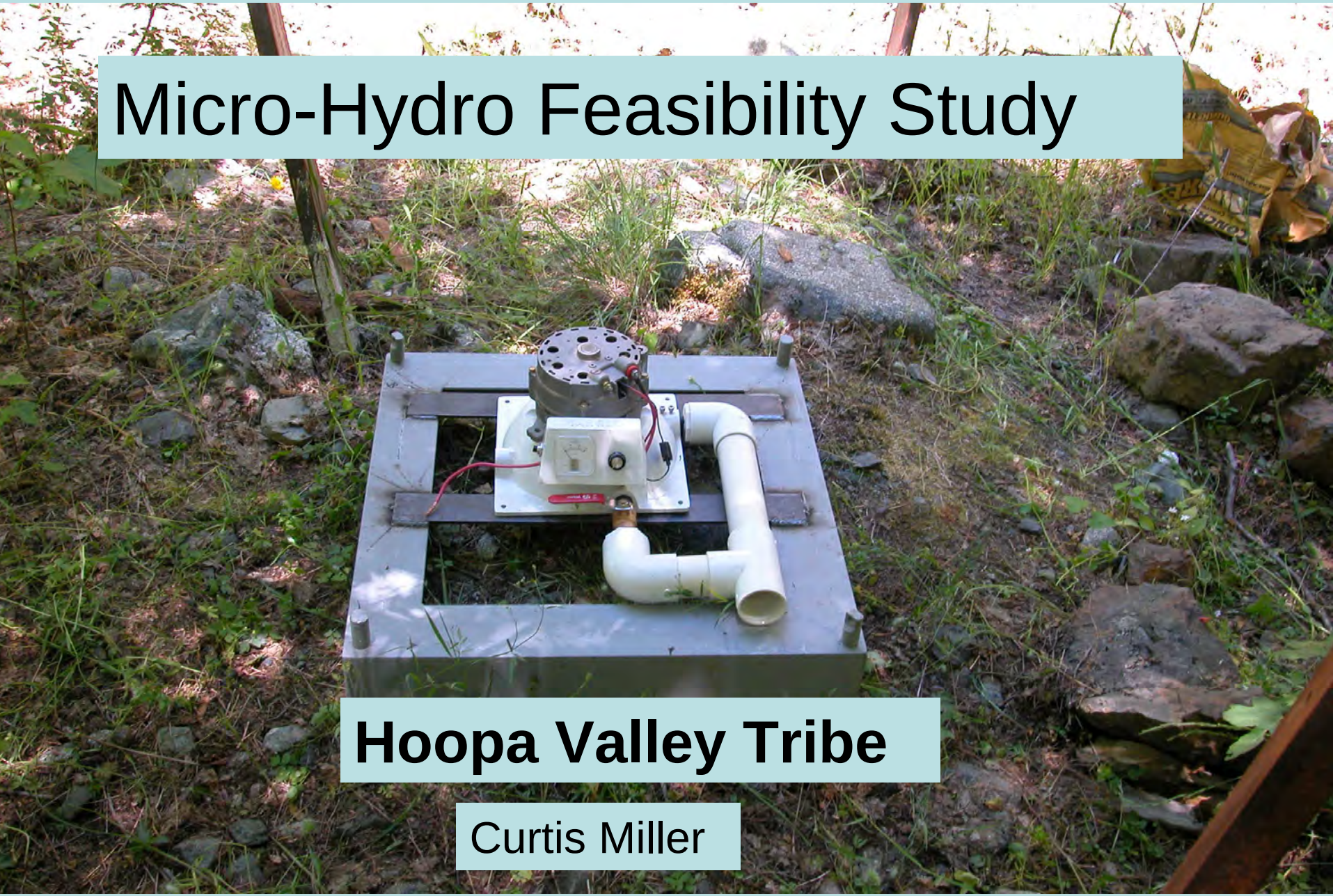
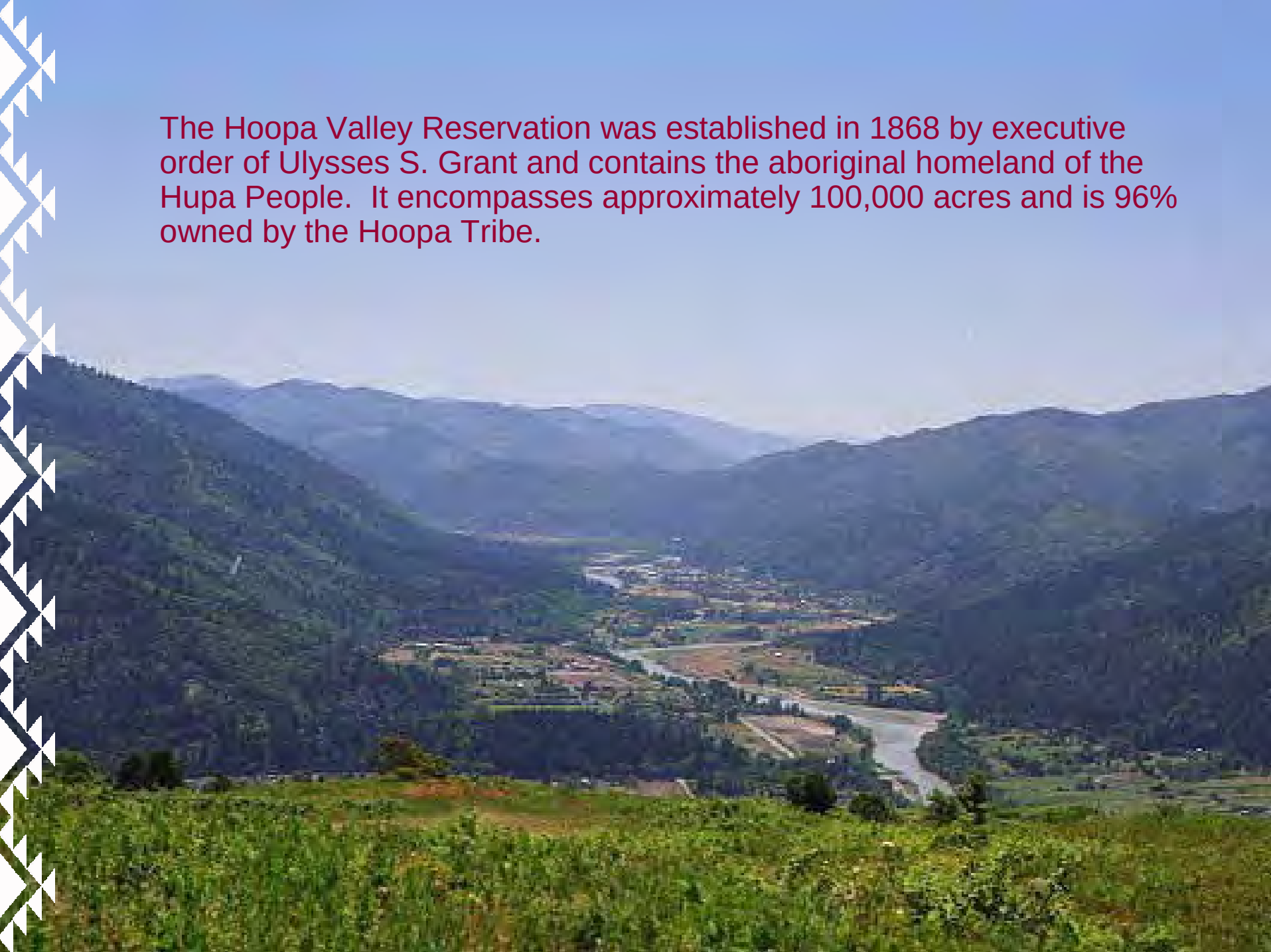
Micro-Hydro Feasibility Study



Hoopa Valley Tribe

Curtis Miller

The Hoopa Valley Reservation was established in 1868 by executive order of Ulysses S. Grant and contains the aboriginal homeland of the Hupa People. It encompasses approximately 100,000 acres and is 96% owned by the Hoopa Tribe.



