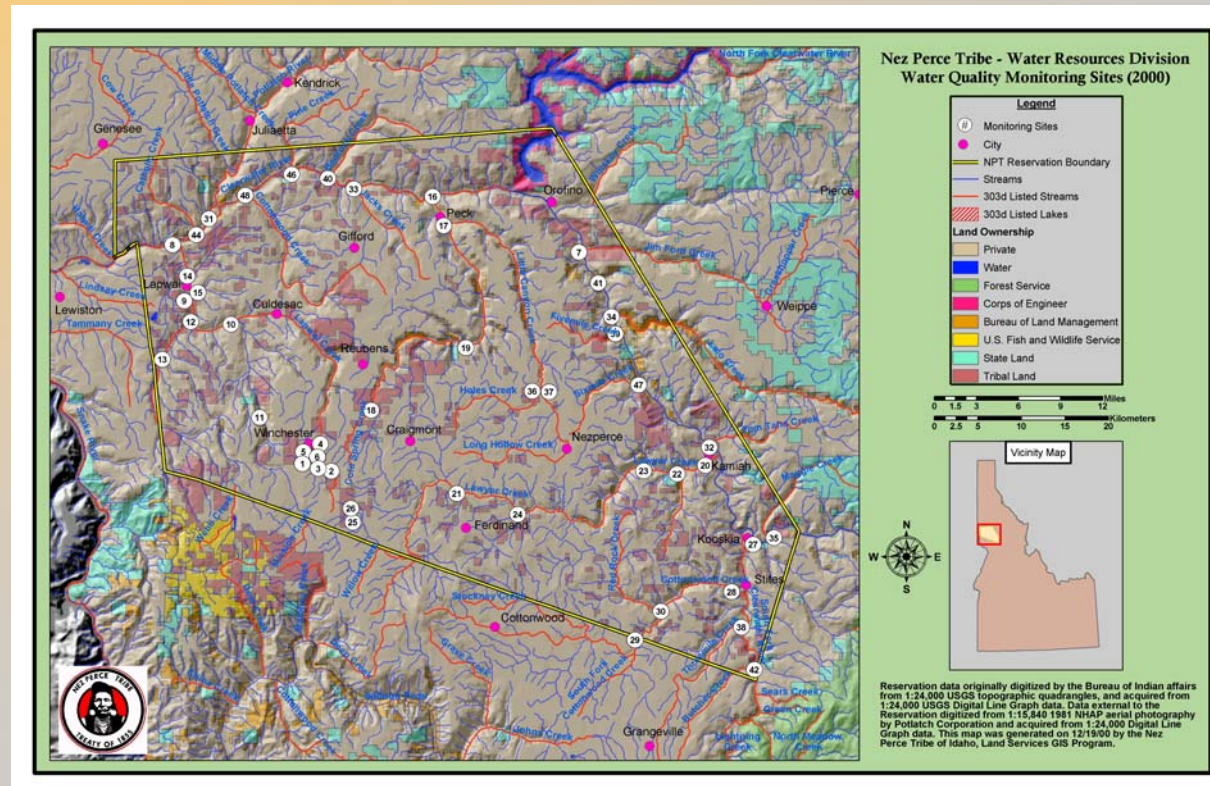
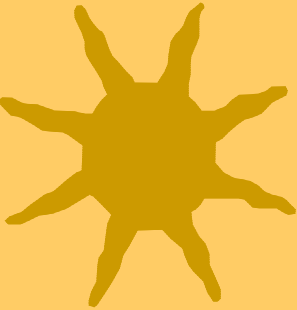


US EPA ARCHIVE DOCUMENT



Water Quality Monitoring and the Nez Perce Tribal Nation





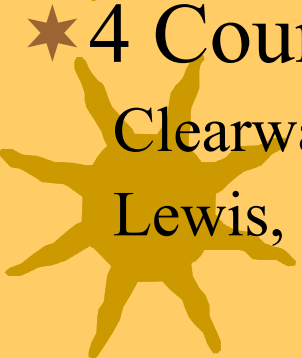
Nez Perce Tribal Nation



★ North Central ID



★ 750,000 acres



★ 4 Counties

Clearwater, Nezperce,
Lewis, and Idaho.

