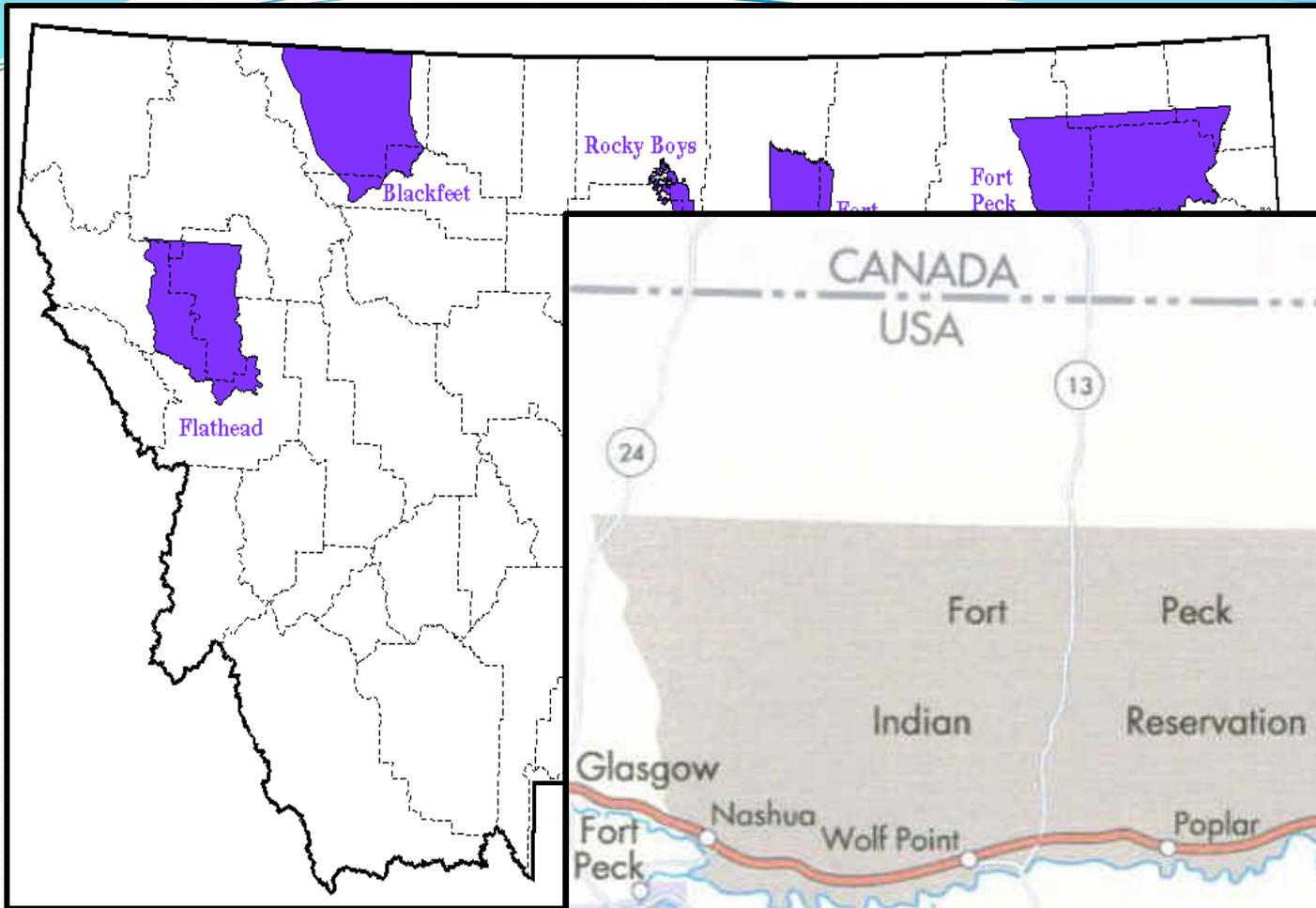


FORT PECK TRIBES' MANNING LAKE WETLAND COMPLEX AND TRIBAL WILDLIFE REFUGE



Jeanne Spaur
Wetland Coordinator/Non-game Biologist
EPA National Tribal Water Quality Conference
November 15, 2011



