
***Western Area Power Administration
Reauthorization Project***

Appendix A

Cumulative Effects Project List

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APPENDIX A

CUMULATIVE EFFECTS PROJECT LIST

Table A-1 identifies other present and reasonably foreseeable future actions considered in the cumulative impacts analysis. No projects in the White River National Forest were identified for the cumulative impacts analysis.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
Arapaho-Roosevelt National Forests			
Willow Creek Salvage and Fuels Reduction Project (EA)	The Willow Creek Salvage and Fuels Reduction Project is part of the Forest Service's on-going effort to respond to the mountain pine beetle epidemic on the Sulphur Ranger District. The analysis area encompasses six Forest Plan Geographic Areas including: Bowen, Buffalo Park, Cabin Creek, Little Gravel, Never Summer Wilderness, and Parkca. The 71,481-acre analysis area includes NFS lands between Willow Creek Pass on the north, Hot Sulphur Springs on the south, the Parks Ranger District on the west, and the Gravel Mountain area on the east.	The project analysis was recently completed and the FONSI was certified on September 4, 2011. Project-related activities were approved to begin on September 12, 2011. The duration of the project is not specified.	Roach PA is approximately 47 miles from T3N, R77W. Grand Lake PA is approximately 1 mile from T3N, R77W. Williams Peak PA is approximately 15 miles from T2N, R77W.
Winter Park Resort Vegetation Project - Response to Mountain Pine Beetle (EA)	The Forest Service proposed an expansion of Project 10: Vegetation Management from the Winter Park Resort Phase I Projects EA (2005). The Forest Service proposed in Project 10 a number of areas within WPR for vegetation treatments in response to mountain pine beetle mortality. The 7,580-acre project area is generally the ski area permit boundary, but does include an area (approximately 127 acres) outside the permit boundary along U.S. Highway 40.	The project analysis is complete and the FONSI was certified in June 10, 2010. Project related activities are currently ongoing. The duration of the project is not specified.	Roach PA is approximately 35 miles from Grand County. Williams Peak and Grand Lake PAs are within Grand County borders.
Forest-wide Hazard Tree Removal and Fuels Reduction Project (EA)	The Forest Service proposed to remove the physical threat from falling trees to people and property along open roads and trails, water diversion ditches and reservoirs, and in designated recreation sites and administrative sites. The analysis area for the Proposed Project is defined as the ARNF in its entirety, but may extend beyond the forest boundary depending on the resource being analyzed. The potential treatment areas for the Proposed Project include portions of ARNF lands in Boulder, Clear Creek, Gilpin, Grand, Jackson, Jefferson, Larimer, and Park counties in north central Colorado.	The project analysis is complete and the FONSI was certified on August 10, 2010. Project related activities are currently ongoing. The duration of the project is not specified.	All PAs are within the boundary of the ARNF.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
Blue Ridge Forest Health (EA)	The Blue Ridge Salvage and Fuels Reduction Project is part of the Forest Service's on-going effort to respond to the mountain pine beetle infestation on the Sulphur Ranger District. The analysis area borders, and is part of, the Wildland-Urban Interface formed by the towns of Granby, Hot Sulphur Springs, and the surrounding developed area as identified in the December 2006 Grand County Community Wildfire Protection Plan. The 30,542-acre analysis area includes mostly NFS lands between Church Park on the southeast and Hot Sulphur Springs on the north. The project includes NFS lands located in 6th P.M., T1N, R78W; T1N, R77W; T1S, R78W; and T1S, R77W, Grand County, Colorado.	The project analysis is complete and the FONSI was certified on October 17, 2007. There is no specific project duration or report of current project activity.	Williams Peak PA is approximately 3 miles from T1S, R78W. Grand Lake PA is approximately 4 miles from T1N, R77W. Roach PA is approximately 57 miles from T1N, R78W.
Arrow Fuels Mitigation Project (EA)	The purpose of this project is to modify existing and future fuels buildup from lodgepole pine mortality due to the MPB infestation to decrease the severity and intensity of potential fire behavior near improvements, both public and private, within or adjacent to the national forest. The Arrow Fuels Reduction project area borders, and is part of, the WUI formed by the towns of Winter Park and Fraser; the surrounding developed area; and the Winter Park Ski Resort. The project area includes federal lands along the Moffat Road (NFS Road 149.5) approximately one mile northeast of the Winter Park Ski Resort and one mile southeast of the Town of Winter Park.	The project analysis is complete and the FONSI was certified on August 8, 2007. There is no specific project duration or report of current project activity.	Roach PA is approximately 35 miles from Grand County. Williams Peak PA approximately 26 miles from Winter Park. Grand Lake PA approximately 20 miles from Winter Park.
WAPA Project: Danger Tree Cutting Project	These are ongoing routine maintenance activities on WAPA's transmission lines. The action is to cut danger trees, as defined by WAPA, to protect the transmission lines from trees falling into or coming too close to energized conductors. The trees are identified during line patrols, by contracted tree cutting services. The activities take place on existing ROWs.	This is ongoing work under routine maintenance that is part of WAPA's transmission line maintenance program. It occurs as needed on all parts of the ROWs with trees.	The activity occurs on all ROWs, especially through areas with trees. All of the ROWs addressed in the EIS are subject to this activity.
WAPA Project: Granby Pumping Plant-Windy Gap Transmission Line Rebuild Project (EIS)	WAPA owns and operates a 12-mile, 69-kV electric transmission line in Grand County, Colorado, that originates at Windy Gap Substation and terminates at Granby Pumping Plant Switchyard. The proposed project would rebuild the single circuit line as a double circuit transmission line and add a second power transformer. One circuit would replace the existing 69-kV line; the other circuit would be a new 138-kV line. Granby Pumping Plant Switchyard would be expanded to accommodate the second line and power transformer. Windy Gap Substation would be modified to accommodate the second line.	This is a joint project between WAPA, Tri-State Generation and Transmission Association, Inc., Mountain Parks Electric, and the Northern Colorado Water Conservancy District. The Notice of Availability for the Final EIS was published in the <i>Federal Register</i> , July 5, 2013 and the Record of Decision published on October 1, 2013.	WAPA is the lead agency on the EIS, the U.S. Forest Service and U.S. Bureau of Land Management are Federal cooperating agencies; and Grand County is a cooperating local agency.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
WAPA Project: EIS for 2 parallel lines between West Loveland and Estes Park	This project occurs in Larimer County, Colorado between the town of Estes Park and the Flatiron substation, located west of the city of Loveland, Colorado. The proposal is to combine two transmission lines onto one set of structures on one ROW. The Forest Service is a cooperating agency on the EA, which is in the early development stages. Approximately 4 miles of ROW on NFS lands would be involved. Vegetation management is part of the proposed project.	The project is ongoing. The Notice of Availability for the Final EIS was published in the Federal Register on April 13, 2018 and the Record of Decision published on March 21, 2019.	This project is part of Western's transmission system. It is located approximately 1 mile from the east Portal.
Ashley National Forest			
Flaming Gorge Ponderosa Pine Maintenance and Fuels Reduction (EA)	The purpose of this project is to maintain or move Ponderosa Pine vegetation types to a condition similar to historical conditions and to improve the visual quality of key areas. The primary tool proposed to accomplish the desired outcome would be a continuing or an initial low intensity/high frequency fire.	The project analysis is complete and the Decision Notice signed on May 8, 2013. There is no specific project duration or report of current project activity.	Approximately 25% of the Flaming Gorge PA is within the boundary of Flaming Gorge ranger district within Daggett County.
Bighorn Sheep Habitat Improvement Process	The purpose of this project is to improve bighorn sheep forage and lambing habitat in areas along Flaming Gorge Reservoir in an effort to improve the sight distance of bighorn sheep to detect predators. The project would use prescribed fires to remove encroaching conifers (mostly in the form of juniper).	The project is listed as "Under Analysis." There is currently a scoping report available. The comment period is estimated for April 2015.	Approximately 25% of the Flaming Gorge PA is within the boundary of Flaming Gorge ranger district within Daggett County.
Grand Mesa, Uncompahgre, and Gunnison National Forests			
Grand Valley Spruce beetle SAD Treatments (EA)	The Grand Valley Ranger District is proposing sanitation and salvage treatments of spruce beetle affected Engelmann spruce stands and trembling aspen stands with sudden aspen decline. The area where treatment would take place covers parts of Mesa and Delta Counties. All proposed treatments would be within the Grand Valley Ranger District.	This Decision Notice was signed December 8, 2011.	Paradox PA is approximately 22 miles from Mesa County. Flatiron PA is approximately 10 miles from Delta County. Monarch PA is approximately 52 miles from Delta County. Hightower PA is within the boundary of Mesa and Delta Counties.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
Naturita Fuels Management Project (EA)	The purpose of this project is for vegetation management (other than forest products). This is a wildland urban Interface Fire Hazard reduction and Fire Landscape Restoration Project. The project area is in the Norwood Ranger District specifically sections T43 and 44N and R13 and 14W.	This project is listed as “Under Analysis.” There are no links to documents. The Notice of Initiation occurred on September 30, 2013 and the next milestone is the NEPA or Forest Plan Amendment Decision Document availability estimated for June 2014.	Paradox PA is approximately 7 miles from T44N, R13W. Flatirons PA is approximately 46 miles from T44N, R13W. Monarch PA is approximately 94 miles from T44N, R13W. Hightower PA is approximately 70 miles from T44N, R13W.
Cochetopa Hills Vegetation Management Project	This project will provide timber management at a landscape scale in the Cochetopa Hills portion of the Gunnison Ranger District to meet various Forest Plan objectives. The project area is in the Gunnison Ranger District specifically T44N, R2,3&4 E; T45N, R2,3,4E; T46N, R2,3,4E; T47N, R2,3,4E; New Mexico Prime Meridian.	This Decision Notice for this project was signed May 12, 2014.	Paradox PA is approximately 70 miles from T47N, R2E. Flatiron PA is approximately 41 miles from T47N, R2E. Monarch PA is approximately 2 miles from T47N, R4E. Hightower PA is approximately 60 miles from T47N, R2E.
Thunder Trails Project (EA)	To analyze, design and construct 17.5 miles of motorized single track trails in the Thunder Road area south of the Town of Norwood. The purpose and need for this project is to provide single track opportunities for the community of Norwood.	The project analysis is complete and the FONSI was certified September 22, 2011. There is no specific project duration or report of current project activity.	Paradox PA is partially within the boundary of the county listed as the project area for this project. Flatiron PA is approximately 32 miles from San Miguel County. Monarch PA is approximately 78 miles from San Miguel County. Hightower PA is approximately 60 miles from San Miguel County.
Uncompahgre Pine Maintenance (EA)	This is a reentry of the Glencoe, Copper King, and Hanks Valley prescribed burns. This project is an understory, maintenance burn in ponderosa pine. The project area has two treatment areas on the Uncompahgre Plateau. Glencoe Prescribed Burn is located at T47N. R13W. s. 6, 7, 8; T47N. R14W. S. 1-6, 7-12; T47N. R15W. s. 1, 2, 11, 12; T48N. R14W. S. 31-35; T48N. R15W. s. 36; and Copper King Prescribed Burn is located at T48N. R14W. s. 14, 15, 19-24, 26-29. Legal land description for the project: (1) T47N, R14W, s 1-12 and 17; T47N, R15W, s 1 and 2; T48 N, R15W, s 31-35; (2) T48N, R14W, s 13-16, 19-24; (3) T46N, R12W, s 2-5, 8-11, and 15-17.	The project analysis is complete and the FONSI was certified June 2, 2011. There is no specific project duration or report of current project activity.	Paradox PA is approximately 1 mile from T46N, R12W. Flatiron PA is approximately 35 miles from T46N, R12W. Monarch PA is approximately 86 miles from T46N, R12W. Hightower PA is approximately 56 miles from T46N, R12W.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
Medicine Bow-Routt National Forests			
Morrison Creek Fuels Reduction (EA)	The Medicine Bow-Routt National and Thunder Basin National Grassland propose to implement a hazardous fuels reduction project in the Morrison Creek Hazardous Fuels Reduction Analysis Area. The Morrison Creek Hazardous Fuels Reduction Analysis Area is located within the Morrison Geographic Area, which encompasses approximately 26,000 acres of National Forest System lands on the east central portion of the Yampa Ranger District. The proposed treatments will include approximately 1,317 acres and is situated in the center of the geographic area.	The Decision Notice and FONSI were issued January 25, 2012.	Most of the Phippsburg PA is within the area delineated by T2N, R84W, T2N, R83W, and T3N, R83W. Agnes PA is approximately 11 miles from T3N, R84W. Mohawk PA is approximately 16 miles from T3N, R84W. Cowdrey PA is approximately 52 miles from T3N, R84W.
Invasive Plant Management EIS for the Medicine Bow - Routt NFs and Thunder Basin NG (EIS)	The Medicine Bow-Routt National Forests and Thunder Basin National Grassland will prepare an EIS to continue control of noxious weeds and other invasive plants through the integration of manual, mechanical, biological, and ground and aerial herbicide control methods. Approximately 175,300 acres within the forest areas are infested with invasive plants, which is about six percent of the total acres.	The Draft EIS was released March 25, 2014. There is no additional information available for the project at this time.	All WESTEIS PAs are within the county boundaries listed as part of the project area for this project.
Emergency Power Line Clearing Project (EA)	The USFS, ARNF, MBRNF, and WRNF propose to allow felling and/or removal, where feasible, of hazardous trees up to 200 feet (from each side of centerline) of transmission lines and up to 75 feet (from each side of centerline) of distribution lines. The project area consists of 22,235 acres and includes all distribution and transmission lines on NFS lands.	The project analysis was completed and the FONSI was certified on November 17, 2010. Project-related activities are ongoing. The duration of the project is not specified.	All WESTEIS PAs are within the county boundaries listed as part of the project area for this project.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
Nebraska National Forest			
Nebraska National Forest Travel Management (EIS)	The Nebraska National Forest proposes to designate routes and areas open to motorized travel. Actions would occur on most lands administered by the Nebraska National Forest (except the Fort Pierre National Grassland) including the Buffalo Gap National Grassland (including Fall River and Wall Ranger Districts), Oglala National Grassland, Samuel R. McKelvie National Forest, and the Pine Ridge and Bessey Units of the Nebraska National Forest.	The project analysis is complete and the FONSI was certified September 13, 2010. There is no specific project duration or report of current project activity.	The Chadron PA is within the boundaries of the counties listed as the project area for this project.
Bordeaux Creek Fuels Reduction Project	This project involves fuel reduction treatments including a combination of mechanical thinning, prescribed burning, and mowing on up to 4,513 acres.	Signed July 13, 2005, approximately 30% of the stands have been thinned, but none of the prescribed burns have been completed.	Some thinning units as close as approximately 0.5 miles.
Chadron Creek Fuels Reduction Project	This project involves fuel reduction treatments on approximately 2,831 acres including thinning and prescribed fires.	Signed February 7, 2003, all of the mechanical thinning has been completed; none of the prescribed fire has been completed.	Some thinning units as close as approximately 0.5 miles.
Pike and San Isabel National Forests			
Spruce Creek Hazardous Fuels Reduction Project (CE)	The District Ranger of the Salida Ranger District of the Pike and San Isabel National Forest has signed the Decision Memo for the Spruce Creek Hazardous Fuels project. The project will occur southwest of Poncha Springs, Colorado. This project consists of vegetation management on approximately 730 acres. The intent of this project is to reduce the risk of high intensity wildland fire and restore and maintain healthy, diverse, fire adapted ecosystems to provide improved resilience and sustainability. In addition the project will treat vegetation so that growth and vigor of residual trees are maintained or increased to favor the development of a large tree forest structure.	The project was certified as a Categorical Exclusion on November 19, 2007. Project activities are on-going; however, the duration of the project is not defined.	Maysville PA is approximately 6 miles from T49N, R7E. Twin Lakes PA is approximately 39 miles from T49N, R7E.
San Juan National Forest			
Fuels - Rock Springs Fuels Reduction and Forest Health Project (EA)	The overall management goal of this project is to reduce the risk of high severity wildland fire and restore and maintain healthy, diverse, fire adapted ecosystems to provide improved resilience and sustainability. In addition the project will treat vegetation so that growth and vigor of forest stands is maintained or increased.	The project analysis was completed and the FONSI was certified on December 14, 2010. Project-related activities are ongoing. The duration of the project is not specified.	McPhee PA is approximately 8 miles from T37N, R14W. Norwood PA is approximately 2 miles from T37N, R13W.

Table A-1. Cumulative Effects Project List

Project Name	Project Summary	Project Status/Completion Date	Distance to Project Area
White River National Forest			
NA	NA	NA	NA

ARNF Arapaho-Roosevelt National Forests

E East

EA Environmental Assessment

EIS Environmental Impact Statement

EPA United States Environmental Protection Agency

FONSI Finding of No Significant Impact

kV kilovolt

MBRNF Medicine Bow-Routt National Forests

MPB mountain pine beetle

N North

NA Not applicable

NEPA National Environmental Policy Act

NFS National Forest System

NG National Grassland

PA Project Area

R Range

RAMP Rangeland Allotment Management Plan

ROW Right-of-way

S South

T Township

U.S. United States

USDA United States Department of Agriculture

USFS United States Forest Service

W West

WRNF White River National Forest

WUI Wildland-Urban Interface

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Appendix B

Soils by Right-of-Way (ROW)

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APPENDIX B

SOILS BY RIGHT-OF-WAY

Appendix B includes soil characteristics by forest and ROW upon which some of the ratings in Table 3-21 are based. The tables in Appendix B for each national forest provide soils information pertinent to vegetation management activities: slope gradient, hydrologic soil group, and erosion hazard. Data in the tables were derived from the Soil Survey Geographic (SSURGO) Data Base (Natural Resources Conservation Service 2011). Percent slope gradient (expressed as the weighted average for the soil map unit) was based on the SSURGO element “slopegradw.” Hydrologic soil group was based on the SSURGO element “hydgrpdc.” Erosion hazard was based on the SSURGO element “forpehrtd,” which corresponds to the relative potential erosion hazard for the soil map unit when used as a site for forest roads and trails.

B.1 Arapaho-Roosevelt National Forests

Archer-North Park ROW (part of Archer-Hayden transmission line)

This ROW crosses an area of mountain slopes and ridges. The soils are very shallow to very deep, gently sloping to extremely moderately steep, well-drained to excessively drained gravelly sandy loams and stony loams that formed in slope alluvium and colluvium from acid igneous rocks and from glacial till. Table B-1 provides additional information on these soils.

Ault-Craig ROW

This ROW crosses an area of hillslopes and mountain sides. The soils generally are shallow to deep, gently sloping to steep, somewhat excessively drained and cobbly or gravelly and loamy that formed in colluvium, residuum, and slope alluvium from granite and metamorphic rocks. Table B-2 provides additional information on these soils.

Blue River-Gore Pass ROW

This ROW crosses an area of mountain slopes, ridges, structural benches, and spurs. The soils generally are very shallow to very deep, moderately sloping to very steep, well-drained or somewhat excessively drained, gravelly loamy sand and very stony sandy loams that formed in slope alluvium, colluvium, and residuum from schist, gneiss, and granitic rocks. There are also areas of primarily cobbles along the ROW. Table B-3 provides additional information on these soils.

Green Mountain-Blue Ridge Repeater ROW (part of Green Mountain-Blue River transmission line)

This ROW crosses an area of mountain slopes and ridges, hills, and knobs. The soils are very shallow to moderately deep, gently sloping to extremely steep, well-drained to excessively drained gravelly sandy loams, stony loams, and channery loams that formed in slope alluvium and colluvium from acid igneous rocks and from slope alluvium, colluvium from sedimentary rocks, or both. Some areas consist of rubble land. Table B-4 provides additional information on these soils.

B.2 Ashley National Forest

Flaming Gorge-Vernal #1 ROW

This ROW crosses an area of hills, mountain slopes, fan remnants, and drainageways. The soils generally are very deep, gently sloping to steep, well-drained, loamy, and cobbly and bouldery that formed in alluvium, colluvium, and aeolian deposits. Table B-5 provides additional information on these soils.

Flaming Gorge-Vernal #3 ROW

This ROW crosses an area consisting of pits and dumps, with little to no native soils present in their original configuration. The areas of pits consist of open excavations from which soil and underlying material has been removed for the purpose of exposing and extracting minerals. Slopes in these areas are nearly level to gently sloping. Areas of dumps consist of areas of smoothed or uneven accumulations or piles of waste rock from mines or quarries. Slopes in these areas are nearly level to very steep (Natural Resources Conservation Service 2003). Table B-6 provides additional information on these soils.

B.3 Grand Mesa, Uncompahgre, and Gunnison National Forests

Curecanti-Lost Canyon ROW

This ROW crosses an area of mountain toe slopes and foot slopes, plateau tops, mesa tops and side slopes, and alluvial fans. The soils generally are shallow to deep, nearly level to steep, well-drained, and fine to moderately coarse textured that formed in alluvium, colluvium, and residuum derived from interbedded sandstone and shale. Table B-7 provides additional information on these soils.

Curecanti-North Fork ROW (part of Curecanti-Rifle transmission line)

This ROW crosses an area of mountain tops and sides, outwash fans, benches, mesa sideslopes, and lateral moraines. The soils generally are very deep, moderately sloping to steep, well-drained cobbly and loamy that formed in glacial till, residuum from basalt, and alluvium and colluvium from sandstones and shale. Table B-8 provides additional information on these soils.

Curecanti-Poncha ROW

This ROW crosses an area of mountain slopes and ridges, mesas, and hills. The soils generally are shallow to very deep; moderately sloping to very steep; well-drained to excessively drained loams; very cobbly very fine sandy loams; extremely flaggy loams that formed in slope alluvium and colluvium derived from granitic rocks; slope alluvium and colluvium derived from andesite, rhyolite, trachyte, breccia, and tuff; and in slope alluvium and colluvium derived from sandstone, tuff, basalt, and breccia. Table B-9 provides additional information on these soils.

Hesperus-Montrose ROW

This ROW crosses an area of uplands; knobs; ridges; mountain side slopes, toe slopes, and foot slopes; plateau tops; and alluvial fans. The soils generally are shallow to very deep, nearly level to steep, well-drained, and fine to moderately coarse textured that formed in alluvium, colluvium, and residuum derived from interbedded sandstone and shale and loess. Table B-10 provides additional information on these soils.

North Fork-Rifle ROW (part of Curecanti-Rifle transmission line)

This ROW crosses an area of mountain and valley side slopes, benches, ridges, mesas, and cuestras. The soils generally are shallow to moderately deep, moderately sloping to very steep, well-drained to somewhat excessively drained cobbly sandy loam to clay loam that formed in glacial till, slope alluvium, and colluvium and residuum from limestone, shale, and sandstone. Table B-11 provides additional information on these soils.

North Gunnison-Salida ROW

This ROW crosses an area of mountain slopes and ridges. The soils generally are shallow to very deep, strongly sloping to very steep, well-drained to excessively drained, very stony loams and very cobbly sandy loams that formed in colluvium and slope alluvium from mixed igneous and metamorphic rocks, including schist, gneiss, granite, granodiorite, granodiorite gneiss, and quartz monzonite. Table B-12 provides additional information on these soils.

B.4 Medicine Bow-Routt National Forests***Archer-North Park ROW (part of Archer-Hayden transmission line)***

This ROW crosses an area of mountain slopes and ridges. The soils are very shallow to very deep, gently sloping to extremely moderately steep, well-drained to excessively drained gravelly sandy loams and stony loams that formed in slope alluvium and colluvium from acid igneous rocks and from glacial till. Table B-1 provides additional information on these soils.

Ault-Craig ROW

Table B-2 provides additional information on these soils.

Gore Pass-Hayden ROW

No soil data from the SSURGO database was available for this transmission line.

Gore Pass-Muddy Pass ROW

This ROW crosses an area of upland hills, plateaus, foot slopes, fans, and mountain sides. The soils generally are moderately deep to deep, moderately sloping to very steep, well-drained, stony sandy loams that formed in glacial till, outwash, alluvium, aeolian deposits, or similar material. Table B-13 provides additional information on these soils.

Hayden-Gore Pass ROW

This ROW crosses an area of mountain sides, crests, and ridges. The soils generally are moderately deep, moderately sloping to very steep, well-drained to excessively drained, very stony sandy loams that formed in weathered granite and other granitic intrusive rocks. Table B-14 provides additional information on these soils.

Hayden-North Park ROW (part of Archer-Hayden transmission line)

No soil data from the SSURGO database was available for this transmission line.

B.5 Nebraska National Forest

Box Butte-Chadron ROW

This ROW crosses uplands and footslopes of the Pine Ridge area. The soils generally are shallow to deep, moderately steep to very steep, well-drained, loamy, and silty that formed in colluvium and material weathered from sandstone. Table B-15 provides additional information on these soils.

B.6 Pike and San Isabel National Forests

Curecanti-Poncha ROW

Table B-9 provides additional information on these soils.

Malta-Mount Elbert ROW

This ROW crosses an area of mountains and fan terraces. The soils generally are very deep, gently sloping to moderately steep, well-drained, gravelly sandy loams that formed in gravelly alluvium or gravelly till. Table B-16 provides additional information on these soils.

North Gunnison-Salida ROW

This ROW crosses an area of old alluvial fans or terraces. The soils generally are very shallow, nearly level to steep, somewhat excessively drained, gravelly sandy loams that formed in coarse textured calcareous alluvial materials derived from mixed sources. Table B-12 provides additional information on these soils.

B.7 San Juan National Forest

Curecanti-Lost Canyon ROW

This ROW crosses an area of mesas, hills, alluvial fans, mountain and canyon side slopes, structural benches, and drainageways. The soils generally are deep to very deep, nearly level to steep, well-drained loams that formed in alluvium and colluvium derived from sandstone and shale and from silty aeolian deposits. There are also areas of rock outcrop along the ROW. Table B-7 provides additional information on these soils.

Great Cut Switchyard-Great Cut Tap ROW

Table B-17 provides additional information on these soils.

Great Cut-McPhee ROW

This ROW crosses an area of hills, mesas, alluvial fans, and canyon side slopes. The soils generally are shallow to very deep, nearly level to strongly sloping, well-drained, cobbly or stony loams and sandy loams that formed in residuum from sandstone or aeolian deposits from sandstone. Table B-18 provides additional information on these soils.

Hesperus-Montrose ROW

This ROW crosses an area of mesas, hills, alluvial fans, fan remnants, and mountain slopes. The soils generally are deep to very deep, nearly level to very steep, well-drained loams, clay loams, and stony sandy loams that formed in alluvium and colluvium derived from sandstone and shale. There are also areas of rock outcrop along the ROW. Table B-10 provides additional information on these soils.

B.8 White River National Forest

Blue River-Gore Pass ROW

This ROW crosses an area of mountain slopes and upland hills and ridges. The soils generally are shallow to very deep, moderately sloping to extremely steep, well-drained to excessively drained, gravelly and stony sandy loams that formed in colluvium from acid igneous rocks, till, slope alluvium, and colluvium from acid igneous rocks. Table B-3 provides additional information on these soils.

Curecanti-Rifle ROW (part of Curecanti-North Fork-Rifle transmission line)

This ROW crosses an area of mountain and valley side slopes, ridges, structural benches, mesa tops, and cuestas. The soils generally are deep to very deep, nearly level to very steep, well-drained or moderately well-drained loams and clay loams that formed in residuum and colluvium derived from sandstone, shale, and glacial till. Table B-19 provides additional information on these soils.

Green Mountain-Blue Ridge Repeater ROW (part of Green Mountain-Blue River transmission line)

Table B-4 provides additional information on these soils.

Green Mountain-Kremmling ROW

This ROW crosses an area of mountain and valley side slopes, toe slopes, foot slopes, and backslopes; ridges; relict fan aprons; coalescing fans; terraces; and hills. The soils generally are shallow to very deep, moderately sloping to very steep, well-drained loams and cobbly loams that formed in alluvium or colluvium derived from sedimentary and crystalline rocks, including andesite, rhyolite, trachyte, breccia, or tuff. There are also areas of rock outcrop along the ROW. Table B-20 provides additional information on these soils.

Table B-1. ROW: Archer-North Park, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cryaquolls-Gateview complex, 0 to 15 percent slopes	8	D	Moderate	0.83	1
Cryaquolls-Typic Cryohemists complex, 0 to 15 percent slopes	3	D	Moderate	0.75	1
Goosepeak-Catamount families, moist complex, 5 to 40 percent slopes	15	A	Slight	3.68	3
Leighcan family, 5 to 40 percent slopes	40	A	Severe	1.42	1
Leighcan-Catamount families, moist complex, 5 to 40 percent slopes	33	A	Severe	37.26	32
Rogert family, 5 to 40 percent slopes	15	D	Moderate	11.95	10
Tolby family-Rubble land-Legault family, moist complex, 40 to 150 percent slopes	47	A	Severe	1.23	1
Tolby-Legault families, moist complex, 5 to 40 percent slopes	19	A	Moderate	18.73	16
Unsurveyed area within ROW	N/A	N/A	N/A	40.16	35
TOTAL:				116.02	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-2. ROW: Ault-Craig, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Boyle-Ratake gravelly sandy loams, 9 to 25 percent slopes	16	D	Moderate	0.00	>1
Cryaquepts-Cryaquolls complex, 0 to 15 percent slopes	7	D	Moderate	0.00	>1
Cryaquolls-Gateview complex, 0 to 15 percent slopes	8	D	Moderate	1.72	>1
Cryaquolls-Typic Cryohemists complex, 0 to 15 percent slopes	3	D	Moderate	1.12	>1
Goosepeak-Catamount families, moist complex, 5 to 40 percent slopes	15	A	Slight	0.67	>1
Leighcan family, 5 to 40 percent slopes	40	A	Severe	2.16	1
Leighcan-Catamount families, moist complex, 5 to 40 percent slopes	33	A	Severe	51.81	14
Rogert family, 5 to 40 percent slopes	15	D	Moderate	19.12	5
Tolby family-Rubble land-Legault family, moist complex, 40 to 150 percent slopes	47	A	Severe	1.39	>1
Tolby-Legault families, moist complex, 5 to 40 percent slopes	19	A	Moderate	25.32	7
Unsurveyed area within ROW	N/A	N/A	N/A	275.59	73
TOTAL:				378.89	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-3. ROW: Blue River-Gore Pass, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Anvik loam, 15 to 50 percent slopes	33	B	Severe	0.06	>1
Bucklon loam, 15 to 35 percent slopes	25	D	Severe	3.11	1
Cimarron loam, 15 to 35 percent slopes	25	C	Severe	0.96	>1
Cimarron loam, 6 to 15 percent slopes	11	C	Severe	0.45	>1
Leavitt loam, 15 to 55 percent slopes	35	B	Severe	5.88	3
Leighcan family, 40 to 75 percent slopes	55	A	Severe	0.77	>1
Leighcan family, 5 to 40 percent slopes	40	A	Severe	1.15	1
Leighcan family, till substratum-Cryaquolls complex, 5 to 40 percent slopes	30	A	Severe	16.67	8
Leighcan family, warm, 40 to 75 percent slopes	55	A	Severe	0.86	>1
Leighcan-Catamount families, moist-Rock outcrop complex, 40 to 150 percent slopes	54	A	Severe	6.14	3
Lithic Cryorthents-Rubble land complex, 5 to 40 percent slopes	16	A	Moderate	11.76	6
Parkview family, cold, 5 to 40 percent slopes	15	A	Moderate	3.36	2
Rock outcrop-Cryoborolls complex	50	D	Severe	1.45	1
Scout-Goosepeak families complex, 40 to 75 percent slopes	49	A	Severe	6.57	3
Tolby family-Rubble land-Legault family, moist complex, 40 to 150 percent slopes	47	A	Severe	25.75	12
Tolby-Legault families, moist complex, 40 to 75 percent slopes	33	A	Severe	25.59	12
Tolby-Legault families, moist complex, 5 to 40 percent slopes	19	A	Moderate	5.33	3
Unsurveyed area within ROW	N/A	N/A	N/A	94.54	45
TOTAL:				210.39	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-4. ROW: Green Mountain-Blue Ridge Repeater, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Leighcan family, 40 to 75 percent slopes	55	A	Severe	0.30	7
Leighcan family, till substratum-Cryaquolls complex, 5 to 40 percent slopes	30	A	Severe	0.91	20
Leighcan-Catamount families, moist-Rock outcrop complex, 40 to 150 percent slopes	54	A	Severe	0.91	21
Lithic Cryorthents-Rubble land complex, 5 to 40 percent slopes	16	A	Moderate	0.15	3
Parkview family, cold, 40 to 75 percent slopes	40	A	Severe	0.29	7
Parkview family, cold, 5 to 40 percent slopes	15	A	Moderate	0.44	10
<i>Unsurveyed area within ROW</i>	N/A	N/A	N/A	1.39	32
<i>TOTAL:</i>				4.39	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-5. ROW: Flaming Gorge-Vernal #1, Utah

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cortyzack-Flynncove-Chivers association, 1 to 25 percent slopes	13	B	Moderate	0.69	1
Dokie-Flynncove association, 25 to 50 percent slopes	38	B	Severe	0.02	>1
Unsurveyed area within ROW	N/A	N/A	N/A	62.21	99
TOTAL:				62.92	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-6. ROW: Flaming Gorge-Vernal #3, Utah

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Pits-Dumps complex	17	A	Very Severe	0.08	>1
Unsurveyed area within ROW	N/A	N/A	N/A	189.61	100
TOTAL:				189.69	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-7. ROW: Curecanti-Lost Canyon, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Argiustolls-Haplustalfs-Rock outcrop complex, 30 to 80 percent slopes	55	C	Severe	3.49	1
Bradfield clay loam, 0 to 5 percent slopes	3	C	Slight	12.47	4
Bradfield-Narraguinnep complex, 0 to 5 percent slopes	3	C	Slight	5.89	2
Burnson loam, 1 to 15 percent slopes	8	C	Moderate	37.79	12
Burnson loam, dry, 1 to 15 percent slopes	8	C	Moderate	0.64	>1
Burnson-Herm complex, 15 to 30 percent slopes	23	C	Severe	18.33	6
Chilson-Delson, moderately deep-Beenom families complex, 1 to 20 percent slopes	7	D	Slight	37.67	12
Delson-Kubler-Showalter families complex, 15 to 45 percent slopes	30	C	Severe	22.28	7
Fivepine-Nortez complex, 0 to 15 percent slopes	8	D	Moderate	10.67	3
Fivepine-Pino loams, 0 to 15 percent slopes	8	D	Moderate	0.22	>1
Fughes loam, 1 to 12 percent slopes	7	C	Moderate	7.21	2
Fughes-Sheek complex, 15 to 30 percent slopes	23	C	Severe	3.53	1
Granath-Nortez complex, 0 to 15 percent slopes	8	B	Moderate	3.40	1
Herm-Pagoda complex, 0 to 15 percent slopes	8	C	Moderate	39.34	13
Jemco-Detra-Beje complex, 1 to 15 percent slopes	8	C	Moderate	52.87	17
Jemco-Moento complex, 0 to 15 percent slopes	8	C	Moderate	0.10	>1
Kubler-Delson-Cerro families complex, 3 to 15 percent slopes	9	C	Moderate	24.00	8
Narraguinnep clay loam, 15 to 50 percent slopes	32	D	Severe	7.15	2
Narraguinnep clay loam, 5 to 15 percent slopes	10	D	Moderate	4.66	2
Narraguinnep-Dapoin complex, 1 to 15 percent slopes	8	D	Moderate	0.85	>1
Rock outcrop	50	D	Severe	5.65	2
Shawa loam, 0 to 5 percent slopes	3	B	Moderate	1.16	>1

Table B-7. ROW: Curecanti-Lost Canyon, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Shawa-Fughes complex, 30 to 60 percent slopes	45	B	Severe	2.74	1
Tellura-Leaps clay loams, 5 to 40 percent slopes	23	C	Severe	5.11	2
Trampas-Delson, moderately deep families complex, 3 to 30 percent slopes	15	C	Moderate	0.88	>1
Unsurveyed area within ROW	N/A	N/A	N/A	0.00	>1
TOTAL:				308.10	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-8. ROW: Curecanti-North Fork, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Broad Canyon-Scout family complex, 5 to 25 percent slopes	15	B	Severe	23.30	36
Clayburn-Quander-Guero complex, 5 to 30 percent slopes	18	B	Severe	4.82	7
Cryochrepts-Cryoborolls-Rubble land complex, 15 to 90 percent slopes	53	A	Severe	6.85	11
Delson-Fughes complex, 5 to 25 percent slopes	15	C	Severe	24.87	39
Haploborolls-Ustochrepts-Rock outcrop complex, 40 to 99 percent slopes	70	D	Severe	2.22	3
Seth-Nordicoll complex, 10 to 65 percent slopes	38	C	Severe	2.44	4
TOTAL:				64.49	100

Source: Natural Resources Conservation Service 1999-2010.

ROW Right-of-Way

Table B-9. ROW: Curecanti-Poncha, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cryolls-Cryaquolls association, 0 to 15 percent slopes	8	B	Moderate	0.63	>1
Goosepeak gravelly loam, cool, 20 to 65 percent slopes	43	B	Severe	3.05	1
Herbman, moist-Kismuth complex, 25 to 65 percent slopes	45	A	Severe	8.23	3
Moran-Telluride-Rock outcrop complex, 5 to 40 percent slopes, extremely stony	23	D	Moderate	3.18	1
Ohman-Perfecto complex, 25 to 65 percent slopes	45	A	Severe	22.06	8
Perfecto-Ohman-Legault complex, 25 to 65 percent slopes, very bouldery	45	A	Severe	31.69	11
Quander, cool-Bushpark-Rock outcrop complex, 15 to 45 percent slopes	30	D	Severe	31.98	11
Storm family very cobbly sandy clay loam, 10 to 65 percent slopes	38	B	Severe	8.45	3
Tellura, moist-Quander complex, 5 to 25 percent slopes	15	C	Moderate	38.13	14
Vanwirt-Storm complex, 5 to 40 percent slopes	23	B	Severe	7.52	3
Unsurveyed area within ROW	N/A	N/A	N/A	126.88	45
TOTAL:				281.81	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-10. ROW: Hesperus-Montrose, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Archuleta loam, 12 to 65 percent slopes	39	D	Severe	12.04	1
Archuleta-Sanchez complex, 12 to 65 percent slopes	35	D	Severe	0.03	>1
Archuleta-Sheek complex, 12 to 65 percent slopes	39	D	Severe	19.59	2
Argiustolls-Haplustalfs complex, 30 to 80 percent slopes	55	B	Severe	14.23	1
Argiustolls-Haplustalfs-Rock outcrop complex, 30 to 80 percent slopes	55	C	Severe	24.06	2
Behanco-Powderhorn family complex, 0 to 15 percent slopes	8	B	Moderate	8.71	1
Borolls-Boralfs-Rock outcrop complex, 40 to 150 percent slopes	66	B	Severe	4.29	>1
Bradfield clay loam, 0 to 5 percent slopes	3	C	Slight	16.79	2
Bradfield-Narraguinnep complex, 0 to 5 percent slopes	3	C	Slight	8.05	1
Burnson loam, 1 to 15 percent slopes	8	C	Moderate	4.01	>1
Burnson-Herm complex, 15 to 30 percent slopes	23	C	Severe	4.35	>1
Chilson-Delson, moderately deep-Beenom families complex, 1 to 20 percent slopes	7	D	Slight	82.62	8
Clayburn cobbly loam, 6 to 25 percent slopes	16	B	Severe	2.26	>1
Dalmatian-Apmay-Schrader complex, 0 to 5 percent slopes	3	B	Moderate	1.00	>1
Delson, moderately deep-Sharrott families complex, 1 to 15 percent slopes	7	C	Moderate	34.34	3
Delson-Kubler-Showalter families complex, 15 to 45 percent slopes	30	C	Severe	21.50	2
Dressel-Jersey complex, 30 to 80 percent slopes	55	B	Severe	3.27	>1
Endoaquolls-Ustifluvents complex, 0 to 5 percent slopes	3	D	Slight	6.68	1
Fardraw loam, 3 to 15 percent slopes	9	B	Slight	0.66	>1
Fivepine-Nortez complex, 0 to 15 percent slopes	8	D	Moderate	3.40	>1
Fivepine-Pino loams, 0 to 15 percent slopes	8	D	Moderate	0.06	>1
Fortlewis stony fine sandy loam, 3 to 12 percent slopes	8	C	Moderate	55.39	5
Fortwingate-Rock outcrop complex, 6 to 25 percent slopes	15	C	Moderate	18.65	2
Frisco-Horsethief complex, 30 to 75 percent slopes	51	B	Severe	0.76	>1

Table B-10. ROW: Hesperus-Montrose, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Fughes loam, 1 to 12 percent slopes	7	C	Moderate	16.66	2
Fughes-Herm complex, 5 to 25 percent slopes	15	C	Moderate	18.33	2
Fughes-Sheek complex, 15 to 30 percent slopes	23	C	Severe	16.50	2
Goldbug very stony fine sandy loam, 5 to 30 percent slopes	18	B	Severe	19.11	2
Goldvale very stony fine sandy loam, 15 to 65 percent slopes	40	B	Severe	19.13	2
Gralic-Grenadier families complex, 15 to 50 percent slopes	28	B	Severe	10.70	1
Granath-Dolores-Fivepine complex, 0 to 15 percent slopes	8	B	Moderate	14.44	1
Granath-Fughes complex, 0 to 15 percent slopes	8	B	Moderate	2.95	>1
Hapgood-Lamphier families complex, 20 to 50 percent slopes	32	B	Severe	18.27	2
Herm loam, 6 to 25 percent slopes	16	C	Severe	4.78	>1
Herm-Pagoda complex, 0 to 15 percent slopes	8	C	Moderate	77.68	7
Hesperus loam, 0 to 3 percent slopes	2	B	Slight	1.45	>1
Hesperus loam, 3 to 12 percent slopes	8	B	Moderate	3.98	>1
Horsethief very stony fine sandy loam, 20 to 65 percent slopes	43	B	Severe	1.30	>1
Jemco-Detra-Beje complex, 1 to 15 percent slopes	8	C	Moderate	23.84	2
Kubler-Delson-Cerro families complex, 3 to 15 percent slopes	9	C	Moderate	113.92	10
Maudrey-Tombac complex, 0 to 15 percent slopes	8	C	Moderate	136.06	13
Mavreeso-Valto-Rock outcrop complex, 30 to 80 percent slopes	55	D	Severe	2.15	>1
Moento loam, 0 to 15 percent slopes	8	C	Moderate	0.00	>1
Narraguinnep clay loam, 15 to 50 percent slopes	32	D	Severe	10.62	1
Narraguinnep clay loam, 5 to 15 percent slopes	10	D	Moderate	29.75	3
Narraguinnep-Dapoin complex, 1 to 15 percent slopes	8	D	Moderate	2.21	>1
Needleton-Snowdon-Rock outcrop complex, 30 to 80 percent slopes	55	D	Severe	0.15	>1
Pinacol loam, 12 to 40 percent slopes	29	C	Severe	3.19	>1

Table B-10. ROW: Hesperus-Montrose, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Pinata loam, 12 to 40 percent slopes	26	C	Severe	16.40	2
Shawa-Fughes complex, 15 to 30 percent slopes	19	B	Severe	12.06	1
Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes	53	D	Severe	4.44	>1
Snowdon-Rock outcrop complex, 30 to 65 percent slopes	48	D	Severe	2.14	>1
Storm extremely flaggy loam, 15 to 30 percent slopes	23	B	Moderate	2.49	>1
Supervisor-Cebone families complex, 1 to 15 percent slopes	8	C	Slight	32.39	3
Teedown-Nordic complex, 15 to 30 percent slopes	21	B	Severe	7.26	1
Tellura-Leaps clay loams, 5 to 40 percent slopes	23	C	Severe	5.85	1
Trampas-Delson, moderately deep families complex, 3 to 30 percent slopes	15	C	Moderate	24.91	2
Ula-Agreston-Pendergrass families complex, 1 to 15 percent slopes	7	B	Slight	45.40	4
Ustic Torriorthents-Ustollic Haplargids complex, 12 to 60	36	B	Severe	0.01	>1
Ustorthents-Ustochrepts-Rock outcrop complex, 40 to 150 percent slopes	67	D	Severe	5.98	1
Valto-Rock outcrop complex, 10 to 65 percent slopes	38	D	Severe	3.35	>1
Valto-Rock outcrop complex, 12 to 65 percent slopes	38	D	Severe	4.89	>1
Water	0	N/A	Not rated	0.32	>1
TOTAL:				1061.81	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-11. ROW: North Fork-Rifle, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Broad Canyon, warm-Bullbasin-Cryaquolls complex, 0 to 30 percent slopes	14	B	Severe	2.64	1
Cerro-Herm complex, 15 to 40 percent slopes	28	C	Severe	11.45	3
Cryaquolls and Borohemists, 0 to 10 percent slopes	4	D	Very Severe	10.02	3
Cumulic Haploborolls, 1 to 3 percent slopes	2	B	Slight	0.88	>1
Godding-Kolob family-Delson complex, 25 to 65 percent slopes, extremely stony	45	C	Severe	3.84	1
Herm-Fughes complex, 5 to 25 percent slopes	15	C	Moderate	4.92	1
Herm-Fughes-Kolob family complex, 25 to 40 percent slopes	33	C	Severe	26.15	7
Shawa-Sandia family-Kolob family complex, 40 to 65 percent slopes	53	B	Severe	16.30	4
Shawa-Sandia family-Kolob family complex, 5 to 40 percent slopes	23	B	Severe	1.94	1
Tellura-Jerry complex, 5 to 40 percent slopes	23	C	Moderate	52.15	13
Wesdy-Mudbuz complex, 10 to 40 percent slopes	25	C	Severe	39.31	10
Wetopa-Hayrack complex, 5 to 40 percent slopes	23	C	Severe	122.73	32
Wetopa-Wesdy complex, 5 to 65 percent slopes	35	C	Severe	93.86	24
Unsurveyed area within ROW	N/A	N/A	N/A	0.51	>1
TOTAL:				386.67	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-12. ROW: North Gunnison-Salida, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cryaquolls-Cryohemists complex, 0 to 5 percent slopes	3	D	Slight	2.39	1
Cryepts, Cryorthents, and Rubble land, 25 to 75 percent slopes	50	A	Severe	0.26	>1
Cryolls-Cryaquolls association, 0 to 15 percent slopes	8	B	Moderate	0.08	>1
Dewville loam, 5 to 15 percent slopes	10	B	Severe	0.11	>1
Dominson gravelly sandy loam, 9 to 45 percent slopes	27	A	Severe	0.35	>1
Herbman very gravelly sandy loam, 25 to 65 percent slopes	45	A	Severe	4.85	3
Herbman, moist-Kismuth complex, 25 to 65 percent slopes	45	A	Severe	15.00	8
Moran-Telluride-Rock outcrop complex, 5 to 40 percent slopes, extremely stony	23	D	Moderate	1.52	1
Ohman-Perfecto complex, 25 to 65 percent slopes	45	A	Severe	21.30	12
Perfecto-Ohman-Legault complex, 25 to 65 percent slopes, very bouldery	45	A	Severe	20.73	12
Piloni very gravelly loamy sand, 15 to 65 percent slopes	40	A	Severe	25.80	15
Tellura very gravelly clay loam, dry, 15 to 65 percent slopes, very bouldery	40	C	Severe	13.01	7
Unsurveyed area within ROW	N/A	N/A	N/A	72.17	41
TOTAL:				177.57	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-13. ROW: Gore Pass-Muddy Pass, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Clayburn loam, 15 to 25 percent slopes	20	B	Severe	0.14	1
Youga loam, 15 to 45 percent slopes	30	B	Severe	0.02	>1
Unsurveyed area within ROW	N/A	N/A	N/A	19.52	99
TOTAL:				19.68	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-14. ROW: Hayden-Gore Pass, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Perfecto very gravelly sandy loam, 3 to 25 percent slopes, very stony	0	A	Not rated	0.46	>1
Upson stony sandy loam, 15 to 65 percent slopes	40	C	Severe	0.01	>1
Unsurveyed area within ROW	N/A	N/A	N/A	332.06	100
TOTAL:				332.54	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
ROW Right-of-Way

Table B-15. ROW: Box Butte-Chadron, Nebraska

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Bridget silt loam, 9 to 20 percent slopes	15	B	Severe	0.79	1
Busher loamy very fine sand, 9 to 20 percent slopes	15	A	Severe	2.16	3
Canyon soils, 3 to 30 percent slopes	17	D	Severe	3.60	4
Keith and Ulysses silt loams, 3 to 9 percent slopes	6	B	Moderate	6.41	8
Oglala-Canyon loams, 9 to 20 percent slopes	15	B	Severe	9.15	11
Oglala loam, 9 to 30 percent slopes	20	B	Severe	4.31	5
Sarben and Vetala loamy very fine sands, 9 to 30 percent slopes	17	A	Severe	6.05	7
Tassel-Ponderosa-Rock outcrop association, 9 to 70 percent slopes	39	D	Severe	18.75	23
Tassel soils, 3 to 30 percent slopes	17	D	Severe	20.00	24
Ulysses silt loam, 9 to 20 percent slopes	14	B	Severe	12.23	15
TOTAL:				83.45	100

Source: Natural Resources Conservation Service 1999-2010.

ROW Right-of-Way

Table B-16. ROW: Malta-Mount Elbert, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Troutville gravelly sandy loam, 3 to 35 percent slopes	19	B	Moderate	12.49	100
TOTAL:				12.49	100

Source: Natural Resources Conservation Service 1999-2010.

ROW Right-of-Way

Table B-17. ROW: Great Cut SWYD-Great Cut Tap, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Zigzag very channery clay loam, 3 to 25 percent slopes	14	D	Severe	0.87	100
TOTAL:				0.87	100

Source: Natural Resources Conservation Service 1999-2010.

ROW Right-of-Way

Table B-18. ROW: Great Cut-McPhee, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Ackmen loam, 1 to 3 percent slopes	2	B	Slight	0.14	1
Fughes loam, 1 to 12 percent slopes	7	C	Moderate	0.16	1
Gladel-Pulpit complex, 3 to 9 percent slopes	6	D	Moderate	1.68	9
Granath loam, 3 to 6 percent slopes	5	B	Moderate	0.93	5
Granath loam, 6 to 12 percent slopes	9	B	Severe	0.27	2
Hesperus loam, 3 to 6 percent slopes	5	B	Moderate	1.47	8
Ilex-Granath complex, 2 to 6 percent slopes	4	C	Moderate	1.05	6
Ilex-Granath complex, 6 to 12 percent slopes	9	C	Severe	1.63	9
Ilex-Pramiss-Granath complex, 2 to 9 percent slopes	4	C	Moderate	0.59	3
Pramiss very cobbly loam, 6 to 25 percent slopes	16	C	Severe	1.22	7
Pramiss-Granath complex, 3 to 9 percent slopes	6	C	Moderate	0.13	1
Sharps-Pulpit complex, 2 to 6 percent slopes	4	C	Moderate	2.19	12
Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes	53	D	Severe	3.28	18
Umbarg-Winner-Tesajo complex, 0 to 2 percent slopes	1	C	Slight	0.25	1
Water	0	N/A	Slight	0.14	1

Table B-18. ROW: Great Cut-McPhee, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Wauquie-Dolcan complex, 6 to 25 percent slopes	16	B	Moderate	1.15	6
Wetherill loam, 3 to 6 percent slopes	5	B	Moderate	0.93	5
Zigzag very channery clay loam, 3 to 25 percent slopes	14	D	Severe	0.69	4
TOTAL:				17.88	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
 ROW Right-of-Way

Table B-19. ROW: Curecanti-Rifle, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cerro-Herm complex, 15 to 40 percent slopes	28	C	Severe	0.33	1
Herm-Fughes complex, 5 to 25 percent slopes	15	C	Moderate	0.06	>1
Wetopa-Hayrack complex, 5 to 40 percent slopes	23	C	Severe	0.59	1
Unsurveyed area within ROW	N/A	N/A	N/A	50.37	98
TOTAL:				51.35	100

Source: Natural Resources Conservation Service 1999-2010.

N/A Not Applicable
 ROW Right-of-Way

Table B-20. ROW: Green Mountain-Kremmling, Colorado

Soil Map Unit Name	Weighted Average Slope %	Hydrologic Soil Group	Erosion Hazard (off-road, off-trail)	Acres in ROW	Percent of ROW
Cimarron loam, 15 to 35 percent slopes	25	C	Severe	3.72	15
Cimarron loam, 6 to 15 percent slopes	11	C	Severe	1.23	5
Leavitt loam, 15 to 55 percent slopes	35	B	Severe	2.46	10
Quander cobbly loam, 15 to 55 percent slopes	35	B	Severe	7.30	30
Rock outcrop-Cryoborolls complex	50	D	Severe	5.24	22
Youga loam, thick surface, 15 to 50 percent slopes	33	B	Severe	1.99	8
Yovimpa clay loam, 15 to 45 percent slopes	30	D	Severe	2.40	10
TOTAL:				24.34	100

Source: Natural Resources Conservation Service 1999-2010.

ROW Right-of-Way

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Appendix C

Wetland Type and Location Data

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APPENDIX C

WETLAND TYPE AND LOCATION DATA

The tables in Appendix C identify the types of wetlands and riparian areas by forest, including location coordinates. There are no wetlands in the project area in Nebraska National Forest or White River National Forest.

Table C-1. Summary of Non-Linear Wetland and Riparian Resources in Arapaho-Roosevelt National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PSS Wetlands			
W	0.02	405333	4532523
W	0.25	423402	4443250
Subtotal	0.27	-	-
PEM Wetlands/Ponds			
M	0.11	425194	4449762
M	0.06	425319	4449650
M	0.03	425488	4449454
M	0.01	425469	4449424
L	0.51	425207	4449739
Subtotal	0.72	-	-
TOTAL	0.99	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)

²UTM Zone 13; NAD 83

L lakes, ponds, reservoirs
M meadow/emergents
W wetland shrub complex

Table C-2. Summary of Wetland and Riparian Resources for Ashley National Forest

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
1700	0.59	638771	4521405
1700	0.28	629932	4508136
1700	0.18	628700	4502358
1700	0.51	628836	4502993
1700	0.12	629888	4507892
1700	10.04	629959	4511004
TOTAL	11.72	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)²UTM Zone 13; NAD 83

1700

Table C-3. Summary of Wetland and Riparian Resources in Grand Mesa, Uncompahgre, and Gunnison National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PSS Wetlands			
ALINT	0.40	275903	4332540
SALIX	0.08	270225	4351632
SALIX	0.77	273593	4346830
SALIX	0.05	271597	4347923
SALIX	0.72	274336	4343942
SALIX	0.10	275597	4335470
SALIX	0.46	275665	4334052
SALIX	0.06	275713	4333196
SALIX	0.12	275880	4332547
SALIX	0.24	276169	4331538
SALIX	0.34	276153	4331524
SALIX	0.29	276327	4330910
SALIX	0.08	276874	4328893
SALIX	0.50	276852	4328905
SALIX	0.12	276718	4327056
SALIX	0.01	276839	4328891
SALIX	0.09	276856	4327923
SALIX	0.10	276701	4326959

Table C-3. Summary of Wetland and Riparian Resources in Grand Mesa, Uncompahgre, and Gunnison National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
SALIX	1.20	276480	4325678
SALIX	0.14	276502	4325809
SALIX	0.20	276463	4325583
SALIX	0.14	276409	4324584
SALIX	0.10	276462	4323435
SALIX	0.04	364162	4264091
SALIX	1.61	384023	4259651
Subtotal	7.96	-	-
PEM Wetlands/Ponds			
PAB	0.08	226331	4219452
GRASS/FORB	0.02	275495	4337095
GRASS/FORB	0.27	275546	4336355
GRASS/FORB	0.15	275632	4334842
GRASS/FORB	0.08	275649	4334517
GRASS/FORB	0.16	275671	4334175
GRASS/FORB	0.22	228228	4221199
GRASS/FORB	0.15	227534	4224142
GRASS/FORB	0.23	226680	4231277
rh2	0.53	364534	4264156
rh2	0.18	377496	4254111
rh2	0.02	369215	4252307
rh2	0.11	227155	4238369
Subtotal	2.20	-	-
Riparian Areas/Possible PFO Wetlands			
POTR5	0.09	274912	4340963
PIEN:POTR5:ABLA	0.01	276618	4329876
POTR5	0.08	276839	4328963
PIEN	0.12	276523	4322157
POTR5	0.09	276539	4321778
POTR5	0.11	276650	4318608
POTR5	0.21	276647	4318126
PIEN	0.08	382419	4262057
PIEN	0.10	380493	4262247
PIEN	0.05	384204	4259802
PIEN	0.11	229528	4240199
PIEN	0.12	228819	4239807
POTR5	0.15	227108	4237985

Table C-3. Summary of Wetland and Riparian Resources in Grand Mesa, Uncompahgre, and Gunnison National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PIEN	0.20	226962	4235862
POTR5	0.12	227539	4224570
POTR5	0.26	230345	4223145
POAN3	0.39	229723	4222565
PIEN	0.14	227496	4222567
POTR5	0.09	274912	4340963
PIEN:POTR5:ABLA	0.01	276618	4329876
re	0.16	379566	4256048
rs1	0.20	364181	4264075
rt1	0.14	367704	4264735
rt1	0.22	366255	4264473
rt1	0.44	364745	4264186
rt1	0.19	279770	4263899
rt1	0.11	370444	4251777
Subtotal	3.99	-	-
TOTAL	14.15	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011; Colorado Division of Wildlife 2011; Cowardin et al. 1979)²UTM Zone 13; NAD 83

ABLA	subalpine fir
ALINT	alder
PAB	palustrine aquatic bed (pond)
PIEN	Engelmann spruce
POTR5	quaking aspen
re	riparian evergreen tree-general
rh2	riparian herbaceous-sedges/rushes/mesic grasses (waterlogged or moist soils)
rs1	riparian shrub-willow
rt1	riparian deciduous tree-aspen
SALIX	willow

Table C-4. Summary of Linear Wetland and Riparian Resources in Medicine Bow-Routt National Forests

Wetland/Riparian Type ¹	Length (feet)	UTM Coordinates ²	
		X	Y
PSS Wetlands			
WST-SWI	1,038	356467	4487756
WST-SWI	358	366225	4468518
WST-SWI	107	366454	4468190
WST-SWI	774	343599	4449844
WST-SWI	41	344301	4448833
WST-SWI	126	344327	4448831
WST-SWI	66	344309	4448823
WST-SWI	75	354087	4438728
WST-SWI	161	352624	4438632
WST-SWI	47	357480	4437275
WST-SWI	142	357170	4440410
WST-SWI	147	363889	4440070
WST-SWI	39	364494	4439765
WST-SWI	86	364446	4435923
WST-SWI	90	363624	4435681
WST-SWI	223	362828	4435497
Subtotal	3,520	-	-
PEM Wetlands/Ponds			
WS-GRA	665	367003	4467350
Subtotal	665	-	-
Riparian Areas/Possible PFO Wetlands			
WST-TSF	259	356340	4487741
WST-TSF	99	356316	4487692
WST-TLP	38	343514	4449928
WST-TLP	79	368347	4439487
Subtotal	475	-	-
TOTAL	4,660	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)

²UTM Zone 13; NAD 83

GRA grass
 SWI willow
 TLP lodgepole pine
 TSF spruce/fir
 WS wet area, usually not containing a stream
 WST wet area, usually containing a stream

Table C-5. Summary of Non-Linear Wetland and Riparian Resources in Medicine Bow-Routt National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PSS Wetlands			
WS-SWI	0.58	367006	4467366
WS-SWI	0.81	352026	4486788
WST-SWI	0.25	356693	4487847
WST-SWI	0.32	365881	4470747
WST-SWI	0.82	360317	4440282
WST-SWI	0.27	358286	4440366
WST-SWI	1.41	359274	4440326
WST-SWI	0.60	362365	4440201
WST-SWI	0.41	368473	4439723
WST-SWI	0.44	365464	4439207
WST-SWI	0.45	366129	4438838
WST-SWI	0.36	367294	4437860
WST-SWI	1.62	368224	4437682
WST-SWI	3.39	366418	4436667
WST-SWI	0.70	365205	4436177
WST-SWI	0.25	356693	4487847
Subtotal	12.68	-	-
PEM Wetlands/Ponds			
WS-GRA	2.96	358389	4488189
WS-GRA	0.80	353404	4487312
WS-GRA	0.29	352790	4442127
WST-GRA	0.60	363097	4440169
WST-GRA	1.36	361424	4440238
WST-GRA	0.42	355185	4438696
WST-GRA	1.39	359006	4435815
WST-GRA	0.74	362560	4435490
WST-GRA	0.53	360503	4435409
Subtotal	9.09	-	-
TOTAL	21.77	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)

²UTM Zone 13; NAD 83

GRA grass predominant
 SWI willow predominant
 TLP lodgepole pine predominant
 TSF spruce/fir predominant
 WS wet area, usually not containing a stream
 WST wet area, usually containing a stream

Table C-6. Summary of Linear Wetland and Riparian Resources in Pike and San Isabel National Forests

Wetland/Riparian Type ¹	Length (feet)	UTM Coordinates ²	
		X	Y
ASCLINE	123	392676	4267543
EB/GRLINE	75	394849	4267615
ECLINE	95	386725	4263375
GRLINE	144	393882	4267835
GRLINE	65	394710	4268021
GRLINE	89	395883	4267409
GRLINE	150	395740	4267439
GRLINE	211	394355	4267957
RLINE	76	386539	4261613
TOTAL	1,028	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)²UTM Zone 13; NAD 83

ASCLINE
EB/GRLINE
ECLINE
GRLINE
RLINE

Table C-7. Summary of Non-Linear Wetland and Riparian Resources in Pike and San Isabel National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
ASB/SPOLY	0.27	393221	4267635
ASB/SPOLY	0.73	387261	4263946
ASC/EAPOLY	0.07	386873	4263618
ASC/SPOLY	0.18	393855	4267700
ASCPOLY	0.58	392236	4267401
ASCPOLY	1.54	390022	4265887
ASCPOLY	0.17	393181	4267677
ASCPOLY	0.02	388900	4265396
ASCPOLY	0.27	388169	4264404
ASCPOLY	0.23	386891	4263657
ASCPOLY	0.15	386995	4263745
COB/SPOLY	0.26	395733	4268271
EB/ASAPOLY	0.00	386933	4264210
EB/ASBPOLY	0.11	392635	4267556

Table C-7. Summary of Non-Linear Wetland and Riparian Resources in Pike and San Isabel National Forests

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
EB/ASBPOLY	0.06	390257	4266052
EB/ASBPOLY	1.15	389635	4265838
EB/ASBPOLY	0.20	386900	4263651
EB/GRPOLY	1.07	395347	4267516
EB/SPOLY	0.03	387151	4263862
EB/SPOLY	0.19	385990	4263688
EB/SPOLY	0.37	384562	4263019
EC/SPOLY	0.14	385706	4263526
ECPOLY	0.69	390921	4266471
ECPOLY	0.34	395253	4268159
ECPOLY	0.15	388973	4265408
ECPOLY	0.38	387801	4264682
ECPOLY	0.01	388212	4264413
ECPOLY	0.04	386973	4264194
ECPOLY	0.43	386825	4263383
GRPOLY	0.73	388911	4265388
LPOLY	0.02	389568	4265482
NVPOLY	1.98	388733	4265277
SPOLY	0.47	390811	4266422
SPOLY	0.24	389041	4264974
SPOLY	0.18	386955	4264207
SPOLY	0.03	387236	4263950
TOTAL	13.48	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)

²UTM Zone 13; NAD 83

ASB/SPOLY
ASC/EAPOLY
ASC/SPOLY
ASCPOLY
COB/SPOLY
EB/ASAPOLY
EB/ASBPOLY
EB/GRPOLY

EB/SPOLY
EC/SPOLY
ECPOLY
GRPOLY
LPOLY
NVPOLY
SPOLY

**Table C-8. Summary of Wetland and Riparian Resources
in San Juan National Forest**

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PSS Wetlands			
S	0.27	223967	4136468
S	0.14	218367	4137919
S	0.32	217242	4138732
SALIX	0.01	200452	4173217
SALIX	0.01	200438	4176708
Subtotal	0.75	-	-
PEM Wetlands/Ponds			
CAREX	3.09	200483	4176583
G	0.12	215677	4144446
G	0.01	184045	4159862
G	0.00	184214	4162689
G	3.37	200538	4174699
G	1.20	195385	4159896
G	0.01	193662	4154997
G	1.07	202823	4164073
G	0.20	205519	4162376
G	2.99	200443	4173401
G	0.18	200497	4173832
G	2.07	200364	4172299
G	0.05	183944	4158497
G	1.15	200467	4174063
G	2.18	196175	4161657
G	0.02	199945	4168436
F	0.59	224229	4135785
G	0.33	216862	4139867
G	1.01	213717	4147695
JUNCU	0.15	200538	4174491
Subtotal	19.79	-	-
Riparian Areas/Possible PFO Wetlands			
ARTEM	0.01	182997	4158118
B	0.08	182633	4158048
BS	0.12	182491	4157888
PIEN	0.15	209060	4157631
PIPOS2	0.07	193674	4155472
PIPOS2	0.76	211800	4149045
PIPOS2	0.06	194757	4158493

**Table C-8. Summary of Wetland and Riparian Resources
in San Juan National Forest**

Wetland/Riparian Type ¹	Area (acres)	UTM Coordinates ²	
		X	Y
PIPOS2	0.03	214283	4146561
PIPOS2	0.09	199723	4165357
PIPU	0.30	211841	4153146
PIPU	0.60	212466	4150961
PIPU	0.45	210715	4154583
POAN3	0.42	221063	4136662
POAN3	0.18	216885	4139854
POAN3	0.07	184185	4164768
POAN3	0.18	202864	4164045
POTR5	1.12	206984	4159889
POTR5	0.95	212048	4151021
POTR5	0.07	212051	4152654
POTR5	0.08	213177	4148859
POTR5	0.49	208035	4159397
POTR5	0.18	208136	4158761
POTR5	0.30	200354	4166465
POTR5	0.23	210591	4203878
POTR5	0.09	206501	4161622
PSME	0.32	216028	4143458
QUGA	0.05	216425	4141784
QUGA	0.20	219882	4138564
QUGA	0.21	215270	4145065
Subtotal	7.86	-	-
TOTAL	28.40	-	-

Source: Forest Service 2011.

¹Type explanations (Forest Service 2011)

²UTM Zone 13; NAD 83

ARTEM sagebrush
 B
 BS
 CAREX sedge
 G grass
 JUNCU rush
 PIEN Engelmann spruce
 PIPOS2 Ponderosa pine (*Pinus ponderosa* spp. *scopulorum*)
 PIPU blue spruce (*Picea pungens*)
 POAN3 narrowleaf cottonwood (*Populus angustifolia* spp.)
 POTR5 quaking aspen
 PSME Douglas-fir (*Pseudotsuga menziesii*)
 QUGA Gambel oak (*Quercus gambeli*)
 S shrub
 SALIX willow

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Appendix D

Biological Resources Support Document

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APPENDIX D

BIOLOGICAL RESOURCES SUPPORT DOCUMENT

This appendix contains information on invasive species, rare plants, fisheries, and wildlife. WAPA used this information in addition to the Biological Assessments and Biological Evaluations (available on WAPA's website) to support the Affected Environment and Environmental Consequences (Chapter 3) for these resources.

D.1 Invasive Species

The following text provides short descriptions of the invasive species documented to occur within the ROWs; the descriptions are taken from the Colorado Department of Agriculture Noxious Weed Management website (Colorado Department of Agriculture 2011), the Learning Center of the American Southwest (Learning Center of the American Southwest 2011), and the Alberta Invasive Plant Council (Alberta Invasive Plant Council 2011).

Black henbane (Hyoscyamus niger)

Black henbane was introduced from Europe as an ornamental and medicinal herb. In Colorado it is mostly found on the western slope. The plant blooms June through September and can be an annual or biennial. A mature plant reaches 1 to 3 feet tall, and has foliage that has a foul odor. Leaves are shallowly lobed to coarsely toothed, with sticky hairs. The outer part of the flower is brownish yellow, with a purple center and veins. Fruits are approximately 1 inch long with five lobes.

Bull thistle (Cirsium vulgare)

Bull thistle is a biennial forb introduced to North America as a seed contaminant and is now widespread. Gumdrop-shaped flowers are pinkish to dark purple and 1.5 to 2 inches in diameter. The flower bracts are somewhat tapered and covered with spines. Seeds are capped with a circle of plume-like white hairs. Leaves are alternate. In Colorado, bull thistles are the only species that are prickly hairy on the top and are cottony hairy on the undersides of the leaves. In mature plants, the leaves extend down, clasping the stem, and are divided into segments. The plant has a short, fleshy taproot with several primary roots extending from the root crown. Seed leaves are round to spatulate, and smooth. Mature plants can produce up to 4,000 seeds per plant.

Butter and eggs (Yellow toadflax) (Linaria vulgaris)

Yellow toadflax is a perennial escaped ornamental plant native to the Mediterranean region. The leaves are narrow, linear, and 1 to 2 inches long. The stems are woody at the base and smooth toward the top. Yellow toadflax is sparingly branched and 1 to 3 feet tall. The showy snapdragon-like flowers are bright yellow with a deep orange center and have a spur as long as the entire flower. It develops an extensive root system, making control options limited. Yellow toadflax displaces desirable plant communities, which reduces ecological diversity and rangeland value; decreases forage for domestic livestock and some big game species; and decreases habitat for associated animal communities. The plant is known to be mildly poisonous to cattle. Goats and sheep have been known to graze the plants with little effect.

Canada thistle (Cirsium arvense)

Canada thistle is a non-native deep-rooted perennial that spreads by seeds and aggressive, creeping, horizontal stems (rhizomes). Canada thistle can grow 2 to 4 feet in height. The leaves are oblong, spiny, and bright green, and are only slightly hairy on the undersurface. Flowers occur in small clusters that form on the ends of branches. They are approximately 1 centimeter (0.39 inch) in diameter, tubular shaped, vary from white to purple in color and have a strong vanilla scent (female flowers). Canada thistle emerges from its root system from late April through May. It begins to flower in late spring to early summer with increase in day length. Canada thistle only produces approximately 1,000 to 1,500 seeds per plant. Typically, it reproduces vegetatively through a creeping root system, and can quickly form dense stands. Every piece of root from 0.5 to 1 inch in length is capable of forming new plants. The keys to controlling Canada thistle are to eliminate seed production and to reduce the plant's nutrient reserves in its root system through persistent, long-term management.