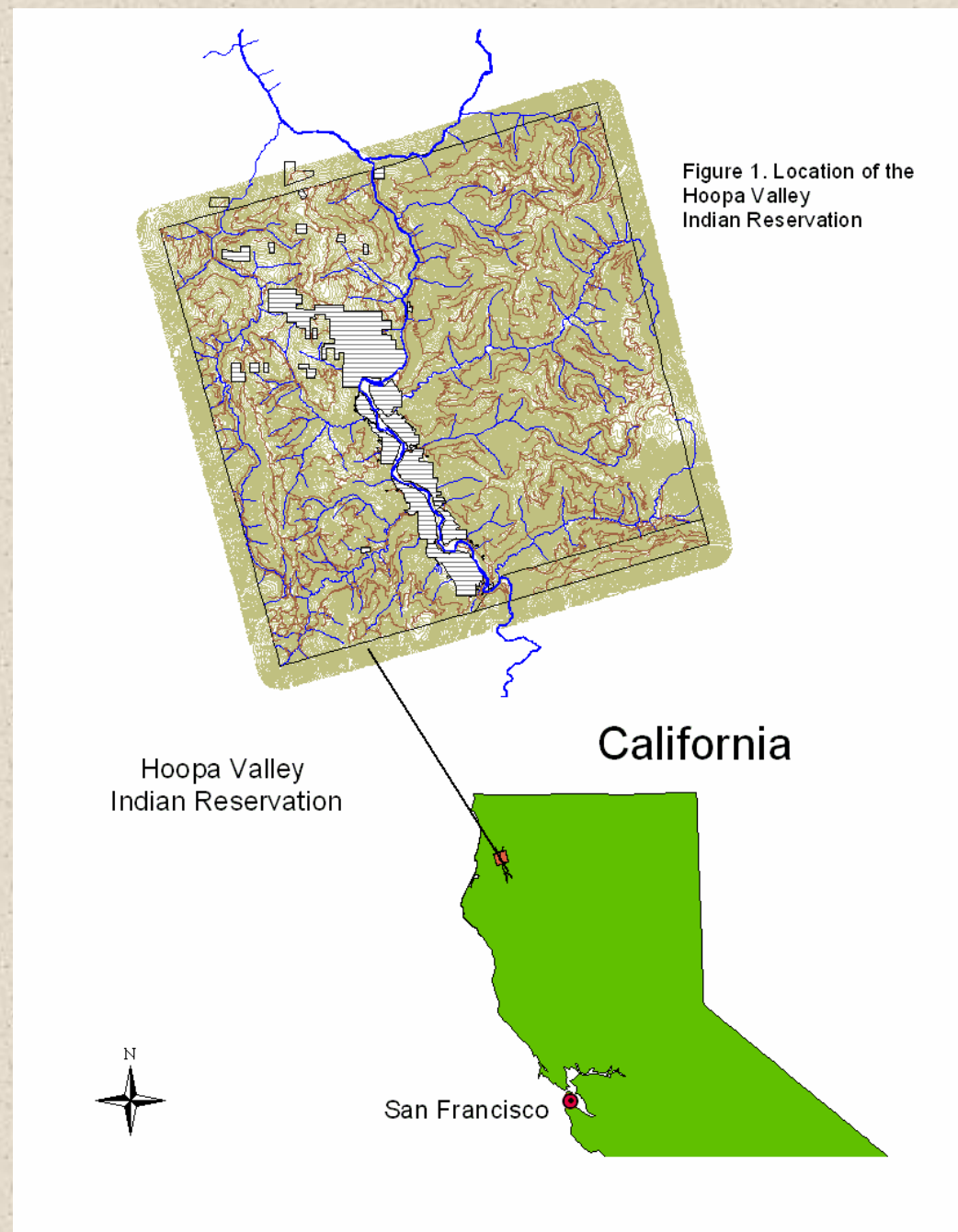
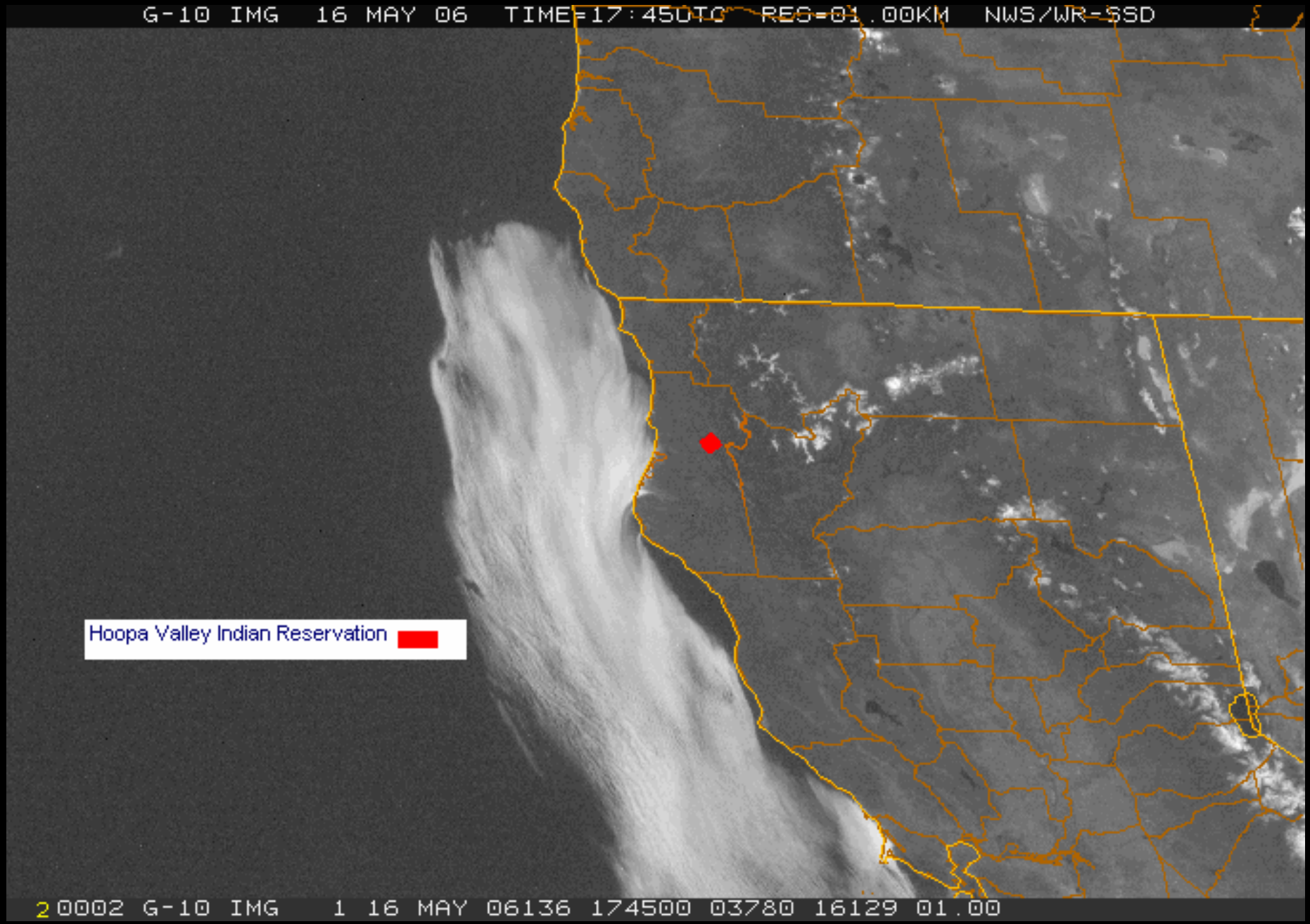
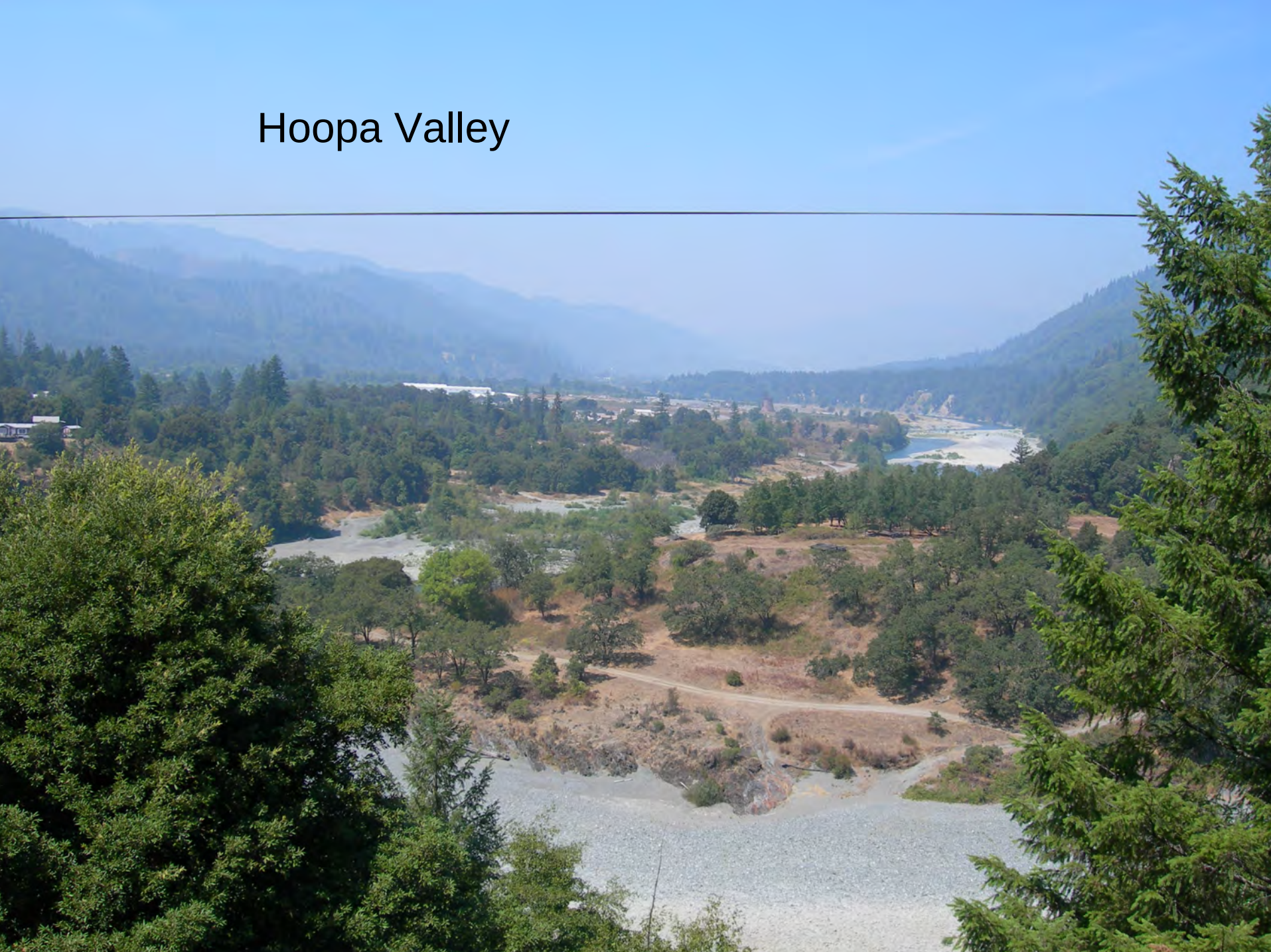
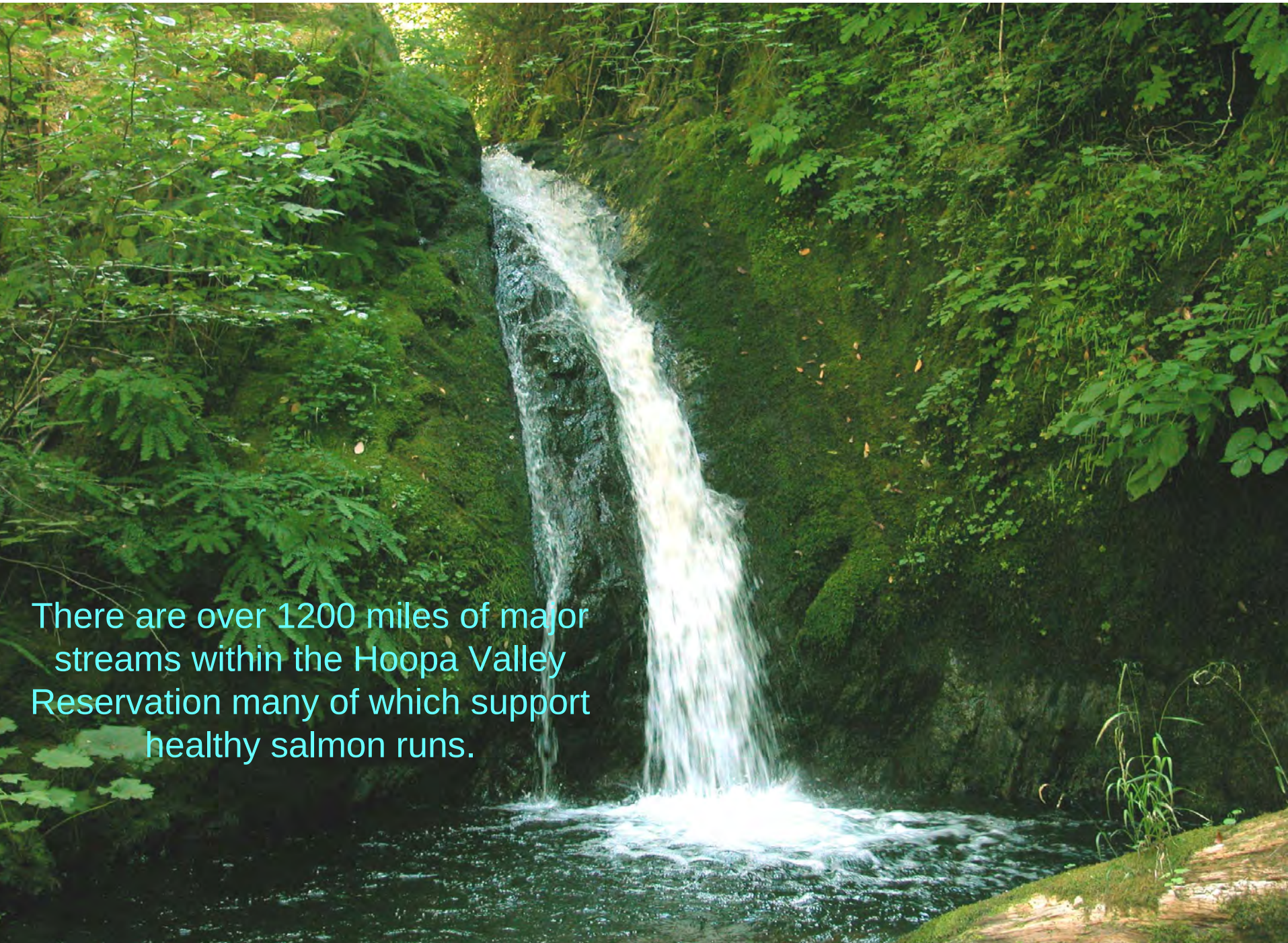


Figure 1. Location of the Hoopa Valley Indian Reservation


G-10 IMG 16 MAY 06 TIME=17:45UTC RES=01.00KM NWS/WR-SSD
Hoopa Valley Indian Reservation
20002 G-10 IMG 1 16 MAY 06136 174500 03780 16129 01.00

Hoopa Valley




There are over 1200 miles of major streams within the Hoopa Valley Reservation many of which support healthy salmon runs.

