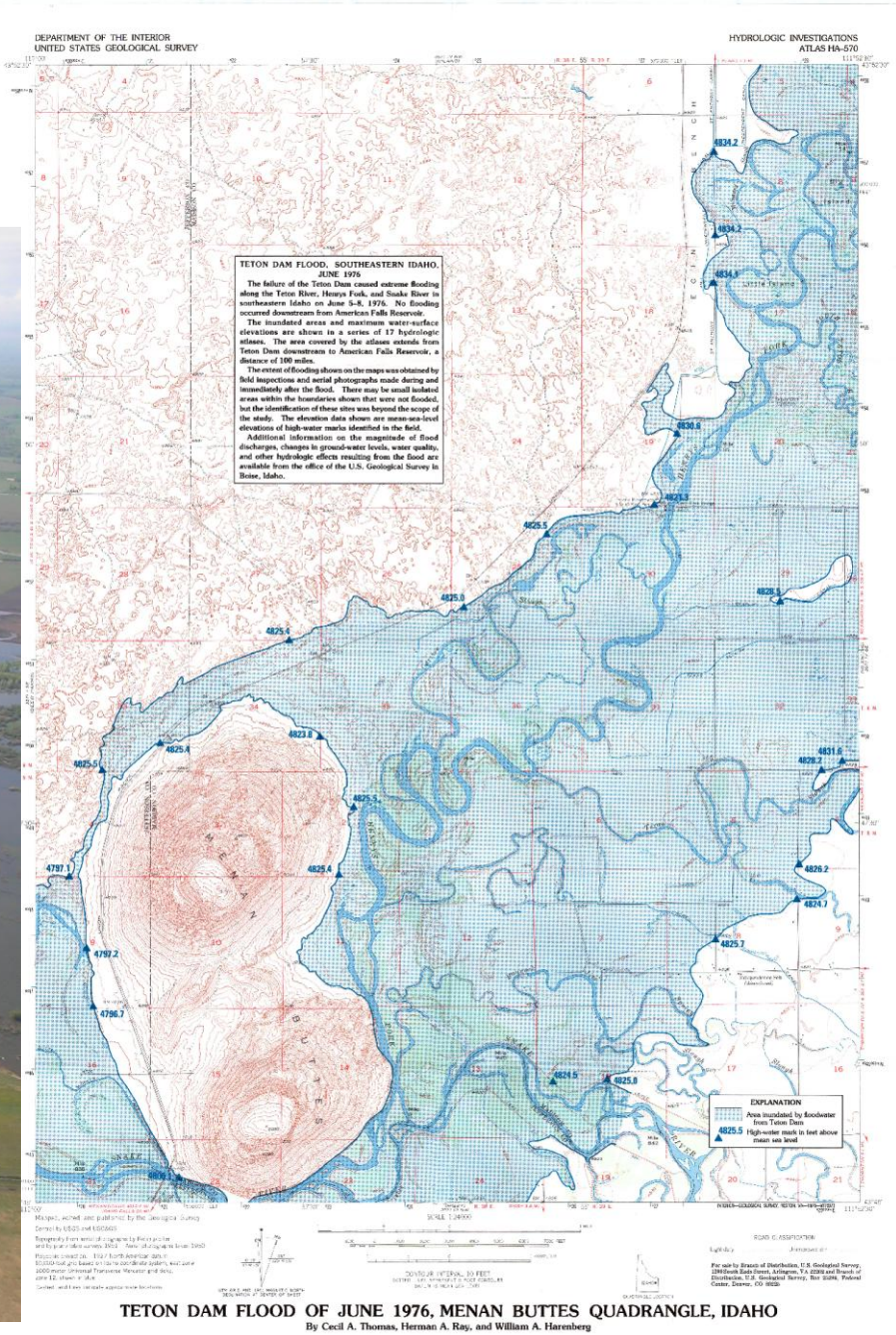
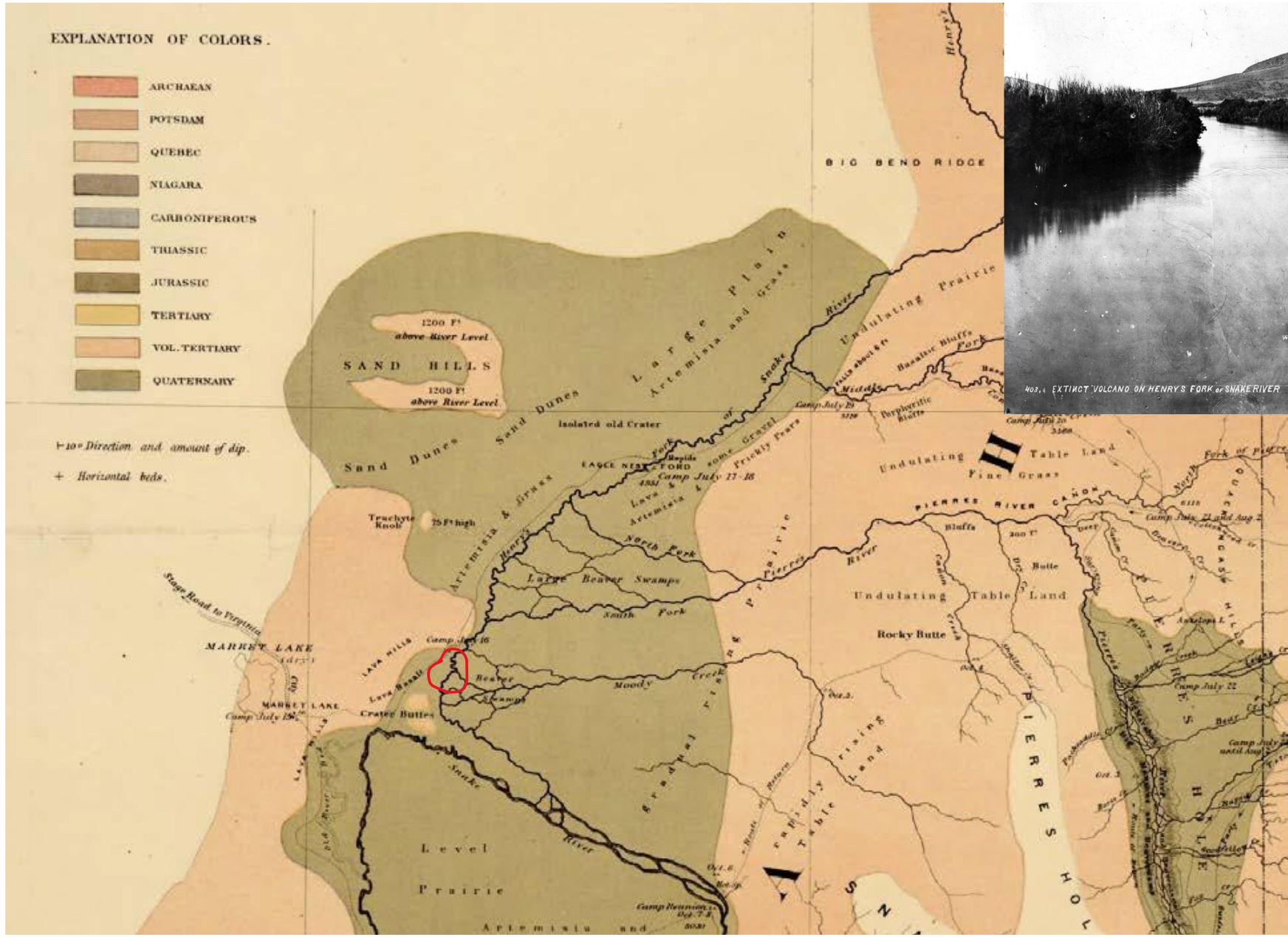
Cartier Slough Wildlife Management Area (CSWMA) Habitat Restoration