Cheatgrass (Downy brome) (Bromus tectorum)

Cheatgrass is a wide spread non-native invasive winter annual grass species that spreads by seeds and aggressive lateral and vertical root growth. Mature plants range from 4 to 30 inches in height with light green, hairy leaves and approximately 0.2 to 2 inch long spikelet seeds. Cheatgrass is commonly found in recently disturbed areas, overgrazed grasslands, areas recently affected by wildfire, abandoned areas, and intermixed with winter crops. This species seeds typically germinate after the first fall rain and can quickly colonize if left untreated. Once seeds have matured, plants typically dry out and become flammable. Cheatgrass is common throughout Colorado from approximately 4,000 to 9,000 feet in elevation. Common control measures include livestock grazing, mechanical and manual removal, application of herbicides, and controlled burns.

Common or woolly mullein (Verbascum thapsus)

Common or woolly mullein is an erect biennial herb that forms a low-growing rosette in the first year and flowers in its second year, growing 5 to 10 feet tall, including the conspicuous flowering stalk. Leaves are bluish gray-green and feltlike; they range from 4 to 12 inches long and 1 to 5 inches wide. Flowers have five yellow petals borne on a large spike, which bloom a few at a time from June to August. The tiny seeds are pitted and rough with wavy ridges and deep grooves and can germinate after lying dormant in the soil for several decades.

Corn chamomile (Anthemis arvensis)

Corn chamomile is an annual forb. The flowers are 0.75 inch in diameter and are borne at the ends of branched stems. Flowers resemble daisies, with white ray flowers and yellow disk centers. The seeds are 10 ribbed without glandular bumps. Leaves are alternate and finely dissected, and mature plants are 10 to 30 inches tall. There is no odor when leaves are crushed, unlike mayweed chamomile. Stems are erect, smooth, and highly branched above. Corn chamomile germinates readily in spring and fall. It has a dense, fibrous root system, which spreads rapidly during wet periods.

Dalmatian toadflax (Linaria dalmatica)

Dalmatian toadflax is a non-native, perennial forb introduced from the Mediterranean region as a folk remedy, fabric dye, and ornamental. It reproduces both by seed and by extensive, creeping rhizomes. A single plant produces 500,000 seeds, most of which fall within 18 inches of the parent plant. Seeds can remain viable for at least 10 years. Dalmatian toadflax grows to 3 feet tall, and has bright yellow snapdragon-like flowers with an orange throat on elongated racemes. The alternate leaves are broad, with a thick, waxy cuticle and a bluish cast. Each leaf is heart-shaped and wraps the stem.

Diffuse knapweed (Centaurea diffusa)

Diffuse knapweed is a non-native biennial forb that reproduces solely by seed. During the first year of growth, diffuse knapweed appears as a rosette in spring or fall. During the second year, in mid to late spring the stem bolts, flowers, and sets seed, and the plant dies. Once the plant dries up, it breaks off at ground level and becomes tumbleweed, which disperses the still viable seeds over long distances. A prolific seed producer, diffuse knapweed can produce up to 18,000 seeds per plant. Therefore, the key to managing this plant is to prevent seed production. Diffuse knapweed can grow 1 to 3 feet tall, and is diffusely branched above ground. This gives the plant a ball-shaped appearance and tumbleweed mobility when broken off. Leaves are small, and are reduced in size near the flowering heads. Flowers are mostly white, sometimes purple, urn-shaped, and are located on each branch tip. Bracts that enclose the flowerheads are divided like the teeth of a comb, and are tipped with a distinct slender spine. Upon drying, the bracts become rough, rendering them injurious to the touch. Flowers bloom July through August. Seed set usually occurs by mid-August.

Field bindweed (Convolvulus arvensis)

Field bindweed is a non-native deep-rooted perennial that reproduces from seed and creeping, horizontal stems (rhizomes). Field bindweed stems are prostrate (grows low to the ground) and twining, and grow up to 6 feet long. Leaves are distinguishable by their arrowhead shape. The flowers are bell or trumpet-shaped, white to pink, and approximately 1 inch long. Field bindweed seeds can remain viable in the soil for up to 40 years. Field bindweed emerges from its root system in spring. Flowering occurs from June to September and until the first fall frost. The number of seeds produced per plant ranges from 25 to 300, and seed production is variable depending on environmental conditions. Field bindweed is an extremely difficult noxious weed to control because, in part, of its taproot, which can go 20 feet deep into the soil, and which repeatedly gives rise to numerous long rhizomes.

Fuller's (common) teasel (Dipsacus fullonum)

Common teasel is a biennial or sometimes monocarpic perennial forb. A monocarpic perennial lives for 2 or more years, then flowers once, sets seed and dies. The fruits are a four-angled achene, each containing a single seed. Common teasel can produce more than 2,000 seeds per plant. The flowers are purple or white, with spiny, awned bracts at the base. The flower head is generally egg-shaped with a square base. The floral bracts at the base of the head are generally longer than the head. Rosette leaves are conspicuously veined, with stiff prickles on the lower midrib, and appear to be wrinkled. Stem leaves are simple, opposite, net-veined, stalkless, and clasp the stem. Mature plants can grow up to or more than 6 feet tall. The taprooted stem is rigid, with several rows of downward turned prickles. Plants die after they produce seed.

Gypsyflower (Houndstongue) (Cynoglossum officinale)

Houndstongue is a short-lived perennial or biennial forb. It produces rosettes in the first year, and bolts a stout, erect stem 1 to 4 feet tall by mid-summer of the second year. Then it flowers and produces fruit. Flowers are reddish-purple (occasionally white) and droop slightly from densely clustered panicles. The five rounded petals are cupped by five sepals covered with long, soft white hairs. Flowering occurs May to July. The simple leaves are lance or oblong shaped, with a smooth edge and no teeth or lobes. Leaves are alternate, 1 to 12 inches long and 1 to 3 inches wide. The leaf tip is sharply pointed and is covered with long-soft white hairs. Leaves often appear dusty and insect-ridden. A thick, dark, woody taproot can reach 3 to 4 feet deep.

Leafy spurge (Euphorbia esula)

Leafy spurge is a non-native deep-rooted perennial that spreads by seed and extensive, creeping roots. The roots can extend as deep as 30 feet into the soil and are extremely wide-spreading. The roots are brown and contain numerous pink buds that generally produce new shoots or roots. Leafy spurge can grow from 1 to 3 feet tall. The stems are smooth, pale green, and thickly clustered. Leaves are alternate, narrow, linear, and 1 to 4 inches long. The flowers are very small and yellowish-green. They are enclosed by very visible yellowish-green, heart-shaped bracts. The entire plant contains white, milky sap that exudes readily upon stem or leaf breakage. This sap can damage eyes and sensitive skin. Leafy spurge is one of the earliest plants to emerge in spring. Flower clusters develop 1 to 2 weeks after stem emergence, which is from mid-April to late May. One large leafy spurge plant can produce up to 130,000 seeds. Three-sided seed capsules explode when ripe and project the seeds up to 15 feet away from the parent plant.

Lesser (common) burdock (Arctium minus)

Lesser burdock is an introduced biennial that forms a rosette of leaves the first year, and a large, stout flowering stem with many branches the second year. It blooms from July to October and prefers areas with moist fertile soils, riparian zones, and areas with recent soil disturbance. Its prickly seed heads are designed for dispersal, readily attaching to whatever animal might brush past. Lesser burdock produces burrs that can entangle in the manes and tails of horses and the wool of sheep and can damage and de-value the wool.

Nodding plumeless thistle (Musk thistle) (Carduus nutans)

Musk thistle is a non-native biennial forb that reproduces solely by seed. A biennial is a plant that completes its lifecycle within 2 years. During the first year of growth, musk thistle appears as a rosette in spring or fall. During the second year in mid to late spring, the stem bolts, flowers, and sets seed, and the plant dies. Musk thistle produces many flower heads. The terminal, or tallest, shoots flower first, then lateral shoots develop in leaf axils. A robust plant can produce 100 or more flowering heads. A prolific seed producer, musk thistle can produce up to 20,000 seeds per plant, only one-third being viable. Because musk thistle reproduces solely from seed, the key for successful management is to prevent seed production.

Oxeye daisy (Leucanthemum vulgare)

Oxeye daisy was introduced from Europe as a seed contaminant and as an ornamental. It is an erect, rhizomatous, creeping perennial that grows 10 inches to 2 feet tall. The basal and lower leaves are lance shaped and toothed with long petioles (leaf stalk), and the upper leaves are narrower and clasp the stem. The leaf size progressively decreases up the stem. Flower heads are mostly solitary at the end of the flower stalk, and the flower head has 15 to 30 white ray flowers.

Quackgrass (Elymus repens)

Quackgrass is an invasive perennial grass species that spreads primarily through seed dispersal and aggressive horizontal (rhizotomous) stem growth. Seeds typically germinate in the fall or spring, can remain viable in underground seed banks for several years, and are adapted for coarse, medium, and fine textured soils. An individual plant has the capability to spread stems horizontally to a length of approximately 10 feet and give rise to over 200 annual new shoots. Rhizomes are highly branched with yellowish-white color. Stems are vertical and range between 1 and 3 feet in height with wide, flat 0.25 to 0.5-inch leaf blades. This species is commonly found in open fields and grasslands, and is a strong competitor with natural and agricultural vegetation for resources. Common management treatments

include application of herbicides, mechanical and manual removal, and use of controlled burns followed by up to two years of monitoring after treatment.

Russian knapweed (Acroptilon repens)

Russian knapweed is a non-native deep-rooted perennial that spreads by aggressive, creeping, horizontal stems (rhizomes) and seeds. The roots are black with a scaly appearance. Russian knapweed can grow up to 3 feet in height. The stems and leaves are covered with short, stiff hairs. The flowers are urn-shaped, pink to purple in color, and are solitary at the tips of the upper branches. Russian knapweed can be distinguished from other knapweeds by the pointed papery tips of the rounded bracts that surround the flowers. This species emerges in early spring after soil temperatures remain above freezing. It produces flowers from June to August, and sets seed in late summer to early fall. Russian knapweed reproduces primarily from its rhizome stem system. Buds on the horizontal roots can form adventitious shoots that can grow to be independent plants.

Saltcedar (Tamarix ramosissima)

Saltcedar, or tamarisk, is a non-native deciduous evergreen shrub or small tree that grows from 5 to 20 feet tall. The bark on saplings and stems is reddish-brown. The leaves are small, scale-like, and bluish-green. Tiny pink to white flowers have five petals and grow on slender racemes. Saltcedar reproduces by seeds and vegetatively. A mature plant can produce up to 600,000 seeds per year. Seeds are viable for up to 45 days under ideal conditions. Saltcedar buds break dormancy in February or March. Flowering occurs anytime between April and August. Ideal conditions for saltcedar seedling survival are saturated soil during the first few weeks of life, a high water table, and open sunny ground with little competition from other plants.

Scentless false mayweed (Tripleurospermum perforatum)

Scentless chamomile is an annual, biennial, or short-lived perennial forb native to Europe. Seedlings emerge in spring and can produce a dense mat, out-competing other species. Seeds and flowers are continually being formed. Each flower head can produce 300 seeds, and a single plant can produce 300,000 seeds. The flowers are white, 0.75 inch long, and are daisy-like flowers that are solitary on each stem. Flowers have a yellow central disk surrounded by white petals. Leaves are alternate, fernlike, finely divided, and odorless when crushed. The stems can reach 6 inches to 3 feet tall and have numerous branches.

Scotch cottonthistle (Onopordum acanthium)

Scotch cottonthistle is a non-native biennial forb in the Aster family that reproduces solely by aggressive seed dispersal. Appearance is a coarse, multi-spined and highly branched vertical habit with a grey-green color and hairy leaves. This species can reach between 6- to 8-feet in height at maturity, with spiny leaves that extend up to one-foot in length, and purple flowers between 1- to 2-inches in diameter on branch tips. Each plant can produce in excess of 20,000 lightweight seeds which can persist underground for up to twenty-years. Seed dispersal is typically accomplished through wind, water, or attachment to livestock and/or wildlife. Once established, this species can create a physical barrier to grazing livestock.

Spotted knapweed (Centaurea stoebe ssp. micranthos)

Spotted knapweed is a non-native short-lived perennial forb that reproduces only by seed. A prolific seed producer, spotted knapweed can produce up to 40,000 seeds per plant. The key to distinguishing spotted from other knapweeds is the black-tipped involucre bracts (phyllaries) at the base of the cluster of flowers (inflorescence). Unlike diffuse knapweed, there is no long, distinct terminal spine at the tip of

the bracts. Spotted knapweed can grow up to 4 feet tall on erect, ridged stems that are openly branched on the upper half of the plant. Urn-shaped flowers are solitary on the end of each branch tip. Flowers are pink to purple, and rarely, white. Leaves are small, oblong in shape, and pinnately divided. Multiple rosettes can form on a single spotted knapweed taproot crown. Flowers bloom June to October and seed set usually occurs by mid-August.

Stinking (Mayweed) chamomile (Anthemis cotula)

Mayweed chamomile is a bushy annual that can adapt to various conditions and is native to Europe. The seeds are 10 ribbed with small glandular bumps. Mayweed chamomile is a prolific seed producer, producing more than 960,000 seeds per plant. The seed's viability in soil range from 4 to 6 years. The leaves are finely dissected, alternate, and are approximately 0.75 to 2.5 inches long and 1 inch wide. Leaves can have some short hairs and emit an unpleasant odor. Flowers are solitary and borne at the ends of branches. They are 0.75 to 1.25 inches in diameter with 12 white ray flowers and yellow disk centers. The white ray flowers are in bloom from June through September. Mature plants grow from 0.5 to 2 feet tall and are highly branched.

Sulfur cinquefoil (Potentilla recta)

Sulfur cinquefoil is a perennial forb native to Eurasia. The flowers are pale yellow with five heart-shaped petals and are slightly longer than the five enclosing green sepals and five small bracts. Sulfur cinquefoil's flowers appear from May to July, with peak flowering generally occurring in late June. Each flower produces numerous small seeds that are slightly flattened and 1.3 millimeters (0.05 inch) long. The seeds are comma-shaped, brownish-purple and covered with a net-like pattern of veins. Seeds remain viable in the soil for at least 3 years. Leaves are numerous, alternate, and compound, with five to seven leaflets having toothed edges. Leafstalks have conspicuous perpendicular hairs, and leaves appear green on the underside. The erect stems are single to several, with few (or no) slender branches, are 12 to 28 inches tall, and grow from well-developed rootstock. The plant has a single taproot and can have several shallow, spreading branch roots but no rhizomes.

Whitetop (Hoary cress) (Cardaria draba)

Hoary cress, commonly known as whitetop, is a creeping perennial that is a member of the mustard family and native to Europe. The stems, in the rosette stage, can grow up to 2 inches in height and produce grayish-green lance-shaped leaves. The leaves are alternate and 0.75 to 4 inches long. The upper leaves have 2 lobes that clasp the stem. The plant has numerous small, white flowers with four petals on stalks radiating from a stem. Seed capsules are heart-shaped with two small, flat, reddish brown seeds. One plant can produce from 1,200 to 4,800 seeds. The plants emerge in early spring, with stems emerging from the center of each rosette in late April. Hoary cress flowers from May to June and plants set seed by mid-summer.

D.2 Rare Plants

The following text provides short descriptions of federally listed plant species, sensitive plant species, and plant species of local concern and, unless otherwise indicated, is taken from the BA/BE reports (Elliott 2012, 2013a-2013g).

D.2.1 Federally Listed Plant Species

The following text provides short descriptions of the federally listed plant species in the project area; only one of these species (Ute ladies'-tresses) has the potential to be present in the ROWs.

Clay-loving buckwheat (Eriogonum pelinophilum)

This species is endemic to Delta and Montrose counties of western Colorado. The known elevation range is 5,200 to 6,400 feet. A total of 23 sites are now known, with an estimated total population of approximately 45,000 to 50,000 individuals (USFWS 2003). Critical habitat is in western Delta County, Colorado, and is not in the project area. No species occurrences are known within the power transmission line ROW (CNHP 2009); therefore, this species is excluded from further analysis.

Clay reed-mustard (Schoenocrambe argillacea)

Occurrences of this species are narrowly endemic to the Tabaputs Plateau and it is not likely to be found within the transmission line ROW north and east of the known sites (Forest Service 2009). This species is excluded from further analysis because the nearest ROW in the project area is approximately 70 miles northeast of known or documented occurrences.

Colorado hookless cactus (Sclerocactus glaucus)

The Colorado hookless cactus is a perennial cactus species endemic to Delta, Garfield, Mesa, and Montrose counties in Colorado with a known elevation range of 4,500 to 6,000 feet (Elliot 2013c). This species is a small barrel cactus, generally between 1 and 5 inches, found on cobbly, gravelly, and rocky alluvial soils on river terraces and mesa slopes (Elliot 2013c). The Colorado hookless cactus is excluded from further analysis due to lack of suitable habitat in the project area.

De Beque phacelia (Phacelia submutica)

This species is endemic to Mesa and Garfield counties in Colorado. Current population size is estimated at 3,600 to 34,500 in 28 populations on 500 acres sparsely distributed over a 17-by-17-mile area (USFWS 2003). Of the 39 recorded occurrences, 13 were observed more than 15 years ago and have not been found since (Ladyman 2003). This species is excluded from further analysis because there are no known species occurrences in the project area.

Graham's beardtongue (Penstemon grahamii)

Graham's beardtongue is a narrowly endemic substrate specialist. It grows on white to tan, steep, barren, shale slopes and ridges of the Parachute member of the Green River Formation (Elliott 2012). It is found in desert shrub or pinyon-juniper plant communities. It is known from southeastern Uintah County at elevations ranging from 5,800 to 6,300 feet. This species is excluded from further analysis because there are no known species occurrences in the project area.

Knowlton cactus (Pediocactus knowltonii)

This species is known only from San Juan County, New Mexico, and adjacent La Plata County, Colorado (Elliott 2013b). Knowlton cactus is a small perennial barrel shaped species that grows on alluvial deposits that overall the San Jose Formation (Elliott 2013b). This formation consists of rolling, gravelly hills with desert scrub vegetation. Knowlton cactus is often found in the shade of trees and shrubs and in open areas of pinyon-juniper woodlands (Elliott 2013b). This species is excluded from further analysis because there are no known species occurrences in the project area.

North Park phacelia (Phacelia formosula)

This species is a Colorado endemic known from North Park in Jackson County and from a limited number of occurrences in Larimer County. It is a substrate specialist known from sparsely vegetated habitats of sandy soils derived from the Coalmont Formation. The North Park phacelia is excluded from further analysis due to lack of suitable habitat in the project area.

Osterhout milkvetch (Astragalus osterhoutii)

This species is a Colorado endemic known only from the Troublesome and Muddy Creek drainages of Grand County. The species is a substrate specialist, occupying seleniferous clay soils derived from shales of the Niobrara, Pierre, and Troublesome formations (Spackman et al. 1997). Osterhout milkvetch is excluded from further analysis due to lack of suitable habitat and confirmed populations in the project area.

Pagosa skyrocket (Ipomopsis polyantha)

Pagosa skyrocket is an herbaceous perennial (or possibly a biennial) herb of the phlox family (Polemoniaceae). Plants bloom from late May through early August, with populations apparently restricted to Mancos shale, and with other occurrences documented from open sites, shrublands, woodlands, and forests. Associated dominant species are usually ponderosa pine, Gamble oak, pinyon pine (*Pinus edulis*), and juniper (*Juniperus*) (Anderson 2004b). The species is sensitive to ground disturbance, particularly livestock grazing, and is often found within fenced-road ROWs. Primary threats to this species are road maintenance activities, livestock grazing, and trampling from recreational activities. The known elevation range is 6,800 to 7,200 feet (Spackman et al. 1997). This species is excluded from further analysis due to no known occurrences within two miles of the transmission line ROWs, no appropriate substrate in the ROWs, surveys revealed no new occurrences or potential habitat, and known occurrences are geographically distant from the project area (Elliott 2014a).

Parachute beardtongue (Penstemon debilis)

This species is known only from the southern edge of the Roan Plateau in Garfield County, Colorado, at elevations between approximately 3,786 and 4,086 feet above sea level. There are no known occurrences within 2 miles of the transmission line ROW. The species is known only from the Parachute Creek member of the Green River Formation, with substrates consisting of white shale talus and clay (O’Kane et al. 1987). Based on county distribution, parachute beardtongue is not likely to be found in the transmission line ROWs in the project area; therefore, it is excluded from further analysis.

Pariette cactus (Sclerocactus brevispinus)

Pariette cactus inhabits the Wagonhound member of the Uinta Formation, growing in fine-textured clay soils (Elliott 2012). Plants are known from the Uintah-Duchesne County boundary area in southeastern Duchesne County. The plants are narrowly endemic, and are known from an area of approximately 72,000 acres (Elliott 2012). No individuals, populations, or suitable habitat for this species have been identified in the project area.

Penland alpine fen mustard (Eutrema penlandii)

This species is found in specific habitat locations, typically in alpine fens on the lee side of mountain crests where deep wind-deposited snow accumulates (Roy et al. 1993); however, it is also found along alpine streamlets with typical alpine riparian vegetation (Elliott 2013g). Penland alpine fen mustard is endemic to Colorado and only found in the Mosquito Range from Hoosier Pass to Mount Sherman in Park and Summit counties at elevations from 12,000 to 12,800 feet (Spackman et al. 1997). Penland alpine fen mustard is excluded from further analysis due to lack of suitable habitat in the project area.

Penland beardtongue (Penstemon penlandii)

This species is endemic to Grand County in Colorado. The species is a substrate specialist, occupying seleniferous clay-shale soils of the Troublesome Formation. Penland beardtongue grows primarily in steep barren areas with little competition from other plant species. The known elevation range is narrow (7,500 to 7,700 feet). The Penland beardtongue is excluded from further analysis due to lack of suitable habitat in the project area.

Schmoll milk-vetch (Astragalus schmolliae)

Schmoll milkvetch is an herbaceous perennial of the bean or legume family (Fabaceae). Plants emerge in early spring, produce flowers in April-June, and set fruit in May-June. The species inhabits mature pinyon-juniper woodlands at elevations ranging from 6,500 to 7,500 feet (Elliott 2013b), generally growing in red loess soils on mesa tops (Elliott 2013b). No individuals, populations, or suitable habitat for this species have been identified in the project ROWs.

Shrubby reed-mustard (Schoenocrambe suffrutescens)

Occurrences of this species are narrowly endemic to the Tabaputs Plateau and are unlikely to be found within the transmission line ROW north and east of the known sites (Elliott 2012). This species is excluded from further analysis because the nearest ROW in the project area is approximately 70 miles northeast of known or documented occurrences.

Skiff milkvetch (Astragalus microcymbus)

Skiff milkvetch is endemic to Colorado's Gunnison Valley with present known distribution limited to sites in Gunnison County, Colorado, and one site located in Saguache County, Colorado (Elliott 2013f). There are no known sites for this species on National Forest System lands (Elliott 2013f). There is no suitable habitat for this species in the project area; therefore, it is excluded from further analysis.

Uintah Basin hookless cactus (Sclerocactus wetlandicus)

The species inhabits cobbly, gravelly, or rocky alluvial soils on river terraces and mesa slopes. Associated vegetation type is most often desert scrub dominated by shadscale (*Atriplex confertifolia*), black-sage (*Artemisia nova*), galleta (*Hilaria jamesii*), and Indian rice grass (*Stipa hymenoides*) (Elliott 2012). Known elevation ranges from 4,500 to 6,000 feet. No individuals, populations, or suitable habitat for this species have been identified in the project ROWs.

Ute ladies'-tresses (Spiranthes diluvialis)

This species is known from widely disjunct sites in the western United States, and is primarily found in mesic to wet riparian meadows, marshes, and riparian areas, typically ranging in elevation from 4,250 to 6,800 feet. The Utah Natural Heritage Program shows four occurrences of the Ute ladies'-tresses in the Green River basin downstream from Flaming Gorge Reservoir. These masked sites are mapped approximately five miles east of WAPA's Flaming Gorge #1 and #3 transmission lines in the Ashley National Forest (Elliott 2014b). No Section 7 consultation area is available for Ute ladies'-tresses. Threats to this species include urban development, habitat fragmentation, stream channelization, water diversions, recreation activities, livestock grazing, and competition with nonnative invasive plants.

Western prairie fringed orchid (Platanthera praeclara)

This species is found primarily in grasslands of Nebraska, typically on unplowed, calcareous prairies and sedge meadows. There is no suitable habitat for this species in the project area; therefore, it is excluded from further analysis.

White River penstemon (Penstemon scariosus var. albifluvis)

White River penstemon grows in mixed desert shrub and pinyon-juniper communities, primarily on semi-barren shale slopes of the Parachute Creek member of the Green River formation with sparse vegetation (Elliott 2012). Soils at occupied sites are dry and partially composed of shale talus. Common woody plant associates include *Atriplex confertifolia*, *Chrysothamnus viscidiflorus*, *Eriogonum ephedroides*, *Pinus edulis*, and *Juniperus* (Elliott 2012). There is no suitable habitat for this species in the project area; therefore, it is excluded from further analysis.

D.2.2 Sensitive Plant Species

There are numerous sensitive species in the national forests assessed in this document, with a potential for 39 of those species to be present in project ROWs (Forest Service 2011; Elliott 2012, 2013a-2013g). The following text provides short descriptions of the sensitive plant species in the project area and, unless otherwise indicated, is taken from the BA/BE reports (Elliott 2012, 2013a-2013g).

Arctic braya (Braya glabella)

This is a perennial herb of the mustard family (Brassicaceae) that flowers and fruits from late June through August. It is an alpine species found at elevations from 12,000 to 13,000 feet on sparsely vegetated slopes, and is often found on limestone or dolomite substrates, scree slopes, and poorly developed gravelly or disturbed soils. Arctic braya is circumboreal, ranging in North America from Alaska to Quebec, with disjunct populations in Colorado. The Colorado distribution includes Chaffee, Gunnison, Park, and Pitkin counties. Populations in Colorado are disjunct from the major part of the species range. Small and disjunct populations make arctic braya vulnerable to chance disturbances; otherwise, habitat for this species is highly protected and receives little use (Spackman et al. 1997).

Arizona willow (Salix arizonica)

Arizona willow is a shrub of the willow family (Salicaceae). Catkins appear from late May to early July, and primary habitat consists of subalpine wet meadows, springs, seeps and riparian areas. This species is often found along edges of spruce stands or in drier meadow sites with subsurface flows in volcanic- or limestone-derived soils. Elevations of known sites range from 8,300 to 10,800 feet. Arizona willow occurs in Arizona and New Mexico, with Colorado and Utah on the northern edge of the species' range. Primary threats to this species include grazing by domestic and wild ungulates, hydrologic alterations, impacts from timber harvesting, impacts from recreational use, consequences arising from small population sizes, and global climate change (Decker 2006a). Occurrences have been documented in New Mexico, eastern Arizona, southern Utah, and southern Colorado (Conejos County).

Aztec milkvetch (Astragalus proximus)

Aztec milkvetch is a perennial forb of the bean family (Fabaceae) and is most often associated with grassland or pinyon-juniper communities. It may also grow amongst ponderosa pine/Gambel oak, sagebrush, desert scrub, and open ground. The species is a substrate specialist usually found on sites underlain by the San Jose Formation, Nacimiento Formation, Pictured Cliffs Sandstone-Lewis Shale, and Animas Formation at elevations of 5,400 to 7,500 feet. Flowering starts in April and continues through July, with fruits beginning to form in May. In Colorado Aztec milkvetch is found only in La Plata and Archuleta counties.

Barr's milkvetch (Astragalus barrii)

This species is a perennial herb in the bean or pea family (Fabaceae) that grows on dry badlands and semi-barren slopes with low vegetation cover among rocky prairie breaks, ridges, knolls, and slopes.

Individuals and populations are usually found on soils derived from shale, sandstone, silts, and limestone. The species has a patchy distribution and occurrences are widely scattered and generally small. It is known only from Montana, Wyoming, South Dakota, and Nebraska (Dawes County). Primary threats to this species include loss of habitat and degradation associated with grazing, trampling, and nonnative species invasion (Ladyman 2006b; Spackman et al. 1997). In Nebraska it is known from only three occurrences, none of which are on NFS lands.

Brownie lady's-slipper orchid (Cypripedium fasciculatum)

This is a perennial herb of the orchid family (Orchidaceae) that inhabits moist to dry coniferous forests, primarily spruce-fir and lodgepole pine forest types, at elevations ranging from 8,000 to 9,000 feet. Plants bloom from April to August. Geographically, the plant ranges from Washington to Montana and south to California and Colorado. In Utah it is known from Cache, Daggett, Salt Lake, Summit, and Uintah counties. This species is critically imperiled in Utah due to few known occurrences (Elliott 2012).

Clawless draba (Draba exungiculata)

The clawless draba is a perennial herb of the mustard family (Brassicaceae) that flowers from late June into July and produces fruit in early August. It is found in talus and gravelly or sandy slopes at elevations of 11,500 to 14,000 feet (Spackman et al. 1997) on granitic substrates. It is a Colorado endemic known from eight counties: Boulder, Clear Creek, El Paso, Gilpin, Grand, Lake, Park, and Summit. This species is a small plant and easily overlooked in its abundant habitat. Primary threats to this species include alterations to the soil or hydrologic regime.

Club spikemoss (Selaginella selaginoides)

Club spikemoss is a perennial, mat-forming herb of the little spike-moss family (Selaginellaceae) that grows in marshy wetland areas and wet spruce forests in low- to mid-elevation valley wetlands. Club spikemoss is found in Alaska, Canada, several eastern states, Idaho, Montana, Nevada, Wyoming, and Colorado. Little is known about the Colorado distribution of this species, but one report comes from the east side of the Park Range in eastern Park County. The species is difficult to identify in the field, and this could contribute to the lack of information on the species' Colorado distribution. The primary threats to this species in national forests cannot be determined without knowing locations, but the general threats to wetland habitat at low- to mid-elevation valley wetlands are habitat loss and degradation associated with water loss, inundation, or successional change (Heidel and Handley 2006).

Colorado butterfly plant (Gaura neomexicana ssp. Coloradensis)

The Colorado butterfly plant is known to occur in north-central Colorado, southeastern Wyoming, and western Nebraska. Plants are usually found in moist prairie meadows in the transition zone between the wet streambottoms and alluvial floodplains. Occurrences are generally surrounded by mixed-grass prairies (Fertig et al. 1994; Spackman et al. 1997). Colorado butterfly plant is excluded from further analysis due to lack of suitable habitat and confirmed populations in the project area.

Colorado tansy-aster (Machaeranthera coloradoensis)

Colorado tansy-aster is a perennial herb of the sunflower family (Asteraceae) that inhabits mountain parks, slopes, rock outcrops, and dry tundra at elevations ranging from 8,500 to 12,500 feet, usually on open or barren sites with little competing vegetation. The species is a regional endemic known only from Wyoming and Colorado. In Colorado, there are known occurrences in Gunnison, Hinsdale, La Plata, Lake, Mineral, Park, Pitkin, Saguache, and San Juan counties, and in Wyoming, Albany and Carbon counties. Threats to the species are poorly documented, but could include recreation; competition from invasive species; trail and road construction and maintenance; changes to natural disturbance regimes;

livestock grazing and rangeland developments; mining; and habitat loss from urbanization, reservoir expansion, and energy exploration.

Dainty moonwort (Botrychium crenulatum)

Dainty moonwort is a perennial herb in the adder's-tongue fern family (Ophioglossaceae) that inhabits moist and wet meadows and produces spores in summer. The plant is considered widespread in western North America; however, it is known from relatively few sites and the sites typically have small population numbers. Primary threats to this species include development activities leading to habitat loss or degradation, invasion by nonnative plant species, habitat fragmentation, and alteration of soil and hydrological regimes. In Utah it is known from historic sites in Cache, Juab, and Summit counties, and more recently from Wasatch County.

Degener's beardtongue (Penstemon degeneri)

Degener's beardtongue is a perennial herb in the figwort family (Scrophulariaceae), flowering in June and July, and fruiting in late July. It is found in pinyon-juniper woodlands, montane grasslands, and mountain meadows on rocky soils with igneous bedrock (Spackman et al. 1997) at elevations ranging from 6,000 to 9,500 feet. Threats to this species include alterations to the fire regime, livestock grazing, recreation activities, loss of habitat, and invasive species. Degener's beardtongue is often associated with Parry's oatgrass (*Danthonia parryi*), prairie sagewort (*Artemisia frigida*), mountain goldenbanner (*Thermopsis montana*), and mountain muhly (*Muhlenbergia montana*).

Dropleaf buckwheat (Eriogonum exilifolium)

Dropleaf buckwheat is a perennial herb of the buckwheat family (Polygonaceae) that grows in sparsely vegetated habitats such as barren hills or sagebrush flats of the mountain parks. It is a regional endemic known only from 26 occurrences in Wyoming and Colorado, although it can be locally abundant. In Colorado the plant has been found in North Park and Middle Park of Jackson and Grand counties at elevations ranging from 7,500 to 9,000 feet. Anderson (2006a) notes that threats include "residential and commercial development, range improvements, off-road vehicle use, other recreational uses, grazing, energy development, reservoir creation, right-of-way management, coal mining, exotic-species invasion, effects of small population size, disease, declining pollinators, fire, global climate change, and pollution." Populations have also been affected by reservoir expansion at Twin Buttes Lake in Wyoming, and possibly at any of the numerous impoundments that have been created in North Park and the Laramie Basin (Anderson 2006a).

Dwarf raspberry (Rubus arcticus var. acaulis (= Cylactis arctica ssp. acaulis))

Dwarf raspberry is an herbaceous perennial plant in the rose family (Rosaceae). It flowers from late June to early July and sets fruit in late July to August; however, the species seldom sets fruit in Colorado. It is a wetland species found in willow carrs and on mossy streamsides at elevations ranging from 8,600 to 9,700 feet. Species that have been found in association with dwarf raspberry include shrubby cinquefoil (*Dasiphora fruticosa*), dwarf birch (*Betula nana*), diamondleaf willow (*Salix planifolia*), water sedge (*Carex aquatilis*), and alpine meadow-rue (*Thalictrum alpinum*). Dwarf raspberry is circumboreal, ranging south in North America to Oregon, Colorado, Michigan, and Maine. The primary threat to dwarf raspberry is habitat loss resulting from recreation activities, livestock grazing, and extraction of natural resources such as timber and peat. Activities such as water diversions or impoundments that reduce water availability and change habitat quality are also a threat. Other threats include recreation, forest management activities, invasion by nonnative plant species, and climate change.

Front Range cinquefoil (*Potentilla rupicola* (= *P. effusa* var. *rupicola*))

Front Range cinquefoil is a perennial herb in the rose family (Rosaceae). It flowers from mid-June through August. It is found on granitic outcrops or on thin, gravelly granitic soils at elevations of 6,500 to 10,900 feet. Front Range cinquefoil is endemic to Colorado, where it is known from 23 occurrences in Boulder, Clear Creek, Larimer, and Park counties. Threats include invasion by nonnative plants, habitat loss from residential and commercial development, secondary impacts of grazing, ROW management, off-road vehicle use and other recreation, global climate change, and pollution (Anderson 2004b). Front Range cinquefoil could also be threatened by hybridization with closely related *Potentilla* sp., particularly branched cinquefoil (*Potentilla effusa*), and stochastic events; one disturbance could completely destroy or severely reduce a small occurrence.

Graham columbine (*Aquilegia grahamii*)

Graham columbine is a perennial herb in the buttercup family (Ranunculaceae). It flowers in June and July and grows along cliffs, ledges, and sandy drip line of wet cliffs and ledges on Weber Sandstone in deep, shady canyons at an elevation of approximately 7,600 feet. It is endemic to Uintah County, Utah. In general, the species is well protected from management actions and has few threats due to its steep and inaccessible cliff-face habitat.

Gray's draba (*Draba grayana*)

Gray's draba is a perennial herb of the mustard family (Brassicaceae) that flowers during July and August and produces fruit from August to September. It is a Colorado endemic found in rocky alpine areas including talus slopes. It has been found in Clear Creek, Gilpin, Grand, Lake, Larimer, Park, and Summit counties at elevations of 11,500 to 14,000 feet. Primary threats to this species include alterations to the soil or hydrologic regime.

Hall's fescue (*Festuca hallii*)

Hall's fescue is a perennial graminoid of the grass family (Poaceae) that inhabits alpine and subalpine grasslands and meadows. It is found in Canada, Washington, Montana, Wyoming, North Dakota, and Colorado, where it reaches its southernmost Rocky Mountain distribution. In Colorado the species is found in Larimer County at 11,000 to 12,000 feet elevation and Huerfano County at 11,000 feet elevation. The species has a global rank of G4, indicating that the species is considered apparently secure globally but rare in portions of its range. Although the Colorado rank is SH (state historical, a rank given to species not seen in the state since 1920), fieldwork in 2005 and 2006 (Anderson 2006b) showed that the species is present at the historical site near Spanish Peaks. Threats include livestock grazing, fire and fire suppression, invasion by exotic species, residential development, recreation, effects of small population size, pollution, and global climate change. Livestock grazing, in particular, appears to be detrimental to Hall's fescue (Anderson 2006b).

Harrington beardtongue (*Penstemon harringtonii*)

Harrington beardtongue is a perennial herb of the snapdragon family (Scrophulariaceae). It is endemic to Colorado, where it is known primarily from sagebrush communities of Eagle, Garfield, Grand, Pitkin, Medicine Bow-Routt, and Summit counties. Although there are 74 known occurrences, only 20 of these have 500 or more individuals; most occurrences have 20 to 300 individuals (Spackman-Panjabi and Anderson 2006). It is found on sagebrush slopes at elevations ranging from 6,400 to over 9,400 feet. Threats to the species include habitat loss due to agricultural conversion or residential development, motorized recreation, invasion by nonnative plant species, grazing by domestic livestock and native ungulates, oil and gas development, and climate change (Spackman-Panjabi and Anderson 2006).

Hoary willow (Salix candida)

Hoary willow is a woody shrub of the willow family (Salicaceae) found in pond and stream edges and in fens of the foothill and montane wetlands. The species is found in Alaska, Canada, and across the northern tier of American states. It reaches its southernmost distribution in Colorado, where it is found from 8,800 to 10,600 feet elevation in Gunnison, Hinsdale, La Plata, Larimer, and Park counties. Primary threats to this species include grazing by domestic and wild ungulates, hydrologic alterations, recreational use, alteration of the natural fire regime, and invasive species.

Kotzebue's grass of Parnassus (Parnassia kotzebuei)

Kotzebue's grass of Parnassus is a perennial herb that flowers in June and July and usually sets fruit in July and August. Most botanists consider it a member of the saxifrage family (Saxifragaceae), but Dr. W.A. Weber (Weber and Wittmann 2001) placed it in Parnassiaceae, the grass of Parnassus family. The species inhabits wet rocky areas, especially along small streams and among moss mats in the alpine and subalpine zones. The plant is circumboreal, ranging in North America from Alaska and Canada to Washington, Idaho, Montana, Wyoming, Nevada, and Colorado. It reaches its southernmost Rocky Mountain distribution in Colorado, where it is found at 10,000 to 12,000 feet elevation. Potential threats to this species include effects of small population size, global climate change, motorized recreation, grazing, nonmotorized recreation, exotic-species invasion, mining, and pollution (Panjabi and Anderson 2007). There are known occurrences in the north-central and southwestern portions of Colorado, including Clear Creek, San Juan, Park, and Summit counties.

Largeflower triteleia (Triteleia grandiflora)

Largeflower triteleia is a perennial forb of the lily family (Liliaceae). This species is more common to the north, and there is only one known occurrence in Colorado (in San Juan National Forest). This occurrence is found in openings among ponderosa pine and Gambel oak at approximately 7,800 feet elevation. In Colorado, plants have been observed flowering in June. The species is known primarily from the Pacific Northwest; the Colorado occurrence in Montezuma County is disjunct and represents the southernmost range extension. Habitat loss, fragmentation, and degradation caused by recreation, livestock grazing, resource development (timber and mineral), and invasive nonnative plant species are potential threats to the long-term persistence of largeflower triteleia throughout its range (Ladyman 2007).

Lesser bladderwort (Utricularia minor)

Lesser bladderwort is a perennial herb of the bladderwort family (Lentibulariaceae). Plants are generally aquatic, but they can become stranded as water levels fall in summer and fall. The plants are insectivorous, with bladders acting as tiny insect traps. The species is found in Alaska, Canada, across the northern United States, and south to California along the Pacific Coast and to Colorado in the Rocky Mountains. In Colorado, the species is known from shallow water in ponds at 5,500 to 9,000 feet elevation. The plant is often overlooked, partially due to the difficulty of collecting and identifying the species, and little is known about its Colorado distribution. Dr. W.A. Weber (Weber and Wittmann 1996) lists it from the "Boulder watershed, but very likely elsewhere." Primary threats to this species include hydrologic impacts, especially degradation of water quality and hydrologic alteration, habitat loss, and invasive species; indirect threats include land use practices that impact water quality and habitat integrity (Neid 2006).

Lesser panicled sedge (Carex diandra)

This species is a graminoid of the sedge family (Cyperaceae) that inhabits montane to subalpine willow carrs and rich fens (Weber and Wittmann 2001) and produces flowers and fruit from June to August.

Lesser panicked sedge is circumboreal, ranging across the northern half of the United States and reaching its southernmost Rocky Mountain distribution in Colorado. It is known from Boulder, Grand, Jackson, and Larimer counties at elevations ranging from 7,000 to 9,000 feet. Primary threats to this species include alterations of soil and hydrologic regimes and trampling by livestock, native ungulates, and ATVs.

Livid sedge (Carex livida)

This species is a perennial graminoid of the sedge family (Cyperaceae) that flowers from May to July and sets fruit in July and August. Livid sedge is a calcareous wetland species that typically occurs in rich fens and other mineral-rich wetlands. This species is found at elevations ranging from 9,000 to 10,100 feet and ranges from Alaska, Canada, the Pacific Northwest, Wyoming, and Colorado in the west to the upper Midwestern and northeastern states. Although it is widespread in North America, “the distribution of *Carex livida* is very scattered; it is uncommon to rare over much of its range... (Gage and Cooper 2006).” In Colorado, it has been found in Boulder, Grand, Jackson, and Larimer counties. Primary threats to this species include habitat loss, alterations of soil and hydrologic regimes, and trampling by livestock, native ungulates, and ATVs.

Missouri milkvetch (Astragalus missouriensis var. humistratus)

This species is a perennial forb of the bean family (Fabaceae). Missouri milkvetch grows on shales and sandstones of late Cretaceous age and is found in a variety of plant communities, including ponderosa pine woodlands, with a shrubby understory and Gambel oak-mixed montane shrublands dominated by Gambel oak, *Amelanchier* spp., mountain mahogany, and snowberry. This species is often found on clay barrens with an elevation range of 7,100 to 8,600 feet. The plants flower and fruit in May and June. Missouri milkvetch is a local endemic found in the upper San Juan River basin in Archuleta and Hinsdale counties of southern Colorado (and possibly La Plata County). It is also known from adjacent New Mexico in Rio Arriba County. Primary threats to this species include effects of small population size, land development, surface disturbance, invasive species, air pollution, and global climate change.

Narrow-leaved moonwort (Botrychium lineare)

Narrow-leaved moonwort is a perennial herb in the adder’s-tongue family (Ophioglossaceae). It produces spores in June. It has been found in a variety of habitats, including deep grass and forb meadows, under trees in woods, on shelves of limestone cliffs, and among riparian transition vegetation associated with aspen. It is sometimes associated with previously disturbed ground. In Colorado it is found at elevations ranging from roughly 7,900 to 11,000 feet. Narrow-leaved moonwort ranges from Washington and Montana south to California and Colorado, and there are historic records of the species in Quebec and Nebraska. This plant is small and easily overlooked, and might not be present every year. Threats include road maintenance and construction, mining, mine reclamation activities, trampling by hikers or ATVs, over-collection, and alteration of soil and hydrological regimes (Beatty et al. 2003a).

Paradox moonwort (Botrychium paradoxum)

Paradox moonwort is a perennial herb in the adder’s-tongue fern family (Ophioglossaceae). It is an inhabitant of mesic to wet subalpine meadows. It ranges from southwestern Canada to Montana, Idaho, and Utah. Populations are small and widely scattered. This plant is small, easily overlooked, and might not produce aboveground structures every year. Threats to the species include road maintenance and construction, mining, mine reclamation activities, trampling by hikers or ATVs, over-collection, and alteration of soil and hydrological regimes.

Park milkvetch (Astragalus leptaleus)

Park milkvetch is a perennial herb of the bean family (Fabaceae) that grows in sedge-grass meadows, swales and hummocks, wetlands, aspen glades, and streamside willow communities between 6,500 and 9,500 feet elevation. Park milkvetch flowers and sets fruit from June through August and the flowers are few and inconspicuous. It is known from Idaho, Montana, Wyoming, and Colorado. The species is more common in Colorado than in the other states (Moseley 1991). In Colorado this milkvetch is known from Jackson, Chaffee, Larimer, Summit, Park, and Gunnison counties. Threats to park milkvetch include habitat loss and degradation associated with grazing, trampling, and nonnative-species invasion (Ladyman 2006a; Spackman et al. 1997).

Prairie moonwort (Botrychium campestre)

Prairie moonwort is a perennial herb in the adder's-tongue fern family (Ophioglossaceae). In Colorado it grows on dry, gravelly hillsides at elevations ranging from 3,700 to 10,800 feet. This plant is found across the northern tier of states, with Colorado representing the southernmost extension of its range. In Colorado the species has been found in a diversity of habitats ranging from short-grass prairie at 3,700 feet in Yuma County and from several sites in the central mountains. Although the plant is widely distributed in North America, it is not common and is considered vulnerable throughout its range. The species is considered critically imperiled in Colorado where it reaches its southernmost distribution. Known occurrences are disjunct and comprised of a few individuals; therefore stochastic events might also pose a threat. Threats include development activities leading to habitat loss or degradation and invasion by nonnative plant species.

Rock-loving aletes (Neoparrya lithophila)

Rock-loving aletes is a perennial herb in the umbel family (Apiaceae). This species flowers from May to early July. It fruits from late June to September and is found in pinyon-juniper woodlands on north-facing ledges, cliffs, and canyons associated with volcanic dikes composed of igneous outcrops or sedimentary rock, and in montane meadows and grasslands. Typical elevations where this species can be found range from 7,000 to 10,000 feet. Primary threats to this species include off-road vehicle use, grazing, other recreation activities, mining, timber harvest, effects of small population size, residential and commercial development, ROW management, exotic-species invasion, global climate change, and pollution (Anderson 2004a).

Selkirk violet (Viola selkirkii)

Selkirk violet is a perennial herb of the violet family (Violaceae) that inhabits cold mountain aspen forests, moist woods, and thickets. The species ranges from Alaska and Canada to the upper Midwest, the northeastern United States, and Washington. Disjunct populations are found in New Mexico and Colorado. It flowers during May and June, and in Colorado is known from 8,500 to 9,100 feet elevation. Threats to the species include recreation, invasion by nonnative plant species, wildlife and livestock grazing and trampling, road and trail construction and maintenance, forest management activities, and climate change.

Slender cottongrass (Eriophorum gracile)

Slender cottongrass is a perennial graminoid of the sedge family (Cyperaceae) that grows in montane and subalpine wetlands and wet meadows and pond edges. The species is found from Alaska, Canada, and the northern states south to California and Colorado. It reaches its southernmost Rocky Mountain distribution in Colorado, where it is known at elevations from 8,100 to 12,000 feet. The known sites in Colorado are widely scattered in Jackson, Las Animas, and Park counties. Probable threats to this

species in decreasing priority include hydrologic alterations, grazing, motorized vehicle use, peat mining, invasive species, and global climate change (Decker et al. 2006).

Smith's draba (Draba smithii)

Smith's draba is a perennial herb in the mustard family (Brassicaceae). Smith's draba flowers from May to August and fruits from June through August. It is found on cliffs and in canyons, on talus slopes, in crevices, and between rocks in shaded, protected sites in upper montane and lower subalpine areas. Elevations range from 7,700 to 13,100 feet. Smith's draba is endemic to south-central Colorado, where it is known from small and scattered populations in Custer, Las Animas, Mineral, and Saguache counties. Threats to this species include habitat loss or degradation from road construction; trampling by hikers, ATVs, and native ungulates; and to a lesser extent, trail maintenance activities.

Stream orchid (Epipactis gigantea)

This is a perennial herb of the orchid family (Orchidaceae) found on cliffs, hillsides, seeps, springs, and riparian areas, especially calcareous sites, at elevations ranging from 4,800 to 8,000 feet. It flowers during June and July and sets fruit in August and September. Stream orchid ranges from British Columbia south to California, Texas, and Mexico. In Colorado, it is found mostly in the far western portion of the state, but there are a few populations on the east slope in Chaffee and Saguache counties. Primary threats to this species include recreation, exotic-species invasion, water development, domestic livestock grazing, urban development, timber harvest, and utility line construction and maintenance (Rocchio et al. 2006).

Upswept moonwort (Botrychium ascendens)

This species is a perennial herb in the adder's-tongue fern family (Ophioglossaceae). Circumscription of *Botrychium* habitat is difficult, because many of the species are considered habitat generalists and habitat types vary considerably between known sites. However, in many cases moonworts (including upswept moonwort) are found in open sites with little competition. Frequently these sites are associated with old disturbance (20- to 50-year-old events) such as roadsides, trails, earthen dams, ski runs, and mines. Upswept moonwort is widespread geographically and is known from Yukon Territory, British Columbia, Alberta, Saskatchewan, Ontario, Oregon, Washington, Idaho, California, Nevada, Montana, and Wyoming (NatureServe Explorer 2003). Although the species has been reported from Colorado, those reports have not been confirmed. However, sites are widely scattered and often contain few individuals. Primary threats to this species include development activities leading to habitat loss or degradation, invasion by nonnative plant species, habitat fragmentation, and alteration of soil and hydrological regimes.

Weber's draba (Draba weberi)

Weber's draba is a perennial herb of the mustard family (Brassicaceae). It is an extremely narrow endemic known only to occur in the Monte Cristo Creek drainage in Summit County, Colorado (Decker 2006c). Habitat is primarily found on dry, sandy-gritty soils in crevices along rocky streamsides at elevations between 11,500 feet and 11,600 feet (Decker 2006c). This is an evergreen species with simple, oblanceolate leaves arranged in rosettes and cross-shaped yellow flowers that bloom typically from June to July. Primary threats to this species include seasonal variability in population growth in response to weather, disease, or habitat competition; development disturbances from roads and dams; recreation; mining; spread of invasive and exotic species; and global climate change (Decker 2006c).

Weber's monkeyflower (Mimulus gemmiparus)

Weber's monkeyflower is a perennial herb of the figwort family (Scrophulariaceae) found in granitic seeps, slopes, and alluvium in open sites in spruce-fir and aspen forests at 8,500 to 10,500 feet elevation. The species is endemic to the mountains of central and northern Colorado, where it is known from only eight occurrences in Grand, Jefferson, Larimer, and Park counties. The species has a unique reproductive strategy; the leaf petioles are modified to contain dormant embryos (the specific epithet *gemmiparus* refers to a gemma, an asexual reproductive mechanism often found in mosses). The primary threat to Weber's monkeyflower is the small size of populations; a single disturbance could feasibly completely destroy an occurrence. Activities that could impact an occurrence include recreation; invasion by nonnative plant species; trail and road construction and maintenance; wildfires; and forest management activities such as logging, thinning, or prescribed fires (Beatty et al. 2003b). No individuals or populations have been identified in the project ROWs.

White adder's-mouth orchid (Malaxis brachypoda (= M. monophyllus spp. brachypoda))

White adder's-mouth orchid is a perennial herb of the orchid family (Orchidaceae) found in riparian areas, often in association with mosses. The species is widely disjunct in the western United States, and is found in Colorado and California. Elsewhere it is found in Alaska, Canada, the upper Midwest and northeastern United States. In Colorado it is known from Boulder, El Paso, and Jefferson counties at elevations of 7,200 to 8,000 feet. Primary threats to this species include recreation activities, logging, habitat loss or degradation, and competition with invasive species.

Yellow lady's-slipper (Cypripedium parviflorum (= C. calceolus spp. parviflorum))

Yellow lady's-slipper is a perennial herb of the orchid family (Orchidaceae) that inhabits a variety of shaded, moist habitats, including aspen forests, white spruce/paper birch, paper birch/hazelnut, and ponderosa pine/Douglas fir forests, in rich humus and decaying leaf litter in wooded areas, rocky wooded hillsides on north- or east-facing slopes, on wooded loess river bluffs, and moist creek sides (Mergen 2006; Spackman et al. 1997). The species is widespread in North America, growing in Alaska and Canada and most of the northern and eastern states. It reaches its southernmost Rocky Mountain distribution in Colorado. Although widespread, it is uncommon in most of its range. Populations are widely scattered in Colorado, where the species is known from 10 counties at a narrow elevation range of 7,400 to 8,500 feet. Threats to this species include habitat alteration (including conifer encroachment), overstory modification, changes in soil and hydrological regimes, land management activities, unauthorized recreation, and over-collection (Mergen 2006).

D.2.3 Plant Species of Local Concern

The designation of Species Of Local Concern (SOLC) is not required under agency direction in the Forest Service Manual. They are established by individual National Forests and Grasslands on a voluntary basis as a tool to help meet the goal of the U.S. Department of Agriculture to ensure the presence of diverse populations of plant species (USDA Departmental Regulation 9500-004). Plant SOLC lists were provided by Forest botanists for the ARNF, GMUG, and MBRNF. The PSINF (and GMUG) tier to the CNHP list (2011) for their SOLC. Plants in tiers 1 and 2 of the Nebraska Natural Legacy Program were used as SOLC for the NNF. Neither the ANF nor the SJNF have specific lists identifying SOLC. Separate SOLC reports, which include each forest's list of SOLC, are available on WAPA's project website.

Table D-1 identifies the plant SOLCs located in WAPA's ROWs.

Table D-1. Plant Species of Local Concern Located in WAPA's ROWs

Common Name	Scientific Name	ARNF	ANF ¹	GMUG	MBRNF	NNF ¹	PSINF	SJNF ¹	WRNF
Arrowleaf sweet coltsfoot (arrowleaf sweet-colt's-foot)	<i>Petasites sagittatus</i>	X	-	-	-	-	-	-	X
Bitter root (Oregon bitterroot)	<i>Lewisia rediviva</i>	X	-	-	X	-	-	-	-
Bolander's quillwort	<i>Isoetes bolanderi</i>	-	-	-	X	-	-	-	-
Boreal bog sedge	<i>Carex magellanica</i> var. <i>irrigua</i> (<i>paupercula</i>)	-	-	-	X	-	-	-	-
Clustered lady's slipper (purple, brownie lady's slipper)	<i>Cypripedium fasciculatum</i>	X	-	-	-	-	-	-	X
Colorado false hellebore	<i>Veratrum tenuipetalum</i>	-	-	X	-	-	-	-	-
Common ladyfern	<i>Athyrium filix-femina</i>	-	-	-	X	-	-	-	-
Common moonwort	<i>Botrychium lunaria</i>	-	-	X	-	-	-	-	-
Crandall's rock cress	<i>Boechera crandallii</i>	-	-	X	-	-	X	-	-
Flaxseed plainsmustard	<i>Schoenocrambe linifolia</i>	-	-	-	-	-	X	-	-
Heartleaf twayblade	<i>Listera cordata</i>	X	-	-	X	-	-	-	X
Lanceleaf grapefern (triangle grapefern)	<i>Botrychium lanceolatum</i> var. <i>lanceolatum</i>	X	-	X	X	-	X	-	-
Mingan moonwort	<i>Botrychium minganense</i>	-	-	X	-	-	X	-	-
Northern hollyfern (northern holly fern)	<i>Polystichum lonchitis</i>	-	-	-	X	-	-	-	-
Reeves' bladderfern	<i>Cystopteris reevesiana</i>	-	-	-	X	-	-	-	-
Reflected moonwort	<i>Botrychium echo</i>	X	-	X	-	-	X	-	X
Sagebrush (North Park) beardtongue	<i>Penstemon cyathophorus</i>	X	-	-	-	-	-	-	-
Sierra fumewort	<i>Corydalis caseana</i>	-	-	X	-	-	-	-	-
Slender-spire orchid	<i>Piperia unalascensis</i>	-	-	X	-	-	-	-	-
Small bur-reed	<i>Sparganium natans</i> (<i>minimum</i>)	-	-	-	X	-	-	-	-
Sparse-flowered bog orchid	<i>Platanthera sparsiflora</i> var. <i>ensifolia</i>	-	-	-	X	-	-	-	-
Tiger beardtongue	<i>Penstemon mensarum</i>	-	-	X	-	-	-	-	X
Utah sweetvetch	<i>Hedysarum boreale</i>	-	-	X	-	-	-	-	-

Table D-1. Plant Species of Local Concern Located in WAPA's ROWs

Common Name	Scientific Name	ARNF	ANF ¹	GMUG	MBRNF	NNF ¹	PSINF	SJNF ¹	WRNF
Western moonwort	<i>Botrychium hesperium</i>	X	-	X	X	-	X	-	X
Williams' miterwort	<i>Conimitella williamsii</i>	X	-	-	-	-	-	-	X
Yellow coralroot	<i>Corallorrhiza trifida</i>	-	-	X	-	-	X	-	-

Sources: Elliott 2012, 2013a-2013g

¹No species of local concern were found in WAPA's rights-of-way in this forest.

ARNF Arapaho-Roosevelt National Forests
 ANF Ashley National Forest
 GMUG Grand Mesa Uncompahgre and Gunnison National Forests
 MBRNF Medicine Bow-Routt National Forests
 NNF Nebraska National Forest
 PSINF Pike San Isabel National Forest
 SJNF San Juan National Forest
 WRNF White River National Forest

D.3 Fisheries

The following text provides short descriptions of federally listed fish species, sensitive fish species, fish management indicator species, and fish species of local concern.

D.3.1 Federally Listed Fish Species

Bonytail chub (Gila elegans)

Habitat for this species is assumed to occur in large, fast flowing waterways, with individuals typically located in eddies and idle pools (CPW 2011; NDIS-CDOW 2011). Historic range includes Colorado, Utah, Nevada, and Arizona waterways; however, there are currently no known populations of this species in Colorado. Diet primarily includes insects, zooplankton, algae, and general plant debris. The primary threats to continued species success are loss of habitat through human interaction (i.e., damming of waterways) resulting in changes in waterway turbidity, water flows, and sediment levels, and blocked routes (CPW 2011). Additional threats include predation by and competition with non-native fish species.

Colorado pikeminnow (Ptychocheilus lucius)

Habitat for this species primarily includes swift flowing muddy rivers with quiet, warm backwaters. Potential habitat locations for this species in the project area include the Colorado, Green, Yampa, White, Gunnison, San Juan, and Dolores rivers (CPW 2011). Primary diet for this species is comprised of other fish (piscivorous), various insects, and aquatic invertebrates. Primary threats to this species include human developments in waterways, predation, and loss of habitat.

Greenback cutthroat trout (Oncorhynchus clarkii stomias)

Historically this species was found throughout the headwaters of the Arkansas and South Platte river systems in Colorado and Wyoming; at present, this species only occurs within approximately five percent of its historic range (NDIS-CDOW 2011; CPW 2011). Primary habitat includes cold, clear, oxygenated streams of moderate gradient with overhanging branches, undercut banks, and eddies. Diet is primarily comprised of insects, aquatic invertebrates, and small fish species. Threats to continued species success are the result of competition with other fish species and loss of habitat due to logging, livestock over-grazing, water diversions, and pollution (NDIS-CDOW 2011; CPW 2011).

Humpback chub (Gila cypha)

Habitat for this species includes big rivers with deep, fast moving waters and high levels of turbidity, with individuals typically found beneath the current in slow-moving eddies and pools (NDIS-CDOW 2011; CPW 2011). Potential river locations for this species include the Yampa, Gunnison, Green, and Colorado river systems (NDIS-CDOW 2011). Diet for this species is primarily comprised of small aquatic insects and algae. Primary threats to this species include man-made diversions or construction activities such as dams within waterways, and competition with non-native fish species.

Pallid sturgeon (Scaphirhynchus albus)

There are no known occurrences of this species in the project area based on a review of relevant federal, state, and local resources. Therefore, this species is not further addressed in this analysis.

Razorback sucker (*Xyrauchen texanus*)

This species is typically found in large river systems with deep waters, with variable levels of turbidity, commonly in association with areas of strong currents and backwaters (NDIS-CDOW 2011; CPW 2011). Potential habitat locations for this species in the project area include the Colorado, Gunnison, lower Yampa, and Green rivers; individuals of this species are rarely found above the Grand Canyon (NDIS-CDOW 2011). The razorback sucker diet is primarily comprised of plant and animal matter. The primary threat to this species is loss of floodplain habitat throughout its range, which is used for breeding and spawning.

D.3.2 Sensitive Fish Species

Bluehead sucker (*Catostomus discobolus*)

Primary habitat for this species is found across a variety of aquatic areas, including headwater streams and large rivers that contain a rocky substrate. This species is primarily found throughout the middle and upper Colorado River drainage in Colorado, New Mexico, Arizona, Utah, and Wyoming; individuals in Colorado are restricted to western slope waters (NDIS-CDOW 2011). Threats to this species include competition with introduced species, cold water temperatures from reservoir releases, and habitat degradation from increased sedimentation.

Colorado River cutthroat trout (*Oncorhynchus clarkii pleuriticus*)

This native species is primarily found in the Colorado River drainage and a few headwater streams and lakes in the northwest quadrant of Colorado (NDIS-CDOW 2011). Primary diet is typically comprised of aquatic and terrestrial invertebrates, small fish, and miscellaneous aquatic organisms. Historically, habitat alteration from mining, agriculture, and water development contributed to the extirpation or reduction of large numbers of populations of Colorado River cutthroat trout, whereas introductions and invasions of non-native trout probably represent the greatest cause of recent declines and the major impediment to restoration of this fish in much of its historical range (Young 2008).

Finescale dace (*Phoxinus neogaeus*)

Habitat for this species is primarily located in cool, slow-moving waterways and cool ponds (Paulson and Hatch 2002). Finescale dace typical diet is comprised of aquatic and terrestrial insets, aquatic invertebrates, and algae. There are unconfirmed locations of this species and potential habitat in the project area. Primary threats to this species include modifications to the natural water regime, habitat alterations, and introduction of non-native fishes.

Flannelmouth sucker (*Catostomus latippinis*)

This species occurs in larger streams and river waterways in various habitat types, which can include riffles, runs, eddies, and backwaters. In the project area this species is generally restricted to the larger waterways in the middle and upper Colorado River drainage, which includes parts of Utah (NDIS-CDOW 2011). In Utah, flannelmouth suckers are found primarily in tributary systems that have sparse vegetation and deep murky pools (Utah Division of Wildlife Resources 2011). Threats to this species include competition with introduced species, cold water temperatures from reservoir releases, and habitat degradation from increased sedimentation.

Flathead chub (*Platygobio gracilis*)

This species is found in mainstems of turbid streams and rivers in areas of fast, turbid water over sand and gravel substrates (NDIS-CDOW 2011). Diet for this species is primarily comprised of terrestrial and

aquatic insects and invertebrates. In the project area this species typically occurs in the Arkansas River drainage and its larger tributaries. The primary threat to this species is habitat alterations.

Hornyhead chub (Nocomis biguttatus)

This species typically inhabits clear, high-gradient creeks and small rivers with gravelly bottoms. Primary diet for this species includes aquatic and terrestrial insects and some aquatic invertebrates. In the project area this species is only known to occur in Medicine Bow-Routt National Forests. Threats to this species include the modification of stream channels through channelization, landscape scale changes resulting from land use, and local destruction of riparian zones that reduce the natural function of the stream ecosystem (Miller et al. 2005).

Lake chub (Couesius plumbeus)

The lake chub is a state endangered species in Colorado with habitat locations primarily in freshwater lakes, and less commonly in streams and rivers. Habitat for this species is suspected in the project area, but has not been confirmed. Primary threats for this species include habitat alteration, declining water quality and quantity, and the introduction of non-native fishes (Stasiak 2006).

Mountain sucker (Catostomus platyrhynchus)

Typical habitat for mountain sucker in the project area includes small rivers or streams with gravel, sand, and mud bottoms. Specifically within Colorado, specimens are found in areas of undercut banks, eddies, small pools, and in areas of moderate current (NDIS-CDOW 2011). This rare endemic species has a general diet of aquatic substrate, including diatoms and filamentous algae. Habitat loss due to stream impoundment has been the cause of mountain sucker population declines in some drainages, while habitat degradation from increased sedimentation has also contributed to observed declines in others (Belica and Nibbelink 2006).

Northern redbelly dace (Phoxinus eos)

Primary habitat for this species is typically found in vegetated slow-flowing streams (NDIS-CDOW 2011). This species is not documented or known to occur on NFS lands in the project area and therefore, is not further addressed in this analysis. Primary threats to this species include habitat alterations and introduction of non-native fishes.

Pearl dace (Margariscus margarita)

This species or its habitat is suspected to occur on NFS lands in Nebraska, but is currently unconfirmed. Primary threats to this species in Nebraska include habitat alteration and introduction of non-native fishes (Cunningham 2006). Based on the minimal project activities occurring near or over waterways that might contain fish in Nebraska, and lack of confirmed populations of Pearl dace in the area, this species is not addressed further in the analysis.

Plains minnow (Hybognathus placitus)

This native species is state endangered in Colorado, occurs in very rare to sparse numbers, and detailed information is still being gathered regarding species habits. Plains minnow tend to prefer main freshwater channels with moderate current and sandy bottoms (NDIS-CDOW 2011). Diet likely consists of aquatic plants and algae. Primary threats to this species are alternations to natural water regimes, habitat degradation, and pollution.

Roundtail chub (Gila robusta)

This species is typically found in slow-moving waters of large river systems. In the project area, roundtail chub can be present in the Colorado River mainstem and larger tributaries (NDIS-CDOW 2011).

Diet is primarily comprised of aquatic and terrestrial insects, small fish, and algae. Threats to this species include habitat alterations and water regimes, introduction of non-native fishes, and disturbances of riparian zones that reduce the function of stream ecosystems.

Southern redbelly dace (Phoxinus erythrogaster)

This species is very rare, with only one known population in Colorado in a small tributary to the Arkansas River, a slow flowing clear creek with high volumes of algal growth over a silty stream substrate (NDIS-CDOW 2011). This species and its habitat are not documented as occurring on NFS lands in the project area; therefore, it is not further addressed in this analysis.

Sturgeon chub (Macrhybopsis gelida)

This species is adapted for fast, turbid waters, typically found in large shallow waterways with shallow gravel riffles (Stewart 1981). This species is currently documented to occur on NFS lands; however, exact locations are not known. Species occurrence is rare due to limited and isolated habitat conditions. Threats to this species include dewatering activities and habitat degradation.

D.3.3 Fish Management Indicator Species and Species of Local Concern

Brook trout (Salvelinus fontinalis)

This management indicator species (MIS) is found throughout most cold waterways in the project area, with prolific populations reaching in excess of 3,000 individuals per area in some areas. This species feeds primarily on aquatic and terrestrial insects and is typically used as a recreational sport fish throughout most of its range. Primary threats to this species include habitat alterations and degradation.

Brown trout (Salmo trutta)

This MIS and species of local concern (SOLC) is found in most cold, clear waterways in the project area. Habitat locations include, but are not limited to cold, high mountain streams, feeder tributaries, and broad rivers on the plains. Typical diet for this species is aquatic and terrestrial insects, and this species is typically used as a recreational sport fish. Primary threats to this species include habitat alterations and degradation.

Plains killifish (Fundulus zebrinus)

Habitat for this MIS is typically found in shallow, sandy-bottom streams or along shallow banks and shoals in larger streams (NDIS-CDOW 2011). The species is also tolerant of fairly extreme habitat variations, being able to tolerate very warm water (86 °F) and locations where runoff from cattle operations has created a stream substrate composed of oxygen-consuming organic wastes (NDIS-CDOW 2011). This species is known to occur primarily in Colorado eastern slope waterways. Threats to this species include water development activities that alter the natural streamflow regime, cause physical or chemical habitat degradation, and result in stream fragmentation (Rahel and Thel 2004a).

Plains topminnow (Fundulus sciadicus)

This MIS occurs in a specialized habitat in the project area, and is primarily found in waters where there are abundant filamentous algal growths and still, clear water (NDIS-CDOW 2011). This native Colorado fish is not known to have widespread populations and is typically found in isolated colonies within cool streams and the mainstem South Platte River (Propst 1982). Primary threats to this species include development activities that alter streamflows, physical and chemical habitat degradation, stream fragmentation, and introduction of non-native fishes (Rahel and Thel 2004b).

Rainbow trout (Oncorhynchus gairdneri)

This MIS is best known as a game fish and occurs in cold waterways throughout the project area. Rainbow trout are typically found in cold, clear water streams over rocky bottoms with areas containing deep pools and natural cover. The Colorado Division of Wildlife stocks approximately 4.5 million individual rainbow trout greater than 8 inches in length throughout Colorado's waterways (NDIS-CDOW 2011). Primary diet consists of a variety of aquatic and terrestrial insects. Primary threats to this species include habitat alterations and degradation.

D.4 Wildlife

D.4.1 Federally Listed Wildlife Species

The following text provides short descriptions of the 4 federally listed wildlife species that may be affected by the no action and proposed action alternatives and are protected pursuant to the Endangered Species Act.

Mammals

Canada lynx (Lynx canadensis)

The Canada lynx is a medium-sized cat with long legs, large well-furred paws, long tufts on the ears, and a short black-tipped tail. Winter pelage of the Canada lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet, while summer pelage is more reddish to gray-brown. Adult males average 22 pounds in weight and 33.5 inches in length (head to tail), and females average 19 pounds and 32 inches. The Canada lynx's long legs and large feet make it highly adapted for hunting in deep snow. The species' range extends south from the classic boreal forest zone into the subalpine forest of the western United States, and the boreal/ hardwood forest ecotone in the eastern United States. Within these general forest types, Canada lynx are most likely to persist in areas that receive deep snow and have high-density populations of snowshoe hares, their principal prey. Within the contiguous United States, Canada lynx occur in 14 states: Colorado, Idaho, Maine, Michigan, Minnesota, Montana, New Hampshire, New Mexico, Oregon, Utah, Vermont, Washington, Wisconsin, and Wyoming.

Birds

Gunnison sage-grouse (Centrocercus minimus)

The Gunnison sage-grouse is a species of grouse endemic to the United States, not recognized as a separate species until 2000. Gunnison are closely related to greater sage-grouse in appearance, but are about a third smaller in size, have much thicker plumes behind the head, and perform a less elaborate courtship dance. The Gunnison sage-grouse is restricted in range to southwestern Colorado and extreme southeastern Utah. Their largest population resides in the Gunnison Basin region of Colorado, with six satellite populations located in San Miguel Basin, Monticello-Dove Creek, Pinon Mesa, Crawford, Cerro Summit-Cimarron-Sims Mesa, and Poncha Pass. Sage-grouse habitat consists of sagebrush plains, while prime nesting habitat includes wet areas where young can readily forage for insects. In the spring, sage-grouse gather on traditional breeding areas referred to as leks. Lek displaying occurs from mid-March through late May, depending on elevation. Most females nest within four miles of a lek. Incubation is only by females and lasts 25-27 days.

