Bureau of Indian Affairs Role in the National Cooperative Soil Survey

(As Users and Contributors to Soil Surveys)

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BIA Soils Staff

- Soil Scientists-11 located in western US.
- Soil Conservationists-18 throughout the nation.
- Natural Resource Specialists-some are soil scientists.

Location of Soil Scientists

- Most are at the agency level-directly assisting tribes.
- A few soil scientists are at Regional offices-provide assistance to agencies and tribes.

Soil Scientist Duties

- Soil and Range Inventories
- GIS support
- Land Reclamation/Restoration
- Land Use Planning
- Erosion control
- Irrigation and Agriculture
- NEPA compliance
- Education/Training

BIA's Role in NCSS

- Act as advocate for Tribes to ensure their needs and interests are being met.
- Attend and provide input at field reviews
- Assist in development of Memorandums of Understanding
- Act as a liaison and foster communication.
- Other creative ways to work together??

Resource Inventory Initiative

- Result of the **American Indian Agricultural Resource Management Act (**AIARMA)
- Soil and Vegetation Inventories are the basis for land use planning and resource allocation
- About 2 million nationwide available to conduct inventories on tribal lands.

Who conducts range/soil inventories on tribal land?

- BIA or Tribal staff
- NRCS-through cooperative agreement with BIA/Tribes
- Contractors/consulting firms by bid

2009 Range Inventories in Western Region

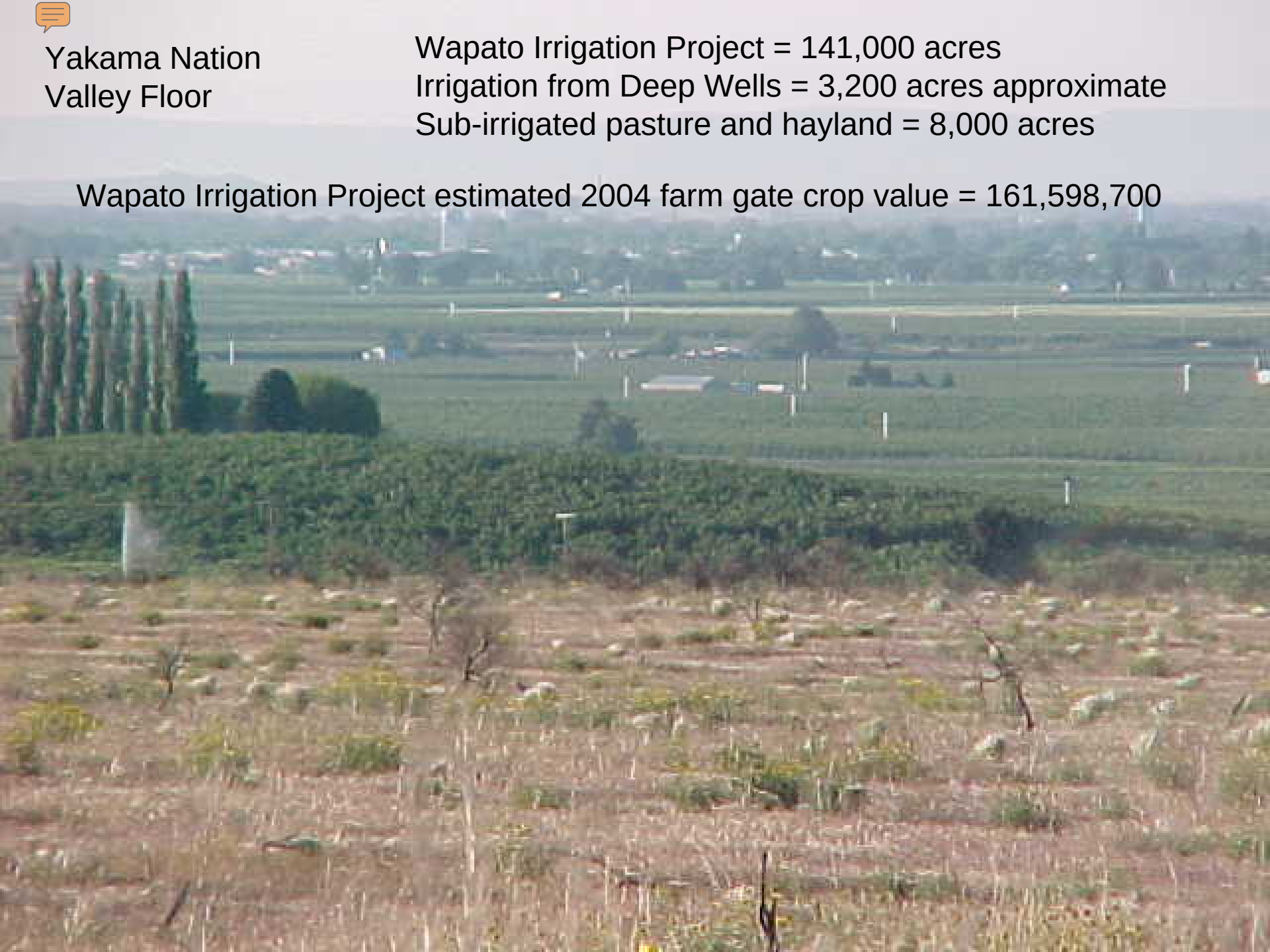
- Uintah and Ouray-Utah-Ongoing-multi-year-BIA
- Fort Apache, AZ-80,000 acres-Tribal Staff
- Hopi Tribe-NRCS contract
- San Carlos Apache, AZ-BIA agency staff
- Completion of Walker River Inventory in NV including update of soils and correlation of ecological sites