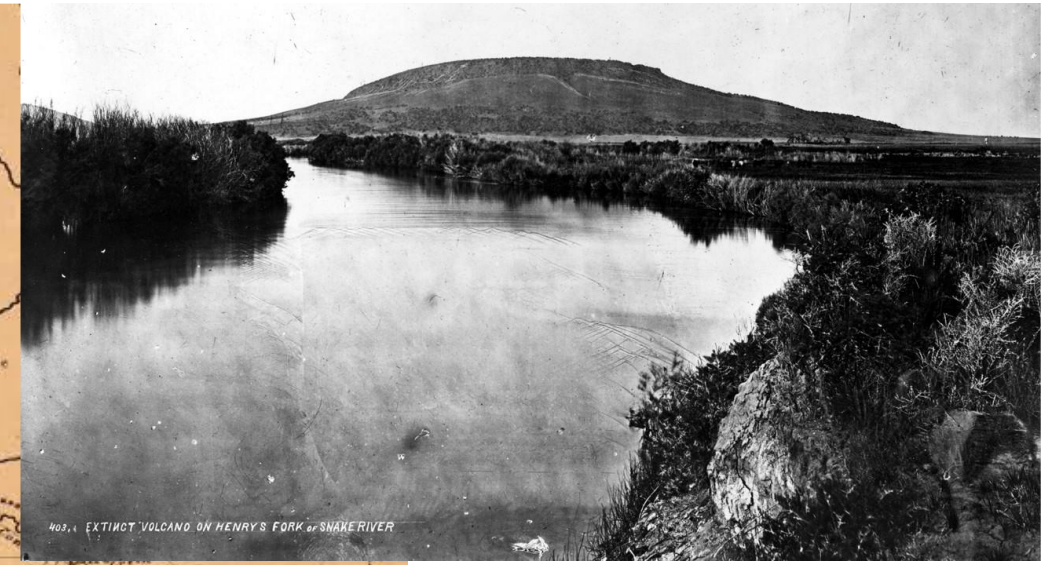
Madison County, Idaho

- Established in 1976
- 1,026 acres
- Idaho’s first waterfowl mitigation project
  - Ririe and Teton dams