Vicinity Map



The Nez Perce Reservation

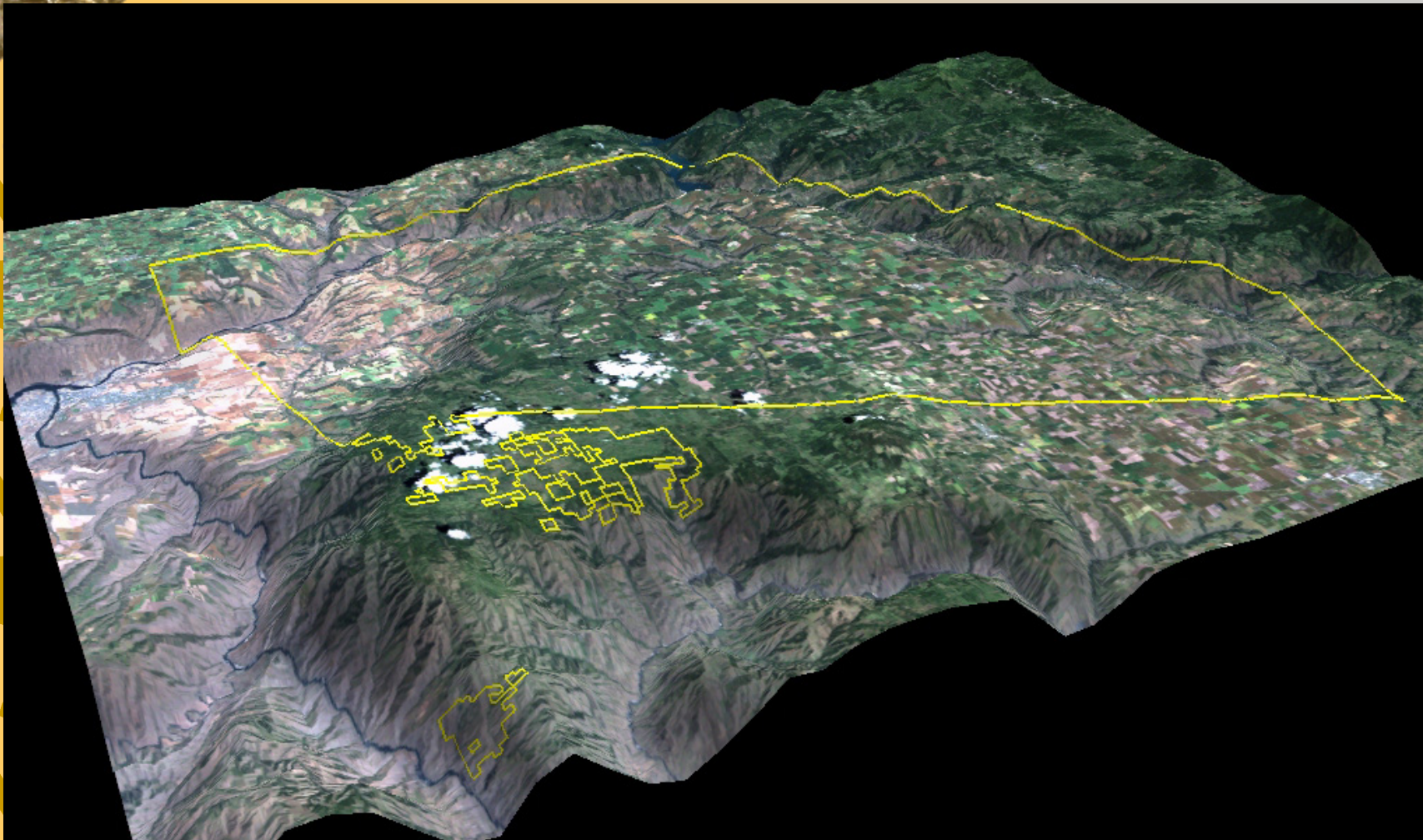