Chinook Salmon, Coho and Steelhead Trout comprise a large portion of the Hupa diet and the key to good health

Objectives of Project

- Assess the potential for developing micro-hydro electricity on 7 tributaries within the Reservation

- Assess the potential for economic benefits to the Tribe

Things to evaluate

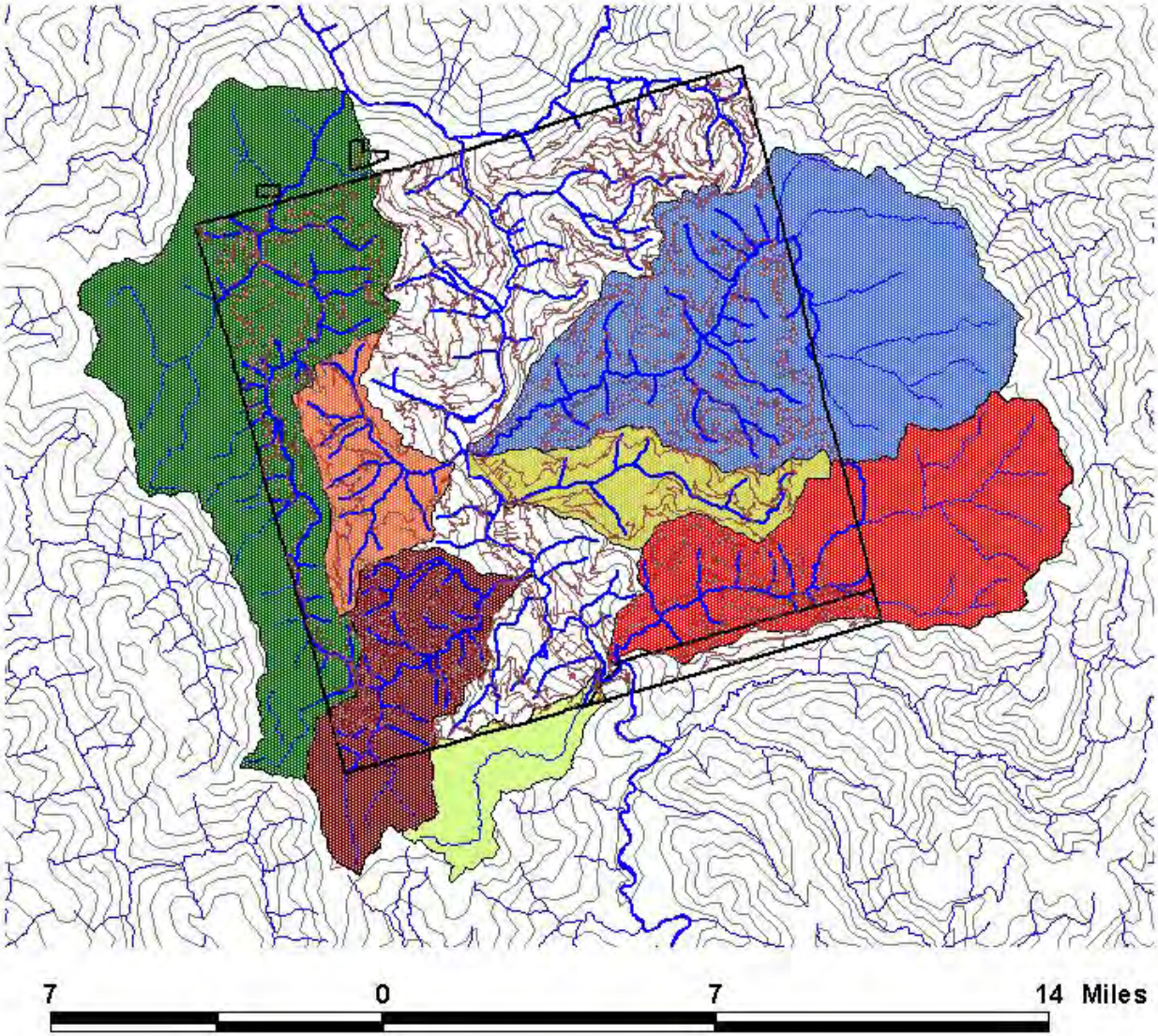
- Topography of stream course
  -determining head and distance
- Terrain – road construction, pipeline
- Stream flow and dynamics - power
- Access to creeks - maintenance
- Distance of electrical transmission
- Route of electric lines


Instability

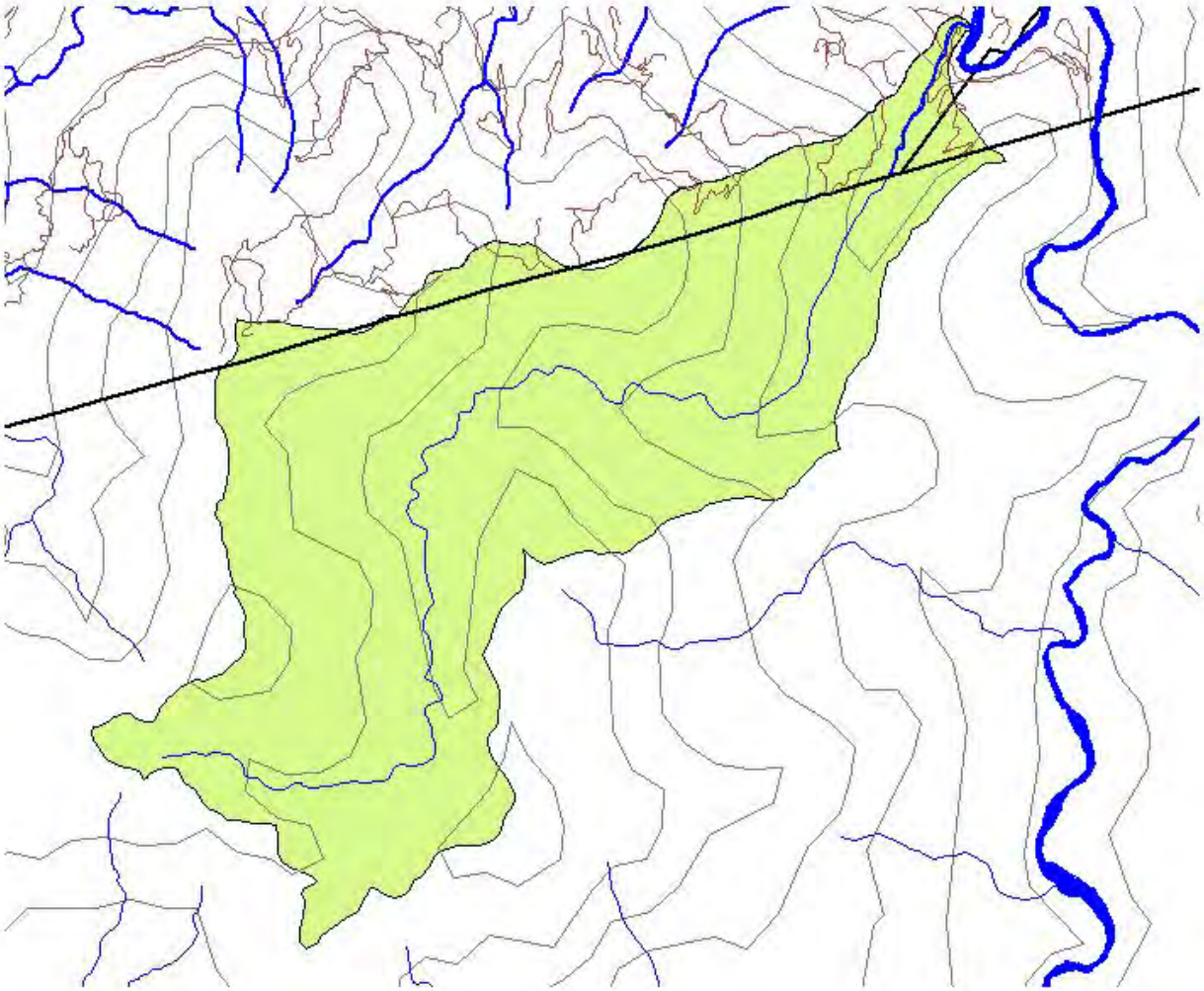
General Criteria

- Low in watershed
- Existing access
- Close to valley
- Stable terrain
- Sufficient stream flow

Hoopa Valley Hydrosheds



Campbell Creek Watershed

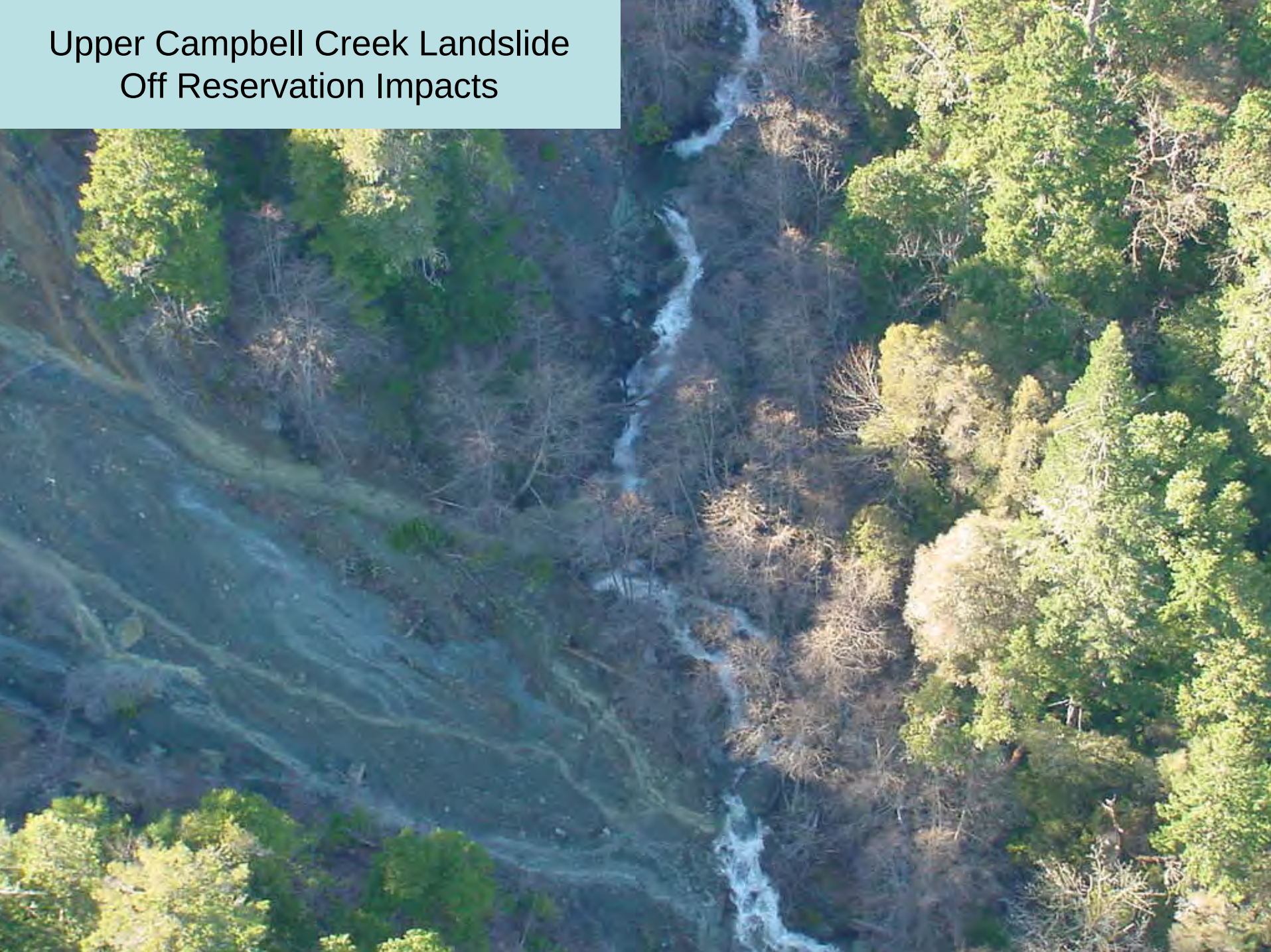


Roads
Trinity River
Reservation boundary
Major streams
Reservation Streams
Contour at 500ft
Campbell Creek Watershed.