Prone to flooding

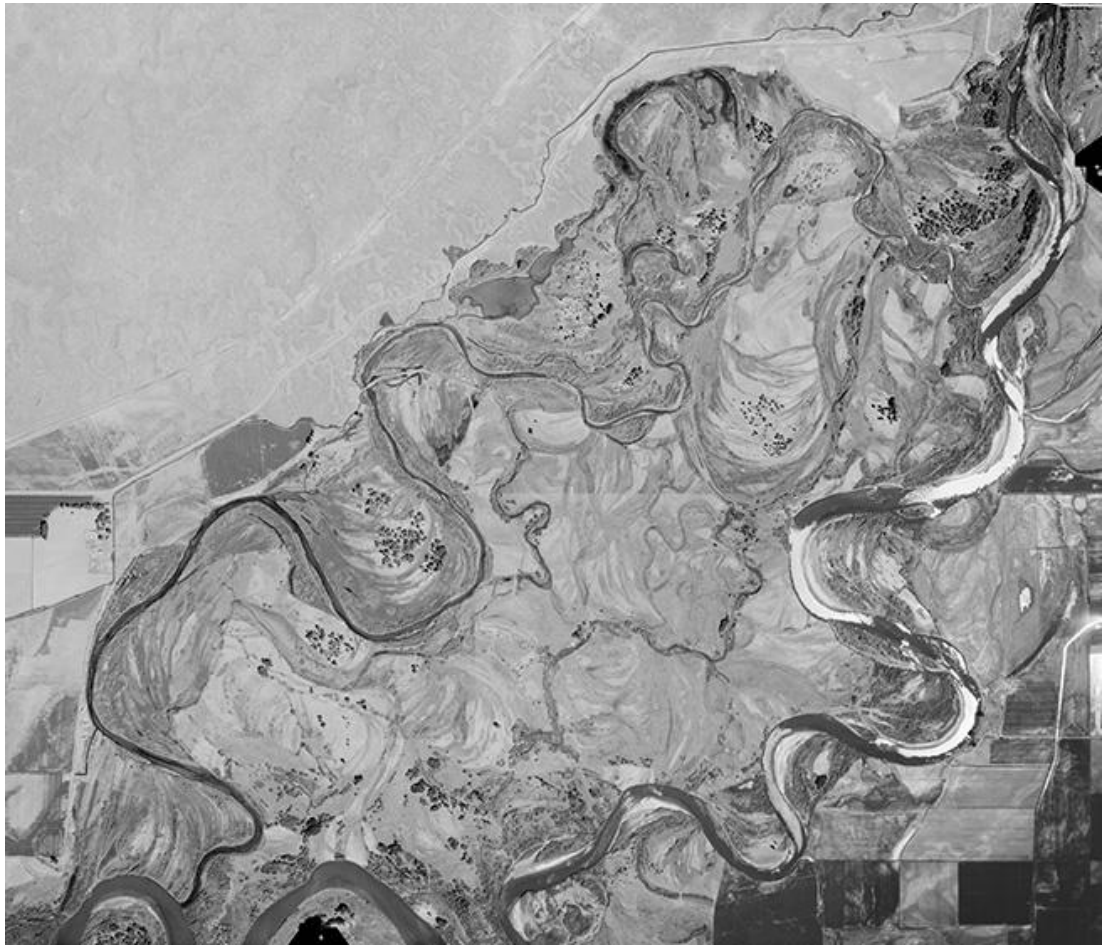



EXPLANATION OF COLORS.
ARCHAEAN
POTSDAM
QUEBEC
NIAGARA
CARBONIFEROUS
TRIASSIC
JURASSIC
TERTIARY
VOL. TERTIARY
QUATERNARY
Direction and amount of dip.
Horizontal beds.
BIG BEND RIDGE
SAND HILLS
1200 Ft above River Level
Large plain Artemisia and Grass
Undulating Prairie
Isolated old Crater
Sand Dunes
Trachyte Knob 75 Ft high
EAGLE NEST FORD
Camp July 17-18
Undulating Table Land Fine Grass
PIERRES RIVER CANON
Bluffs
Butte
Undulating Table Land
Rocky Butte
Large Beaver Swamps
North Fork
South Fork
Stage Road to Virginia
MARKET LAKE
LAVA HILLS
Lava Basalt
Crater Buttes
Camp July 16
Camp July 22
Level Prairie
Artemisia and
Rapidly rising Table Land
PIERRES HOLE


403. EXTINCT VOLCANO ON HENRY'S FORK of SNAKE RIVER

CSWMA, a natural wetland associated with a slough channel of the Henrys Fork River in Madison CO

- **Restore the natural riverine habitat within the slough.**
- **Removal of water control devise that limit the natural hydrologic connection of the slough waters to the Henry's Fork**
- **Remove dikes and restore the floodplain to wetland native habitat using historical pre-anthropogenic target conditions**
- **Encourage expansion of riparian area and diversity of native plants**

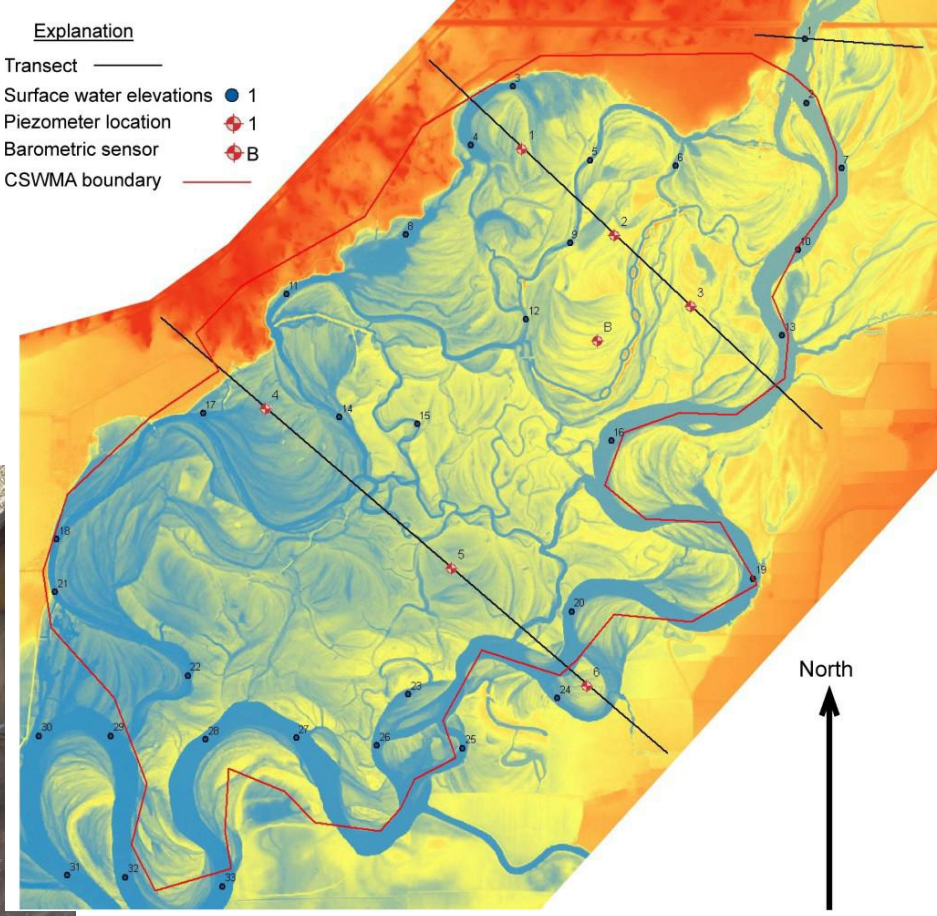


Flow barrier removal projects to increase channel and side-channel connectivity.

This project replaced multiple blocked culverts with open ford crossings to improve hydrologic connectivity into and through the Slough complex.

These barrier removal projects were designed to increase floodplain inundation and dynamic exchanges of water, sediment, and nutrients between the channel and side-channel areas for improved riparian growth and diversity to improve Yellow-billed Cuckoo (YBC) habitat.