Cottonwood West
Sandy Upland 10-14” precip.
Map point O-672 (photo 1 of 2)

Moccasin Mesa
Sandy Upland 13-17” precip.
Map point 200 (photo 2 of 2)
pricklypear holding soil on site
AUG 19 2003

BIA's role in assisting Tribes in using soil survey information

- Irrigation
- Agriculture
- Fire response and rehabilitation plans
- Forestry
- Site Assessments
- Planning
- Other interpretations



Yakama Nation
Valley Floor

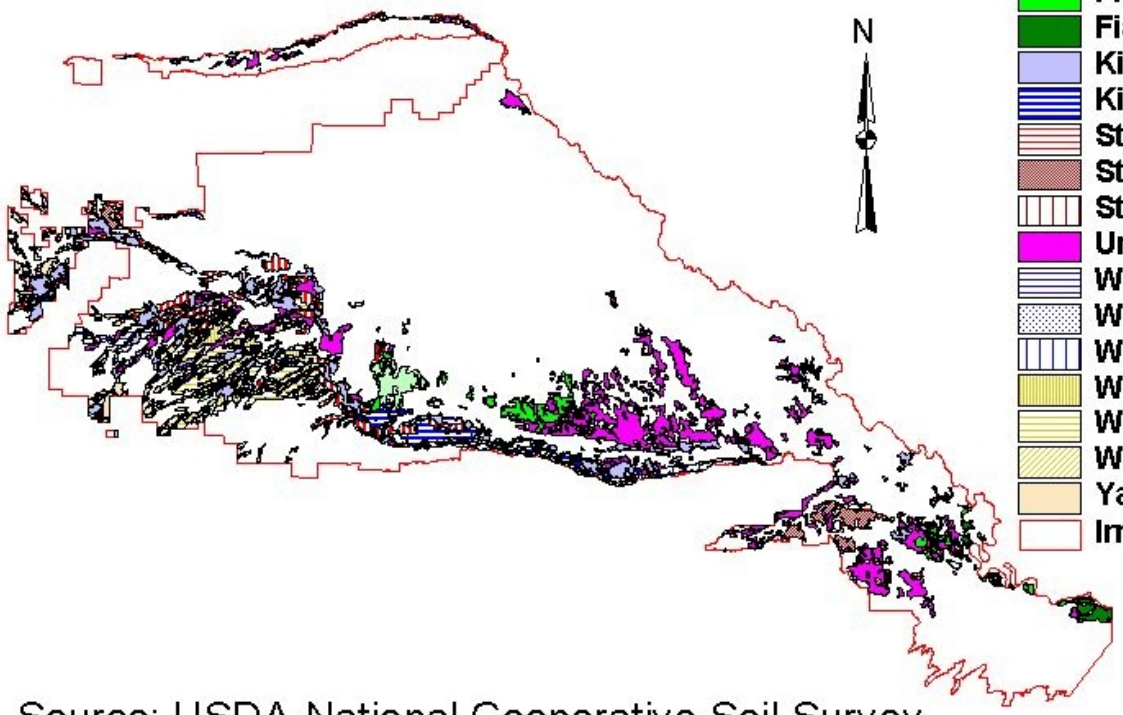
Wapato Irrigation Project = 141,000 acres
Irrigation from Deep Wells = 3,200 acres approximate
Sub-irrigated pasture and hayland = 8,000 acres