Complex consists of:

Emergent wetland: 7,035 ac
Open water: 452 ac
Cropland: 1,200 ac
Grasslands: 12,517 ac
Total : 21,204 acres



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Pointer 48°16'36.06" N 104°44'59.96" W elev 1916 ft Streaming ||||| 100%

Eye alt 23142 ft

Wetland Complex Provides:

reproduction and stopover sites for thousands of waterfowl, migratory birds, songbirds, and other species of conservation concern













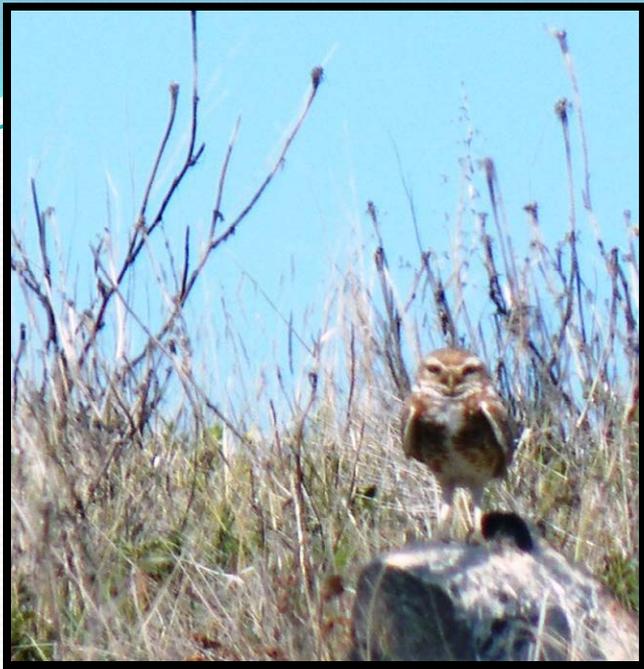












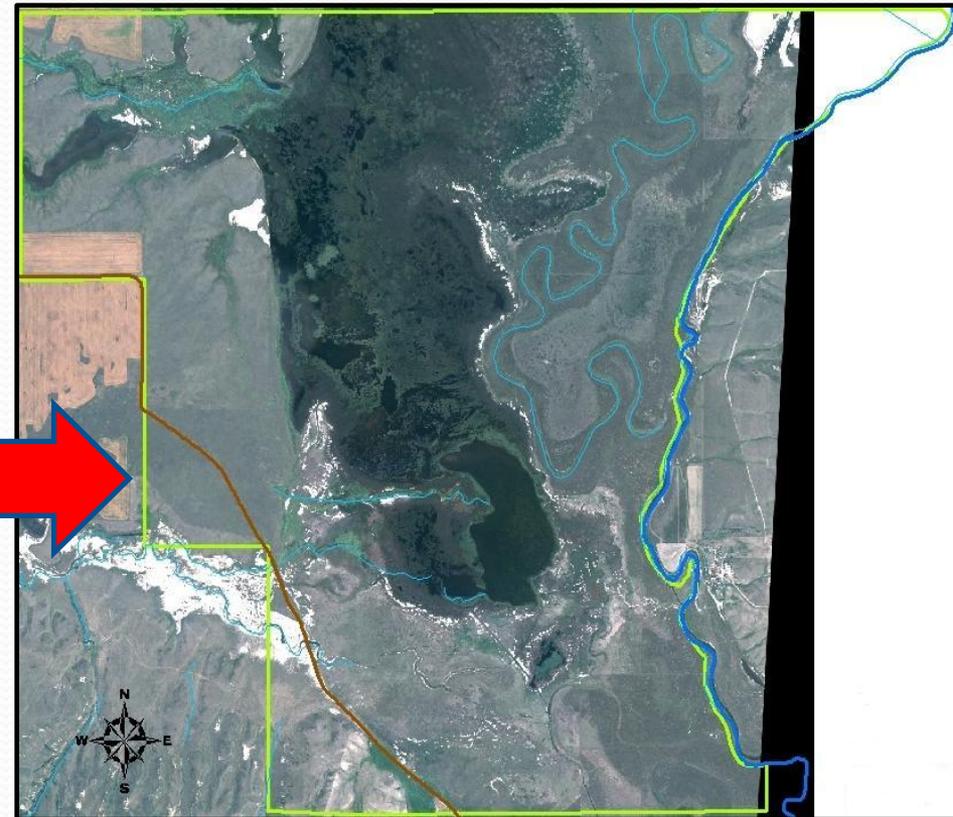
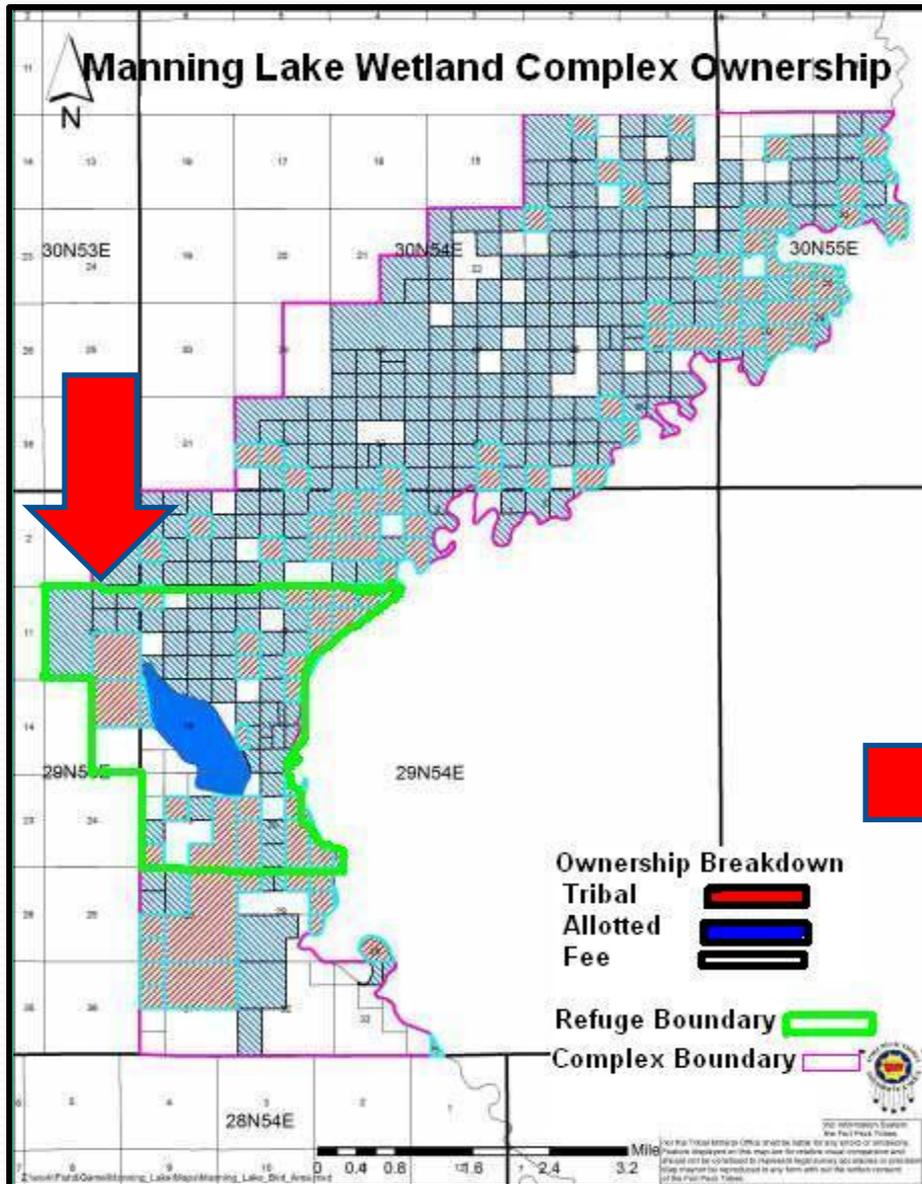


PROTECTION, MANAGEMENT, & RESTORATION OF COMPLEX THROUGH...