Groundwater and Surface water Connectivity

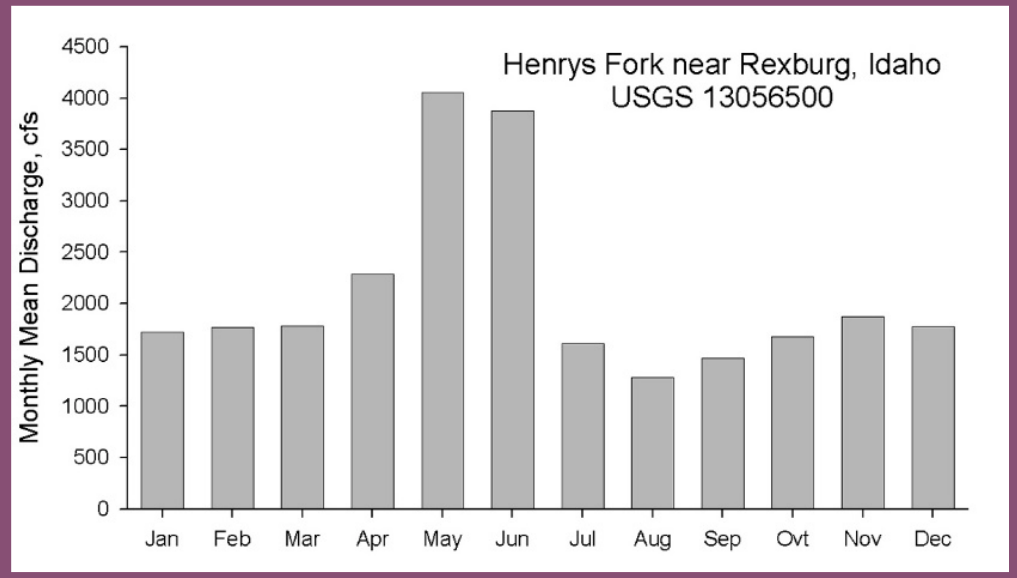


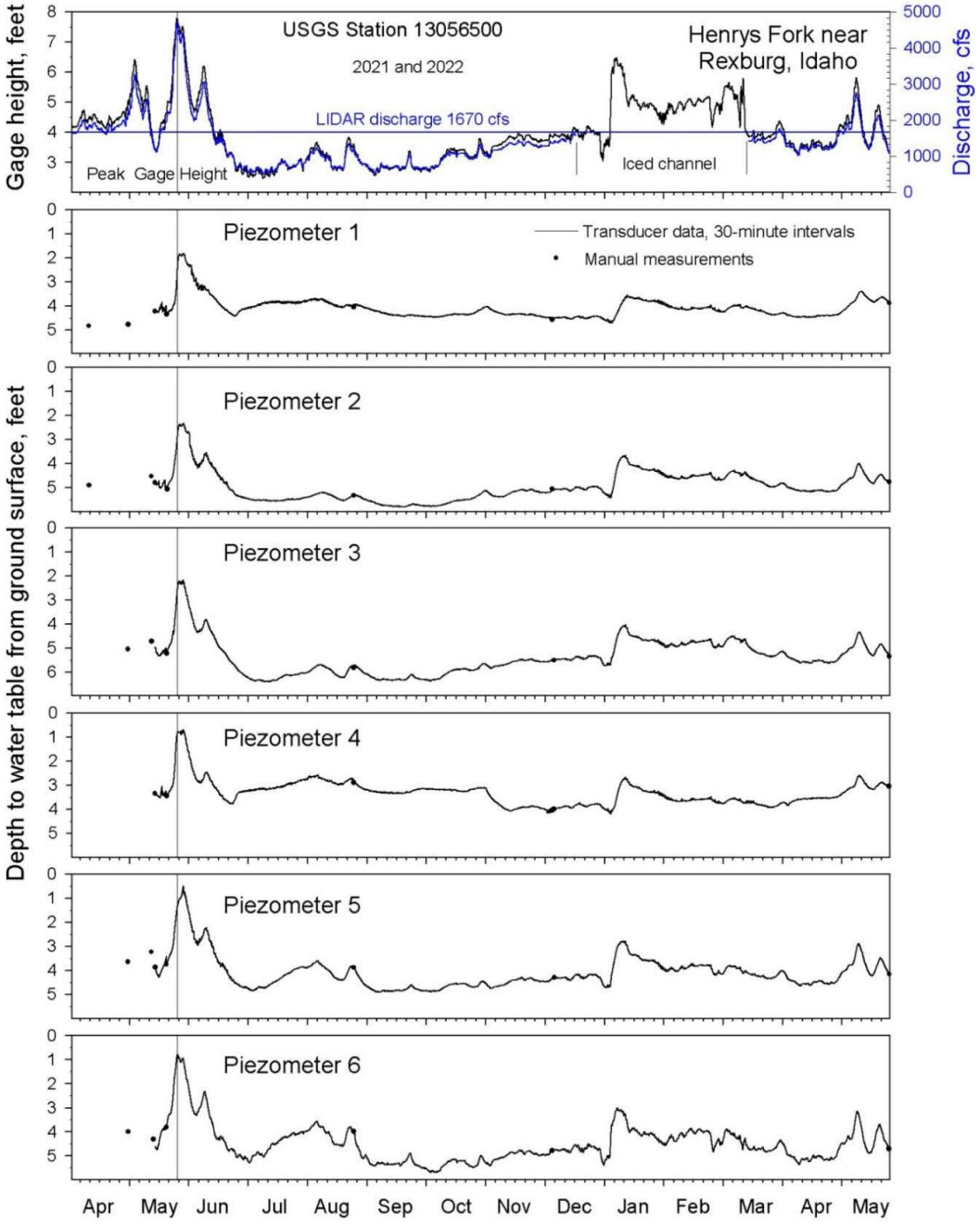
Piezometers on Cartier Slough WMA

N=6

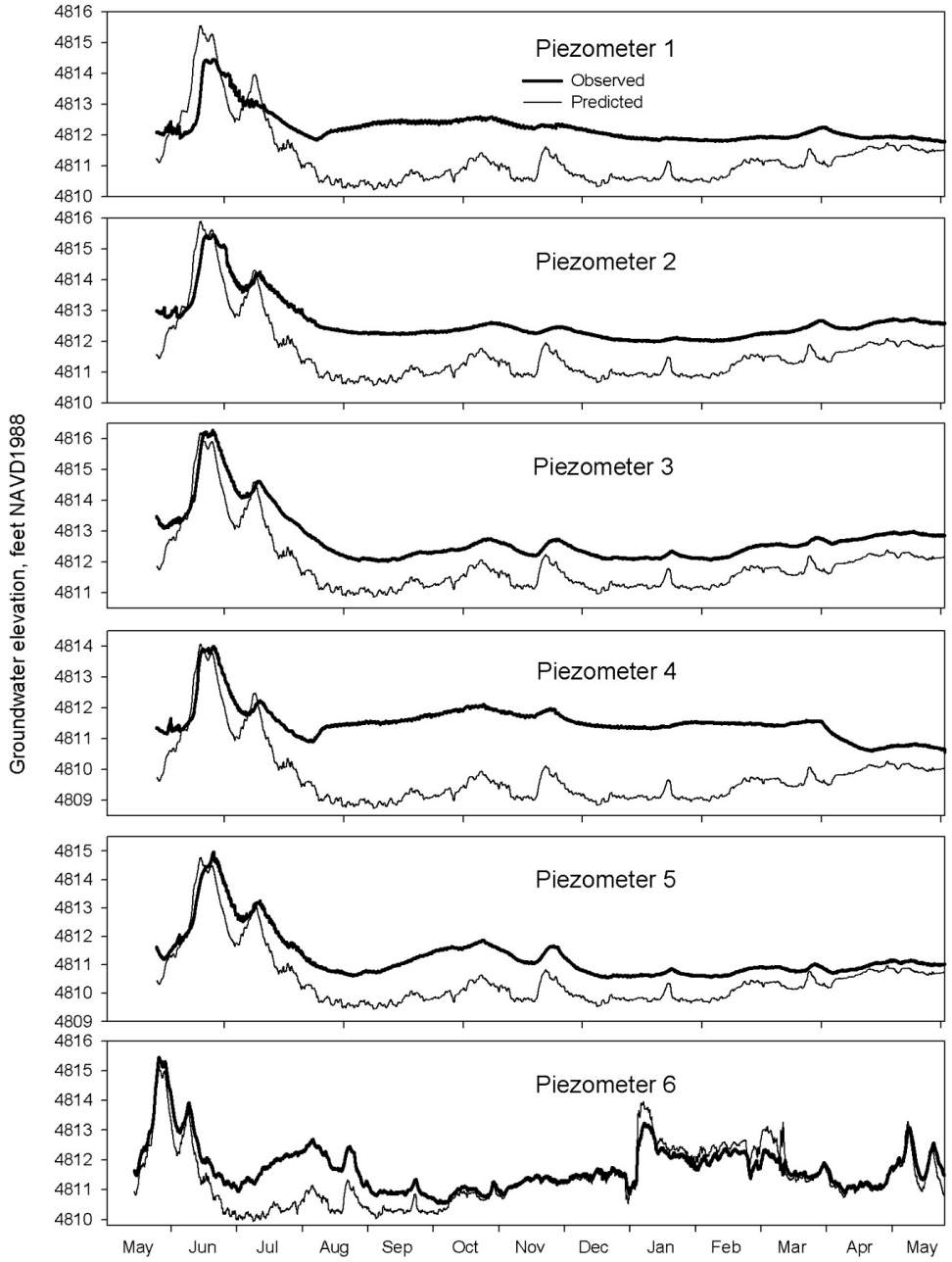
Pressure transducers with internal data-loggers were suspended within metal pipes with a mesh-screen at the lower two feet. These pipes, or piezometers, were driven about 8 feet into the ground to monitor groundwater elevations