Wapato Irrigation Project estimated 2004 farm gate crop value = 161,598,700

Apples
Apricots
Asparagus
Beans
Broccoli
Cabbage
Cantaloupe
Char
Cherries
Corn
Cucumbers
Eggplant
Grapes
Hopps
Huckleberry
Mint
Melons
Nectarines
Okra
Onions
Peaches
Pears
Peas
Peonies
Peppers
Plums
Potatoes
Prunes
Pumpkins
Rhubarb
Squash
Strawberries
Tomatoes
Watermelons
Zucchini

Saline, Sodic, or Saline-Sodic Map Units of the Yakama Nation Irrigated Area

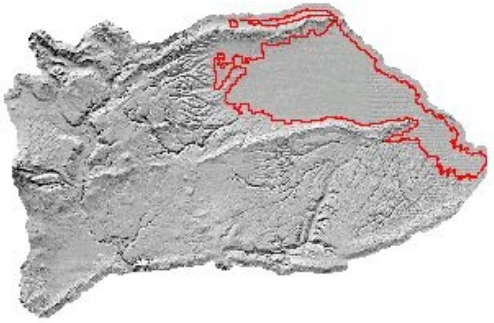
46,503 acres of delineated salt affected soils



Map Unit Legend

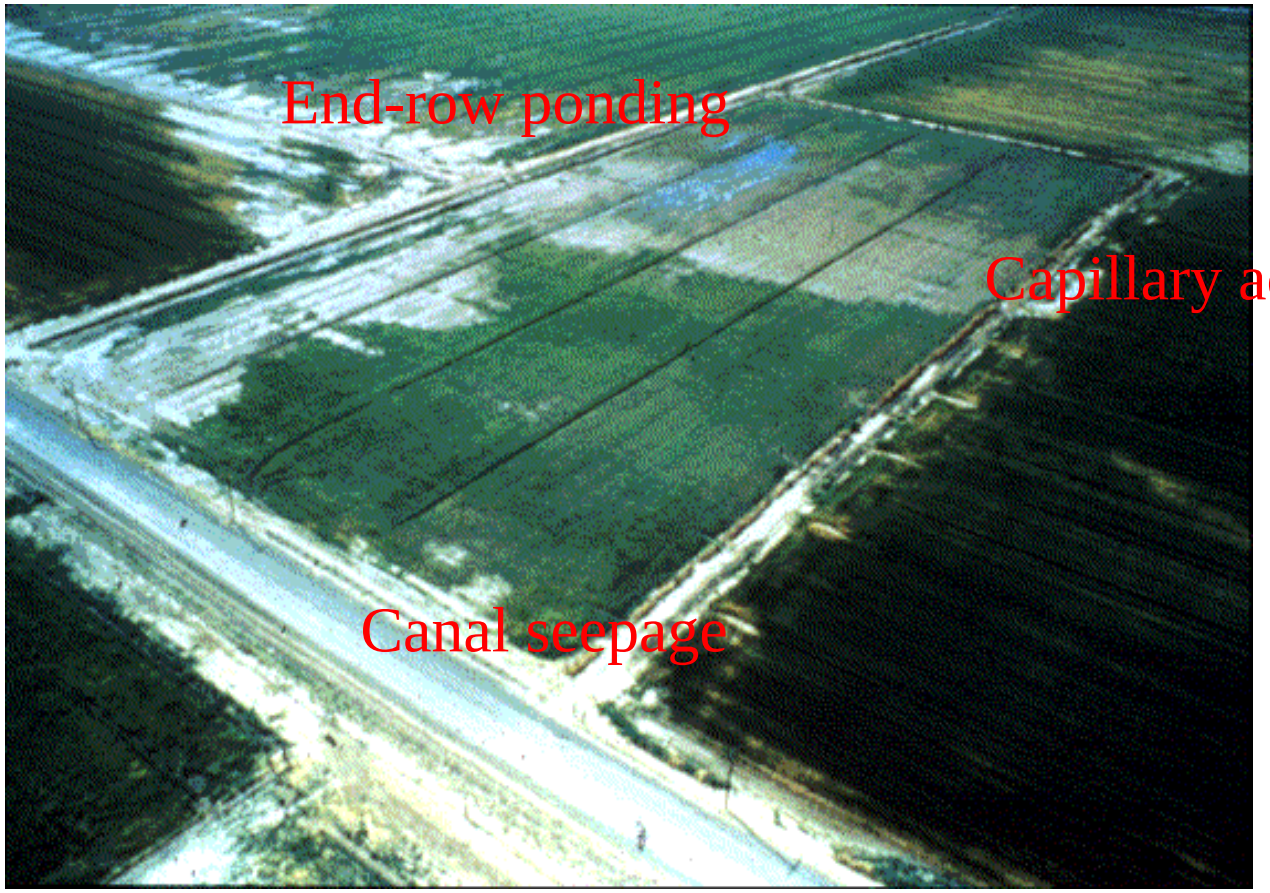
- Ahtanum Silt Loam 0-2 % slopes
- Ahtanum Silt Loam 2-5 % slopes
- Fiander Loamy Fine Sand
- Fiander Silt Loam
- Fiander Silty Clay Loam
- Kittitas Silt Loam
- Kittitas Silty Clay Loam
- Standfield Sandy Loam
- Standfield Silt Loam 0-2 % slopes
- Standfield Silt Loam 2-5 % slopes
- Umapine Dilt Loam
- Wahtum Loam 0-2 % slopes
- Wahtum Loam 2-5 % slopes
- Wahtum Loam, dark variant
- White Swan Silt Loam 0-2 % slopes
- White Swan Silt Loam 2-5 % slope
- White Swan Silt Loam 5-8 % slopes
- Yakima Silt Loam
- Irrigated area boundary