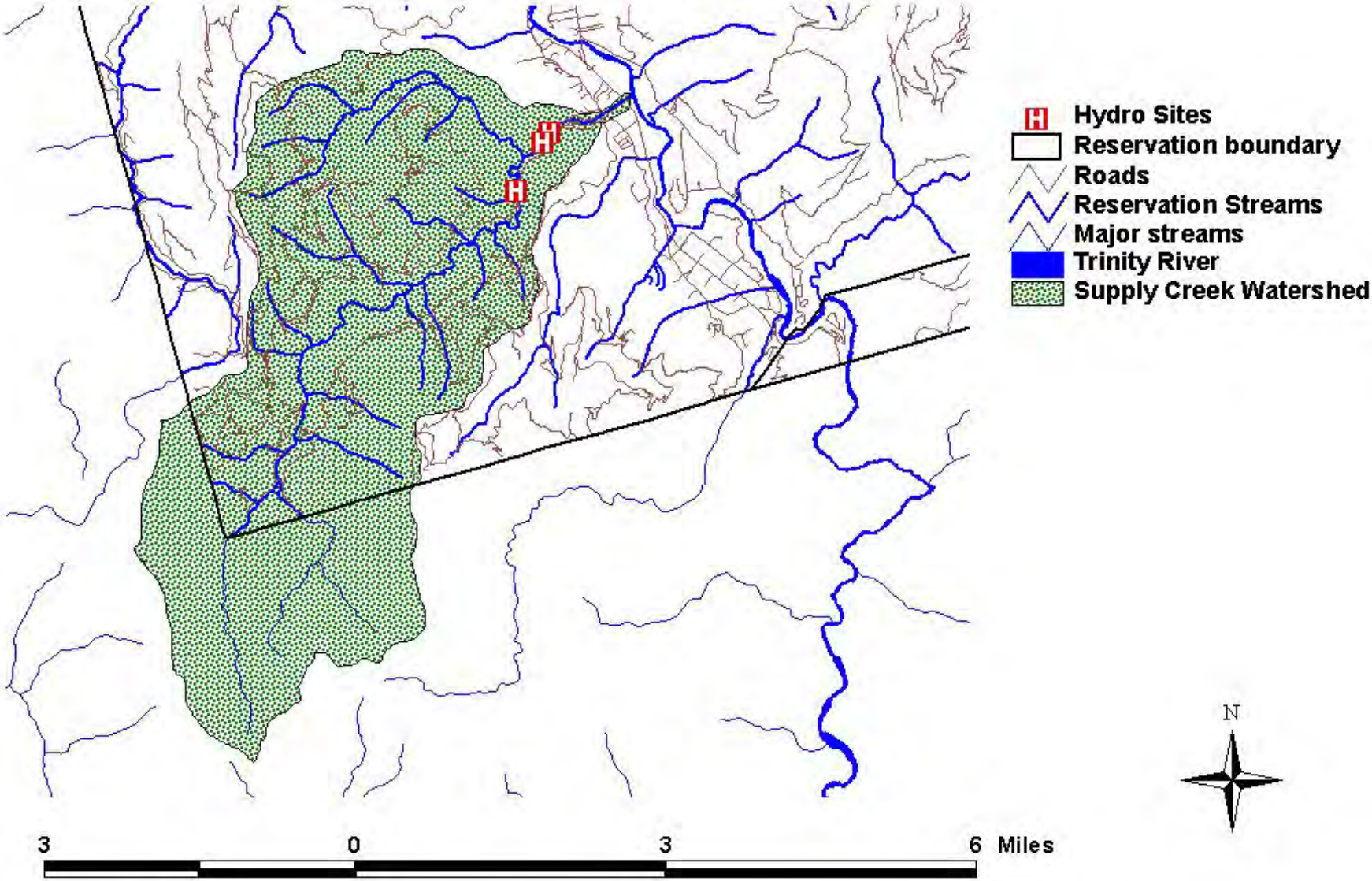
N

2 0 2 4 Miles

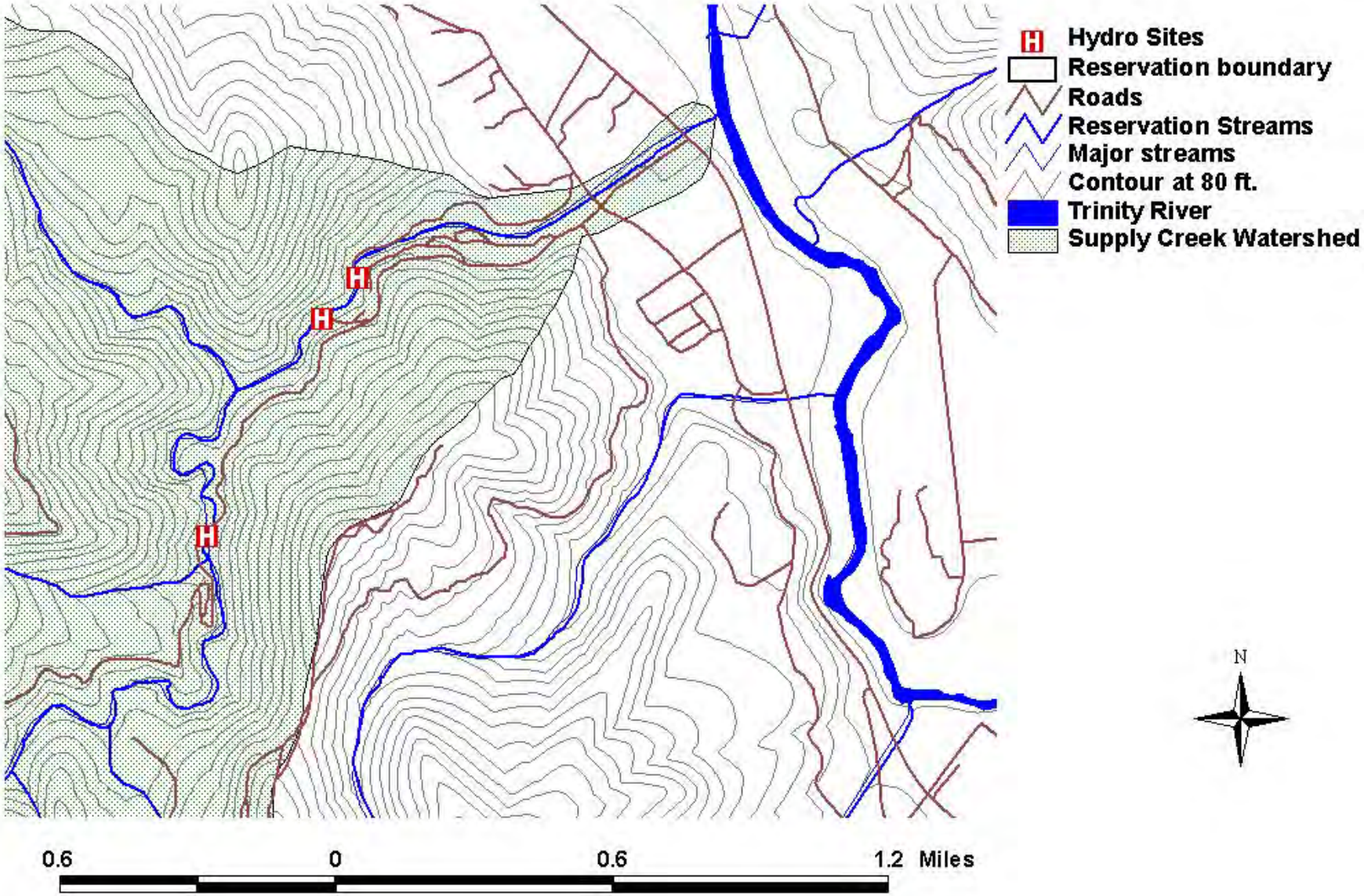
Upper Campbell Creek Landslide
Off Reservation Impacts