- At most of the sites, the observed groundwater elevations are smoother over time compared to the gage heights. This is because open channel flow is more responsive than flow within sediments





Depth to groundwater surface at piezometers

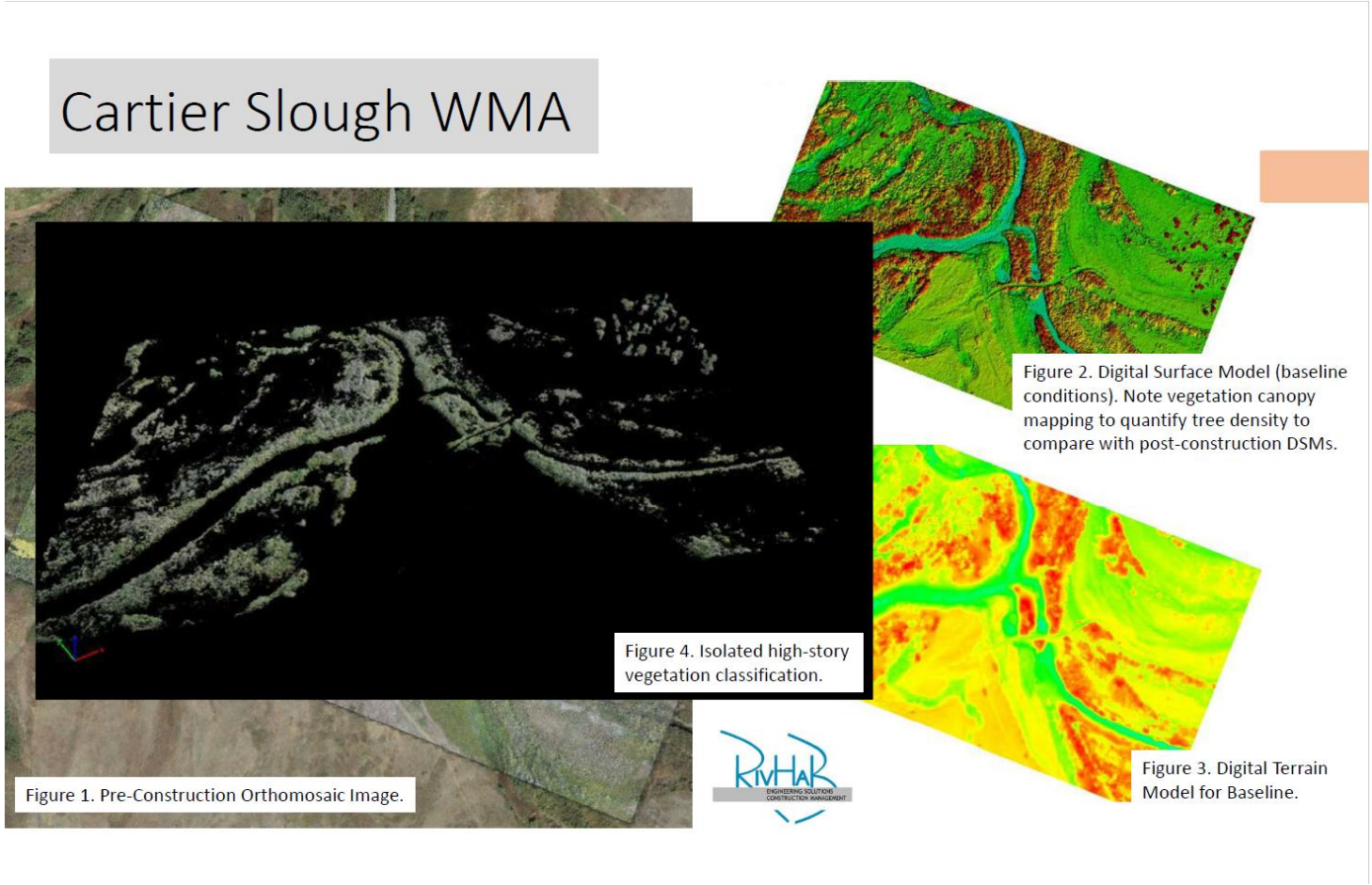


Observed and predicted groundwater elevations at piezometers

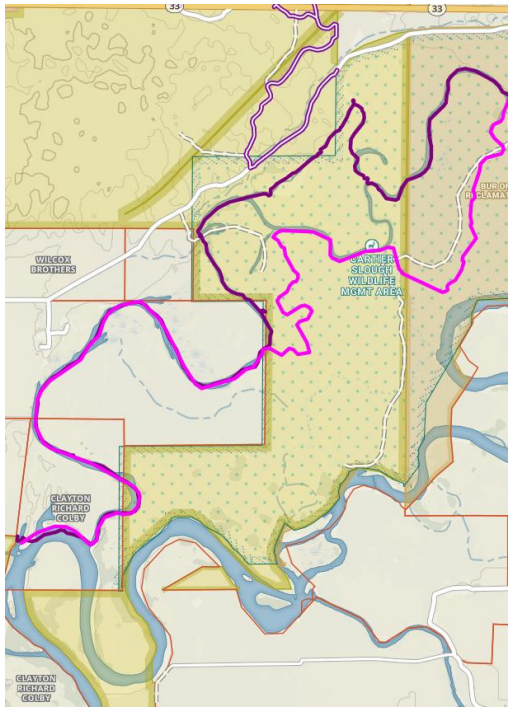
Drone Surveying

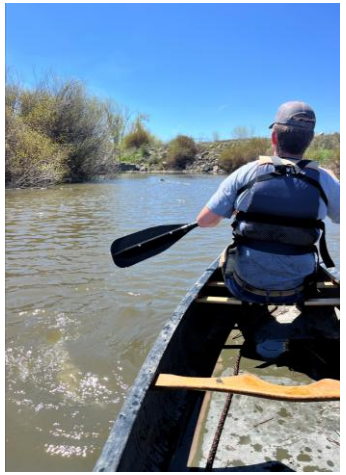
Data used to measure restoration outcomes for several metrics:

- quantifiable areas for high-story vegetation
- riparian vegetation
- wetted areas
- wetland classification
- high-water flood inundation areas



Over 7 miles of waterways reconnected with more consistent water flowing





What have we noticed so far…..