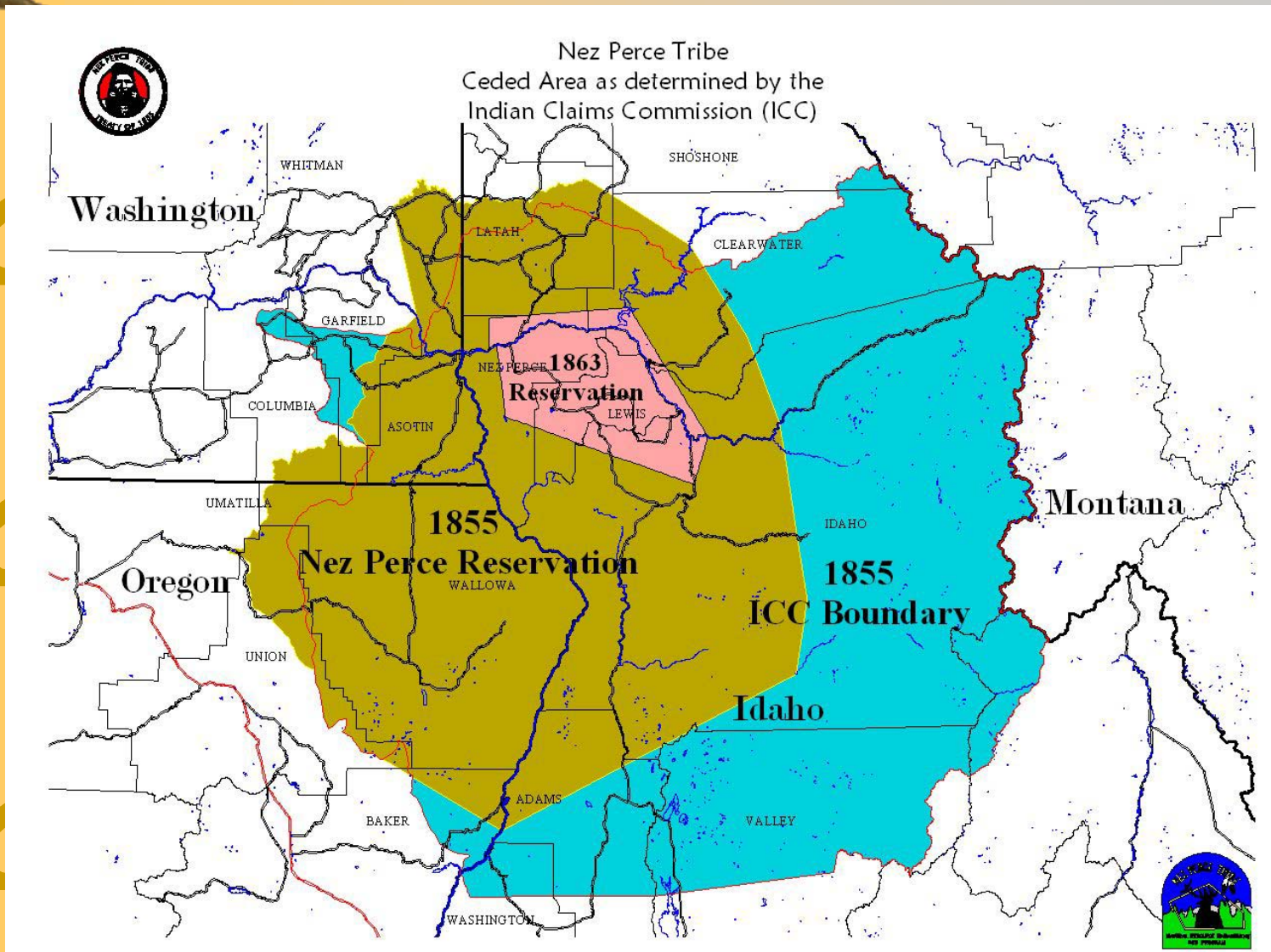