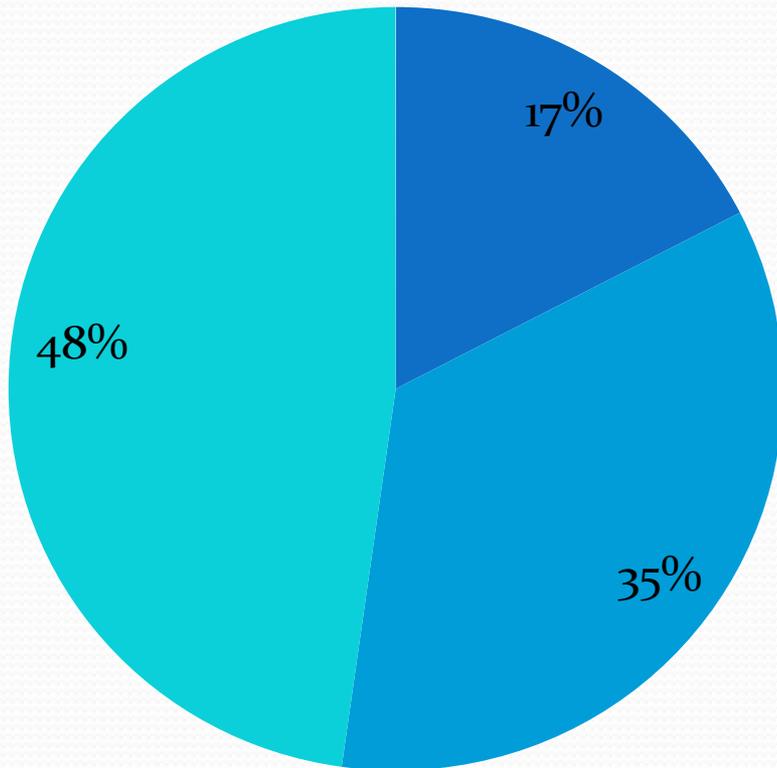
1. Designation of Tribal Wildlife Refuge
2. Development of water quality monitoring methods
3. Determine hydrologic functionality
4. Development of habitat and wildlife species monitoring strategies
 - Provide baseline information to help monitor condition and health of the ecosystem
 - Link between WQ and health of habitat and inhabitants

1. DESIGNATION of REFUGE:

All Tribal land within 4,882 acre boundary



Refuge Ownership



■ Fee
640 acres

■ Tribal
1285 acres

■ Allotted
1760 acres

2. WATER QUALITY MONITORING

Temperature
pH
Dissolved oxygen
Conductivity
Salinity
Depth
Invertebrates

Nitrates



3. DETERMINING HYDROLOGIC FUNCTIONALITY

- Establish evaporation rate-class A evaporation pan
- Determine surface and ground water interactions-
 - shallow 2" observation wells
 - piezometers
 - surface water monitoring locations
- Establish precipitation rates-tipping bucket rain gauge next to the evaporation pan.



4. DEVELOPMENT OF HABITAT AND WILDLIFE SPECIES MONITORING STRATEGIES

Map vegetation communities/associations

One site will be randomly selected per each vegetation community and 5 points will be surveyed within a 100 meter radius of this point.