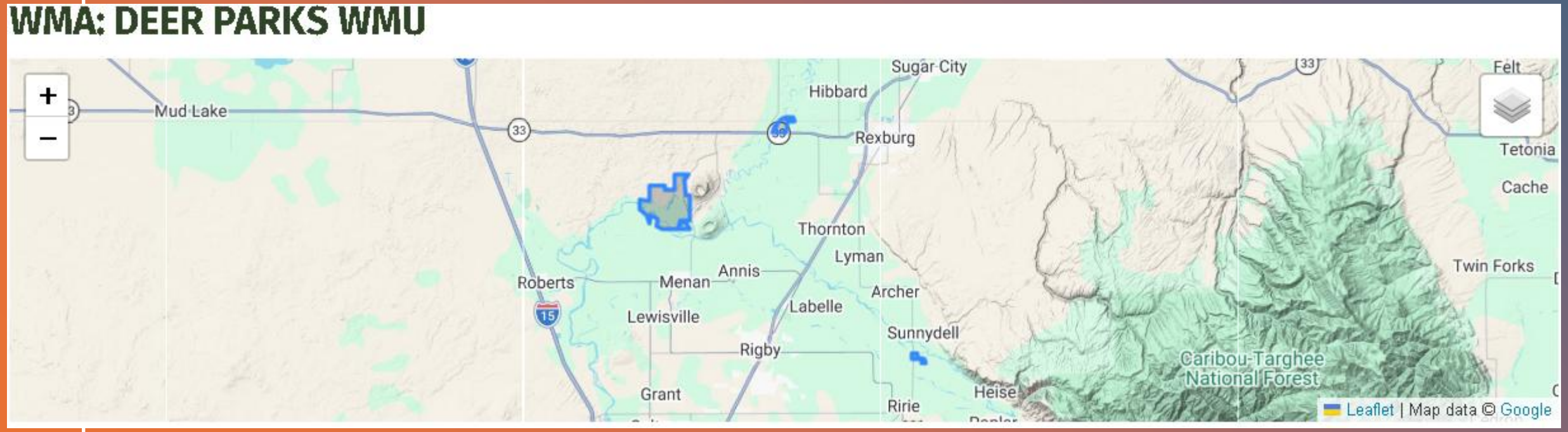
Least Chub (Lotichthys phlegethontis)
-endangered freshwater fish