Figure 1: A rendering of the Nez Perce Reservation obtained by draping a Landsat TM image over a DEM. The Clearwater River runs along the northern (top) boundary of the reservation, and is a major tributary to the Snake River, shown on the left (west) edge of the image. TM bands are displayed in a manner than shows active vegetation in green tones. The northern boundary of the reservation is approximately 30 miles wide.



Ceded Territory



Indian Ownership - Nez Perce Reservation

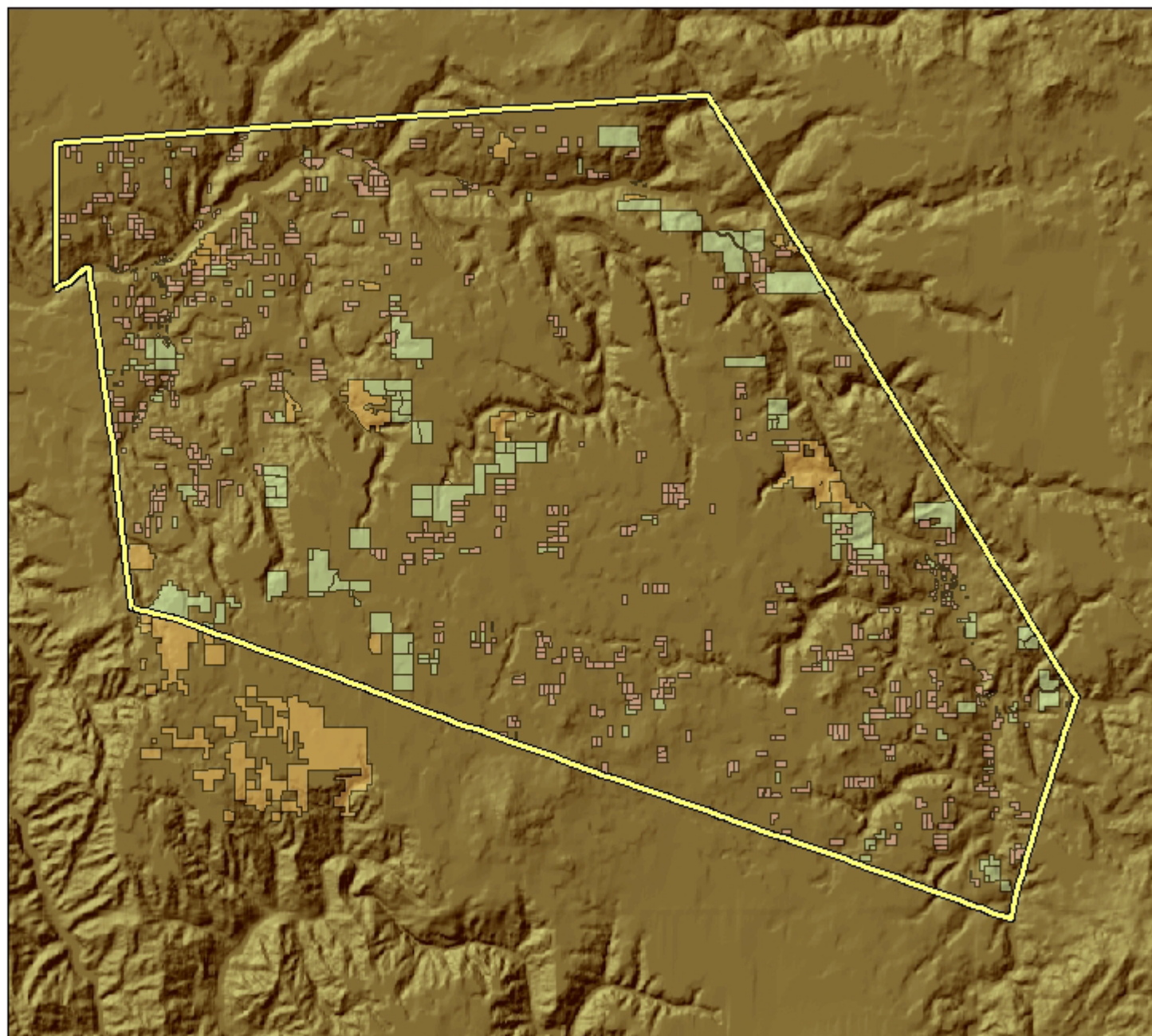
0 2.5 5 10 15 20 Miles



Legend

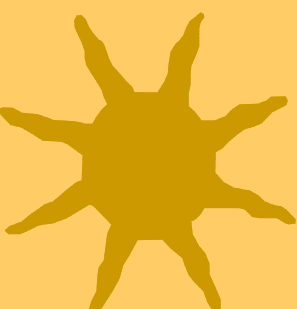
Ownership Categories

- Individual Allotments - Trust
- Tribal - Fee
- Tribal - Trust





Landscapes



★ Diversity of Landscapes within the Reservation

- Mountainous reaching 3,800 ft in elevation
- Prairies (major recharge areas)
- Lowland valley habitats 800 ft in elevation
- Forest lands



Water



★ Clearwater River

- Reservation Watersheds drain into the Clearwater.
- The Clearwater flows for Approximately 71 miles through the Nez Perce reservation.