Mexican spotted owl (Strix occidentalis lucida)

One of 3 subspecies of spotted owl recognized by the American Ornithologists' Union, the Mexican spotted owl is geographically and genetically isolated from both the California and northern subspecies. The Mexican spotted owl is a medium-sized owl without ear tufts, is mottled, and has irregular white spots on its brown abdomen, back, and head. The Mexican spotted owl differs from the two other subspecies of spotted owls in plumage coloration; the white spots of the Mexican spotted owl are generally larger and more numerous than in the other two subspecies, giving it a lighter appearance. Unlike most owls in North America, spotted owls have dark eyes. Adult male and female Mexican spotted owls are similar in plumage; however, females are larger, on average, than males. The Mexican spotted owl occurs in forested mountains and canyon lands in Utah, Colorado, Arizona, New Mexico, and the western portions of Texas south into several States of Mexico.

Southwestern willow flycatcher (Empidonax traillii extimus)

The southwestern willow flycatcher is a small bird species, usually a little less than 6 inches in length, including tail. The species has conspicuous light-colored wing bars, brownish-olive to gray-green body, whitish throat, pale olive breast, and a yellowish body. Southwestern willow flycatchers are best identified by vocalizations and, while perched, characteristically flick their tail slightly upward. Southwestern willow flycatchers breed in relatively dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands, including lakes and reservoirs. Most of these habitats are classified as forested wetlands or scrub-shrub wetlands. The species breeding range in the United States includes far western Texas, New Mexico, Arizona, southern California, southern portions of Nevada and Utah, and southwestern Colorado. Southwestern willow flycatchers winter in southern Mexico, Central America, and northern South America.

D.4.2 Sensitive Wildlife Species

Mammals

American marten (Martes americana)

A North American member of the family Mustelidae, the American marten is sometimes referred to as the pine marten and differs from the fisher (*Pekania pennanti*) in that it is smaller in size and lighter in color. The American marten is broadly distributed in northern North America, is a long, slender-bodied weasel about the size of a mink with relatively large rounded ears, short limbs, and a bushy tail. American martens have long silky fur ranging from pale yellowish buff to tawny brown to almost black. Males average 15% larger than females in length and as much as 65% larger in body weight. Total length ranges from 1.5 to 2.2 feet and adult weight ranges from 1.1 to 3.1 pounds. American martens are opportunistic predators, influenced by local and seasonal abundance and availability of potential prey. In the western United States, American marten distribution is limited to mountain ranges that provide preferred habitat of mature coniferous or mixed forests.

Fringed myotis (Myotis thysanodes)

The fringed myotis is a species of vesper bat found in Mexico, British Columbia, and the western United States. The species has the shortest ears of the long-eared myotis group and gets its name from the distinct fringe of short wire-like hairs found on the membrane between its hind legs. Average total body length is roughly 3.3 inches with an average weight of 0.3 ounces, though males are considerably smaller than females. The pelage of fringed myotis is full and tends to be light yellow-brown or olive on the back with an off-white color on its underside. The species is primarily found in desert shrublands,

sagebrush-grassland, and woodland habitats consisting of Douglas-fir, oak, and pine trees. Fringed myotis typically inhabit elevations of 3,900 to 6,900 feet elevation.

Gunnison's prairie dog (Cynomys gunnisoni)

The Gunnison's prairie dog is a member of the Sciuridae family, which includes squirrels, chipmunks, marmots, and prairie dogs. Gunnison's prairie dog adults vary in length from 12 to 15 inches and weigh 23 to 42 ounces, with males averaging slightly larger than females, and its dorsal color is yellowish buff intermixed with blackish hairs. The species differs from black-tailed prairie dogs (*C. ludovicianus*) in having a much shorter and lighter colored tail, and from white-tailed prairie dogs (*C. leucurus*) and Utah prairie dogs (*C. parvidens*) in having grayish-white hairs in the distal half of the tail rather than pure white. Gunnison's prairie dog habitat includes level to gently sloping grasslands and semi-desert and montane shrublands at elevations from 6,000 to 12,000 feet. Gunnison's prairie dogs are a colonial species, historically occurring in large colonies over large areas.

Hoary bat (Aeorestes cinereus)

The hoary bat is a species of bat in the vesper bat family, Vespertilionidae. Hoary bats live throughout most of North America and much of South America, with disjoint populations in the Galápagos Islands and Hawaii. The hoary bat averages 5.1 to 5.7 inches long with a 15.5 inch wingspan and a weight of 0.92 ounces. The species coat is dense and dark brown, with white tips to the hairs that give the species its 'hoary' appearance for which it is named. The body is covered in fur except for the undersides of the wings. Females are 40% heavier than males. Hoary bats normally roost alone on trees, hidden in the foliage, but on occasion are seen in caves with other bats. The species prefers woodland, mainly coniferous forests and hunts individually over open areas or lakes for moths. Hoary bats are long-distance migrants, spending winter in Central America and the southwestern United States and spring/summer in more northern latitudes of the United States and Canada.

Kit fox (Vulpes macrotis)

The kit fox is the smallest species of the family Canidae found in North America with large ears, between 2.8 and 3.7 inches, that help the fox lower its body temperature and give it exceptional hearing. Males are slightly larger and the average species weight is between 3.5 and 6.0 pounds, a body length of 17.9 to 21.1 inches, and a tail adding another 9.8 to 13.4 inches to its length. Kit fox have a gray coat with rusty tones, a black tip to their tail, and color ranging from yellowish to gray. The species is mostly nocturnal, carnivorous, with a varied diet of small animals depending on availability. Kit foxes favor arid climates, such as desert scrub, chaparral, and grasslands, and inhabit elevations of 1,300 to 6,200 feet above sea level. The northernmost part of the species' range is the arid interior of Oregon, with an eastern limit of southwestern Colorado, and distributed south through Nevada, Utah, southeastern California, Arizona, New Mexico, and into western Texas.

American pygmy shrew (Sorex hoyi)

The American pygmy shrew is the smallest mammal native to North America and is one of the smallest mammals in the world. Its body is about two inches long including an 0.8-inch-long tail and it weighs about 0.071 to 0.159 ounces. Fur of American pygmy shrews is generally reddish or grayish brown during the summer and a white-gray color during the winter. American pygmy shrews are distributed throughout the northern coniferous and deciduous forests of North America, ranging from northern Alaska, to the Rocky Mountains, through the Great Lakes region, to the Appalachians, and to eastern Canada. Preferring moist habitats, American pygmy shrews forage in moist soil and dead leaves to find prey. Because of their small size, their diet primarily consists of insects and insect larvae. American

pygmy shrews have keen senses of smell and hearing to help them find prey, are active year-round, and do not sleep or rest for extended periods of times, alternating rest and activity all day and night.

North American river otter (Lontra canadensis)

The North American river otter is a semiaquatic mammal endemic to North America. A member of the weasel family (Mustelidae), the species is equally versatile in the water and on land. North American river otters are protected and insulated by a thick, water-repellent coat of fur and establish burrows close to the water's edge in river, lake, swamp, coastal shoreline, tidal flat, or estuary ecosystems. North American river otters can weigh between 11.0 and 30.9 pounds, with bodies ranging from 26 to 42 inches, about one-third of which is a long, tapered tail. Like most predators, North American river otters prey upon the most readily accessible species with fish as their favored food. The species is active year-round and is most active at night and during crepuscular hours. The range of the North American river otter has been significantly reduced by habitat loss, beginning with European colonization of North America.

Rocky Mountain bighorn sheep (Ovis canadensis canadensis)

The Rocky Mountain bighorn sheep is one of three distinct subspecies of *Ovis canadensis*. Rocky Mountain bighorn sheep occupy northwestern United States, including the U.S. and Canadian Rocky Mountains. Sierra Nevada bighorn sheep (*O. c. sierrae*), formerly California bighorn sheep, only occur in the Sierra Nevada region of California and desert bighorn sheep (*O. c. nelsoni*) occur throughout the desert regions of southwestern United States and northwestern Mexico. Bighorn sheep from the Rocky Mountains are relatively large with males that occasionally exceed 500 pounds and females that exceed 200 pounds. In contrast, Sierra Nevada bighorn males only weigh up to 200 pounds and females up to 140 pounds. Bighorn sheep are named for the large, curved horns borne by the rams (males) that may weigh up to 30 pounds. Ewes (females) also have horns, but they are shorter with less curvature. Bighorn sheep range in color from light brown to grayish or dark, chocolate brown, with a white rump and lining on the backs of all four legs. Bighorn sheep generally inhabit alpine meadows, grassy mountain slopes, and foothill country near rugged, rocky cliffs and bluffs. Since bighorn sheep cannot move through deep snow, they prefer drier slopes. A Rocky Mountain bighorn sheep's winter range usually lies at lower elevations than its summer range. Bighorn sheep graze on grasses and browse shrubs, particularly in fall and winter, and seek minerals at natural salt licks.

Birds

American peregrine falcon (Falco peregrinus anatum)

The peregrine falcon belongs to the genus "Falco," which is characterized by long pointed wings. In fact, the word Falco is derived from "falx," the Latin word for sickle in reference to the distinct sickle-shaped silhouette of the peregrine falcon's extended wings in flight. Also unique to this species is the notched beak that is used to kill prey by severing the spinal column at the neck. The peregrine falcon is a crow-sized bird, weighing just over two pounds with a wing span of approximately 3 feet. An adult peregrine has a dark grey back and crown, dark bars or streaks on a pale chest and abdomen, and heavy malar (cheek) stripes on the side of the face. Immature peregrines are buff colored in front and have dark brown backs; adults are white or buff in front and bluish-gray on their backs. Females and males are identical in appearance, however, the female can be a third larger than the male. Habitat of the peregrine falcon includes many terrestrial biomes in North America. Most often, breeding peregrine falcons utilize habitats containing cliffs and almost always nest near water, generally utilizing open habitats for foraging. Peregrine falcons prey vary by location and seasonally. Their prey mainly consists of birds ranging from small passerines to mid-sized waterfowl. They may also feed on bats. Juveniles

primarily feed on large flying insects. Peregrine falcons are active throughout the day from dawn to dusk and can even be nocturnal. They usually hunt in the morning and late evening. Areas of Alaska and the western United States including Utah, Arizona, western Colorado, and northern California are where the peregrine falcon is most widely found.

Bald eagle (Haliaeetus leucocephalus)

A large raptor, the bald eagle has a wingspread of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak. Juveniles are mostly brown with white mottling on the body, tail, and undersides of wings. Adult plumage usually is obtained by the 6th year. In flight, the bald eagle often soars or glides with the wings held at a right angle to the body. As in most other raptors, females are larger than males. Bald eagles typically breed and winter in forested areas adjacent to large bodies of water in large, super-canopy roost trees that are open and accessible. Bald eagles breed throughout much of Canada and Alaska, in addition to scattered sites across the lower 48 states from California to the southeastern U.S. coast and Florida. Wintering covers most of the contiguous United States with some year-round distribution in the northwest. The bald eagle is an opportunistic forager and food habits are highly varied across its range based on prey species available.

Boreal owl (Aegolius funereus)

The boreal owl is part of the larger grouping of owls known as typical owls (Strigidae), which contains most species of owl. The other grouping is the barn owls (Tytonidae). Due to its shyness and evasive reaction to human activities, nocturnal habits, and preferred inaccessible taiga forest habitat, the boreal owl is one of the, if not the, least known owl species in both North America and Europe. Boreal owls are 8.7 to 10.6 inches long with a 20 to 24 inch wingspan. They are brown above with white flecking on the shoulders and underparts are whitish streaked with rust. Their head is large with yellow eyes, a white facial disc, and a "surprised" appearance. Boreal owls are unsociable and not normally migratory, but in some autumns significant numbers move further south. The species breeds in dense coniferous forests across northern North America and Eurasia, including mountain ranges such as the Alps and Rockies.

Brewer's sparrow (Spizella breweri)

The Brewer's sparrow is a small slim species of American sparrow in the family Passerellidae. Adults have grey-brown backs and speckled brown crowns, both with dark streaks, and a pale eye-ring. Their wings are brown with light wing bars and the underparts are pale grey, while their bill is pale with a dark tip and they have a long notched tail. Brewer's sparrows are similar in appearance to the clay-colored sparrow (*S. pallida*), but do not have a pale stripe on the crown or grey neck patch. Male Brewer's sparrows sing to defend a nesting territory with a song that is a long varied mix of notes and trills. Brewer's sparrows forage primarily in shrubs or in low vegetation, but also on the ground, eating insects in summer with seeds becoming a more important part of the diet at other times of the year. The species usually forages in flocks outside of the breeding season, sometimes with other sparrows. One of the most characteristic summer birds of the sagebrush flats of the Great Basin, the Brewer's sparrow migrates to the southwestern United States south to central Mexico for winter.

Burrowing owl (Athene cunicularia)

The burrowing owl is a small, long-legged owl found throughout open landscapes of North and South America. They have prominent white eyebrows and a white "chin" patch which they expand and display during certain behaviors, such as a bobbing of the head when agitated. Burrowing owls can be found in grasslands, rangelands, agricultural areas, deserts, or any other open dry area with low vegetation. They nest and roost in burrows, such as those excavated by prairie dogs (*Cynomys* spp.). Unlike most owls, burrowing owls are often active during the day, although they tend to avoid the midday heat. Like many

other kinds of owls, though, burrowing owls do most of their hunting from dusk until dawn, when they can use their night vision and hearing to their advantage. Living in open grasslands as opposed to forests, the burrowing owl has developed longer legs that enable it to sprint, as well as fly, when hunting. Males and females are similar in size and appearance. As a size comparison, an average adult is slightly larger than an American robin (*Turdus migratorius*). Burrowing owls are year-round residents in most of their range. The western burrowing owl (*A. c. hypugaea*) is most common in Colorado, especially at the Rocky Mountain Arsenal National Wildlife Refuge.

Chestnut-collared longspur (Calcarius ornatus)

The chestnut-collared longspur is a species of bird in the family Calcariidae. Like other longspurs, it is a small ground-feeding bird that primarily eats seeds, also eating insects in the summer (young birds are mainly fed insects). Chestnut-collared longspurs have a short conical bill, a streaked back, and a white tail with a dark tip. In breeding plumage, males have black underparts, a chestnut nape, a yellow throat, and a black crown. Non-breeding birds are grayish buff overall with dusky streaks on the back and underparts. Chestnut-collared longspurs breed in short and mixed grass prairies in central Canada and the north central United States. In winter, they migrate in flocks to prairies and open fields in the southern United States and Mexico.

Columbian sharp-tailed grouse (Tympanuchus phasianellus columbianus)

The Columbian sharp-tailed grouse is a subspecies of sharp-tailed grouse native to the Western U.S. and British Columbia. Out of the seven sub-species of sharp-tailed grouse, the Columbian is the smallest at 15–20 inches in length. They have plumage with a base of grayish-brown, white and black markings, and a white wedge-shaped tail. Males have a longer tail, a purple throat patch, and a yellow comb over the eye. Columbian sharp-tailed grouse inhabit sagebrush-bunchgrass prairies, meadow-steppe, mountain shrub, and riparian zones. The species' historical range extended from British Columbia south through eastern Washington and Oregon to northeastern California, Nevada, and Utah, and then west to the Continental Divide. Currently, Columbian sharp-tailed grouse are found in central British Columbia, southeastern Idaho, northern Utah, northwestern Colorado, south-central Wyoming, and a re-introduced population in Oregon.

Flammulated owl (Psilosops flammeolus)

The flammulated owl is a small nocturnal owl approximately six inches long with a 14 inch wingspan. With such large wings for a small body, flammulated owls can fly rapidly from tree to tree. Females are larger, ranging from 2.2 to 2.3 ounces, while males range from 1.8 to 2.0 ounces. The species gets its name flammulated from the flame-like markings on its face. Unlike many owls, flammulated owls are migratory and a neotropical migrant. These owls are obligate cavity nesters, meaning they only create nests in tree cavities. The species breeds from southern British Columbia and the western United States to central Mexico. Nesting habitat in the western United States and Canada is usually mature, open, ponderosa pine and Douglas fir forests.

Grasshopper sparrow (Ammodramus savannarum)

The grasshopper sparrow is a small American sparrow in the genus *Ammodramus* containing nine species that inhabit grasslands and prairies. These small sparrows measure 3.9 to 5.5 inches long, span about 6.9 inches across the wings, and weigh 0.5 to 1.0 ounces. Adults have upperparts streaked with brown, grey, black, and white, in addition to a light brown breast, a white belly, and a short brown tail. Their faces are light brown with an eye ring and a dark brown crown with a central narrow light stripe. Grasshopper sparrows breed in open fields and prairies across southern Canada, the United States, Mexico, and Central America. The northern populations migrate to the southern United States, Mexico,

Central America, and the Caribbean. Nests are a well-concealed open cup on the ground under vegetation. Grasshopper sparrows forage on the ground in vegetation, mainly eating insects, especially grasshoppers, and seeds.

Greater sage-grouse (Centrocercus urophasianus)

The greater sage-grouse is the largest grouse in North America. Adult males range in length from 26 to 30 inches and weigh between four and seven pounds. Adult females are smaller, ranging in length from 19 to 23 inches and weighing between two and four pounds. Adult greater sage-grouse have a long pointed tail and legs with feathers to the toes. Adult males have a yellow patch over each eye, are grayish on top with a white breast, and have a dark brown throat and a black belly; two yellowish sacs on the neck are inflated during courtship display. Adult females are mottled gray-brown with a light brown throat and dark belly. Greater sage-grouse are obligate residents of the sagebrush (*Artemisia* spp.) ecosystem, usually inhabiting sagebrush-grassland or juniper (*Juniperus* spp.) sagebrush-grassland communities. The greater sage-grouse is a permanent resident in its breeding grounds but may move short distances to lower elevations during winter. Greater sage-grouse use a complex lek system in mating, nest on the ground under sagebrush or grass patches, and forage on the ground, mainly eating sagebrush but also other plants and insects. The range of greater sage-grouse is sagebrush country in the western United States and southern Alberta and Saskatchewan, Canada.

Lewis' woodpecker (Melanerpes lewis)

The Lewis' woodpecker is a large North American species of woodpecker that measures 10 to 11 inches long. Lewis' woodpeckers are mainly reddish-breasted, blackish-green in color with a black rump, a gray collar and upper breast, pinkish belly, and a red face. Wings are much broader than those of other woodpeckers and Lewis' woodpeckers fly at a sluggish pace with slow even flaps similar to those of a crow. Though they do forage for insects by boring into trees with their chisel-like bills, Lewis' woodpeckers also catch insects in the air during flight, feed on berries and nuts, and even shell and store nuts in cracks and holes in wood to store until winter. Lewis' woodpeckers nest in a cavity excavated from a dead tree branch. The species is locally common, dwelling mostly in open pine woodlands and other areas with scattered trees and snags. Unlike other American woodpeckers, Lewis' woodpeckers will sit in the open as opposed to just heavy tree cover. The range of the species is primarily the western to central U.S.

Loggerhead shrike (Lanius ludovicianus)

The loggerhead shrike is a medium-sized passerine bird in the family Laniidae and is the only member of the shrike family endemic to North America. Although loggerhead shrikes are passerines, they are a predatory species that hunts during the day. Due to its small size and weak talons, loggerhead shrikes often use thorns or barbed wire to impale their prey, which may be larger than themselves and consist of amphibians, insects, lizards, small mammals, and small birds. "Loggerhead" refers to the relatively large size of the head as compared to the rest of the body. They are 9 inches long from bill to tail with 3.8 inch wings and a 3.9 inch tail. Adult weights range from 1.6 to 2.1 ounces and plumage is grey on top with a white to pale grey breast and black tarsi and feet. In addition, loggerhead strikes have a black mask that extends across its eyes to its bill. Open pastures and grasslands with shorter vegetation are preferred by loggerhead shrikes to increase hunting efficiency. They breed from southern Ontario, Quebec and the Canadian prairie provinces, south to Mexico.

Long-billed curlew (Numenius americanus)

The long-billed curlew is a large shorebird of the family Scolopacidae. Long-billed curlews are the largest sandpipers of regular occurrence in North America at 20 to 26 inches long, 24 to 35-inch wingspan, and

weight of 1.1 to 2.1 pounds. Their disproportionally long bills curve downward and measure 4.4 to 8.6 inches long. In addition, they have long necks, small heads, light cinnamon neck and underparts, and crown streaked with brown. Long-billed curlews often feed in flocks, using their long bills to probe the mud or other substrate for suitable food, which usually consists of crabs and various other small invertebrates. This species exhibits reversed sexual dimorphism, as females are larger with a much longer bill. A small hollow is lined with various weeds and grasses for nests. Long-billed curlews breed in central and western North America, migrating southward and coastward for the winter.

McCown's longspur (Rhynchophanes mccownii)

The McCown's longspur is a small bird from the family Calcariidae of longspurs and snow buntings. McCown's longspurs have a large cone-shaped bill, a streaked back, a rust-colored shoulder, and a white tail with a dark tip. In breeding plumage, males have a white throat and underparts, a grey face and nape, and a black crown. McCown's longspurs forage on the ground and mainly eat seeds, though young birds are mainly fed insects. They breed in dry, short-grass prairies of central Canada and north central United States. Females lay 3 or 4 eggs in a grass cup nest in a shallow scrape on the ground. Males sing and fly up to defend their territories. Both parents feed the young. In winter, McCown's longspurs migrate in flocks to prairies and open fields in the southern United States and northern Mexico. They prefer areas with sparser vegetation than those chosen by the chestnut-collared longspur.

Northern goshawk (Accipiter gentilis)

The northern goshawk is a medium-large raptor in the family Accipitridae, which also includes diurnal raptors such as eagles, buzzards, and harriers. Northern goshawks, like all *Accipiters*, exhibits sexual dimorphism where females are significantly larger than males. Males are 18 to 24 inches long with a 35 to 41 inch wingspan and weighing 0.8 to 2.6 pounds, while females are 23 to 27 inches long with a 43 to 50 inch wingspan and weighing 1.7 to 4.9 pounds. Northern goshawks have relatively short broad wings and a long tail, typical for *Accipiter* species and common to raptors that require maneuverability within forested habitats. Northern goshawks are blue-grey above or brownish-grey with dark barring or streaking over a grey or white base color below. Both juveniles and adults have a barred tail with 3 to 5 dark brown or black bars. Adults always have a white eye stripe. Northern goshawks have a large circumpolar distribution and are widespread throughout many of the temperate parts of the Northern Hemisphere. Their breeding range in the western contiguous U.S. largely consists of the wooded foothills of the Rocky Mountains and many other large mountain ranges from Washington to southern California extending east to central Colorado and westernmost Texas. Conifers are often used for nesting in the western U.S. Northern goshawks may live anywhere up to a given mountain range's tree line, which is usually 9,800 feet in elevation or less. Most northern goshawks do not migrate, though in winter months the northernmost or high mountain populations move down to warmer forests at lower elevations.

Northern harrier (Circus cyaneus)

The northern harrier (or marsh hawk) is a bird of prey with the longest wing and tail relative to its body size of any raptor occurring in North America. Northern harriers are 16 to 20 inches long with a 38 to 48 inch wingspan. Males weigh 10 to 14 ounces, while females weigh 14 to 26 ounces. Adult female plumage is dark brown above and buff below, with some streaking on the underparts and a barred tail. Males are pale gray above and white below with reddish spots on the underparts and wingtips edged with black. Northern harriers are one of few raptorial birds known to practice polygyny. One male mates with up to five females in a season. Built on the ground or on a mound of dirt or vegetation, nests are made of sticks and lined inside with grass and leaves. Northern harriers hunt primarily small mammals and breed on moorland, bogs, prairies, farmland coastal prairies, marshes, grasslands,

swamps, and other assorted open areas throughout the northern parts of the northern hemisphere in Canada and the northernmost U.S. From northerly areas, they migrate and overwinter in southern U.S., Mexico, and Central America. Northern harriers may be present in the southern U.S. all year.

Olive-sided flycatcher (Contopus cooperi)

The olive-sided flycatcher is a medium-sized, tyrant, passerine bird. Adults are dark olive on the face, upperparts and flanks with light underparts, a large dark bill, and a short tail. Olive-sided flycatchers wait on a perch at the top of a tree and fly out to catch insects in flight. Females usually lay 3 eggs in a shallow open cup nest on a horizontal tree branch. Males defend a large area around their nesting territory and both parents feed young. Olive-sided flycatchers are abundant in early post-fire landscapes that have burned at high severity. Breeding habitat is coniferous woods across Canada, Alaska, and the northeastern and western United States; they migrate and over-winter in Central America and the Andes region of South America.

Purple martin (Progne subis)

The purple martin is the largest North American swallow with an average length from bill to tail of 7.9 inches. Purple martins are known for their speed and agility in flight. When approaching their housing, they will dive from the sky at great speeds with their wings tucked. Adult males are entirely black with glossy steel blue sheen, while adult females are dark on top with some steel blue sheen and lighter underparts. Both sexes have a slightly forked tail. Purple martins are aerial insectivores, meaning they catch insects from the air. They are agile hunters and eat a variety of winged insects. Males arrive at breeding sites throughout temperate North America before females to establish a territory. Breeding habitat is open areas across eastern North America, in addition to some locations on the west coast from British Columbia to Mexico. Purple martins make their nests in cavities, either natural or artificial. Western birds often make use of natural cavities such as old woodpecker holes in trees or saguaro cacti. Purple martins migrate to the Amazon basin in winter.

Sagebrush sparrow (Artemisiospiza nevadensis)

The sagebrush sparrow is a medium-sized sparrow of the western U.S. and northwestern Mexico. Sagebrush sparrows are small songbirds, medium-sized for sparrows, with a relatively long tail, rounded head, and fairly short and thick bill. They are 4.7 to 5.9 inches long and weigh 0.5 to 0.8 ounces. Sagebrush sparrows are brown above with a soft gray head, white underparts, and a dark spot in the middle of their breasts. Their faces have a white eye ring, a white spot before the eye, and a dark stripe bordering the throat. Their tails are dark with light edges to the outer feathers. Sagebrush sparrows mostly eat seeds or insects and primarily inhabit sagebrush habitats, though they can also be found in brushy stands of saltbush, chamise, and other low shrubs of the arid interior west. Sagebrush sparrows breed in shrub-steppe habitats consisting of shrubs up to about six feet tall, especially big sagebrush (*Artemisia tridentata*) below about 5,600 feet in elevation. Sagebrush sparrows breed in the interior of the western U.S. between the Rocky Mountains and the coastal ranges such as the Cascades. They migrate and overwinter in the southern U.S. and northern Mexico.

Three-toed woodpecker (Picoides tridactylus)

The three-toed woodpecker is a medium-sized woodpecker 8.5 to 9.4 inches long. Three-toed woodpeckers are black on their heads, wings, and rumps, and white from their throat to belly. Flanks are white with black bars, backs are white with black bars, and tails are black with the white outer feathers barred with black. Adult males have a yellow cap. Three-toed woodpeckers forage on conifers in search of wood-boring beetle larvae and other insects; they may also eat fruit and tree sap. Three-toed woodpeckers often move into areas with large numbers of insect-infested trees, often following a

forest fire or flooding. They nest in a cavity in a dead conifer or sometimes a live tree or pole and three-toed woodpecker pairs excavate a new nest each year. Breeding habitat in North America is coniferous forests across western Canada, Alaska, and the mid-western United States. Three-toed woodpeckers are normally a permanent resident, but northern birds may move south and birds at high elevations may move to lower levels in winter.

Insects

Hudsonian emerald dragonfly (Somatochlora hudsonica)

The Hudsonian emerald dragonfly appears to be an uncommon species, both from the standpoint of its encounters with human beings as well as the number of specimens found in collections. Very little historical information or primary literature exists for this dragonfly and it has never been studied in depth. Although the species is reported to be widely distributed across Canada, the only records of its occurrence in the continental United States are seven locations in Colorado, three in Wyoming, and one in Montana. Most records are over 30 years old and little or no documented collecting has been done at these sites since the originals. As with other dragonflies, the main threat to the viability of this species is degradation of its aquatic habitat. Trees are an important component of areas surrounding the aquatic habitats of the Hudsonian emerald dragonfly since they provide areas for prey foraging by adults as well as shade that maintains lower water temperatures. Trees may also serve as mating areas. Since the largest proportion (possibly 80 percent or more) of this species' life cycle is spent as larvae in the water, these aquatic stages are the most important to preserve to produce reproducing populations.

Nokomis fritillary (aka Great Basin silverspot) (Speyeria nokomis nokomis)

Typically orange-brown with black markings, the Nokomis fritillary is a brush-footed butterfly among the largest species in the *Speyeria* genus. The species lives in four states in the United States: Utah, Colorado, Arizona, and New Mexico, and requires streamside meadows, seepage areas, and marshes in the midst of otherwise desert environment. Adults have wingspans of 2.5 to 3.1 inches. The dorsal wing surface of males is typically orange-brown with black markings, with a lightly to greatly darkened wing base. Comparatively, females have a dorsal wing surface with a more pronounced darkening of the wing base, while the outer portion is primarily a white-cream or bluish-white color, rather than the orange-brown observed in males. The black-bordered silver spots found on their wings are the basis for the "silverspot" common name. Habitat components critical to sustaining Colorado Great Basin silverspot populations are spring fed and/or sub-irrigated wetlands above 7,500 feet in elevation, the larval food plant *Viola nephrophylla*, wet meadows interspersed with willows and other woody wetland species, and adult nectar sources.

Ottoe skipper (Hesperia ottoe)

The ottoe skipper is a medium sized butterfly in the family HesperIIDae (skippers). The wingspan of ottoe skippers is between 1.3 and 1.7 inches and the upper sides of the species' wings are a warm orange-brown. Males have an obvious dark stigma (black or dark gray) and black borders, while females have more diffuse black borders. The undersides of the wings are yellow-orange, unmarked on males and sometimes with faint markings on females. The larval hostplants are a range of grasses, including fall witchgrass, little bluestem, and sideoats grama. Adults are avid nectar feeders and require abundant flowers to maintain a population. The ottoe skipper is a prairie-dependent species found on a range of prairie types from southern Manitoba and eastern Montana south along the high plains to north Texas; east through Nebraska and Kansas, to central Illinois and southwest Michigan.

Regal fritillary (Speyeria idalia)

The regal fritillary is a large and beautiful butterfly in the family Nymphalidae (brush-footed butterflies) with a wingspan of 2.6 to 4.1 inches. The upper side of the forewing is bright red-orange with black markings. On females, the forewing is edged with a black marginal band with a post-median row of white spots. The upper side of the hindwing is black with a post-median row of white spots. There is also a sub-marginal row of spots that is orange on males and white on females. The underside of the forewing is orange with a marginal band of white spots and a black fringe. The hindwing is dark greenish brown with elongate white spots. Larvae are yellowish-brown with yellow lines and black spots. Habitat of the regal fritillary is tall-grass prairie and other open, sunny locations, including meadows, marshes, and mountain pastures. Larval hostplants are violets. A wide range of violets are used, including bird-foot violet (*Viola pedata*) and prairie violet (*Viola pedatifida*) in the western parts of its range. Eggs are laid on dead leaves and pebbles by females walking through vegetation. Caterpillars hatch and overwinter without feeding. In spring they eat leaves of violets. There is one flight period from mid-June to mid-August. The regal fritillary is found in the Great Plains states across the northern United States to Maine.

Susan's purse-making caddisfly (Ochrotrichia susanae)

The Susan's purse-making caddisfly is a small caddisfly in the family Hydroptilidae (purse-maker or micro-caddisflies) with dark brown wings crossed by three silver bands with a wingspan of 0.08 inches. The larvae are aquatic and inhabit small cold streams that are well-oxygenated, highly buffered, and low in trace metals. Susan's purse-making caddisfly was identified as a new species in 1976 and has only been found in two sites in central Colorado: Trout Creek Spring in Chaffee County, where the species was first described, and High Creek Fen in Park County, in addition to a third site at Jaramillo Creek in Valles Caldera National Preserve, New Mexico. This species is seriously threatened by habitat loss, primarily due to the effects of livestock grazing and timbering projects in the Trout Creek Spring area.

Amphibians

Boreal toad (Bufo boreas boreas)

The boreal toad is a subspecies of the western toad (*Bufo boreas*). Boreal toads lack a cranial crest and can be distinguished from the western toad by looking at its underbelly, which is covered by a considerable amount of dark blotches. Adult boreal toad males on average are between 2.4 to 3.1 inches and females are 2.9 to 3.9 inches. Coloration can range from brown to green and they have a distinct, white, mid-dorsal stripe. Both sexes have dry warty skin and oval parotoid glands. Male boreal toads have no vocal sac and therefore have no mating call. Boreal toads feed on a wide variety of insects and invertebrates. Their diet includes grasshoppers, beetles, flies, and mosquitos. The breeding season is usually from May to late July and occurs in marshes and still waters. Females on average lay about 3,000 to 8,000 eggs. Tadpoles take around two months to develop and are usually black in color. Boreal toads are known in Colorado as the only alpine species of toad. The species is currently found in Wyoming, Colorado, Idaho, Washington, British Columbia, Alaska, Utah and northern New Mexico. Boreal toads prefer high-altitude wet habitats, such as lakes, marshes, ponds, bogs, and quiet shallow water, around 8,000 to 12,000 feet in elevation.

Northern leopard frog (Rana pipiens)

The northern leopard frog is a species of leopard frog from the true frog family, native to parts of Canada and the United States. Northern leopard frogs are fairly large, reaching about 4.3 inches in snout-to-vent length. They vary from green to brown in dorsal color, with large, dark, circular spots on their back, sides, and legs. A pale stripe runs from the nostril, under the eye and tympanum,

terminating at the shoulder. The ventral surface is white or pale green, the iris is golden, and toes are webbed. Tadpoles are dark brown or grey, with light blotches on the underside and a pale tan tail. Northern leopard frogs have a wide range of habitats and are found in permanent ponds, swamps, marshes, and slow-moving streams throughout forest, open, and urban areas. They normally inhabit water bodies with abundant aquatic vegetation and are well adapted to cold, thus they are found above 9,800 feet in elevation. Northern leopard frogs breed during March to June and up to 6,500 eggs are laid in water. Tadpole development takes 70–110 days, depending on conditions. Northern leopard frogs eat a wide variety of animals, including crickets, flies, worms, and smaller frogs. Using their large mouths, they can even swallow birds and garter snakes. Northern leopard frogs occur from Great Slave Lake and Hudson Bay, Canada, south to Kentucky and New Mexico in the U.S.

Wood frog (*Lithobates sylvaticus*)

The wood frog belongs to a large family of long-legged frogs (Ranidae) distinguished by extensively webbed hind feet, horizontal pupils, and a bony sternum. Wood frogs range from 2.0 to 2.8 inches in length and females are larger than males. Adult wood frogs are usually brown, tan, or rust-colored, and usually have a dark eye mask, though individual frogs are capable of varying their color. The underparts of wood frogs are pale with a yellow or green cast. A small brown frog with a dark eye mask in the woods is likely to be a wood frog, as no other species has a similar appearance in North America. The wood frog has garnered attention by biologists over the last century because of its freeze tolerance, relatively great degree of terrestriality (for a Ranidae), interesting habitat associations (e.g., peat bogs, vernal pools, and uplands), and relatively long-range movements (i.e., hundreds of meters). Wood frogs are "obligate" breeders in ephemeral wetlands (i.e., "vernal pools") that are themselves imperiled. Adult wood frogs spend summer months in moist woodlands, forested swamps, ravines, or bogs. During the fall, they leave summer habitats and migrate to neighboring uplands to overwinter. Hibernacula tend to be in the upper organic layers of the soil under leaf litter. Wood frogs are mostly diurnal, are rarely seen at night (except maybe in breeding choruses), and eat a variety of small forest-floor invertebrates. Omnivorous, wood frog tadpoles feed on plant detritus, algae, and also attack and eat eggs and larvae of amphibians, including those of wood frogs. The wood frog has a broad distribution over North America, extending from the boreal forests of Canada and Alaska to the southern Appalachians, with several notable disjoint populations (e.g., eastern North Carolina).

D.4.3 Wildlife Management Indicator Species and Species of Local Concern

Mammals

Abert's squirrel (*Sciurus aberti*)

Abert's or tassel-eared squirrel is a tree squirrel measuring 18 to 23 inches long with a 7 to 10 inch tail. Abert's squirrels are distinguished by their hair ear tufts, which extend up from each ear about one inch. They are gray in color, have pale underparts, and a rufous patch on their lower back, though Abert's squirrels found in Colorado rocky mountain foothills are all black. Abert's squirrels feed on the seeds and cones of the Mexican pinyon and the ponderosa pine when they are available, but will also eat fungi, buds, bark, and carrion. Breeding normally occurs in summer within a spherical nest built high in the canopy. Abert's squirrels occur in pure ponderosa pine stands or stands with associated Gambel oak (*Quercus gambelii*), Colorado pinyon (*Pinus edulis*), junipers (*Juniperus* spp.), quaking aspen (*Populus tremuloides*), and Douglas fir (*Pseudotsuga menziesii*). They are native from the southern Rocky Mountains of the U.S. to the northern Sierra Madre Occidental of Mexico, with concentrations found in Arizona, the Grand Canyon, New Mexico, and southwestern Colorado.

Beaver (Castor canadensis)

The beaver is a large, primarily nocturnal, semi-aquatic rodent. Beavers have webbed hind-feet and a broad scaly tail. They have poor eyesight, but keen senses of hearing, smell, and touch. Adults usually weigh from 24 to 71 pounds with a head-and-body length of 29 to 35 inches, plus a tail adding an additional 7.9 to 13.8 inches. They are the second-largest rodent in the world after the capybara (*Hydrochoerus hydrochaeris*). Beavers are known for building dams, canals, and lodges (homes). Their colonies create one or more dams to provide still deep water to protect against predators and to float food and building material. A beaver's teeth grow continuously so are not worn down by chewing wood. Beavers prefer the inner bark of aspen and poplar. They do not hibernate, but store sticks and logs in a pile in their ponds to feed on during winter. Beavers inhabit riparian zones.

Black bear (Ursus americanus)

The American black bear is the continent's smallest and most widely distributed bear species. American black bears are omnivores with diets varying greatly depending on season and location. Seasonal variation in weight is significant. In autumn, pre-den weight tends to be 30% higher than in spring when they emerge from dens. Adult males typically weigh between 126 to 551 pounds and females 90 to 375 pounds. American black bears in the U.S. inhabit most of the northeast and the Appalachian Mountains almost continuously from Maine to northern Georgia, the northern Midwest, the Rocky Mountain region, the West Coast, and Alaska. American black bears are most typically found in areas with relatively inaccessible terrain, thick understory vegetation, and large quantities of edible material (especially masts). Spruce-fir forest dominates much of their range in the Rockies and important non-forested areas here are wet meadows, riparian areas, avalanche chutes, roadsides, burns, side-hill parks, and sub-alpine ridgetops.

Deer mouse (Peromyscus maniculatus)

The deer mouse is a small rodent with a 3 to 4 inch body and 2 to 4 inch tail weighing 0.4 to 0.8 ounces. Deer mice have large beady eyes and large ears giving them good sight and hearing. Their soft fur can vary in color from white to black, but all deer mice have a distinguishable white underside and white feet. Deer mice are distinguishable from the white-footed mouse, *Peromyscus leucopus*, by their long and multicolored tail. Deer mice are often active in open habitat and mostly nest high up in large hollow trees. They inhabit a wide variety of plant communities including grasslands, brushy areas, woodlands, and forests across North America, with the major exception being the southeast U.S. and the far north. Deer mice are widespread across western mountains, inhabiting both wooded and previously wooded areas. They are generally nocturnal and are active year round.

Elk (Cervus canadensis)

The elk is one of the largest species within the deer family, Cervidae, and one of the largest terrestrial mammals in North America. Elk are ruminants and therefore have four-chambered stomachs. Unlike white-tailed deer and moose, which are primarily browsers, elk are similar to cattle in that they are primarily grazers. Like other deer, they also browse. Elk have a tendency to do most of their feeding in the mornings and evenings, seeking sheltered areas in between feedings to digest. Their diets vary somewhat depending on the season, with native grasses being a year-round supplement, tree bark being consumed in winter, and forbs and tree sprouts during the summer. Elk consume an average of 20 pounds of various vegetation daily. Particularly fond of aspen sprouts which rise in the spring, elk have had some impact on aspen groves which have been declining in some regions where elk exist. Elk range in forest and forest-edge habitat feeding on grasses, plants, leaves, and bark. Male elk have large antlers that are shed each year. Males also engage in ritualized mating behaviors during the rut,

including posturing, antler wrestling (sparring), and bugling, a loud series of vocalizations that establishes dominance over other males and attracts females.

Mule deer (Odocoileus hemionus)

The mule deer is indigenous to western North America, inhabiting the western Great Plains, the Rocky Mountains, the U.S. southwest, and west coast of North America. Mule deer are named for their ears, which are large like those of a mule, and have black-tipped and short tails. They are larger than white-tailed deer (*Odocoileus virginianus*) with a height of 31 to 42 inches at the shoulders and a nose-to-tail length of 3.9 to 6.9 feet. Adult males (bucks) normally weigh 121 to 331 pounds, while adult females (does) typically weigh 95 to 198 pounds. Males have bifurcated antlers that "fork" as they grow, rather than branching from a single main beam like white-tailed deer. Mule deer are intermediate feeders rather than pure browsers or grazers. They predominantly browse, but also eat forb vegetation, small amounts of grass, and, where available, tree or shrub fruits such as beans, pods, and nuts (including acorns and berries). Mule deer are ruminants, meaning they employ a nutrient acquisition strategy of fermenting plant material before digesting it. Rumination time increases with high-fiber, low-starch diets. Mule deer fat storage varies throughout the year, with the most fat stored in October and depleted throughout the winter to the lowest level of fat storage in March. Depending on location, they may migrate to lower elevations in winter.

Birds

American dipper (Cinclus mexicanus)

The American dipper is a stocky dark grey bird with a head sometimes tinged with brown and white feathers on the eyelids that cause the eyes to flash white as the bird blinks. American dippers are 6.5 inches long and weigh 1.6 ounces on average. They have long legs and bob their whole body up and down during pauses as they feed on the bottom of fast-moving rocky streams. American dippers are equipped with an extra eyelid, called a "nictitating membrane" that allows them to see underwater, and scales that close their nostrils when submerged. They feed on aquatic insects and their larvae, including dragonfly nymphs, small crayfish, and caddisflies. American dipper nests are a globe-shaped structure with a side entrance located close to water, as American dippers defend linear territories along streams. They are usually a permanent resident, moving south or to lower elevations to find food or unfrozen water as necessary, and inhabit mountainous regions of Central America and western North America from Panama to Alaska.

Band-tailed pigeon (Patagioenas fasciata)

The band-tailed pigeon is the biggest pigeon in North America, measuring 13 to 16 inches long and weighing 7.9 to 18.2 ounces. The head and underparts of band-tailed pigeons have a faint pink cast (especially in the adult male), their bellies are nearly white, the distal half of their tails is pale, and their bills and feet are yellow. Adults have green iridescence on the back of their necks adjacent to a thin white collar on their napes. Juvenile birds have white feather edges above, giving a scaly appearance. Band-tailed pigeons build a rudimentary platform nest out of twigs and form flocks outside of the breeding season, sometimes over 50 birds. In addition to acorns and other seeds, band-tailed pigeons eat fruits such as Pacific madrona and Toyon berries. They are found near sea level up to 12,000 feet in elevation, generally in oak, pine-oak, and coniferous forests of British Columbia, Washington, Oregon, California, and southern Arizona, south in higher elevations of Mexico and Central America to northern Argentina during winter.

Brewer's sparrow (Spizella breweri)

The Brewer's sparrow is a small slim species of American sparrow in the family Passerellidae. Adults have grey-brown backs and speckled brown crowns, both with dark streaks, and a pale eye-ring. Their wings are brown with light wing bars, underparts are pale grey, bills are pale with a dark tip, and Brewer's sparrows have a long notched tail. They are found in brushy areas, especially with sagebrush, in southern parts of western Canada and in the western United States. Brewer's sparrows forage primarily in shrubs or in low vegetation, but also on the ground, eating mainly eat insects in summer with seeds becoming a more important part of the diet at other times of the year. They migrate and overwinter in the southwestern U.S. to central Mexico.

Broad-tailed hummingbird (Selasphorus platycercus)

The broad-tailed hummingbird is a medium-sized hummingbird species found in highland regions of western U.S. and western Canada. Medium in size, the broad-tailed hummingbird is four inches in length with an overall wingspan of 5.25 inches. Weighing about 0.13 ounces, females tend to be slightly larger than males. Adults show an iridescent green back, white eye ring, and a rounded black tail projecting beyond their wing tips. Broad-tailed hummingbirds are found in the understory or under tree canopies of pine and oak woodlands. They forage in open areas with flowers or in grasslands among trees and shrubs. The diet of broad-tailed hummingbirds consists mainly of insects and nectar of plants characterized by high nectar production and red corollas with a tubular shape, such as *Aquilegia elegantula*. Breeding habitat is mainly subalpine meadows, foothills, montane valleys, and strands of aspen or spruce. Broad-tailed hummingbirds migrate and overwinter in southern Mexico and Guatemala, though some populations live year-round in these locations.

Cordilleran flycatcher (Empidonax occidentalis)

The Cordilleran flycatcher is a small insect-eating bird with a typical length ranging from 5.1 to 6.7 inches. Adult Cordilleran flycatchers have olive-gray upperparts, darker on the wings and tail, with yellowish underparts, a conspicuous teardrop-shaped white eye ring, white wing bars, a small bill, and a short tail. They wait on an open perch of a shrub or low branch of a tree and fly out to catch insects in flight (hawking), also sometimes picking insects from foliage while hovering (gleaning). Preferred breeding habitat of Cordilleran flycatchers is pine-oak or coniferous forests, usually near running water, and located in the Rocky Mountains. They make a cup nest on a fork in a tree, usually low in a horizontal branch. Cordilleran flycatchers migrate to Mexico for the winter, where the Mexican central-southern birds are resident.

Dusky grouse (Dendragapus obscurus)

The dusky grouse is a species of forest-dwelling grouse native to the Rocky Mountains. Adults have a long square tail, gray at the end. Adult males are mainly dark with a purplish throat air sac surrounded by white and a yellow to red wattle over the eye during display. Adult females are mottled brown with dark brown and white marks on the underparts. Dusky grouse forage on the ground for green plants (*Pteridium*, *Salix*), berries (*Gaultheria*, *Mahonia*, *Rubus*, *Vaccinium*), and insects (particularly ants, beetles, and grasshoppers). In winter, they forage in trees and mainly eat fir and douglas-fir needles, occasionally also hemlock and pine needles. Their nest is a scrape on the ground concealed under a shrub or log and chicks are almost entirely dependent on insect food for their first ten days. Dusky grouse are permanent residents but move short distances by foot and short flights to denser forest areas in winter, with the odd habit of moving to higher altitudes in winter. Their breeding habitat is the edges of conifer and mixed forests in mountainous regions of western North America, from southeastern Alaska and Yukon south to New Mexico.

Golden eagle (Aquila chrysaetos)

The golden eagle is one of the best-known birds of prey in the Northern Hemisphere and is the most widely distributed species of eagle. Adult golden eagles are dark brown with lighter golden-brown plumage on their napes and immature golden eagles often have white on their tail and wings. Golden eagles use their agility and speed combined with powerful feet and massive sharp talons to snatch up a variety of prey, including hares, rabbits, marmots, and other ground squirrels. In North America, the average wingspan of both sexes is about 6 feet 8 inches. Females are heavier than males and average 10.8 pounds compared to 7.7 pounds. Golden eagles breed throughout Alaska, western Canada, and the western U.S. They are also found sporadically in the eastern U.S. south to central Mexico. Golden eagles maintain territories as large as 77 square miles and build large nests in cliffs and other high places to which they may return for several breeding years. Except from extreme northern or high altitude locations, golden eagles do not migrate. In the foothills of the Rocky Mountains, golden eagles are most widespread across the plains and prairies.

Golden-crowned kinglet (Regulus satrapa)

The golden-crowned kinglet is a very small songbird that inhabits much of North America. Golden-crowned kinglets measure 3.1 to 4.3 inches long and weigh 0.14 to 0.28 ounces. Adults have olive-gray coloration on the upperparts, white underparts, thin bills, a short tail, white wing bars, a black stripe through the eyes, and a yellow crown surrounded by black. Adult males have an orange patch in the middle of the yellow crown. Golden-crowned kinglets forage actively in trees or shrubs, mainly eating insects, insect eggs, and spiders. They nest in a well-concealed hanging cup suspended from a conifer branch. Golden-crowned kinglets are widespread, breeding in coniferous forests across Canada, the northeastern and western United States, Mexico, and Central America. Some birds are permanent residents in coastal regions and in the southern parts of their range.

Grace's warbler (Setophaga graciae)

Grace's warbler is a New World warbler that specializes in pine woods. A small bird, Grace's warblers are about 4.3 to 5.1 inches long. They are mostly gray on top with broken black streaks across the back and flanks, two white bars on the wings, the throat and breast are a vibrant yellow, and the rest of the underparts are white. Grace's warblers have a yellow half-eye ring under the eye and a long yellow "eyebrow" stripe that starts at the base of the beak and runs above the eye, fading to white after it passes the eye. Like the vast majority of warblers, Grace's warblers only eat insects and spiders. They forage mostly high in pine trees and catch their food from the bases of needle clusters and the upper bark of branches no thicker than its body. Nests are a compact cup of plant fibers, the inside lined with hair and feathers, placed high above the ground on a tree branch, usually pine. Grace's warblers breed from the southwestern United States to Nicaragua and winter in their breeding range from northeastern Sinaloa and northwestern Durango south. They are almost always found in pine forests, even in migration, though at the northern end of their range (in southern Nevada and Utah and southwestern Colorado) they occur in spruce-fir forest. Grace's warblers prefer open "park-like" woods.

Green-tailed towhee (Pipilo chlorurus)

The green-tailed towhee is the smallest towhee, but is still one of the larger members of the American sparrow family Passerellidae. Green-tailed towhees are 7.3 inches long and weigh about 1.0 ounce. They are recognized by the bright green stripes on the edge of their wings, a distinct white throat, and a rufous cap. Green-tailed towhees are fairly tame and often stay hidden under a bush. They are fairly common in habitats with sagebrush and similar bushes. The breeding range of green-tailed towhees covers most of the interior western U.S., while the winter range is the southern edge of the southwestern U.S. into Mexico.

Hairy woodpecker (Leuconotopicus villosus)

The hairy woodpecker is a medium-sized woodpecker measuring 7.1 to 10.2 inches long with a 13 to 17 inch wingspan and weighing 1.4 to 3.4 ounces. Adults are mainly black on the upper parts and wings with a white or pale back and white spotting on the wings, a white bar above and one below the eye, and a black tail with white outer feathers. Adult males have a red patch or two side-by-side patches on the back of the head, while juvenile males have red or rarely orange-red on the crown. Hairy woodpeckers are virtually identical in plumage to the smaller downy woodpecker. Downy woodpeckers have a shorter bill relative to the size of their head, which is, other than size and voice, the best way to distinguish them in the field. Hairy woodpeckers forage on trees, often turning over bark or excavating to uncover insects. They mainly eat insects, but also fruits, berries, nuts, and sometimes tree sap. Mating pairs excavate a hole in a tree to nest. Hairy woodpeckers are mostly permanent residents, though in the extreme north they may migrate further south and birds in mountainous areas may move to lower elevations. Hairy woodpeckers inhabit mature deciduous forests across North and Central America.

Hammond's flycatcher (Empidonax hammondi)

The Hammond's flycatcher is a small insectivorous bird inhabiting mature coniferous and mixed forests. Adults are 4.7 to 5.5 inches long with a wingspan about 8.7 inches and weighing 0.3 to 0.4 ounces. Hammond's flycatchers have grayish-olive upperparts, darker on the wings and tail with whitish underparts, a conspicuous white eye ring, white wing bars, a small bill, and a short tail. Females usually have a shorter wider bill and immatures are more buff with broader wing bars. Hammond's flycatchers are typically found in dense fir forests, conifer and aspen forests, and dogwood; their habitats on wintering grounds are similar to those on breeding grounds. Hammond's flycatchers inhabit Alaska, Montana, Wyoming, California, Nevada, Utah, Arizona, New Mexico, and Colorado, as well as British Columbia, Yukon, and Alberta. The Hammond's flycatcher is a migratory species, breeding in western North America and wintering in Mexico and Central America.

Juniper titmouse (Baeolophus ridgwayi)

The juniper titmouse is a passerine bird in the tit family Paridae. Juniper titmice are small gray birds with small tuft or crest, plain faces, and lighter gray undersides. They will sleep in cavities, dense foliage, and birdhouses. When roosting in foliage, Juniper titmice choose a twig surrounded by dense foliage or an accumulation of dead pine needles, simulating a roost in a cavity. They eat insects and spiders, sometimes catching insects in mid-air, in addition to berries, acorns, and some seeds. Juniper titmice forage on foliage, twigs, branches, trunks, and occasionally on the ground. Their strong legs and feet allow them to hang upside down to forage. Juniper titmice build nests in woodpecker holes, natural cavities, and nest boxes, lining them with grass, moss, mud, hair, feathers, and fur. They live year-round primarily in the Great Basin, but are residents from southeastern Oregon and central Colorado south to the eastern Mojave Desert in California and central Arizona, as far as west Texas and extreme northeastern Sonora, Mexico. Juniper titmice prefer open woodlands of warm, dry, pinyon-juniper, juniper, and desert riparian woods.

Lazuli bunting (Passerina amoena)

The lazuli bunting is a North American songbird. Male lazuli buntings are easily recognized by their bright blue heads and backs, conspicuous white wing bars, light rusty breasts, and white bellies. Their smaller size of 5.0 to 5.5 inches long distinguish them from eastern and western bluebirds. Female lazuli buntings are brown, grayer above, and warmer underneath. Lazuli buntings eat mostly seeds and insects, feeding conspicuously on the ground or in bushes. Nests are a loose cup nest of grasses and rootlets placed in a bush and their habitat is brushy areas and sometimes weedy pastures, generally

well-watered, and sometimes in towns. Lazuli buntings breed mostly west of the 100th meridian from southern Canada to northern Texas, central New Mexico and Arizona, and southern California. They migrate to southeastern Arizona and Mexico to overwinter.

MacGillivray's warbler (Geothlypis tolmiei)

The MacGillivray's warbler is a species of New World warbler. These birds are sluggish and heavy warblers, preferring to spend most of their time on or near the ground, except when singing. Adult MacGillivray's warblers are approximately 5.1 inches long. They are an olive-green color on their upperparts and dull yellow below. Males have black heads and breasts, while females and immature birds have drab light gray heads; both males and females have broken white eye-rings. MacGillivray's warblers are very similar to their eastern counterpart, the mourning warbler, the primary difference between the two species being the mourning warbler's lack of an eye-ring. MacGillivray's warblers are migratory and spend their summers in temperate forests of the western United States and in boreal forests of western Canada. Each autumn they migrate to Central America, where they overwinter in temperate shrublands.

Mallard (Anas platyrhynchos)

The mallard is a dabbling duck measuring 20 to 26 inches long with a 32 to 39 inch wingspan and weighing 1.6 to 3.5 pounds. Males (drakes) have a glossy green head and are grey on their wings and belly, while females (hens) have mainly brown-speckled plumage. Both sexes have an area of white-bordered black or iridescent blue feathers called a speculum on their wings. Mallards live in wetlands, eat water plants and invertebrates, and are gregarious congregating in groups or flocks of varying sizes. The mallard is a very adaptable species, inhabiting a wide range of habitats and climates from Arctic tundra to subtropical regions. Mallards are attracted to bodies of water with aquatic vegetation and are found in both fresh- and salt-water wetlands, as well as shallow inlets and open sea within sight of a coastline. Water depths of less than 3.0 feet are preferred. Mallards are strongly migratory in the northern parts of their breeding range, wintering farther south. In North America, mallards breeding in Alaska, Canada, and the northern U.S. overwinter in the southern U.S., Mexico, Central America, and the Caribbean.

Merriam's wild turkey (Meleagris gallopavo merriami)

The Merriam's wild turkey is a subspecies that ranges through the Rocky Mountains and the neighboring prairies of Wyoming, Montana, and South Dakota, as well as high mesa country in New Mexico, Arizona, and southern Utah. Merriam's wild turkeys live in ponderosa pine and mountainous regions. Their tails and lower back feathers have white tips and purple and bronze reflections. In general, wild turkeys are an upland game bird native to North America and the heaviest member of the diverse Galliformes. Adult males, called toms or gobblers, have a large, featherless, reddish head, red throat, and red wattles on the throat and neck. Juvenile males are called jakes. The difference between an adult male and a juvenile is that jakes have a very short beard and a tail fan with longer feathers in the middle. Females, called hens, have feathers that are duller overall and in shades of brown and gray. Adult males normally weigh 11 to 24 pounds and measure 39 to 49 inches long, while adult females are 5.5 to 11.9 pounds and measure 30 to 37 inches long. Wild turkeys seemingly can adapt to virtually any dense native plant community as long as coverage and openings are widely available.

Mountain bluebird (Sialia currucoides)

The mountain bluebird is a medium-sized bird measuring 6.3 to 7.9 inches long and weighing around 1.1 ounces. Mountain bluebirds have light underbellies and black eyes. Adult males have thin bills and are bright turquoise-blue and somewhat lighter underneath. Adult females have duller blue wings and

tail, grey breast, grey crown, throat and back. In fresh fall plumage, the throat and breast of adult females are tinged with red-orange, brownish near the flank contrasting with white tail underparts. Mountain bluebirds are omnivores that eat spiders, grasshoppers, flies and other insects, and small fruits. Their breeding habitat is open country across western North America, including mountainous areas as far north as Alaska. Mountain bluebirds nest in pre-existing cavities or in nest boxes. Among birds that nest in cavities but cannot excavate them on their own, competition is high for nest sites.

Osprey (Pandion haliaetus)

The osprey is a diurnal, fish-eating, bird of prey measuring 20 to 26 inches long with a 50 to 71 inch wingspan and weighing 2.0 to 4.6 pounds. The sexes appear fairly similar with pure white underparts, deep glossy brown upperparts, white breasts sometimes streaked with brown, and white heads with a dark mask across the eyes that extends to the sides of the neck. Ospreys typically eat fish weighing 5.3 to 10.6 ounces and measuring 9.8 to 13.8 inches long, but will eat fish from 1.8 ounces up to 4.4 pounds. Ospreys are found across a wide variety of habitats and will nest in any type of location located near a body of water providing an adequate food supply. They inhabit all continents except Antarctica, although in South America occur only as a non-breeding migrant. In North America, ospreys breed from Alaska and Newfoundland south to the Gulf Coast and Florida, wintering further south from the southern U.S. through to Argentina.

Pinyon jay (Gymnorhinus cyanocephalus)

The pinyon jay is between the North American blue jay and Eurasian jay in size. Pinyon jays are bluish-grey colored with deeper head coloring and a whitish throat with black bill, legs, and feet. They are highly social, often forming flocks of 250 or more. Seeds of pinyon pine are their staple food, but they supplement their diet with fruits, berries, and insects. Pinyon jays interact in a mutual relationship with the pinyon, as pinyon trees provide pinyon jays with food, nesting and roosting sites, and breeding stimuli, while pinyon jays influence seed dispersal, establishment, and genetic structure of pinyon populations. Nests are always part of a colony, but there is never more than one nest per tree. Pinyon jays are permanent residents of pinyon-juniper (*Pinus-Juniperus* spp.) woodlands in the northwestern U.S. and low-elevation ponderosa pine (*Pinus ponderosa*) forests in the southwestern U.S. Pinyon jays inhabit central Oregon to western South Dakota, south to northern Baja California, northwestern and east-central Arizona, central New Mexico, and western Oklahoma. Pinyon-juniper woodlands composed primarily of Colorado pinyon (*P. edulis*) and Utah juniper (*J. osteosperma*) cover vast acreages in Colorado, northern Arizona, Utah, and Nevada.

Sharp-tailed grouse (Tympanuchus phasianellus)

The plains sharp-tailed grouse is a medium-sized prairie grouse. Adults have a relatively short tail with the two central (deck) feathers that are square-tipped and somewhat longer than their lighter, outer, tail feathers. The plumage of plains sharp-tailed grouse is mottled dark and light brown against a white background, lighter on the underparts, and a white belly uniformly covered in faint "V"-shaped markings. Adult males have a yellow comb over their eyes, a violet display patch on their neck, and irregular markings on deck feathers running parallel to the feather shaft as compared to the regular horizontal markings on females. On average, males weigh 33.5 ounces and females 29.0 ounces. Plains sharp-tailed grouse range from the northern Great Plains in southern Alberta and Saskatchewan, eastern Montana, North and South Dakota, Nebraska, and northeastern Wyoming. Suitable habitat is a mixed-grass prairie mosaic of native grasslands, cropland, and brushy/woody riparian draws, creeks, and rivers for a winter food source above the snow cover as buds and berries. Habitat selection and usage vary by season with lekking, nesting, brood rearing, and winter habitat selected and utilized differently. Leks are usually made up of short, relatively flat, native vegetation. Plains sharp-tailed grouse select

nest sites with dense residual vegetation and a shrubby component, while winter habitat usage shifts toward denser cover for thermal insulation.

Pygmy nuthatch (Sitta pygmaea)

The pygmy nuthatch is a tiny songbird about four inches long weighing 0.4 ounces. All plumages are similar with a warm gray cap, blue-gray upper-parts, and whitish underparts. Pygmy nuthatches are usually found in pines (especially ponderosa pines), Douglas-firs, and other conifers. Most often they clamber acrobatically in the foliage of these trees, feeding on insects and seeds. Pygmy nuthatches nest in cavities in dead stubs of conifers, lining the bottom of the cavity with pine-cone scales, plant down, and other soft plant and animal materials and sometimes filling cracks or crevices around the entrance with fur. Pygmy nuthatches are highly gregarious and a nesting pair may have other birds as helpers. They roost communally with as many as 100 birds huddled in a single tree cavity. Pygmy nuthatches range from southern British Columbia south through various discontinuous parts of the western United States (northwest United States, Sierra Nevada range, and southern Rockies) to central Mexico.

Red-naped sapsucker (Sphyrapicus nuchalis)

The red-naped sapsucker is a medium-sized North American woodpecker measuring 7.5 to 8.3 inches long and weighing 1.1 to 2.3 ounces. Adults have a black head with a red forehead, white stripes, and a red spot on the nape, in addition to a white lower belly, white rump, yellow breast, yellow upper belly, and black on the back and wings with white bars and a large white wing patch. Adult males have a red throat patch, while females have red on the lower part of the throat and white on the upper part. Breeding habitat is mixed forests in the Rocky Mountains and Great Basin areas of North America. Red-naped sapsuckers nest in a cavity in a dead tree and migrate south and inhabit lower elevations to overwinter.

Violet-green swallow (Tachycineta thalassina)

The violet-green swallow is a small North American passerine bird. With an average body length about 5.3 inches, violet-green swallows are slightly shorter and appear more compact in flight compared to other members of the Hirundinidae family. Their long pointed wings and slim streamlined body evolved to catch insects while in flight. These aerial insectivores are distributed along the west coast from Alaska to Mexico, extending as far east as Montana and Texas. With an appearance very similar to the tree swallow, these individuals can be identified by the white rump side-patches that appear to separate their green back and purple tail. Violet-green swallows are secondary cavity nesters, found in a number of habitats including deciduous and coniferous forests. In addition to nesting in tree holes within these habitats, they are also widely observed nesting in the cracks of large cliffs.

Virginia's warbler (Oreothlypis virginiae)

The Virginia's warbler is a small bird, only 4.0 to 4.5 inches in length. Virginia's warblers are mainly gray in color with a lighter colored under-belly and a white eye ring. Their rumps and under-tail coverts are yellow. They also have a yellow patch on their breast and a partially hidden, dark-reddish crest. Females are slightly duller with less yellow on their breasts. Virginia's warbler are common in dense oak and pinyon woodlands and brushy streamside hills at altitudes ranging from 6,000 to 9,000 feet. They build nests on the ground, hidden amongst dead leaves and tufts of grass at the base of a shrub or young tree. Nests are cup-shaped and constructed from moss, grass, strips of bark, and roots. Virginia's warblers summer in the southwestern United States and migrate as far south as Belize during winter. The species' eastern range is central and southern mountains of Colorado, central Wyoming, and central and western New Mexico.

Warbling vireo (Vireo gilvus)

The warbling vireo is a small North American songbird. Adults are 4.7 inches long and weigh 0.42 ounces. They are mainly olive-grey on the head and upperparts with white underparts, brown eyes, a light front of the face, thick blue-grey legs, and a stout bill. Western birds are generally smaller and have darker grey crowns. Warbling vireos forage for insects in trees, hopping along branches and sometimes hovering. They also eat berries, especially before migration and in winter. Warbling vireos make a deep cup nest suspended from a tree branch or shrub. Males help with incubation and may sing from the nest. Breeding habitat for warbling vireos is open deciduous and mixed woods from Alaska to Mexico and the Florida Panhandle, often along streams. The species is a neotropical migrant to Mexico and Central America.

Williamson's sapsucker (Sphyrapicus thyroideus)

The Williamson's sapsucker is a medium-sized woodpecker belonging to the genus *Sphyrapicus* (sapsuckers). Adult males are iridescent black on their head, back, sides, and tail with a white stripe behind the eye and a lower white stripe across each side of the head, a red chin, and a bright yellow belly. Males also have black wings with large white patches. Females are completely different in appearance: mainly black, with a pale yellow breast, a brownish head with black streaking, and fine barring on the back, breast and side. Williamson's sapsuckers excavate a new nesting cavity each year, sometimes reusing the same tree, and feed on sap, mainly from conifers, though insects are their main food source during the nesting season. Breeding habitat is open forested areas with conifers, mainly ponderosa pine, douglas-fir, and grand fir. Partially migratory, Williamson's sapsuckers breed in western North America from northern Mexico as far north as British Columbia. They are permanent residents in some parts of their range and migrate to central Mexico for winter from other parts.

Wilson's warbler (Cardellina pusilla)

The Wilson's warbler is a small passerine ranging from 3.9 to 4.7 inches long with a wingspan of 5.5 to 6.7 inches and weighing 0.2 to 0.4 ounces. Wilson's warblers have a plain green-brown back and yellow underparts, plus a small black cap in males. They are insectivores, feeding primarily on insects gleaned from leaves and twigs or caught by fly-catching. The species' breeding habitat is fairly open woodlands with undergrowth or shrubs and thickets in moist areas with streams, ponds, bogs, and wet clearings. The cup nest is typically constructed of vegetation and lined with grasses and hair, often sunken into moss or sedges at the base of shrubs. Wilson's warblers breed in northern Canada and the western United States, migrating to the tropics for winter. The species prefers secondary growth, riparian habitats, lakes, montane and boreal forests with overgrown clear cuts year-round.

Insects

Tawny crescent butterfly (Phyciodes batesii)

The tawny crescent is a butterfly of the family Nymphalidae that occurs in North America and has a wingspan of 1.0 to 1.5 inches. The upper side is dark brown with orange and the forewing has a pale post-median band with sub-marginal bands. Both sexes have black and white antenna knobs and the female's black sub-marginal band has dots. Adults fly once a year between May and July. During this time females lay their eggs in groups on host plants. Third-instar caterpillars hibernate.

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***Western Area Power Administration
Reauthorization Project***

Appendix E

Routine Maintenance Programmatic Agreement for
Archaeological Resources Protection

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APPENDIX E

ROUTINE MAINTENANCE PROGRAMMATIC AGREEMENT FOR ARCHAEOLOGICAL RESOURCES PROTECTION

Western Area Power Administration (WAPA) manages its rights-of-way in accordance with the National Historic Preservation Act, other regulations that protect historic resources, and Forest Service authorizations and agreements. Specifically, WAPA's Section 106 compliance for routine maintenance of its facilities in Colorado, Nebraska, and Utah are governed by a Programmatic Agreement, executed in 2015, and referred to as the Routine Maintenance Programmatic Agreement. This Programmatic Agreement identifies the procedures WAPA uses to avoid or treat cultural resources in the project area.

As described in 40 CFR 1502.21 the Routine Maintenance Programmatic Agreement is incorporated by reference and can be found in the "Cultural Resources" section at the following website:
<https://www.wapa.gov/transmission/EnvironmentalReviewNEPA/Pages/vegetation-management.aspx>.

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***Western Area Power Administration
Reauthorization Project***

Appendix F

Consultation Letters

APPENDIX F

CONSULTATION LETTERS

Appendix F includes letters of consultation with the U.S. Fish and Wildlife Service and the State Historic Preservation Office.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mountain-Prairie RegionIN REPLY REFER TO:
FWS/R6
ES/ER10/0333MAILING ADDRESS:
P.O. Box 25486, DFC
Denver, Colorado 80225-0486STREET LOCATION:
134 Union Boulevard
Lakewood, Colorado 80228-1807

JUN 04 2010

Memorandum

To: Environmental Manager, Western Area Power Administration
Attention: James Hartman

From: Assistant Regional Director, Ecological Services, Region 6

Subject: Maintenance and Vegetation Management Along Existing Western Area Power Administration Transmission Line Rights of Way on National Forest System Lands, Colorado, Utah, and Nebraska

The U.S. Fish and Wildlife Service (USFWS) has reviewed the Western Area Power Administration's (Western) Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for vegetation management along rights-of-way (ROW) on National Forest System lands in the States of Colorado, Nebraska, and Utah (75 FR 17913; April 8, 2010). Western proposes to change its management from reactively cutting danger trees and annual re-entry cycles on ROW to a more proactive approach that incorporates integrated vegetation management. The vegetation management practices are intended to reduce the risk of vegetation growing into transmission lines or falling on lines, and to sustain access for transmission line maintenance.

The USFWS has identified the following fish and wildlife resource issues for your consideration in the EIS. These issues are provided pursuant to our authorities under the National Environmental Policy Act (NEPA), the Migratory Bird Treaty Act (MBTA); Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.); and Fish and Wildlife Act of 1956. Section 1 of this memorandum conveys issues that should be addressed in the NEPA compliance document for this project. Section 2 of this memorandum addresses the interagency consultation responsibilities under section 7 of the ESA.