Supply Creek Watertshed

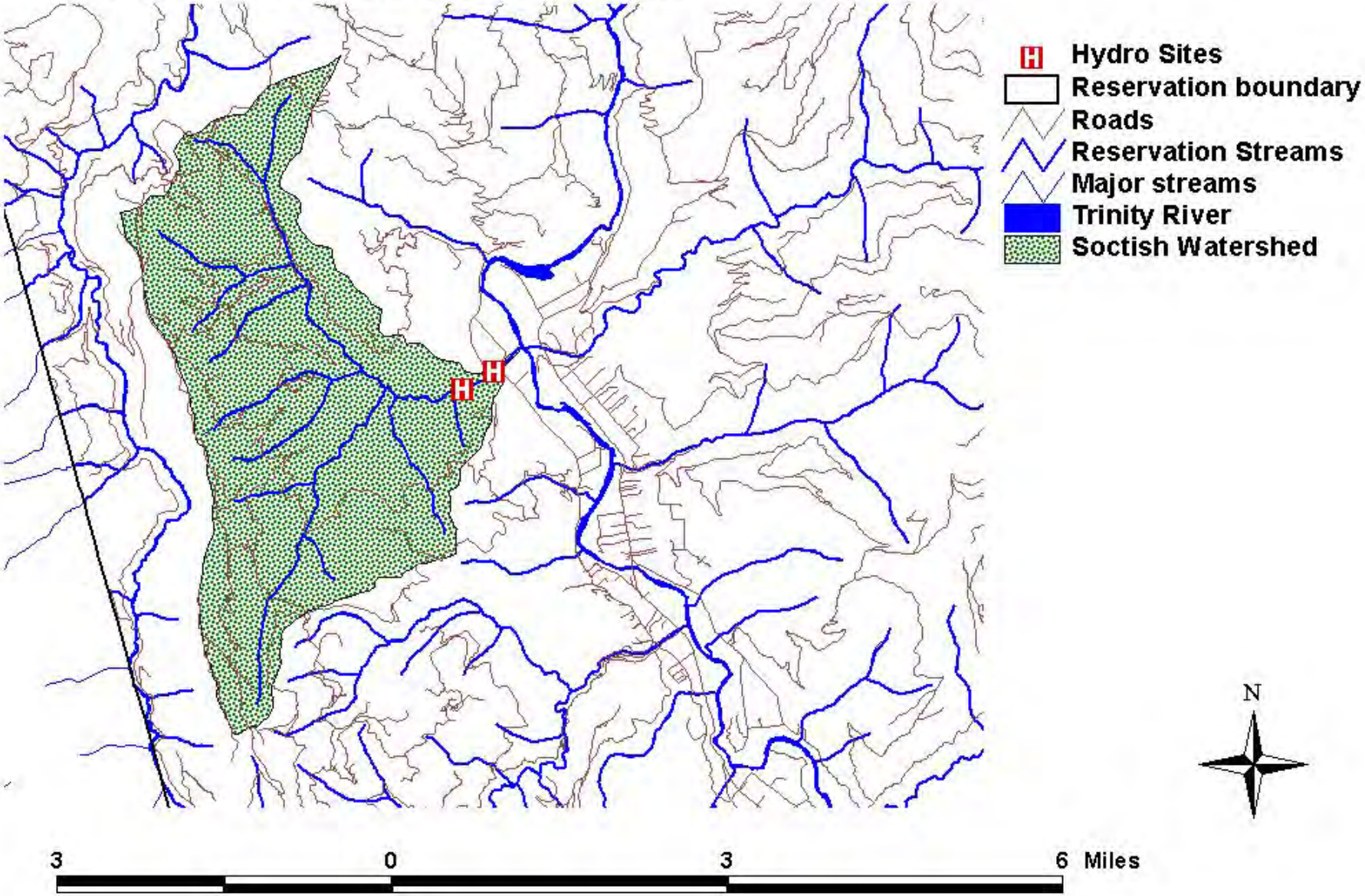


Lower Supply Hydro sites

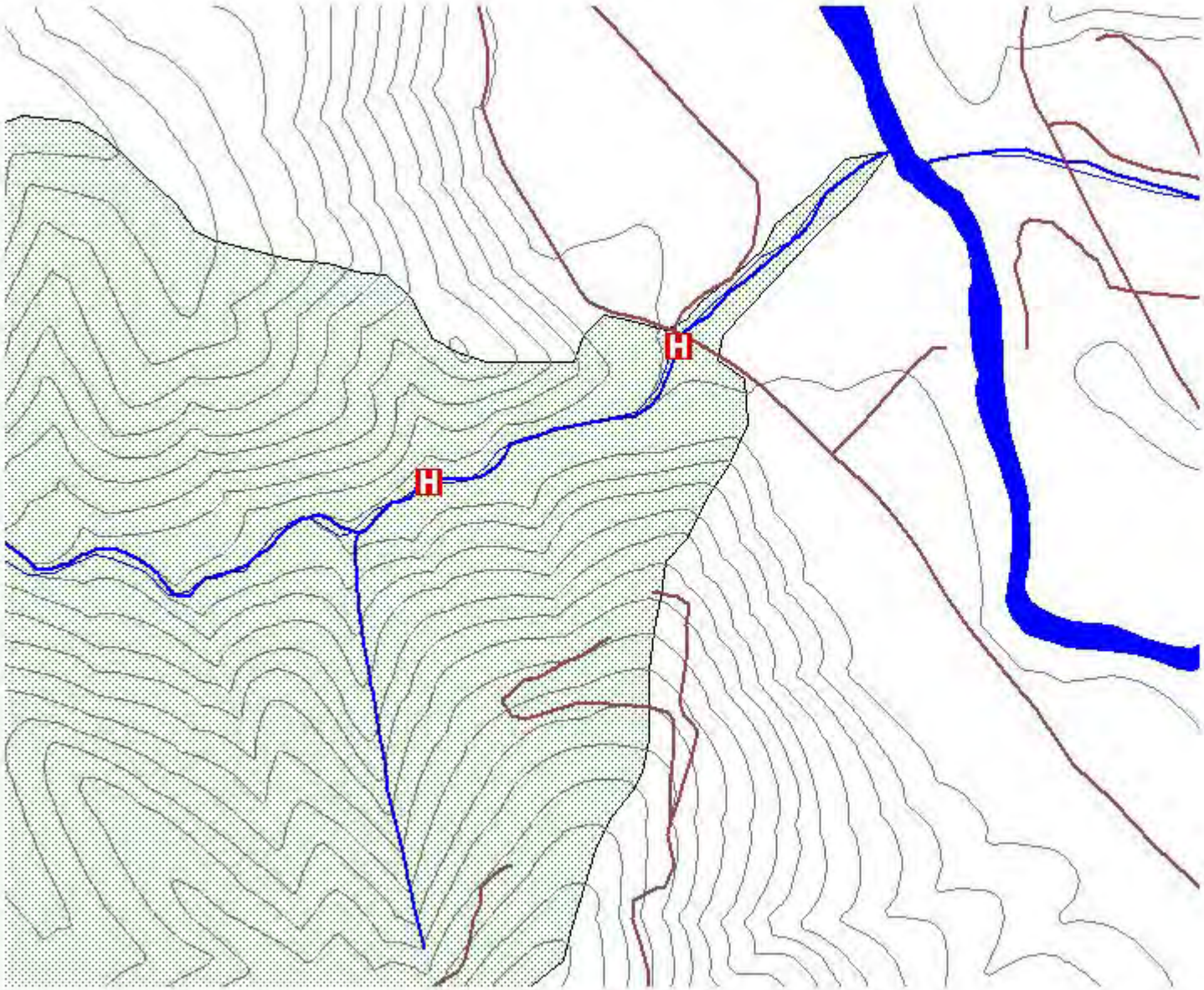



Gradient 160 feet per 1000

Soctish Watershed

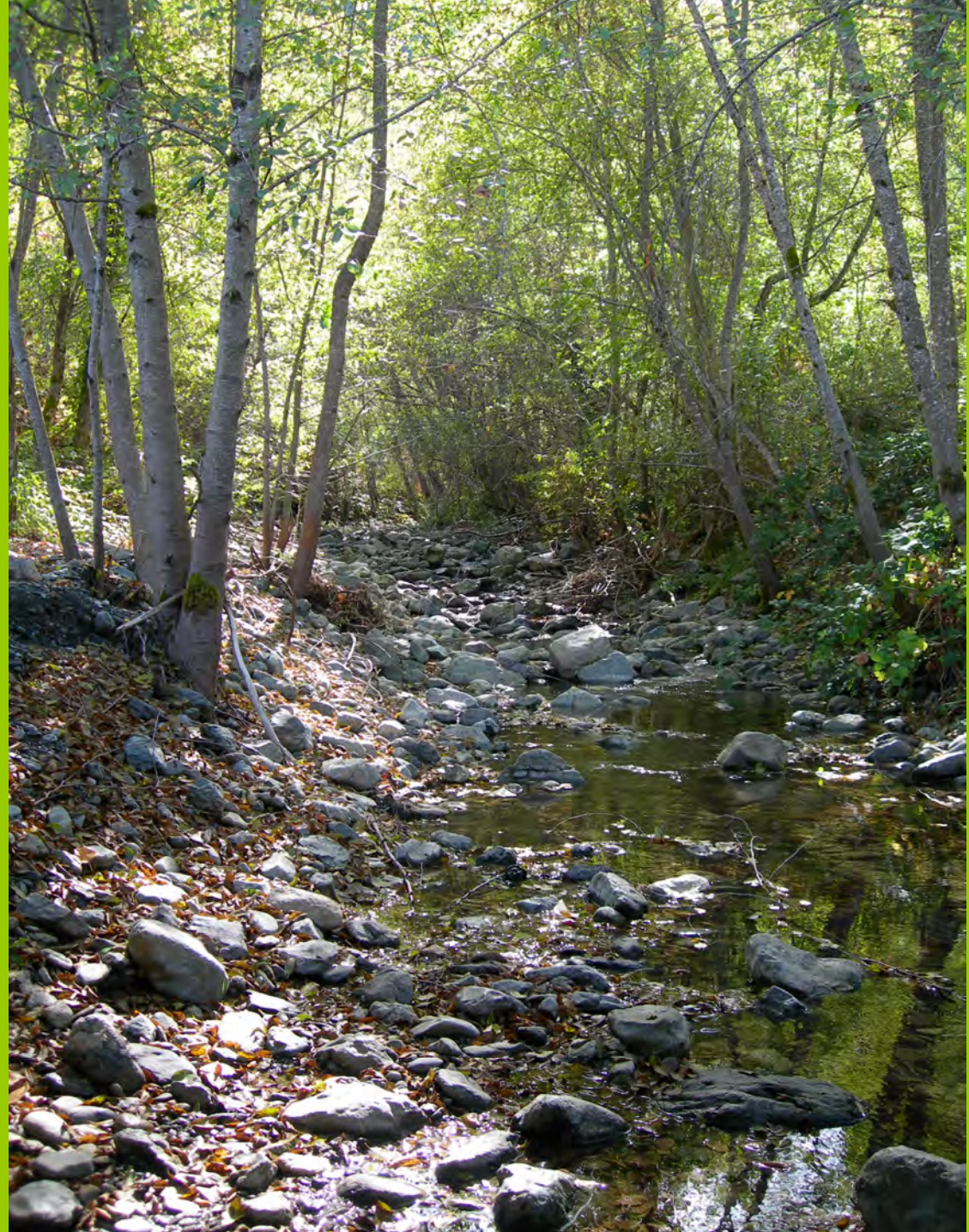


Lower Soctish Hydro Sites



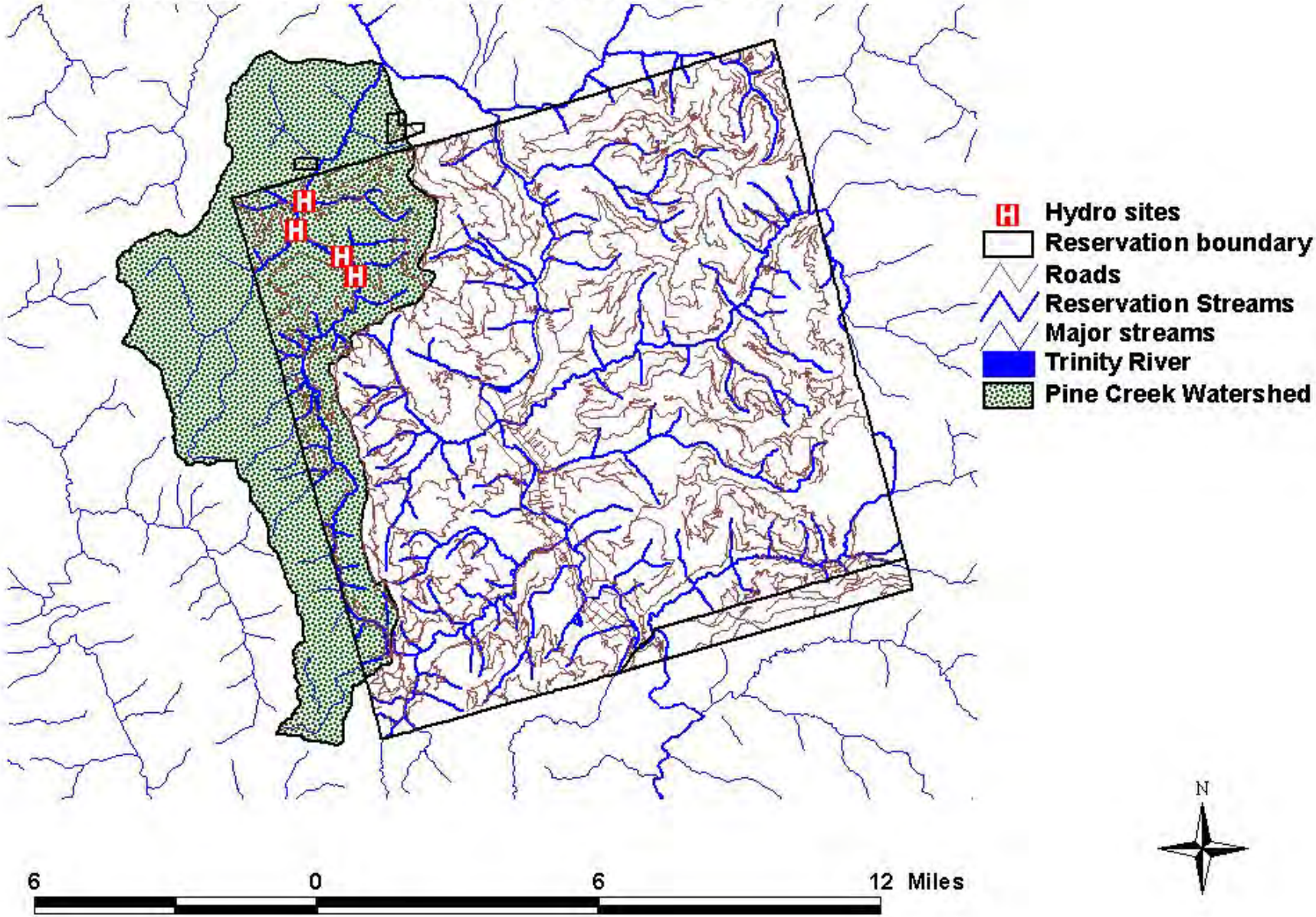
H Hydro Sites
Reservation bounda
Roads
Reservation Stream
Major streams
Trinity River
Contour at 80 ft.
Soctish Watershed