Land Use



- ★ Tribal Cultural land use activities



- ★ Agriculture



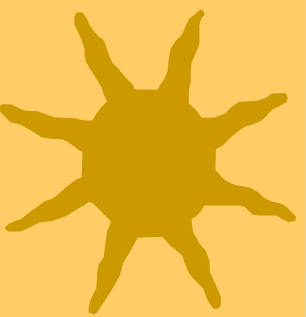
- ★ Recreation

- ★ Timber Management

- ★ Live Stock Management

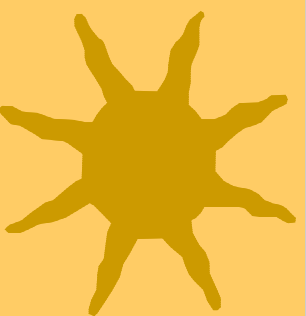
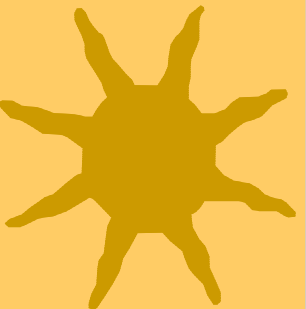


Water Quality Monitoring



★ Rational behind monitoring

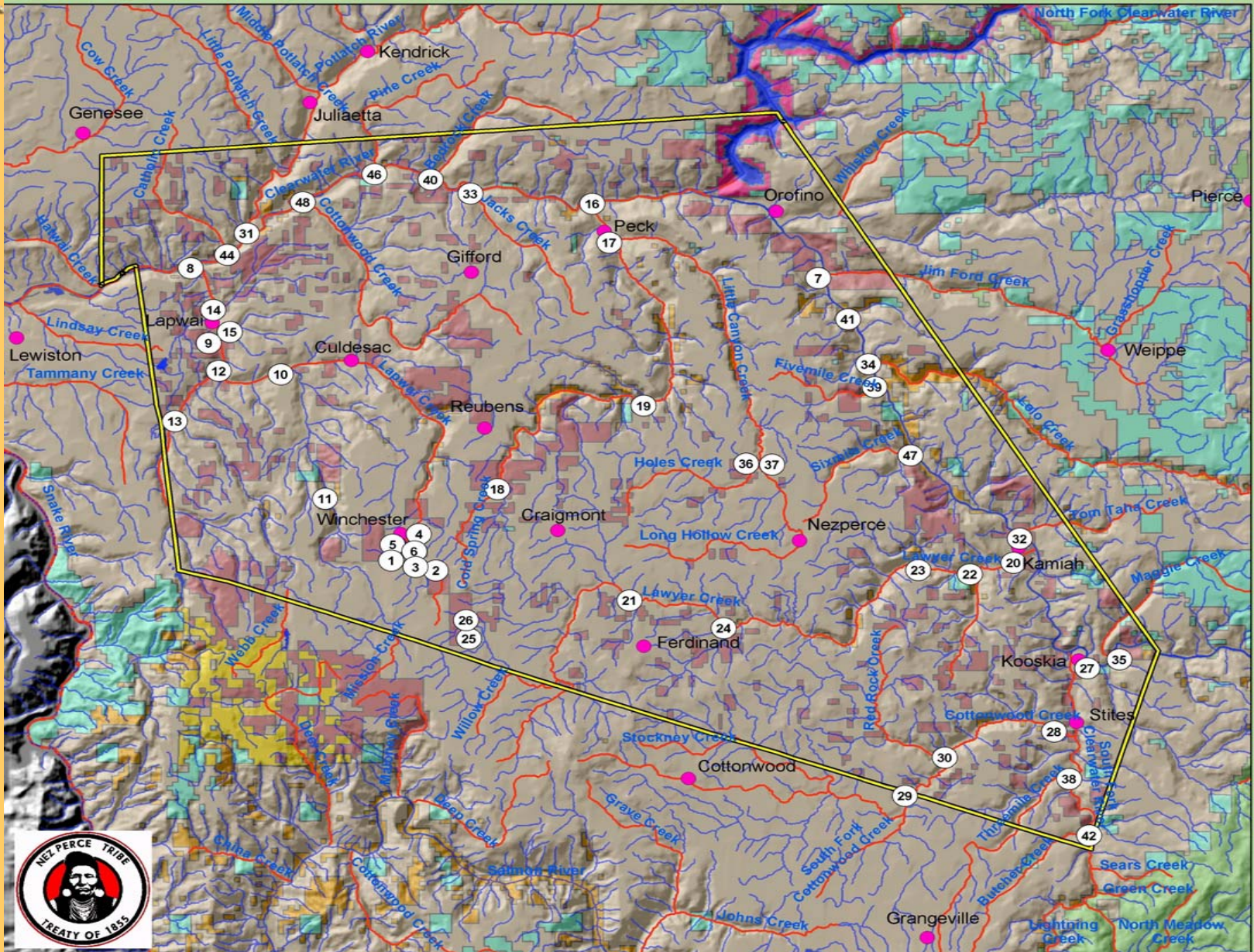
- Assist Total Maximum Daily Load (TMDL).
- Establish “Base Line Data” for the Reservation.
- Assist other Tribal Natural Resource Departments.
- Address Tribal Members Water and Health Concerns.