Section 1

The EIS should specifically evaluate potential impacts to migratory birds and establish measures to avoid and minimize impacts to birds. The MBTA prohibits the take of migratory birds, their parts, nests, eggs, and nestlings, and Executive Order 13186, issued on January 11, 2001, affirmed the responsibilities of Federal agencies to comply with the MBTA.

In addition, in 2006 and 2008, the Department of Energy (DOE) and National Forest Service, respectively, completed Memorandums of Understanding (MOU) with the USFWS to help implement the Executive Order. The MOUs strengthen migratory bird conservation through enhanced collaboration, and identify specific opportunities whereby cooperation between the Parties will substantially contribute to the conservation and management of migratory birds and their habitats.

To ensure ground-disturbing activities do not result in the “take” of an active nest or migratory bird protected under the MBTA, we recommend:

- a. Any groundbreaking activities or vegetation treatments should be performed before migratory birds begin nesting or after all young have fledged to avoid incidental take;
- b. If activities must be scheduled to start during the migratory bird breeding season, Western should take appropriate steps to prevent migratory birds from establishing nests in the potential impact area. These steps could include covering equipment and structures and use of various excluders (e.g., noise). Birds can be harassed to prevent them from nesting on the site.
- c. If activities must be scheduled during the migratory bird breeding season, a site specific survey for nesting birds should be performed starting at least two weeks prior to vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see b., above), until all young have fledged and are capable of leaving the nest site;
- d. If nesting birds are found during the survey, appropriate spatial buffers should be established around nests. Vegetation treatments within the buffer areas should be postponed until the birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.

We recommend use of the Utah Field Office *Guidelines for Raptor Protection from Human and Land Use Disturbances* (Romin and Muck 2002) which were developed in part to provide consistent application of raptor protection measures and provide full compliance with environmental laws regarding raptor protection. Raptor surveys and mitigation measures are provided in the Guidelines as recommendations to ensure that proposed projects will avoid adverse impacts to raptors. Locations of existing raptor nests should be identified prior to the initiation of project activities. Appropriate spatial buffer zones of inactivity should be established during crucial breeding and nesting periods relative to raptor nest sites or territories. Arrival at nesting sites can occur as early as December for certain raptor species. Nesting and fledging can continue through August.

The scope of the EIS is limited to National Forest Service lands. If project-related activities also will occur on other Federal, state, and private lands, we recommend these be included in the EIS.

The Forest Service is proposing to develop activity restrictions and requirements in areas of known declining plant species. The EIS also should identify activity restrictions and conservation measures for proposed, threatened, endangered and candidate plant species.

The NOI indicates that vegetation treatments may include logging, chipping, grinding of trees and other activities. We assume other activities may include the possible use of herbicides for noxious weed control or for controlling tall growth species in forested areas. We recommend the following considerations in selecting herbicides and treatment methods to evaluate in the EIS:

- Minimize the use of herbicides;
- Preferentially select herbicides that:
 - * are non-toxic to honeybees and other pollinators,
 - * do not bioaccumulate,
 - * rapidly degrade in the environment,
 - * pose the least risk to aquatic life, and
 - * are less mobile and will not contaminate groundwater or surface water;
- Select additives (e.g., surfactants, adjuvant, dyes) that are less toxic than the herbicide; and
- Use spot treatment methods to target specific areas rather than broad-scale treatments.

To prevent the spread of aquatic nuisance species, we recommend cleaning equipment prior to moving between hydrologic drainage systems.

Section 2

Federal agencies have specific additional responsibilities under section 7 of the ESA. Current species lists for counties can be obtained from the USFWS website <http://www.fws.gov/mountain-prairie/endsp>. The proposed action should be reviewed and a determination made if the action will affect any listed species or their critical habitat. If it is determined by the Federal agency, with the written concurrence of the USFWS, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is complete, and no further action is necessary.

Formal consultation (50 CFR 402.14) is required if the Federal agency determines that an action is “likely to adversely affect” a listed species or will result in jeopardy or adverse modification of critical habitat (50 CFR 402.02). Federal agencies also should confer with the

USFWS on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10). A written request for formal consultation or conference should be submitted to the USFWS with a completed biological assessment and any other relevant information (50 CFR 402.12).

Only a Federal agency can enter into formal ESA section 7 interagency consultation with the USFWS. A Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment by giving written notice to the USFWS of such a designation. However, the ultimate responsibility for compliance with ESA section 7 remains with the Federal agency.

Your attention also is directed to section 7(d) of the ESA, as amended, which underscores the requirement that the Federal agency or the applicant shall not make any irreversible or irretrievable commitment of resources during the consultation period which, in effect, would deny the formulation or implementation of reasonable and prudent alternatives regarding their actions on any endangered or threatened species.

We appreciate the opportunity to provide these comments. If you need further assistance, please contact Dave Carlson, Coordinator for Conservation Planning Assistance, at dave_e_carlson@fws.gov or by telephone at (303) 236-4254.

References

Romin, L.A., and J.A. Muck. 2002. Utah field office guidelines for raptor protection from human and land use disturbances. U.S. Fish and Wildlife Service. Salt Lake City, Utah.

cc: U.S. Forest Service/Rocky Mountain Regional Office (attn: David Loomis)

NOV 19 2013

Mr. Kurt Broderdorp
U.S. Fish and Wildlife Service
764 Horizon Dr. Ste B
Grand Junction, CO 81506-8721

Dear Mr. Broderdorp:

In response to your e-mail request of September 17, 2013, Western has enclosed copies of the current Operation and Maintenance plans (plans) for some sections of transmission lines included in the scope of the environmental impact statement (EIS) being jointly prepared by Western and the U.S. Forest Service. The Draft EIS addresses reauthorization of permits for maintenance and vegetation management along Western's existing transmission lines on Forest Service managed lands in Colorado, Utah, and Nebraska. The attached plans cover approximately 1/3 of the rights-of-way that are addressed in the EIS. The other transmission lines are not covered under plans because they were authorized by memoranda between the Bureau of Reclamation and the Forest Service. One purpose of the EIS is to update the authorizations.

The titles of the enclosed plans:

1. Operation and Maintenance Plan. Ault-Craig 345 kV Transmission Line. For those Right-of-way Portions Crossing the Hahns Peak and North park Ranger Districts, Routt National Forest and Red Feather Ranger District, Roosevelt National Forest.
2. Department of Energy, Western Area Power Administration, Operations, Maintenance, and Access Plan. Rifle-San Juan 345-kV Transmission Line, Montrose to Hesperus Segment. Uncompahgre and San Juan National Forests, June 28-July 1993. Exhibit E.
3. Department of Energy, Western Area Power Administration, Operations, Maintenance, and Access Plan. Rifle-San Juan 345-kV Transmission Line, Montrose to Hesperus Segment. Uncompahgre and San Juan National Forests, April 1994.
4. Construction, Operation, and Maintenance Plan Covering the Variable Width Right-of-way on the Grand Mesa-Uncompahgre-Gunnison and San Juan National Forests as traversed by the Rifle to San Juan Single Circuit 345-kV Transmission Line. September 1986.
5. Construction, Operation, and Maintenance Plan. Blue River to Gore Pass Single Circuit 230/345-kV Transmission Line Covering the Corridor and Right-of-way on Lands Administered by Routt and White River National Forest, October 1986.

2

6. Tri-State Generation and Transmission Association, Inc. Construction, Operation, and Maintenance Plan for Hayden-Gore Pass 345-kV Transmission Line. December 1985.

Please note that the enclosures do not include plan and profile drawings and structure location maps. Most of these drawings are not legible. Better quality maps accompany the Draft EIS and the draft biological assessments, which you have access to.

My telephone number is (720) 962-7255, and my e-mail is Hartman@wapa.gov.

Sincerely,

James G. Hartman

Jim Hartman
Western Area Power Administration

Enclosures

cc:
Mr. Douglas Laye
Section 7 Coordinator
U.S. Fish and Wildlife Service, Region 6
Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486

bcc:
A7400 (RF, Hartman)
Administrative Record

A7400:JHartman:x7255;lou;11/19/13: K Broderdorp US Fish and Wildlife Service

APR 10 2014

Ms. Patty Gelatt
Western Colorado Supervisor
U.S. Fish and Wildlife Service
Ecological Services Office
Western Colorado Field Office
445 West Gunnison Ave. Suite 240
Grand Junction, CO 81501-5720

Subject: Western Area Power Administration and U.S. Forest Service; Transmission Line Rights-of-Way and Routine Maintenance Reauthorization and Proposed Change in Vegetation Management Practices in Colorado, Nebraska, and Utah. Consultation, Section 7 of the Endangered Species Act (FWS/R6 ES/ER10/0333)

Dear Ms. Gelatt:

Summary

The U.S. Department of Energy, Western Area Power Administration (Western) and U.S. Forest Service Regions 2 and 4 (Forest Service) request concurrence from the U.S. Fish and Wildlife Service (Service) on not likely to adversely affect (NLAA) determinations for the plant and animal species in Tables 1 and 2 (enclosed). Enclosed are the Biological Assessments (BA) for plants and animals prepared for the forests with listed threatened and endangered species and species proposed for listing.

Plants:

Ute ladies' tresses orchid (*Spiranthes diluvialis*): Location: Ashley National Forest. (Elliott, Brian, 2014). Western proposes a NLAA determination for *Spiranthes diluvialis* on Western's ROW based on its commitment to complete field surveys during the appropriate time of year in 2014 (about August) and before implementing ground disturbing activities. If plants are found during the survey, Western will reinitiate consultation with the Service and implement additional conservation measures agreed to in the consultation.

Animals:

Canada Lynx (*Lynx canadensis*) on the following forests: Ashley National Forest (ANF), Arapaho-Roosevelt National Forest (ARNF), Grand Mesa Uncompahgre and Gunnison National Forests (GMUGNF), Medicine Bow-Routt National Forest (MBRNF), Pike-San Isabel National Forest (PSNIF), San Juan National Forest (SJNF), White River National Forest (WRNF).

Spotted Owl (*Strix occidentalis lucida*): ANF, GMUGNF, PSNIF, SJNF.

Southwest Willow Flycatcher (*Empidonax traillii extimus*): SJNF.

Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*): ARNF, GMUGNF, MBRNF, PSINF, SJNF, WRNF.

Project Background and Description

Western and the Forest Service Region 2 are joint lead agencies on an environmental impact statement (EIS) that analyzes the effects of a proposal to reauthorize Western's existing transmission lines on National Forest System (NFS) lands, including Western's proposed change in vegetation management practices. The Ashley National Forest in Forest Service Region 4 is included in the proposal. Enclosed are the BAs and additional information in compliance with Section 7 of the Endangered Species Act (ESA).

The transmission line rights-of-way (ROW) are located on 8 forests in Colorado, Nebraska, and Utah. The EIS covers approximately 273 miles of transmission line and 4,055 acres of ROW, of which approximately 1,600 acres would be treated over the next few years, depending on the availability of resources, as described in the Draft EIS. In accordance with the Council on Environmental Quality National Environmental Policy Act (NEPA) regulations, Department of Energy NEPA regulations, and Forest Service NEPA regulations, the Draft EIS has been reviewed by federal, state, and local agencies; tribes, and the Environmental Protection Agency (EPA). Copies of the Draft EIS were sent to your office during the review period. The Draft EIS, detailed maps, and other information on the NEPA review is available at: <http://ww2.wapa.gov/sites/western/transmission/infrastructure/Pages/Western%20FS%20EIS.aspx>. The Department of Interior had no comments on the Draft EIS. The Environmental Protection Agency rated the Draft EIS as "Lack of Objections." No comments were received from the general public, and comments from one local agency and one federal agency encouraged Western and the Forest Service to move forward with the Proposed Action. The Proposed Action has not changed in response to the public and agency review, it is Western's preferred alternative. Western and the Forest Service propose to issue the Final EIS as soon as possible after Western, the Forest Service, and the Service complete consultation under the Endangered Species Act. The Final EIS is scheduled for public release in early August 2014, and Western's Record of Decision is scheduled for early November 2014.

Western must improve its management of vegetation along its 273 miles of ROWs on NFS lands in Colorado, Nebraska, and Utah, with the following purposes and objectives:

- To ensure that Western can safely and reliably operate and maintain its existing electrical transmission facilities to deliver electrical power.
- To further Western's compliance with National Electrical Reliability Corporation's Transmission Vegetation Management Reliability Standards, industry standards, and Western's policy and guidance.
- To ensure that Western's transmission facilities remain operational for the useful life of the facilities.
- To protect public and worker safety.
- To reduce the risk of wildfires caused by transmission lines and the risk to the facilities from fire.
- To control the spread of noxious weeds.
- To maintain sound relationships with landowners and land managers.

- To ensure that Western has access to its transmission facilities for maintenance and emergency response.
- To ensure that the costs associated with maintaining the transmission system can be controlled following sound business principles, including achieving technical and economic efficiencies to minimize impacts on transmission line tariff costs and electrical power rates.
- To allow flexibility to accommodate changes in transmission system operation and maintenance requirements.
- To minimize impacts to environmental resources.

The Forest Service must re-authorize and issue Special Use Permits for each transmission line and authorize Western to change the way it manages vegetation along its ROWs on NFS lands.

The enclosed BAs were prepared for the national forests on which listed endangered or threatened species, and species proposed for listing may occur, as indicated by the county lists obtained from the Service. Enclosed is a DVD with the BAs and other documents with detailed analyses and more information on the rationale for the determinations. The discussion of impacts for the purposes of Section 7 of ESA considers the direct, indirect and cumulative impacts that would be expected to occur from the proposed changes in the vegetation management program and continued routine maintenance activities on the transmission lines, ROWs, and access routes.

1. Animals

Table 1 summarizes, by forest, the listed animal species for each forest, their current status under the ESA, whether a detailed evaluation and determination was made for the species, and the result of the determination (e.g., no effect, not likely to adversely affect, or likely to adversely affect). On the Nebraska National Forest, Western and the Forest Service determined that there would be “no effect” to listed animal species.

1.1. Terrestrial Animals

1.1.1 Canada Lynx (*Lynx canadensis*)

The Canada lynx may occur on 7 of the 8 forests covered by the analysis in the EIS and the BAs. The Nebraska National Forest does not contain suitable habitat for the Canada lynx. A summary of the determinations for each of the 7 forests is included below. The BAs followed guidance presented in the Southern and Northern Rockies Lynx Amendments. Based on discussions with the Service, Western developed, in coordination with the Forest Service and your office, an additional design feature (conservation measure) that will be a part of the implemented Proposed Action. The design feature would facilitate lynx use of home ranges and improve lynx habitat connectivity in areas where the transmission line ROWs may introduce a gap that lynx may be reluctant to cross. The design feature is included in the BAs as appropriate and will be in the Final EIS. In summary, the design feature will leave blocks of denser vegetation, including “undesirable” vegetation species (undesirable as defined in the EIS and relevant to ROW management for transmission lines), and shrubby desirable vegetation. The blocks will be left in areas where a gap between effective lynx habitat may result from vegetation management activities within Western’s ROWs.

Arapaho-Roosevelt National Forests, Colorado

Information in this section summarizes the analysis in the BA for the Arapaho and Roosevelt National Forests. The effects analysis discusses the direct, indirect & cumulative impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Laramie Lynx Analysis Unit (LAU) and the Williams Fork LAU. Under the Proposed Action areas of incompatible vegetation within the ROWs would be cleared and ROW conditions would be converted to grass, forb and compatible shrub dominated community type unless part of a mitigation area with blocks of denser vegetation cover. Therefore these areas should be re-categorized as Non-Habitat as there may be little winter foraging or hiding cover for snowshoe hares or lynx. For the purposes of this assessment, lynx habitats were modeled using a geographic information system (GIS) to track the likely impacts of mountain pine beetle (MPB) mortality on lodgepole pine, as this used the best available scientific information.

The Laramie LAU would see a conversion of approximately 80 acres of suitable habitats (e.g., Denning, Winter Foraging, and Other habitats) to Non-Habitat over the course of a one to a few years, given that Western has already done considerable danger tree mitigation in this LAU (and therefore not much of the ROWs still need additional removal of incompatible vegetation). These impacts would include spruce-fir habitats, aspen, and lodgepole pine regardless of its state of recovery from MPB infestations or previous treatments, where these vegetation types pose a threat to Western's infrastructure. These impacts would be approximately 0.12 percent of currently available suitable habitats in the Laramie LAU at this time. Also, approximately 41.8 acres of Currently Unsuitable and 7 acres of Non-Habitat acres, which are currently unsuitable for lynx use, would be maintained indefinitely as Non-Habitat. In total, approximately 121.8 acres of potential habitat would be managed indefinitely in a grass, forb, and shrub vegetation profile, rendering these acres as Non-Habitat. This would raise the total percent of Non-Habitat in the Laramie LAU by 0.15 percent. We modeled that habitats within the Laramie LAU are 43.58 percent Currently Unsuitable due to MPB infestations. This is beyond the recommended threshold of a LAU having no more than 30 percent of lynx habitats in an early seral stage. We estimated through GIS modeling, that approximately 34,439 acres of lodgepole pine may have succumbed to MPB in the Laramie LAU. The additional conversion of 121.8 acres of potential habitats along Western's ROW in this LAU are very minor (0.15 percent of LAU, or 0.4 percent of remaining suitable habitat left in Laramie LAU), but additional loss of habitat may be considered a negative impact.

The Williams Fork LAU would see a conversion of approximately 17.4 acres of suitable habitats (Denning, Winter Foraging & Other habitats) to Non-Habitat. This is approximately 0.05 percent of the total suitable lynx habitat in the Williams Fork LAU. Additionally, 64.5 acres of Currently Unsuitable habitat would be converted to Non-Habitat as well. In total, 81.9 acres would be converted to Non-habitat in perpetuity, which is approximately 0.07 percent of the total LAU. At this time, we modeled that habitats within the Williams Fork LAU are 45.89 percent Currently Unsuitable. This is beyond the recommended threshold of a LAU having no more than 30 percent of lynx habitats in an early seral stage. We estimated, through GIS modeling, that approximately 53,811.4 acres of lodgepole pine may have succumbed to MPB in the Williams Fork LAU. The additional conversion of 81.9 acres of potential habitats along Western's ROW in this LAU are very minor (0.07 percent of LAU, or 0.22 percent of remaining suitable habitats

left in the Williams Fork LAU), but additional loss of habitat may be considered a negative impact. The proposed project does not occur within Lynx Linkage Areas.

As discussed in greater detail in the BA for the ARNF, the effects of the project could result in minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there may be no remaining effective snowshoe hare or lynx habitat. The conversion of suitable habitats to Non-Habitat would not likely affect the ability of a lynx to establish a home range or prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs. The likely increase in snowmobiling activities into lynx habitat may reduce habitat connectivity and habitat effectiveness for resident lynx in some localized areas, but would not have a likely impact to dispersing lynx. However, as the surrounding forests recover from MPB mortality, suitable habitat may redevelop, and at that time, mitigation using blocks of denser vegetation cover could be added to improve connectivity across the ROWs and help to maintain movements of resident lynx. Within the two LAUs, the effects of the proposed action would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx or lynx habitat would not likely rise to the level of "take." Therefore, for the reasons discussed above and in the BA, the Proposed Action "may affect, and is not likely to adversely affect" Canada lynx.

Ashley National Forest (Forest Service Region 4), Utah

Information in this section summarizes the analysis in the BA for the Ashley National Forest. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Carter Creek-Lower Flaming Gorge Reservoir LAU (CCLAU), Lower Flaming Gorge Reservoir Green River Crouse Creek LAU (GRLAU), Lower Flaming Gorge Reservoir LAU (LFRLAU), Little Brush Creek LAU (LBLAU), and Upper Ashley Creek Big Brush LAU (UALAU).

The BA evaluated the effects of the Proposed Action on relevant project standards and guidelines found in the Northern Rockies Lynx Assessment (NRLA) for management of existing infrastructure. Impacts in the CCLAU, GRLAU, LFRLAU, LBLAU, and UALAU would not impact effective lynx habitat, but do occur within mapped Primary and Secondary habitats characterized by montane forests and a very small area of spruce-fir forests at the highest elevations along the Flaming Gorge-Vernal No.3 ROW. The effects of the Proposed Action could result in a very minor reduction in available lynx habitat in the LAUs (e.g., 0.2 percent of lynx habitat occurs in the ROW of the LFRLAU, and impacts to other LAUs are less than that). The conversion of 49.2 acres of Primary lynx habitats and 18.4 acres of Secondary lynx habitats across all LAUs to Non-Habitat would not affect the ability of a lynx to establish a home range or prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs. The Proposed Action adheres to Ashley National Forest's Forest Plan (given the adherence to the NRLA), and under the NRLA, the Proposed Action meets conservation measures including terms and conditions, reasonable and prudent measures, standards, and guidelines. This project would not add to the amount of Currently Unsuitable habitat, rather it would convert Primary and Secondary habitats to Non-Habitat conditions. Because the conversion of up to 0.2 percent of habitat in the LFRLAU (and even fewer acres in other LAUs) occurs within ROWs that have been managed for many years, have not been highly effective habitat for many years, and are located in areas seeing other impacts diminishing the likelihood that lynx would reside in

proximity to the ROWs, the effects of these habitat losses and conversions would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx habitat would not rise to the level of “take.” Therefore, for the reasons discussed above and in more detail in the BA, the Proposed Action “may affect, but is not likely to adversely affect” Canada lynx or its habitats.

Grand Mesa, Uncompahgre and Gunnison National Forests, Colorado

Information in this section summarizes the analysis in the BA for the GMUGNF. The effects analysis discusses the impacts of Western’s Proposed Action on the lynx’s ability to meet its life history requirements in the Huntsman Mountain LAU, Chalk Mountain LAU, Crater Lake LAU, Black Mesa LAU, Pitkin LAU, Upper Tomichi LAU, Spring Creek LAU, and Lone Cone LAU.

The analysis in the BA indicates that the effects of the project may result in minor direct reductions in available and effective lynx habitat in the ROWs given Western’s many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there may be no remaining effective snowshoe hare or lynx habitat. The conversion of Primary and Secondary Suitable and Primary and Secondary Unsuitable habitats to Non-Habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs. There would likely be decreased effectiveness of habitats along the ROWs, and likely increased human activities along the ROWs, which may further diminish habitat effectiveness. The potential increase in snowmobiling activities into effective blocks of lynx habitat within the Crater Lake and Chalk Mountain LAUs may create a reduction in habitat connectivity for resident lynx, or may reduce the ability for a lynx to establish a home range straddling the ROW. Within the Crater Lake and Chalk Mountain LAUs mitigation to maintain connectivity could be applied to the treated ROWs. Leaving blocks of denser vegetation cover would help to maintain habitat connectivity and help to prevent the effects of habitat fragmentation for resident lynx.

Within all LAUs, aside from the Crater Lake and Chalk Mountain LAUs, the effects of these impacts are unlikely to produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx or lynx habitat would not likely rise to the level of “take.” However, given potential impacts to habitat connectivity and habitat effectiveness in the Crater Lake and Chalk Mountain LAUs, and a potential decreased effectiveness of habitats around the North Fork-Rifle ROW, there could be a negative impact in the ability for lynx to fully utilize habitats in these LAUs as a home range. Using mitigation to retain blocks of denser vegetation cover would greatly decrease the effects of habitat fragmentation for resident lynx, but this would not completely avoid impacts. Therefore, for the reasons discussed above and in more detail in the BA, the Proposed Action “may affect, but is not likely to adversely affect” Canada lynx.

Medicine Bow-Routt National Forests, Colorado

Information in this section summarizes the analysis in the BA for the MBRNF in Colorado. The effects analysis in the BA discusses the impacts of Western’s Proposed Action on the lynx’s ability to meet its life history requirements in the Horse Thief LAU, Mount Werner LAU, Walton Peak LAU, Lynx Pass LAU, and Red Dirt LAU.

Given the dominance of the Buffalo Pass area by mostly ineffective habitat for long-term lynx residency, the Proposed Action would not likely have significant additional or cumulative impacts on lynx or the general effectiveness or condition of habitats in the Mount Werner or Horse Thief LAUs. As the eastern side of the Mount Werner LAU recovers from MPB, more suitable lynx habitat in the area would be available for snowshoe hare and lynx, and this project would not preclude the ability for snowshoe hare or lynx to possibly use these habitats, but the ROWs may diminish habitat connectivity for a lynx using a home range within a larger block of suitable and effective habitats.

In the Lynx Pass & Red Dirt LAUs, the recent MPB epidemics, danger tree mitigation and salvage logging has left large areas, including areas within the ROWs, with widespread conversion of suitable lynx habitats to stand initiation stage forests. Applying mitigation by retaining blocks of denser vegetation cover in the parts of the ROWs with surrounding suitable habitat, now or in the future, would help to retain habitat connectivity for movements of resident lynx and could help to retain winter habitat conditions for both lynx and snowshoe hares in the Lynx Pass and Red Dirt LAU.

The effects of the project would result in minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there may be no remaining effective snowshoe hare or lynx habitat. The conversion of Suitable and Unsuitable habitats to Non-Habitat would not likely affect the ability of a lynx to establish a home range or prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs. There would likely be decreased effectiveness of habitats along the ROWs through increased potential snowmobiling, snow compaction, and decreased snowshoe hare densities. The managed ROWs may reduce habitat connectivity for a resident lynx using a home range, or may change how a home range would be spatially located (e.g., to avoid crossing ROWs), but the ROWs would not likely impact dispersing lynx. Within the affected LAUs, the effects of these impacts would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx or lynx habitat would not likely rise to the level of "take." However, given that the Lynx Pass and Red Dirt LAUs already have 36 percent and 50 percent of the respective LAUs in a currently unsuitable habitat condition, additional loss of suitable habitat may be a negative impact to lynx. Lynx using a home range now or in the future may see a decrease in habitat connectivity across a ROW. Mitigation to retain blocks of denser vegetation cover in these areas would help to maintain habitat connectivity and permit movement of resident lynx. Therefore, for the reasons discussed above and detailed in the BA, the Proposed Action **"may affect, and is not likely to adversely affect"** Canada lynx.

Pike and San Isabel National Forests, Colorado

Information in this section summarizes the analysis in the BA for the Pike and San Isabel National Forests (PSINF). The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Tennessee Pass LAU (TPLAU), Monarch Pass LAU (MPLAU), and Poncha Pass Lynx Linkage Area (PPLLA).

The project is not expected to cause direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along the ROWs, however some very minor, short term increase in traffic on State Highway (SH) 50, which crosses the LLA, may occur during the initial vegetation management activities (i.e., <0.01 percent vehicles per day). The analysis assumed that Western's access to the ROW would reasonably be expected to use the highway through the LLA. Increased traffic is not expected to have potential effect on lynx given how little increased traffic may occur, but the impacts of a vehicle strike would not be insignificant. The Monarch Pass area supports large blocks of coniferous habitat near the ROWs; however, there are several other human actions in the vicinity of Monarch Pass that reduce the effectiveness of this area for more significant lynx use, which are discussed in the BA. The ROWs themselves would not create a barrier or significantly decrease habitat connectivity per se, but the long-term maintenance of the ROWs as essentially a Non-Habitat feature could change how lynx use the adjacent habitats, and could also change the focus of their activities.

Based on the less-than-optimal habitat conditions, and compounding impacts from SH 50, the two ROWs, multiple Forest Service roads, Ski Monarch, and other dispersed winter & summer human activities on Monarch Pass, the likelihood that lynx would choose to den or establish a home range in the Monarch Pass area is assumed to be low. The effects of the project may result in a very minor direct reduction in available and effective lynx habitat in the Monarch Pass LAU (i.e., approximately 0.07 percent of suitable lynx habitat in the LAU would be converted to Non-Habitat), and in areas seeing removal of incompatible vegetation, there would be no remaining effective snowshoe hare or lynx habitat. These losses in habitat would occur in ROWs that have been managed by Western for many years. Therefore these ROWs are not considered to be highly functional or highly effective lynx habitat at this time, and much of the area along these ROWs may already be considered Non-Habitat given how long they have been kept cleared. The conversion of 113.2 acres of Winter Foraging, Denning, Other, and Currently Unsuitable habitat to Non-Habitat would not significantly affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the Monarch Pass LAU. Because the conversion of up to 0.07 percent of habitat in the Monarch Pass LAU occurs within ROWs that have been managed for many years, have not been highly effective habitat for many years, and are located in an area with many other impacts, the likelihood that lynx would reside next to the ROWs is diminished. The effects of these habitat losses and conversions would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx and lynx habitat would not rise to the level of "take." Where applicable, mitigation blocks of denser vegetation cover could be maintained to help retain movement and use areas across cleared ROWs; however, these blocks are not likely needed at this time. Therefore, for the reasons summarized above and discussed in detail in the BA, the Proposed Action "may affect, but is not likely to adversely affect" Canada lynx.

San Juan National Forest, Colorado

Information in this section summarizes the analysis in the BA for the San Juan National Forest (SJNF). The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Mancos LAU.

This project would include the long-term conversion of approximately 160.4 acres of ponderosa pine, oakbrush, pinyon-juniper, Douglas-fir, and integrated aspen stands to early seral grass/forb

conditions. As these areas are already considered to be Non-Habitat, Western's proposed management of these vegetation types would not change the status of these habitats. In three spanned drainages, vegetation profiles are generally still compatible, but some impact to mapped Primary Suitable and Secondary Suitable habitats may occur, which could total 6.1 acres. These treated areas should be re-categorized to Non-Habitat and tracked in LAU statistics. While the area around Western's ROW is dominated by large contiguous blocks of unsuitable lynx habitat, some incidental lynx dispersal may occur through the area. However, the combined conditions of unsuitable habitat, high levels of human activities (summer recreation, and some winter time snowriding activities), and existing ROW vegetation conditions, make most of the ROW and adjacent habitat unsuitable and ineffective habitats for long-term lynx use. Western's access and maintenance of infrastructure and vegetation within the ROW would have incidental and insignificant impacts to snowshoe hare and lynx secondary prey species densities at the stand-level. However, Western assumes some decrease in secondary prey species densities would occur within the ROW from a reduction in vegetation cover and structural complexity. This reduction in secondary prey species densities would have insignificant and discountable impacts to the lynx's ability to incidentally procure prey during dispersal activities through the unsuitable habitats dominating the ROW and adjacent stands. This project would not reduce the lynx's ability to disperse through the project area or through the MLAU. This project would have no significant increase in snow compaction leading to additional advantages to lynx competitors.

The Proposed Action would have insignificant and discountable impacts to snowshoe hare, lynx and higher quality lynx habitats. The majority of the project occurs in large blocks of non-habitat, and would likely only be used incidentally by lynx passing through the area. However, approximately 6.1 acres of Primary Suitable and Secondary Suitable habitats would be converted to non-habitat. Therefore a determination of **"may affect, not likely to adversely affect"** for lynx is warranted for the Proposed Action due to insignificant and likely discountable impacts to dispersing lynx and potential reductions in incidental foraging opportunities in Primary Suitable and Secondary Suitable habitats. There would likely be no anticipated impacts to lynx's ability to find shelter, disperse, forage successfully, or continue to utilize habitats within the MLAU.

White River National Forest, Colorado

Information in this section summarizes the analysis in the BA for the White River National Forest (WRNF). The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Blue River LAU, Mahan LAU, and Divide Creek LAU.

In the Divide Creek and Mahan LAUs, there would be no impact to lynx habitat, and no activities or management of the ROW that would prevent lynx from dispersing across the largely ineffective habitats within and around the ROW. In the Blue River LAU, the recent MPB epidemics, danger tree mitigation and salvage logging has left large areas, including areas within the ROWs, with widespread conversion of suitable lynx habitats to stand initiation stage forests. In the long-term, the Blue River LAU would see approximately 42.9 acres (or 0.11 percent) of potentially suitable habitats converted to Non-Habitat, which is a very small amount of habitat; however, the Blue River LAU is already 21.57 percent Unsuitable at this time (USFS 2014). In recently killed lodgepole pine stands (including salvaged and un-salvaged stands), snowshoe

hare densities would likely show lower densities (i.e., <0.5 hares/ha), and lynx foraging opportunities would be limited in these early seral stand types adjacent to the ROWs.

The effects of the project would result in minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there would be little remaining effective snowshoe hare or lynx habitat. The conversion of suitable and Currently Unsuitable habitats to non-habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the Blue River LAU. There may be a decreased effectiveness of habitats along the ROWs through potential increased snowmobiling, snow compaction, and decreased snowshoe hare densities. The cleared ROW could produce a "soft" boundary for a resident lynx using a territory. Lynx would not be expected to repeatedly crisscross a ROW in using a territory during foraging bouts, so there may be some level of habitat fragmentation for a resident lynx. This "soft" boundary could occur for a resident lynx, but would not be a deterrent for a dispersing lynx or a lynx making more long-range movements. Within the affected LAUs, the effects of these impacts would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx or lynx habitat would not likely rise to the level of "take." However, given that the Blue River LAU already is 21.57 percent Currently Unsuitable habitat condition, any additional loss of suitable habitat may be considered detrimental to lynx. Where applicable, mitigation blocks of denser vegetation cover could be maintained to help retain movement and use areas across cleared ROWs; however, these blocks are not likely needed at this time. Therefore, for the reasons discussed above and in more detail in the BA, the Proposed Action "may affect, and is not likely to adversely affect" Canada lynx.

1.1.2. Mexican Spotted Owl (*Strix occidentalis lucida*)

Western's activities covered under the BA occur within the Southern Rocky Mountains-Colorado Recovery Unit (Uinta County in northern Utah is outside of a Recovery Unit). For the project areas, distributional data for the Mexican Spotted Owl (MSO) was obtained using updated Protected Activity Center (PAC) information, and MSO associated habitat was determined using GIS modeling and site visits. The analysis for this consultation designated protected steep-slope habitat and restricted habitat separately, to the extent possible given current GIS databases available. Both of these potential habitat components occur along the transmission lines crossing forested habitat types within counties listed by the Service for potential MSO activity. None of the ROWs occur within Critical Habitat.

Within Colorado, documented surveys on the GMUGNF and ARNF failed to detect MSO, which indicates that the northern extent of MSO at this time is likely similar to designated Critical Habitat, with the exception of the MSOs occupying Mesa Verde National Park and other individual owls detected on the SJNF.

Ashley National Forest, Utah

No known MSO occur in proximity to the ROWs. Direct impacts to adult owls (i.e., direct mortality) are highly unlikely as adult owls would be able to fly away from activities, including treatment of incompatible vegetation. There are no cliffs or walled canyons along the ROWs,

but steep slope habitats do exist. Therefore, otherwise unknown nesting may (however unlikely) occur near the ROWs. Indirect impacts to owls could occur from modifications to foraging habitats through the removal of incompatible vegetation, which could include removal of some shrubby and shorter tree canopies in ROWs, and a reduction in prey species habitats. Conversion of the majority of ROWs to grass, forb, and shrub vegetation profiles may have potential indirect impacts to MSO and foraging habitats and potentially, but unlikely, nesting MSO through loud noises from machinery, which may cause startle or flushing responses. This habitat-type conversion may also reduce potential, but in all likelihood unused, foraging habitats within and adjacent to ROWs. Based on this analysis, the Proposed Action “**may affect, but is not likely to adversely affect**” the MSO.

Grand Mesa, Uncompahgre and Gunnison National Forests, Colorado

Because Western’s transmission lines do not cross PACs or Critical Habitat, the likelihood of potential effects to MSO or their ability to use area habitats is relatively insignificant. MSO are very rare in Colorado, and based on extensive surveys of potential habitats in Colorado and on the GMUGNF, it is reasonable to surmise that most of the consistently used nesting areas are well documented. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on this analysis, the Proposed Action “**may affect, but is not likely to adversely affect**” the MSO.

San Juan National Forest, Colorado

Because Western’s transmission lines do not cross PACs or Critical Habitat, the likelihood that the Proposed Action would have impacts on MSO or their ability to continue to use area habitats are relatively insignificant. MSO are very rare in Colorado, and based on extensive surveys of potential habitats in and around the SJNF noted in the BA, it is reasonable to assume that most of the consistently used nesting areas are well documented. Further, most of the protected steep-slope habitats occur in areas where transmission lines span canyons, which greatly diminishes the need for tree cutting that may impact owls. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on the analysis in the BA, the Proposed Action “**may affect, but is not likely to adversely affect**” the MSO.

Pike and San Isabel National Forests, Colorado

Western’s transmission lines do not cross PACs or Critical Habitat in the PSINF. The likelihood that the potential effects analyzed in the BA would impact the MSO or their ability to use area habitats is relatively insignificant. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on the analysis in the BA, the Proposed Action “**may affect, but is not likely to adversely affect**” the MSO.

1.1.3 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

San Juan National Forest, Colorado

The San Juan National Forest (SJNF) is the only Forest with potential habitats for the Southwestern willow flycatcher (SWWF). The BA for the SJNF (April 2014) contains an extensive evaluation of the potential effects of the Proposed Action on the SWWF.

Impacts to potential habitats within the Rio Grande and San Juan watersheds were assessed. Western does not have transmission lines within suitable habitat or potentially suitable habitats within the Rio Grande watershed. Within the San Juan watershed, Western's transmission lines cross and span potential habitats, which may contain suitable or potentially suitable habitat. Based on the information and analysis in the BA, the potential disturbances associated with the Proposed Action, as long as they do not occur in occupied SWWF habitat would be short-lived, but there may be possible brief and discrete disruption to SWWF pairs' courting, nesting, fledging, and foraging activities. Western would conduct surveys for nesting SWWF prior to conducting noisy, extended ground-based activities and vegetation treatment within or adjacent to potential SWWF habitats. The anticipated indirect impacts and unlikely direct impacts would result in a likely insignificant, but not entirely discountable impact. Therefore a determination for the Proposed Action would be that these actions "may affect, but not likely to adversely affect" the SWWF.

Western's transmission lines do not cross Critical Habitat for SWWF; therefore, the Proposed Action would have had "no effect" on Critical Habitats.

1.1.4. Uncompahgre Fritillary Butterfly (*Boloria acrocnema*)

Grand Mesa, Uncompahgre, and Gunnison National Forests, Colorado

Based on the analysis in the BA, there would be no reasonably foreseeable direct or indirect impacts to potential butterfly habitats through the implementation of the Proposed Action; the project would have "no effect" to the Uncompahgre fritillary butterfly.

Pike and San Isabel National Forests, Colorado

Based on the analysis in the BA, there would be no reasonably foreseeable direct or indirect impacts to potential butterfly habitats through the implementation of the Proposed Action; the project would have "no effect" to the Uncompahgre fritillary butterfly.

1.2 Fish

1.2.1. Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*)

Arapaho-Roosevelt National Forests, Colorado

There are no identified direct impacts from the Proposed Action on Greenback (GB) lineage fish on the ARNF. There are no known GB lineage fish occurring in streams spanned by the ROWs, even though native cutthroat trout have been located downstream of the ROWs. There is a potential for increased fine sediment delivery into suitable habitats. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs, potential impacts to habitat or unknown fish may occur; therefore, the Proposed Action "may affect, but is not likely to adversely affect" greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Grand Mesa, Uncompahgre, and Gunnison National Forests, Colorado

There are no identified direct impacts from the Proposed Action on GB lineage fish on the GMUGNF. In the Hightower project area several streams spanned by the ROW are assumed to

have GB lineage fish in them (none of the streams have been specifically surveyed for GB lineage fish at this time, and this analysis uses the best available existing data). In both the Hightower and Paradox project areas the ROWs occur in streams which at least provide habitats for GB lineage fish. Because these habitats are spanned by transmission lines, no proposed activities are anticipated to have a direct impact on GB lineage fish. No water depletions are associated with the Proposed Action. There is a potential for increased fine sediment delivery into suitable habitats. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs, potential impacts to habitat or unknown fish may occur, therefore the Proposed Action “**may affect, but is not likely to adversely affect**” greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Medicine Bow and Routt National Forests, Colorado

The analysis in the BA did not identify anticipated direct impacts to GB lineage fish on the MBRNF. There are no known GB lineage fish occurring in streams spanned by the ROWs (but native cutthroat trout have been located downstream of the ROWs in the Phippsburg project area in Deadman Gulch). The streams supporting GB lineage habitats are spanned by transmission lines; no proposed activities are expected to have a direct impact on (unknown) GB lineage fish or their habitats. No water depletions are associated with the Proposed Action.

Of the 602.7 acres in the three project areas, only 54.8 acres of ROWs intersect a water influence zone (WIZ), and 26.5 acres of incompatible vegetation would be treated within the WIZs. Neither stream hydrology, nor the amount and timing of water delivery to aquatic habitats, is expected to change from the ongoing treatment of vegetation on ROWs. The potential impacts from fine sediment delivery to potential habitats and spawning gravel beds could impact GB lineage fish. GB lineage prey species (i.e., aquatic invertebrates) may also be smothered or see reductions in suitable habitat from siltation. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities and maintenance in ROWs, potential impacts to habitat or unknown fish may occur, therefore the Proposed Action “**may affect, but is not likely to adversely affect**” greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Pike and San Isabel National Forests, Colorado

There are no anticipated direct impacts to GB lineage fish on the PSINF. There are no known GB lineage fish occurring in streams spanned by the ROWs. However, GB lineage fish are known to occur in tributaries to the North Fork of the Arkansas River. This stream is spanned by both the Curecanti-Poncha and North Gunnison-Salida transmission lines. As these potential habitats are spanned by transmission lines, no proposed activities would have a direct impact on possible GB lineage fish or their habitats. No water depletions are associated with the Proposed Action. There is a potential for increased fine sediment delivery into suitable habitats. County Road 225 (the road to Fooses Reservoir) provides access to Western for ROW maintenance, and this road crosses the North Fork of Arkansas River near the highway on private lands. There could be decreased shading of riparian areas and modification of riparian vegetation profiles from vegetation treatment near WIZ areas. These indirect impacts would likely affect aquatic conditions and trout habitats and their prey species compositions (i.e., the species of aquatic macroinvertebrates available), but these impacts would not likely cause substantial changes in GB lineage use of habitats or their ability to procure aquatic macroinvertebrates. Given the

cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs, potential impacts to habitat and individual fish or spawning beds may occur. Therefore, the Proposed Action **“may affect, but is not likely to adversely affect”** greenback cutthroat trout (GB lineage) and their suitable habitats.

San Juan National Forest, Colorado

There were no identified anticipated direct impacts to GB lineage fish on the SJNF. As the two known populations occur many river miles upstream of the Hesperus-Montrose transmission line span of the Dolores River, no proposed activities would have a direct impact on GB lineage fish or their habitats. No water depletions are associated with the Proposed Action. As there are no known GB lineage populations near the Curecanti-Lost Canyon or Great Cut-McPhee transmission lines, activities within those ROWs would have no direct impacts to GB lineage fish. Additionally, there would be no indirect impacts to GB lineage fish or their occupied habitats on the SJNF. There are no access roads or activities proposed by Western that would produce indirect impacts to occupied reaches (i.e., no vegetation removal from WIZ areas, fine sediment delivery etc., within the Rio Lado or Little Taylor Creek reaches). However, there is a possibility that otherwise unknown GB lineage fish may have, or currently do occupy other reaches on the SJNF crossed by Western’s ROWs, or downstream of the ROWs. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs (while there are no known viable populations of GB lineage fish in the project area), potential impacts to habitat or unknown fish may occur, and therefore the Proposed Action **“may affect, but is not likely to adversely affect”** greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

White River National Forest, Colorado

There were no identified potential direct impacts on Colorado native cutthroat trout (CNC) on the WRNF. There are no known CNC fish occurring in streams spanned by the ROWs. However, native cutthroat trout have been stocked in Green Mountain Reservoir, and native cutthroat trout (lineage is unknown) were caught in Mumford Gulch, but follow-up visits revealed that Mumford Gulch was dry and no viable fishery remained. Because the streams are spanned by transmission lines, no proposed activities would have a direct impact on CNC fish or their habitats. No water depletions are associated with the proposed action. There is a potential for increased fine sediment delivery into suitable habitats. There are no access roads or activities proposed by Western that would produce indirect impacts within the WIZ of known occupied reaches. However, there is a possibility that otherwise unknown CNC fish may have, or currently do occupy other reaches on the WRNF crossed by Western’s ROWs, or downstream of their ROWs. Use of existing roads for haul-operations and access under the Proposed Action may further mobilize fine sediments from the roadways and allow for more material to be washed off road surfaces into aquatic habitats. There could also be decreased shading of riparian areas and modification of riparian vegetation profiles from vegetation treatment near WIZ areas. These indirect impacts would likely affect aquatic conditions and trout habitats and their prey species compositions (i.e., the species of aquatic macroinvertebrates available), but these impacts would not likely be significant or cause substantial changes in CNC use of habitats or their ability to procure aquatic macroinvertebrates. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management and maintenance in ROWs, potential impacts to habitat or unknown fish may occur in down-reach streams;

therefore, the Proposed Action “may affect, but is not likely to adversely affect” greenback cutthroat trout (CNC) and their otherwise suitable habitats.

2.0 Plants

Table 2 summarizes, by forest, the listed plant species for each forest, their current status under the ESA, and their effect determinations.

Determination and Additional Design Feature for Ute Ladies tresses orchid (*Spiranthes diluvialis*)

Based on discussions with biologists on the Ashley National Forest, Western prepared an Addendum to the Ashley National Forest Biological Assessment/Biological Evaluation (BABE). The Addendum is enclosed with the Ashley BABE. The addendum addresses additional information on the Ute Ladies’ tresses orchid and proposes conservation measures (Elliott, Brian. 2014. Addendum, Western Area Power Administration Reauthorization Project; Biological Assessment/Evaluation (BA/BE) for Threatened, Endangered, and Forest Service Sensitive Plant Species on the Ashley National Forest. 8 pp.)

Based on new information *Spiranthes diluvialis* is no longer excluded from analysis and an effects determination is necessary. A determination of “Not Likely to Adversely Affect” is made for federally threatened species *Spiranthes diluvialis*. This determination is based on the following rationale: field surveys will take place during the appropriate time of year in 2014 (August-September) before implementing ground disturbing activities. If plants are found during the survey, Western will reinitiate consultation with the Service and additional conservation measures will be developed. If ground disturbing activities take place prior to the surveys, Western will perform a habitat survey and exclude potential habitat from ground disturbance.

Determinations

The following plants were analyzed in the enclosed BABEs. Table 2 (enclosed) summarizes the forests in which the plants are listed. The lists, obtained from the Service, are by county, not by forest. To facilitate review of the BAs and potential effects of the proposal on plants, Western enclosed the report: Elliott, Brian. April 2014. Federally Listed Plant Species; Section 7 Consultation Areas for the Western Area Power Administration and Forest Service EIS to Reauthorize Transmission Line Maintenance and Vegetation Management in Colorado and Utah, 79 pp.) Based on the evaluations in the BAs and the additional analysis in the additional report, Western determined that, with the exception of *Spiranthes diluvialis* on the ANF, the federally listed plants species could be excluded from further analysis and that the Project would therefore not affect the federally listed endangered (FE) or threatened (FT) species. Western made no determination for Candidate species but included information on them in the reports. Federally listed plants were excluded from further analysis based on one or more of the following reasons:

- distance of analysis area from known occurrences
- negative field survey results
- lack of suitable habitat within analysis area
- lack of appropriate substrate within analysis area
- difference in elevation between known occurrences and analysis area

- lack of water depletion

Federally listed Plant Species Addressed in Biological Assessments/Biological Evaluations.

Common Name	Scientific Name	Status
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	FE
Clay reed-mustard	<i>Schoenocrambe argillacea</i>	FT
Colorado butterfly plant	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	FT
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	FT
De Beque phacelia	<i>Phacelia submutica</i>	FT
Knowlton cactus	<i>Pediocactus knowltonii</i>	FE
North Park phacelia	<i>Phacelia formosula</i>	FE
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	FE
Parachute beardtongue	<i>Penstemon debilis</i>	FT
Pariette cactus	<i>Sclerocactus brevispinus</i>	FT
Penland alpine fen mustard	<i>Eutrema penlandii</i>	FT
Penland beardtongue	<i>Penstemon penlandii</i>	FE
Shrubby reed-mustard	<i>Schoenocrambe suffrutescens</i>	FE
Uintah Basin hookless cactus	<i>Sclerocactus wellandicus</i>	FT
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT
Western prairie fringed orchid	<i>Platanthera praeclara</i>	FT
Schmoll milk-vetch	<i>Astragalus schmolliae</i>	FC
Skiff milkvetch	<i>Astragalus microcymbus</i>	FC
White River penstemon	<i>Penstemon scariosus</i> var. <i>albifluvis</i>	FC

If you have questions or comments regarding these determinations please contact Mr. Jim Hartman, Western Area Power Administration; phone: (720) 962-7255, e-mail: Hartman@wapa.gov, mail: to the letter head address attention: A7400. You may also contact Mr. Peter McDonald, Forest Service, at (303) 275.5029 or petermcdonald@fs.fed.us.

Respectfully,

James G. Hartman
James Hartman
NEPA Project Manager

Enclosures
DVD with BAs

Cc:
With copy of DVD

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Table 1. Summary of Evaluated Threatened and Endangered Animal Species, Candidate Species and Effect Determinations.

Common Name	Scientific Name	Status	Forest Occurrence or Potential Habitat and Effect Determinations							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Mammals										
Black-footed ferret	<i>Mustela nigripes</i>	FE	-	-	-	O	-	-	-	-
Canada lynx	<i>Lynx canadensis</i>	FT	NLAA	NLA A	NLAA	NLAA	-	NLAA	NLA A	NLAA
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	FT	O	-	-	O	-	O	-	-
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	FC	-	-	X	-	-	-	X	-
North American Wolverine	<i>Gulo gulo</i>	PT	NJ	NJ	NJ	NJ	-	NJ	NJ	NJ
Birds										
Least tern	<i>Sterna antillarum</i>	FE	-	-	-	-	-	-	-	-
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT	O	NLA A	NLAA	-	-	NLAA	NLA A	O
Mountain plover	<i>Charadrius montanus</i>	FT	O	-	-	O	-	-	-	-
Piping plover	<i>Charadrius melodus</i>	FT	O	-	-	O	-	O	-	-
Southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	FE	-	-	-	-	-	-	NLA A	-
Whooping crane	<i>Grus americana</i>	FE	O	-	-	-	-	O	-	-
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	FC	-	X	-	X	-	-	-	X
Gunnison sage-grouse	<i>Centrocercus minimus</i>	FC	-	-	X	-	-	-	O	-
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	PT	-	-	-	-	-	-	O	-
Amphibians										
Wyoming toad	<i>Bufo baxteri</i>	FE	-	-	-	O	-	-	-	-
Insects, other Invertebrates										
American burying beetle	<i>Nicrophorus americanus</i>	FE	-	-	-	-	-	-	-	-
Pawnee montane skipper	<i>Hesperia leonardus montana</i>	FT	-	-	-	-	-	-	-	-
Uncompahgre fritillary	<i>Boloria acrocnema</i>	FT	-	-	NE	-	-	NE	O	O
Susan's purse making caddisfly	<i>Ochrotrichia susanae</i>	FC	-	-	-	-	-	x	-	-

2

Common Name	Scientific Name	Status	Forest Occurrence or Potential Habitat and Effect Determinations							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Fish										
Bonytail chub	<i>Gila elegans</i>	FE	-	O	O	O	-	-	O	O
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	FE	O	O	O	O	-	-	O	O
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	FT	NLAA	-	NLAA	NLAA	-	NLAA	NLAA	NLAA
Humpback chub	<i>Gila cypha</i>	FE	O	O	O	O	-	-	O	O
Pallid sturgeon	<i>Scaphirhynchus albus</i>	FE	O	-	-	O	-	O	-	-
Razorback sucker	<i>Xyrauchen texanus</i>	FE	O	O	O	O	-	-	-	O

FE=Federally Endangered, FT= Federally Threatened, FC= Federal Candidate Species,
PT=Proposed Threatened Species

X: Species is a candidate species evaluated in the BA but not addressed in the Consultation Letter

O: Listed Species occurs on the list of species for the county in which the forest is located but there is no habitat in the project area, or project area is outside of the known species range.

NE: No Effect Determination

NLAA: May Affect, Not Likely to Adversely Affect

LAA: May Affect, Likely to Adversely Affect

NJ: Not Likely to Jeopardize the Continued Existence

ARNF: Arapaho-Roosevelt National Forest, ANF: Ashley National Forest, GMUG: Grand Mesa, Uncompahgre, and Gunnison National Forests, MBRNF: Medicine Bow and Routt National Forests, NNF: Nebraska National Forest, PSINF: Pike and San Isabel National Forests, SJNF: San Juan National Forest, WRNF: White River National Forest

Table 2. Summary of Evaluated Federally-Listed Threatened and Endangered Plant Species, Candidate Species.

Common Name	Scientific Name	Status	Forest							
			ARNF	ANF	GMUG	MBRNF	NNF	PSNF	SJNF	WRNF
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	FE	-	-	O	-	-	-	-	-
Clay reed-mustard	<i>Schoenocrambe argillacea</i>	FT	-	O	-	-	-	-	-	-
Colorado butterfly plant	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	FT	O	-	-	-	-	-	-	-
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	FT	-	-	O	-	-	-	-	O
De Beque phacelia	<i>Phacelia submutica</i>	FT	-	-	-	-	-	-	-	O
Knowlton cactus	<i>Pediocactus knowltonii</i>	FE	-	-	-	-	-	-	O	-
North Park phacelia	<i>Phacelia formosula</i>	FE	O	-	-	O	-	-	-	O
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE	O	-	-	O	-	-	-	O
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	FE	-	-	O	-	-	-	O	-
Parachute beardtongue	<i>Penstemon debilis</i>	FT	-	-	-	-	-	-	-	O
Pariette cactus	<i>Sclerocactus brevispinus</i>	FT	-	O	-	-	-	-	-	-
Penland alpine fen mustard	<i>Eutrema penlandii</i>	FT	O	-	-	-	-	O	-	O
Penland beardtongue	<i>Penstemon penlandii</i>	FE	O	-	-	O	-	-	-	O
Shrubby reed-mustard	<i>Schoenocrambe suffrutescens</i>	FE	-	O	-	-	-	-	-	-
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	O	NLAA	-	-	-	O	-	O
Uintah Basin hookless cactus	<i>Sclerocactus wetlandicus</i>	FT	-	O	-	-	-	-	-	-
Western prairie fringed orchid	<i>Platanthera praecleara</i>	FT	O	-	-	-	-	-	-	-
Schmoll milk-vetch	<i>Astragalus schmolliae</i>	FC	-	-	-	-	-	-	X	-
Skiff milkvetch	<i>Astragalus microcymbus</i>	FC	-	-	X	-	-	-	-	-

4

Common Name	Scientific Name	Status	Forest							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
White River penstemon	<i>Penstemon scariosus</i> var. <i>albifluvis</i>	FC	-	X	-	-	-	-	-	-

FB=Federally Endangered, FT= Federally Threatened, FC= Federal Candidate Species

X: Species is a candidate species evaluated in the BA but not addressed in the Consultation Letter

O: Listed Species occurs on the list of species for the county in which the forest is located but there is no habitat in the project area, or project area is outside of the known species range.

NLAA: Not Likely to Adversely Affect

ARNF: Arapaho-Roosevelt National Forest, ANF: Ashley National Forest, GMUG: Grand Mesa, Uncompahgre, and Gunnison National Forests, MBRNF: Medicine Bow and Routt National Forests, NNF: Nebraska National Forest, PSINF: Pike and San Isabel National Forests, SJNF: San Juan National Forest, WRNF: White River National Forest.



United States Department of the Interior

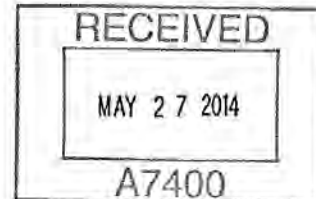
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IN REPLY REFER TO

ES/CO: DOE/Western Area Power Administration
TAILS 06E24100-2014-I-0130

May 21, 2014



James Hartman
NEPA Project Manager
Western Area Power Administration
P.O. Box 281213
Lakewood, Colorado 80228-8213

Subject: Section 7 Consultation for the Transmission Line Rights-of-Way and Routine Maintenance Reauthorization and Proposed Change in Vegetation Management Practices in Colorado, Nebraska, and Utah

Dear Mr. Hartman:

This responds to your April 10, 2014, letter to the Fish and Wildlife Service (Service) requesting concurrence of the effects of the subject project to species and habitats listed under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.; [Act]). We received your request on April 21, 2014.

At this time, we are unable to concur with the determination of “may affect, not likely to adversely affect” the Canada lynx. Although there were separate biological assessments for each Forest, the consultation was submitted as a single consultation package and we are responding accordingly.

There are two primary reasons why we are unable to concur with your determination of effect to lynx. First, the environmental baseline lynx habitat data provided in the biological assessments for the White River and Arapaho-Roosevelt National Forests are incorrect. We suspected that the information may be incorrect, because of our knowledge of project areas on the White River National Forest involved in previous section 7 consultations, and we confirmed that the data presented in the BAs is incorrect. In addition, the lynx habitat data provided in the BA for the Arapaho-Roosevelt National Forest are not clear. Two sets of lynx habitat data are displayed in each of the Tables 15 and 18. We recognize that the mountain pine beetle epidemic has severely impacted lynx habitat in these LAUs, necessitating an adjustment to the LAU baseline statistics. However, we were unable to corroborate the data generated by Rocky Mountain Ecological Services GIS Modeling with the Forest Service. Secondly, the environmental baseline habitat calculations provided in all of the BAs for all of the LAUs is incorrect.

We believe that due to the discrepancies in the data, the conclusions regarding the effects of the actions may be incorrect. We conclude that if the data are incorrect, the environmental baseline is incorrect, and it is not possible to accurately assess the effects of the action. Therefore, we cannot agree with any conclusion regarding the effects of the action.

In addition to inaccurate data, we have evidence in our files that suggests a more severe negative effect to lynx on some Forests, which may not support conclusions reached in the BAs of “may affect not likely to adversely affect” for all affected forests. The effects of an action are evaluated in addition to the environmental baseline. The environmental baseline consists of all past activities, current non-federal activities, and Federal project with completed section 7 consultation. To this baseline, future direct and indirect impacts of the action are added to determine the total effect on listed species and their habitat.

The environmental baseline for lynx is evaluated, among other things, against the Southern Rockies Lynx Amendment (SRLA) vegetation standard one (VEG S1). We use this standard as a means for determining whether the lynx analysis unit (LAU) contains sufficient lynx habitat in a suitable condition to support survival (feeding) and reproduction of lynx. Our current understanding of lynx home ranges suggests that at least 70 percent of the lynx habitat within a LAU should be in a suitable (functioning) condition, and the suitable habitat supports a high density of snowshoe hares to support a resident lynx year-round. The Canada Lynx Conservation Assessment and Strategy states, “To maintain the amount and distribution of lynx foraging habitat over time, manage so that no more than 30% of the lynx habitat in a LAU is in an early stand initiation structural stage (i.e. unsuitable condition) or has been silviculturally treated to remove horizontal cover (i.e., does not provide winter snowshoe hare habitat). Emphasize sustaining snowshoe hare habitat in an LAU. If more than 30% of the lynx habitat in an LAU is in early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (e.g., clear-cuts, seed tree harvest, precommercial thinning, or understory removal), no further increase as a result of vegetation management projects should occur on federal lands” (Interagency Lynx Biology Team 2013), clarification added.

Several LAUs within the action area contain less than 70 percent of the lynx habitat in a suitable (functioning) condition including, the Williams Fork LAU on the Arapaho-Roosevelt National Forest; the Walton Peak, Lynx Pass, and Red Dirt LAUs on the Medicine Bow-Routt National Forest; and the Blue River LAU on the White River National Forest. We were unable to confirm habitat statistics for the Laramie LAU on the Arapaho-Roosevelt National Forest, but information provided in the project BA suggest that Laramie LAU contains less than 70 percent suitable habitat. We conclude that these LAUs may not be able to support occupancy and reproduction at this time, which represents an injury to lynx occupying that home range. Additional lynx habitat loss, as a result of the proposed changes to the vegetation management within the ROW will have an additive effect (increasing the severity of the injury) on lynx, where sufficient prey may not be available to support occupancy and/or reproduction, translating to further impairment of reproduction and feeding within the LAUs. Effects on female lynx may

include the following: 1) abandonment of their home range in search of adequate food to survive (i.e. become nomadic), 2) die of starvation, and/or 3) fail to complete a pregnancy or would be less successful in finding adequate food resources needed to ensure maximum survival potential for kittens.

Since there are several LAUs within the action area that currently do not contain at least 70% of the lynx habitat in a suitable condition, and the proposed action includes changes in vegetation management that will result in additional losses of suitable (functional) habitat within those LAUs, we believe the effects of the action are more severe than documented in the BAs, and may result in adverse effects to lynx. Once we receive the additional information regarding lynx habitat and environmental baseline conditions in the LAU, we can assist you with evaluation of the effects of the action, and an appropriate determination of the impacts to the species, if you desire.

If you have any questions regarding the information contained herein, please contact Kurt Broderdorp at 979-628-7186.

Sincerely,



Susan C. Linner
Colorado Field Supervisor

Pc: Peter McDonald (petermcdonald@fs.fed.us)
Kurt Broderdorp (kurt_broderdorp@fws.gov)

Literature Cited:

Interagency Lynx Biology Team. 2013. Canada lynx conservation assessment and strategy. 3rd edition. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication R1-13-19, Missoula, MT. 128 pp.



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AUG 06 2014

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Subject: Western Area Power Administration and U.S. Forest Service; Reauthorization of Transmission Line Rights-of-Way and Routine Maintenance and Proposed Change in Vegetation Management Practices in Colorado, Nebraska, and Utah. Consultation, Section 7 of the Endangered Species Act (FWS/R6 ES/ER10/0333)

Dear Mr. Clayton:

Summary

The U.S. Department of Energy, Western Area Power Administration (Western) and U.S. Forest Service Regions 2 and 4 (Forest Service) respond by this letter to a letter of non-concurrence dated May 21, 2014, from the U.S. Fish and Wildlife Service (Service). The Service's letter addressed its non-concurrence on a may affect, but is not likely to adversely affect (NLAA) determination for the Canada lynx (*Lynx canadensis*). The other species addressed in the April 10, 2014, letter from Western and the Forest Service were not addressed in the Service's non-concurrence letter. In that letter, Western and the Forest Service requested concurrence from the Service on NLAA determinations for several plant and animal species. Biological Assessments (BA) for plants and animals accompanied the letter.

After several meetings and discussions with representatives from the Service on the Service's concerns about the lynx analysis, Western and the Forest Service are submitting revised BAs and a revised determination for the Canada lynx on four forests.

Western and the Forest Service request concurrence on our NLAA determinations on the Ute ladies'-tresses orchid (*Spiranthes diluvialis*), Mexican Spotted Owl (*Strix occidentalis lucida*), Southwestern Willow Flycatcher (*Empidonax traillii eximius*), and Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*). We also request to enter formal consultation because we determined that the proposed action may affect and is likely to adversely affect (LAA) the Canada lynx on four of the seven National Forests with lynx habitat.

Plants:

Ute ladies'-tresses orchid (*Spiranthes diluvialis*): Location: Ashley National Forest (Elliott, Brian, 2014). Western and the Forest Service determined that the proposed actions described in the BAs and Draft environmental impact statement were NLAA on *Spiranthes diluvialis* in Western's ROW based on the commitment to complete field surveys during the appropriate time of year in 2014 (about July or August) and before implementing ground disturbing activities. If plants are found during the survey, Western and the Forest Service will reinitiate consultation with the Service and implement additional conservation measures agreed to in the consultation.

Animals:

Canada Lynx (*Lynx canadensis*) suitable habitat occurs on the following forests in the project area: Ashley National Forest (ANF), Arapaho-Roosevelt National Forests (ARNF), Grand Mesa, Uncompahgre and Gunnison National Forests (GMUGNF), Medicine Bow-Routt National Forests (MBRNF), Pike-San Isabel National Forests (PSINF), San Juan National Forest (SJNF), and White River National Forest (WRNF). Based on the analysis in the BAs Western and the Forest Service determined that the proposed action is LAA Canada lynx on the ARNF, GMUGNF, MBRNF, and WRNF. Based on the analysis in the BAs Western and the Forest Service determined that the proposed actions are NLAA Canada lynx on the ANF, PSINF, and SJNF.

Mexican Spotted Owl (*Strix occidentalis lucida*): Suitable habitat for the Mexican spotted owl occurs on the ANF, GMUGNF, PSINF, and SJNF. Based on the analysis in the BAs we made a NLAA determination for the owl on those forests.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*): Based on the analysis in the BAs, we determined that the proposed actions were NLAA the flycatcher on the SJNF.

Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*): Potentially suitable habitat occurs downstream from the transmission line rights-of-way (ROWs) on the ARNF, GMUGNF, MBRNF, PSINF, SJNF, and WRNF. Based on the analysis in the BAs, we determined that the proposed actions were NLAA the greenback cutthroat trout on those forests.

Project Background and Description

Western and the Forest Service are joint lead agencies on an environmental impact statement (EIS) that analyzes the effects of a proposal by the Forest Service to reauthorize Western's existing transmission lines on National Forest System (NFS) lands, including Western's proposed action of changing the way it manages vegetation on the ROWs. The ANF in Forest Service Region 4 is included in the proposal and is represented by Region 2. Enclosed are the BAs, revised as requested in the Service's non-concurrence letter and subsequent meetings and discussions among Western, the Forest Service, and Service. Additional information is included to support the consultation under Section 7 of the Endangered Species Act (ESA).

The transmission line ROWs are located on six forests in Colorado, one in Nebraska, and one in Utah. The EIS covers approximately 273 miles of transmission line and 4,055 acres of ROW, of which approximately 1,600 acres would be treated over the next few years, depending on the

availability of resources, as described in the Draft EIS. In accordance with the Council on Environmental Quality National Environmental Policy Act (NEPA) regulations, Department of

Energy NEPA regulations, and Forest Service NEPA regulations, the Draft EIS has been reviewed by interested citizens; federal, state, and local agencies; tribes; and the Environmental Protection Agency (EPA). Copies of the Draft EIS were sent to your office during the review period. The Draft EIS, detailed maps, and other information on the NEPA review is available at: <http://ww2.wapa.gov/sites/western/transmission/infrastructure/Pages/Western%20FS%20EIS.aspx>. The Department of the Interior had no comments on the Draft EIS. The Environmental Protection Agency rated the Draft EIS as "Lack of Objections." No comments were received from the general public, and comments from one local agency and one federal agency encouraged Western and the Forest Service to move forward with the Proposed Action. The Proposed Action has not changed in response to the public and agency review, it is Western's preferred alternative. Western and the Forest Service propose to issue the Final EIS as soon as possible after Western, the Forest Service, and the Service complete consultation under the ESA. The Final EIS is scheduled for public release in October 2014, and Western's Record of Decision is scheduled by December 2014.

Western must improve its management of vegetation along its 273 miles of ROWs on NFS lands in Colorado, Nebraska, and Utah, with the following purposes and objectives:

- To ensure that Western can safely and reliably operate and maintain its existing electrical transmission facilities to deliver electrical power.
- To further Western's compliance with National Electrical Reliability Corporation's Transmission Vegetation Management Reliability Standards, industry standards, and Western's policy and guidance.
- To ensure that Western's transmission facilities remain operational for the useful life of the facilities.
- To protect public and worker safety.
- To reduce the risk of wildfires caused by transmission lines and the risk to the facilities from fire.
- To control the spread of noxious weeds.
- To maintain sound relationships with landowners and land managers.
- To ensure that Western has access to its transmission facilities for maintenance and emergency response.
- To ensure that the costs associated with maintaining the transmission system can be controlled following sound business principles, including achieving technical and economic efficiencies to minimize impacts on transmission line tariff costs and electrical power rates.
- To allow flexibility to accommodate changes in transmission system operation and maintenance requirements.
- To minimize impacts to environmental resources.

The Forest Service will issue or re-issue Special Use Permits for each transmission line and authorize Western to manage vegetation along its ROWs on NFS lands according to the design features identified in the Final EIS.

The enclosed BAs were prepared for the National Forests on which listed endangered or threatened species, and species proposed for listing may occur, as indicated by the county lists obtained from the Service. Enclosed is a DVD with the BAs and other supporting documents with detailed analyses and more information on the rationale for the determinations. The

discussion of impacts for the purposes of Section 7 of ESA considers the direct, indirect and cumulative impacts that would be expected to occur from the proposed changes in the vegetation management program and continued routine maintenance activities on the transmission lines, ROWs, and access routes.

1. Animals

Table 1 summarizes, by forest, the listed animal species for each forest, their current status under the ESA, whether a detailed evaluation and determination was made for the species, and the result of the determination (e.g., no effect, not likely to adversely affect, or likely to adversely affect). On the Nebraska National Forest, Western and the Forest Service determined that there would be “no effect” to listed animal species.

1.1. Terrestrial Animals

1.1.1 Canada Lynx (*Lynx canadensis*)

The Canada lynx may occur on seven of the eight forests covered by the analysis in the EIS and the BAs. The Nebraska National Forest does not contain suitable habitat for the Canada lynx. A summary of the determinations for each of the seven forests is included below. The BAs followed guidance presented in the Southern and Northern Rockies Lynx Amendments. Based on discussions with the Service, Western developed, in coordination with the Forest Service and your office, an additional design feature (conservation measure) that will be a part of the implemented Proposed Action. The design feature would facilitate lynx use of home ranges and improve lynx habitat connectivity in areas where the transmission line ROWs may introduce a gap between areas of suitable habitat on both sides of the transmission line ROW that lynx may be reluctant to cross. The design feature is enclosed with this letter (see Enclosure 1), included in the BAs as appropriate, and will be in the Final EIS. In summary, the design feature will leave blocks of denser vegetation, including “undesirable” vegetation species (undesirable as defined in the EIS and relevant to ROW management for transmission lines), and shrubby desirable vegetation. The blocks will be left in areas where a gap between effective lynx habitat may result from vegetation management activities within Western’s ROWs. Western and the Forest Service will coordinate to ensure that the design feature is implemented. The process for ensuring implementation would include a commitment in the Records of Decision, coordination meetings between Western and the forests as described in the Operation and Maintenance Plan, and stipulations in the Special Use Permits.

Arapaho-Roosevelt National Forests, Colorado

Information in this section summarizes the analysis in the BA for the ARNF. The effects analysis discusses the direct, indirect, and cumulative impacts of Western’s Proposed Action on the lynx’s ability to meet its life history requirements in the Laramie Lynx Analysis Unit (LAU) and the Williams Fork LAU. Under the Proposed Action areas of incompatible vegetation within the ROWs would be converted to grass, forb and compatible shrub dominated community type unless there is an identified need to leave part of the ROW as a mitigation area with blocks

of denser vegetation cover. Therefore these areas should be re-categorized as Non-Habitat as there may be little winter foraging or hiding cover for snowshoe hares or lynx. For the purposes of this assessment, lynx habitats were modeled using a geographic information system (GIS) to track the likely impacts of mountain pine beetle (MPB) mortality on lodgepole pine, as this used the best available scientific information.