N

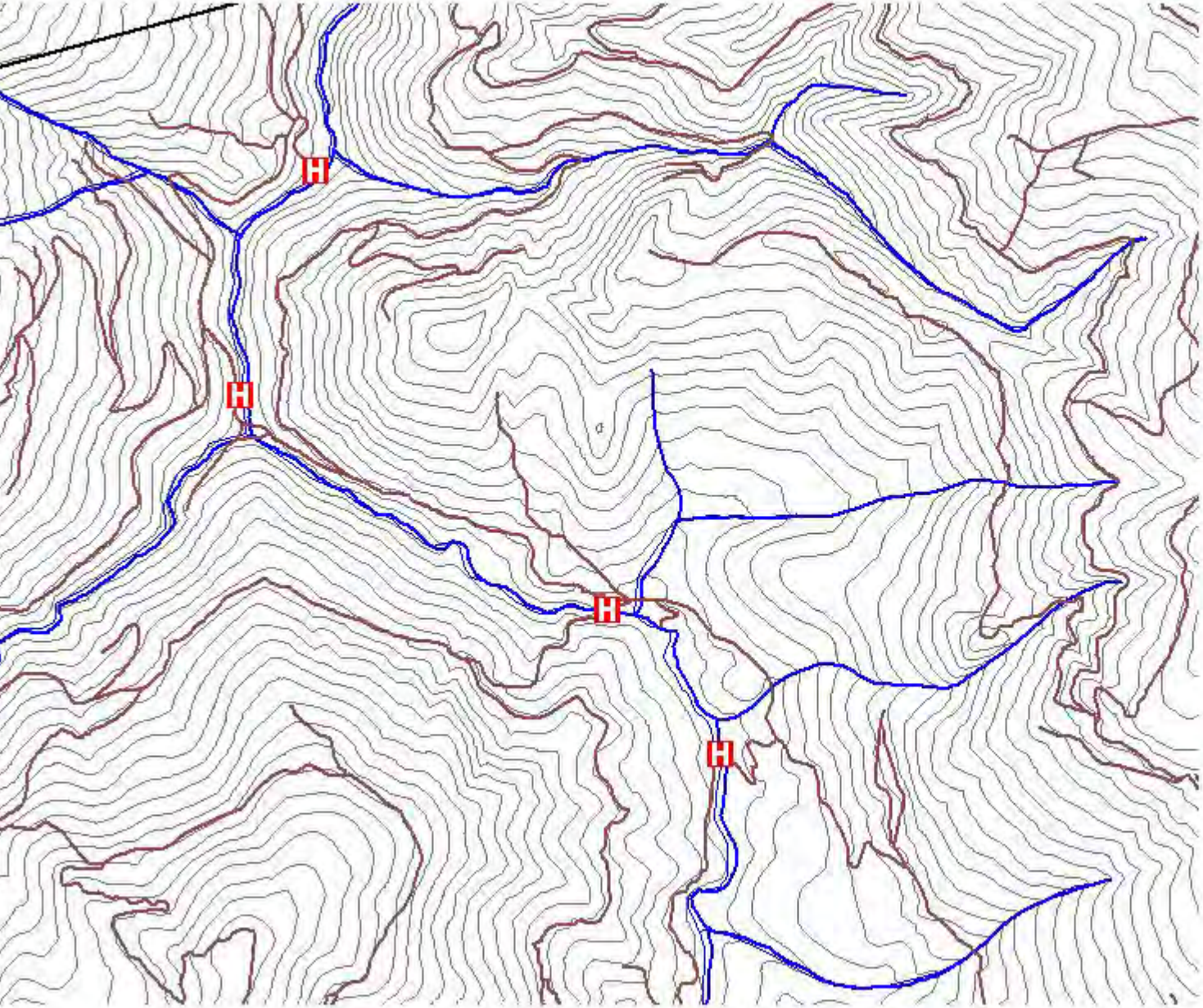



Agricultural
Water

Pine Creek Watershed



Pine Creek Hydro Sites



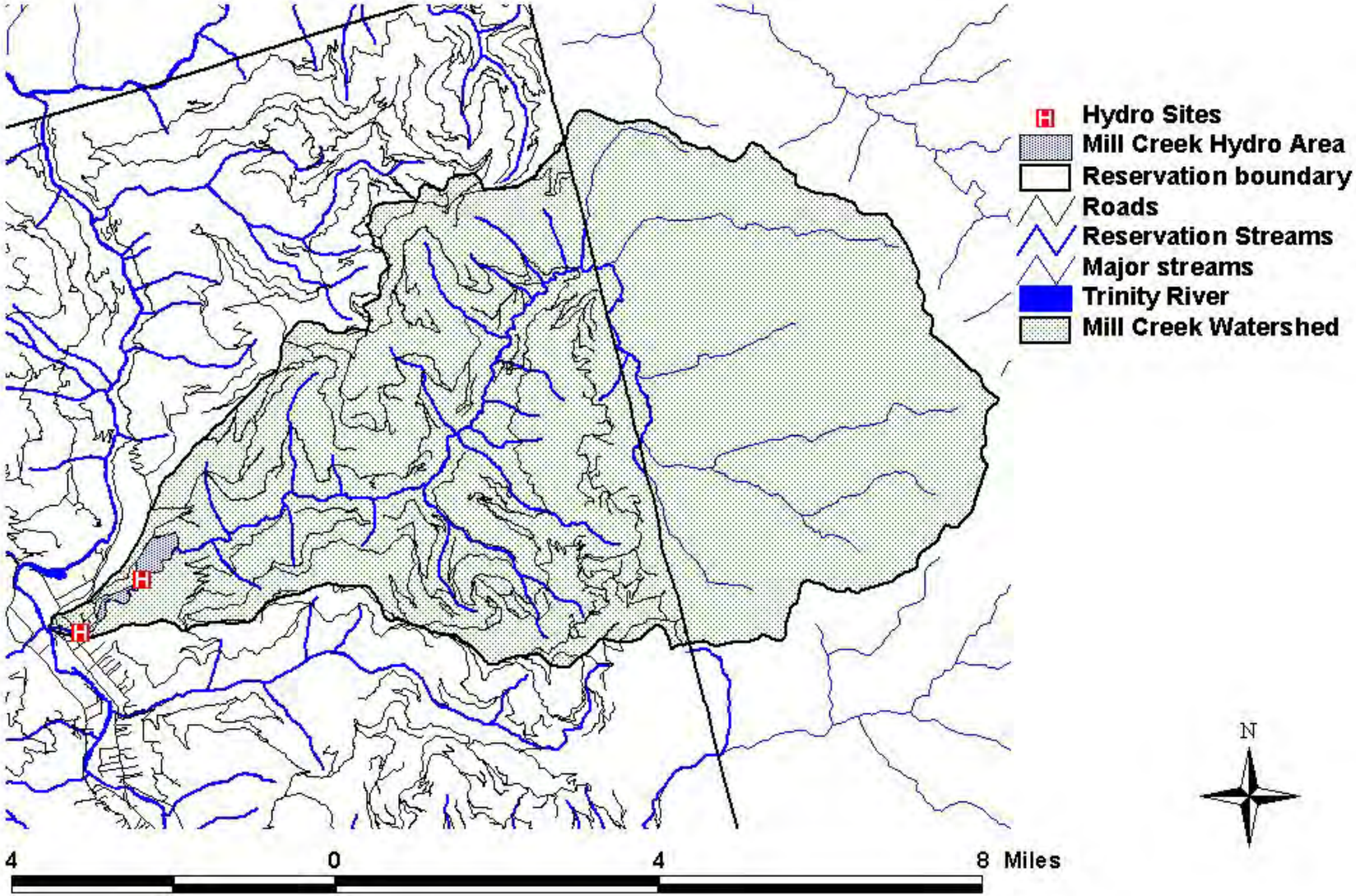
H Hydro sites
Reservation bound
Roads
Reservation Strean
Major streams
Trinity River
Contour at 80 ft.