Beaver activity

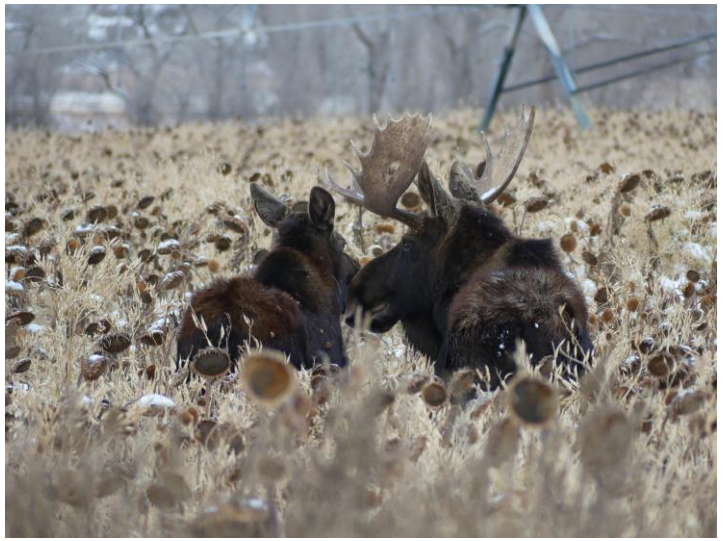
Wildlife security

Deer Parks Wildlife Mitigation Unit (DPWMU)- Habitat Restoration Projects

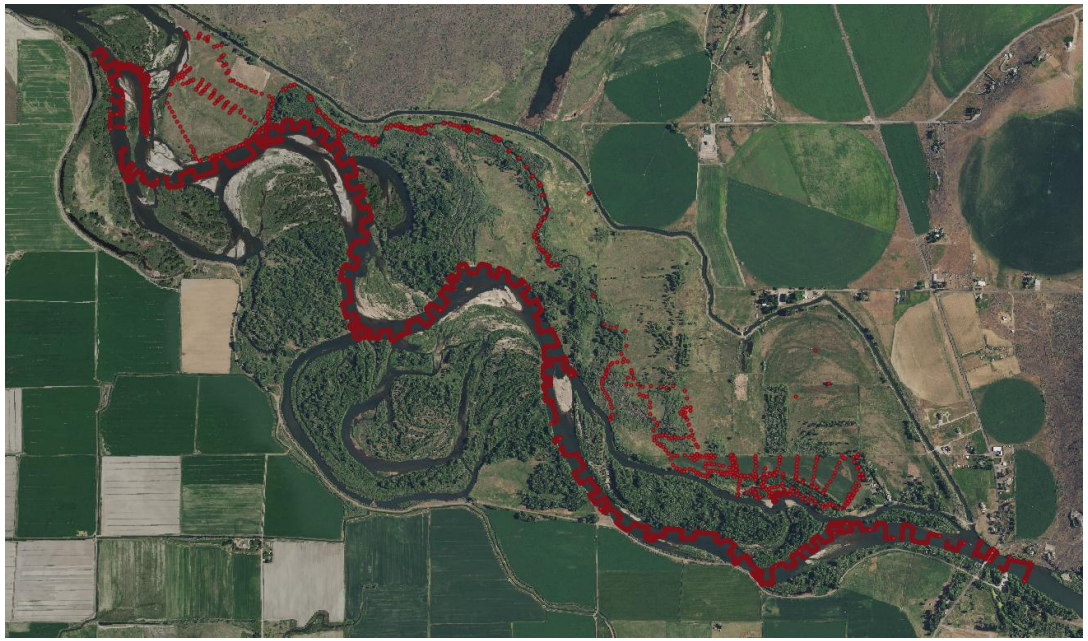
Jefferson and Madison County, Idaho

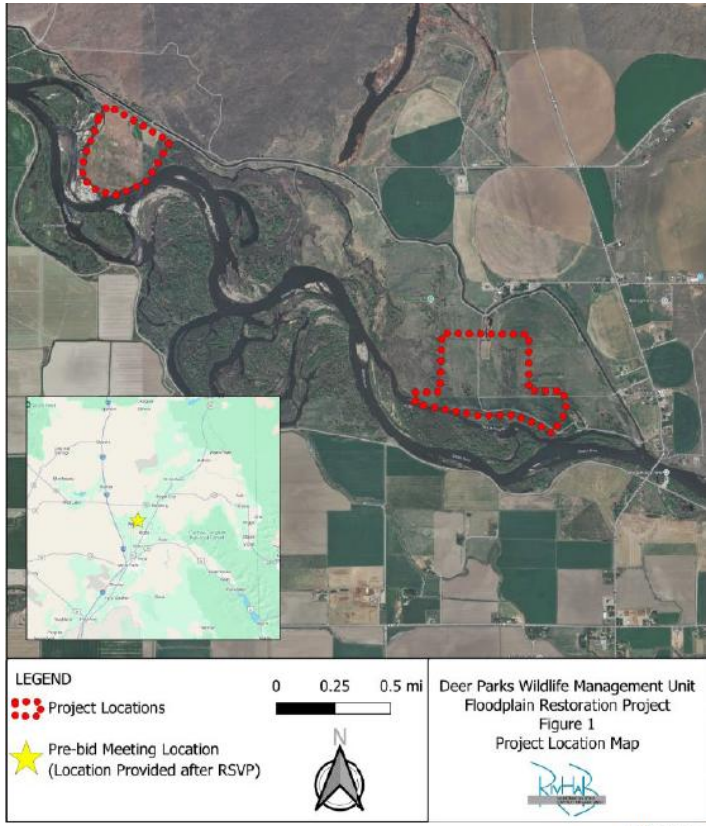


- ❑ Established in 1997
- ❑ 3,101 acres
- ❑ Partial mitigation for Palisades Dam



DPWMU Main Snake River project area





Project goals

- Convert from the previous agricultural land use to improved hydrologic regime to support more diverse and abundant wildlife, including supporting recovery goals of Yellow-billed Cuckoo (YBC).

GRAPHIC SCALE
0 1000 2000
(IN FEET)
1 INCH = 1000 FT

DRAWING IS REDUCED TO 50% OF FULL SCALE
0 1"
BAR IS 1 INCH ON ORIGINAL DRAWING. IF NOT 1 INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

SECTIONS 21, 20, 16, 17 TOWNSHIP 5N, RANGE 38E, BPM
IDAHO 7.5' USGS QUADRANGLE

RIVHAB ENGINEERING SOLUTIONS CONSTRUCTION MANAGEMENT

IDAHO FISH & GAME

PROFESSIONAL ENGINEER LICENSED PRELIMINARY NOT FOR CONSTRUCTION STATE OF IDAHO JEANNE M. MCFALL

REV.	DATE	DESCRIPTION	BY

DFG XXXX-XXX
DEER PARKS WMU
HABITAT RESTORATION

DESIGNED:	RIVHAB
DRAWN:	SG
CHECKED:	JM
DATE:	03/02/22
SCALE:	1" = 1000'
APPROVED:	