The Proposed Action covers Western's ongoing inspection and maintenance of infrastructure and access roads, and a change from "danger tree" mitigation to a more comprehensive and long-term proactive vegetation management strategy as part of the reauthorization of Western's ROWs. The proposed vegetation management strategy would convert incompatible vegetation (e.g., trees) to compatible grass, forb and lower-growing shrub profiles. This results in a conversion of long, linear blocks of ROWs to a grass/forb dominated vegetation profile, which would effectively convert denning, winter foraging, other, and early stand-initiation habitats within the ROW to a Non-Habitat condition. Below are summaries of impacts to lynx and lynx habitats from the various components of the Proposed Action. Given Western's current regular, but infrequent, entries into ROWs for aerial or ground-based inspections, maintenance, and danger tree treatments, there are already human activities, loud noises, and on-going manipulation of habitats. Western's activities in ROWs would continue to occur during daylight hours and generally during the snow-free months, but some aerial inspections of infrastructure and potential emergency danger tree treatments could occur during the winter months. Some emergency maintenance could occur during the winter months as well, using over-the-snow vehicles to address infrastructure or maintenance issues. Lynx would likely be able to completely avoid human activities and use most of the ROWs given the very infrequent human activities along ROWs.

The Proposed Action is not expected to cause direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along and abutting the ROWs; other roadways would see continued Western traffic, but there are no high-speed roadways likely to be used by Western that are within the ARNF. Off-Forest increased traffic is expected to be very minor (i.e., <0.01% increase in daily traffic), and there is a discountable low potential effect to lynx given how little increase traffic would be realized, nevertheless, the impacts if a vehicle strike occurred to a lynx would not be insignificant.

In the Laramie LAU, there may be some increased snowmobiling and snow compaction along the ROW, but this area is dominated by poor quality lynx habitat. The ROW already sees consistent snowmobiling use during the winter months. While the Forest Service does not currently show large areas of snow compaction around the ROW, on-site visits to the area during the winter and helicopter over-flights in the spring of 2009 revealed that these areas see moderate levels of snow compaction (however, no formal mapping of snow compaction areas has occurred as part of this report). There is already the ability for other lynx competitors to access and compete with lynx in these areas and along the ROW. With the recent danger tree mitigation occurring along and adjacent to the ROWs, there is also the potential for additional snowmobile use to occur in blocks of potential habitat adjacent to the ROWs. With the implementation of the Proposed Action, there may be the opportunity for additional snow compaction to occur deeper or more consistently into the area, but again, this area is dominated by xeric lodgepole pine having seen widespread MPB mortality and recent salvage efforts. In the Laramie LAU there would be a conversion of 121.8 acres of mapped lynx habitat to non-habitat, which is

approximately 0.19% of remaining effective habitats in the LAU. Given the dominance of the area by poor-quality habitat for snowshoe hare and lynx, this Proposed Action would not likely have significant impacts on lynx or the condition of habitats in the LAU. As the area recovers from MPB, more suitable lynx habitat in the area would be available for snowshoe hare and lynx, and this project would not preclude the ability for snowshoe hare or lynx to possibly use these habitats.

In the Williams Fork LAU, the area is relatively steep and has poor snowmobiling access, but the access road along the ROW is mapped as a snow-compacted route by the Forest Service. The Proposed Action alternative would not change the general area's lack of access and generally poor-suitability for widespread snowmobiling. No significant increase in snow compaction would be expected under the Proposed Action. Long-term, there would be approximately 81.8 acres (or 0.09%) of potentially suitable habitat converted to Non-Habitat, which is a very small amount of habitat; however, the Williams Fork Mountains do show dominance by lodgepole pine which has been recently killed by MPB. In these dead lodgepole pine stands, snowshoe hare densities would likely be on the lower end of the density spectrum (i.e., <0.5 hares/ha), and lynx foraging opportunities would be more limited in these early seral stand types adjacent to the ROW.

In summary, the effects of the project would cause minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there would be no remaining effective snowshoe hare or lynx habitat. The conversion of denning, winter foraging, other and currently unsuitable habitats to non-habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs; however, there would likely be a decreased effectiveness of habitats along the ROWs through increased potential snowmobiling, snow compaction, and decreased snowshoe hare densities. The long-term management of the ROWs as non-habitat may reduce habitat connectivity and habitat effectiveness for resident lynx, but would not have a likely impact to dispersing lynx. However, as the surrounding forests recover from MPB devastation, suitable habitat may redevelop, and mitigation using blocks of denser vegetation cover could be used to improve connectivity across the ROWs and help to maintain movements of resident lynx. Within the two LAUs, the effects of these impacts would have a minor impact to lynx habitat, but impacts to lynx or lynx habitat would not likely rise to the level of "take." However, any additional loss of suitable habitat is likely a negative impact given that these LAUs have such a large amount of habitat currently impacted by MPB, and there may be a loss in habitat connectivity across ROW. For the reasons discussed above, the Proposed Action "may affect, and is likely to adversely affect" Canada lynx.

Ashley National Forest (Forest Service Region 4), Utah

Information in this section summarizes the analysis in the BA for the ANF. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Carter Creek-Lower Flaming Gorge Reservoir LAU (CCLAU), Lower Flaming Gorge Reservoir-Green River-Crouse Creek LAU (GRLAU), Lower Flaming Gorge Reservoir LAU (LFRLAU), Little Brush Creek LAU (LBLAU), and Upper Ashley Creek-Big Brush LAU (UALAU).

As described in more detail in the BA, the evaluation of the effects of the Proposed Action is assessed with respect to relevant project standards and guidelines found in the Northern Rockies Lynx Assessment for management of existing infrastructure. The Proposed Action alternative covers Western's ongoing inspection and maintenance of infrastructure and access roads, and a change from "danger tree" mitigation to a more comprehensive and long-term proactive vegetation management strategy, which targets the removal of vegetation incompatible with transmission line and infrastructure operation, safety, and maintenance. This would convert long blocks of ROWs that are dominated by Categories 2-6 (see the BA section 4.6.1., Table 4: Proposed Acres of Vegetation Treatments on the ANF by Transmission Line, Vegetation Type, and Category) to a grass/forb dominated vegetation profile, which would effectively convert Primary and Secondary habitats within the ROW to a non-habitat or "un-typed" condition. In the affected LAUs, this would equal approximately 49 acres of Primary and 18 acres of Secondary habitats being converted to non-habitat.

Given Western's regular, but infrequent, entries into ROWs for aerial or ground-based inspections, maintenance, and danger tree treatments, there are human activities, loud noises, and manipulation of habitats. Further, given the proximity of US-191, the lack of large contiguous blocks of effective lynx habitat, and the commonality of timber harvest blocks in the area, ROWs are generally not considered to be in or near optimal or effective lynx habitat. Western's activities in ROWs occur during daylight hours and generally during the summer months, but some aerial inspections of infrastructure and potential danger trees occur during the winter months. Some emergency maintenance can occur during the winter months as well, using over-the-snow vehicles to address infrastructure issues. Lynx would be able to avoid these types of activities and still incidentally use parts of the treatment areas and ROWs given the infrequent nature of operations. The project is not expected to cause direct mortality to individual lynx or prevent lynx from traveling through or using the ROWs, but speeds on US-191 are fast enough that threats to lynx from vehicle strikes are a low-level risk. Given the very low amount of traffic anticipated to be generated by the Proposed Action, impacts to lynx are extremely unlikely, but not discountable.

Impacts in the CCLAU, GRLAU, LFRLAU, LBLAU and UALAU would have no impact to highly effective or suitable lynx habitat, but do occur within mapped Primary and Secondary habitats characterized by montane forests (dominated by ponderosa pine and Douglas-fir) as well as a smaller area of spruce-fir forests at the highest elevations along the LV-3 ROW. The effects of the project would cause a very minor reduction in available and effective lynx habitat in the LAU (i.e., 0.2% of lynx habitat occurs in the ROW of the LFRLAU, and impacts to other LAUs are even less than that). No additional snow compaction above existing levels would be expected, given the limitations of suitable snow conditions, access, and terrain.

Long-term impacts would include the removal of an overstory and horizontal cover within the ROWs, and there would be no remaining effective snowshoe hare or lynx habitat where treatments occur. These losses in habitat would occur in ROWs that have been managed by Western for many years, and therefore these ROWs are not considered to be highly functional or highly effective lynx habitat at this time. The conversion of 49 acres of Primary lynx habitats and 18 acres of Secondary lynx habitats to Non-Habitat across all LAUs would not affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs.

The Proposed Action adheres to ANF's Forest Plan (given the adherence to the Northern Rockies Lynx Amendment [NRLA]), and under the NRLA, the Proposed Action meets conservation measures including terms and conditions, reasonable and prudent measures, standards, and guidelines. This project would not add to the amount of Currently Unsuitable habitat, rather it would convert Primary and Secondary habitats to non-habitat conditions. Because the

conversion of up to 0.2% of habitat in the LFRLAU (and even fewer acres in other LAUs) occurs within ROWs that have been managed for many years, have not been highly effective habitat for many years, and are located in an area seeing other impacts diminishing the likelihood that lynx would reside near the ROWs, the effects of these habitat losses/conversions would not likely produce a measureable, meaningful, or detectable impact to lynx, and impacts to lynx habitat would not rise to the level of "take." Therefore, for the reasons summarized above and discussed in more detail in the BA, the Proposed Action "may affect, but is not likely to adversely affect" Canada lynx or its habitat on the ANF.

Grand Mesa, Uncompahgre and Gunnison National Forests, Colorado

Information in this section summarizes the analysis in the BA for the GMUGNF. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Huntsman Mountain LAU, Chalk Mountain LAU, Crater Lake LAU, Black Mesa LAU, Pitkin LAU, Upper Tomichi LAU, Spring Creek LAU, and Lone Cone LAU.

Given Western's current regular, but infrequent, entries into ROWs for aerial or ground-based inspections, maintenance, and danger tree treatments, there are already human activities, loud noises, and on-going manipulation of habitats. Western's activities in ROWs would continue to occur during daylight hours and generally during the snow-free periods, but some aerial inspections of infrastructure and potential danger trees occur during the winter months. Some emergency maintenance would occur during the winter months as well, using over-the-snow vehicles to address infrastructure or maintenance issues. Lynx would likely be able to completely avoid human activities and use the vast majority of the ROWs given the very infrequent human activities along ROWs. The Proposed Action is not expected to result in direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along the ROWs; however, some very minor increased traffic on SH-50 over Monarch Pass and through the Poncha Pass Lynx Linkage Area (LLA) may occur (other roadways would see continued Western traffic, but SH-50 is the only high-speed roadway likely to see utilization by Western that is within a LLA). Increased traffic is expected to be very minor (i.e., <0.01% increase in daily traffic), and there is a discountable low potential effect to lynx given how little increase traffic would be realized, nevertheless, the impacts if a vehicle strike occurred to a lynx would not be insignificant.

The Chalk Mountain and Crater Lake LAUs may see increased snowmobiling and snow compaction along the ROW which passes through a large, intact block of Primary and Secondary lynx habitat. The North Fork-Rifle (NFK-RFL) transmission line occurs near the locally popular Buzzard Park and Electric Mountain Lodge snowmobiling areas. The ROW is already known to see consistent snowmobiling use during the winter months. While the Forest Service does not currently show large areas of snow compaction around the ROW, or though Buzzard Park and Electric Mountain Lodge, on-site visits to the area during the winter and helicopter over-flights in the spring of 2009 revealed that these areas see extensive snow compaction (however, no

formal mapping of snow compaction areas has occurred as part of this report). Snowmobile use of the ROW is already present, and there is already the ability for other lynx competitors to access and compete with lynx in these areas and along the ROW. With the recent danger tree mitigation occurring along the ROW, there is also the potential for additional snowmobile use to occur. With the implementation of the Proposed Action, there may be the opportunity for additional snow compaction to occur deeper or more consistently into the larger blocks of lynx

habitat in the Chalk Mountain and Crater Lake LAUs. The exact amount of additional competitor access into adjacent soft snow habitat would be fairly speculative, primarily as these LAUs are not close to large big game winter ranges, and coyotes would therefore not be expected to be occurring along the ROWs with any regularity. Also, there is the likely opportunity for the increased presence and disturbance by snowmobiles along the ROWs in these LAUs, and this could create an indirect impact to adjacent lynx habitats from increased noise and human activities adjacent to higher quality habitats. While the ROW would not be promoted as a snowmobiling route, the indirect impacts of creating a long, open corridor cannot be discounted and negative impacts to lynx and lynx habitat may result from increased snowmobiling activities along the ROW. In the Huntsman Mountain, Chalk Mountain, and Crater Lake LAUs, there would be 5.8, 3.5, and 17.2 acres of habitat (respectively) converted from potentially suitable habitats to Non-Habitat.

In the Black Mesa LAU, no significant impacts to lynx habitat and habitat effectiveness would be realized. This area is relatively steep and has poor snowmobiling access. The Proposed Action alternative would not change the lack of access and general poor-suitability of the area for snowmobiling. No significant increase in snow compaction would be expected under the Proposed Action. Long-term there would be approximately 7.2 acres of potentially suitable habitat converted to Non-Habitat. While there would be a decrease in forested habitats within this LAU, it is unlikely that lynx territories occur adjacent to the ROW given the area's habitat conditions, and impacts to resident lynx would not be expected from this decrease in potential habitat along the ROW.

In the Pitkin LAU, a large portion of the ROW occurs in sagebrush habitats. It is unknown if snowmobiling is common in the area during the winter months, but the area does not appear to be a highly suitable snowmobiling area. The ROW also occurs through areas with poor snowmobiling terrain. Nevertheless, some incidental increase in snowmobiling use may occur along the Curecanti-Poncha (CCI-PON) line in the Pitkin LAU. However, this area is also a well-known big game wintering area, so coyotes would likely be very common in the area. Also, because much of the ROWs are located on south-facing slopes and at lower elevations, sun crusting, and wind packing are also likely occurring. Therefore, coyotes and other lynx competitors are likely already venturing into habitats along the ROW, and blocks of soft snow habitats where lynx could have a competitive advantage may be naturally lacking. There would be approximately 4.1 acres of suitable lynx habitat converted to Non-Habitat in the Pitkin LAU.

The Upper Tomichi LAU and Poncha Pass LLA support large blocks of mapped suitable habitat around the ROW; however, there are a number of human uses and habitat limitations that reduce the effectiveness of this area for more significant lynx use, and which should be considered. The forests in the area have a strong dominance by lodgepole pine- this is likely because of the historic mining activities in the area and widespread timber harvesting that occurred in the 1800s

and early 1900s. Specifically on the west-side of Monarch Pass in the Upper Tomichi LAU, lodgepole pine dominates stand types up to near the higher points of Monarch Pass. This mature forest type does not provide as good of snowshoe hare habitat as spruce-fir forest types. In these lodgepole pine stands, snowshoe hare densities would likely be low (i.e., <0.5 hares/ha), and lynx foraging opportunities would be limited in these stand types adjacent to the ROW. This likely contributes to a lack of persistent lynx activity in the area. Of note, is that the Forest Service maps large blocks of ponderosa pine, Douglas-fir, climax lodgepole pine, as well as spruce-fir stand types as “primary suitable” habitats in this LAU.

There is existing motorized and non-motorized use of ROWs on Monarch Pass, and existing snow compaction in and around Ski Monarch. As snow compaction is already occurring in the area, other competitors could access and compete with lynx in the area. As the ROW is close to big game winter ranges in Tomichi Creek, coyotes and other competitors may already be venturing into soft-snow habitats, especially up and along the Old Monarch Pass Road, which is compacted by motorized and non-motorized activities, and is a designated snow-compacted route. Given the nearby presence of Ski Monarch and the Old Monarch Pass Road, over-the-snow activities along the ROWs (especially along the CCI-PON line) may increase slightly, or at least be potentially maintained through implementation of the Proposed Action. The CCI-PON and North Gunnison-Salida (NGU-SLA) ROWs already are mostly supporting compatible vegetation, and incompatible vegetation is relatively infrequent. Nevertheless, the Proposed Action may result in the expansion of snow-compacting activities into variously effective blocks of lynx habitat adjacent to the ROWs. Based on on-site observations, however, over-the-snow activities are likely more limited by suitable snow conditions, access and terrain, and where suitable snow terrain and conditions exist for over-the-snow activities, it is likely that snow compaction is already occurring.

With regards to habitat connectivity through the Upper Tomichi LAU and Poncha Pass LLA; Ski Monarch itself is a moderately sized area with high human activity. While lynx could still cross the ski area relatively unimpeded during the off-seasons (spring, summer and fall), lynx passing through the area in the winter would not linger in or around the ski area due to large areas of snow compaction, diurnal human activities, nighttime grooming, and likely a decreased density of snowshoe hares from habitat fragmentation of forests (from ski trails), snow compaction, and high levels of persistent human activities. Western’s ROWs crosses the Monarch Pass area, and the CCI-PON ROW passes through Ski Monarch. While the transmission line ROWs are infrequently visited by Western’s staff and contractors, they are another anthropogenic feature that diminishes continuity of effective snowshoe hare and lynx habitat at the top of Monarch Pass. The ROWs themselves would not create a barrier or significantly decrease habitat connectivity per se, but the long-term maintenance of the ROWs as essentially a non-habitat feature could cumulatively add to impacts affecting how lynx use the adjacent habitats. One would not expect a non-habitat ROW to prevent lynx from crossing through the area, as lynx are known to pass through the LLA commonly, but cumulatively, the human activity levels and highly fragmented habitats remaining on Monarch Pass would likely result in decreased lynx residency times in this area. It would be very difficult to quantify or accurately predict how the treated ROW would cumulatively affect lynx use of habitats in the area, but based on the literature, it would seem rational that lynx may use habitats in the area differently- likely minimizing their time in the area around SH-50, Monarch Pass, Ski Monarch, and where the ROWs occur in the vicinity of these features. Nevertheless, continued incidental lynx foraging

(although diminished in effectiveness) and dispersing (although impacted by SH-50 and Ski Monarch) would not be precluded in the Monarch Pass and Poncha Pass LLA from the implementation of the Proposed Action. Based on the less-than optimal habitat conditions, and compounding impacts from SH-50, the two ROWs, multiple Forest Service roads, Ski Monarch, and other dispersed human activities on Monarch Pass, the likelihood that lynx would choose to reside, linger, or den in the Monarch Pass area is assumed to be very low.

In suitable habitats to the west of Monarch Pass, away from the high activity areas on the Pass, the areas of suitable spruce-fir habitats likely provide important diurnal security habitat areas for lynx, and the Proposed Action would keep ROWs in these habitat blocks open and unsuitable for lynx use. There is also the possibility that over-the-snow activities along the ROW would occur to a level high enough to reduce some diurnal security habitat adjacent to the ROWs. In the Upper Tomichi LAU, there would be a long-term conversion of 46.3 acres of potentially suitable habitats to Non-Habitat along the two ROWs.

In the Paradox project area, the Hesperus-Montrose (HS-MTR) ROW and areas around the ROW have already seen significant and large-scale fuels and forest thinning and opening of habitats. Much of the ROW and areas around the ROW are already in an early seral stage and generally unsuitable for lynx at this time. In the Spring Creek LAU and around the ROW snowmobiling is widespread and consistently compacts most roads and trails, and the HS-MTR ROW is undoubtedly used by snowmobilers, especially since implementation of a number of fuels treatment and forest health projects in the early 2000s (which dramatically opened up the ROW and surrounding habitats). The Proposed Action may increase some suitability of areas for more or continued snowmobiling, but given the widespread and consistent snowmobiling activities in the area, it is likely that lynx competitors already have the ability to take advantage of these conditions, and the Proposed Action would not significantly add to these existing conditions. Long-term, the Spring Creek LAU would see approximately 84.9 acres of Unsuitable habitats converted to Non-Habitat.

In summary, the analysis in the BA indicates the proposed project would cause minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas with removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there would be no remaining effective snowshoe hare or lynx habitat. The conversion of Primary and Secondary Suitable and Primary and Secondary Unsuitable habitats to non-habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs, but there would likely be a decreased effectiveness of habitats along the ROWs, and likely increased human activities along the ROWs, which may further diminish habitat effectiveness. The implementation of the Proposed Action within the Crater Lake and Chalk Mountain LAUs may reduce habitat connectivity for resident lynx, or may reduce the ability for a lynx to establish a home range straddling the ROW.

Within the Crater Lake and Chalk Mountain LAUs mitigation to maintain connectivity could be applied to the treated ROWs. Creating blocks of denser vegetation cover to maintain connectivity between suitable habitats on either side of the ROWs would help to maintain habitat connectivity and help to prevent the effects of fragmentation described above for resident lynx. Within all LAUs, aside from the Crater Lake and Chalk Mountain LAUs, the effects of these

impacts would have only minor potential impacts to lynx or lynx habitat, and impacts to lynx or lynx habitat would not likely rise to the level of “take.” However, given potential impacts to habitat connectivity and habitat effectiveness in the Crater Lake and Chalk Mountain LAUs, and a potential decreased effectiveness of habitats around the NFK-RFL ROW, there could be a negative impact in the ability for lynx to fully use habitats in these LAUs as a home range. Using mitigation to retain blocks of denser vegetation cover would greatly decrease the effects of fragmentation on resident lynx to maintain habitat connectivity, but this may not completely avoid impacts. Therefore, for the reasons discussed in detail in the BA and summarized above, the Proposed Action “may affect, and is likely to adversely affect” Canada lynx on the GMUGNF.

Medicine Bow-Routt National Forests, Colorado

Information in this section summarizes the analysis in the BA for the MBRNF in Colorado. The effects analysis in the BA discusses the impacts of Western’s Proposed Action on the lynx’s ability to meet its life history requirements in the Horse Thief LAU, Mount Werner LAU, Walton Peak LAU, Lynx Pass LAU, and Red Dirt LAU.

The Proposed Action covers Western’s ongoing inspection and maintenance of infrastructure and access roads, and a change from “danger tree” mitigation to a more comprehensive and long-term proactive vegetation management strategy as part of the reauthorization of Western’s ROW. The proposed vegetation management strategy would convert incompatible vegetation (e.g., trees) to compatible grass, forb and low-growing shrub profiles. This results in a conversion of long, linear blocks of ROWs to a grass and forb dominated vegetation profile, which would effectively convert suitable and unsuitable habitats within the ROW to a non-habitat condition. Vegetation treatments along access roads would be minimal (e.g., pruning of limbs, removal of individual trees, etc.). Below are summary discussions of impacts to lynx and lynx habitats from the various components of the Proposed Action. Given Western’s current regular, but infrequent, entries into ROWs for aerial or ground-based inspections, maintenance, and danger tree treatments, there are already human activities and loud noises and on-going manipulation of habitats. Western’s activities in ROWs would continue to occur during daylight and generally during the snow-free months, but some aerial inspections of infrastructure and potential emergency danger tree treatments could occur during the winter months. Some emergency maintenance could occur during the winter months as well, using over-the-snow vehicles to address infrastructure or maintenance issues. Lynx would likely be able to completely avoid human activities and would not be precluded from using most of the ROWs given the very infrequent nature of Western’s activities along ROWs. The Proposed Action is not expected to cause the direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along and abutting the ROWs; other roadways would see continued Western traffic; however, some very minor increased traffic on SH-134 over Lynx Pass and through the Lynx Pass LAU and Red Dirt LAU may occur in the short-term (other roadways would see continued Western traffic, but SH-134 is the only high-speed roadway likely to be used by Western that is within a LAU or LLA). Increased traffic is expected to be very minor (i.e., <1% increase in daily traffic), and there is a discountable low potential effect to lynx given how little increase traffic would be realized. Nevertheless, the impacts if a vehicle strike occurred to a lynx would not be insignificant.

The two transmission lines in the Mount Werner LAU (Hayden-North Park [HDN-NOP] and Ault-Craig [AU-CRG]) occur within the Rabbit Ears & Buffalo Pass Winter Recreation Area, which is extensively snow compacted and has multiple compacted routes in and around the ROWs. Large areas of uncompacted snow or diurnal security habitat are generally lacking around the ROWs. Snowmobile use of the ROWs is already present, and there is already the ability for other competitors to access and compete with lynx in the area. With the implementation of the Proposed Action, there is likely the opportunity for additional snow compaction to occur deeper or more consistently into the area, but again, this area is dominated by open parks, many old logging roads, and lodgepole pine having seen widespread MPB mortality and recent salvage efforts, and this area is heavily used by snowmobilers and other winter recreationists at this time. In the Mount Werner LAU, there would be a conversion of 107.9 acres of suitable lynx habitat to non-habitat, which is approximately 0.34% of suitable habitats in the Mount Werner LAU, and there would be an additional 10.4 acres of unsuitable habitat converted to non-habitat.

Given the dominance of mostly ineffective habitat for long-term lynx residency in the Buffalo Pass area, the Proposed Action would not likely have significant additional or cumulative impacts on lynx or the general effectiveness or condition of habitats in the Mount Werner or Horse Thief LAUs. As the eastern side of the Mount Werner LAU recovers from MPB, more suitable lynx habitat in the area would be available for snowshoe hare and lynx, and this project would not preclude the potential for snowshoe hare or lynx to use these habitats, but the ROWs may diminish habitat connectivity for lynx that use a home range within a larger block of suitable and effective habitats. The ROWs passing through suitable habitats, in the long-term, would also allow for more persistent human activities and noise in the area, but given the eastern side of Buffalo Pass already sees consistent snowmobiling, there is already snow compaction and human activities in the area.

In the Lynx Pass and Red Dirt LAUs, the recent MPB epidemics, danger tree mitigation and salvage logging has resulted in large areas, as well as areas within the ROWs, already seeing widespread conversion of suitable lynx habitats to stand initiation stage forests. There are a few spanned drainages which would act as a deterrent to snowmobile use along the ROWs. Therefore, some additional snowmobile use would be expected on at least certain easily accessible sections of the ROWs; in areas near salvage logging operations, there are open “park like” conditions in the vicinity of the ROWs. However, as these sections of the ROW do not provide suitable lynx habitat (e.g., there is no suitable habitat in the ROWs at this time– they are currently unsuitable), there would be no additive loss of lynx habitat effectiveness within the ROWs due to snowmobile activities. Some indirect impact to adjacent lynx habitats would likely occur from the possible incursion of competitors into adjacent soft snow habitats given the long-term likelihood that snowmobiles would continue to use the opened conditions of the ROWs. The exact amount of additional competitor access into adjacent soft snow habitat would be fairly speculative, primarily as these LAUs are not close to large big game winter ranges, and coyotes would therefore not be expected to regularly occur along the ROWs. But, as snowmobile activities occur throughout most of the Lynx Pass LAU and Red Dirt LAU areas, lynx predators may be conducting foraging bouts into area soft snow habitats. This project may expand snow-compacting activities into blocks of lynx habitat.

In the long-term, the Lynx Pass LAU would see approximately 134.8 acres (or 0.24%) of potentially suitable habitat converted to non-habitat. In the Red Dirt LAU, there would be approximately 71.4 acres, or 0.36% decrease in Suitable habitats. The Lynx Pass LAU is 36% unsuitable, and the Red Dirt LAU is currently 50% Unsuitable, and additional loss of Suitable habitats would be detrimental towards snowshoe hare and lynx. Applying mitigation by retaining blocks of denser vegetation cover in the parts of the ROWs with surrounding suitable habitat, now or in the future, would help to retain habitat connectivity for movements of resident lynx and could help to retain winter habitat conditions for both lynx and snowshoe hares in the Lynx Pass and Red Dirt LAUs.

In summary, the effects of the project would cause minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there would be no remaining effective snowshoe hare or lynx habitat. The conversion of Suitable and Unsuitable habitats to non-habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the affected LAUs, although there would likely be decreased effectiveness of habitats along the ROWs through increased potential snowmobiling, snow compaction, and decreased snowshoe hare densities. The treated ROWs may reduce habitat connectivity for a resident lynx using a home range, or may change how a home range would be located (e.g., to avoid repeatedly crossing ROWs), but the ROWs would not likely impact dispersing lynx.

Within the affected LAUs, the effects of these impacts would be a reduction of habitat effectiveness, and may increase habitat fragmentation; however, impacts to lynx or lynx habitat would not likely rise to the level of "take." Given that the Lynx Pass and Red Dirt LAUs already have 36% and 50% of the LAUs in an early seral and currently unsuitable habitat condition, any additional loss of suitable habitat may be a negative impact to lynx. Lynx using a home range now or in the future may see a decrease in habitat connectivity across a ROW. Mitigation applied to retain blocks of shorter, dense vegetation cover in these areas would help to maintain habitat connectivity and permit movement of resident lynx. Therefore, for the reasons discussed above, the Proposed Action "may affect, and is likely to adversely affect" Canada lynx in the MBRNF.

Pike and San Isabel National Forests, Colorado

Information in this section summarizes the analysis in the BA for the PSINF. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Tennessee Pass LAU (TPLAU), Monarch Pass LAU (MPLAU), and Poncha Pass Lynx Linkage Area (PPLA).

The Proposed Action covers Western's ongoing inspection and maintenance of infrastructure and access roads, and a change from "danger tree" mitigation to a more comprehensive and long-term proactive vegetation management strategy, which targets the removal of incompatible vegetation. This converts long areas of ROWs to a grass/forb dominated vegetation profile, which would effectively convert winter foraging, denning, other and currently unsuitable habitats within the ROW to a non-habitat condition. Below are summary discussions of impacts to lynx and lynx habitats from the various components of the Proposed Action. The project is not

expected to cause direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along the ROWs; however, some very minor increased traffic on SH-50 may occur (e.g., <0.01% vehicles per day). Increased traffic is not expected to have a potential effect to lynx given how little increase traffic would be realized, but the impacts if a vehicle strike occurred would not be insignificant.

The Monarch Pass area supports large areas of coniferous habitat near the ROWs; however, there are a number of actions in the vicinity of the Pass that reduce the effectiveness of this area for more significant lynx use, and which should be considered. The forests in the area have a strong dominance by lodgepole pine- this is likely because of the historic mining activities in the area and widespread timber harvesting that occurred in the early 1900s. Specifically on the west-side of Monarch Pass (technically on the GMUGNF), lodgepole pine surprisingly dominates stand types up to near the higher points of Monarch Pass. Lodgepole pine also occurs high up into Fooses Creek. Currently, this mature forest type does not provide as good of snowshoe hare habitat as does spruce-fir forest types (USFS 2008a, Dressen et al. 2010). In these lodgepole pine stands, snowshoe hare densities would likely be on the lower end of the density spectrum (i.e., <0.5 hares/ha), and lynx foraging opportunities would be limited in the greater Monarch Pass area. This likely contributes to an observed lack of persistent lynx activity/residency in the area (Jvan 2011). Also in the Monarch Pass area, SH-50 is a higher-speed, higher volume highway. The presence of the highway would likely hinder habitat connectivity through the area, but lynx have been documented using suitable habitats right up to the edges of highways in some areas of Colorado (Roberts pers. comm. 2012). However, there could be decreased density of snowshoe hares near the highway due to highway-associated noise and lighting.

Ski Monarch also introduces impacts, with a high amount of human activity. While lynx would still be able to cross the ski area relatively unimpeded during the nighttime and during the summer months, lynx would not linger in or around the ski area due to large areas of snow compaction, diurnal human activities, nighttime grooming, and likely a decreased density of snowshoe hares due to habitat fragmentation, snow compaction, and human activities in the ski area, as well as in areas around the ski area. While the transmission line ROWs are infrequently visited by Western's staff and contractors, visitation is another anthropogenic feature that diminishes contiguity of effective snowshoe hare and lynx habitat. Also in the Monarch Pass area are the Monarch Crest Tramway and the Continental Divide National Scenic Trail, which further cumulatively contribute to human activity patterns in the area.

The ROWs themselves would not create a barrier or significantly decrease habitat connectivity per se, but the long-term maintenance of the ROWs as essentially a Non-Habitat feature could change how lynx use the adjacent habitats, and could also change the focus of their activities. An "edge effect" may be realized by lower snowshoe hare densities near the ROWs, increased snow compaction and human noise and activity, and potentially increased competition from coyotes and other competitors. This decreased habitat effectiveness near the ROWs would also be compounded due to the presence of SH-50 and Ski Monarch, where additional summertime vehicle traffic and winter time over the snow activities would compound human disturbances and snow compaction near to the ROWs. It would be very difficult to quantify or accurately predict how the treated ROW would affect lynx use of habitats in the area, given the other activities ongoing in the area, but based on the literature, it would seem rational that lynx may use habitats in the area differently- likely minimizing their time in the ROWs, and thus compounding the

negative stressors in the Monarch Pass area in reducing a lynx's ability to effectively forage and fully use habitats on Monarch Pass. Nevertheless, continued incidental lynx foraging and dispersing (although impacted by SH-50 and somewhat by the ski area) would not be precluded in the Monarch Pass area from the implementation of the Proposed Action. By applying mitigation consisting of blocks of denser vegetation cover where suitable habitat conditions surround ROWs, connectivity across the ROWs could be maintained to facilitate use and movement of lynx. Identifying possible mitigation sites would take further coordination with the Service and the Forest Service.

Based on the less-than-optimal habitat conditions, and compounding impacts from SH-50, the two ROWs, multiple Forest Service roads, Ski Monarch, and other dispersed winter and summer human activities on Monarch Pass, the likelihood that lynx would choose to den or establish a home range in the Monarch Pass area is assumed to be low. The effects of the project would cause a very minor direct reduction in available and effective lynx habitat in the Monarch Pass LAU (i.e., approximately 0.07% of suitable lynx habitat in the LAU would be converted to Non-Habitat), and in areas seeing removal of incompatible vegetation, there would be no remaining effective snowshoe hare or lynx habitat unless mitigation vegetation is allowed to develop and is maintained to help retain movement areas across the ROWs. These losses in habitat would occur in ROWs that have been managed by Western for many years, and therefore these ROWs are not considered to be highly functional or highly effective lynx habitat at this time, and much of the area along these ROWs should probably already be considered Non-Habitat given how long they have been managed. The conversion of 113.2 acres of winter foraging, denning, other, and currently unsuitable habitat to non-habitat would not significantly affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the Monarch Pass LAU. However, the treated ROW could produce a "soft" boundary for a resident lynx using a territory. In other words, one would not expect a lynx to repeatedly crisscross a ROW in using a territory during foraging bouts, and therefore there may be some habitat fragmentation for a resident lynx. As previously discussed, this "soft" boundary could occur for a resident lynx, but would not be a dispersal deterrent for a dispersing lynx or a lynx making more long-range movements.

The conversion of up to 0.08% of habitat in the Monarch Pass LAU occurs within ROWs that have been managed for many years, have not been highly effective habitat for many years, and are located in an area seeing many other impacts diminishing the likelihood that lynx would reside next to the ROWs. The effects of these habitat losses/conversions would not likely produce a significant impact to lynx or lynx habitats, and impacts to lynx and lynx habitat would not rise to the level of "take." However, where applicable mitigation blocks of denser vegetation cover could be maintained to help retain movement and use areas across treated ROWs, but these blocks are not likely needed at this time. Within the Tennessee Pass LAU, on-site habitat verification resulted in a conclusion that no effective lynx habitat would be impacted. Therefore, for the reasons discussed above, the Proposed Action "may affect, but is not likely to adversely affect" Canada lynx on the PSINF.

San Juan National Forest, Colorado

Information in this section summarizes the analysis in the BA for the SJNF. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Mancos LAU.

The Proposed Action covers Western's ongoing inspection and maintenance of infrastructure and access roads, and a change from "danger tree" mitigation to a more comprehensive and long-term proactive vegetation management strategy as part of the reauthorization of Western's ROWs. The proposed vegetation management strategy would convert incompatible vegetation (e.g., trees) to compatible grass, forb and low-growing shrub profiles. This results in a conversion of long, linear sections of ROWs to a grass/forb dominated vegetation profile, which would effectively convert denning, winter foraging, other, and early stand-initiation habitats within the ROW to a Non-Habitat condition. Following are summary discussions of impacts to lynx and lynx habitats from the various components of the Proposed Action.

This project would include the long-term conversion of approximately 184 acres of ponderosa pine, oak brush, pinyon-juniper, Douglas-fir, and integrated aspen stands to early seral grass/forb conditions. As these areas are already considered to be non-habitat, Western's proposed management of these vegetation types would not change the status of these habitats. In three spanned drainages, vegetation profiles are generally still compatible, but some impact to mapped Primary Suitable and Primary Unsuitable Habitats may occur, which could total 7.3 acres. These treated areas should be re-categorized to non-habitat and tracked in LAU statistics.

While the area around Western's ROW is dominated by large contiguous blocks of unsuitable lynx habitat, some incidental lynx dispersal may occur through the area. However, the combined conditions of unsuitable habitat, high levels of human activities (summer recreation, and some winter time snowriding activities), and existing ROW vegetation conditions, make most of the ROW and adjacent habitat unsuitable and ineffective habitats for long-term lynx use. Western's access and maintenance of infrastructure and vegetation conditions within the ROW would have incidental and insignificant impacts to snowshoe hare and lynx secondary prey species densities. However, it is assumed that some decrease in secondary prey species densities would occur within the ROW due to a reduction in vegetation cover and structural complexity. This reduction in secondary prey species densities would have insignificant and discountable impact to lynx's ability to incidentally procure prey during dispersal activities through the unsuitable habitats dominating the ROW and adjacent stands. This project would not reduce lynx's ability to disperse through the project area or through the Mancos LAU. This project would have no significant increase in snow compaction leading to additional competitive advantages to lynx competitors.

In summary, the majority of the actions under the Proposed Action would have insignificant and discountable impacts to snowshoe hare, lynx, and higher quality lynx habitats. The majority of the project occurs in large blocks of non-habitat, and would likely only be used incidentally by lynx passing through the area. However, approximately 7.3 acres of Primary Suitable and Primary Unsuitable Habitats would be converted to non-habitat. Therefore a determination of "may affect, but is not likely to adversely affect" lynx is warranted for the Proposed Action due to insignificant and likely discountable impacts to dispersing lynx and potential reductions in incidental foraging opportunities in unsuitable and Primary Suitable and Secondary Suitable habitats. There would likely be no anticipated impacts to lynx's ability to find shelter, disperse, forage successfully, or continue to use habitats within the Mancos LAU.

White River National Forest, Colorado

Information in this section summarizes the analysis in the BA for the WRNF. The effects analysis discusses the impacts of Western's Proposed Action on the lynx's ability to meet its life history requirements in the Blue River LAU, Mahan LAU, and Divide Creek LAU.

The Proposed Action covers Western's ongoing inspection and maintenance of infrastructure and access roads, and a change from "danger tree" mitigation to a more comprehensive and long-term proactive vegetation management strategy as part of the reauthorization of Western's ROWs. The proposed vegetation management strategy would convert incompatible vegetation (e.g., trees) to compatible grass, forb and low-growing shrub profiles. This converts long, linear sections of ROWs to a grass/forb dominated vegetation profile, which would effectively convert denning, winter foraging, other, and early stand-initiation habitats within the ROW to a Non-Habitat condition. Below are summary discussions of impacts to lynx and lynx habitats from the various components of the Proposed Action. Given Western's current regular, if infrequent, entries into ROWs for aerial or ground-based inspections, maintenance, and danger tree treatments, there is already a low-level of human activities, loud noises, and on-going manipulation of habitats. Western's activities in ROWs would continue to occur during daylight hours and generally during the snow-free months, but some aerial inspections of infrastructure and potential emergency danger tree treatments (although very rare) could occur during the winter months. Some emergency maintenance could occur during the winter months as well, using over-the-snow vehicles to address infrastructure or maintenance issues. Lynx would likely be able to completely avoid human activities and use (to the extent that habitats would allow) the vast majority of the ROWs given the very infrequent nature of human activities along ROWs.

The Proposed Action is not expected to cause direct mortality of individual lynx or prevent lynx from traveling through or using remaining habitats along and abutting the ROWs; other roadways would see continued Western traffic, but there are no high-speed roadways likely to see use by Western that are within the WRNF. Off-forest increased traffic is expected to be very minor (i.e., <0.01% increase in daily traffic), and there is a discountable low potential effect to lynx given how little increased traffic would be realized; nevertheless, the impacts if a vehicle strike occurred to a lynx would not be insignificant.

In the Divide Creek and Mahan LAUs, there would be no impact to lynx habitat, and any activities or management of the ROW would not prevent lynx from dispersing across the largely ineffective habitats within and around the ROW.

In the Blue River LAU, the recent MPB epidemics, danger tree mitigation and salvage logging has produced large areas, including areas within the ROWs, with widespread conversion of suitable lynx habitats to stand initiation stage forests. In the long-term, the Blue River LAU would see approximately 42.8 acres (or 0.06%) of potentially suitable habitats converted to Non-Habitat, which is a very small amount of habitat; however, the Blue River LAU is already 48.07% Unsuitable at this time. In recently killed lodgepole pine stands (including salvaged and un-salvaged stands), snowshoe hare densities would likely be on the lower end of the density spectrum (i.e., <0.5 hares/ha), and lynx foraging opportunities would be limited in these early seral stand types adjacent to the ROWs.

In summary, the effects of the project would cause minor direct reductions in available and effective lynx habitat in the ROWs given Western's many years of managing the ROWs for transmission line safety. However, in areas seeing removal of incompatible vegetation and maintenance of currently early seral and unsuitable habitats, there would be no remaining effective snowshoe hare or lynx habitat. The conversion of suitable and Currently Unsuitable habitats to non-habitat would not likely affect the ability of a lynx to establish a home range or to prevent a lynx from foraging, finding shelter, or reproducing in the BRLAU, but there could be a decreased effectiveness of habitats along the ROWs through potential increased snowmobiling, snow compaction, and decreased snowshoe hare densities. The treated ROW could produce a "soft" boundary for a resident lynx using a territory. In other words, one would not expect a lynx to repeatedly crisscross a ROW in using a territory during foraging bouts, and therefore there may be some habitat fragmentation for a resident lynx. As previously discussed, this "soft" boundary could occur for a resident lynx, but would not be a dispersal deterrent for a dispersing lynx or a lynx making more long-range movements.

Within the affected LAUs, the effects of these impacts would not likely produce significant impact to lynx or lynx habitat, and impacts to lynx or lynx habitat would not likely rise to the level of "take." However, given that the Blue River LAU already is 48.07% Currently Unsuitable, any additional loss of suitable habitat may be considered detrimental to lynx. Therefore, for the reasons discussed above, the Proposed Action "may affect, and is likely to adversely affect" Canada lynx.

1.1.2. Mexican Spotted Owl (*Strix occidentalis lucida*)

Western's activities covered under the BA occur within the Southern Rocky Mountains-Colorado Recovery Unit (Uinta County in northern Utah is outside of a Recovery Unit). For the project areas, distributional data for the Mexican Spotted Owl (MSO) was obtained using updated Protected Activity Center (PAC) information, and MSO associated habitat was determined using GIS modeling and site visits. The analysis for this consultation designated protected steep-slope habitat and restricted habitat separately, to the extent possible given current GIS databases available. Both of these potential habitat components occur along the transmission lines crossing forested habitat types within counties listed by the Service for potential MSO activity. None of the ROWs occur within Critical Habitat.

Within Colorado, documented surveys on the GMUGNF and ARNF failed to detect MSO, which indicates that the northern extent of MSO at this time is likely similar to designated Critical Habitat, with the exception of the MSOs occupying Mesa Verde National Park and other individual owls detected on the SJNF.

Ashley National Forest, Utah

No known MSO occur near the ROWs. Direct impacts to adult owls (i.e., direct mortality) are highly unlikely as adult owls would be able to fly away from activities, including treatment of incompatible vegetation. There are no cliffs or walled canyons along the ROWs, but steep slope habitats do exist. Therefore, otherwise unknown nesting may (however unlikely) occur near the ROWs. Indirect impacts to owls could occur from modifications to foraging habitats through the removal of incompatible vegetation, which could include removal of some shrubby and shorter tree canopies in ROWs, and a reduction in prey species habitats. Conversion of the majority of

ROWS to grass, forb, and shrub vegetation profiles may have potential indirect impacts to MSO and foraging habitats and potentially, but unlikely, nesting MSO through loud noises from machinery, which may cause startle or flushing responses. This habitat-type conversion may also reduce potential, but in all likelihood unused, foraging habitats within and adjacent to ROWs. Based on this analysis, the Proposed Action “may affect, but is not likely to adversely affect” the MSO.

Grand Mesa, Uncompahgre and Gunnison National Forests, Colorado

Because Western’s transmission lines do not cross PACs or Critical Habitat, the likelihood of potential effects to MSO or their ability to use area habitats is relatively insignificant. MSO are very rare in Colorado, and based on extensive surveys of potential habitats in Colorado and on the GMUGNF, it is reasonable to surmise that most of the consistently used nesting areas are well documented. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on this analysis, the Proposed Action “may affect, but is not likely to adversely affect” the MSO.

San Juan National Forest, Colorado

Because Western’s transmission lines do not cross PACs or Critical Habitat, the likelihood that the Proposed Action would have impacts on MSO or their ability to continue to use area habitats are relatively insignificant. MSO are very rare in Colorado, and based on extensive surveys of potential habitats in and around the SJNF noted in the BA, it is reasonable to assume that most of the consistently used nesting areas are well documented. Further, most of the protected steep-slope habitats occur in areas where transmission lines span canyons, which greatly diminishes the need for tree cutting that may impact owls. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on the analysis in the BA, the Proposed Action “may affect, but is not likely to adversely affect” the MSO.

Pike and San Isabel National Forests, Colorado

Western’s transmission lines do not cross PACs or Critical Habitat in the PSINF. The likelihood that the potential effects analyzed in the BA would impact the MSO or their ability to use area habitats is relatively insignificant. Impacts to potential foraging habitats for MSO would likely be insignificant and discountable. Based on the analysis in the BA, the Proposed Action “may affect, but is not likely to adversely affect” the MSO.

1.1.3 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

San Juan National Forest, Colorado

The SJNF is the only Forest with potential habitats for the Southwestern willow flycatcher (SWWF). The BA for the SJNF (July 2014) contains an extensive evaluation of the potential effects of the Proposed Action on the SWWF.

Impacts to potential habitats within the Rio Grande and San Juan watersheds were assessed. Western does not have transmission lines within suitable habitat or potentially suitable habitats within the Rio Grande watershed. Within the San Juan watershed, Western’s transmission lines cross and span potential habitats, which may contain suitable or potentially suitable habitat. Based on the information and analysis in the BA, the potential disturbances associated with the Proposed Action, as long as they do not occur in occupied SWWF habitat would be short-lived,

but there may be possible brief and discrete disruption to SWWF pairs' courting, nesting, fledging, and foraging activities. Western would conduct surveys for nesting SWWF prior to conducting noisy, extended ground-based activities and vegetation treatment within or adjacent to potential SWWF habitats. The anticipated indirect impacts and unlikely direct impacts would cause a likely insignificant, but not entirely discountable impact. Therefore a determination for the Proposed Action would be that these actions "may affect, but not likely to adversely affect" the SWWF.

Western's transmission lines do not cross Critical Habitat for SWWF; therefore, the Proposed Action would have had "no effect" on Critical Habitat.

1.1.4. Uncompahgre Fritillary Butterfly (*Boloria acrocnema*)

Grand Mesa, Uncompahgre, and Gunnison National Forests, Colorado

Based on the analysis in the BA, there would be no reasonably foreseeable direct or indirect impacts to potential butterfly habitats through the implementation of the Proposed Action; the project would have "no effect" to the Uncompahgre fritillary butterfly.

Pike and San Isabel National Forests, Colorado

Based on the analysis in the BA, there would be no reasonably foreseeable direct or indirect impacts to potential butterfly habitats through the implementation of the Proposed Action; the project would have "no effect" to the Uncompahgre fritillary butterfly.

1.2 Fish

1.2.1. Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*)

Arapaho-Roosevelt National Forests, Colorado

There are no identified direct impacts from the Proposed Action on Greenback (GB) lineage fish on the ARNF. There are no known GB lineage fish occurring in streams spanned by the ROWs, even though native cutthroat trout have been located downstream of the ROWs. There is a potential for increased fine sediment delivery into suitable habitats. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs, potential indirect impacts to habitat or unknown fish may occur; therefore, the Proposed Action "may affect, but is not likely to adversely affect" greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Grand Mesa, Uncompahgre, and Gunnison National Forests, Colorado

There are no identified direct impacts from the Proposed Action on GB lineage fish on the GMUGNF. In the Hightower project area several streams spanned by the ROW are assumed to have GB lineage fish in them (none of the streams have been specifically surveyed for GB lineage fish at this time, and this analysis uses the best available existing data). In both the Hightower and Paradox project areas the ROWs occur in streams which at least provide habitats for GB lineage fish. Because these habitats are spanned by transmission lines, no proposed activities are anticipated to have a direct impact on GB lineage fish. No water depletions are associated with the Proposed Action. There is a potential for increased fine sediment delivery into suitable habitats. Given the cumulative nature of potential fine sediment delivery and

changes in forest types from vegetation management activities in ROWs, potential indirect impacts to habitat or unknown fish may occur, therefore the Proposed Action “may affect, but is not likely to adversely affect” greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Medicine Bow and Routt National Forests, Colorado

The analysis in the BA did not identify anticipated direct impacts to GB lineage fish on the MBRNF. There are no known GB lineage fish occurring in streams spanned by the ROWs (but native cutthroat trout have been located downstream of the ROWs in the Phippsburg project area in Deadman Gulch). The streams supporting GB lineage habitats are spanned by transmission lines; no proposed activities are expected to have a direct impact on (unknown) GB lineage fish or their habitats. No water depletions are associated with the Proposed Action.

Of the 602.7 acres in the three project areas, only 54.8 acres of ROWs intersect a water influence zone (WIZ), and 26.5 acres of incompatible vegetation would be treated within the WIZs. Neither stream hydrology, nor the amount and timing of water delivery to aquatic habitats, is expected to change from the ongoing treatment of vegetation on ROWs. The potential impacts from fine sediment delivery to potential habitats and spawning gravel beds could impact GB lineage fish. GB lineage prey species (i.e., aquatic invertebrates) may also be smothered or see reductions in suitable habitat from siltation. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities and maintenance in ROWs, potential indirect impacts to habitat or unknown fish may occur, therefore the Proposed Action “may affect, but is not likely to adversely affect” greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

Pike and San Isabel National Forests, Colorado

There are no anticipated direct impacts to GB lineage fish on the PSINF. There are no known GB lineage fish occurring in streams spanned by the ROWs. However, GB lineage fish are known to occur in tributaries to the North Fork of the Arkansas River. This stream is spanned by both the Curecanti-Poncha and North Gunnison-Salida transmission lines. As these potential habitats are spanned by transmission lines, no proposed activities would have a direct impact on possible GB lineage fish or their habitats. No water depletions are associated with the Proposed Action. There is a potential for increased fine sediment delivery into suitable habitats. County Road 225 (the road to Fooses Reservoir) provides access to Western for ROW maintenance, and this road crosses the North Fork of Arkansas River near the highway on private lands. There could be decreased shading of riparian areas and modification of riparian vegetation profiles from vegetation treatment near WIZ areas. These indirect impacts would likely affect aquatic conditions and trout habitats and their prey species compositions (i.e., the species of aquatic macroinvertebrates available), but these impacts would not likely cause substantial changes in GB lineage use of habitats or their ability to procure aquatic macroinvertebrates. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs, potential indirect impacts to habitat and individual fish or spawning beds may occur. Therefore, the Proposed Action “may affect, but is not likely to adversely affect” greenback cutthroat trout (GB lineage) and their suitable habitats.

San Juan National Forest, Colorado

There were no identified anticipated direct impacts to GB lineage fish on the SJNF. As the two known populations occur many river miles upstream of the Hesperus-Montrose transmission line span of the Dolores River, no proposed activities would have a direct impact on GB lineage fish or their habitats. No water depletions are associated with the Proposed Action. As there are no known GB lineage populations near the Curecanti-Lost Canyon or Great Cut-McPhee transmission lines, activities within those ROWs would have no direct impacts to GB lineage fish. Additionally, there would be no indirect impacts to GB lineage fish or their occupied habitats on the SJNF. There are no access roads or activities proposed by Western that would produce indirect impacts to occupied reaches (i.e., no vegetation removal from WIZ areas, fine sediment delivery etc., within the Rio Lado or Little Taylor Creek reaches). However, there is a possibility that otherwise unknown GB lineage fish may have, or currently do occupy other reaches on the SJNF crossed by Western's ROWs, or downstream of the ROWs. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management activities in ROWs (while there are no known viable populations of GB lineage fish in the project area), potential indirect impacts to habitat or unknown fish may occur, and therefore the Proposed Action "may affect, but is not likely to adversely affect" greenback cutthroat trout (GB lineage) and their otherwise suitable habitats.

White River National Forest, Colorado

There were no identified potential direct impacts on Colorado native cutthroat trout (CNC) on the WRNF. There are no known CNC fish occurring in streams spanned by the ROWs. However, native cutthroat trout have been stocked in Green Mountain Reservoir, and native cutthroat trout (lineage is unknown) were caught in Mumford Gulch, but follow-up visits revealed that Mumford Gulch was dry and no viable fishery remained. Because the streams are spanned by transmission lines, no proposed activities would have a direct impact on CNC fish or their habitats. No water depletions are associated with the proposed action. There is a potential for increased fine sediment delivery into suitable habitats. There are no access roads or activities proposed by Western that would produce indirect impacts within the WIZ of known occupied reaches. However, there is a possibility that otherwise unknown CNC fish may have, or currently do occupy other reaches on the WRNF crossed by Western's ROWs, or downstream of their ROWs. Use of existing roads for haul-operations and access under the Proposed Action may further mobilize fine sediments from the roadways and allow for more material to be washed off road surfaces into aquatic habitats. There could also be decreased shading of riparian areas and modification of riparian vegetation profiles from vegetation treatment near WIZ areas. These indirect impacts would likely affect aquatic conditions and trout habitats and their prey species compositions (i.e., the species of aquatic macroinvertebrates available), but these impacts would not likely be significant or cause substantial changes in CNC use of habitats or their ability to procure aquatic macroinvertebrates. Given the cumulative nature of potential fine sediment delivery and changes in forest types from vegetation management and maintenance in ROWs, potential indirect impacts to habitat or unknown fish may occur in down-reach streams; therefore, the Proposed Action "may affect, but is not likely to adversely affect" greenback cutthroat trout (CNC) and their otherwise suitable habitats.

2.0 Plants

Table 2 summarizes, by forest, the listed plant species for each forest, their current status under the ESA, and their effect determinations.

Determination and Additional Design Feature for Ute Ladies tresses orchid (*Spiranthes diluvialis*)

Based on discussions with biologists on the Ashley National Forest, Western prepared an Addendum to the Ashley National Forest Biological Assessment/Biological Evaluation (BA/BE). The Addendum is enclosed with the Ashley BA/BE. The addendum addresses additional information on the Utes Ladies' tresses orchid and proposes conservation measures (Elliott, Brian. 2014. Addendum, Western Area Power Administration Reauthorization Project: Biological Assessment/Evaluation (BA/BE) for Threatened, Endangered, and Forest Service Sensitive Plant Species on the Ashley National Forest. 8 pp.)

Based on new information *Spiranthes diluvialis* is no longer excluded from analysis and an effects determination is necessary. A determination of NLAA is made for federally threatened species *Spiranthes diluvialis*. This determination is based on the following rationale: field surveys will take place during the appropriate time of year in 2014 (August-September) before implementing ground disturbing activities. If plants are found during the survey, Western will reinstate consultation with the Service and additional conservation measures will be developed. If ground disturbing activities take place prior to the surveys, Western will perform a habitat survey and exclude potential habitat from ground disturbance.

Determinations

The following plants were analyzed in the enclosed BA/BEs. Table 2 (enclosed) summarizes the forests in which the plants are listed. The lists, obtained from the Service, are by county, not by forest. To facilitate review of the BAs and potential effects of the proposal on plants, Western enclosed the report: Elliott, Brian. April 2014. Federally Listed Plant Species; Section 7 Consultation Areas for the Western Area Power Administration and Forest Service EIS to Reauthorize Transmission Line Maintenance and Vegetation Management in Colorado and Utah, 79 pp.) Based on the evaluations in the BAs and the additional analysis in the additional report, Western determined that, with the exception of *Spiranthes diluvialis* on the ANF, the federally listed plants species could be excluded from further analysis and that the Project would therefore not affect the federally listed endangered or threatened species. Western made no determination for Candidate species but included information on them in the reports. Federally listed plants were excluded from further analysis based on one or more of the following reasons:

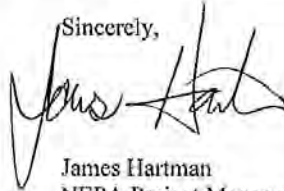
- distance of analysis area from known occurrences
- negative field survey results
- lack of suitable habitat within analysis area
- lack of appropriate substrate within analysis area
- difference in elevation between known occurrences and analysis area
- lack of water depletion

Federally listed Plant Species Addressed in Biological Assessments/Biological Evaluations.

Common Name	Scientific Name	Status
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	FE
Clay reed-mustard	<i>Schoenocrambe argillacea</i>	FT
Colorado butterfly plant	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	FT
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	FT
De Beque phacelia	<i>Phacelia submutica</i>	FT
Knowlton cactus	<i>Pediocactus knowltonii</i>	FE
North Park phacelia	<i>Phacelia formosula</i>	FE
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	FE
Parachute beardtongue	<i>Penstemon debilis</i>	FT
Pariette cactus	<i>Sclerocactus brevispinus</i>	FT
Penland alpine fen mustard	<i>Eutrema penlandii</i>	FT
Penland beardtongue	<i>Penstemon penlandii</i>	FE
Shrubby reed-mustard	<i>Schoenocrambe suffrutescens</i>	FE
Utah Basin hookless cactus	<i>Sclerocactus wetlandicus</i>	FT
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT
Western prairie fringed orchid	<i>Platanthera praeclara</i>	FT
Schmoll milk-vetch	<i>Astragalus schmolliae</i>	FC
Skiff milkvetch	<i>Astragalus microcymbus</i>	FC
White River penstemon	<i>Penstemon scariosus</i> var. <i>albifluvis</i>	FC

If you have questions or comments regarding these determinations please contact Mr. Jim Hartman, Western Area Power Administration; phone: (720) 962-7255, e-mail: Hartman@wapa.gov, mail: to the letter head address attention: A7400. You may also contact Mr. Peter McDonald, Forest Service, at (303) 275-5029 or petermcdonald@fs.fed.us.

Sincerely,



James Hartman
NEPA Project Manager

Enclosures
Design Feature
DVD with BAS

cc:
Ms. Susan Linner
Colorado Field Supervisor
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P.O. Box 25486
Denver Federal Center
(MS 65412)
Denver, CO 80225

Mr. Christopher Wehrli
Regional Environmental Coordinator
US Forest Service
Rocky Mountain Region
740 Simms Street
Golden, CO 80401

Mr. Peter McDonald
Regional Program Leader
Threatened, Endangered,
and Sensitive Species
U.S. Forest Service,
Rocky Mountain Region
740 Simms Street
Golden, CO 80401

Enclosure 1: Proposed Design Feature for Lynx Habitat Connectivity

Proposed Design Feature (Conservation Measure) to facilitate Lynx habitat connectivity (Revised based on information from K. Broderdorp (January 13, Feb. 11-12, 2014) and additional discussion with Western Maintenance and Forest Service).

The goal of this design feature is to facilitate lynx use of suitable habitat separated by the transmission line ROWs where vegetation management practices reduce the amount of horizontal cover on the ROW. Gaps in suitable habitat may be avoided by resident lynx (E. Roberts, pers. comm. 2013). Gaps may be from forest fires, timber harvests, and roads (von Kienast 2003, Koehler, et al. 2008, Interagency Lynx Biology Team 2013). Von Kienast (2003) noted that lynx seemed to avoid crossing a burned area over 150 meters wide; Koehler et al. (2003) noted that lynx avoided forest openings and burned areas where cover canopy was less than 10 percent. Results of snow tracking studies found that lynx traveled the edges of meadows but only crossed meadows where openings were less than 100 meters wide (Aubry, et al. 2000.) During snow-free periods, shrub habitats may be used for travel by lynx (Aubry, et al. 2000).

Based on this information, it is assumed that lynx may be reluctant to cross wide transmission line ROWs typical of those found within the project area. To facilitate lynx use of suitable habitats and to contribute to the goal of maintaining connectivity between habitats, Western, the Forest Service, and the Service coordinated to develop a design feature, which is incorporated into the Proposed Project. Within lynx habitat, the proposed vegetation management and maintenance activities (i.e., removal of “undesirable” vegetation) may pose a barrier to daily lynx movements, where vegetation removal creates wide linear gaps that separate suitable habitat. Natural topography (i.e., drainages, swales) may allow the retention of existing habitat conditions with taller growth forms and dense vegetation that would continue to facilitate lynx movement.

The objectives of the design feature are: 1) ensure that the sections are located where they are likely to facilitate lynx habitat use when natural connectivity areas are not available; 2) the locations and spacing of the blocks should be determined based on availability of contiguous (across the ROW) and effective lynx habitats that need to stay connected; 3) the blocks must meet requirements of the purpose and need for the proposed action and allow Western to meet the regulatory requirements (e.g., not present undue risks of fire and fuel loads, ensure system reliability, improve effectiveness and efficiency of ROW maintenance); 4) allow for flexibility in areas where lynx habitat has been altered (e.g., beetle kill) to establish blocks in the out years as the vegetation recovers and a need for adding a block is then identified by the Forest Service, Western, and the Service.

Design Feature

Within lynx habitat, where topography does not allow for retention of taller vegetative growth within the ROWs, and in locations where vegetation management in the ROW creates long stretches of ROW without contiguous habitat, blocks of taller or denser vegetation that may include undesirable species will be retained within the ROW. Blocks may cross the width of the ROW, but smaller access roads or natural gaps in vegetation within the blocks will be

acceptable. The retained taller or denser vegetation would ensure desired clearance between transmission line and vegetation and allow for extended re-entry intervals for the purpose of successive treatment, as described in the purpose and need for the Proposed Project. Tall older age class incompatible vegetation (typically trees) would be removed, but younger age class incompatible vegetation would be retained on the row, along with compatible shrubs and other vegetation. The blocks would typically be about 50 to 100 meters in length, and as wide as the ROW (depending on site conditions [e.g., availability of contiguous effective habitat on both sides of the ROW, availability of natural connections in the area, fire risk proposed by the fuels condition of the vegetation block, present condition of the lynx habitat]). The retention blocks would include trees and other undesirable species which come in naturally (such as lodgepole pine regeneration). The blocks would be spaced about 0.5 to 1 mile apart along the ROW as needed to maintain connectivity across the ROWs between effective habitats. In some areas, management of the blocks could occur on a rotational basis, depending on the status of the vegetation risks in the block. For example, as one treated area reaches a height and density where it would need retreatment to maintain line safety, a nearby new retention block area would be maintained to provide habitat connectivity in the same area.

In areas where the condition of habitat around the ROW is no longer considered suitable or vegetation conditions present unacceptable risk of fire or other risks to the transmission line (e.g., in areas with extensive beetle kill, unacceptable fuel loads under and adjacent to the ROW), Western would initially treat the area to mitigate the risks, and monitor vegetation recovery. As the vegetation recovers, Western would coordinate with the Forest Service and Service to identify options for creating retention blocks across the ROW. The block areas would be identified through Western's Annual Operating Plan or other agreed to review process.

Citations:

Aubry, K.B., G.M. Koehler, and J.R. Squires. 2000. Ecology of Canada lynx in southern boreal forests. Pages 373-396. In L.F. Ruggiero, K. B. Aubry, S.W. Buskirk, G.M. Koehler, C.J. Krebs, K.S. McKerver, and J.R. Squires, editors. Ecology and conservation of lynx in the United States. University Press of Colorado, Boulder, USA.

Interagency Lynx Biology Team. 2013. Canada lynx conservation assessment and strategy. 3rd edition. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, USDI National Park Service, Forest Service Publication R1-13-19, Missoula MT. 128pp.

E.K. Roberts. 2013. Personal Communications. U.S. Forest Service Wildlife Biologist. White River National Forest, Glenwood Springs, CO.

Koehler G.M., B.T. Maletzke, J.A. Von Kienast, K.B. Aubry, R.B. Wielgus, R.H. Naney. 2008. Habitat Fragmentation and the Persistence of Lynx Population in Washington State. *Journal of Wildlife Management* 72(7) pages 1518-1524.

Von Kienast, J.A. 2003. Winter Habitat Selection and Food Habits of Lynx on the Okanogan Plateau, Washington. Master of Science Thesis. University of Washington iv + 57 pages.

Table 1. Summary of Evaluated Threatened and Endangered Animal Species, Candidate Species and Effect Determinations.

Common Name	Scientific Name	Status	Forest Occurrence or Potential Habitat and Effect Determinations							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Mammals										
Black-footed ferret	<i>Mustela nigripes</i>	FE	-	-	-	O	-	-	-	-
Canada lynx	<i>Lynx canadensis</i>	FT	LAA	NLAA	LAA	LAA	-	NLAA	NLAA	LAA
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	FT	O	-	-	O	-	O	-	-
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	FC	-	-	X	-	-	-	X	-
North American Wolverine	<i>Gulo gulo</i>	PT	NJ	NJ	NJ	NJ	-	NJ	NJ	NJ
Birds										
Least tern	<i>Sterna antillarum</i>	FE	-	-	-	-	-	-	-	-
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT	O	NLAA	NLAA	-	-	NLAA	NLAA	O
Mountain plover	<i>Charadrius montanus</i>	FT	O	-	-	O	-	-	-	-
Piping plover	<i>Charadrius melodus</i>	FT	O	-	-	O	-	O	-	-
Southwestern willow flycatcher	<i>Empidonax traillii eximius</i>	FE	-	-	-	-	-	-	NLAA	-
Whooping crane	<i>Grus americana</i>	FE	O	-	-	-	-	O	-	-
Greater Sage-grouse	<i>Centrocercus urophasianus</i>	FC	-	X	-	X	-	-	-	X
Gunnison sage-grouse	<i>Centrocercus minimus</i>	FC	-	-	X	-	-	-	O	-
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	PT	-	-	-	-	-	-	O	-
Amphibians										
Wyoming toad	<i>Bufo baxteri</i>	FE	-	-	-	O	-	-	-	-
Insects, other Invertebrates										
American burying beetle	<i>Nicrophorus americanus</i>	FE	-	-	-	-	-	-	-	-
Pawnee montane skipper	<i>Hesperia leonardus montana</i>	FT	-	-	-	-	-	-	-	-
Uncompahgre fritillary	<i>Boloria acrocnema</i>	FT	-	-	NE	-	-	NE	O	O
Susan's purse making caddisfly	<i>Ochrotrichia susanae</i>	FC	-	-	-	-	-	x	-	-
Fish										
Bonytail chub	<i>Gila elegans</i>	FE	-	O	O	O	-	-	O	O

2

Common Name	Scientific Name	Status	Forest Occurrence or Potential Habitat and Effect Determinations							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	FE	O	O	O	O	-	-	O	O
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	FT	NLAA	-	NLAA	NLAA	-	NLAA	NLAA	NLAA
Humpback chub	<i>Gila cypha</i>	FE	O	O	O	O	-	-	O	O
Pallid sturgeon	<i>Scaphirhynchus albus</i>	FE	O	-	-	O	-	O	-	-
Razorback sucker	<i>Xyrauchen texanus</i>	FE	O	O	O	O	-	-	-	O

FE=Federally Endangered, FT=Federally Threatened, FC=Federal Candidate Species, PT=Proposed Threatened Species

X: Species is a candidate species evaluated in the BA but not addressed in the Consultation Letter

O: Listed species occurs on the list of species for the county in which the forest is located but there is no habitat in the project area, or project area is outside of the known species range.

NE: No Effect Determination

NLAA: May Affect, But is Not Likely to Adversely Affect

LAA: May Affect, and is Likely to Adversely Affect

NJ: Not Likely to Jeopardize the Continued Existence

ARNF: Arapaho-Roosevelt National Forest, ANF: Ashley National Forest, GMUG: Grand Mesa, Uncompahgre, and Gunnison National Forests, MBRNF: Medicine Bow and Routt National Forests, NNF: Nebraska National Forest, PSINF: Pike and San Isabel National Forests, SJNF: San Juan National Forest, WRNF: White River National Forest

Table 2. Summary of Evaluated Federally-Listed Threatened and Endangered Plant Species, Candidate Species.

Common Name	Scientific Name	Status	Forest							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	FE	-	-	O	-	-	-	-	-
Clay reed-mustard	<i>Schoenocrambe argillacea</i>	FT	-	O	-	-	-	-	-	-
Colorado butterfly plant	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>	FT	O	-	-	-	-	-	-	-
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	FT	-	-	O	-	-	-	-	O
De Beque phacelia	<i>Phacelia submutica</i>	FT	-	-	-	-	-	-	-	O
Knowlton cactus	<i>Pedlocactus knowltonii</i>	FE	-	-	-	-	-	-	O	-
North Park phacelia	<i>Phacelia formosula</i>	FE	O	-	-	O	-	-	-	O
Osterhout milkvetch	<i>Astragalus osterhoutii</i>	FE	O	-	-	O	-	-	-	O
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	FE	-	-	O	-	-	-	O	-
Parachute beardtongue	<i>Penstemon debilis</i>	FT	-	-	-	-	-	-	-	O
Pariette cactus	<i>Sclerocactus brevispinus</i>	FT	-	O	-	-	-	-	-	-
Penland alpine fen mustard	<i>Eutrema penlandii</i>	FT	O	-	-	-	-	O	-	O
Penland beardtongue	<i>Penstemon penlandii</i>	FE	O	-	-	O	-	-	-	O
Shrubby reed-mustard	<i>Schoenocrambe suffrutescens</i>	FE	-	O	-	-	-	-	-	-
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	FT	O	NLAA	-	-	-	O	-	O
Uintah Basin hookless cactus	<i>Sclerocactus wetlandicus</i>	FT	-	O	-	-	-	-	-	-
Western prairie fringed orchid	<i>Platanthera praecleara</i>	FT	O	-	-	-	-	-	-	-
Schmoll milk-vetch	<i>Astragalus schmolliae</i>	FC	-	-	-	-	-	-	X	-
Skiff milkvetch	<i>Astragalus microcymbus</i>	FC	-	-	X	-	-	-	-	-

Common Name	Scientific Name	Status	Forest							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
White River penstemon	<i>Penstemon scarlosus</i> var. <i>albifluvis</i>	FC	-	X	-	-	-	-	-	-

FE=Federally Endangered, FT=Federally Threatened, FC=Federal Candidate Species

X: Species is a candidate species evaluated in the BA but not addressed in the Consultation Letter

O: Listed Species occurs on the list of species for the county in which the forest is located but there is no habitat in the project area, or project area is outside of the known species range.