Percent primary cover type

Vertical vegetation density

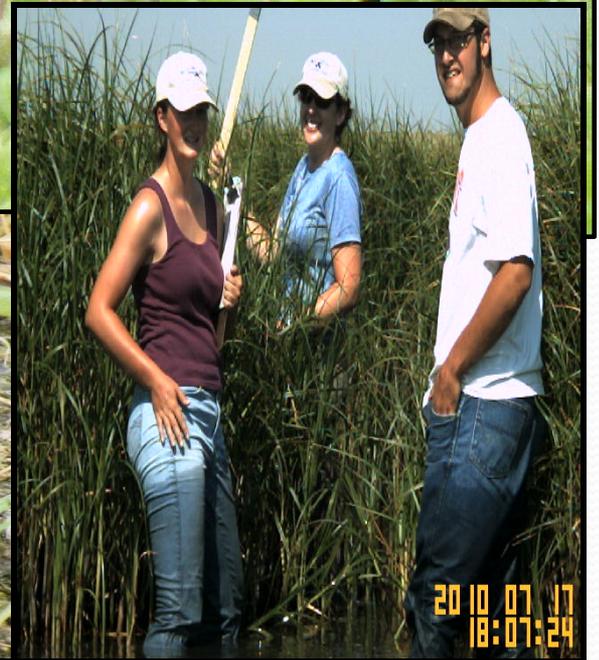
Average height of both live and dead vegetation- determines nesting/cover habitat

“Patty” counts-presence/absence of livestock

Breeding birds: 5 points per
vegetation community, 6 minute
survey of activity within 100 m
radius

Colonial nesting birds:
estimated nest count survey
before fledge

Amphibians: auditory and visual
survey



Small mammal diversity

Not much is known about ne Montana small mammal populations, especially in wetland communities

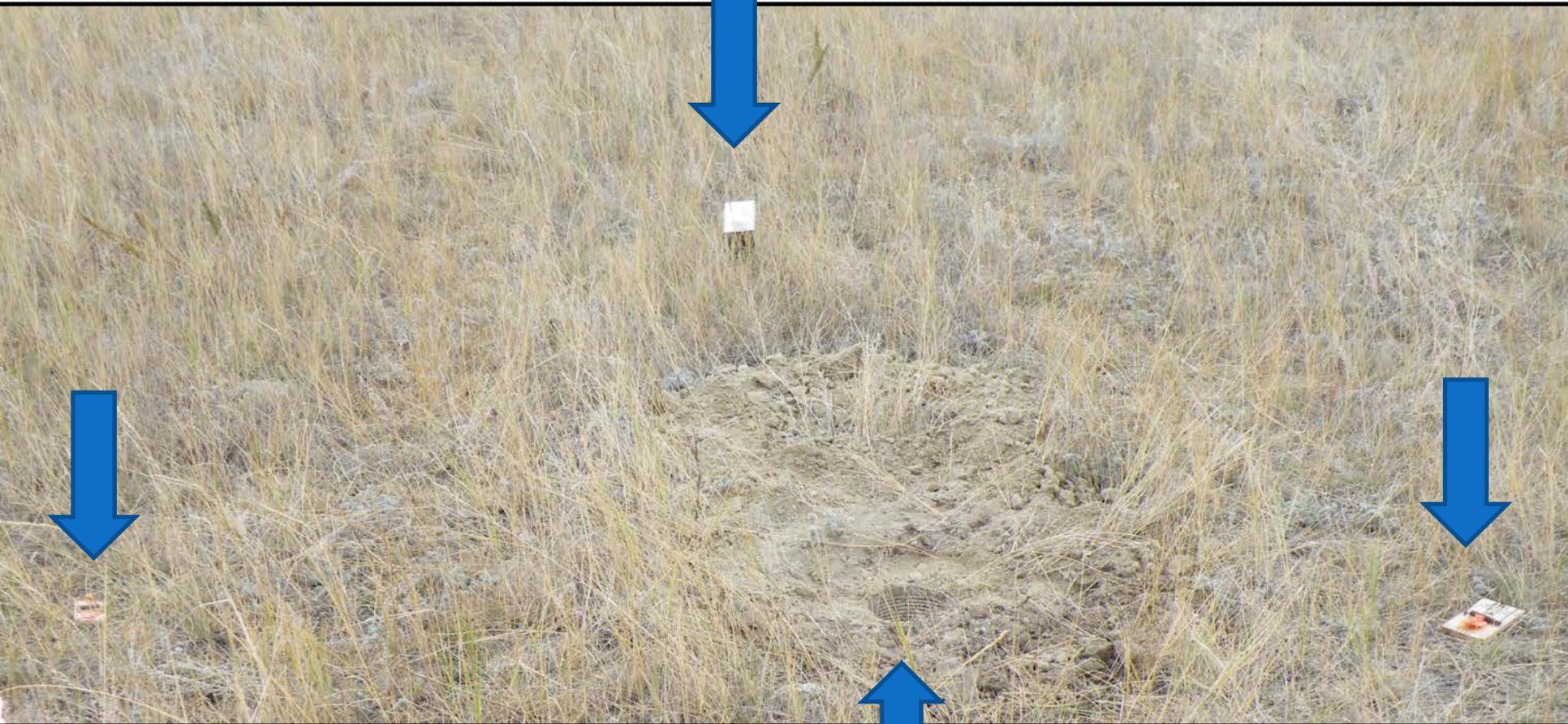
Quantitative data is virtually lacking from most EPA regions as well