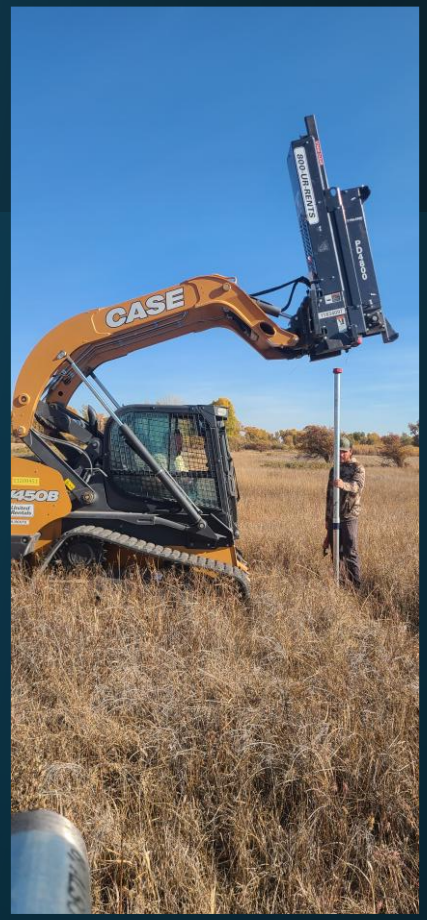
SITE EXHIBIT

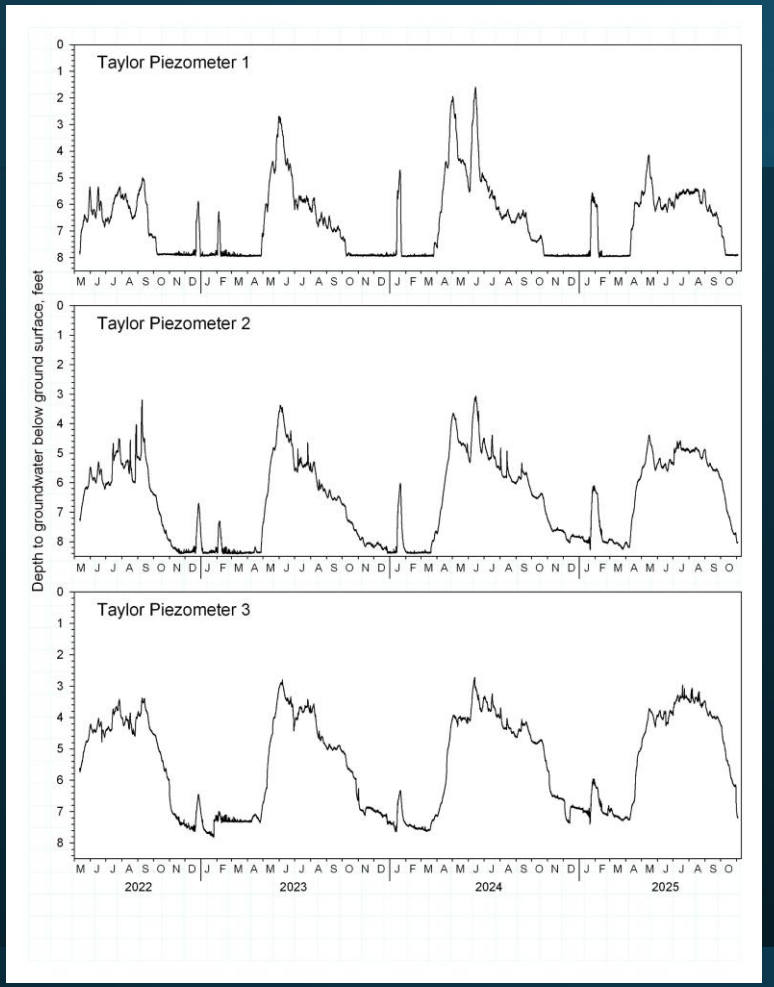
SHEET:
E1

3 OF _

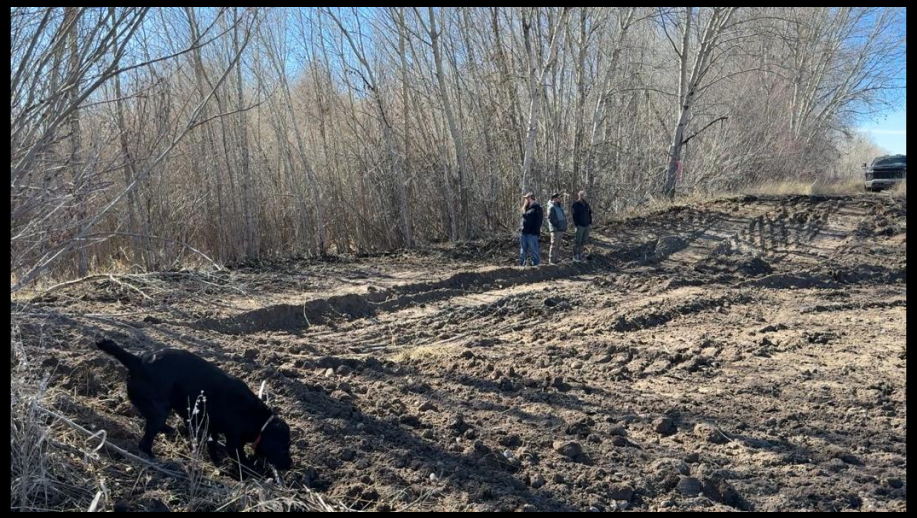
- Model of 20 year water flow event

Piezometers installed on both sites





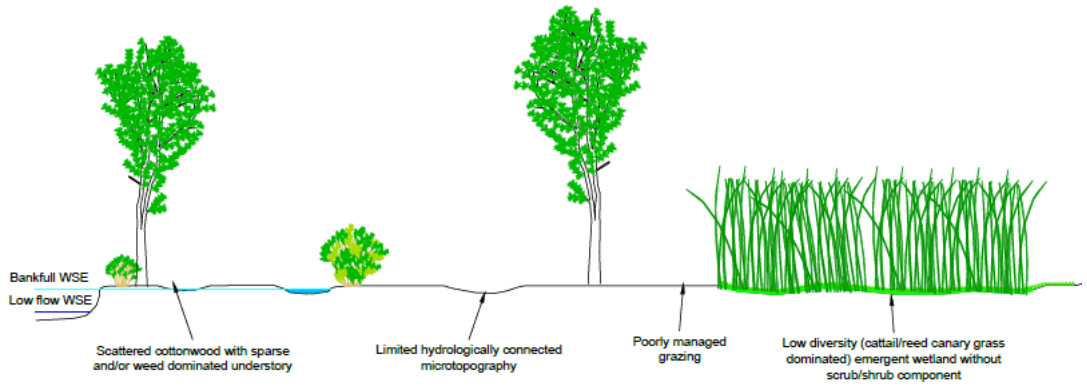
Remove berm to allow water to flow across floodplain at higher river flows



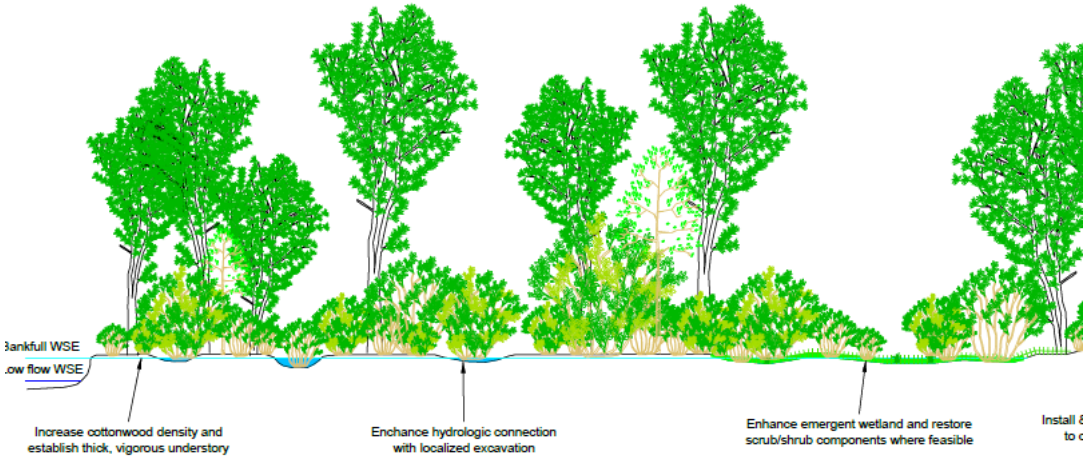
Over 4,000 trees and shrubs to be planted this fall

All wood stock and seeds collected on site in 2025.

- ✓ Cottonwood
- ✓ Large willow trees (i.e. peachleaf)
- ✓ Streambank willow
- ✓ Red Osier dogwood
- ✓ Silverberry
- ✓ Hawthorn
- ✓ Wild rose
- ✓ Snowberry
- ✓ Chokecherry



LOW QUALITY EMERGENT WETLAND



HIGH QUALITY FORESTED SCRUB-SHRUB WETLA

Beaver Dick/Hwy 33 Restoration project

Restore and promote floodplain

Potential restoration approaches may include, but are not limited to:

- Removal of historic channel plugs;
- Bioengineered bank stabilization treatments associated with plug removal activities;
- Floodplain recontouring;
- Construction of starter channels;
- Partial or complete deconstruction of existing berms; and
- Native riparian and wetland vegetation plantings.

Questions?

Josh Rydalch

Wildlife Biologist

Idaho Department of Fish and Game

Josh.Rydalch@idfg.Idaho.gov