NLAA: May Affect, But Not Likely to Adversely Affect

ARNF: Arapaho-Roosevelt National Forest, ANF: Ashley National Forest, GMUG: Grand Mesa, Uncompahgre, and Gunnison National Forests, MBRNF: Medicine Bow and Routt National Forests, NNF: Nebraska National Forest, PSINF: Pike and San Isabel National Forests, SJNF: San Juan National Forest, WRNF: White River National Forest.



Department of Community and Culture

PALMER DePAULIS
Executive Director

State History

PHILIP F. NOTARIANNE
*Division Director***RECEIVED**
BY JGA / DATE 15 NOV 2010

November 8, 2010

Jim Hartman
Environmental Manager
Western Area Power Administration
Rocky Mountain Customer Service Region
P. O. Box 3700
Loveland CO 80539-3003

RE: "Cultural Resources Inventory of the Flaming Gorge-Vernal No. 1 and No. 3 Transmission Lines
in Ashley National Forest, Daggett and Uintah Counties, Utah" U-09-A1-0710

In Reply Please Refer to Case No. 10-1742

Dear Mr. Hartman:

The Utah State Historic Preservation Office received your request for our comment on the above-referenced project on November 2, 2010.

After consideration of the area of potential effect, identification efforts and results, USHPO concurs with the determination of **No Adverse Effect, 36 §CFR 800.5(b)**. The determination is based on the monitoring procedures and other actions taken to limit effect. Thank you for the cultural resource work completed and efforts to take into account these important resources.

This letter serves as our comment on the determinations you have made, within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-533-3555 or Lhunsaker@utah.gov or contact Jim Dykman at 801-533-3523 or Jdykman@utah.gov

Sincerely,

Lori Hunsaker
Deputy State Historic Preservation Officer
Archaeology

THE STATE
OF UTAH
HISTORY
UTAH STATE HISTORICAL SOCIETY
ANTIQUITIES
HISTORIC PRESERVATION
RESEARCH CENTER & COLLECTIONS

800 S. RIO GRANDE STREET, SALT LAKE CITY, UT 84101-1102 • TELEPHONE 801-533-3500 • FACSIMILE 801-533-3501 • HISTORY@UTAH.GOV

MAY 28 2013

Mr. Ed Nichols
State Historic Preservation Officer
1200 Broadway
Denver, CO 80203
Attn: Dan Corson

Re: Western Area Power Administration (Western) and the United States Forest Service (Forest Service) Reauthorization of Existing Transmission Lines for Routine Maintenance and Vegetation Management on Forest Service Lands in Colorado.

Dear Mr. Nichols:

Western and the Forest Service are currently preparing an environmental impact statement (EIS) for reauthorization of Western's existing transmission lines. The Forest Service proposes 20-year special use permits that would reauthorize Western to maintain approximately 243 miles of transmission lines on approximately 5,890 acres of right-of-way on National Forest System (NFS) lands in Colorado. The forests are the Routt, White River, Arapaho-Roosevelt, Grand Mesa-Uncompahgre-Gunnison, Pike-San Isabel, and San Juan National Forests.

Western and the USFS are joint lead agencies on the EIS under the National Environmental Policy Act (NEPA). Western is the lead on tribal consultation and compliance with the National Historic Preservation Act (NHPA) and other cultural resource protection regulations. Early in the review process, pursuant to Section 106 of the NHPA, Western invited 44 tribes with ties to Colorado to participate in the project review under the NHPA and NEPA. No tribes expressed interest or provided concerns. The 44 tribes invited to participate are copied on this letter for their records (enclosure 1).

Reauthorization of the existing lines by the Forest Service and Western's implementing of associated authorized maintenance activities trigger the requirements of Section 106 of the NHPA (Section 106). Initially, Western and the Forest Service were pursuing a new programmatic agreement (PA) for this action; however, it was concluded from our conference call of February 15, 2013, with Mr. Dan Corson from your office, and Lisa Meyer from Western, that a new PA was not necessary because the authorization would permit maintenance activities, including vegetation management, that are already addressed in an existing PA executed in 2002, titled: *"Programmatic Agreement among the Advisory Council on Historic Preservation, Western Area Power Administration, And the State Historic Preservation Offices of Colorado, Wyoming, Nebraska, and Utah, Bureau of Land Management, National Park Service, U.S. Forest Service, Bureau of Reclamation, Fort Carson, Northern Arapaho and Shoshone Tribe, Regarding the Impacts of Routine Maintenance of transmission Lines, Substations, and Other Facilities on Archaeological Resources in Colorado, Wyoming, Nebraska and Utah,"* from here on referred to as the Routine Maintenance PA.

The special use permit would authorize Western's proposed use of the integrated vegetation management (IVM) approach. The IVM approach is based on the American National Standards Institute, standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Management Standard Practices. As part of this approach, Western would manage vegetation along their transmission lines based on existing conditions of vegetation within the rights-of-way. Traditional vegetation treatments are used under the IVM approach, including individual use or a combination of manual (e.g., hand felling), mechanized (e.g., skidder to remove trees), or herbicide treatments. These treatments can be classified within existing categories - with respect to potential effects on cultural resources - as outlined in Attachment B of the Routine Maintenance PA (enclosure 2), as follows: manual hand-felling and herbicide treatments fall under "Maintenance Activities with No or Minor Associated Surface Disturbance", and mechanized techniques fall under "Maintenance Activities Causing Extensive Surface Disturbance".

Western will ensure that maintenance activities are executed in accordance with the stipulations of the Routine Maintenance PA. Stipulations of the Routine Maintenance PA ensure that compliance with the NHPA will be completed for individual maintenance activities before the activity is implemented. The existing Routine Maintenance PA covers maintenance activities that would be authorized by the permits and carried out by Western.

Please note that the Routine Maintenance PA is scheduled to expire in October of 2014. Western plans to begin consultation to update the PA soon. If the Routine Maintenance PA expires and no new PA for routine maintenance is executed, Western will follow the process outlined in 36 CFR Part 800 before implementing maintenance activities on NFS lands. Regardless of whether a Routine Maintenance PA is in place, Section 106 compliance will be completed by Western before maintenance activities on NFS lands are implemented.

To summarize, the Forest Service and Western will not be pursuing a new PA for this action as originally proposed, because activities associated with this action are already covered under the current Routine Maintenance PA executed in 2002.

Western looks forward to consulting on updating the Routine Maintenance PA and will be contacting you soon. Please contact me Tromly@wapa.gov, (720)-962-7256 or Molly Westby mwestby@fs.fed.us, (303)-275-5047 if you have questions.

Sincerely,

Matthew Blevins

 Stephen Tromly
Federal Preservation Officer

Enclosures:
Tribal Distribution List (letter only)
Routine Maintenance PA (SHPO only)

3

cc:
Tom McCulloch
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW., Suite 803
Washington, DC 20004

Molly Westby, USFS
U.S. Forest Service, Rocky Mountain Region
740 Simms St.
Golden, CO 80401

bcc:
A7400 (Tromly, Meyer, Hartman, RF)
G. Iley, J0400, Loveland, CO

Administrative Record

A7400:STromley;x7256:lou:5/22/13:TromlyRMRTribalLetter52213

APPENDIX B

PROGRAMMATIC AGREEMENT AMONG
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
WESTERN AREA POWER ADMINISTRATION,
AND THE STATE HISTORIC PRESERVATION OFFICERS OF
COLORADO, WYOMING, NEBRASKA, AND UTAH,
BUREAU OF LAND MANAGEMENT, NATIONAL PARK
SERVICE, U.S. FOREST SERVICE, BUREAU OF
RECLAMATION, FORT CARSON, NORTHERN ARAPAHO
AND SHOSHONE TRIBE, REGARDING IMPACTS OF
ROUTINE MAINTENANCE OF TRANSMISSION
LINES, SUBSTATIONS, AND OTHER FACILITIES
ON ARCHAEOLOGICAL RESOURCES
IN COLORADO, WYOMING, NEBRASKA AND UTAH

WHEREAS, the United States Department of Energy, Western Area Power Administration (hereafter referred to as Western), Rocky Mountain Region (RMR) operates and maintains an extensive electrical transmission system in Colorado, Wyoming, Nebraska and Utah that includes transmission lines, Substations, communications sites, maintenance facilities, and ancillary features; and

WHEREAS, Western owns and leases lands containing some of its built facilities, occupies rights-of-way on lands not fee-owned by Western, and constructs and maintains access roads on lands not fee-owned by Western; and

WHEREAS, Western's facilities must be maintained, upgraded, or expanded at times in order for Western to perform its mandated functions and

WHEREAS, Western has determined that certain of these activities are considered undertakings and may have an effect on historic properties included in or eligible for inclusion in the National Register of Historic Places, and Western has consulted with the Advisory Council on Historic Preservation (Council) and the State Historic Preservation Officers (SHPOs) of Colorado, Wyoming, Nebraska, and Utah pursuant to Section 800.14(b) of the regulations (36 CFR 800) implementing Section 106 of the National Historic Preservation Act (16 USC 470f) and Section 110 of the same act (16 USC 470h-2); and

WHEREAS, Western will act as lead federal agency for the purpose of compliance with Section 106 of the National Historic Preservation Act for all Western activities regardless of land ownership of historic properties that may be affected by: Western activities; and

WHEREAS, Western fee-owned lands, rights-of-way, and access roads could contain archaeological and other historic properties other than Western's built facilities, and systematic inventory, evaluation of National Register eligibility, application of the Criteria of Effect and Adverse Effect, and mitigation of adverse effects are desirable; and

WHEREAS, other federal agencies and tribes have been invited to be consulting parties in this Agreement because of their land management responsibilities on lands where Western has easements or leases. These agencies include the U.S. Forest Service, the National Park Service, the Bureau of Reclamation, the Bureau of Land Management, Ft. Carson, the Northern Arapaho Tribe and the Shoshone Tribe (hereafter referred to as the land management agencies); and

WHEREAS, the definitions given in Attachment A are applicable throughout this Agreement,

NOW, THEREFORE, the Council, Western, the SHPOs, and the land-management agencies agree that Western's routine maintenance and emergency maintenance programs will be administered in accordance with the following stipulations to satisfy Western's Section 106 responsibilities for all individual actions under these programs

STIPULATIONS

I. RESPONSIBILITY

- A. RMR Environmental Management will be responsible for implementation of and compliance with this Agreement. The RMR Environmental Manager will coordinate with Western's Historic Preservation Officer (HPO) and RMR's Maintenance Managers and staff, as discussed below in IIB, IIC, and IV, to, ensure consistent implementation of this Agreement. The Environmental Manager and the HPO will remain current by attending periodic training updates in historic preservation law. The HPO will meet the training program established by the Secretary of the Interior under section 101(g) of the NHPA. The RMR Environmental Manager will ensure that the maintenance staff receives training through annual cultural resource sensitivity training, tailgate meetings, and as other opportunities arise;
- B. Western will provide each land-management agency represented herein with information and any changes on the location of its rights-of-way and facilities within their jurisdiction. Western real estate staff will coordinate any right-of-way changes with the appropriate land-managing realty staff. Each land-management will provide Western with appropriate information on sites and inventory areas identified on Western's rights-of-way or facilities when requested. Western agrees to
- 1) notify each land management agency of Western's intent to initiate consultations on projects which could potentially impact cultural resources on their property;
 - 2) negotiate and execute specific project plans, determinations of eligibility and effect, and mitigation plans with the land management agency on a project-by-project basis;
 - 3) contact the land management agency prior to any field inventories either by Western staff or contractor;
 - 4) provide the land management agency with all inventory and other reports, research designs, mitigation plans and all similar documentation on identification and treatment of cultural resources located on their lands;
 - 5) provide the land Management agency the opportunity to review and comment to Western on all such documentation prior to Western's submittal to the SHPO;
 - 6) in coordination with appropriate land managing agencies, consult with appropriate Native American tribes on projects related to this PA;
 - 7) NAGPRA, will be the responsibility of the land management agency;
 - 8) Western will deposit all collections and records resulting from their in-house work conducted under this PA with a curatorial facility acceptable to the land management agency not later than 90 calendar days after the final report is submitted to the appropriate land management agency;
 - 9) Western will conform to the standards and guidelines issued by the respective SHPO for work under this PA; and
 - 10) Western will assure that cultural site specific stipulations in the ROW permits are followed in carrying out work under this PA.
- C. Western cultural resource employees and contractors will have permits or authorizations from each land management agency prior to conducting any fieldwork.

II. MAINTENANCE ACTIVITIES

- A. The classes of activities listed in Section I of Attachment B will not require any cultural resources investigations or any consultation among the parties to this Agreement. These activities have little likelihood of impacting cultural resources. Western's maintenance personnel will carry out these activities without consultation between the RMR Environmental Manager, Western's HPO, the SHPOs or the land-managing agencies.

- B. The classes of activities listed in Section II of Attachment B may impact cultural resources since they are limited surface disturbing activities. RMR's Maintenance Supervisor will consult with the RMR Environmental Manager and the HPO to determine the Area of Potential Effect (APE) for each activity and will consult with Western's HPO concerning the likelihood of impacting cultural resources. The HPO will conduct a project review which will include a Class I (records and literature search), which will include checking with the appropriate land managing agency, for known historic properties in the vicinity of the APE. The HPO will determine whether a field survey or monitoring is necessary. Activities determined to not require field inventory or monitoring will be included in the annual report (see Stipulation VI).

Monitoring is defined here as directing maintenance activities away from an archaeologically sensitive area it is not monitoring for intact archaeological subsurface remains.

- C. The Classes of activities listed in Section III of Attachment B can impact cultural resources and will require a Class III cultural resources survey prior to implementation. The RMR Environmental Manager will determine the APE in consultation with the RMR Maintenance Supervisor and Western's HPO.
- D. If the class I and Class III surveys that took place under Stipulations II and III find no resources that can be defined as sites, no additional consultation is required. If an archaeological or historic site is located, but the APE can be changed in order to avoid the site, e.g. no road maintenance in or near the site, no consultation with the appropriate SHPO is required. If the site is located on a land management agency's land, Western will consult with them on appropriate avoidance methods. Western will forward the survey report and cultural resource forms to the appropriate SHPO and the appropriate land-managing agency within eight weeks of the completed survey. If Sites are located and cannot be avoided, consultation will take place in accordance with 36 CFR 800.3 through 800.7 for eligibility and effect with the SHPO and appropriate land managing agencies.

III. EMERGENCIES

Emergency pole and structure replacements and other emergency activities will be carried out without consultation prior to cultural fieldwork. Emergency activities are defined as situations of unplanned or unscheduled power outages or imminent outages that potentially threaten human life and property. These activities may take place within existing facilities such as substations or along transmission lines and may include "replacing structures, structure members such as crossarms, insulators, and/or conductors. The RMR Maintenance Supervisor will submit a report to the RMR Environmental Manager concerning any emergency activities within 7 calendar days of their occurrence. Western will conduct a cultural resources survey of the emergency activity APE within 45 calendar days. Western will forward a survey report and cultural resource forms to the appropriate land managing agency and SHPO within 60 calendar days of the completed survey. If a site was affected, Western will notify the appropriate SHPO or appropriate land managing agency within 15 calendar days. The site will be recorded and evaluated for significance and effect according to 36 CFR 800.3 through 800.7. If no sites were affected, these surveys will be included in the annual report.

IV. DISCOVERIES

If any cultural resources are discovered during maintenance activities covered under Stipulation I, II, or III, work will cease until the cultural resource can be evaluated and the appropriate land management agency notified within 7 calendar days. Work will not proceed until the appropriate land managing agency authorizes it or if on private lands, until RMR's environmental manager authorizes it. This procedure will include contacting Western's HPO and will include field review by a qualified archaeologist or the HPO, if the resources are not sites, if the site has been previously determined not eligible, or effects to the Site have been previously mitigated through data recovery, no additional consultation is required, and the maintenance activity may proceed. If it is a newly discovered site and cannot be avoided, the site will be recorded and evaluated for significance and effect according to 36 CFR 800.3 through 800.7. The appropriate land management agency will be included in this consultation. Should human remains or other

cultural items as defined by NAGPRA be located, Western will notify the appropriate land managing agency within 1 calendar day. The appropriate land management agency will be responsible for NAGPRA. For human remains located on private lands, Western will follow the applicable state laws. Human remains or other cultural items as defined by NAGPRA, will not be moved or removed until approval by the appropriate land managing agency or other appropriate state official.

V. HISTORIC FACILITIES

Building disposal, rebuild, replacement and/or demolition projects of any RMR's facilities which are over 45 years old is addressed in a separate agreement document, regarding upgrading, maintenance and removal of transmission lines, substations and other Western facilities in Colorado, Wyoming, Nebraska and Utah. If that agreement document is no longer in effect or has been terminated, Western will consult according to 36 CFR §§ 800.3 through 800.7.

VI. ANNUAL REPORT

On an annual basis, the RMR Environmental Manager and Western's HPO will review those portions of the maintenance program listed under Section II and III of Attachment B. A report detailing this review will be Submitted to the SHPOs, the land management agencies and the ACHP by December 1 of each year, beginning in 2001. This report will include information concerning all projects in Section II that were reviewed and required no further consultation. A table will be prepared listing the project, date, review process, results of files search and Survey (if applicable), sites avoided (if applicable), and decision. Should curation be necessary for any project related to this PA, the curation information will be included in the annual report. The SHPOs, land management agencies and ACHP will have 30 days to respond to the annual report.

VII. DISPUTE RESOLUTION

Should any party to this agreement object within 30 days to any actions proposed pursuant to this Agreement, Western will consult with the objecting party to resolve the objection. Should an objection pertaining to this Agreement be raised by a member of the public, Western shall notify the parties to this agreement and take the objection into account, and consult with the objector. If Western and the appropriate land management agency determine that the objection cannot be resolved, Western will forward all documentation relevant to the dispute to the Council. Within 30 days, the Council will either Provide Western with recommendations or notify Western that it will comment pursuant to 36 CFR 800.6b, and proceed to comment. Western will consider Council's comments in accordance with 36 CFR 800.6c (2). Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute, and Western and SHPOs' responsibilities will remain unchanged to carry out all actions under this Agreement that are not the subject of the dispute.

VIII. AMENDMENTS

Any party to this Programmatic Agreement may request that it be amended or modified, whereupon the parties will consult in accordance with 36 CFR 800.14(b) to consider such amendments. Any resulting amendments will be developed and executed in the same manner as the original document.

IX. ENACTMENT AND PERIOD OF EFFECT

- A. This, Programmatic Agreement will take effect in all States the day after it is accepted, by signature by the ACHP, and will remain in effect until terminated as provided under Stipulation X below.
- B. Acceptance or termination of this Programmatic Agreement by a SHPO for one state will not affect the standing of the Agreement for other states. Acceptance or termination of this Agreement by Western for a state or agency will not affect Western's participation or obligations under the Agreement for other states or agencies.

X. TERMINATION

Any party to this Programmatic Agreement may terminate it by providing 45 calendar days notice to the other parties with specific reasons for such withdrawal, provided that the parties consulted during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

XI. PERIODIC REVIEW OF AGREEMENT

Western will meet or otherwise consult with the SHPOs, ACHP and other signatories to review this Agreement at three-year intervals, beginning the first year after enactment of the Agreement. This PA will be null and void on the date of execution, 2014, unless it is reviewed by signatories.

XII. ATTACHMENTS

All attachments attached to this Agreement shall be in force and in effect, as part of this Agreement, until suspended or amended, or until the termination of this Agreement.

XIII. APPLICABILITY

This Agreement does not cover new construction of transmission lines, substations or communication sites.

Execution of this Programmatic Agreement and implementation of its terms evidences that Western is considering the effects of its undertaking on historic properties and has afforded the Council a reasonable opportunity to comment on Western's program of maintenance, repair, and upgrading, of electrical transmission lines and related facilities and on the programs likely effects on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: *John M. Stale* Date: 2/25/02
Executive Director

COLORADO STATE HISTORIC PRESERVATION OFFICER

By: *Mark Wolfe* Date: 1/29/02
Colorado State Historic Preservation Officer

NEBRASKA STATE HISTORIC PRESERVATION OFFICER

By: *David E. ...* Date: 10/8/01
Nebraska State Historic Preservation Officer

WYOMING STATE HISTORIC PRESERVATION OFFICER

By: *David A. ...* Date: 11/29/01
Wyoming State Historic Preservation Officer

UTAH STATE HISTORIC PRESERVATION OFFICER

By: *Walter M. ...* Date: 12/23/01
Utah State Historic Preservation Officer

WESTERN AREA POWER ADMINISTRATION

By: *David L. ...* Date: 2/30/01
Regional Manager, Rocky Mountain Region

BUREAU OF LAND MANAGEMENT

By: [Signature] Date: 4/5/02
Colorado State Director 009.20

BUREAU OF LAND MANAGEMENT

By: [Signature] Date: 7/22/02
Utah State Director

BUREAU OF LAND MANAGEMENT

By: [Signature] Date: 10/9/02
Wyoming State Director

ACTING

NATIONAL PARK SERVICE

By: [Signature] Date: 3/22/02
Director, Intermountain Region

NATIONAL PARK SERVICE

By: [Signature] Date: 3/26/02
Midwest Regional Director

DEPARTMENT OF ARMY, FORT CARSON

By: [Signature] Date: 2/2 Mon 02
Director, Environmental Compliance and Management

BUREAU OF RECLAMATION

By: [Signature] Date: 4/9/02
Pacific Plains Regional Director

BUREAU OF RECLAMATION

By: [Signature] Date: 3-29-02
Upper Colorado Regional Director

~~BUREAU OF RECLAMATION~~

By: _____ Date: _____
~~Lower Colorado Regional Director~~

U.S. FOREST SERVICE

By: [Signature] Date: 10/09/02
Intermountain Regional Director

Ref # 02-MU-11046000-003

U.S. FOREST SERVICE

By: Richard P. Sledge Date: 5/3/02
 Rocky Mountain Regional Director *PS Agreement with DO-NU-1103.0120-003*
 NORTHERN ARAPAHO TRIBE *fw*

By: _____ Date: _____
 Chairman

SHOSHONE TRIBE

By: _____ Date: _____
 Chairman

Attachment A: Definitions

Attachment B: Maintenance Activities

Section I: Maintenance Activities with no or minor associated ground disturbance

Section II Maintenance Activities with minimal ground disturbance

Section III: Maintenance Activities causing extensive ground disturbance

IV. Obligation of Funds:

Nothing in this PA shall obligate either the Department of Agriculture or other parties to this agreement to obligate or transfer any funds. Specific work projects or activities that involve the transfer of funds, services, or property among the various agencies and offices of the Department of Agriculture and the other parties to this agreement will require execution of separate agreements and be contingent upon the availability of appropriated funds. Such activities must be independently authorized by appropriate statutory authority. This PA does not provide such authority. Negotiation, execution, and administration of each such agreement must comply with all applicable statutes and regulations.

THE AUTHORITY AND FORMAT OF THIS INSTRUMENT
 HAS BEEN REVIEWED AND APPROVED FOR SIGNATURE
[Signature] 5/3/02
 COORDINATOR

ATTACHMENT A

Definitions

Aircraft Warning Devices – These devices consist of both signs and marker balls. Signs are usually placed on the tops of transmission line structures. “Marker balls” are large colored balls placed around overhead groundwires to make the groundwires more visible to aircraft and birds.

Anchors – Anchors are metal pins or concrete weights attached to the ends of guy wires to secure them to the ground.

Armor Rod – Protective pre-formed wires wrapped around aluminum conductor to prevent damage at point of support. Also used to repair minor conductor damage.

Auger Truck – A truck equipped with a bed-mounted auger used to dig holes for poles or structure foundations.

Avoidance – Avoidance of effects to an archaeological site or historic property by having a buffer zone around the site or historic property of at least 50.

Bird Guard – A specially designed device placed on transmission line structures to prevent birds from being electrocuted.

Bobcat – A small front-end loader.

Bucket Truck – A specially designed truck equipped with a bucket and hydraulic arm used to lift men and equipment to the top of transmission line structures during construction, maintenance and inspection of transmission line structures.

Bushing – An electrically insulating lining for a hole to protect a through conductor. (from Webster’s).

Capacitor Banks – Capacitors are devices which store an electrical charge. Capacitors are grouped in “banks” inside switchyards and substations. Capacitor banks perform various functions including increasing power flow, compensating for voltage drops, and improving power at the point of delivery.

Circuit Breakers or “Breakers” – A circuit breaker is any device designed primarily to provide safe, rapid interruption of abnormal current flow. Circuit breakers interrupt a faulted circuit, and reclose as soon as the fault has been cleared.

Class I Survey – This cultural resources survey is a literature and records search of identified archaeological and historic site records a check of SHPO files and appropriate land-managing agency files.

Class II Survey This cultural resources survey is a professionally conducted sample survey designed to characterize an area.

Class III Survey – This cultural resources survey is a professionally conducted, intensive 100% survey at an area.

Clipping – The task of permanently attaching the conductor to the insulators during construction. Clipping is the last step in completing conductor stringing.

Communication Sites – Four communication systems are used by Western to track and monitor the power system: microwave transmissions, power line carriers, radio, and leased telephone lines. Microwave communication sites are being used more and more. A microwave site consists of a fenced, level pad occupied by a tower and small control building.

Conductor – Conductors, often called wires or lines, are the actual carriers of current in a transmission system. They are usually made from solid or stranded aluminum and reinforced with steel.

Crossarms – The crossarm is the crossing member of a wood pole or steel transmission line structure which supports the insulators for the conductors.

Cultural Resources – Any definite location of past human activity, occupation, or use. Cultural resources are identifiable through inventory, historical documentation or oral evidence. Cultural resources include archeological, historic, or architectural sites, cultural landscapes, ethnographic resources, structures, places, objects or artifacts and all records and remains related to or located within such resources.

Cut Out Fuse – A fuse is an electrical safety device that melts and interrupts the circuit when the current exceeds a certain amperage.

Dampener Installation – Vibration dampeners are installed to inhibit the conductor or overhead ground wires from oscillating, whipping, and/or bouncing. They may be installed using bucket trucks.

Disconnect Switches – A switch is used to open or close a circuit. An open switch stops current from flowing in a circuit, while a closed switch allows current to flow again. Disconnect switches are used throughout an electrical system to separate various parts of the system during a fault, and to allow for maintenance and repair.

Footing – A footing is an enlargement at the base of a structure used to distribute the load or weight of the structure. Footings are dug with an auger in to the ground and sometimes are filled with concrete.

Ground Mat – A ground mat is a large Wire mesh mat buried under a substation or other electrical facility used to help ground electrical equipment.

Ground Rod – A ground rod is a metal pole, not more than 1" in diameter, pounded in the ground to a depth of at least 5 feet. The rods are attached to grounding cables.

Ground Wire – A ground wire is a safety device that directs current to the earth or "ground". Overhead ground wires act as lightning rods. They are connected to the transmission line structures and extend down into the ground.

Guy Wire – A steel wire used to support or strengthen a structure. A guy wire securely anchors the structure to the ground. Guy wires are used at dead end and turning structures and at endpoints such as substations.

Historic Preservation Officer – A Western employee designated who is responsible for coordinating Western's activities under the National Historic Preservation Act.

Historic Property – any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register; such term includes artifacts records, and remains which are related to such a district, site, building structure, or object.

Insulators – An insulator keeps current from flowing to earth or another conductor. Insulators usually hang from the transmission line structure crossarms. An insulator inhibits the flow of electricity to earth or another conductor. Insulators are usually bell-shaped, arranged in strings, and are made of porcelain, Pyrex glass or plastic.

Knee Brace – An angle support device used to support a transmission line structure's crossarm.

Light Beacon – A light attached to a tower used for guidance or aircraft warning.

Lightning Arrestor – Any attachment, usually a metal bayonet, used to attract lightning away from the transmission system and direct it to a ground wire and the ground.

Microwave Radio Tower – A tower, usually constructed of steel lattice, equipped with a microwave-receiving dish.

Parabolic Dish – A bowl-shaped antennae or reflector used in microwave communications.

Pole Guard – A metal collar or brace used to add strength to a pole. See also "stub".

Portable or Mobile Substation – A mini-substation that can be transported by truck and installed anywhere along the transmission system.

Reactors – Reactors are devices used to introduce inductive reactance into a circuit. Usually installed in groups or banks, they help limit current to a safe value. This protects equipment from excessive power surges during a fault.

Reclosers – A recloser is a device associated with a circuit breaker that allows the circuit to close automatically after a fault.

Regulators – See voltage regulators.

Site – For the purposes of the PA, Western will follow the definition for archaeological site for whichever state in which the project is located.

Solar Power Array – A collection or grouping of devices such as mirrors or photovoltaic cells, capable of capturing solar energy for use in generating electricity.

Shoo-fly – A shoo-fly is a temporary tap line used to direct current around a piece of the transmission system that is under construction or repair. It also refers to a temporary road used to get around an obstruction in the normal right-of-way.

Stabilizer or Outrigger Pads – Metal plates used to support lifting equipment.

Stub – A “stub” refers to temporary reinforcement done at the base of a pole to provide additional strength. A stub usually consists of a short piece of another pole.

Steel Transmission Line (TL) Structure – A steel structure, usually in a lattice or single pole configuration which can be used in special construction situations and to carry large transmission voltages.

Substations – Substations are on-ground facilities consisting of electrical equipment used to transform (step down or up) the voltage for delivery and consumer use.

Switches (Switchgear) – Substation equipment designed and operated to switch electrical circuits and to interrupt powerflow.

Tail gate meetings – A Western line crew meeting held in the field prior to beginning a maintenance job.

Tap Changers – Devices in some transformers that increase or reduce the potential by changing the transformer turns ratio. Tap changing transformers are used to control voltage at loads, substations, and direct current ties.

Transformers – Transformers transfer energy from one circuit to another circuit and are used to increase or decrease voltage in an alternating current system. A transformer consists of two “windings”, or many turns of magnetically coupled wires or coils, placed very close together within an oil cooled cylinder.

Voltage Regulators – Electric devices that regulate voltage flowing through distribution lines. It automatically raises and lowers the voltage to maintain required voltage levels for service.

Wave Traps – A wave trap is used in carrier communications to confine the carrier signal to one transmission line section. It is a parallel circuit tuned to the frequency of the carrier signal.

Wood Transmission Line (TL) Structures – Structures built from large wooden poles (usually of fir, pine, larch or cedar) that are treated with a preservative chemical to protect them against decay fungi.

X-Braces – X-braces, usually constructed of wood, provide reinforced support to large wooden transmission line structures.

ATTACHMENT B

Maintenance Activities

I. Maintenance Activities with No or Minor Associated Surface Disturbance

Many of these activities take place within the confines of an existing substation or communications site. Most substations have been leveled and graveled. Transmission line work generally occurs on existing access roads or within existing rights-of-way. Equipment used for these activities consist of rubber-tired vehicles such as bucket trucks, backhoes, front-end loaders, cranes, auger trucks, bobcats, and pole trucks. Many vehicles require stabilizer pads which can compact a ground area of about 2 by 2'. Fill or rock will come from existing or commercial quarry sources. Work off existing roads will not be conducted when the ground is muddy.

A. Substation Maintenance

- 1) Maintenance and replacement of transformers and breakers.
- 2) Servicing and testing of equipment at existing substations, including oil changeouts.
- 3) Installation or replacement of bushings.
- 4) Cleaning or replacement of capacitor banks.
- 5) Maintenance or installation of propane tanks within a substation yard.
- 6) Maintenance of switches, voltage regulators, reactors, tap changes, reclosers and valves.
- 7) Replacement of wiring in substations and switch yards.
- 8) Replacement of existing substation equipment including regulators, capacitors, switches, wave traps, radiators, and lightning arresters.
- 9) Installation of cut-out fuses.
- 10) Adjust and clean disconnect switches.
- 11) Placement of temporary transformer.
- 12) Maintenance, installation and removal of solar power array and controller.
- 13) Clean up of chemical spills that don't reach reportable quantities when clean up remains above the ground mat.
- 14) Installation of foundation for storage buildings above ground mat within existing substation yard.

B. Transmission Line Maintenance

- 1) Ground and aerial patrols.
- 2) Climbing inspection and tightening hardware on wood and steel transmission line structures.
- 3) Repair of overhead ground wire or overhead fiberoptic line.
- 4) Replacement or placement of aircraft warning devices.
- 5) Replacement or cleaning of insulators.
- 6) Installation of bird guards.
- 7) Replacement of cross arms on wood pole transmission line structures.

- 8) Cut and drop danger trees.
- 9) Replacement or repair of steel members of steel transmission line structures.
- 10) Inspection of hardware on wood and steel transmission line structures.
- 11) Installation, repair or replacement of X brace and knee brace.
- 12) Removal or installation of structure mile markers.
- 13) Dampener installation.
- 14) Replacing ground spike on wood pole structures.
- 15) Brush removal by hand.
- 16) Installation of ground rods.
- 17) Installation of armor rod and clipping-in structures.
- 18) Replacement of conductor.
- 19) Application of wood preservatives on existing wooden pole structures.
- 20) Place fill or rocks around existing towers or structures.
- 21) Place fill or rocks around existing culverts.
- 22) Adding rock to bases of poles or structures where the soil is blown out.
- 23) Hanging a fiberoptic line on an existing transmission line when no ground disturbance is necessary.

C. Communication System Maintenance

- 1) Microwave radio tower maintenance.
- 2) Communication tower and antennae maintenance.
- 3) Installation of light beacons.
- 4) Removal of microwave dish.
- 5) Installation, removal and repair of parabolic dish.

D. General Maintenance at Facilities

- 1) Building maintenance including interior and exterior painting; and roof ceiling, floor², window and door maintenance.
- 2) Application of soil sterilants and herbicides.
- 3) Clearing vegetation by hand.
- 4) Place fill or rocks around existing culverts.

II. Maintenance Activities with Minimal Surface Disturbance

These activities may cause minimal and restricted surface and subsurface disturbance. Fill or rock will come from existing or commercial quarry sources. However, if fill or rock will be obtained from new quarries developed specifically for Western or existing quarries expanded to meet Western's needs, such activities will require Section 106 consultation.

A. Substation Maintenance

- 1) Excavation for and installation of new footings.
- 2) Repair or replacement of ground mats.
- 3) Replacement or repair of footings for electrical or communications equipment within an

existing substation or communications facility.

- 4) Remediation of small spills of oil and hazardous materials when the spill goes below the ground mat.

B. Transmission Line Maintenance

- 1) Replacement of existing culverts use of a backhoe/front-end loader within an existing access road).
- 2) Installation of gates where no new posts need to be installed.
- 3) Digging out buried anchors.
- 4) Uncovering tower legs from soil deposition.
- 5) Installation of anchors.
- 6) Wood pole replacements.
- 7) Stub an existing wood pole structure.
- 8) Rip-rap installation on creek or river banks where no recontouring is required.
- 9) Repair of pole guards.
- 10) Placement of single post informational signs for accessing the right-of-way.
- 11) Place fill in erosional features on access roads.
- 12) Remediation of small spills of quantities of oil and hazardous materials that do not reach reportable limits.
- 13) Replacement of ground wire.
- 14) Hanging fiber optics Frio on an existing transmission line.
- 15) Tree removal of non-danger trees.

C. Communication System Maintenance

- 1) Removal of foundations or footings at communication sites.
- 2) Installation or removal of solar power array and controller.

D. General Maintenance at Facilities

- 1) Repair fences and gates.
- 2) Pull existing fences.
- 3) Grounds maintenance for existing facilities, including the use of brush hogs.
- 4) Erosion control projects within an existing facility.

III. Maintenance Activities Causing Extensive Surface Disturbance

These types of activities may include the use of bulldozers, graders, backhoes, front-end loaders. Activities could take place on any Western facility including transmission line rights-of-way, substations, communication facilities, microwave facilities, and office locations.

- 1) Access road construction or upgrading, (This activity may take place adjacent to, or outside of, Western facilities).
- 2) Installation of new culverts.
- 3) Installation of foundation for storage buildings outside graveled area at an existing substation.

- 4) Installation of fences and gates where posts or poles must be installed.
- 5) Erosion control projects outside existing facilities.
- 6) Propane tank and pad installation at a communication site
- 7) Erosion control projects outside existing substation.
- 8) Vegetation clearing by bulldozer or grader.
- 9) Installation, replacement or removal of microwave and radio tower.
- 10) Rip-rap installation that includes re contouring on creek or river banks.
- 11) Underground installation of water, power, communication and/or ground electrical line below ground mat or outside a substation.
- 12) Installation of water diversion bars on existing access roads.
- 13) Installation of foundation for storage buildings inside communication site yards.
- 14) Setting up portable substations outside of an established substation.
- 15) Propane tank installation outside of an established substation.
- 16) Excavation for and installation of new footings on a transmission line or at a communication site.



United States Department of the Interior



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IN REPLY REFER TO:
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TAILS 06E24100-2014-F-0195

December 22, 2014

Cynthia Adornetto
Natural Resources Specialist
Western Area Power Administration
12155 West Alameda Parkway
Lakewood, Colorado 80228

Subject: Section 7 Consultation for the Western Area Power Administration and U.S. Forest Service; Reauthorization of Transmission line Rights-of-Way and Routine Maintenance and Proposed Change in Vegetation Management Practices in Colorado, Nebraska, and Utah, Consultation under Section 7 of the Endangered Species Act, as amended (16 U.S.C. § 1531 et seq.).

Dear Ms. Adornetto:

This responds to the Western Area Power Administration (Western) and U.S. Forest Service (Forest Service); August 6, 2014, letter to the Fish and Wildlife Service (Service) requesting informal and formal Section 7 consultation on effects of the subject project to species and habitats listed under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.; [Act]). The project described in your letter and the accompanying biological assessments (BA or BAs), occurs on eight forests within the States of Colorado, Nebraska, and Utah. We received your request on August 11, 2014.

Western and the Forest Service provided the following summary (Table 1) of federally listed species affected by the proposed action. The status of several of the species changed since the BA was provided to the Service. On August 13, 2014, we withdrew our proposed rule to list the North American wolverine (*Gulo gulo luscus*) (79 Fed Reg. 47522), therefore, wolverine will not be further considered herein. On October 3, 2014, we published our final rule listing the western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*) as threatened (79 Fed. Reg. 59991), and published a proposed rule to designate critical habitat for this species on August 15, 2014 (79 Fed. Reg. 48548). On November 20, 2014, we published final rules for the Gunnison sage-grouse (*Centrocercus minimus*) as a threatened species (79 Fed. Reg. 69191), and designated critical habitat (79 Fed. Reg. 69311). As stated in the BA for the Grand Mesa, Uncompahgre, and Gunnison National Forests, the Gunnison sage-grouse and its habitat are present and will be affected by the proposed action. We have attempted to reach agreement with

Western for inclusion of a conservation measure to eliminate or reduce effects to Gunnison sage-grouse. We have been unsuccessful in reaching agreement. In addition, we informally discussed extending the consultation period for a sufficient period of time for Western to provide additional analysis and determination of effects of the proposed action on the Gunnison sage-grouse. Western has decided to continue with the existing time line for this consultation, and not initiate consultation for the effects of the proposed action on Gunnison sage-grouse (Cynthia Adornetto, pers comm., December 18, 2014).

Please be advised, Section 7(d) of the Act (Limitation on Commitment of Resources) States: After initiation of consultation required under subsection (a)(2), the Federal agency (Forest Service) and the permit or license applicant (Western) shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2). Furthermore, until otherwise notified, the prohibitions of Section 9 of the Act come into effect on Monday December 22, 2014.

Table 1. Summary of Threatened and Endangered Species, and determinations of effect.

Table 1. Summary of Threatened and Endangered Species, and determinations of effect.										
Common Name	Scientific Name	Status	Forest Occurrence or Potential Habitat and Determinations							
			ARNF	ANF	GMUG	MBRNF	NNF	PSINF	SJNF	WRNF
Mammals										
Canada lynx	<i>Lynx canadensis</i>	FT	LAA	NLAA	LAA	LAA	-	NLAA	NLAA	LAA
Birds										
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT	-	NLAA	NLAA	-	-	NLAA	NLAA	-
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE	-	-	-	-	-	-	NLAA	-
Gunnison sage-grouse	<i>Centrocercus minimus</i>	FT	-	-	none	-	-	-	-	-
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT	-	-	-	-	-	-	-	-
Greenback Cutthroat Trout	<i>Oncorhynchus clarki stomias</i>	FT	NLAA	-	NLAA	NLAA	-	NLAA	NLAA	NLAA

The following information applies to Tables 1 and 2.

FE= Federally Endangered, FT= Federally Threatened, FC= Federal Candidate Species

NLAA: May Affect, Not Likely to Adversely Affect

LAA: May Affect, Likely to Adversely Affect

- (Dash) means species is not present within project area on that Forest

ARNF: Arapaho-Roosevelt National Forest, ANF: Ashley National Forest, GMUG: Grand Mesa, Uncompahgre, and Gunnison National Forests, MBRNF: Medicine Bow and Routt National Forests, NNF: Nebraska National Forest, PSINF: Pike and San Isabel National Forests, SJNF: San Juan National Forest, WRNF: White River National Forest

Based on our review of the information provided for the proposed action, we concur with Western's and the Forest Service determinations that the proposed project may affect, but is not likely to adversely affect the Southwestern willow flycatchers (*Empidonax traillii extimus*), the Mexican spotted owl (*Strix occidentalis lucida*), and the greenback cutthroat trout (*Oncorhynchus clarki stomias*) where present on Forest Service lands within the action area. We also concur with the may affect, not likely to adversely affect determination made for the Canada lynx (*Lynx canadensis*) (lynx) on the Ashley, Pike and San Isabel, and San Juan National

Forests. We agree that the proposed action may affect and is likely to adversely affect the Canada lynx on the ARNF, GMUG, MBRNF, and the WRNF.

CONSULTATION HISTORY

April 10, 2014 – Cover document requesting concurrence with the effects determinations for each forest, a summary of information for the species receiving a may affect determination, and enclosures including BAs for each of the Forests.

May 21, 2014 – Letter from the Service documenting our inability to concur with the determination for the Canada lynx.

August 10, 2014 – Letter from Western requesting formal consultation for lynx, providing background information, and reanalysis of the effects determinations on each forest for lynx.

On August 20, 2008, we issued biological opinion (BO) number ES/LK-6-CO-08-F-024 (BO) on the effects of the Southern Rocky Mountains Lynx Amendment (SRLA) in accordance with section 7 of the Act. The BO was identified as the first-tier of a tiered programmatic consultation framework, with the review of subsequent projects that may affect lynx as being the second-tier of consultation. For projects that result in insignificant or discountable effects to lynx, the Service will provide a concurrence letter. For projects that will result in adverse effects to lynx and are consistent with, and fully analyzed under, the first-tier BO, we will provide a letter that confirms that the project complies with the first-tier BO. For projects that result in adverse effects to lynx but were not fully analyzed in the first-tier BO, a second-tier BO will be prepared.

BIOLOGICAL OPINION

I. PROPOSED ACTION

Background

In response to widespread power outages, Congress enacted the Energy Policy Act of 2005 (Public Law 109-58), which authorized the Federal Energy Regulatory Commission (FERC) to certify an Electric Reliability Organization (ERO) to create mandatory and enforceable reliability standards, subject to FERC's review and approval. FERC certified the North American Electric Reliability Corporation (NERC) as the ERO. The Energy Policy Act of 2005 requires Federal agencies to expedite approvals to allow owners or operators of transmission facilities access to the facilities to comply with applicable standards, including vegetation management standards.

North American Electric Reliability Corporation's Reliability Standard, FAC-003-1, "Transmission Vegetation Management Program" (NERC Standard) was enforced beginning on June 18, 2007. The NERC standard was revised as FAC-003-2 "Transmission Vegetation Management" was approved on May 28, 2013, and would be enforced in July 2014. A copy of the standard is available on the project website at <http://go.usa.gov/THsA>. To enhance Western Area Power Administration's (Western) compliance with NERC's transmission vegetation

management reliability standard, industry standards, and Western's policy and guidance. Western proposes to improve the way it manages vegetation along its rights-of-way (ROWs) on National Forest System (NFS) lands in Colorado, Nebraska, and Utah (the project area; see Figure 1-1 in the Draft Environmental Impact Statement). Western operates and maintains approximately 273 miles of transmission line ROWs on NFS lands in Colorado, Nebraska, and Utah, encompassing approximately 4,055 acres.

When the Forest Service approves the construction of an electric transmission line on NFS lands, it is a long-term commitment of the area in the permitted ROW. This includes a commitment to allow continuous access for maintenance and emergencies. Although the Forest Service authorizations are not exclusive, subsequent uses within the ROW must be compatible with the permitted ROW. The electrical transmission facility must routinely be maintained and be able to operate unimpeded for its intended purpose through its full range of anticipated and designed conditions. In the permitted ROW, vegetation management objectives focus on reducing the risk associated with transmission lines contacting trees and starting wildfires, ensuring the transmission lines are managed to maximize the opportunity to survive wildfires, ensuring public health and safety, ensuring the safety of electrical workers, ensuring access, and protecting environmental resources.

The existing vegetation management requirements within ROWs are an example of the issues Western and the Forest Service encounter with having different types of authorizations for the transmission lines. In many cases, ROW maintenance has been guided by operation and maintenance (O&M) plans that limit removal of trees to those identified as hazardous. In those cases, maintenance practices typically do not address the encroaching vegetation until it becomes a threat that requires immediate attention to ensure no adverse effect to the transmission line, or to avoid a threat of fire. This reactive approach to hazardous vegetation maintenance is not conducive to ensuring the level of operating reliability required by today's NERC standards, nor is it efficient or cost effective. Today's stricter maintenance standards require a more aggressive, proactive approach to vegetation management, with the goal of ensuring that there will be no tree-caused transmission line outages or fires. Surveys of Western's transmission-line ROWs in the Colorado, Nebraska, and Utah forests reveal a broad spectrum of vegetation threat conditions. Some ROWs are reasonably clean and secure, but many others contain dense slash, heavy live and dead fuel loads, and encroaching trees.

Proposed Action

The proposed action consists of two actions, one involving Western and the other, the Forest Service. Western proposes to revise their vegetation management practices within the ROWs in the project area such that Western will be in compliance with NERC's transmission vegetation management reliability standard, industry standards, and Western's policy and guidance. The Forest Service's action consists of reauthorizing Western's occupancy of the ROWs through issuance of new or revised special-use-permits (SUP), including Western's proposed changes to vegetation management within the ROWs. Individual Forests will issue the new SUPs separately at Western's request. Western identified six categories of existing vegetative conditions along the ROWs and described how each category will be managed (see categories below) to meet the objectives described above. Implementation of the proposed action includes vegetation

management options based on the ROW existing conditions. Western identified approximately 4,055 total acres within ROWs on NFS lands.

The project area consists of Western's transmission line ROWs on NFS lands in Colorado, Nebraska, and Utah. U.S. Forest Service Region 2 manages NFS lands in Colorado and Nebraska, and Region 4 manages NFS lands in Utah. The ROWs are located on the following Forests: Ashley National Forest (Utah), Arapaho-Roosevelt National Forests (ARNF), Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG), Medicine Bow-Routt National Forests and Thunder Basin National Grassland (MBRNF), Nebraska National Forest, Pike and San Isabel National Forests Cimarron and Comanche National Grasslands (PSINF), San Juan National Forest (SJNF), and White River National Forest (WRNF).

Conservation Measures

Conservation measures - are actions to benefit or promote the recovery of listed species that are included by the Federal agency as an integral part of the proposed action. These actions will be taken by the Federal agency or applicant, and serve to minimize or compensate for, project effects on the species under review. These may include actions taken prior to the initiation of consultation, or actions which the Federal agency or applicant have committed to complete in a BA or similar document.

Western and the Forest Service agreed to include the following conservation measure (a.k.a design feature) as an integral part of the proposed action.

Within lynx habitat, where topography does not allow for retention of taller vegetative growth within the ROWs, and in locations where vegetation management in the ROW creates long stretches of ROW without contiguous habitat, blocks of taller or denser vegetation that may include undesirable species will be retained within the ROW. Blocks may cross the width of the ROW, but smaller access roads or natural gaps in vegetation within the blocks will be acceptable. The retained taller or denser vegetation would ensure desired clearance between transmission line and vegetation and allow for extended re-entry intervals for the purpose of successive treatment, as described in the purpose and need for the proposed project. Tall older age class incompatible vegetation (typically trees) would be removed but younger age class incompatible vegetation would be retained on the ROW, along with compatible shrubs and other vegetation. The blocks would typically be about 50 to 100 meters in length, and as wide as the ROW (depending on site conditions [e.g., availability of contiguous effective habitat on both sides of the ROW, availability of natural connections in the area, fire risk proposed by the fuels condition of the vegetation block, present condition of the lynx habitat]). The retention blocks would include trees and other undesirable species which come in naturally (such as lodgepole pine regeneration). The blocks would be spaced about 0.5 to 1 mile apart along the ROW as needed to maintain connectivity across the ROWs between effective habitats. Management of the blocks may occur on a rotational basis. For example, as one treated area reaches a height and density where it would need retreatment to maintain line safety, a nearby new retention block area may be started to provide habitat connectivity.

In areas where the condition of habitat around the ROW is no longer considered suitable or vegetation conditions present unacceptable risk of fire or other risks to the transmission line (e.g., in areas with extensive beetle kill, unacceptable fuel loads under and adjacent to the ROW),

Western would initially treat the area to mitigate the risks, and monitor vegetation recovery. As the vegetation recovers, Western would coordinate with the Forest Service and the Service to identify options for creating retention blocks across the ROW. The block areas would be identified through Western's Annual Operating Plan or other agreed to review process.

Initial Vegetation Treatments

Western identified six broad categories of ROW conditions on NFS lands (Table 2). The vegetative condition (category) in the ROW determines whether the ROW requires immediate treatment, needs treatment over the longer term (later in time), or is unlikely to need treatment in the near future. The categories and the need for treatment are summarized as follows:

- Category 1 - requires no vegetation treatment, but monitoring continues.
- Categories 2 and 4 - require initial vegetation treatment in the short-term.
- Categories 3 and 5 - areas that have already been treated by Western in previous actions; however, incompatible species require additional treatment.
- Category 6 - identifies areas that require treatment for fuels reduction.

Table 2. Categories of ROW Conditions and Vegetation Treatment methods

Category	Vegetation	Examples	Frequency of Treatment	Treatment methods
1	Compatible with the transmission line.	The lines span canyons and there will likely always be adequate clearance between vegetation and the transmission line conductors – even with larger mature trees; a vegetation community that is already a stable, low-growth one (e.g., grasses, forbs, bushes, and shrubs.) so that vegetation at mature height is not a threat to the transmission line.	None expected for the duration of the authorization, but ROW monitoring will be needed to ensure conditions have not changed.	None expected.
2	Fast-growing incompatible species that are presently not acceptable, and over the long term, the vegetation is likely to contain incompatible vegetation types that would require monitoring and treatment.	Mature lodgepole pine, mature aspen, and other species on high-quality growth sites.	Initial treatment expected within 1 to 5 years. Maintenance treatments are 2- 6-year return intervals.	Accessible sites would favor use of mechanized equipment and removal of salvageable material. Inaccessible sites favor hand felling.
3	Fast-growing incompatible species of trees that currently are in an acceptable condition, but over the long term incompatible vegetation treatments would be needed.	Immature lodgepole pine and aspen. Other species on high-quality growth sites.	Maintenance treatments are expected 2- 6-year return intervals, may vary depending on site conditions.	Accessible sites favor mechanized equipment, with removal of salvageable material. Inaccessible sites hand felling.

4	Slow-growing incompatible species of mature vegetation that is currently not acceptable, and over the long term. Treatments for incompatible vegetation would be needed to control re-growth.	Mature spruce and fir. Other species on harsh sites.	Initial treatment is expected within 2 to 5 years, depending on site conditions and vegetation growth. Maintenance treatments are expected to be relatively infrequent on sites with incompatible species with slow growth rates, perhaps 5 or more years, depending on site conditions.	sites with good access, mechanized equipment, salvageable material removed. poor access, hand felling and other manual methods would typically be used.
5	These sites have slow-growing incompatible species, and the ROW is in an acceptable condition; however, over the long term, the incompatible species would need to be monitored and treated.	Immature spruce and fir. Other incompatible species on harsh sites.	Maintenance treatments are expected to be relatively infrequent, perhaps 5 years or longer, depending on site conditions.	good access-mechanized equipment favored and salvageable material be removed. poor access-hand felling and other manual methods would typically be used.
6	Treatments in these areas of ROW are driven largely by the conditions of the fuel load. Typically, they include areas with low-growing vegetation types that are characterized by having high fuel loads. Sites are characterized by dense, woody vegetation capable of high-intensity fire, with transmission lines having relatively low conductor-to-ground clearances.	Sagebrush, Gambel oak, dense lodgepole regeneration, and pinion and juniper pine.	Initial treatments are expected. This could include mechanical removal of vegetation near structures and from areas of the ROW. Maintenance treatments as needed. Need is determined from ROW monitoring.	good access-mechanized treatment (i.e.) mowing poor access-manual treatments typically be used. Gambel oak could be treated with herbicides.

Right-of-Way Vegetation Maintenance

Western's proposed action includes monitoring and re-treating ROWs areas at appropriate intervals based on the results of reviews of ROW conditions during line patrols (see Categories 3, 5, and 6). In ROWs with relatively low conductor-to-ground clearances, Western typically retains lower-growth native plant species to maintain the desired vegetation condition, but intends to remove tall-growth species. Depending on the specific site conditions, desirable native species could include grasses, forbs, and shrubs, through appropriately sized small or lower-growing tree species. Generally, more selective control methods can be used to maintain this condition along the ROW. Right-of-Way maintenance activities and treatment intervals may vary in the ROW depending on the success of previous treatments, vegetation type, rates of vegetation re-growth, environmental protection requirements, and risks to the transmission line.

Fuel Reduction

An important component of ROW maintenance is fuels management to mitigate the risk of outages and wildfires. Western evaluates the risk to transmission line operations and security from wildfire and manages fuels in the ROWs. Right-of-Way fuel loads associated with vegetation re-growth or control treatments must be evaluated and controlled as needed. All vegetation (dead or live) can be considered fuel because it can contribute to fire intensity and duration. In addition to reducing the risk of incompatible vegetation in a ROW, Western's proposed ROW reclamation and long-term maintenance strategies address areas where accumulated fuel poses an unacceptable risk. Western would reduce fuel density in ROWs using mechanical and manual treatment approaches.

II. STATUS OF THE SPECIES

The lynx was added to the list of threatened species on March 24, 2000 (65 Fed. Reg. 16052). We concluded that the single factor threatening the contiguous United States distinct population segment of lynx was the inadequacy of existing regulatory mechanisms, specifically the lack of guidance for conservation of lynx in National Forest Land and Resource Management Plans and Bureau of Land Management (BLM) Land Use Plans. On July 3, 2003, we published a clarification of findings published in the Federal Register (68 Fed. Reg. 40076) determining that threatened species designation was appropriate for the lynx. We published a final rule to revise designated critical habitat for the Canada lynx in the contiguous United States on February 25, 2009 (74 Fed. Reg. 8616). The final critical habitat designation did not include habitats in Colorado. On September 26, 2013, we published a proposed rule to revise our designation of critical habitat for lynx, but did not include habitats in Colorado (78 Fed. Reg. 59430). Therefore, this BO will not analyze effects to critical habitat, as none will be affected. The Service's various listing rules provide a good resource for a more thorough discussion of life history information on lynx, summarized below.

The status of the Canada lynx (lynx) for this BO tiers to the SRLA BO and incorporated here by reference.

The lynx is a medium-sized cat with long legs; large, well-furred paws; long tufts on the ears; and a short, black-tipped tail (McCord and Cardoza 1982, cited in SRLA BO). Individual lynx maintain large home ranges reported as generally ranging between 12 to 83 square miles (Koehler 1990; Aubry et al. 2000; Squires and Laurion 2000; Squires et al. 2004; Vashon et al. 2005) (cited in SRLA BO). The size of lynx home ranges varies depending on abundance of prey, the animal's gender and age, season, and the density of lynx populations (Koehler 1990; Poole 1994; Slough and Mowat 1996; Aubry et al. 2000; Mowat et al. 2000; Vashon et al. 2005, cited in SRLA BO).

In 1999, each National Forest within the range of lynx was advised to begin mapping lynx habitats in coordination with respective Service field offices. Specific tasks included the preparation of maps of lynx habitat on National Forests, and the delineation of Lynx Analysis Units (LAUs) (as recommended in the Lynx Conservation Assessment and Strategy (Ruediger et al. 2000) within mapped lynx habitat. Lynx analysis units are intended to provide the fundamental or smallest scale with which to begin evaluation and monitoring of the effects of

management actions on lynx habitat (Ruediger et al. 2000). Lynx analysis units do not depict actual lynx home ranges, but their scale should approximate the size of area used by an individual lynx (Ruediger et al. 2000). Using this scale allows land management agencies to monitor the additive effects of actions within lynx habitat, which translates to effects to individuals of the species.

In the SRLA BO, we provided information about lynx in Colorado, including the reintroduction of 218 lynx into the state. We documented sources of mortality for those reintroduced animals, reproduction, and evidence of lynx born in Colorado giving birth to kittens. The evidence suggests that lynx in Colorado have the capability to reproduce, and we assume continue to provide recruitment of lynx into the population. What the State did not demonstrate is whether Colorado can support sufficient recruitment to offset annual mortality for a viable lynx population over time (Shenk, 2009). However, Shenk (2010) concluded that if the population would repeat the reproduction and mortality patterns documented over the last 10 years, the lynx population would continue into the future at sustainable numbers.

Status of Lynx Population in Colorado

Accurate estimates of the lynx population in Colorado are not available. Of the 218 lynx reintroduced into Colorado, there were 122 known mortalities of released adult lynx (Shenk 2010). However, survival rates within the reintroduced lynx population in Colorado were considered high within the study area (Devineau et al. 2010). The estimated survival rates for the reintroduced lynx population were higher than estimates obtained in Canadian studies for natural, lightly trapped populations of Canada lynx (Slough and Mowat 1996, O'Donoghue et al. 1997, and Poole 1994; cited in Devineau et al. 2010). As of 2009, 126 kittens were born in Colorado (Shenk 2009), with 33 percent of collared female lynx having dens (Shenk 2010).

Critical Habitat

On September 12, 2014, we designated critical habitat for lynx. We did not designate critical lynx habitat within southern Wyoming, and Colorado (79 Fed. Reg. 54782-54846).

Recovery Outline

In 2005, the Service, along with representatives from the Forest Service, completed a Recovery Outline (Service 2005) for the Contiguous United States Distinct Population Segment of the Canada Lynx, which serves as an interim strategy to guide recovery efforts until we complete a final recovery plan. The outline identifies core, secondary, and peripheral areas for lynx, and preliminary recovery actions. The Recovery Outline provides four objectives that provide a framework for progressing towards the recovery goal of delisting the lynx. In addition, the Recovery Outline identified a number of recovery actions needed to attain the objectives. As the recovery action relates to the proposed action, we identified the following recovery action to support the delisting goal.

- I. Where power lines under Western's authority cross private lands within lynx habitat, implement the conservation measure.

III. ENVIRONMENTAL BASELINE

This section is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat (including designated critical habitat), and ecosystem within the action area. The environmental baseline consists of the past and present impacts of all Federal, State, or private actions, and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50 C.F.R. § 402.02).

Status of the Species within the Action Area

The environmental baseline for lynx is generally evaluated against vegetation standard one (VEG S1) of the SRLA. We use this standard as a means for determining whether the LAU contains sufficient lynx habitat in a suitable (functional) condition to support survival (feeding) and reproduction of lynx. Our current understanding of lynx home ranges suggests that at least 70 percent of the lynx habitat within a LAU should be in a suitable (functioning) condition to support a resident lynx year-round. In addition to VEG S1, other natural and man-caused factors may reduce prey abundance within the action area. These impacts include, but are not limited to, bark beetle infestations, or vegetation management activities. Bark beetle infestations, depending on the intensity and geographic extent, and vegetation management may affect mature cone-bearing trees, which may reduce the abundance of red squirrels. Vegetation management removes the structural and foraging components of lynx habitat at varying spatial scales, reducing the carrying capacity of the habitat for lynx prey. In combination, bark beetle activity and past vegetation management may significantly reduce prey abundance within a LAU, potentially reducing productivity of a lynx occupying that home range. The environmental baseline of each LAU and/or lynx linkage within the action area, where the BA determined that the proposed action may affect and is likely to adversely affect the lynx, are described below on a forest-by-forest basis.

The environmental baseline for the proposed action has been influenced by several factors, including existing Forest Service authorizations for the ROWs, which include operation and maintenance (O&M) plans. Each authorization dictates how Western may implement vegetation management within specific segments of a transmission line, depending on the Forest, and varies across forest boundaries or even between parallel ROWs on the same Forest. In addition, the on-going mountain-pine-beetle and/or spruce bark-beetle epidemics occurring within portions of the project area have resulted in high occurrence of tree mortality within the ROWs.

As stated above, existing ROW maintenance is guided by O&M plans that limit removal of trees identified as dangerous. Under existing authorizations Western manages trees that are already or nearly a risk to the transmission lines. Western defines danger trees, as follows:

Danger trees are trees located within or adjacent to the easement or permit area that present a hazard to employees, the public, or power system facilities. Characteristics used in identifying a danger tree include but are not limited to the following:

encroachment within the safe distance to the conductor as a result of the tree bending, growing, swinging, or falling toward the conductor; deterioration or physical damage to the root system, trunk, stem or limbs and/or the direction and lean of the tree; vertical or horizontal conductor movement and increased sag as a result of thermal, wind and ice loading; exceeding facility design specifications; fire risk; other threats to the electric power system facilities or worker/public safety (WAPA O 430.1A, dated 03-18-2008)” (cited in the DEIS).

Western must patrol each ROW at least once a year to look for and remove new danger trees. This focus requires annual reentries, and in some areas more frequent reentries, into the ROW to address danger trees identified during periodic line patrols, or when maintenance personnel were in the ROW for other activities. Western currently manages vegetation along ROWs segments as control needs are identified through periodic line patrols. Western manages vegetation using a mix of manual, mechanical, and chemical methods (herbicides) to control vegetation in transmission line and access route ROWs. Existing vegetation management includes the practice of spot application of Forest Service-approved herbicides. Western conducts access route maintenance (i.e. repairs) as needed. Transmission system maintenance activities consist of regular aerial and ground patrols to find problems, scheduling and performing repairs to correct problems, and preventative maintenance.

The on-going mountain pine beetle and/or spruce bark beetle infestations have resulted in vast acreages of tree mortality within lynx habitat. Large-scale tree mortality within lynx habitat may result in various habitat conditions for lynx. Areas where there was little structural diversity within timbered areas have become, temporarily, lynx habitat in an unsuitable condition, also referred to as, stand initiation structural stage (SISS), which does not support year-round habitat for snowshoe hare (*Lepus americanus*), the lynx’s primary prey. In areas with greater structural diversity (i.e. multi layered canopy), the majority of larger over-story trees may have been killed, but understory structure remains and may provide conditions that support snowshoe hares. In some situations, the extent of beetle killed trees has significantly degraded habitat conditions for lynx (see discussion below).

In response to the beetle epidemics, Western, in cooperation with the Forest Service, conducted emergency danger tree cutting within the ROWs on Forest Service lands. Western completed emergency Section 7 consultation with the Service for the danger tree cutting project in 2009. The intensity of the danger tree cutting action varied across the action areas depending on the magnitude of tree mortality within the ROWs. In some areas, the ROW resembles a grassland park, while other areas remain forested. In some areas, the overstory mortality resulted in more open canopy conditions, which resulted in re-initiation of the stand (stand initiation structural stage), generally resulting in areas of dense regeneration which support high densities of snowshoe hares. Other areas may not experience dense vegetative regeneration (trees) due to the limited site productivity.

As stated above, the ROWs are managed based on existing O&M plans which likely include the following:

Maintenance Activities

Inspection and Transmission System Management

Western does aerial (usually by helicopter), ground, and climbing inspections of its transmission infrastructure in compliance with its internal policies and guidance. The requirements are updated as needed. A detailed description of the types of inspections is available in the draft Environmental Impact Statement (EIS). Aerial inspections are typically conducted every six months. Ground inspections occur on an annual basis. Western uses climbing inspections on transmission line structures if aerial or ground inspections find problems. Typically these inspections involve accessing the structures via existing access routes, or travel along the ROW in pickup trucks or ATVs, and could require bucket trucks.

Access

Western relies on access routes for safe and reliable access to transmission lines and supporting infrastructure. Western typically notifies the Forest Service before work begins on access routes, and complies with applicable specifications, guidelines, and design features. Maintenance activities include grading; blading; surfacing; reseeding; and constructing, repairing, or replacing water diversions such as culverts, ditches, and water bars. Typically, such activities would involve graders, backhoes, and support vehicles such as pickup trucks.

Vegetation Management

Manual

Manual vegetation control includes using powered and unpowered tools; installing static barriers (such as weed control mats); and spot, or localized, application of approved herbicides. The primary benefit of manual methods is selectivity, only unwanted vegetation is removed. Manual methods are labor intensive and are more effective and efficient in relatively low density vegetation in relatively small areas. Manual treatments typically are not efficient for disposal of accumulated biomass, and managing fuels and preventing fire in the ROW. Western uses the following manual techniques: cutting, trimming, hand-pulling and hoeing, and applying herbicides, described in detail in the BA.

Chemical (Herbicides)

Spot application of Forest Service-approved herbicides is a typical technique to control noxious weeds and other undesirable, mostly herbaceous, vegetation. Western applies herbicides on a limited basis to control vegetation in areas around towers. The herbicide is applied directly to the vegetation using a hand or powered sprayer. There will be no aerial application of herbicides.

Western uses herbicides that are approved for use in ROW maintenance and by the Forest Service. Western uses Environmental Protection Agency, and State-registered herbicides, and appropriately licensed or certified applicators following the label requirements.

Mechanical

Mechanical vegetation management typically uses self-propelled machine platforms with various interchangeable treatment-head attachments to remove or control target vegetation along transmission line and access routes. Depending on the particular equipment attachment and skill of the operator, these methods are selective or non-selective (all plants in the path of the machine are affected). Rubber-tired mechanical equipment platforms are generally limited to operating on slopes less than 30 to 35 percent. Specialized tracked equipment platforms, with articulating control cabins, are typically used on slopes up to 60 percent. Both types of specialized equipment platforms can operate with very low ground pressures. However, site-specific obstacles such as rocks or other extreme terrain can reduce their efficiency. Western uses the following mechanical techniques: mowing/grinding, chipping, and grinding, as described in detail in the biological assessment.

Summary of Activities Included in Maintenance

Transmission Line Maintenance

- Ground and aerial patrols
- Ground wire maintenance
- Aircraft warning devices maintenance, including repair and replacement
- Insulator maintenance, including replacements, repairs, or cleaning
- Bird-guard maintenance, including repair and adding bird-guard devices (e.g., anti-perching and anti-fouling devices)
- Bird perching and nesting structure repair and replacement
- Cross-arms maintenance on wood-pole structures, including replacement, repair, and addition
- Steel members of steel lattice transmission line structures, including repair, replacement, and addition
- Hardware on wood and steel transmission line structures, including repair and replacement
- Installation, repair, and replacement of guy anchors and guy lines on wood structures
- Cross-brace and knee-brace maintenance, including repair, replacement, and addition
- Damper maintenance, including repair, replacement, and addition
- Ground-spike maintenance on wood-pole structures, including repair, replacement, and addition
- Ground-rod maintenance, including repair, replacement, and addition
- Armor rod maintenance and clipping-in structures
- Conductor maintenance, including repair and replacement
- Static wire maintenance, including repair, replacement, and addition
- Fiber optic cable repair and replacement
- Wood preservative maintenance on wood-pole structures, including inspections and retreatment

- Placement of rocks, mats, and other materials at bases of poles or structures to stabilize erosion
- Remediation of small spills of oil and hazardous materials that occurred incidental to maintenance work (e.g., hydraulic hose failures and overfills)
- Structure mile markers and structure identification number maintenance, including repair, replacement, and addition
- Repair of vandalism such as gunshots to insulators and other structural damage
- Removing soil deposited around tower legs
- Ground-anchors maintenance, including repair, replacement, and addition
- Wood-pole maintenance, including butting, reinforcement, replacement and in-kind replacement of damaged or rotted poles
- Placing fill or rocks around existing towers or structures
- Maintaining identified vehicle and equipment staging areas for work associated with routine maintenance

Access Maintenance

- Installing and repairing fences and gates to control access
- Placing fill or rocks around existing culverts to control erosion
- Repairing erosion on access roads to maintain the existing roadbed
- Grading existing access roads to the existing standard for that road
- Installing rip-rap along creeks and rivers in localized, restricted areas to control erosion, prevent bank degradation, and protect structures and access roads; maintenance and repair, including replacement, of existing culverts
- Vegetation management, including mowing, weed spraying, reseeding, and similar activities
- Manual and mechanical removal or pruning of danger trees or vegetation
- Placing rocks, mats, and other materials at bases of poles or structures to control vegetation growth
- Manual and mechanical removal or pruning of danger trees or vegetation
- Localized applications of herbicides to control weeds and vegetation

Assumptions

In order to facilitate this analysis, the Service, Western, and the Forest Service developed several assumptions. These assumptions were developed to standardize the vegetative conditions within the ROWs. We recognize that the existing on-the-ground vegetative conditions vary throughout the broader project geographic area. The assumption is that the existing vegetative conditions within all ROWs are in a suitable (functioning) condition to support lynx, and that Western will request modification of the existing vegetation management plans to meet the new requirements.

The new vegetation management activities will effectively reduce/eliminate functional lynx habitat within the ROWs, except those areas where the conservation measure is applied.

Another assumption is, in general, all vegetation management restrictions/authorizations within O&M plans are consistent across the action areas, and that the proposed action will modify the O&M plans as proposed. We recognize that the existing plans are not consistent and that modification of the vegetation management practices may over-estimate or under-estimate the effects resulting from changes to the vegetation management plans.

For lynx, the action area for the proposed action is defined as the lynx analysis unit(s) where Western's ROWs occur. In addition, the action area includes areas identified as a lynx landscape linkage where existing ROWs occur or where access to the ROW occurs within a linkage.

Arapaho-Roosevelt National Forests

There are six distinct transmission lines that cross NFS lands managed by the ARNF, crossing 20.45 miles (Table 3). The ROWs have variable widths and cover approximately 305.22 acres.