Source: USDA-National Cooperative Soil Survey
Issued 1976



8 0 8 16 Miles

Irrigation induced high water table and/or poor water management seriously reduce crop production



Without Sufficient Profile Drainage
Salt Conditions Persist
Even with Good Quality Irrigation Water

Burned Area
Emergency Response-

BAER Teams

Mule Dry Canyon Rehabilitation Project, 2 Years After Fire

Meadow Restoration

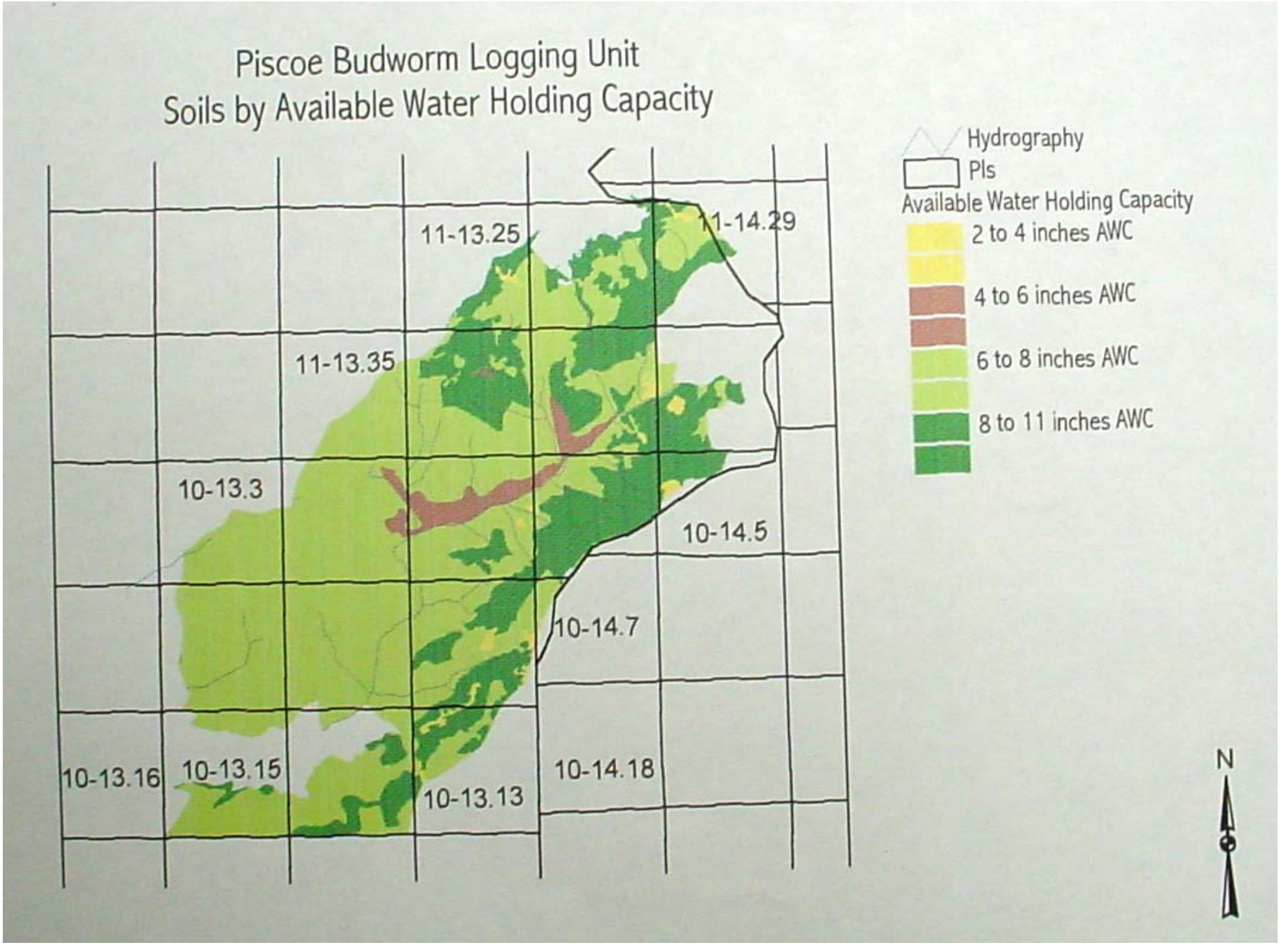
Erosion on the Forest Road System

Other soil related
Threats to productivity:

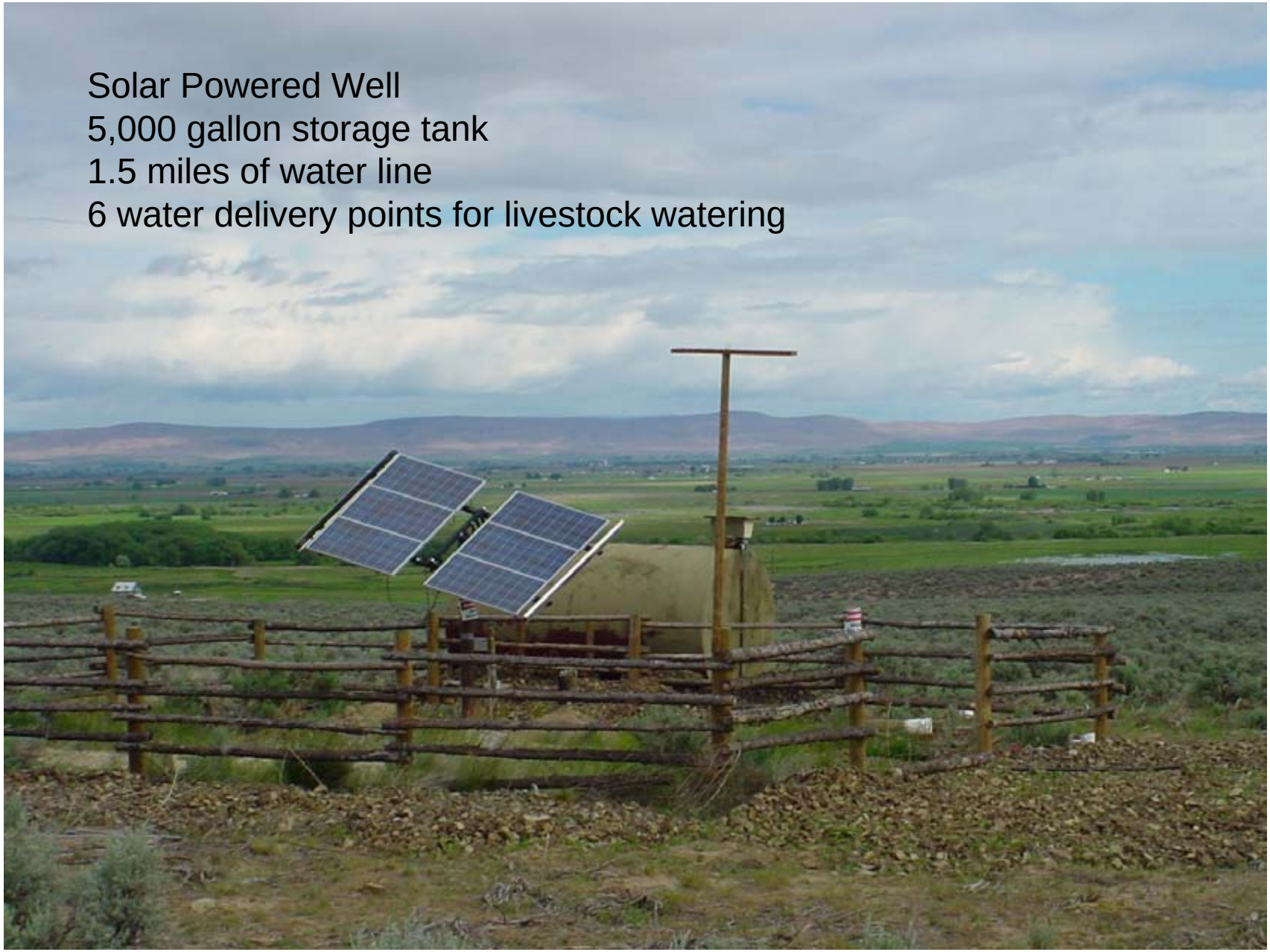
Soil Compaction
Soil Displacement
Fire (Soil Alteration)
Wind throw