N

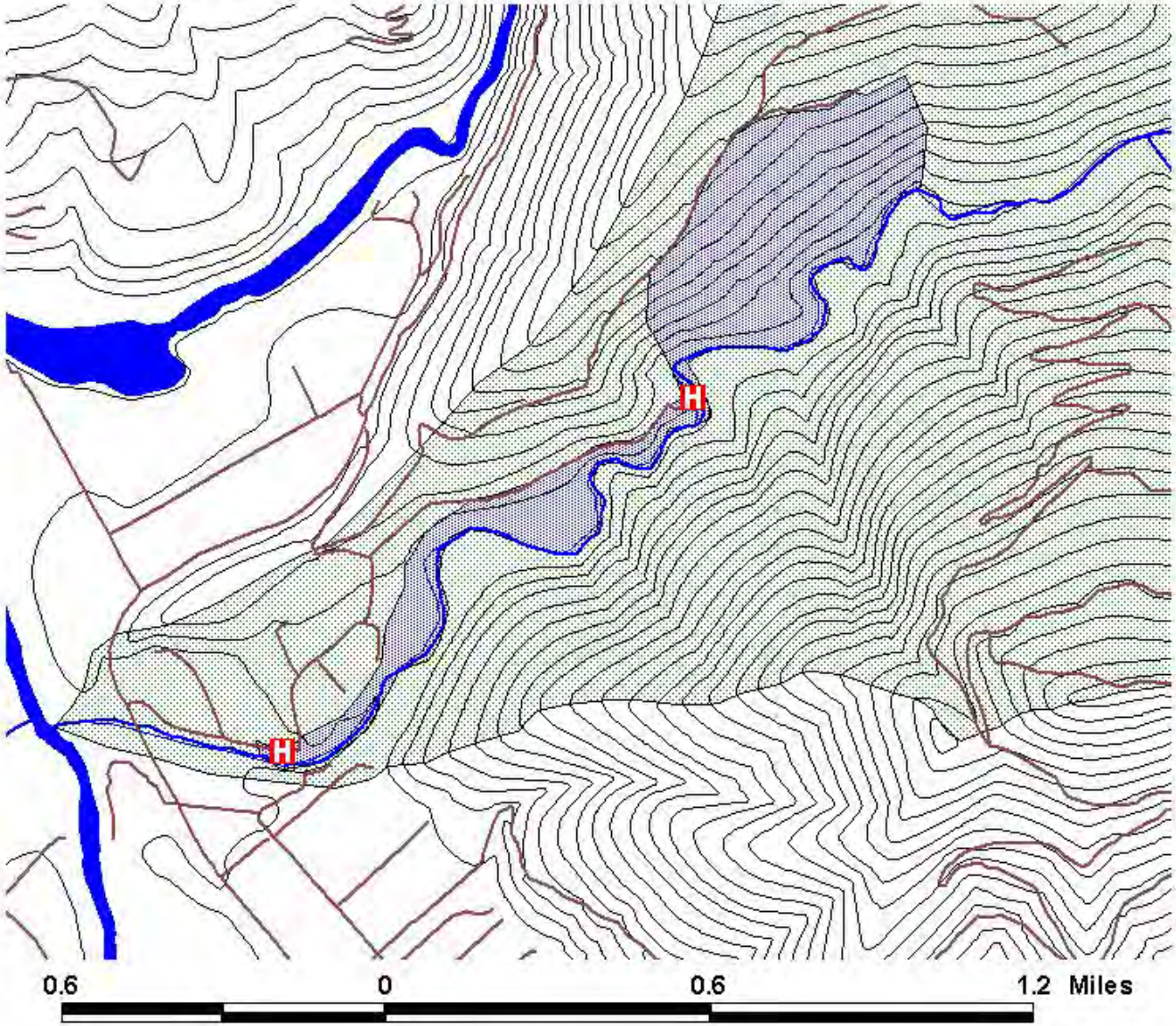
1 0 1 2 Miles

Gradient
80 feet head
per 1000 feet
of stream

Mill Creek Watershed



Lower Mill Creek

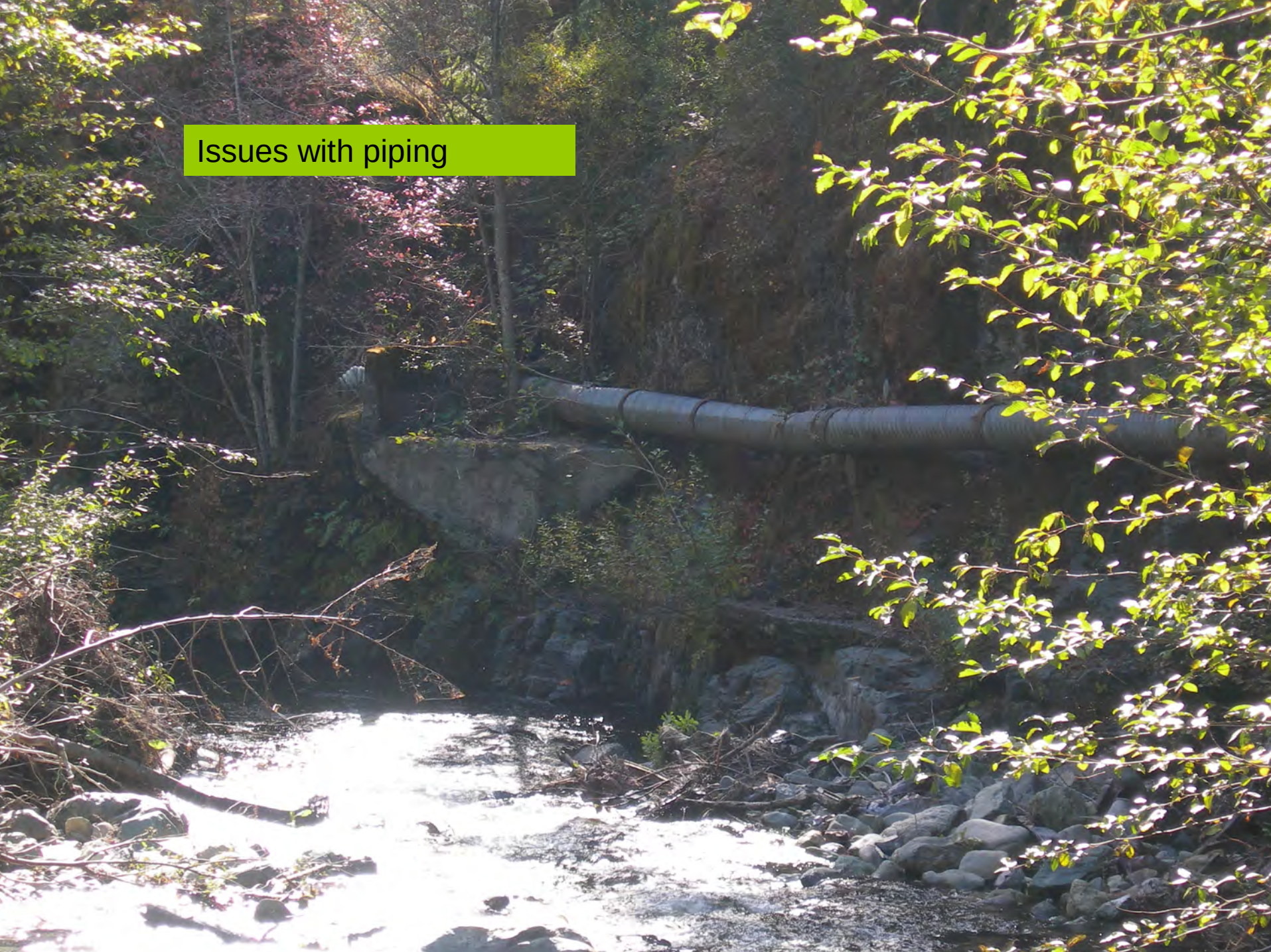


H Hydro Sites
Reservation boundary
Roads
Reservation Streams
Major streams
Trinity River
Contour at 80 ft.
Mill Creek Hydro Area
Mill Creek Watershed

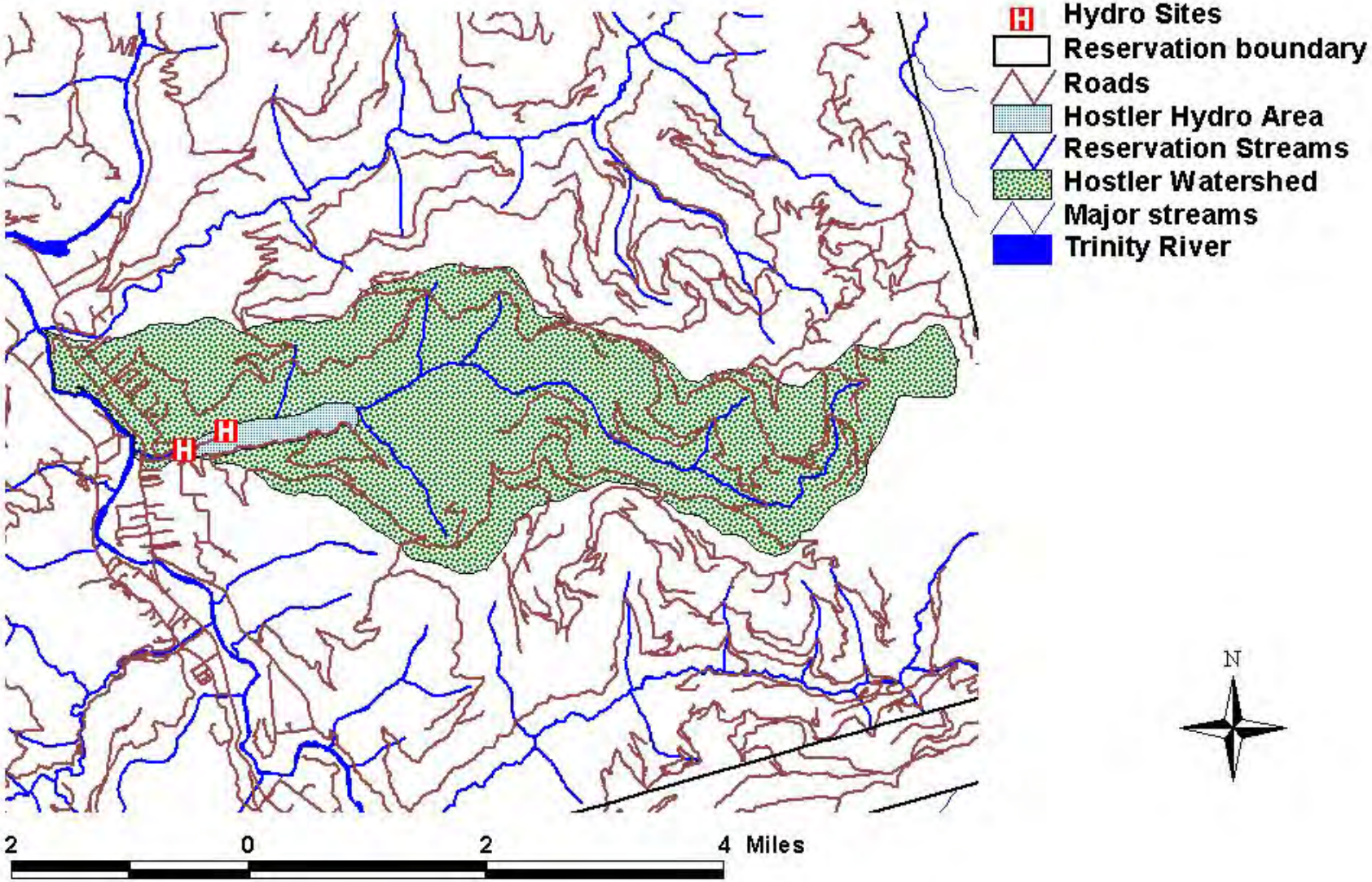

Lower Mill Creek Site


Est. Gradient 60 feet head
per 1000 foot of stream

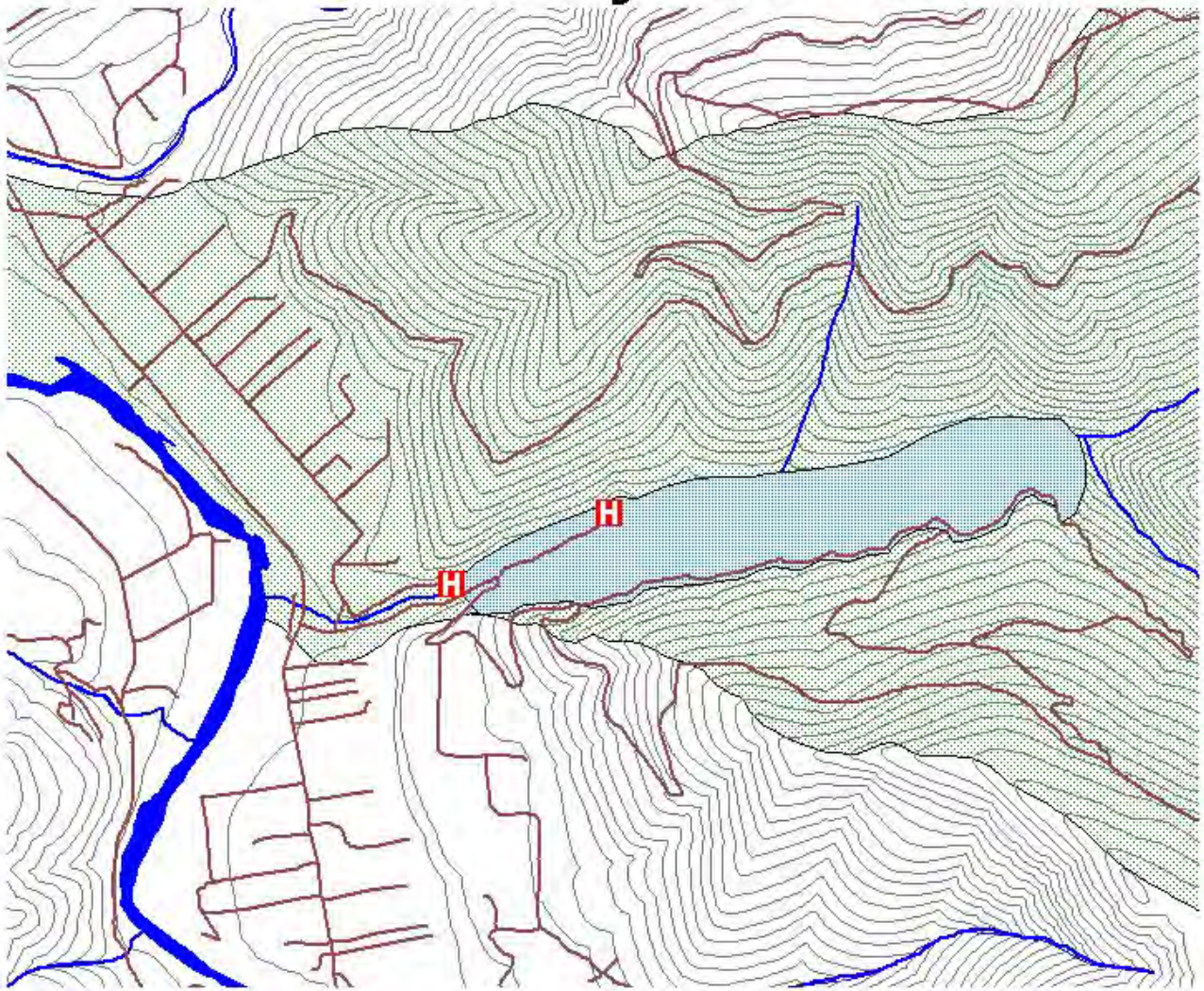

Drinking Water Intake


Issues with piping

Hostler Creek Watershed



Lower Hostler Hydro Sites



H Hydro Sites
Reservation boundary
Roads
Hostler Hydro Area
Reservation Streams
Trinity River
Contour at 80 ft.
Hostler Watershed
Major streams