Table 3

Transmission Line	Miles	ROW Acres
ARCHER-NORTH PARK <i>ARH-NOP / 230kV</i>	5.04	76.48
AULT-CRAIG <i>AU-CRG / 345kV</i>	5.08	104.59
BLUE RIVER-GORE PASS <i>BRU-GOT / 230kV</i>	6.88	104.07
GRANBY PP-MARYS LAKE <i>GPP-MLA / 69kV</i>	0.80	7.11
GRANBY-GRANBY DAM <i>GRB-GR / 69kV</i>	1.65	9.95
GREEN MOUNTAIN-BLUE RIDGE REPEATER <i>GM-BLR / 2.4kV</i>	1.00	3.02
Total	20.45	305.22

The Archer-North Park 230kV and Ault-Craig 345kV lines occur in the Canyon Lakes Ranger District in the Roach Geographic Area in Section 36, Township 12 North, Range 78 West, and sections 1, 2, 11, 15, 16 and 21 in T11N, R78W at an elevation of 8,600 to 9,600 feet. All lines on the Canyon Lakes Ranger District are within Larimer County, Colorado.

On the Sulphur Ranger District transmission lines occur in two areas: the Granby Pumping Plant-Mary's Lake 69kV and the Granby-Granby Dam transmission lines occur within the Arapaho National Recreation Area, in sections 26 and 35 of T3N, R76W, and sections 3, 6, 8, 10, 11, 15, T2N, R76W, at elevations of approximately 8,100 to 8,300 feet. The other area is in the Williams Peak area at the western end of the Sulphur Ranger District. The transmission lines in this area are the Blue River-Gore Pass 230kV and the Green Mountain-Blue Ridge Repeater 2.4kV in Sections 31-33, T1S, R79W, and Sections 3, 4, and 10, 11 & 14, T2S, R79W, at 8,950 to 10,800 feet in elevation, and are within the Blue River and Williams Fork basins.

The Roach project area is on the Canyon Lakes Ranger District of the ARNF and is within the Laramie LAU (LLAU). The Williams Peak project area is within the Sulphur Ranger District of the ARNF and the Williams Fork LAU (WFLAU). The Lake Granby project area does not occur within a designated LAU, and is not within suitable lynx habitat.

Mountain Pine-Beetle Effects within the Laramie and Williams Fork LAUs

In stands dominated by lodgepole pine, mountain pine-beetles (MPB) have killed off the majority of the mature trees. Patches of smaller diameter lodgepole pine and spruce/fir trees remain alive. Where MPB-induced mortality of larger lodgepole pine trees has recently occurred, and continues to occur, habitat conditions are changing and will continue to change. Once dead lodgepole pine loses its needles and small branches, the lynx habitat is considered currently unsuitable (i.e. SISS condition).

The Laramie Lynx Analysis Unit (LLAU) contains 81,004.6 total acres. There are no private lands within the LLAU. Environmental baseline statistics of lynx habitat in the LLAU are summarized in Table 4.

Table 4.

Laramie LAU	Total Habitat	Denning	Winter Forage	Other	Currently Unsuitable
Acres	65,591	9,154	18,414	2,799	35,224
Percent of Habitat	100%	14%	28%	4%	54%

The LLAU occurs on the east side of the Medicine Bow Range (the west slope of the Medicine Bow Range is part of the Colorado State Forest, and not managed as a LAU). The northern end of the LLAU is within the Roach area, which was historically logged for railroad ties. The southern and higher-elevations of the LLAU are within the Rawah Wilderness Area. The southern end of the LLAU abuts the Poudre LAU. No major towns, roads, highways, or mapped snow-play areas occur within the LLAU. During the summer months, recreation activities are relatively light in the northern end of the LLAU, but recently off highway vehicle (OHV) use has increased, generally using the many miles of old logging roads in the area.

In 2006-2008, as part of the Roach Integrated Vegetation Management Project, silvicultural treatments targeted approximately 2,170 acres, which included harvest units located within the Ault-Craig and Archer-North Park transmission line ROWs, totaling approximately 12 acres.

Within the Roach area there are 13 miles of designated and mapped snow-compacted trails, which are old logging roads utilized by snowmobiles. During the winter months, access for over-the-snow motorized use is from the north on Forest roads coming down from Wyoming through the Medicine Bow-Routt National Forest. Snowmobile activity was observed in the vicinity of the Roach project area and ROWs during helicopter reconnaissance, but are not mapped or tracked by the ARNF, thus their extent is not known.

The WFLAU is 117,251 acres in size. There are no private inholdings within this LAU. Environmental baseline statistics of lynx habitat in the WFLAU are summarized in Table 5.

Table 5.

Williams Fork LAU	Total Habitat	Denning	Winter Forage	Other	Currently Unsuitable
Acres	117,251	18,372	15,551	2,565	53,664
Percent of Habitat	100%	20%	17%	3%	60%

The west side of the WFLAU is the eastern slope of the Williams Fork Mountains (the west side of the Williams Fork Mountains is the Blue River LAU, located on the White River National Forest). The southern end of the WFLAU is just north of Interstate-70, and incorporates portions of the Continental Divide. The eastern side of the WFLAU follows the Vasquez Mountains, which form the eastern side of the Williams Fork drainage. In the center of the LAU are the Williams Fork River, and the Henderson Mill and tailings impoundments. The western side of the WFLAU is mostly forested; the southern and eastern sides of the LAU consist of large alpine areas. No major towns, roads, or highways occur within the WFLAU, aside from Ute Pass, which is paved and services traffic to the Henderson Mill from the Interstate-70 corridor. During the summer months, recreation activities are relatively light to moderate in the WFLAU. However, campgrounds along the Williams Fork River draw recreationists to the area.

Within the WFLAU there are 139.8 miles of designated snow-compacted trails, which consist of logging roads utilized by snowmobiles. There are 1,472.3 acres of snow play (snow compaction) areas in the WFLAU. These snow play areas are generally in the northeastern part of the LAU where logging roads provide access for snowmobiles. There is one outlying snow play area at the south end of the LAU, where access leads from the I-70 corridor to the Coon Hill area.

There is a lack of summertime trails in the LAU, except for access into the Byers Peak Wilderness, and at the southern end of the LAU. There is one trail into the project area, and an access road along the transmission line corridor. This road is gated and locked for administrative use only, but this road is documented by the Forest Service as a snow-compacted route, and public access on this road is likely due to snow depths that bury the gates. Roads and trails are more common at the northeastern corner of the LAU, where logging activities are common. However, given the steepness of the Williams Peak project area there have been no recent or significant forest management activities in the project area.

The project area is generally within mature lodgepole pine forest types, which likely provided marginal foraging opportunities, but likely provides habitat for lynx moving between higher quality spruce-fir habitats. As the ROWs have been managed for shorter vegetation, ROWs contained lower height lodgepole pine trees with high densities, creating high quality snowshoe hare habitats. However, due to recent MPB infestations, Western was required to dramatically reduce the risks to transmission lines, by removing much of the smaller diameter lodgepole pine trees. Mountain pine-beetle caused mortality of mature lodgepole pine in the WFLAU is extensive, creating large areas of non-functional (SISS) habitat for snowshoe hares and lynx.

The southern end of the WFLAU provides larger areas of functional habitat. The WFLAU is at the northern end of the Loveland Pass Lynx Linkage Area, extending from the Breckenridge/Keystone area, through the I-70/ Loveland Pass corridor, and into habitat areas north of I-70 and the WFLAU.

Grand Mesa, Uncompahgre, and Gunnison National Forests

There are six distinct transmission lines that cross NFS lands managed by the GMUG National Forests, crossing 75.32 miles. The ROWs have variable widths and cover approximately 1201.79 acres (Table 6).

Table 6: Lines and ROWs on the GMUG Covered in EIS

Transmission Line	Miles	ROW Acres
CURECANTI-LOST CANYON <i>CCI-LCN / 230kV</i>	5.95	90.16
CURECANTI-NORTH FORK <i>CCI-NFK / 230kV</i>	4.26	64.49
CURECANTI-PONCHA <i>CCI-PON / 230kV</i>	9.15	155.10
HESPERUS-MONTROSE <i>HS-MTR / 345kV</i>	18.87	400.23
NORTH FORK-RIFLE <i>NFK-RFL / 230kV</i>	25.52	386.67
NORTH GUNNISON-SALIDA <i>NGU-SLA / 115kV</i>	11.57	105.14
Total	75.32	1,201.79

Transmission lines on the GMUG occur in four areas (see Figure 1 in the BA): the Hightower project area in Mesa and Delta counties contains the North Fork-Rifle 230-kV (NFK-RFL 230kV) line at elevation ranges from 7,375 to 9,500 feet. The Flatiron project area in Montrose County contains the Curecanti-North Fork 230kV (CCI-NFK 230kV) line at elevation ranges from 8,290 to 9,780 feet. The Monarch project area in Gunnison and Saguache counties contains the Curecanti-Poncha 230 kV (CCI-PON 230 kV) and the North Gunnison-Salida 115 kV (NGU-SL 115 kV) transmission lines, at elevation ranges from 8,350 feet to 11,610 feet at the top of Monarch Pass. The Paradox project area is within Ouray, Montrose, and San Miguel counties and contains the Hesperus-Montrose 345 kV (HES-MON 345 kV) and the Curecanti-Lost Canyon 230 kV (CCI-LCN 230 kV) transmission lines, at elevation ranges from 7,600 to 9,700 feet. All of these project areas are within the Colorado River basin.

The Hightower project area is on the Paonia Ranger District of the GMUG and lies within the Huntsman Mountain, Chalk Mountain, and Crater Lake LAUs. The Flatiron project area lies within the Gunnison Ranger District and is within the Black Mesa LAU. The Monarch project area is also within the Gunnison Ranger District, and it is within the Pitkin and Upper Tomichi LAUs. The Paradox project area is within the Ouray and Norwood Ranger Districts, and it is within the Spring Creek and Lone Cone LAUs.

Huntsman Mountain LAU

The Huntsman Mountain LAU (HMLAU) is 47,549 acres in size. Environmental baseline statistics of lynx habitat in the LAU are summarized in Table 7.

Table 7. Huntsman Mountain LAU

Huntsman Mountain LAU	Total Habitat	Currently Unsuitable
Acres	37,515	0
Percent of Habitat	100%	N/A

Existing land uses that may influence lynx habitat use within the HMLAU are generally limited to widespread livestock (sheep and cattle) grazing, dispersed camping and infrequent trail use, relatively active fall big game hunting, and some limited winter time snowmobile activities. Natural gas exploration and development is occurring within the lower elevations of the HMLAU as well. Within the 47,548 acres composing the HMLAU, 529 acres are under private ownership.

The HMLAU overlaps a small portion of the 27,034 acre McClure Pass Lynx Linkage Area (MPLLA) at the southeastern end of the LAU, linking the Huntsman Ridge area with habitats in the Crystal West, Crystal East, and Ragged Mountain LAUs on the White River and GMUG National Forests. The MPLLA links suitable lynx habitats in the Elk Mountains to potential habitats on Huntsman Ridge and the Grand Mesa.

There are a few Forest Service-mapped snow compaction routes within the HMLAU. The majority of these routes are more towards the northern end of the LAU, closer to Hightower Mountain and Buzzard Park, which are not considered suitable habitat. Snowmobiles are known to utilize the NFK-RFL ROW, but the actual areas and frequency of use has not been quantified. Snow compaction areas currently mapped within the HMLAU total 38.4 acres.

Chalk Mountain Lynx Analysis Unit

Approximately 27.4 acres of the NFK-RFL ROW occurs within the Chalk Mountain LAU (CMLAU). The CMLAU is 31,403 acres in size, of which 24,639 is mapped lynx habitat. Environmental baseline statistics of lynx habitat in the CMLAU are summarized in Table 8 below. Within the 31,403 acre CMLAU, 1,827 acres are under private ownership. There are no lynx linkages within the CMLAU.

Table 8 Chalk Mountain LAU

Chalk Mountain LAU	Total Habitat	Currently Unsuitable
Acres	24,639	0
Percent of Habitat	100%	N/A

Existing land uses that may influence lynx habitat use within the CMLAU are widespread livestock (sheep and cattle) grazing, dispersed camping and infrequent trail use, relatively busy fall big game hunting, and winter time snowmobile activities. The LAU contains a large number of lakes and reservoirs, campgrounds, roads, and the Electric Mountain Lodge, which provides summertime and fall camping and guest services. The Lodge is a destination area for snowmobilers in the winter. The Electric Mountain Lodge is located approximately 0.25 miles from the ROW, and introduces and concentrates a large number of snowmobilers very close to the ROW. The LAU contains approximately 707 acres of snow compaction (play areas) and 27.5 miles on snow compacted routes.

Crater Lake LAU

Approximately 100 acres of the NFK-RFL ROW occur within the Crater Lake LAU (CLLAU). The CLLAU is 46,668 acres in size, of which 36,436.4 acres is currently mapped lynx habitat. There are no lynx linkage areas within the CLLAU. Habitat statistics for the Crater Lake LAU are summarized in Table 9.

Table 9. Crater Lake LAU

Crater Lake LAU	Total Habitat	Currently Unsuitable
Acres	36,436	55.6
Percent of Habitat	100	<1

The major existing land uses that influence lynx habitat use within the CLLAU includes widespread livestock (sheep and cattle) grazing, dispersed camping and infrequent trail use, relatively busy fall big game hunting, and winter time snowmobile activities. Within the 46,668 acres in the CLLAU, 1,707 acres are under private ownership.

Immediately adjacent to the NFK-RFL ROW is the privately owned and operated Electric Mountain Lodge, which provides summertime and fall camping and guest services, and is a destination area for snowmobilers in the winter. The Electric Mountain Lodge is located on a private land inholding, but currently operates on Forest Service lands under a temporary outfitter-guide permit, providing guided snowmobiling tours. The Lodge is a year-round resort, but provides a significant winter time snowmobiling opportunity in the area. The Lodge provides refueling for snowmobiles, which creates snowmobile traffic from a number of trailheads to the Lodge. This allows for longer duration riding and longer distances traveled.

There are no mapped snow compaction areas within the CLLAU. However anecdotal evidence suggests that much of the area around Electric Mountain Lodge (some of which is private lands) is heavily used by snowmobiles during the winter months. Despite temporary permitted use of Forest Service lands by Electric Mountain Lodge, and use of surrounding trails by snowmobilers the Forest Service has not formally mapped snow compaction areas around the Lodge. There are 32.9 miles of designated snow compacted routes, of which 14.4 are groomed during the winter months. Snowmobiles are known (anecdotal information) to utilize the NFK-RFL ROW, especially as the ROW passes close to the Electric Mountain Lodge.

Black Mesa Lynx Analysis Unit

Approximately 52.5 acres of the CCI-NFK ROW occur within the Black Mesa LAU (BMLAU). The BMLAU is 52,248.7 acres in size, of which 33,892.6 acres is currently mapped lynx habitat. There are no lynx linkage areas within the BMLAU. Habitat statistics for the Crater Lake LAU are summarized in Table 10.

Table 10 Black Mesa LAU

Black Mesa LAU	Total Habitat	Currently Unsuitable
Acres	33,893	501
Percent of Habitat	100	<1

The area sees widespread livestock grazing during the summer months, and roads and trails are relatively common throughout the LAU, and experiences significant big game hunting during the fall and early winter months. Within the Wilderness Area, trails are very common given the presence of nearby peaks (Mount Guero, Tater Heap, Sheep Mountain, etc.). At lower elevations (outside of the Wilderness Area), snowmobiling activities are common. State Highway 92 crosses at the extreme southwest corner of the LAU.

There are approximately 2,057 acres of mapped snow compaction areas within the BMLAU, primarily from snowmobile use. In addition, there are 45.5 miles of designated and groomed snow compacted routes. Given the location of the CCI-NFK ROW away from snow play areas and snow compaction routes, it is unlikely that snowmobiles use is limited in the ROW.

Pitkin Lynx Analysis Unit

Within the Pitkin LAU (PLAU), the CCI-PON transmission line ROW occupies approximately 62.3 acres. The PLAU is 81,033 acres, of which 39,981 acres is considered to be habitat for lynx. Environmental baseline statistics of lynx habitat in the PLAU are summarized in Table 11. There are no Lynx Linkage Areas within the PLAU.

Table 11. Pitkin LAU

Pitkin LAU	Total Habitat	Currently Unsuitable
Acres	39,981	1,131
Percent of Habitat	100	1

Within the PLAU there is a large inholding of private land just north of Tomichi Dome. This area, referred to as Waunita (including Waunita Park and Waunita Hot Springs), operates as a guest ranch, with guided horseback rides, hunting trips, etc. Some recreational activities occur on Forest Service lands within lynx habitats in the area. This area also includes a large number of roads and trails, as well as the CCI-PON right-of-way. North of Waunita Park is Waunita Pass and the Pitkin mining district. Historic mining activity at the turn of the century, resulted in, exploratory roads, mines, tailings piles, etc., and widespread historic logging activity. Evidence of mining activity decreases near Fairview Peak, along with lower mining road density, and evidence of activity, etc.

Around the Pitkin town site, there is a moderately sized 6,182 snow compaction area, created from snowmobile use. There is approximately 54 miles of designated compacted trails within the PLAU, most of which is from motorized compaction (e.g., snowmobiles).

Upper Tomichi LAU

Within the Upper Tomichi LAU (UTLAU), the CCI-PON transmission line ROW occupies approximately 60.7 acres, and the NGU-SL line occupies 52.2 acres. The UTLAU is 47,918 acres in size, of which approximately 30,161 acres is mapped lynx habitat. Environmental baseline statistics of lynx habitat in the UTLAU are summarized in Table 12. The Poncha Pass linkage area occurs on the eastern side of the UTLAU, along the top of Monarch Pass.

Table 12 Upper Tomichi LAU

Upper Tomichi LAU	Total Habitat	Currently Unsuitable
Acres	30,161	66
Percent of Habitat	100	<1

Where the CCI-PON line crosses Black Sage Pass, vegetation is mapped as both primary and secondary. However, forest types in the Black Sage Pass area are dominated by ponderosa pine, Douglas-fir and dry aspen types. The SRLA and literature (Ruediger et al. 2000, Dressen et al. 2010; all cited in BA) indicate that these forest types are not considered lynx habitat. At lower elevations of the Sawatch Range, where the CCI-PON line begins to climb the ridgeline following the old Monarch Pass Highway (FSR 237), forest types are dominated by ponderosa pine, Douglas-fir and aspen. The Forest has been conducting widespread thinning and restoration activities to improve forest health in these lower montane forest types. These stand types are not considered to be suitable lynx habitat. However, the Forest Service currently has all of the forests on the western slope of the Sawatch Range around the ROW categorized as suitable habitat.

The Upper Tomichi LAU has a high number of roads, especially the northern portion of the LAU around the old Pitkin, White Pine, and Whitehouse, mining areas, where minerals exploration and mining precipitated the need for access and logging roads. Outside of the mining areas the steep slopes and rugged terrain limited the development of roads, but evidence of widespread historic logging is fairly common. In the vicinity of the CCI-PON and NGU-SL transmission lines, roads are relatively infrequent due to rugged terrain. An exception to this is the Old Monarch Pass Road, and State Highway 50, running east-west over Monarch Pass. Annual average daily traffic (AADT) on State Highway 50 over Monarch Pass through the UTLAU and PPLA is approximately 3,000 vehicles per day (CDOT 2012, cited in BA). Most of the highway is two lanes, with climbing lanes intermittently available on both sides of the Pass. The Pass is relatively winding, which means that vehicles speeds do not often exceed 45 miles per hour. South of SH-50 Forest roads are less concentrated.

Public Service Company of Colorado owns and operates the White Pine distribution line, located approximately 1.3 miles north of Ski Monarch, and 2.4 miles north of the CCI-PON line. The line was originally built in 1918 to serve Whitepine mining operations and the town site. The line is operated as a conventional 2.4 kV distribution line, serving permanent and seasonal residents of Whitepine.

Monarch Ski Area is located near the top of Monarch Pass within the UTLAU and PPLLA, at an elevation ranging from 10,790 to 11,952 feet along both sides of the Continental Divide. Monarch Ski Area includes approximately 800 permitted acres of trails and is operated from the end of November through mid-April. Monarch Snowcat Tours also offers snowcat skiing just north of the groomed ski area, which can access around 1,000 acres of skiing outside of the ski area boundaries from January 14 through March 25. Snowcat skiing areas are mapped as snow compaction areas by the Forest Service. Monarch Ski Area also has summertime activities including hiking and mountain biking.

The Forest Service maps developed ski runs as non-habitat. Although forested areas (including inter-trail islands) are mapped as suitable habitat, it is unlikely that lynx use the ski area during winter months given the high levels of human activity, widespread snow compaction, which may result in significantly reduced densities of snowshoe hare. The Monarch Ski Area is the only area of mapped snow compaction in the UTLAU, and compacted snow routes total approximately 19 miles.

Spring Creek LAU

Approximately 108.2 acres of the HS-MTR ROW occur within the Spring Creek LAU (SCLAU). The CCI-LCN transmission line (which is the other transmission line crossing over the Uncompahgre Plateau) does not cross over into the SCLAU. The SCLAU is 35,746 acres in size, of which 30,882 acres is lynx habitat. There are no lynx linkage areas within the SCLAU. Habitat statistics are summarized in Table 13.

Table 13. Spring Creek LAU

Spring Creek LAU	Total Habitat	Currently Unsuitable
Acres	30,882	359
Percent of Habitat	100	<1

The SCLAU is located on the higher elevations of the Uncompahgre Plateau, in an area that experiences high recreation use, and is adjacent to summer camps and private inholdings. Historic logging, ranching, and summer recreation activities occur in the relatively gentle terrain of the SCLAU, resulting in a large number of roads and roadways. Aside from summertime road use and dispersed recreation, fall big game hunting is very popular in the SCLAU. The SCLAU contains one snow compacted route (the Divide Road), but many of the spur roads and historic logging roads experience regular snow compaction. These routes are not tracked by the Forest Service as designated snow compaction routes, but evidence of widespread snowmobile use of these roads was fairly common. The Forest Service and Western undertook landscape-scale fuels management and forest health projects in the mid-2000s, and most activities occurred in the SCLAU. These activities included 323 acres of commercial harvest, 23 acres of broadcast burning, 90 acres of underburns (preserving the live canopy), 241 acres of mechanical treatment (chipping/grinding, etc.), and 105 acres of danger tree mitigation specific to the ROW. Many of these vegetation treatments overlap, and the final acreage of treatments impacting habitats in the SCLAU is not available at this time. However, we believe that treatments have resulted in insignificant impacts to lynx and lynx habitat.

Lone Cone LAU

Approximately 11 acres of the HS-MTR and CCI-LCN ROWs occur within the Lone Cone LAU (LCLAU). These ROWs parallel each other through a small corner of the LAU, through non-habitat types (i.e. gambel oak). Since lynx habitats within the Lone Cone LAU will not be affected by the proposed action, we will not further discuss this LAU herein.

Medicine Bow-Routt NF and Thunder Basin National Grassland

There are six distinct transmission lines that cross NFS lands managed by the MBRNF, crossing 62.05 miles. The ROWs have variable widths and cover approximately 935.54 acres Table 14.

Table 14: List of Lines and ROWs on the MBRNF

Transmission Line	Miles	ROW Acres
ARCHER-NORTH PARK	2.62	39.54
ARH-NOP / 230kV	-	-
AULT-CRAIG	13.64	274.30
AU-CRG / 345kV	-	-
GORE PASS-HAYDEN	11.13	102.01
GOT-HD / 138kV	-	-
GORE PASS-MUDDY PASS	1.66	19.68
GOT-MPS / 69kV	-	-
HAYDEN-GORE PASS	21.95	332.54
HDN-GOT / 230kV	-	-
HAYDEN-NORTH PARK	11.05	167.47
HDN-NOP / 230kV	-	-
Total	62.05	935.54

There are four project areas on the MBRNF including the Cowdrey, Mohawk, Agnes, and Phippsburg project areas (See Figure 1 in the MBRNF BA).

The Cowdrey project area is not within a mapped LAU, but is within the Snowy Range Lynx Linkage Area (SRLLA). Two ROWs, Ault-Craig and Archer-North Park, bisect the SRLLA. Incompatible lodgepole pine forest occupies 54.6 acres, and spruce-fir forests occupy 20 acres within these ROWs. The lodgepole pine stands adjacent to the ROWs are dominated by 6 to 13 inch diameter at breast height trees, and canopy cover in the area is currently in flux due to MPB mortality.

Within the ROWs, past danger tree removal efforts has resulted in a lack of spruce-fir blocks within the ROWs. However, some sections of the ROWs contain smaller diameter lodgepole pine and spruce-fir, which may support some hare use.

Horse Thief Lynx Analysis Unit

The Horse Thief LAU (HTLAU) contains 47,528 total acres. Lynx habitat is mapped on Federal lands, but not on non-Federal lands. Large areas of the HTLAU are within the Mount Zirkel Wilderness Area. Western's ROWs barely intrude into this LAU, and under the proposed action, only 2.2 acres of the ROW would be within the HTLAU. The ROWs occur on Buffalo Pass within a large block of non-habitat within a large open park, and a motorized play area in the Rabbit Ears/Buffalo Pass Winter Recreation Area. The ROWs are near Buffalo Pass Road (FSR 60). Forest Service Road 301 provides administrative access to the western end of the ROWs, and is gated for administrative use only. Environmental baseline statistics of lynx habitat in the HTLAU are summarized in Table 15.

Table 15. Horse Thief LAU

Horse Thief LAU	Total Habitat	Currently Unsuitable
Acres	28,877	6,514
Percent of Habitat	100	23

As displayed in the habitat statistics, the Horse Thief LAU has experienced significant mountain pine beetle mortality within the lodgepole pine community. However, based on the statistics, the LAU is capable to support a reproductive female lynx.

Mount Werner LAU

The Mount Werner LAU (MWLAU) is named after Mount Werner, which is home to the Steamboat Ski Resort. This LAU is 54,724 acres, of which 2,660 acres (or 4 percent) are privately lands within the LAU. The environmental baseline statistics of lynx habitat in the MWLAU are summarized in Table 16. On the east side of the MWLAU is the Muddy Pass lynx linkage area, which provides lynx movement corridors from the Hyannis Peak LAU across the Muddy Pass area.

Table 16. Mount Werner LAU

Mount Werner LAU	Total Habitat	Currently Unsuitable
Acres	38,306	6,640
Percent of Habitat	100	17

Existing land uses that may influence lynx habitat use within the MWLAU in the vicinity of Western's ROWs include: summer use roads and trails, Steamboat Ski Resort (summer and winter activities), and the Rabbit Ears and Buffalo Pass Winter Recreation Area (WRA). The biggest influences on lynx within this LAU include Steamboat Resort approximately 2,837 of skiable terrain (3,740 permitted acres), the Rabbit Ears and Buffalo Pass WRA demo-area (approximately 111,000 acres) including approximately 69,351 acres of winter motorized use (snow compacted area).

Winter activities generally occur from late November to early April. Most snowmobiling, skiing, snowcat skiing, hybrid-skiing and snowshoeing activities in the MWLAU occur during the daylight hours. Activities begin as early as 7:30 am and generally end at dusk. Once a month (around the full moon), there is an increase in skier/snowmobiler use on clear nights.

Trail grooming at Steamboat Ski Resort occurs nightly at dusk using multiple snowcats and can take up to eight hours to complete. The intensity and frequency of activity within the MWLAU is fairly constant from November to April. Precise user numbers are not known, but average skier days since 2005 have been 961,071 per season (or 6,994 skiers per day). Peak skier days have generally been in excess of 15,000 skiers in a day.

In the Rabbit Ears-Buffalo Pass WRA users obtain permits or sign-in. Average user days in the Rabbit Ears-Buffalo Pass WRA total 2,500 to 3,000 user days (which includes both motorized, non-motorized, and the popular hybrid skiing/riding. Steamboat Powdercats averages 15 users per day from December through March (approximately 150 days), resulting in approximately 2,200 user days during their winter operation season. The Buffalo Pass area may see upwards of 5,500 user days per winter season, or around 37 persons per day in the immediate vicinity of the ROWs.

Snow compaction and human use patterns during the winter months may negatively impact lynx. Winter activities may locally influence lynx use of the landscape through diurnal displacement from activity areas and issues related to snow compaction. In addition to the major snow compaction areas associated with Steamboat Ski Resort and Buffalo Pass WRA, there are also numerous trails and snow-play areas coincidental with Western's ROWs, including areas around Steamboat Powdercats' cabin and further to the east near the eastern side of the MWLAU. Snow compaction may negatively affect lynx when large portions of a LAU become compacted and lynx lose their competitive advantage over other forest carnivores during the winter months. The current baseline for these designated snow compaction areas is approximately 12,659 acres (23 percent) of the MWLAU.

Walton Peak LAU

The Walton Peak LAU (WPLAU) contains approximately 54,032 total acres. Large areas of the WPLAU are within the Sarvis Creek Wilderness Area. Western's ROWs just barely intrude into this LAU, and under the proposed action, only 0.5 acre of the ROW would require clearing of aspen forest types. Current habitat statistics (Table 17) document a high incidence of currently unsuitable habitat (i.e. ≥ 30 percent). At this time, this LAU is unlikely to contain sufficient habitat in a suitable condition to support lynx. No other information was provided for this LAU.

Table 17. Walton Peak LAU

Walton Peak LAU	Total Habitat	Currently Unsuitable
Acres	40,700	15,199
Percent of Habitat	100	37

Lynx Pass LAU

The larger HDN-GOT line traverses 21.95 miles through the Lynx Pass LAU (LPLAU) and Red Dirt LAUs (RDLAU). In the LPLAU the HDN-GOT ROW occupies 332.54 acres. The smaller GOT-HDN line crosses 11.13 miles of the LPLAU and RDLAU, and its ROW occupies 102.01 acres. The LPLAU is 55,011 acres. Environmental baseline statistics of lynx habitat in the LPLAU are summarized in Table 18.

Table 18. Lynx Pass LAU

Lynx Pass LAU	Total Habitat	Currently Unsuitable
Acres	48,357	19,921
Percent of Habitat	100	41

Red Dirt LAU

The Red Dirt LAU (RDLAU) is 50,099 acres. The RDLAU occurs on the eastern side of Lynx Pass. The State Bridge and Egeria lynx linkage areas abut the southern ends of the RDLAU. There are no designated Wilderness areas within this LAU, and SH-184 crosses the LAU. Habitat statistics are summarized in Table 19.

Table 19. Red Dirt LAU

Red Dirt LAU	Total Habitat	Currently Unsuitable
Acres	45,099	25,154
Percent of Habitat	100	56

Given the high incidence of currently unsuitable lynx habitat (i.e. ≥ 30 percent) within the Lynx Pass and Red Dirt LAUs, it is unlikely that these LAU contain sufficient habitat in a suitable condition to support lynx.

The ROW for the HDN-GOT transmission line crosses over onto the LPLAU from the northern end of Green Ridge. Along the top of Green Ridge the transmission line follows relatively flat terrain, and occurs near the main Green Ridge Road (FSRs 226 and 285). These roads provide access to much of the ROW. However, a number of spur roads branch off of these main roads for specific access to structures. At the north end of Green Ridge, the road is gated at the private land/Forest boundary, and the road deteriorates. Therefore the Green Ridge road experiences much less public use towards the northern end of the ROW in the LPLAU.

The east-west running State Highway-134 crosses the LPLAU. Annual average daily traffic on State Highway-134 over Lynx Pass through the LPLLA is approximately 330 to 590 vehicles per day (VPD), well below the volume where significant effects begin to occur (i.e. 2,000 VPD). Most of the highway is two lanes, with climbing lanes intermittently available in some areas. The highway is moderately winding, moderating vehicles speeds below approximately 50 miles per hour. South of SH-134 there are several smaller timber harvest roads near the GOT-HDN ROW (including FSR 206), but these roads are generally short in length and restricted to administrative uses only.

On the northeast side of Lynx Pass (in the RDLAU), there are a number of Forest Service roads accessible during the summer months. This area has seen active timber management for many years, so road densities in the RDLAU, especially north of SH-134 are especially high. Some of these roads are groomed for motorized use, but most are compacted by snowmobile use. The total mileage of these snow-compacted routes (which includes groomed trails for both motorized and non-motorized use as well as motorized compacted trails) is 28.1 miles. South of SH-184 (at Gore Pass) there is a minor road system that steeply climbs up into the forested ranges. There

are also a number of infrequently used timber roads in this area, as well as roadways that access Western's transmission line ROWs and towers.

State Bridge Lynx Linkage Area

The State Bridge Lynx Linkage Area (SBLLA) is a large area of potential lynx movement from core habitat blocks in the Gore Range (in Eagle and Summit Counties) into suitable and effective habitat blocks in the southern Routt County area and into the Lynx Pass area. Both the HDN-GOT and more southern GOT-HDN line have segments within the SBLLA, within non-habitat blocks. State Highway 134 crosses the SBLLA.

Egeria Lynx Linkage Area

The Egeria Lynx Linkage Area (ELLA) is a large area of potential lynx movement from core habitat blocks in the Lynx Pass area to habitats in the Flattops Wilderness Area. There are no proposed Western projects within or adjacent to the ELLA.

White River National Forest

There are four distinct transmission lines that cross NFS lands managed by the White River National Forest (WRNF) Table 21, crossing 12.9 miles (See Figure 1 in the WRNF BA).

Table 21: List of Lines and ROWs on the WRNF

Transmission Line	Miles	ROW Acres
BLUE RIVER-GORE PASS	7.0	106.3
<i>BRU-GOT / 230kV</i>		
GREEN MOUNTAIN - BLUE RIDGE REPEATER	0.5	1.4
<i>GM-BLR / 2.4kV</i>		
GREEN MOUNTAIN - KREMMLING	2.0	24.3
<i>GM-KRM / 69kV</i>		
NORTH FORK - RIFLE	3.4	51.4
<i>NFK-RFL / 230kV</i>		
Total	12.9	183.4

The proposed action will be implemented in two locations on the WRNF. The East project area is on the Dillon Ranger District of the WRNF and lies within the Blue River LAU ("BRLAU") and Mahan LAU ("MLAU"). The BRLAU overlaps and abuts a portion of the Loveland Pass Lynx Linkage Area (LPLLA). The West project area lies within the Rifle Ranger District of the WRNF and the Divide Creek LAU ("DCLAU"). The West project area is also within the Battlement Mesa Lynx Linkage Area (BMLLA).

Blue River Lynx Analysis Unit

The BRLAU contains 158,650 total acres. Lynx habitat is mapped only on Federal lands, but not on non-Federal lands. Environmental baseline statistics of lynx habitat in the BRLAU are summarized in Table 22.

Table 22. Blue River LAU

Blue River LAU	Total Habitat	Currently Unsuitable
Acres	71,188	34,218
Percent of Habitat	100	48

Given the high incidence of currently unsuitable habitat (i.e. ≥ 30 percent) within the Blue River LAU, it is unlikely that these LAU contain sufficient habitat in a suitable condition to support lynx. The BRLAU overlaps and abuts a portion of the Loveland Pass Lynx Linkage Area (LPLLA) extending north on either side of the Continental Divide and north and south of I-70 in the Eisenhower Pass and Loveland Pass areas. The project area is approximately 13 miles northwest of the LPLLA

There are no major snow compaction areas occurring in suitable lynx habitat within the BRLAU. There are a number of snow compaction routes within the BRLAU (approximately 80 miles). The majority of these routes are towards the southern end of the LAU, closer to Silverthorne and I-70. However, there are routes that occur in suitable habitat blocks farther north. One route is actually the access road along the BRU-GOT transmission line near the top of the Williams Fork Mountains. The Forest Service indicated that snowmobilers and cross-country skiers use this route. There are a total of 247.9 miles of compacted routes within the BRLAU.

Despite the large size of the BRLAU, much of the LAU is not suitable lynx habitat. Large areas of alpine and sagebrush habitats occupy much of the LAU. In addition, the impacts caused by mountain pine beetle infestations have rendered, large blocks of lodgepole pine dominated forest types to habitats that are currently unsuitable to support lynx. This leaves relatively small and scattered blocks of suitable lynx habitat at the higher elevations and on north facing slopes. Also the presence of I-70 bisecting the southern end of the LAU causes a significant barrier to lynx movement. In the vicinity of the East project area transmission lines (BRU-GOT), lynx habitat is dominated by recently killed lodgepole pine stands, sagebrush habitats, and smaller blocks of mixed conifer forests and aspen stands that provide some effective lynx habitats.

Mahan Lynx Analysis Unit

Approximately 2,354 feet of the BM-KRM line crosses the Mahan Lynx Analysis Unit. However, the line crosses non-lynx habitat within the LAU and will not be considered further.

Divide Creek Lynx Analysis Unit

Located south of the City of Rifle, approximately 3.4 miles of the West Fork-Rifle transmission line lies within the Divide Creek LAU (DCLAU). The DCLAU contains a number of smaller

snow compaction areas associated with 3,628 acres of snowmobile play areas at higher elevations of the East and West Divide Creek headwater areas.

The DCLAU is 90,635 acres. Environmental baseline statistics of lynx habitat in the DCLAU are summarized in Table 23. The DCLAU overlaps and abuts a portion of the Battlement Mesa Lynx Linkage Area (BMLLA) at the eastern end of the LAU, linking the Battlement Mesa area with habitats in the Buzzard Park and Spruce Mountain areas on the White River and GMUG National Forests. This project is within the BMLLA.

Table 23. Divide Creek LAU

Divide Creek LAU	Total Habitat	Currently Unsuitable
Acres	30,119	97.8
Percent of Habitat	100	<1

The ROW crosses approximately 4.5 miles of the very eastern portion of the DCLAU. However, the ROW does not cross suitable lynx habitat. The BA stated that compacted snow routes do exist within the Divide Creek LAU, the routes are located east of the project area. The LAU contains 3,628 acres of compacted snow area. However, these areas are not near the ROW.

IV. EFFECTS OF THE ACTION

The effects of the proposed action tier, in part, to our analysis of effects contained in the SRLA BO. Specifically, the SRLA BO describes the effects of vegetation management on lynx. The SRLA Implementation Guide states that the vegetation management standards within the SRLA do not apply within powerline ROWs. Therefore, there are no restrictions on vegetation management within the ROWs within lynx habitat. Although the vegetation management standards within the SRLA do not apply to powerlines, the effects of vegetation management within the ROWs are anticipated to have negative effects to lynx as described in the SRLA BO. Below, we provide the site specific information (forest-by-forest) regarding the adverse effects to lynx.

Effects of the Proposed Action

As stated above, the Laramie, and Williams Fork LAUs on the Arapaho Roosevelt NF, Walton Peak, Lynx Pass LAUs on the Medicine Bow Routt NF, and Blue River LAU on the White River NF contain less than 70 percent of the lynx habitat in a suitable (functioning) condition. We conclude that, by themselves, these LAUs may not be able to support occupancy and reproduction of lynx at this time. Additional lynx habitat loss caused by the proposed action will have an additive effect on lynx where sufficient prey may not be available to support occupancy and/or reproduction, translating to further impairment of reproduction and feeding within these LAUs. Effects on female lynx may include the following: 1) abandonment of their home range in search of adequate food to survive (i.e. become nomadic), 2) die of starvation, and/or 3) fail to complete a pregnancy or would be less successful in finding adequate food resources needed to ensure maximum survival potential for kittens. We considered additional habitat loss within these LAU, and the effects resulting from habitat loss are caused by the existing habitat conditions within the LAUs, and create the likelihood of injury within the LAUs where the

VEG S1 conditions are not met. Therefore, an additional reduction of habitat within these LAUs increases the severity of the injury thus resulting in take of lynx within those LAUs. Therefore, we believe that the increased severity of the injury results in take of up to 5 lynx. In time, the vegetation within these LAUs will regenerate and provide sufficient habitat to support lynx, eliminating/ or reducing the injury to lynx. The recovery of these LAUs will vary depending when tree mortality occurred, how broadly the mortality occurred, and other environmental factors. We anticipate that within 30-40 years, the vegetation within these LAUs impacted by beetle mortality, will recover enough to support lynx year-round. At that time, vegetation management within the ROWs is likely to be less severe as it relates to lynx.

The remaining LAUs on the Arapaho Roosevelt, Medicine Bow Routt, and White River National Forest contain sufficient habitat to support lynx year-round, and the effects of the action in those LAUs is expected to result in insignificant and/or discountable effects to lynx.

Grand Mesa, Uncompahgre, Gunnison National Forests

The NFK-RFL ROW falls within the Chalk Mountain and Crater Lake LAUs, which support larger blocks of suitable habitat near the ROW. In these larger, more suitable blocks of lynx habitat, the conversion of the suitable habitat within the ROW to non-habitat will reduce snowshoe hare habitat within and adjacent to these habitat blocks. The width of the ROW (150-feet) is unlikely to prevent lynx from crossing the ROW. However, the change the vegetative structure from timbered vegetation to primarily non-vegetated will likely attract increased use of the ROW by snowmobiles, cross-country skiers, etc., due to the proximity of the ROW to electric mountain lodge. The increased human presence and use of the ROW is likely to result in avoidance of the ROW by lynx, and increase snow compaction within the Chalk Mountain and Crater Lake LAUs. We believe that the increased use may result in avoidance of the ROW and functional lynx habitat adjacent to the ROW during the critical winter period. Considering the previously existing level of use and snow compaction within these LAUs, we believe that the increased disturbance results in adverse effects to lynx, but we do not believe these effects rise to a level of take.

Conservation Measure

The conservation measure applies across all forests within the action area. The retained blocks of functional vegetation within suitable lynx habitat where there are no spanned areas of adequate cover within 0.5 to 1 miles of each other ensures that habitat connectivity will be maintained through time. The location of the retention blocks will change through time as Western manages vegetation consistent with the proposed action and the measure. The incorporation of retained blocks of taller growth forms will facilitate movement of resident lynx.

V. CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The BA documented that there are no

State, private or Tribal actions within the action area that are reasonably certain to occur.

Portions of private lands, especially those above 8,000 feet in elevation, are likely in potential lynx habitat and may be subject to timber harvest and thinning. Other smaller parcels of private lands will be primarily used for residential areas, or may be used for small scale forestry, or will be developed for business uses in the future.

In addition to timber management, activities on non-Federal lands may include mineral extraction, oil and gas exploration, urban and rural development, recreation site construction and use, road construction, and utility corridors. Habitat loss or degradation and direct mortality are some of the possible adverse impacts on lynx from these activities. Cumulatively, urbanization and highway development may impact connectivity in lynx habitat. Development of private lands often leads to increases in traffic volume, which may result in a negative influence on connectivity within the action area. Connectivity for lynx could be more seriously compromised by highway expansions. Even with implementation of the amendment, the role of the Forest Service in ameliorating the impacts of highway or private land development is limited. The amendment would, however, if it were applicable, require the Forest Service to consider land exchanges or acquisition, and coordinate with other agencies to lessen the impacts of development.

Future management of many private lands within the SRLA area is reasonably likely to have negative impacts on lynx habitat. Some snowshoe hare habitat would likely be permanently lost to development, and some would be reduced in quality through thinning or timber harvest. Not all lands would be developed or used in ways that have negative impacts on lynx habitat. Combined, private lands developed or used in ways that would have negative impacts on lynx habitat would constitute a fairly small proportion of lynx habitat within the SRLA area. Private land parcels are fairly small in size relative to the large landscape required by an individual lynx to support its home range and are scattered throughout the SRLA area. Many are, and would be adjacent to or interspersed with, Forest Service or other Federal land, and therefore some of the potential negative effects on the private parcels would be moderated by Federal land management.

The final rule did not find that present conditions on private lands threaten the contiguous U.S. DPS. As stated previously, the Forest Service manages the preponderance of lynx habitat within the SRLA area. Within the SRLA area, the proposed action substantively reduces the primary threat to lynx (inadequate regulatory mechanisms) by addressing the major adverse impacts of Forest Service land management on lynx, as well as several other potential impacts or influences that do not rise to the level of a threat to lynx. Further, the proposed action would alleviate some of the adverse actions on private land, where lands are adjacent to Forest lands or within the same LAU. The Forest Service considers the condition of lynx habitat on private lands within LAUs, to the extent possible, in its assessment of baseline conditions during the development of projects for Forest lands, and adjusts its action to reduce negative effects in the LAU.

VI. CONCLUSION

After reviewing the current status of Canada lynx, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's BO that the proposed action is not likely to jeopardize the continued existence of lynx within the contiguous United States distinct population segment. No critical habitat has been designated for this species in Colorado, therefore none will be affected.

In our effects analysis, we determined that adverse effects and take would result from implementation of the proposed action. We have described the sources or mechanisms of these effects within the action area. We believe that the adverse effects will result in harm (increased severity) to lynx.

Lynx are present within all of the range-wide geographic areas as documented in the SRLA, and we assume that recruitment is at least similar to lynx in Colorado. We have no evidence to suggest that lynx populations have significantly declined in any of the geographic areas. By January 2009, the majority, if not all, of the National Forests, and many of the BLM Field Offices, within the distinct population segment, amended their plans. These amendments address the major factor threatening the lynx: inadequacy of existing regulatory mechanisms, specifically the lack of guidance for conservation of lynx in National Forest Plans and BLM Plans. The reintroduced lynx population in Colorado has demonstrated that recruitment into the population exceeds mortality.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of an incidental take statement.

Projects that are likely to cause incidental take of listed wildlife can receive an exemption from the Act's take prohibitions through one of two administrative processes. The Service typically provides any appropriate incidental take exemption through the section 7(a)(2) consultation process when the project is authorized, funded, or carried out by an agency of the Federal government and the take of listed wildlife would be caused by the action subject to consultation. Such an incidental take statement covers both the Federal action agency and any applicant.

Otherwise, an incidental take permit must be obtained under the procedures of section 10(a)(1)(B).

We have concluded, above, that the proposed will result in take of up to five lynx due to additional lynx habitat removal within LAUs where the existing condition of the habitat has been severely impacted by bark beetle activity. We do not have evidence of any recent starvation of lynx within the state of Colorado, and we believe that lynx using the impacted LAU have likely become nomadic, or do not reproduce.

The measures described below are non-discretionary, and must be implemented by the Federal agency depending on their authority over the proximate cause of the take (see effects section for description of effects), as appropriate, in order for the exemption of section 7(o)(2) to apply. Relative to their authority over the action causing the effects, the Federal agency has a continuing duty to ensure that the conservation measure is implemented and the terms and conditions of the incidental take statement are adhered to. Failure to fulfill that duty may cause the protective coverage of section 7(o)(2) to lapse. To monitor the impact of incidental take, the Federal agency must report the progress of the subject action and resulting impact on the Canada lynx to the Service as specified in the incidental take statement. 50 C.F.R. §402.14(i)(3).

Amount or Extent of Take Anticipated

The extent of a LAU represents a single lynx home range. Due to the already degraded condition of the, Laramie, and Williams Fork LAUs on the Arapaho Roosevelt NF, Walton Peak, Lynx Pass LAUs on the Medicine Bow Routt NF, and Blue River LAU on the WRNF, and the direct habitat loss resulting from the proposed action is likely to contribute to significant disruption of normal behavior patterns, specifically feeding. This impact rises to the level of injury for lynx. Therefore, we anticipate take of five lynx from significant habitat modification as a result of the proposed action.

Effect of Take

Take anticipated from habitat loss resulting from the proposed action is more a function of the degraded baseline condition of the LAU resulting from the mountain pine beetle epidemic than the extent of the habitat loss from the proposed action itself. The forested areas within the Laramie, Williams Fork, Walton Peak, Lynx Pass LAUs, and Blue River LAUs impacted by mountain pine beetles will recover to provide year-round habitat for lynx in approximately 30-40 years. The combined effects of the degraded baseline condition and additional habitat loss resulting from the proposed action may result in the following: 1) potential abandonment of home range in search of adequate food to survive (i.e. become nomadic), 2) adult lynx may die of starvation, and/or 3) a female may fail to complete a pregnancy or would be less successful in finding adequate food resources needed to ensure maximum survival potential for kittens.

The Service anticipates such incidental take of lynx will be difficult to detect for the following reason:

- No active monitoring program that provides for detection of an injury or mortality to lynx.
- Discovery or detection of lynx injury or mortality attributed to habitat loss is very unlikely since the individual could move to a different area, or any physical evidence would likely be moved or eliminated by scavengers.

Because the BA has provided explicit estimates on the amount of habitat removed from the ROW in the LAUs where we believe the take will occur, we can accurately assess take from the activities. For the purposes of this incidental take statement, we use the amount of lynx habitat removed by vegetation management activities carried out by Western or its contractors within the, Laramie, and Williams Fork LAUs on the Arapaho Roosevelt NF, Walton Peak, and Lynx Pass LAUs on the Medicine Bow Routt NF, and Blue River LAU on the WRNF.

In the accompanying BO, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

Reasonable and Prudent Measures

The Service concludes that the Applicant has incorporated all practical measures possible into the proposed action to minimize the impacts of take on lynx. For that reason, the Service has not identified any Reasonable and Prudent Measures necessary to further minimize the impacts of such take on the lynx. However, the Service has identified mandatory reporting and monitoring requirements below as Terms and Conditions that must be complied with in order for the take exemption in this Incidental Take Statement to be valid.

RPM #1: the applicant shall monitor and report the progress of the action and the impacts to the species.

Terms and Conditions

T and C 1.1 By March 1 of each year for the term of the ROW reauthorization, Western and the Forest Service shall submit a joint report to the Grand Junction office of the Fish and Wildlife Service consistent with 50 CFR 13.45.

T and C 1.2 The report shall report the number of acres of lynx habitat removed within the ROW within the respective LAUs where the take will occur (i.e. Laramie, and Williams Fork LAUs on the Arapaho Roosevelt NF, Walton Peak, and Lynx Pass LAUs on the Medicine Bow Routt NF, and Blue River LAU on the WRNF).

Dead and Injured Individuals

In the event a lynx or any other federally-listed species is killed or injured during project activities, the Colorado Field Office of the Service in Lakewood (303-236-4773) or Grand Junction (970-243-2778) should be contacted within ten (10) days.

REINITIATION REQUIREMENT

As provided in 50 C.F.R. § 402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take anticipated is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this BO; or (4) a new species is listed or critical habitat designated that may be affected by the action.

In addition to the above criteria, in the event that the Western fails to: (1) implement the conservation measure; or (2) Western modifies the vegetation management practices as described in the BA; or (3) Western/Forest Service fails to provide the required annual report, the incidental take exemption specified above may lapse.

We appreciate your efforts to ensure the conservation of threatened and endangered species. If you have questions or comments related to this issue, please contact Mr. Kurt Broderdorp at 970-628-7186.

Sincerely,



Susan C. Linner
Colorado Field Supervisor

Pc: Peter McDonald (USFS R2)
Chris Wehrli (USFS R2)
USFWS, Grand Junction, ES

KBroderdorp:WAPAFSPowerlineReauthorizationBO[3F008.docx:122214

LITERATURE CITED

- Devineau, O., T.M. Shenk, G.C. White, P.F. Doherty Jr., P.M. Lukacs, and R.H. Kahn. 2010. Evaluating the Canada Lynx Reintroduction Programme in Colorado: Patterns in Mortality. *Journal of Applied Ecology*. 47(3) pages 524-531
- Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000. Canada lynx conservation assessment and strategy. USDA For. Serv., USDI Fish & Wildl. Serv., USDI Bur. Land. Manage, and USDI Nat'l. Park Serv. FS Publ. #R1-00-53. Missoula, MT. 142 pp.
- Shenk, T. 2009. Wildlife Research Report. Post-release monitoring of lynx reintroduced to Colorado. 28pp.
- Shenk, T. 2010. Wildlife Research Report. Post-release monitoring of lynx reintroduced to Colorado. 13pp.
- U.S. Fish and Wildlife Service. 2005. Recovery outline for the contiguous United States distinct population segment of the Canada lynx. Montana Field Office, Helena, Montana. 21 pp.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Colorado Ecological ServicesIN REPLY REFER TO:
FWS/R6/ES COFront Range:
Post Office Box 25486
Mail Stop 65412
Denver, Colorado 80225-0486Western Slope:
445 W. Gunnison Avenue
Suite 240
Grand Junction, Colorado 81501-5711ES/CO: WAPA/Lakewood
TAILS 06E24100-2017-I-0117

February 1, 2017

Mr. C. Shane Kimbrough
Natural Resources Manager
Western Area Power Administration
P.O. Box 281213
Lakewood, Colorado 80228-8213

Dear Mr. Kimbrough:

☐ No Concerns☒ Concur Not Likely To Adversely Affect (see comments for current and future projects below)☐ Do Not Concur (see explanation below)

This is in response to your request for informal consultation on your routine maintenance of existing access roads and structure locations on National Forest System lands in the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG) in western Colorado. We concur with your December 2, 2016, “may affect, not likely to adversely affect” determination for Gunnison sage-grouse (*Centrocercus minimus*) and its critical habitat. Maintenance work will occur along a total of 87.3 miles of access roads that WAPA is obligated to maintain within these National Forest lands. This work will be conducted on roads within Western Area Power Administration’s rights-of-way within and outside of these National Forests, as described in the email and maps you sent to this office on December 2, 2016 and subsequent email communication and information sent to this office on January 23, 2017.

This concurrence is based on the inclusion of conservation measures from your prior consultation of December 2014 (TAILS 06E24100-2014-F-0195), on right-of-way maintenance including vegetation management on National Forests in Colorado, Nebraska, and Utah. In your request for consultation, you included these conservation measures based on those included in the December 2014, biological opinion and other conservation measures previously agreed upon in other recent consultations (TAILS 06E24100-2015-I-0199; TAILS 06E24100-2016-I-0375) for access road ROW maintenance on Bureau of Land Management lands:

- No work will be performed or authorized by this consultation except for the activities described herein.
- Vehicles will use existing access roads and will remain on them, except when necessary as described in your December 2, 2016 request for consultation and in the referenced BO of December 22, 2014 (TAILS 06E24100-2014-F-0195), to conduct specific work actions described in this consultation.
- No wetlands, riparian areas, brooks, rivers, or creeks shall be disturbed. Intermittent streams may be disturbed to install, repair, or maintain water bars or culverts.
- All equipment used shall be cleaned prior to use in the area to prevent transporting of invasive plant or noxious weed seeds.
- To minimize impacts to the environment and prevent damage to access roads, operations will not be permitted during periods of heavy rains, when soils are wet, and when excessive soil damage may occur due to unsuitable operating conditions. Specifically, if equipment would create ruts in excess of six (6) inches deep, the soil shall be deemed too wet and work will cease until the area dries out.
- WAPA will not work during the grouse lekking, nesting, and early brood rearing season of March 1 through July 15.
- WAPA will notify its employees that they are working within grouse critical habitat and advise them to avoid or minimize any potential disturbance to sagebrush and other shrubs. If present, sagebrush and other shrubs will be identified and avoided or impacts to them minimized when positioning equipment, if positioning off of the road is even necessary.

These conservation measures support your position that this action may affect, but is not likely to adversely affect, Gunnison sage-grouse. We concur with this conclusion, primarily based on your avoidance during the breeding season from March 1 through July 15.

Your December 2, 2016, email to Mark Brennan at this office requesting this consultation stated that developed areas that existed at the time of listing, such as these unpaved access roads, are not essential to the conservation of the species and therefore can be excluded from Gunnison sage-grouse critical habitat. We reference here the final rule for Gunnison sage-grouse critical habitat (79FR69312), which states that this exclusion only pertains to paved roads. The general requirement for exclusion of specific developed areas from being designated as critical habitat within the range of a species is the lack of physical or biological features (formerly primary constituent elements) within that developed area. Since some of these physical and biological features still exist in these primitive access road areas, we do not consider them to be developed areas as described in the final critical habitat rule.

This activity will not result in the creation of any new roadways and will remain within the currently impacted access roads. You describe how your revised vegetation management proposal will minimize vegetative clearing within WAPA rights-of-way from what was initially included in your vegetation management proposal prior to designating Gunnison sage-grouse critical habitat. You also describe how your revised vegetation management proposal will maintain sagebrush heights around structures above the minimal height requirements for seasonal habitat. We acknowledge that this revised proposal should minimize the amount of disturbance and leave the sagebrush relatively intact and conforming with the recommended

structural guidelines along roads where feasible. These revisions support your position that this action may affect, but is not likely to adversely affect, Gunnison sage-grouse critical habitat.

There is a legacy of existing disturbances on the landscape that have impacted and continue to impact Gunnison sage-grouse. A significant body of literature indicates power lines adversely affect grouse both directly through habitat loss, collision, and electrocution hazard and indirectly through avoidance, increased avian predator presence and predation, decreased grouse productivity and survival, and non-native plant invasions (summary available upon request).

Federal agencies have a responsibility to not only consult on Federal projects that may impact threatened and endangered species (section 7(a)(2)), but shall also use their authorities to conserve threatened and endangered species, which includes working to remove species from the threatened or endangered list (section 7(a)(1)). We would like to work with you in the future to conserve Gunnison sage-grouse. As was discussed in your earlier consultations on access road maintenance of August 2015 (TAILS 06E24100-2015-I-0199) and November 28, 2016 (TAILS 06E24100-2016-I-0375), we would like to see the impact from these and other transmission lines to Gunnison sage-grouse lessened from those impacts that are occurring today.

We have some initial thoughts on best management practices for existing power lines to facilitate conservation of Gunnison sage-grouse. These practices could include:

- Minimizing disturbances and the loss of Gunnison sage-grouse habitat
- Moving power lines out of Gunnison sage-grouse habitat
- Consolidating effects from disturbances on the landscape
- Burying existing power lines
- Using different types of poles in rebuilds (monopoles, single cross-arms, poles with no anchor wires, etc.) which may minimize collision risk and be better at deterring the nesting and perching of corvids and raptors (known Gunnison sage-grouse predators).

We understand you anticipate more extensive power line projects in Gunnison sage-grouse habitat in the near future and are developing a Programmatic Biological Assessment for actions in Gunnison sage-grouse critical habitat. We look forward to working with you on this effort to maximize Gunnison sage-grouse conservation and save time and effort for both our agencies.

Thank you, if you have any further questions please contact Mark Brennan of my staff at (970) 628-7191 or email at mark_brennan@fws.gov

Sincerely,



Ann Timberman
Western Slope Supervisor



Brennan, Mark <mark_brennan@fws.gov>

[EXTERNAL] Informal consultation request for GUSE and its CH

1 message

Langer, Timothy <Langer@wapa.gov>

To: "Brennan, Mark" <mark_brennan@fws.gov>, "Timberman, Ann" <ann_timberman@fws.gov>

U.S. FISH AND WILDLIFE SERVICE	
☐ NO CONCERNS	Thu, Sep 6, 2018 at 11:09 AM
☒ CONCERN: LIKELY TO ADVERSELY AFFECT	
☐ NO COMMENT	Concur - NLAA
 WESTERN COLORADO SUPERVISOR (DATE) 9/6/18	

Dear Ann and Mark,

Tail # 0624100-2018-I-0601

Good morning! As part of the informal consultation Biological Assessment (BA) submitted December 2, 2016 (see attached), for which WAPA received concurrence February 1, 2017 (see attached), WAPA now has an additional proposed action as part of operation and maintenance of the existing power system. This additional proposed action is to remove the remaining (up to 2 foot tall) vegetation within 50 feet of the 86 existing structures on U.S. Forest Service land to meet human safety protocols of Occupational Safety and Health Administration (OSHA) requirements for maintenance work on energized power lines. Of the 86 total structures, 83 are located in Gunnison sage-grouse critical habitat (I can re-submit the maps of all 86 structures. However, they are the same as submitted as associated files with the BA on 12-2-2016).

At each existing structure, the area of a 50-foot radius circle is 0.18 acres (see attached "CCI-PON structure 54-1" as an example). Thus, the total acreage for all 86 structures is 15.4 acres, 14.9 of which occur in Gunnison sage-grouse critical habitat. These numbers overestimate the effect of this additional proposed action, as these are previously disturbed areas directly around existing structures that include the existing cleared parking area at each structure.

The grouse reproductive season ended July 15 and the initial clearing will occur after USFWS authorization and before this winter. Because WAPA does not currently have authorization from the U.S. Forest Service to use machines for vegetative maintenance, the initial clearing will occur via hand tools. Future maintenance may be performed with machinery, if permitted by the U.S. Forest Service, and all vegetative maintenance will always avoid the grouse reproductive season of March 1 to July 15. These 86 areas are previously disturbed, located near tall structures in a utility ROW which grouse generally avoid, and are located about 1,000 feet from each other. Of the 1.4 million acres designated as critical habitat for the Gunnison sage-grouse, these 15.4 acres are insignificant. As a result, WAPA has made the biological determination that this additional proposed action does not change the previous may affect, not likely to adversely affect biological determinations for the Gunnison sage-grouse and its critical habitat.

The other conservation measures in the BA dated 12-2-2016 will remain in effect. Specifically,

- No work will be performed or authorized by this consultation except for the activities described herein.
- Vehicles will use existing access roads and will remain on them, except when necessary to conduct specific work actions described in this consultation.
- No wetlands, riparian areas, brooks, rivers, or creeks shall be disturbed. Intermittent streams may be disturbed to install, repair, or maintain water bars or culverts.
- All equipment used shall be cleaned prior to use in the area to prevent transporting of invasive plant or noxious weed seeds.
- To minimize impacts to the environment and prevent damage to access roads, operations will not be permitted during periods of heavy rains, when soils are wet, and when excessive soil damage may occur due to unsuitable operating conditions. Specifically, if equipment would create ruts in excess of six (6) inches deep, the soil shall be deemed too wet and work will cease until the area dries out.

- WAPA will not work during the grouse lekking, nesting, and early brood rearing season of March 1 through July 15.
- WAPA will notify its employees that they are working within grouse critical habitat and advise them to avoid or minimize any potential disturbance to sagebrush and other shrubs. If present, sagebrush and other shrubs will be identified and avoided or

impacts to them minimized when positioning equipment, if positioning off of the road is even necessary.

To reiterate, this additional proposed action only covers vegetative clearing and management within 50 feet of the 86 existing structures on U.S. Forest Service land. The rest of the ROW vegetation is unaffected by this additional proposed action and this additional proposed action does not affect road or vegetative maintenance as previously described in WAPA's 12-2-2016 BA beyond 50 feet of structures. Short grasses and forbs that do not affect WAPA's compliance with the OSHA safety protocol will be permitted within 50 feet of structures, as feasible. Shrubs and trees are inconsistent with WAPA's ability to execute OSHA's safety protocol and will be removed and maintained as absent.

The 50-foot radius areas around structures are already disturbed from the initial construction of building the power lines decades ago, coupled with periodic on-going maintenance during operations from parking of heavy equipment.

Therefore, the vegetated areas within 50 feet of structures are already disturbed habitat and their removal will not constitute a new fragmentation of the landscape.

WAPA requests that this additional proposed action be appended as part of the informal consultation concurrence of may affect, not likely to adversely affect for the Gunnison sage-grouse and its critical habitat dated 2-1-2017. In addition, as this is a human safety issue, WAPA requests to receive written concurrence to this effect as soon as possible (an email with attached .pdf is preferred).

Thank you for your prompt attention! Sincerest regards, Tim.

Tim J. Langer, Ph.D. | Biologist and Regulatory Specialist

Western Area Power Administration | Headquarters | Lakewood, CO

Department of Energy

(O) 720.962.7275 | (C) 720.483.0754 | lander@wapa.gov

Join us on Twitter



3 attachments

 20170201_FWS_MBrennan_CNLAAGUSGDOEWAPATransLineRdMaintenanceFSRoads.pdf
1164K

 WAPA Re-Initiation of 2014 Biological Opinion.pdf
1540K

 CCI-PON structure 54-1.pdf
4945K

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***Western Area Power Administration
Reauthorization Project***

Appendix G

Notification List for the
Environmental Impact Statement

LIST OF TABLES

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the
Availability of the Draft Environmental Impact Statement G-1

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the
Availability of the Final Environmental Impact Statement.....G-1

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APPENDIX G

NOTIFICATION LIST FOR THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT

Table G-1 identifies the federal, state, and local agencies and officials mailed a public notice that the Final Environmental Impact Statement is available. In addition, approximately 944 notices were mailed to individuals on the project mailing list including individuals that provided scoping comments, special interest groups, tribal contacts, individuals on the Forest Service schedule of proposed actions (SOPA) list, and other stakeholders.