Soil Survey and the Yakama Nation Feral Horse Program

Piscoe Budworm Logging Unit
Soils by Available Water Holding Capacity

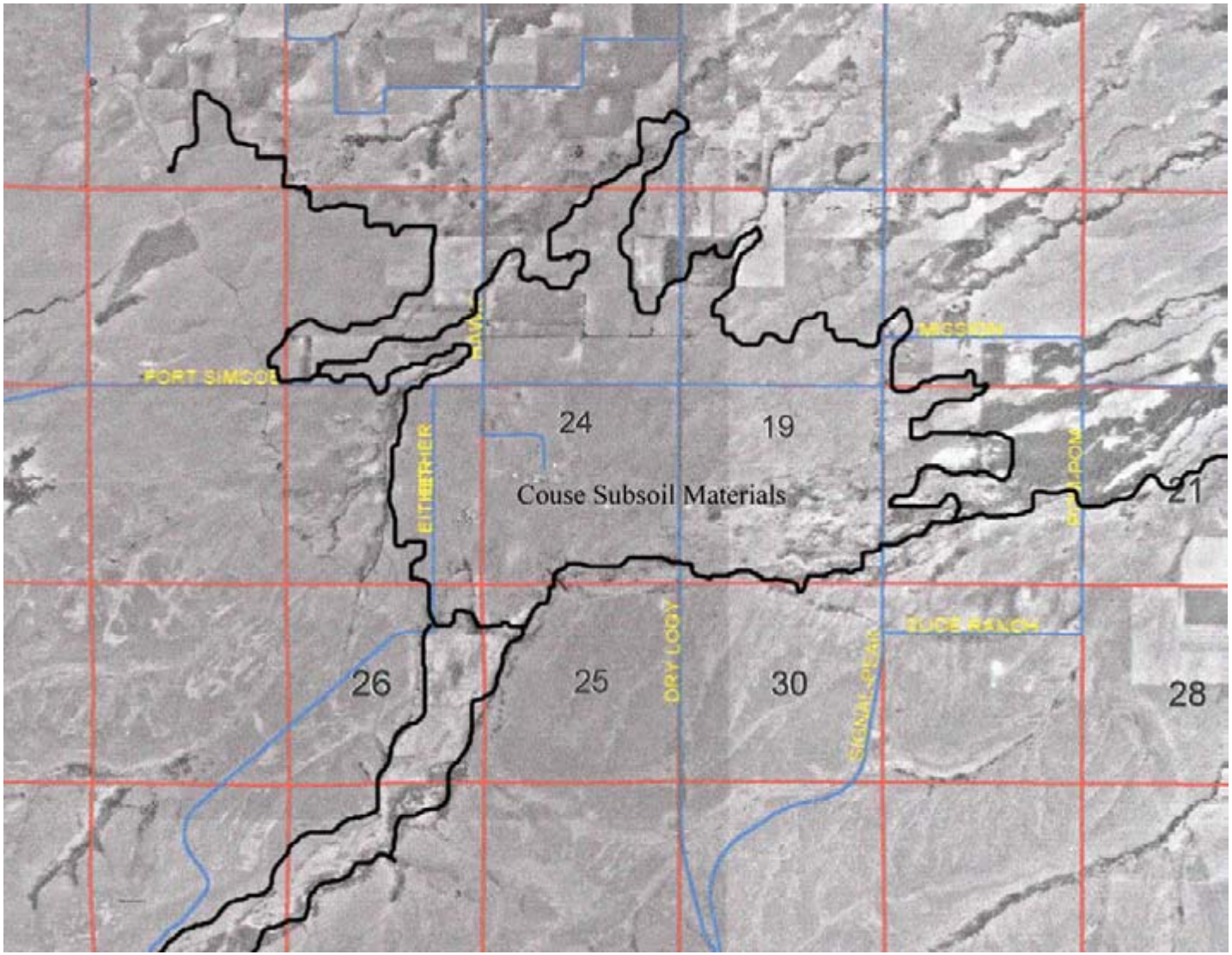


Adams View New 80 Home Addition, HUD Grant


Solar Powered Well
5,000 gallon storage tank
1.5 miles of water line
6 water delivery points for livestock watering