N

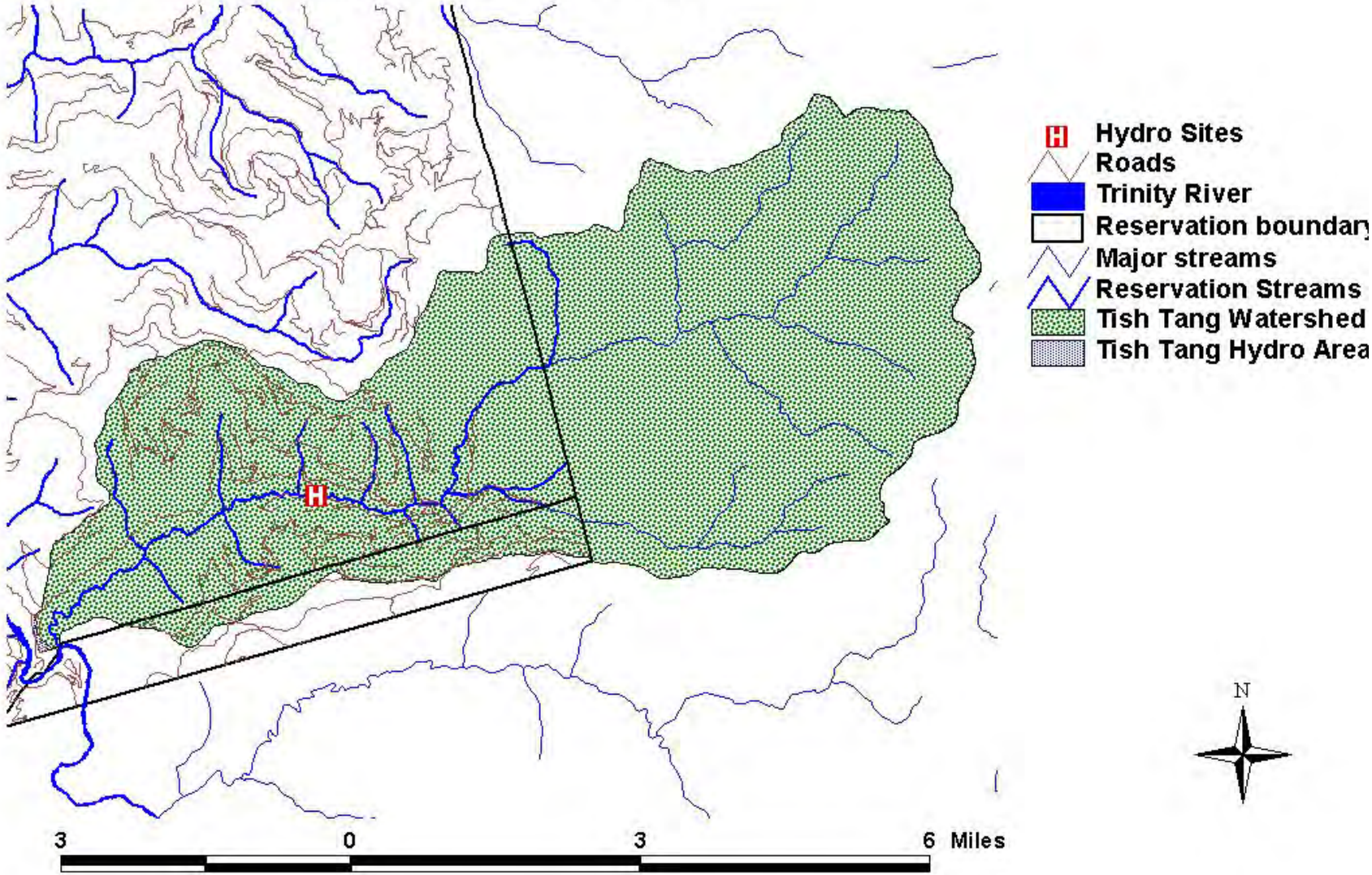
0.8 0 0.8 1.6 Miles

Entrenched
Barrier

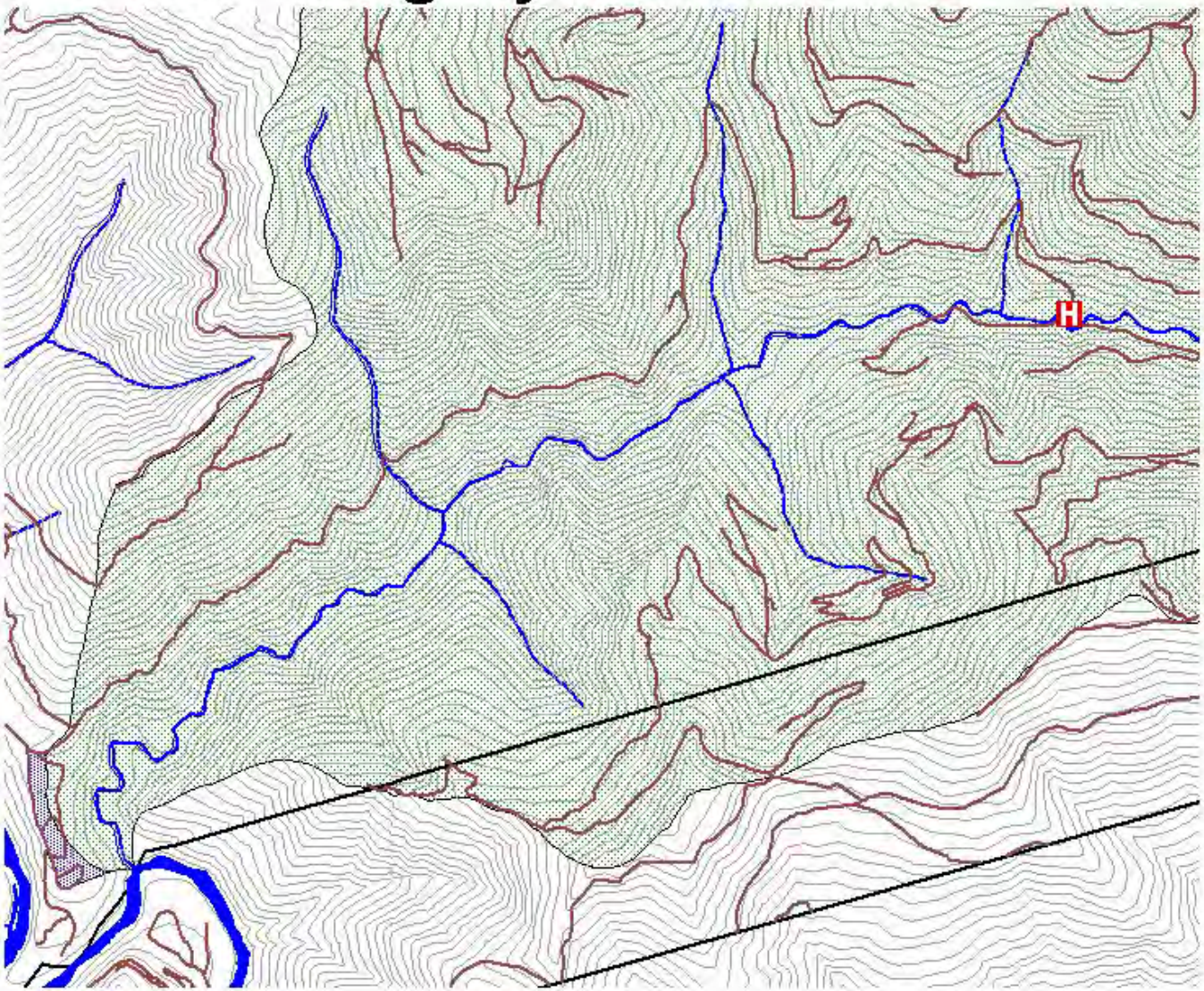
Steep Gradient

Est.160 feet head
per 1000 feet stream

Tish Tang Watershed



Tish Tang Hydro Sites



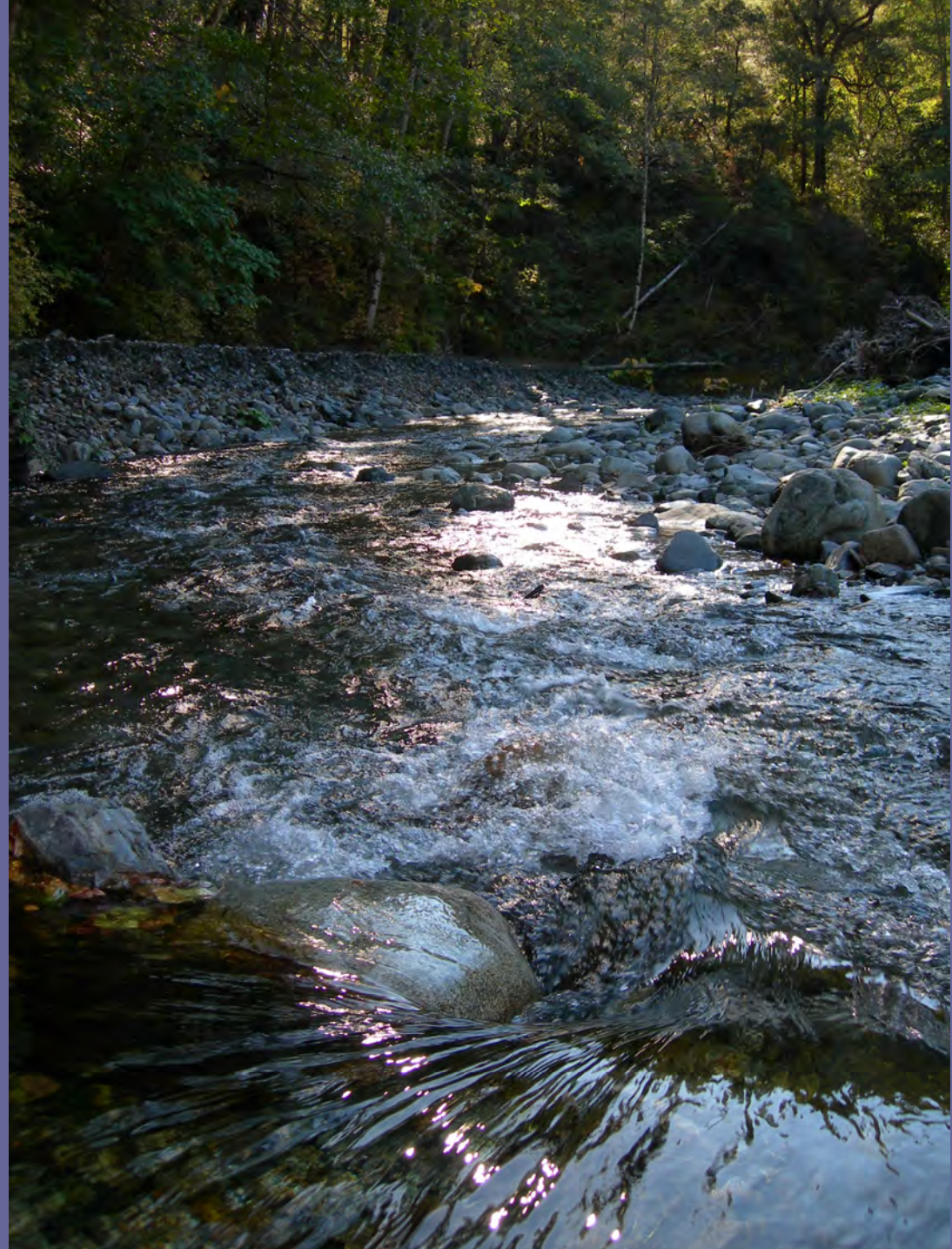
H Hydro Sites
Roads
Trinity River
Reservation boundary
Major streams
Contour at 80 ft.
Reservation Streams
Tish Tang Watershed
Tish Tang Hydro Area

N

1 0 1 2 Miles

Gradient

80 feet head per 1000 foot of stream



Upper Site


Steep gradient
200 feet head per
1000 foot of stream


Cultural Sites

Wrap up

- Do we have potential – YES
- Substantial investment – YES
- Cost benefit – potentially high benefit