Monitoring Sites

Currently 53
Monitoring
sites





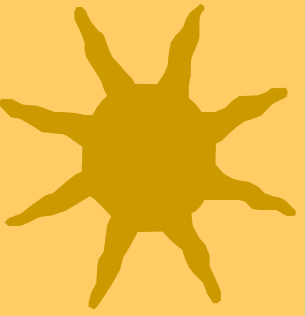
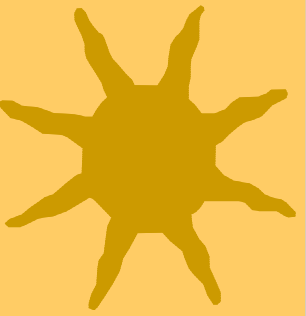
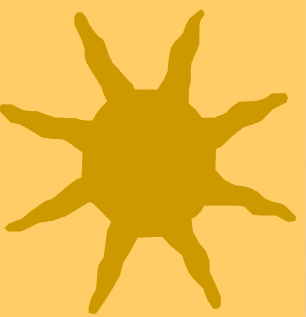
Monitoring Parameters



- ★ Nutrients
- ★ Bacteria
- ★ Stream discharge
- ★ Bed load
- ★ Total suspended solids
- ★ Hydro-lab Data
- ★ In-Situ stream stage loggers
- ★ Temperature loggers
- ★ Turbidity



QA/QC



- ★ Stands for
 - Quality Assurance/Quality Control
 - Insures accurate and reliable data
- ★ Calibration, maintenance, and training of field technicians
- ★ Needed to share raw data and metadata



Equipment Used



Hydro-lab



Sample Bottles



DH-48

Helley Smith

Coolers & blue ice

Calibration Solutions

Flow Meter

Turbidimeter

Misc

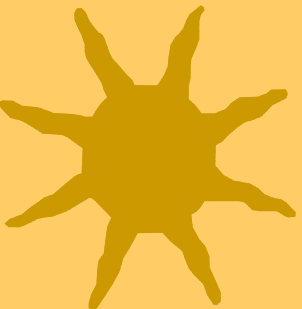




Methods



★ Stream grab samples for nutrients & bacteria



- Site Id, Collector, Time, Date, Sample type.
- Collect Duplicate Samples
- Collect field blank “control”
- Follow QA/QC policy





Stream Flow



- Flow Meter
- Wadding Rod
- Flow Form
- Meter Tape & pins
- Calculator
- Waders!!!!





Sediment Monitoring



- ★ Depth-Intergraded Samplers



- ★ DH-48
 - Samples TSS



- ★ Helley-Smith
 - Samples bedload





HydroLab Multiprobe unit

This “Multiprobe” Unit is
used to collect the following:

Ph, Conductivity, DO, and
temperature





Turbidity



Hach 2100P
Turbidimeter



Measures Light
scattering
Solids in the
stream called
turbidity





EMAP and the Tribe



★ Attended Training in June 2001



★ 2002 Training Review Start EMAP Field Sampling



★ 2003 Continue EMAP Sampling

★ 2004 Field Sampling

★ 2005 Final Report on Completed Project



EMAP Questions



★ What is the Ecological Condition of Streams With in the Reservation?



★ Can EMAP Indicators be useful in Assessing Impact from Alteration?



★ How can EMAP Assist in Developing Accurate Environmental Indicators, Non-Point Source Assessments, Water Quality Reports, and Biological Criteria?



Conclusions



★ EMAP will play a major role in assessing the current condition of streams within the reservation.



★ Special Thanks to :

- Roger Blair, EPA, ORD, Corvallis
- Gretchen Hayslip, EPA Region 10
- Ann Storrar, Nez Perce Tribe, Water Resource Division