Flood Control Projects

Upward Integration of Soils Data



Toppenish Creek Alluvial Fan

Soil Interpretations in ArcGIS

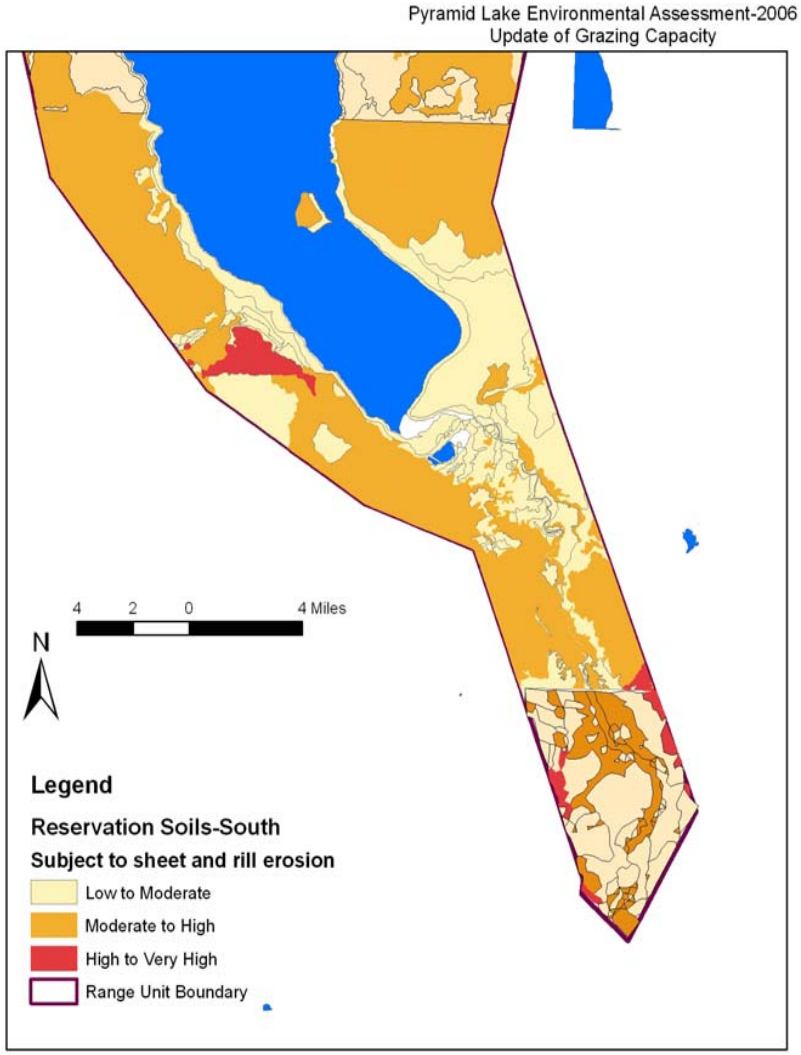
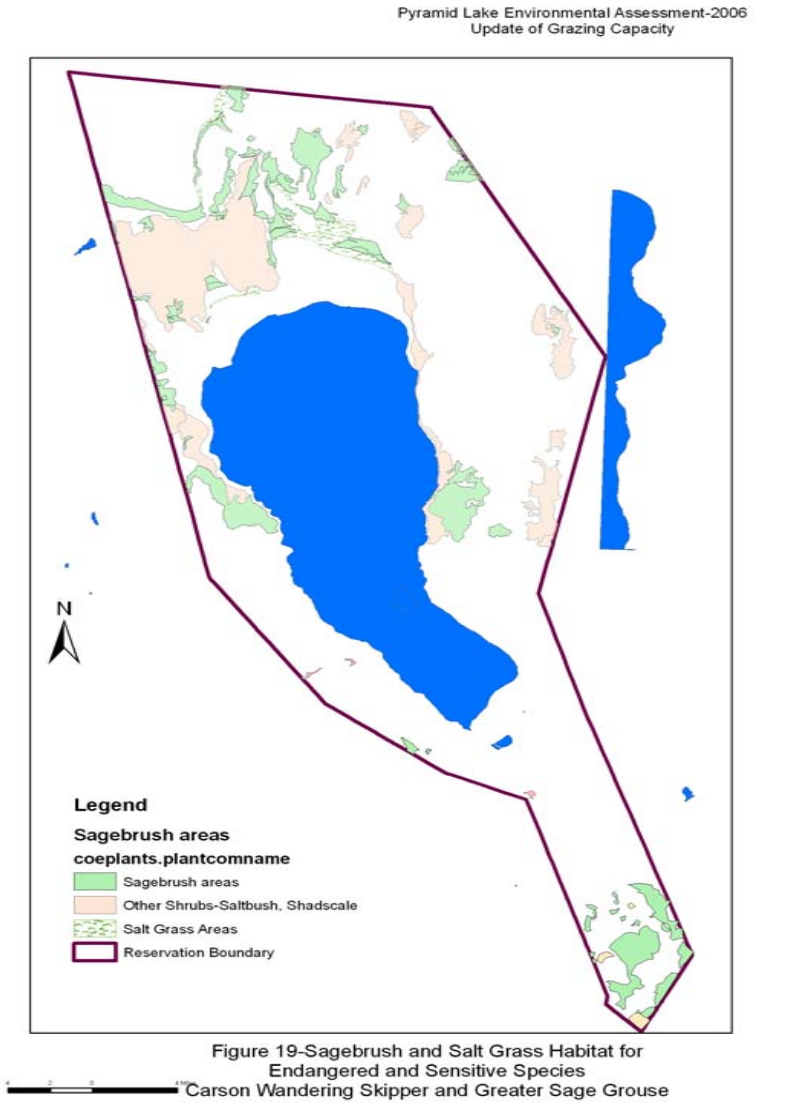


Figure 17. Potential Water Erosion Hazards-Pyramid Lake South

Map Prepared by BIA, WRO, Phoenix

Use of Soil Information for NEPA and Endangered Species Compliance



Education/Soils Training to Tribal and BIA staff

Soil Presentation to Hopi Tribe

Positive Steps

- Joint BIA-NRCS-Tribal Soil Data Viewer Training in Phoenix in 2007
- Range Field Day on Ecological Sites on the San Carlos Reservation in 2008
- Cooperative field work on ecological sites and soils on the Uintah and Ouray Reservation in Utah in 2008.
- Good feedback from NRCS resource soil scientist and soil survey project leader for soils report for Havasupai flooding.

What else can we do?

- **Look for more ways we work together cooperatively.**
- **Keep Communication Lines Open**
- **Be Creative**