1-100 meter transect consisting of 10 stations

3 transects each in main habitat types of mixed grass prairie, foxtail barley, and needle and thread grass

1 each in alkali bulrush, hardstem bulrush, and tufted hair grass



14 transects:

Mice: 39

Voles: 37

Shrews: 6

Least weasel: 1

13-lined ground squirrel: 1

Birds: 9 marsh wrens, 2 chicks

Herps: leopard frogs
tiger salamander

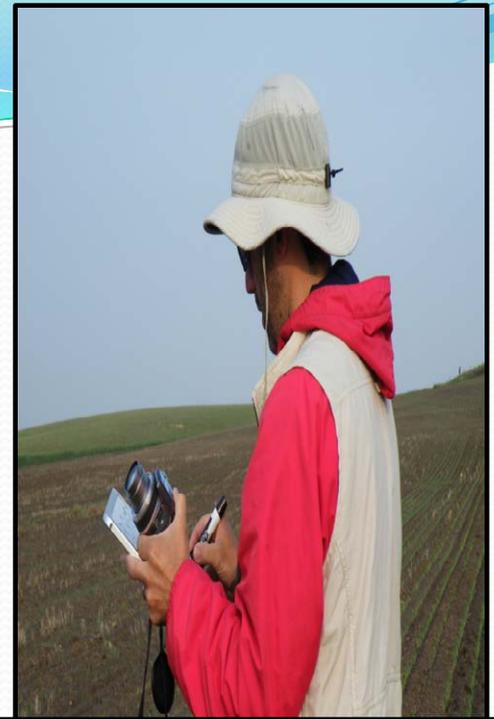


Habitat	# Transects	Mice	Vole	Shre		
Tufted hair grass	1	2	1			
Clustered field sedge	1	0	3			
Alkali bulrush	1	10	5			
Hardstem bulrush	1	9	6			
MG Prairie	3	16	1			
						tiger salamanders
Saline flat	1	0	0	0	0	0
Foxtail barley	3	1	14	4	0	0
Needle and thread grass	3	1	7	0	0	0



PARTNERS INCLUDE:

US Fish & Wildlife Service
Environmental Protection Agency
MT Audubon
Natural Resource Conservation Service
University of Montana
Philip L. Wright Zoological Museum
MT Natural Heritage Program
MT Fish, Wildlife, & Parks
Medicine Lake NWR
Red Rock Lakes NWR
Bureau of Land Management
Glasgow Chamber of Commerce
Army Corps of Engineers
Native Plant Society



QUESTIONS?