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
State Elected Officials	
Representative Perry Buck (49 th District)	Colorado General Assembly
Representative Claire Levy (13 th District)	Colorado General Assembly
Representative Leroy Garcia (46 th District)	Colorado General Assembly
Representative Jared Wright (54 th District)	Colorado General Assembly
Representative Millie Hammer (61 st District)	Colorado General Assembly
Representative James Wilson (60 th District)	Colorado General Assembly
Representative Cheri Gerou (25 th District)	Colorado General Assembly
Representative Don Coram (58 th District)	Colorado General Assembly
Representative Mike McLachlan (59 th District)	Colorado General Assembly
Representative Diane Mitsch Bush (26 th District)	Colorado General Assembly
Representative Bob Rankin (57 th District)	Colorado General Assembly
Representative Gail Schwartz (5 th District)	Colorado General Assembly
Representative Edward Vigil (62 nd District)	Colorado General Assembly
Senator Kevin Lundberg (15 th District)	Colorado General Assembly
Senator Kevin Grantham (2 nd District)	Colorado General Assembly
Senator Jeanne Nicholson (16 th District)	Colorado General Assembly
Senator Larry Crowder (35 th District)	Colorado General Assembly
Senator Rollie Heath (18 th District)	Colorado General Assembly
Senator Randy Baumgardner (8 th District)	Colorado General Assembly
Senator Ellen Roberts (6 th District)	Colorado General Assembly
Senator Steve King (7 th District)	Colorado General Assembly
Senator Al Davis (43 rd District)	Nebraska General Assembly
Senator Ken Schliz (47 th District)	Nebraska General Assembly
Senator John Harms (48 th District)	Nebraska General Assembly
Senator Kevin Van Tassell (26 th District)	Utah General Assembly
Representative Melvin Brown (53 rd District)	Utah General Assembly
Representative John Mathis (55 th District)	Utah General Assembly

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
<i>Federal Agencies</i>	
Mr. Tom Rokita, Contract Administrator	Air Force Academy
Mr. Mark Mackiewicz, National Project Manager	Bureau of Land Management
Ms. Helen Hankins, Colorado State Director	Bureau of Land Management
Mr. Juan Palma, Utah State Director	Bureau of Land Management
Mr. Steve Bennett, Field Manager	Bureau of Land Management, Colorado River Valley Field Office
Mr. John Ruhs, Field Manager	Bureau of Land Management, Kremmling Field Office
Ms. Lisa Bryant, Assistant Field Office Manager	Bureau of Land Management, Utah State Office
Mr. Donald Banks, Deputy State Director	Bureau of Land Management, Utah State Office
Mr. Mike Stiewig, Field Manager	Bureau of Land Management, Vernal Field Office
Mr. Michael Francis, Environmental Group	Bureau of Reclamation
Mr. Howard Bailey, Safety and Security Specialist	Bureau of Reclamation
Mr. Reed Murray, Central Utah Project Completion Act Office	Bureau of Reclamation
Mr. Dave Trueman, Director	Bureau of Reclamation
Mr. Jerry Westbrook	Bureau of Reclamation
Mr. Allan Loy	Mesa Verde National Park
Mr. George San Miguel, Natural Resource Manager	Mesa Verde National Park
Ms. Marilyn Colyer, Natural Resources	Mesa Verde National Park
Sterling Moss, Durango Field Office	Natural Resource Conservation Service
Mr. Randall Julander, Snow Survey Supervisor	Natural Resource Conservation Service
Ms. Robin Foulk, District Conservationist	Natural Resource Conservation Service
Ms. Amy DeFreese, Sacramento District	U.S. Army Corps of Engineers
Mr. Jason Gipson, Utah Regulatory Office	U.S. Army Corps of Engineers
Mr. Nicholas Mezei, Sacramento District	U.S. Army Corps of Engineers
Mr. Nathan Green, Colorado/Gunnison Basin Office	U.S. Army Corps of Engineers
Mr. Paul Helgar, Management Analyst	U.S. Army, Pueblo Army Depot
Mr. Mark Plank, Rural Utilities Service	U.S. Department of Agriculture
Mr. Michael Bodenchuk, Texas Wildlife Services State Director	U.S. Department of Agriculture APHIS, Wildlife Service
Mr. Robert Stewart, Regional Environmental Office	U.S. Department of the Interior
Mr. Ralph Swanson, Fish and Wildlife Biologist	U.S. Department of the Interior
Ms. Dana Allen, Department of Energy Reviewer	U.S. Environmental Protection Agency
Ms. Cindy Cody, Chief NEPA Team	U.S. Environmental Protection Agency
Mr. Joe Cothem, NEPA Coordinator Team Leader	U.S. Environmental Protection Agency
Ms. Beverley Heffernan, Environmental Resources Division Chief	Bureau of Reclamation
Mr. Larry Svoboda, NEPA Director	U.S. Environmental Protection Agency
Ms. Shauna Derbyshire	U.S. Forest Service
Mr. Jim Dunn	U.S. Forest Service
Mr. James McRae	U.S. Forest Service
Ms. Kathy Paulion, GIS Support	U.S. Forest Service
Mr. Jeffrey Rust	U.S. Forest Service

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
Mr. Kris Rutledge	U.S. Forest Service
Ms. Deb Ryon, Lands Specialist	U.S. Forest Service
Mr. Drew Stroberg, Forestry Technician	U.S. Forest Service
Mr. Dave Grey, Surveyor	U.S. Geological Survey, Conservation District
State Agencies	
Mr. Rock Harrison, Duchesne Office	Central Utah Water Conservancy
Mr. Terry Hickman	Central Utah Water Conservancy
Mr. Dave Tinnamon, Superintendent	Chadron State Park
Mr. Jim Martin, Director of Natural Resources	Colorado Department of Natural Resources
Ms. Martha E. Rudolph, Environmental Programs Director	Colorado Department of Public Health and Environment
Mr. Tony Cady, Region Planning and Environmental Manager – Region 4	Colorado Department of Transportation
Mr. Patt Dorsey, Area Manager	Colorado Parks and Wildlife
Ms. Celia Greenman, Northeast Energy Coordinator	Colorado Parks and Wildlife
Mr. Drayton Harrison, District Wildlife Manager	Colorado Parks and Wildlife
Mr. Chris Kloster, Wildlife Biologist	Colorado Parks and Wildlife
Mr. Tom Kroening, District Wildlife Manager	Colorado Parks and Wildlife
Mr. Joe Lewandowski, Public Information Officer	Colorado Parks and Wildlife
Mr. Mike Reid	Colorado Parks and Wildlife
Mr. Lyle Sidener, Area Wildlife Manager	Colorado Parks and Wildlife
Mr. Tom Spezze, Regional Manager	Colorado Parks and Wildlife
Mr. Ron Velarde, NW Service Center	Colorado Parks and Wildlife
Mr. Scott Wait	Colorado Parks and Wildlife
Mr. Michael Warren	Colorado Parks and Wildlife
Ms. Susan Collins, State Archaeologist	Colorado Office of Archaeology and Historic Preservation
Mr. Ron Cousineau, District Forester	Colorado State Forest Service
Mr. Kent Grant, District Forester	Colorado State Forest Service
Mr. Dan Wand	Colorado State Forest Service
Mr. Dan Corson, Intergovernmental Services Director	Colorado State Historic Preservation Office
Mr. Robbie Baird-LeValley, Area Extension Agent	Colorado State University Tri-River Area Extension Office
Mr. Bill Romme, Fire Ecologist	Colorado State University, Department of Forest, Rangeland, and Watershed Stewardship
-	Fort Robinson State Park
Ms. Julie L. Ward	Nebraska Department of Environmental Quality
Mr. Dave Carlson, Panhandle Field Office	Nebraska Department of Environmental Quality
Mr. Hugh Stirts, Small Business Public Assistant/NEPA Coordinator	Nebraska Department of Environmental Quality
Mr. Doak Nickerson, Northwest District Forester	Nebraska State Forest Service
Mr. Eric Wilkinson, General Manager	Northern Colorado Water Conservancy District
Ms. Liz Mullen, Assistant Executive Director	Northwest Colorado Council of Governments
Mr. Bob Leake, Vernal Regional Engineer	State of Utah Division of Water Rights
Mr. Scott Robertson	State of Utah Trust Lands Administration

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
Mr. David Terry	State of Utah Trust Lands Administration
Mr. Tom Faddies	State of Utah Trust Lands Administration
-	Utah Department of Natural Resources
Ms. Tracy Conti, Executive Director	Utah Department of Transportation
Ms. Kate Johnson	Utah Division of Drinking Water
Ms. Shelly Quick, Environmental Consultant	Utah Division of Water Quality
Mr. Todd Adams, Assistant Director	Utah Division of Water Resources
Mr. Kevin Christopherson, Regional Supervisor	Utah Division of Wildlife Resources
Ms. Carolyn Wright	Utah Division of Wildlife Resources
Ms. Judy Edwards, Resource Development Coordinating Committee Contact	Utah Public Lands Policy Analyst
Ms. Sindy Smith, Office of the Governor	Utah Public Lands Policy Coordination Office
Ms. Kelly Beck, Utah Public Lands Policy Coordinator	Office of the Governor
-	Utah Reclamation Mitigation and Conservation Commission
Mr. Jerry Olds	Utah State Department of Natural Resources
Mr. Jim Dykman	Utah State Historic Preservation Office
Mr. Charles VanGenderen	Utah State Parks and Recreation
Local Agencies/Officials	
Jesse Smith, County Administrator	Archuleta County Administrator
Mr. Clifford Lucero, Chairman of the Board	Archuleta County Commission
Mr. Bob Moomaw, County Commissioner	Archuleta County Commission
Mr. John Ranson, County Commissioner	Archuleta County Commission
-	Boulder County Commission
Mr. Pat Gould, Chief	Chadron Volunteer Fire Department
Ms. Pam Caskie, City Manager	City of Alliance
Mr. Phil Overeyder, Utility Director	City of Aspen
Ms. Michelle Fries, City Clerk/Treasurer	City of Bayard
Mr. Bob Hines, Public Works Director	City of Burlington, Public Works
Mr. Donny Grantham, Mayor	City of Chadron Mayor's Office
Ms. Fay Mathews, Utilities Director	City of Delta
Mr. Jeffrey Wells, City Administrator	City of Fort Morgan
Mr. Ken Bradford, Director of Public Works	City of Gunnison
Mr. Mark Brown, City Superintendent	City of Holyoke
-	City of Montrose
-	City of Rifle
Mr. John Hehnke, Public Services Director	City of Sidney
Mr. Bill Johnson, Executive Director	City of Uintah, Vernal Economic Development
Mr. Stan Holmes, City Manager	City of Wray
Mr. Doug Sanderson, City Manager	City of Yuma
-	Clear Creek County
-	Crawford Volunteer Fire Department
Mr. Stewart Leith, County Commission Chair	Daggett County

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
Mr. Brian Raymond	Daggett County Courthouse
Ms. Becky Paulsen, Weed Superintendent	Dawes County
-	Dawes County Commission
Mr. Karl Dailey, Sheriff	Dawes County Sheriff's Office
Mr. Jerry Foster, Irrigation Coordinator	Denver Water Board
-	Dolores County Administration
Mr. Tommy Lux Jr., Mayor	Dolores Town Council
Mr. Mike Preston, Manager	Dolores Water Conservancy District
Mr. Ron Winterton, County Commissioner	Duchesne County Commission
Mr. Kirk Wood, County Commissioner	Duchesne County Commission
-	Duchesne County Commission
Ms. Irene Hansen, Executive Director	Duchesne County Economic Development
Mr. Randy Crozier, Vice Chairman	Duchesne County Water Conservation District
Mr. Ronald Johnson, Supervisor	Duchesne County, Weed Control Department
Mr. Dan Noonan, Chief	Durango Fire and Rescue Authority
-	FLC Environmental Center
-	FLC Reed Library
-	Garfield County Commission
-	Gilpin County Commission
-	Grand County Board of County Commission
Mr. Richard Bready	Grand County Division of Natural Resources
Ms. Amy Sidner, Program Specialist	Grand County Division of Natural Resources
Ms. Laurie Vierheller	Hinsdale County Administrator
-	Jackson County Board of County Commission
Mr. Wally White, Vice Chair	LaPlata County Commission
Ms. Kellie Hotter, County Commissioner	LaPlata County Commissioner
Mr. Joelle Riddle, County Commissioner	LaPlata County Commissioner
-	LaPlata County Development
Mr. Rod Cook, Manager	LaPlata County Weed Control
-	Larimer County Commission
Mr. Dale Miller, Director	Larimer County Road and Bridge Department
Mr. Dennis Morton, Assistant Director	Larimer County Road and Bridge Department
Gary and Catherine Kennedy	Mancos Water Conservancy District
-	Manila Town Council
Mr. Scott Lamb, Commissioner Chairman	Mineral County Commission
Mr. Ashton Harrison, Administrator	Montezuma County
Ms. Clair Baldwin, Noxious Weed Control	Montrose County
Ms. Lynn Winterton	Moon Lake Water Users
Mr. Ron Mabry, Weed Manager	Ouray County
Mr. Harvey Shell	Salt Lake County Fish and Game Association
Mr. Bill Norman, Administrator	San Juan County Administer
Pete and Pat McKay, Commissioner	San Juan County Commission

Table G-1. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Draft Environmental Impact Statement

Name, Title	Affiliation
Ms. Elaine Fischer, District 1 Commissioner	San Miguel County Commission
Ms. Joan May, District 3 Commissioner	San Miguel County Commission
Mr. Dave Schneck	San Miguel County Environmental Health
-	San Miguel County Planning Department
Ms. Sheila Grother, Noxious Weed Control Manager	San Miguel County, Noxious Weed Control
Mr. Steve Hill, Special Projects Manager	Summit County
Mr. Dan Gibbs, District 1 County Commissioner	Summit County Commission
-	Summit County Commission
Mr. Jim Curnutte, Community Development Director	Summit County Community Development Center
Mr. Jerry Atencio, Superintendent of Utilities	Town of Center
Mr. Keith Beck, Town Superintendent	Town of Fleming
Ms. Nanette Fornos, Town Clerk	Town of Frederick
Mr. Lyle McBride, Town Superintendent	Town of Haxtun
Mr. Charles Dickison, Mayor	Town of Manila Mayor's Office
-	Town of Mountain Village
Ms. Melissa Sever, Public Works Director	Town of Oak Creek
-	Town of Ophir
-	Town of Ouray
Mr. Joe Croke, Mayor	Town of Rico
-	Town of Silt
-	Town of Silverton
Mr. Dennis Jones	Town of Tabiona
-	Town of Telluride
Ms. Darlene Burns, County Commissioner	Uintah County Commission
Mr. Mike McKee, County Commissioner	Uintah County Commission
Mr. Mark Raymond, County Commissioner	Uintah County Commission
-	Uintah County Commission
Mr. Irvin Haws	Uintah County Conservation District
Ms. Diane Coltharp, Public Lands Specialist	Uintah County Public Lands
Mr. Coltharp Drake	Uintah County Public Lands
Ms. Scott Ruppe, General Manager	Uintah Water Conservancy District
Ms. Julie Huffman	Upper Niobrara White Natural Resources District
Mr. Lyndon Vogt, General Manager	Upper Niobrara White Natural Resources District
-	Utah County Commission
Mr. Ken Bassett, City Manager	Vernal City
Ms. Eianne Born, Mayor	Village of Lodgepole
Mr. Leonard Phillips, Chairman of the Board	Village of Mullen
Mr. Bill Bischoff, Utilities Superintendent	Village of Wauenta
Mr. Robert Riddle, County Commissioner	Wasatch County Commission
Mr. Tage Flint	Weber Basin Water Conservancy District

NOTIFICATION LIST FOR THE FINAL ENVIRONMENTAL IMPACT STATEMENT

Table G-2 identifies the federal, state, and local agencies and officials mailed a public notice that the Final Environmental Impact Statement is available. In total, approximately 800 notices were mailed to individuals on the project mailing list.

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
<i>Federal Elected Officials</i>	
The Honorable Senator	U.S. Senate
The Honorable Senator Cory Gardner	U.S. Senate
The Honorable Senator Jeanne Nicholson	U.S. Senate
The Honorable Senator Deb Fischer	U.S. Senate
The Honorable Senator Benjamin Sasse	U.S. Senate
The Honorable Congressman Rob Bishop	US House of Representatives
The Honorable Congressman Joe Neguse	U.S. House of Representatives
The Honorable Congressman Scott Tipton	U.S. House of Representatives
The Honorable Congressman Doug Lamborn	U.S. House of Representatives
The Honorable Congressman Adrian Smith	U.S House of Representative
<i>Federal Agencies</i>	
- Superintendent	Bureau of Indian Affairs
Sterling Moss	Natural Resources Conservation Service
Mike Rich	Natural Resources Conservation Service
Robert Heinrich, Contracting Officer	Schriever Air Force Base 50 CONS/LGCA
Larry Svoboda, NEPA Director	U.S. Environmental Protection Agency, Region 8
Drue DeBerry, Field Supervisor	U.S. Fish and Wildlife Service
Pam Sponholtz, Denver Office Field Supervisor	U.S. Fish and Wildlife Service
Ann Timberman, Field Office Supervisor	U.S. Fish and Wildlife Service
Michael Francis	Bureau of Reclamation
Dave Grey	USGS Conservation Division
Dave Trueman, Director	USDI Bureau of Reclamation
Tom Rokita, Contract Administrator	Air Force Academy, Dept. of the Air Force
- Superintendent	Bureau of Indian Affairs
Amy Carmichael, Field Manager,	Bureau of Land Management, Uncompahgre Field Office
Connie Clementson, Field Manager	Bureau of Land Management, San Juan Field Office
Roger Bankert, Field Manager	Bureau of Land Management, Glenwood Springs Field Office
Larry Sandoval, Field Manager	Bureau of Land Management, Kremmling Field Office

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
Bill Mills, Field Manager	Bureau of Land Management, Vernal Field Office
Jamie Connell, Director	Bureau of Land Management, Colorado State Office
Edwin Roberson, Director	Bureau of Land Management, Utah State Office
Howard Bailey	Bureau of Reclamation, Eastern Colorado Area Office
Ralph Swanson	Bureau of Reclamation
Vince Guthrie	Fort Carson, Dept. of the Army
Robin Foulk	Natural Resource Conservation Service
Paul Helgar	Pueblo Army Depot - U.S. Army
David Krueger	Bureau of Reclamation
Jason Gipson	U.S. Army Corps of Engineers, Utah Regulatory Office
Amy DeFreese	U.S. Army Corps of Engineers, Sacramento District
Nicholas Mezei	U.S. Army Corps of Engineers, Colorado/Gunnison Basin Office
Mark Plank	Rural Utilities Service
Robert Stewart	U.S. Department of Interior, Regional Environmental Office
Joe Cothorn, NEPA Coordination Team Leader	U.S. Environmental Protection Agency
Dave Irving	U.S. Fish and Wildlife Service
Michael Bodenchuk	USDA-APHIS-Wildlife Services
Jerry Westbrook	Bureau of Reclamation
Mary Risser	National Park Service
-	Utah Reclamation Mitigation and Conservation Commission
Director, Planning and Review	Advisory Council on Historic Preservation
Deputy Director	APHIS PPD/EAD
National Environmental Coordinator	NRCS
-	National Agricultural Library, Acquisitions & Serials Branch
-	U.S. Army Corps of Engineers, South Pacific Division
State Elected Officials	
Jeni Arndt	Colorado General Assembly
Kerry Donovan	Colorado General Assembly
Jessie Danielson	Colorado General Assembly
Don Coram	Colorado General Assembly
Robert Rodriguez	Colorado General Assembly
Jerry Sonnenberg	Colorado General Assembly
Jon Becker	Colorado General Assembly

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
Perry Buck	Colorado General Assembly
Marc Catlin	Colorado General Assembly
Jessie Danielson	Colorado General Assembly
Chris Hansen	Colorado General Assembly
Dominique Jackson	Colorado General Assembly
Hugh McKean	Colorado General Assembly
Dylan Roberts	Colorado General Assembly
Lori Saine	Colorado General Assembly
Donald Valdez	Colorado General Assembly
Daneya Esgar	Colorado General Assembly
State Agencies	
Jim Martin	Colorado Dept of Natural Resources
Tony Cady	Colorado Dept. of Transportation
Matt Schulz, Forest Management Coordinator	Colorado Div. of Wildlife
Jeff Thompson, Resource Stewardship Coordinator	Colorado Div. of Wildlife
Joe Lewandowski, SW Regional Office	Colorado Div. of Wildlife
Scott Wait, SW Regional Office	Colorado Div. of Wildlife
Zach Spezze, Salida Service Center	Colorado Div. of Wildlife
Lyle Sidener, Hot Sulphur Springs Service Center	Colorado Div. of Wildlife
Tim Kroening, SE Regional Office	Colorado Div. of Wildlife
Brian Kurzel	Colorado Natural Areas Program
Ron Cousineau, District Forester	Colorado State Forest Service
Mabruka Abubaira	Colorado State University, Forest & Rangeland Stewardship
Holly Norton, State Archaeologist	History Colorado, Office of Archaeology and Historic Preservation
Hugh Stirts	Nebraska Department of Environmental Quality
Doak Nickerson	Nebraska State Forest Service
Tracy Conti	Utah Dept. of Transportation
Kate Johnson	Utah Div. of Drinking Water
Shelly Quick	Utah Div. of Water Quality
Todd Adams	Utah Div. of Water Resources
Kevin Christopherson	Utah Div. of Wildlife Resources
Carolyn Wright	Utah Div. of Wildlife Resources
Kelly Beck, Office of the Governor	Utah Public Lands Policy Coordinator
Savana Agardy	Utah State Historic Preservation Office
Chris Hansen	Utah State Historic Preservation Office
Charles VanGenderen	Utah State Parks & Recreation
Jerry Olds	Utah State Dept. of Natural Resources
Dave Carlson	Nebraska Department of Environmental Quality

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
Matthew Marques	History Colorado, Office of Archaeology and Historic Preservation
Holly Norton	History Colorado, Office of Archaeology and Historic Preservation
Mitchell Schaeffer	History Colorado, Office of Archaeology and Historic Preservation
Mark Tobias, Intergovernmental Services Manager	History Colorado, Office of Archaeology and Historic Preservation
Dave Tinnamon, Superintendent	Chadron State Park
Local Agencies/Officials	
Chad Wheelus, Mayor	Dolores Town Council
Dan Noonan	Durango Fire & Rescue Authority
Joe Croke, Mayor	Town of Rico
Scott Wall	Archuleta County Administrator
Julie Kibel, Commission Chair	Dolores County
Oma Fleming, Weed Control	Dolores County
Irene Hansen, County Commissioner	Duchesne County
Gregory Todd, County Commissioner	Duchesne County
Greg Miles, County Commissioner	Duchesne County
Rex Broadhead, Supervisor Weed Dept	Duchesne County
Clyde Church, District #1	LaPlata County Commissioner
Gwen Lachelt, District #2	LaPlata County Commissioner
- Planning Director	LaPlata County Development
Jesse Albright, County Commissioner	Mineral County
Ashton Harrison, Administrator	Montezuma County
William Tookey	San Juan County Administrator
Ian Bald, Planning Commission Member	San Miguel County Planning Dept.
Steve Wadley	Archuleta County Commissioner
Ronnie Maez	Archuleta County Commissioner
Alvin Schaaf	Archuleta County Commissioner
Sandie Hines	Hinsdale County Administrator
Clyde Church	LaPlata County Commissioner
Peter McKay	San Juan County Commissioner
Hilary Cooper	San Miguel County Commissioner
Lance Waring	San Miguel County Commissioner
Bill Bischoff, Utilities Superintendent	Village of Wauneta
Lee Cody, Manager	Mancos Water Conservancy District
-	Boulder County Commissioners
Jeffry Sprock, City Manager	City of Alliance
Dave Hornbacher, Utility Director	City of Aspen
Samantha Jackson, City Clerk/Treasurer	City of Bayard

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
- Public Works Director	City of Burlington
Donny Grantham, Mayor	City of Chadron
Betsy Suerth, Utility Director	City of Delta
Brent Nation, City Administrator	City of Fort Morgan
Matthew Langhorst, Director of Public Works	City of Glenwood Springs
Marlene Crosby, Director of Public Works	City of Gunnison
Kathleen Olofson, City Clerk/Treasurer	City of Holyoke
William Bell, City Manager	City of Montrose
Scott Hahn, City Manager	City of Rifle
- Public Service Director	City of Sidney
James DePue, City Manager	City of Wray
Philip Rodriguez, City Manager	City of Yuma
Sean Wood, Chairman of the Board	Clear Creek County Commission
Randy Asay, Chair	Daggett County Commission
Larry Hankin, Highway Superintendent	Dawes County
Dan Wordekemper, Weed Control Superintendent	Dawes County
Jake Stewart, District 1 Commissioner	Dawes County Commissioners
Lynn Burton	Duchesne County Public Land Use Board
-	Garfield County Commissioners
Robert Hennessy, Gilpin County Surveyor	Gilpin County Public Works
Richard Cimino, District #1	Grand County
Merritt Linke, District #2 Commissioner	Grand County
Cynthia McCoy, District #3 Commissioner	Grand County
Bready Richard	Grand County DNR
Amy Sidner	Grand County DNR
Julie Westendorff, District #3	LaPlata County Commissioner
John Kefalas, District #1 Chairman	Larimer County Commissioners
Dale Miller, Director	Larimer County Road and Bridge Department
Dennis Morton, Assistant Director	Larimer County Road and Bridge Department
Sue Hansen, Commissioner	Montrose County District #2
Ken Curry, Vice-President, Customer & Corporate Services	Nebraska Public Power District
Jeff Stahla, Public Information Officer	Northern Colorado Water Conservancy District
Doug Jones, Director-Energy Program	Northwest Colorado Council of Governments
Don Batchelder, District #3 Chair	Ouray County
- Chairperson	Vernal Public Lands Committee
Janet Kask, Director-Parks and Open Space	San Miguel County
Scott Ruppe, Deputy Director	State of Utah Trust Lands Admin.
Tim Donaldson, Assistant Director - Special Projects	State of Utah Trust Lands Admin.
April Kroner, Planning Department	Summit County

Table G-2. Federal, State, and Local Agencies and Officials Mailed a Public Notice of the Availability of the Final Environmental Impact Statement

Name, Title	Affiliation
Brian Lorch, Open Space/Trails	Summit County
Dan Schroder, Wildfire Mitigation Specialist	Summit County
Thomas Davidson, County Commissioner, Chairperson	Summit County
The Honorable Mayor Anthony Garcia	Town of Center
Keith Beck, Town Superintendent	Town of Fleming
Megan Martinez, Town Clerk	Town of Frederick
Ron Carpenter, Town Superintendent	Town of Haxtun
The Honorable Mayor David Coombs	Town of Manila
Susan Johnston, Town Clerk	Town of Mountain Village
Tom Holliday, Public Works Director	Town of Oak Creek
Ken Haynes, Administrator	Town of Ophir
Mellissa Drake, Administrator	Town of Ouray
Bill Johnson	Uintah City - Vernal Economic Development
Brad Horrocks, Chairman	Uintah County Commissioner
Darlene Burns	Uintah County Commissioner
Mark Raymond	Uintah County Commissioner
-	Uintah County Commissioners
Irvin Haws	Uintah County Conservancy Dist.
Diane Coltharp	Uintah County Public Lands
Coltharp Drake	Uintah County Public Lands
Scott Ruppe	Uintah Water Conservancy Dist
Scott Kenton	Uncompahgre Valley Association
Julie Huffman	Upper Niobrara White Natural Resources District
Lyndon Vogt	Upper Niobrara White NRD
Curt Kennedy	UT Snowmobile Assoc.
Marshall Empey, Planning Manager	Utah Associated Municipal Power System
Brent Tanner	Utah Cattlemen's Assn.
Paul Warner, Commission Chair	Utah County
- Executive Director	Utah Dept. of Natural Resources
Brian Hawthorn	Utah Shared Access Alliance
Ken Bassett	Vernal City
Leonard Phillips, Chairman of the Board	Village of Mullen
Justin Misegadis, Chairman	Village of Lodgepole
Marilyn Crittenden, Seat A	Wasatch County Commissioners
Brian Raymond	Daggett County Courthouse

***Western Area Power Administration
Reauthorization Project***

Appendix H

Draft Environmental Impact Statement
Public Comments and Responses

TABLE OF CONTENTS

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APPENDIX H

DRAFT ENVIRONMENTAL IMPACT STATEMENT PUBLIC COMMENTS AND RESPONSES

H.1 Public Comments and Responses

Table H-1 identifies the agencies that submitted comments on the Draft Environmental Impact Statement (EIS), their comments, and responses from Western Area Power Administration (WAPA) and the U.S. Forest Service (Forest Service). No individuals submitted comments on the Draft EIS.

Table H-1. Draft Environmental Impact Statement Comments and Responses

Document ID	Comment Number	Commenter	Comment	Response
WESTEIS-1001	1001-01	Uintah County Commission	Uintah County extends its support for this proposed DEIS and that it will continue forward in a timely manner.	Thank you for your comment.
WESTEIS-1002	1002-01	Bureau of Reclamation	On behalf of the Bureau of Reclamation's Eastern Colorado Area Office, I would like to express support for the joint WAPA and U.S. Forest Service proposal regarding Reauthorization of Transmission Line Permits, Maintenance and Vegetation management on Forest Service Lands in Colorado, Nebraska and Utah.	Thank you for your comment.
WESTEIS-1003	1003-01	U.S. Department of the Interior, Office of Environmental Policy and Compliance	The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement for Maintenance and Vegetation Management Along Existing WAPA Transmission Line Rights of Way on National Forest System Lands, Colorado, Utah, and Nebraska, and has no comments on the document.	Thank you for your letter.
WESTEIS-1004	1004-01	U.S. Environmental Protection Agency	Based on the EPA's procedures for evaluating potential environmental impacts on the proposed actions and the adequacy of the information present, the EPA is rating the Proposed Action Alternative LO (Lack of Objections).	Thank you for your comment.

Table H-1. Draft Environmental Impact Statement Comments and Responses

Document ID	Comment Number	Commenter	Comment	Response
WESTEIS-1004	1004-02	U.S. Environmental Protection Agency	The EPA notes that although seven waterbody segments impacted by the transmission line ROWs are listed as impaired (Clean Water Act Section 303(d)), "...only one of WAPA's transmission lines (the Ault-Craig ROW) directly intersects and traverses a specific stream... that is listed as impaired." (p.3-49). No further degradation is anticipated since neither alternative involves new road construction, the greatest potential for additional impacts on water resources, and because there are environmental protection commitments in place. The EPA supports these commitments that WAPA and the Forest Service have developed in their design features as part of the Proposed Action (Table 2-13) and standard maintenance procedures listed in Table 2-15.	Thank you for your comment. WAPA and the Forest Service will implement the design features as indicated.

H.2 Comment Letters

This section includes the comment letters received on the Draft EIS and identifies the verbatim comments identified and considered by WAPA and the Forest Service.

WESTEIS-1001

UINTAH COUNTY

STATE OF UTAH
Our past is the nation's future

COMMISSIONERS:
Darlene R. Burns
Michael J. McKee
Mark D. Raymond
ASSESSOR - Rolene Rasmussen
ATTORNEY - G. Mark Thomas
CLERK-AUDITOR - Michael W. Wilkins
RECORDER - Randy J. Simmons
TREASURER - Wendt Long
SHERIFF - Jeff Merrill
SURVEYOR - John Staugh

November 6, 2013

Jim Hartman
Natural Resources Office
Western Area Power Administration
Corporate Services Office
12155 West Alameda Parkway
Lakewood, CO 80228

RE: Proposal to Reauthorize Existing Transmission Lines on Forest Lands in
Colorado, Nebraska and Utah Draft Environmental Impact Statement (DEIS)

Dear Mr. Hartman,

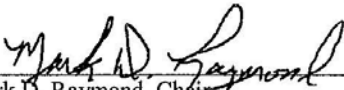
Thank you for the opportunity to comment on the proposed DEIS by Western Area Power Administration to reauthorize existing transmission lines on Forest Service Lands in Colorado, Nebraska, and Utah. Transmission line routes are permanently altered areas and without proper routine management, power outages have occurred. Tall trees are not compatible with power lines. Encroachment of vegetation in the rights-of-ways hinders and causes delays for emergency vehicles. Maintenance of electric utility rights-of-way is necessary to reduce wildfire risk, incorporate multiple use objectives, reduce fuels and ensure safety and reliability.

1001-01

Uintah County extends its support for this proposed DEIS and that it will continue forward in a timely manner.

Sincerely,

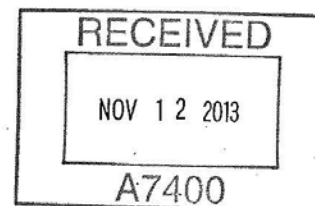
UINTAH COUNTY COMMISSION


Mark D. Raymond, Chair


Michael J. McKee


Darlene R. Burns

cc: Chris Wehrli



COUNTY BUILDING • 152 EAST 100 NORTH • VERNAL, UTAH 84078

WESTEIS-1002



IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION
Great Plains Region
Eastern Colorado Area Office
11056 West County Road 18E
Loveland, Colorado 80537-9711

EC-1310
LND-6.00

NOV 18 2013

Jim Hartman
Natural Resources Office
Western Area Power Administration
Corporate Services Office
12155 West Alameda Parkway
Lakewood, CO 80228

Subject: DEIS for Reauthorization of Transmission Line Permits, Maintenance and Vegetation Management on Forest Service Lands in Colorado, Nebraska and Utah

Dear Mr. Hartman:

The Bureau of Reclamation's Eastern Colorado Area Office has reviewed the subject DEIS. I would like to note that this proposal provides for protection of vital infrastructure needed to transmit electricity generated at Reclamation hydroelectric plants as well as protection of electric services critical to our ability to deliver water and generate hydroelectric power. In addition, the vegetation management component would complement and strengthen the effectiveness of work being conducted on both Reclamation and National Forest System lands as part of the Colorado-Big Thompson Headwaters Partnership to reduce wildfire risks. The Partnership is a joint program to proactively improve the health and resiliency of forests and watersheds, to preplan for post-wildfire response actions in areas critical for providing and delivering water to Northern Colorado Water Conservancy District, and for delivering water and generating hydro-electric power through Reclamation's Colorado-Big Thompson Project facilities.

Reclamation's Fryingpan-Arkansas Project and Colorado-Big Thompson Project facilities deliver water for over 1 million Colorado citizens, provide supplemental water for irrigation of over 1 million acres, and generate approximately 1 billion kilowatt hours of electricity annually.

1002-01

On behalf of the Bureau of Reclamation's Eastern Colorado Area Office, I would like to express support for the joint Western Area Power Administration and U.S. Forest Service proposal regarding Reauthorization of Transmission Line Permits, Maintenance and Vegetation Management on Forest Service Lands in Colorado, Nebraska and Utah.

If you have any questions regarding this issue, please contact Lucy Maldonado at (970) 962-4369 or e-mail lmaldonado@usbr.gov.

Sincerely,

Michael P. Collins
Area Manager



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 67, Room 118
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

WESTEIS-1003



November 18, 2013

9043.1
ER 13/650

Jim Hartman, NEPA Document Manager
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228

Dear Mr. Hartman:

1003-01

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement for Maintenance and Vegetation Management Along Existing Western Area Power Administration (WAPA) Transmission Line Rights of Way on National Forest System Lands, Colorado, Utah, and Nebraska, and has no comments on the document.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

WESTEIS-1004



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

NOV 25 2013

Ref: EPR/N

Mr. Jim Hartman
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228

Re: Reauthorization of Permits,
Maintenance, and Vegetation Management
on Western Area Power Administration
Transmission Lines on Forest Service Lands,
Colorado, Nebraska, and Utah
CEQ #20130283

Dear Mr. Hartman:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed the Reauthorization of Permits, Maintenance, and Vegetation Management on Western Area Power Administration Transmission Lines on Forest Service Lands Draft Environmental Impact Statement (Draft EIS) prepared by the Western Area Power Administration (Western) and the U.S. Forest Service (USUSFS). Our comments are provided for your consideration pursuant to our responsibilities and authority under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609. It is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project, which includes a rating of the environmental impact of the proposed action and the adequacy of the NEPA document.

1004-01

Based on the EPA's procedures for evaluating potential environmental impacts on proposed actions and the adequacy of the information present, the EPA is rating the Proposed Action Alternative LO (Lack of Objections). We do not rate the No Action Alternative. A full description of the EPA's rating system is included as an enclosure.

PROJECT DESCRIPTION

Western proposes improving the way it manages vegetation using an integrated vegetative management approach along approximately 273 miles of transmission line right-of-way (ROW) that it owns, operates or maintains on USFS lands in Colorado, Nebraska and Utah. Western and the USFS are the joint lead agencies for this project. The USFS would reauthorize Special Use Permits for each transmission line and authorize Western to manage vegetation along the ROWs.

WESTEIS-1004

The primary purpose and need for the project is to ensure that Western can safely and reliably operate and maintain its existing electrical transmission facilities to deliver power. The need for action was demonstrated when two major power outages occurred—one in Portland, Oregon, that affected power users as far away as southern California in 1996, and another in 2003 in the Northeast and Midwest that impacted 55 million people in the U.S. and Canada. Both outages were caused by transmission line sag into overgrown trees. Subsequently, Congress passed the Energy Policy Act of 2005 that authorized the certification of an electric reliability organization to create mandatory and enforceable reliability standards, including vegetation management standards.

The major difference between the Proposed Action and the No Action alternatives is the proposal to change from a need-driven, reactive vegetation management approach to a proactive maintenance strategy that does not let vegetation become an immediate threat. Treatments could include manual trimming, hand-pulling and hoeing; herbicide application; and mowing, logging, chipping, and grinding trees and existing debris using mechanized equipment.

GENERAL COMMENTS

Implementing an integrated vegetation management approach would improve efficiencies in scheduling maintenance activities, minimizing emissions so that impacts to air quality are expected to be negligible and comparable or less than the No Action Alternative. And, while the Proposed Action Alternative would likely result initially in more short-term direct impacts to surface water than the No Action Alternative, the long-term impacts to water quality would be greatly reduced.

1004-02

The EPA notes that although seven waterbody segments impacted by the transmission line ROWs are listed as impaired (Clean Water Act Section 303(d)), "...only one of Western's transmission lines (the Ault-Craig ROW) directly intersects and traverses a specific stream...that is listed as impaired." (p.3-49). No further degradation is anticipated since neither alternative involves new road construction, the greatest potential for additional impacts on water resources, and because there are environmental protection commitments in place. The EPA supports these commitments that Western and the USFS have developed in their design features as part of the Proposed Action (Table 2-13) and standard maintenance procedures listed in Table 2-15.

Thank you for the opportunity to provide comments on the Reauthorization of Permits, Maintenance, and Vegetation Management on Western Area Power Administration Transmission Lines on Forest Service Lands Draft EIS. If you have any questions or would like to discuss our comments or rating, please contact me at 303-312-6925 or Carol Anderson of my staff at 303-312-6058.

Sincerely,



Suzanne J. Bohan
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure: EPA's Rating System

H.3 Public Meeting Transcript

This section includes the transcript from the public meeting held on October 23, 2013.

***WESTERN AREA POWER ADMINISTRATION
TRANSMISSION LINE MANAGEMENT
REAUTHORIZATION***

PUBLIC MEETING

10/23/2013

Agren Blando Court Reporting & Video, Inc.

216 16th Street, Suite 600

Denver Colorado, 80202

303-296-0017

Agren Blando Court Reporting & Video, Inc.

PUBLIC COMMENT SESSION

Wednesday, October 23, 2013

WESTERN AREA POWER ADMINISTRATION
TRANSMISSION LINE MANAGEMENT REAUTHORIZATION

The above-entitled matter came on for public hearing on October 23, 2013, at 4 PM at the Sheraton Denver West, 360 Union Boulevard, Lakewood, Colorado, before Martha Loomis, Certified Shorthand Reporter and Colorado Notary Public.

PUBLIC MEETING 10/23/2013

1

Agren Blando Court Reporting & Video, Inc.

1 ADMINISTRATORS PRESENT:
2
3 Jim Hartman, Western Area Power Administration
4 Claire Douthit, Western Area Power Administration
5 Chris Wehrli, US Forest Service
6 Lisa Sakata, ICF International
7 Jenna Wheaton, ICF International
8 Madeline Terry, ICF International
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Agren Blando Court Reporting & Video, Inc.

1 P R O C E E D I N G S:

2 (No public comments were offered.)

3

4 (Whereupon the proceedings were adjourned at 8 PM,
5 October 23, 2013.)

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PUBLIC MEETING 10/23/2013

3

Agren Blando Court Reporting & Video, Inc.

1 CERTIFICATION

2

3

4 I, Martha Loomis, Certified Shorthand Reporter,
5 appointed to take the within proceedings hereby
6 certify that the proceedings was taken by me, then reduced to
7 typewritten form by means of computer-aided transcription; that
8 the foregoing is a true transcript of the proceedings had
9 subject to my ability to hear and understand, and that I have no
10 interest in the proceedings.

11

12 IN WITNESS WHEREOF, I have hereunto set my hand.

13

14

15

16 _____
Martha Loomis

17 Certified Shorthand Reporter

18

19

20 Proofread by E. Williams

21

22

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25

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***Western Area Power Administration
Reauthorization Project***

Appendix I

Roadless Analyses

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APPENDIX I

ROADLESS ANALYSES

Following are the considerations of inventoried roadless areas and associated characteristics on the Arapahoe National Forest and the Ashley National Forest.



Roadless Project Evaluation Form

U.S. Forest Service – Rocky Mountain Region

Date Submitted:

Forest and District	Arapaho National Forest, Sulphur Ranger District				
Project Name	Western Area Power Administration (WAPA) Transmission line vegetation management and re-authorization project (Blue-River to Gore Pass)				
Roadless Area(s)	Copper Mountain RA-lower tier				
NEPA Doc type (CE/EA/EIS?)	EIS				
Resource type (veg, recreation, wildlife habitat, etc)	Project Stage (pre-scoping, or pre- DRAFT decision)	Road Construction or Reconstruction (est. miles)	Tree Cutting (est. acres)	Linear Construction Zone (est. miles CO only)	Is this project within the "upper tier?" (CO only)
	Pre Draft Decision	0 miles	24 Acres	n/a	No

1. Describe the project. Provide a brief summary, location, including the purpose and need, and proposed action. Please include a map (.pdf maps work best for printing):

6th PM, T 1 S, R 79 W, sections 3, 4, 10, 31, 32, Arapaho NF, Sulphur Ranger District.

The overall project covers 273 miles of the US Department of Energy's Western Area Power Administration (WAPA) transmission lines across portions of Nebraska, Colorado, and Utah. It includes enhanced vegetation management and re-authorization of existing permits. This analysis is limited to activities in the Copper Mountain Roadless area within WAPA's 200' right of way (ROW in Grand County Colorado. The vegetation management aspects of the proposal could potentially affect the roadless area characteristics. The intent of WAPA's vegetation management program is to secure and maintain a manageable and stable ROW that minimizes vegetative threats to transmission system safety, security, and reliability, and ultimately does not require frequent re-treatments. Achieving a desired condition is a process that may require several treatments over an extended period of time. Once a desired condition is achieved, it is intended that the desired condition will be proactively maintained (clear cut) only low-lying vegetation will remain.

The activity includes utilizing vegetation management crews to assess the ROW condition, identifying incompatible vegetation, and trimming and removing incompatible vegetation, including "danger trees" as defined in WAPA Order 430.1C, using the appropriate means for the terrain and vegetation type. In general, only hand treatment will be permitted over slopes over 35% while other types of treatment will be used on lesser slopes where access permits. The transmission line will be accessed via existing access routes; no road maintenance or new road construction is authorized, and only rubber-treaded vehicles will be used.

Two portions of the line cross the Copper RA. The southern portion of the line, 16,317', is located within a 100' "cherry stem" excluded from the Roadless area. WAPA will be permitted to treat 125' of the ROW, totaling approximately 9.4 acres located within the Roadless area. The northern portion of the line, 5,074', is not excluded from the Roadless area as the southern portion was, no "cherry stem" exists here. Approximately 14.6 acres of the right of way will be treated in this area.



Roadless Project Evaluation Form

U.S. Forest Service – Rocky Mountain Region

2. **How this is consistent with the 2001 Rule, or the Colorado Roadless Rule?** *If the project involves tree-cutting, road construction, road reconstruction, or construction of a linear construction zone (Colorado only), it must meet an exception.*

The proposed project is in an existing linear construction zone and authorizing tree cutting there is consistent with the exception in 36 CFR 294.44(c)(3) "for the construction, reconstruction, or maintenance of existing or future authorized electrical power lines...."

3. **Does your analysis include impacts to the nine (9) roadless area characteristics?**

(1) High quality or undisturbed soil, water, and air: These resources are present, but design criteria will be in place to protect impacts to soils, water resources and wetlands.

(2) Sources of public drinking water; No, not applicable, no impacts are anticipated.

(3) Diversity of plant and animal communities; Yes, a botany and wildlife field review/survey were conducted and documented in a BA and a BO, that has been prepared for the WAPA Reauthorization EIS, dated 2014. A letter of FWS concurrence is dated 04/26/2018 specific to the proposed project, the Blue River-Gore Line. Design criteria will be in place to protect plant and animal communities.

(4) Habitat for threatened, endangered, proposed, candidate, and sensitive species, and for those species dependent on large, undisturbed areas of land: Yes, a botany and wildlife field review/survey was conducted and included the following TES species and habitat: Canada Lynx, greenback cutthroat trout, wolverine, Osterhout milkvetch and Penland's beardtongue. A letter of FWS concurrence is dated 04/26/2018 specific to the proposed project, the Blue River-Gore Line. Design criteria will be in place to protect plant and animal communities.

(5) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation: 16,317 feet of the line are located in *Semi-Primitive Motorized ROS*, and the other 5,074 feet are located in *Roaded Natural*. No impacts are anticipated.

(6) Reference landscapes: No

(7) Natural-appearing landscapes with high scenic quality: Yes, design criteria will be in place to address concerns to visual resources. Visual resources were analyzed in the WAPA Reauthorization EIS, dated 2014.

(8) Traditional cultural properties and sacred sites: No such sites are present in the project area.

(9) Other locally identified unique characteristics: None known.

4. **Briefly describe any State coordination or cooperation for this project (Colorado only)?** Consultation with the State Historic Preservation Office has been completed.

5. **Briefly describe consultation with Tribal governments completed for this project.** Section 106 consultation was completed in the WAPA Reauthorization EIS, dated 2014, that included local tribes. A letter of SHPO concurrence is dated 11/13/2017, specific to the proposed project, the Blue River-Gore Line.



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6. Describe outreach and analysis completed to determine if project could potentially impact any protect groups (civil rights), including but not limited to, women, minorities, or people with disabilities. This project will have no impact on civil rights for any of the groups described.

7. **Deciding Official:** Anticipated: Forest Supervisor.

8. **Contact for the project:** Matt Custer, Rocky Mountain Regional Office, Forest Service, 1617 W. Cole Blvd, Lakewood, CO 80401 matthew.custer@usda.gov



United States Department of Agriculture

Topic: Informal Briefing Paper – WAPA, Arapaho-Roosevelt NF Blue River-Gore Pass Roadless Project

Date: May 29, 2020

Regional Office - Strategic Planning Contact: Jenna Sloan

Point of Briefing: The intent of the 2001 Roadless Rule is to provide lasting protection for inventoried roadless areas within the National Forest System in the context of multiple-use land management. The ARP has submitted a “pre-decision phase” request for DRF review.

Project Background: The Arapaho-Roosevelt National Forest has submitted the WAPA Gore Line – Blue River Line project on May 26, 2020, requesting exception under 36 CFR §294.44(c)(3). The Blue River-Gore Pass 230-kV Transmission Line is located in the Copper Mountain Roadless Area in the Sulphur Ranger District. Routine vegetation management will be conducted within WAPA’s 200’ right-of-way (ROW) in Grand County, Colorado. The intent of WAPA’s vegetation management program is to secure and maintain a manageable and stable ROW that minimizes vegetative threats, including wildfire, to transmission system safety, security, and reliability, and ultimately does not require frequent re-treatments.

- This transmission line, currently exists, is considered a linear construction feature under the CRA;
- This proposed activity would include trimming and remove incompatible vegetation, including danger trees as defined in *WAPA Order 430.1C*, using the appropriate means for the terrain and vegetation type. About 24 acres of trees could be cut.
- The transmission line will be accessed via existing access routes; no road maintenance or new road construction is authorized, and only rubber-treaded vehicles will be used.
- Not within Upper Tier CRA

Roadless Exception Summary: The Colorado Roadless Rule has a Prohibition on timber cutting, sale, or removal in inventoried roadless areas except where the Responsible Official determines a circumstance exists. The proposed project is within an existing linear construction zone and authorizing tree cutting is consistent with the exception in the Colorado Roadless Rule “for the construction, reconstruction, or maintenance of existing or future authorized electrical power lines....”

- Two portions of the line cross the Copper RA. The southern portion of the line, 16,317’, is located within a 100’ “cherry stem” excluded from the Roadless area. WAPA will be permitted to treat 125’ of the ROW, totaling approximately 9.4 acres located within the Roadless area. The northern portion of the line, 5,074’, is not excluded from the Roadless area as the southern portion was, no “cherry stem” exists here. Approximately 14.6 acres of the right of way will be treated in this area.
- The ARP completed the pre-decision phase of RO Review in June 2019 for a categorical exclusion covering this same footprint.

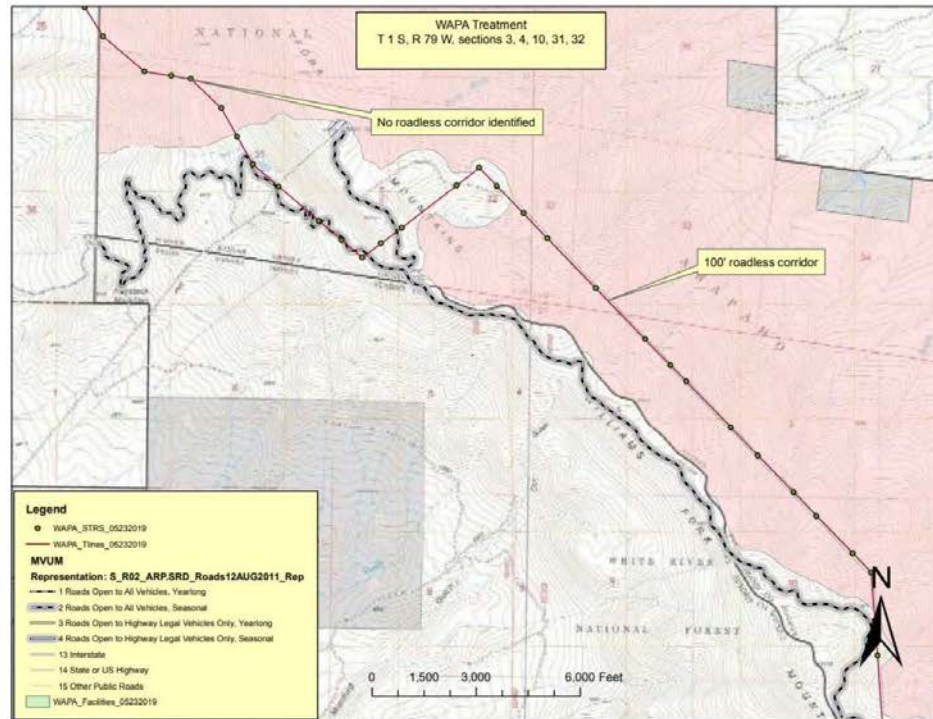
Roadless Review Recommendation(s):

- Project fits the exception at 36 CFR §294.44(c)(3); “for the construction, reconstruction, or maintenance of existing or future authorized electrical power lines....”
- A similar Regional Roadless Review is occurring in coordination with R4 for the portion on the Ashley NF; coordination is on-going.

For DRF Briefing on May 29, 2020



United States Department of Agriculture



For DRF Briefing on May 29, 2020

Inventoried Roadless Area Analysis
Western Area Power Administration (WAPA) Transmission Line Vegetation
Management and Re-Authorization Project
Ashley National Forest
6/28/2020

Prepared by:
Ryan Buerkle
Forest Recreation Program Manager
Ashley National Forest

Summary of project (or alternative effects for each alternative): This project covers 273 miles of the US Department of Energy's Western Area Power Administration (WAPA) transmission lines across portions of Nebraska, Colorado, and Utah. It includes enhanced vegetation management and re-authorization of existing permits. WAPA's high-voltage transmission line right-of-way is not in a roadless area. However, approximately 4 miles of existing access route crosses the 0401002, 0401003, 0401006, and 040132 Roadless Areas on the Ashley National Forest, predominately on unmaintained spurs from NFS Road 610 on Flaming Gorge Ranger District. Less than one mile of existing access route crosses the 0401006 Roadless Area, off various unmaintained spurs along the U.S. Highway 191 corridor on the Vernal Ranger District. In sum, the approximately 5 miles of access routes in the roadless area would equate to 6 acres of ongoing vegetation clearance. While the vegetation management aspects of the proposal on access routes could potentially affect the roadless area characteristics, the primary intent of WAPA's vegetation management program is to secure and maintain a manageable and stable ROW (outside the ROW) that minimizes vegetative threats to transmission system safety, security, and reliability, and ultimately does not require frequent re-treatments. Achieving a desired condition is a process that may require several treatments over an extended period of time. Once a desired condition is achieved, it is intended that the desired condition will be proactively maintained (clear cut) only low-lying vegetation will remain.

The activity includes utilizing vegetation management crews to assess the ROW condition, identifying incompatible vegetation, and trimming and removing incompatible vegetation, including "danger trees" as defined in *WAPA Order 430.1C*, using the appropriate means for the terrain and vegetation type. In general, only hand treatment will be permitted over slopes over 35% while other types of treatment will be used on lesser slopes where access permits. The transmission line will be accessed via existing access routes with no new road construction authorized.

Roadless Area 0401032

Summary of existing condition: The project is partially located with the 0401032 Inventoried Roadless Area (IRA). The project includes the periodic vegetation treatments on the approximately 1.2 miles of access routes to the Western Area Power Administration transmission lines located close to the southern boundary of the IRA. The 0401032 IRA has a total of 5,239 acres. It is located on the eastern side of the Flaming Gorge Ranger District of the Ashley National Forest. The western boundary is non IRA lands of the Ashley National Forest, the northern boundary is adjacent to non IRA lands of the Ashley National Forest and the 0401023 IRA, the eastern boundary is adjacent to Bureau of Land Management lands and Utah Division of Wildlife Resources lands, the southern boundary is adjacent to the 0401002 and 0401003 IRAs and is separated from these IRA from the Western Area Power Administration right of way for their electric transmission line from the Flaming Gorge Dam. The 0401032 IRA is heavily used for recreation, which includes fishing, rafting, hiking, and mountain biking. These activities primarily occur within the Green River corridor which is in the central part of the IRA and well away from the project activities.

<i>Inventoried Roadless Areas: Analysis of Effects to Roadless Characteristics</i>			
Project Name: Western Area Power Reauthorization Project			Date: 6/26/2020
Roadless Area Identifier(s): 0401032			
	Roadless Characteristics	Existing Condition	Describe the probable effects of project activities/ alternatives.
		Use descriptive terms that describe the condition of the resource (characteristic). (Nothing needed in this cell)	Use descriptive terms that discuss the effect, not the activity. Explain if/ how the proposal would alter the resource (characteristic) condition, within the context of the landscape. (Nothing needed in this cell)
1	Soil, water and Air resources	The Green River below the Flaming Gorge Dam is a blue ribbon fishery and the segment of the Green River below the Flaming Gorge	The project activities of periodic vegetation management on approximately 1.2 miles of access

		Dam to the Forest Boundary was found suitable for inclusion in the Wild and Scenic River System in 2008, Congress has not acted on the suitability recommendation.	routes would not alter the soil, water, and air resources. The access routes are located on the southern border of the roadless area outside of the Green River corridor.
2	Sources of public drinking water	There are no public drinking water systems or sources within the roadless area that would be affected by the project.	Periodic vegetation management on approximately 1.2 miles of access routes would not affect sources of public drinking water.
3	Diversity of plant and animal communities	Multiple raptors are present within the Green River corridor as well as Big Horn sheep. In the plateaus north and south of the Green River corridor within the roadless area, pronghorn are present in the north and deer in the south. Within the Green River corridor there is a diverse population of trout, including Rainbow and Cutthroat Trout. Ponderosa Pines are prevalent within the Green River corridor as well as willows, forbs, grasses, and juniper. The plateaus north and south of the Green River corridor are primarily juniper, sagebrush, and grasses. See appendix D of the EIS for the botany and wildlife additional information.	The periodic vegetation management on the 1.2 miles of access routes would not affect the diversity of plant and animal communities.
4	Habitat for TES and species dependent on large undisturbed areas of land	Habitat for the Ashley National Forest management indicator species of Golden Eagle, Sage Grouse, Cutthroat Trout, and macro invertebrates occur within the area. Also Mule Deer habitat exists in the area. See appendix D of the EIS for the botany and wildlife additional information.	The periodic vegetation management of the 1.2 miles of access routes would not affect the habitat for sensitive species and species dependent on large undisturbed areas of land.
5	Primitive and semi-primitive classes of recreation	The ROS classifications within the Roadless Area are: Roaded Natural = 12%, Rural = 6%, Semi-Primitive Motorized = 13%, and Semi-Primitive Non-Motorized = 69%. The recreational activities in the area primarily are hiking, rafting, fishing, mountain biking, and also some hunting in the fall. The Arch Dam Group developed campground is also within the roadless area. The Little Hole National Recreation Trail follows the Green River through the center of the Roadless Area from west to east.	The majority of the recreational activities within the roadless area occur within the Green River Corridor well away from the proposed periodic vegetation treatment of the access routes. The proposed periodic vegetation treatment on the access routes would be short in duration and would have minimal effects on recreationists within the roadless area.
6	Reference landscapes for research study or interpretation	The landscape within the area is a plateau dissected by the Green River corridor below the Flaming Gorge Dam. The canyon that makes up the Green River corridor is narrow and steep sided, with areas of exposed red rock canyon walls. The plateau lands on the north and south of the Green River canyon are primarily flat with small undulations and small gentle sloping drainages.	The periodic vegetation treatment of the access routes would not affect the reference landscape of the Green River corridor as the access routes are located on the southern boundary of the roadless area well away from the Green River.

		The Green River corridor is a unique reference landscape for interpretation within the Ashley National Forest.	
7	Landscape character and integrity	The current Visual Quality Objectives within the Roadless Area are: No assigned Visual Quality Objective = 1% and Retention = 99%. The current scenic integrity of the roadless area is high. The Green River corridor which bisects the roadless area has distinctive scenic attractiveness due to the steep canyon slopes descending into the Green River and include exposed red rock outcroppings and a mixture of vegetation types covering these slopes that provides a variety of scenic views. The plateaus within the roadless area on the north and south of the Green River corridor within the roadless area has a typical scenic attractiveness. The landscape is relatively flat with small undulations and gentle sloping drainages covered with pinyon juniper and sagebrush. In some areas within the roadless area the pinyon juniper has been burned by a wildfire and the primary vegetation is grasses with the standing skeletons of burned juniper.	The periodic vegetation management of the access routes would not affect the landscape character and integrity. Vegetation clearing would be minimal and would blend into the existing landscape.
8	Traditional cultural properties and sacred sites	There are numerous identified pre-historic sites within and adjacent to the Green River corridor, few sites have been identified on the plateaus in the north and south sides of the roadless area.	Any traditional cultural properties identified would be avoided and there would be no affect by the periodic vegetation management on the access routes.
9	Other locally unique characteristics	There are no other locally unique characteristics	No other locally unique characteristics would be affected by the project.

Roadless Area 0401002

Summary of existing condition: The project is partially within the 0401002 Inventoried Roadless Area (IRA). The project includes the periodic vegetation treatments on the approximately 1.2 miles access routes to the Western Area Power Administration transmission lines on the northern boundary of the Roadless Area. The 0401002 IRA has a total of 28,371 acres. It is located between U.S. Highway 191 on the west, the Ashley National Forest boundary and IRA 0401003 on the east, IRA 0401032 on the north, and IRA 0401006 on the south. The 0401002 IRA is heavily used for motorized dispersed camping and off highway vehicle on the Forest Service system roads cherry stemmed into the IRA and the motorized trails within the IRA. Grazing occurs throughout the IRA and there are a number of range developments (fences, developed springs, pipelines, and troughs) in the south part of the IRA.

Inventoried Roadless Areas: Analysis of Effects to Roadless Characteristics

Project Name: Western Area Power Reauthorization Project Date: 6/26/2020

Roadless Area Identifier(s): 0401002			
	Roadless Characteristics	Existing Condition	Describe the probable effects of project activities/ alternatives.
		Use descriptive terms that describe the condition of the resource (characteristic). (Nothing needed in this cell)	Use descriptive terms that discuss the effect, not the activity. Explain if/ how the proposal would alter the resource (characteristic) condition, within the context of the landscape. (Nothing needed in this cell)
1	Soil, water and Air resources	The Roadless area includes part of the Cart Creek watershed which is a focus watershed for the Ashley National Forest	The periodic vegetation management on approximately 1.2 miles of access routes would have no effect on the Cart Creek Focus Watershed, there will be no ground disturbing activities and the periodic vegetation management of the access routes will be minimal in scale to the total vegetation within the roadless area.
2	Sources of public drinking water	There are no sources of public drinking water that would be affected by the project within the Roadless area.	The periodic vegetation management on approximately 1.2 miles of access routes would have no effect on sources of public drinking water.
3	Diversity of plant and animal communities	The roadless area contains habitat for Brewer's Sparrow, Broad-tailed Hummingbird, Cassin's Finch, Flammulated Owl, Lewis's Woodpecker, Three Toed Woodpecker, Lynx, Moose, Snowshoe Hare, Bandtailed Pigeons, Mule Deer, Wild Turkey, Black Bear, Rocky Mountain Bighorn Sheep, Blue Grouse, Greater Sage Grouse, Elk, and Ruffed Grouse as well as other animal species. The vegetation within the Roadless area is diverse. Mixed conifer stands make up approximately half of the plant communities in the Roadless area, the other half includes Adler-leaf Mountain Mahogany, Douglas fir, Fringed Sagebrush, Lodgepole Pine, meadow grasses and forbs, Mountain Big Sagebrush, riparian non willow shrub, persistent Aspen, Ponderosa Pine, and seral Aspen. See appendix D of the EIS for the botany and wildlife additional information.	The periodic vegetation management on approximately 1.2 miles of access routes would have a minimal effect on the diversity of plant and animal communities. The vegetation management operations will be short term in nature and will affect a very small part of the roadless area.
4	Habitat for TES and species dependent on large undisturbed areas of land	Habitat for Ashley National Forest management indicator species of Red-naped Sapsucker, Warbling Vireo, Northern Goshawk, Lincoln's Sparrow, and Song Sparrow may occur within the area. Also Mule Deer and Elk habitat exists in the area.	The periodic vegetation management on approximately 1.2 miles of access routes would have minimal effect of the present habitat for Ashley National Forest management indicator species and species dependent on large undisturbed areas of land.

		See appendix D of the EIS for the botany and wildlife additional information.	
5	Primitive and semi-primitive classes of recreation	The ROS classifications within the Roadless Area are: Roaded Natural = 20%, Rural = 0.3%, Semi-Primitive Motorized = 39%, and Semi-Primitive Non-Motorized = 40%. Many recreational activities occur within the Roadless Area. These include OHV riding, motorized dispersed camping, hunting, fishing, hiking, a recreational rental (Limber Flag Yurt), hiking, cross-country skiing, backcountry downhill skiing, snowmobiling, and snowshoeing. The opportunities for primitive recreation is limited in much of the Roadless area because of motorized roads cherry stemmed into the area, motorized trails, and the proximity to US Highway 191.	The periodic vegetation management on approximately 1.2 miles of access routes would have minimal effect on the primitive and semi-primitive classes of recreation. The access routes are located on the northern boundary of the Roadless area. A small part of the access routes are located along the non-motorized Lowline Trail, #1103. This trail has low use and the periodic vegetation management would be sporadic in nature and use of the trail during the vegetation management activities would be unlikely.
6	Reference landscapes for research study or interpretation	Along the western boundary of the Roadless Area the terrain is comprised of flat to gently rolling plateaus cut by a few, widely spaced, shallow drainage ways, and the open meadow areas of Bowdens and Green Draws. Along the eastern boundary the terrain is gently rolling lands. The center of the area is moderately steep to steep sided hills and ridgelines generally running north to south between Mount Lena and Limber Flag summit. There are no reference landscapes for research study or interpretation.	The periodic vegetation management on approximately 1.2 miles of access routes would have no effect on reference landscapes for research study or interpretation.
7	Landscape character and integrity	The current Visual Quality Objectives within the Roadless Area are: No assigned Visual Quality Objective = 0.1%, Modification = 26%, Partial Retention = 28% and Retention = 46%. The current scenic integrity of the roadless area is high although there has been a number of changes in appearance and natural integrity including dispersed camping sites, motorized trails, and range developments. The landscape character consists of large open meadows, thick forests, and steep slopes with talus fields. In the southern part of the Roadless area there are open moderately steep hill slopes of sagebrush and grasses and gently rolling low hills covered in sagebrush and grasses.	The periodic vegetation management on approximately 1.2 miles of access routes would have no effect on reference landscapes for research study or interpretation. The vegetation management activities would occur in a very small part of the Roadless area and would blend into the existing vegetation.

8	Traditional cultural properties and sacred sites	Less than half of the area has been surveyed for cultural properties and few prehistoric or historic sites have been found. The Stringham cabin eligible historic site is in the western central part of the Roadless area.	Any traditional cultural properties identified would be avoided and there would be no affect by the periodic vegetation management on the access routes. The Stringham cabin site is located well away from the access routes.
9	Other locally unique characteristics	The western part of the Roadless area is very popular for motorized dispersed camping and motorized recreation due to its open terrain for dispersed camping, roads access, and proximity to the Uintah Basin population center and U.S. Highway 191.	The periodic vegetation management on approximately 1.2 miles of access routes would have no minimal effect on the dispersed camping and motorized recreation as the access routes are located well away from the dispersed camping locations.

Roadless Area 0401003

Summary of existing condition: The project is partially located with the 0401003 Inventoried Roadless Area (IRA). The project includes the periodic vegetation treatments on the approximately 0.32 miles access routes to the Western Area Power Administration transmission lines in the northwestern corner of the Roadless Area. The 0401003 IRA has a total of 4,913 acres. It is located on the eastern side of the Vernal Ranger District of the Ashley National Forest. The western boundary is adjacent to private lands and 0401032 IRA, the northern boundary is adjacent to Bureau of Land Management lands, the eastern boundary is adjacent to private, state trust lands, and Bureau of Land Management lands, the southern boundary is adjacent to private lands and Bureau of Land Management lands. The 0401003 IRA lightly used for recreation because of the lack of access resulting from the private lands in Davenport and Lambson Draws. Grazing occurs throughout the IRA, but there are no range developments within the IRA.

<i>Inventoried Roadless Areas: Analysis of Effects to Roadless Characteristics</i>			
Project Name: Western Area Power Reauthorization Project			Date: 6/27/2020
Roadless Area Identifier(s): 0401003			
	Roadless Characteristics	Existing Condition	Describe the probable effects of project activities/ alternatives.
		Use descriptive terms that describe the condition of the resource (characteristic). (Nothing needed in this cell)	Use descriptive terms that discuss the effect, not the activity. Explain if/ how the proposal would alter the resource (characteristic) condition, within the context of the landscape. (Nothing needed in this cell)
1	Soil, water and Air resources	There are no unique or critical watershed resources in the roadless area.	The periodic vegetation management on approximately 0.32 miles of access routes would have no effect on unique or critical watershed resources in the Roadless area.
2	Sources of public drinking water	There are no public drinking water systems or sources within the project area or that would be affected by the project.	The periodic vegetation management on approximately 0.32 miles of access routes would have no effect on sources of public drinking water.
3	Diversity of plant and animal communities	The Roadless Area includes habitat for Lynx, Blue Grouse, Mule Deer, Bandtailed pigeons, Greater Sage Grouse, Elk, Black Bear, Moose	The periodic vegetation management on approximately 0.32 miles of access routes would not affect the diversity of plant and animal communities.

		Ruffed Grouse, Snowshoe Hare, and other animals. The majority of the area is mixed conifer and seral aspen, with small pockets of Douglas fir and Ponderosa Pine. There are a few small meadows with meadow grasses and forbs in Lambson Draw and Davenport Draw. There are no unique plant or animal communities within the Roadless Area. See appendix D of the EIS for the botany and wildlife additional information.	
4	Habitat for TES and species dependent on large undisturbed areas of land	Habitat for Ashley National Forest management indicator species of Red-naped Sapsucker, Warbling Vireo, and Northern Goshawk may occur within the Roadless area. Also Mule Deer and Elk habitat is within the Roadless Area. See appendix D of the EIS for the botany and wildlife additional information.	The periodic vegetation management on approximately 0.32 miles of access routes would not affect the habitat for sensitive species and species dependent on large undisturbed areas of land.
5	Primitive and semi-primitive classes of recreation	The ROS classes in the Roadless Area are Semi-Primitive Motorized = 31% and Semi-Primitive Non-Motorized = 69% There is little recreation within the roadless area because of the lack of access due to the private lands surrounding the roadless area. There are no Forest Service system trails within the roadless area and only two short road segments totaling approximately 1.16 miles. Some of the private landowners that are adjacent to the roadless area use the area for hunting.	The periodic vegetation management on approximately 0.32 miles of access routes would not affect the primitive and semi-primitive classes of recreation. There is little recreational activity in the area and the proposed periodic vegetation treatments on the access routes would be short in duration.
6	Reference landscapes for research study or interpretation	The landscape generally consists of gently to moderately rolling terrain covered with thick stands of mixed conifer forest, mainly of the same age. There are talus fields interspersed with mixed conifer forests along the hill slopes. The portions of the bottom lands in Lambson Draw and Davenport Draw that are within the forest	The periodic vegetation management on approximately 0.32 miles of access routes would not affect reference landscapes for research study or interpretation.

		boundary include some open meadows and some of the south facing hill slopes are open grass and sagebrush. There are no unique reference landscape within the Roadless Area.	
7	Landscape character and integrity	The current Visual Quality Objectives within the Roadless Area are: No assigned Visual Quality Objective = 1%, Modification = 84%, Partial Retention = 0.5% and Retention = 15%. The current scenic integrity of the roadless area is high. The visual quality of the area is high, there have been few human activities that have changed the form, line, color, and texture of the landscape. The characteristic landscape of the roadless area includes gently to moderately steep hills between Davenport Draw, Lambson Draw, and Jackson Draw. Interspersed talus fields and mixed conifer and aspen stands on the hill slopes and hill tops, with some open meadows in the bottom lands and south facing slopes.	The periodic vegetation management on approximately 0.32 miles of access routes would not affect the landscape character and integrity of the Roadless area. The access routes are located in the far northwestern corner of the Roadless area and vegetation clearing would be minimal and would blend into the existing landscape.
8	Traditional cultural properties and sacred sites	The majority of the area has not been surveyed for cultural properties and sacred sites the limited number of surveys have not found any prehistoric or historic sites.	Any traditional cultural properties identified would be avoided and there would be no affect by the periodic vegetation management on the access routes.
9	Other locally unique characteristics	There are no locally unique characteristics.	There are no locally unique characteristics within the Roadless area.

Roadless Area 0401006

Summary of existing condition: The project is partially located with the 0401006 Inventoried Roadless Area (IRA). The project includes the periodic vegetation treatments on the approximately 2.7 miles of access routes to the Western Area Power Administration transmission lines in the far western side of the Roadless Area. The 0401006 IRA has a total of 7,645 acres. It is located on the eastern side of the Vernal Ranger District of the Ashley National Forest. The western boundary is adjacent to non IRA Ashley National Forest lands, the northern boundary is adjacent to the 0401002 IRA, the eastern boundary is adjacent to private and non IRA Ashley National Forest lands, and the southern boundary is adjacent to private lands. The 0401002 IRA is heavily used for motorized dispersed camping and off highway vehicle use because of the gentle terrain, multiple roads and motorized trails in the roadless area, the proximity to the Uintah Basin population center, easy access from U.S. Highway 191, and the number of dispersed camping sites. Grazing occurs throughout the IRA, and there are multiple range developments (fences, developed springs, pipelines, and troughs) within the area.

<i>Inventoried Roadless Areas: Analysis of Effects to Roadless Characteristics</i>			
Project Name: Western Area Power Reauthorization Project			Date: 6/27/2020
Roadless Area Identifier(s): 0401006			
	Roadless Characteristics	Existing Condition	Describe the probable effects of project activities/ alternatives.
		Use descriptive terms that describe the condition of the resource (characteristic). (Nothing needed in this cell)	Use descriptive terms that discuss the effect, not the activity. Explain if/ how the proposal would alter the resource (characteristic) condition, within the context of the landscape. (Nothing needed in this cell)
1	Soil, water and Air resources	There are no unique or critical watershed resources with the Roadless Area.	The periodic vegetation management on approximately 2.7 miles of access routes would have no effect on unique or critical watershed resources within the Roadless Area.
2	Sources of public drinking water	There are no public drinking water systems or sources within the project area that would be affected by the project.	The periodic vegetation management on approximately 2.7 miles of access routes would have no effect on sources of public drinking water within the Roadless Area.
3	Diversity of plant and animal communities	The Roadless Area contains habitat for communities in the Roadless Area includes Mule Deer, Elk, Greater Sage Grouse, and multiple other species. The vegetation within the Roadless Area is a majority of Mountain Big Sagebrush, with interspersed riparian vegetation in the drainages and persistent Aspen between the drainages. Serviceberry is the main plant community in the far southeastern part of the Roadless Area. There are pockets of Douglas Fir on the higher terrains between the drainages. See appendix D of the EIS for the botany and wildlife additional information.	The periodic vegetation management on approximately 2.7 miles of access routes on the western part of the Roadless Area would have a minimal effect on the diversity of plant and animal communities. The vegetation management operations will be short term in nature and will affect a very small part of the roadless area.
4	Habitat for TES and species dependent on large undisturbed areas of land	The Roadless Area contains habitat for Ashley National Forest management indicator species of Red-naped Sapsucker, Warbling Vireo, Lincoln's Sparrow, Song Sparrow, and Greater Sage Grouse may occur within the area. Also Mule Deer and Elk habitat exists in the area.	The periodic vegetation management on approximately 2.7 miles of access routes in the western part of the Roadless Area would have minimal effect of the present habitat for Ashley National Forest management indicator species and species dependent on large undisturbed areas of land.

		See appendix D of the EIS for the botany and wildlife additional information.	
5	Primitive and semi-primitive classes of recreation	The ROS classifications within the Roadless Area is: Roaded Natural = 100%. Many recreational activities occur within the Roadless Area. These include OHV riding, motorized dispersed camping, hunting, hiking, cross-country skiing, and snowmobiling. The opportunities for primitive recreation is limited in much of the Roadless Area because of multiple motorized roads cherry stemmed into the area and within the Roadless area, motorized trails, and the proximity to US Highway 191.	The periodic vegetation management on approximately 2.7 miles of access routes would have minimal effect on the primitive and semi-primitive classes of recreation. The access routes are located on the western boundary of the Roadless area and the Roadless Area is interspersed with motorized routes.
6	Reference landscapes for research study or interpretation	The landscape within the Roadless Area consists of gently to moderately rolling terrain interspersed with gently sloping drainages in the northern and central parts of the Roadless Area. The terrain consists of moderately to steeply sloping drainages in the south end of the Roadless Area, which include The Burnt Cabin Gorge and The Gorge drainages. There are no reference landscapes for research study or interpretation in the Roadless Area.	The periodic vegetation management on approximately 2.7 miles of access routes would have no effect to reference landscapes for research study or interpretation.
7	Landscape character and integrity	The current Visual Quality Objectives within the Roadless Area are: No assigned Visual Quality Objective = 0.03%, Modification = 15%, Partial Retention = 70% and Retention = 18%. The current scenic integrity of the roadless area is high although there has been a number of changes in appearance and natural integrity including dispersed camping sites, motorized trails, and range developments. The landscape character consists of gently rolling terrain interspersed with small drainages and two larger steep sided drainages all running to the southeast. The area is primarily open with riparian vegetation interspersed within the drainages and sagebrush and grasses outside of the	The periodic vegetation management on approximately 2.7 miles of access routes would have on landscape character and integrity as the vegetation management actions would be spread out on small locations and the vegetation removal is small in comparison to the vegetation in the area.

		drainages. There are a number of open non-vegetated hillsides associated with the drainages.	
8	Traditional cultural properties and sacred sites	Less than half of the Roadless Area has been surveyed for Prehistoric or Historic Sites. The surveys that have been conducted have found few Prehistoric or Historic Sites.	Any traditional cultural properties identified would be avoided and there would be no affect by the periodic vegetation management on the access routes.
9	Other locally unique characteristics	The area is a popular motorized dispersed camping area for Uintah Basin residents.	The periodic vegetation management on approximately 2.7 miles of access routes would not have an effect on the motorized dispersed camping in the Roadless Area.

Conclusion

The size of the Roadless Areas compared to the approximately five miles of access routes that would receive vegetation management and that the access routes are mostly short in length and spread across the Roadless Areas result in no to minimal effects to each Roadless Area's characteristics.