The Use of Waterfowl Nesting Structures in Remediated Areas as an Educational and Research Tool

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Presentation Overview:

- What is MTWW?
- Montana and its role for waterfowl
- Using hen houses as an outreach and educational tool
- Using hen houses for research
- Questions

What is MTWW?

- Montana’s only state-based, waterfowl-focused conservation org
- Education and outreach programing
- Hen house project
- Metals bioaccumulation in waterfowl study
- Habitat “influencers”
- Fisheries conservation

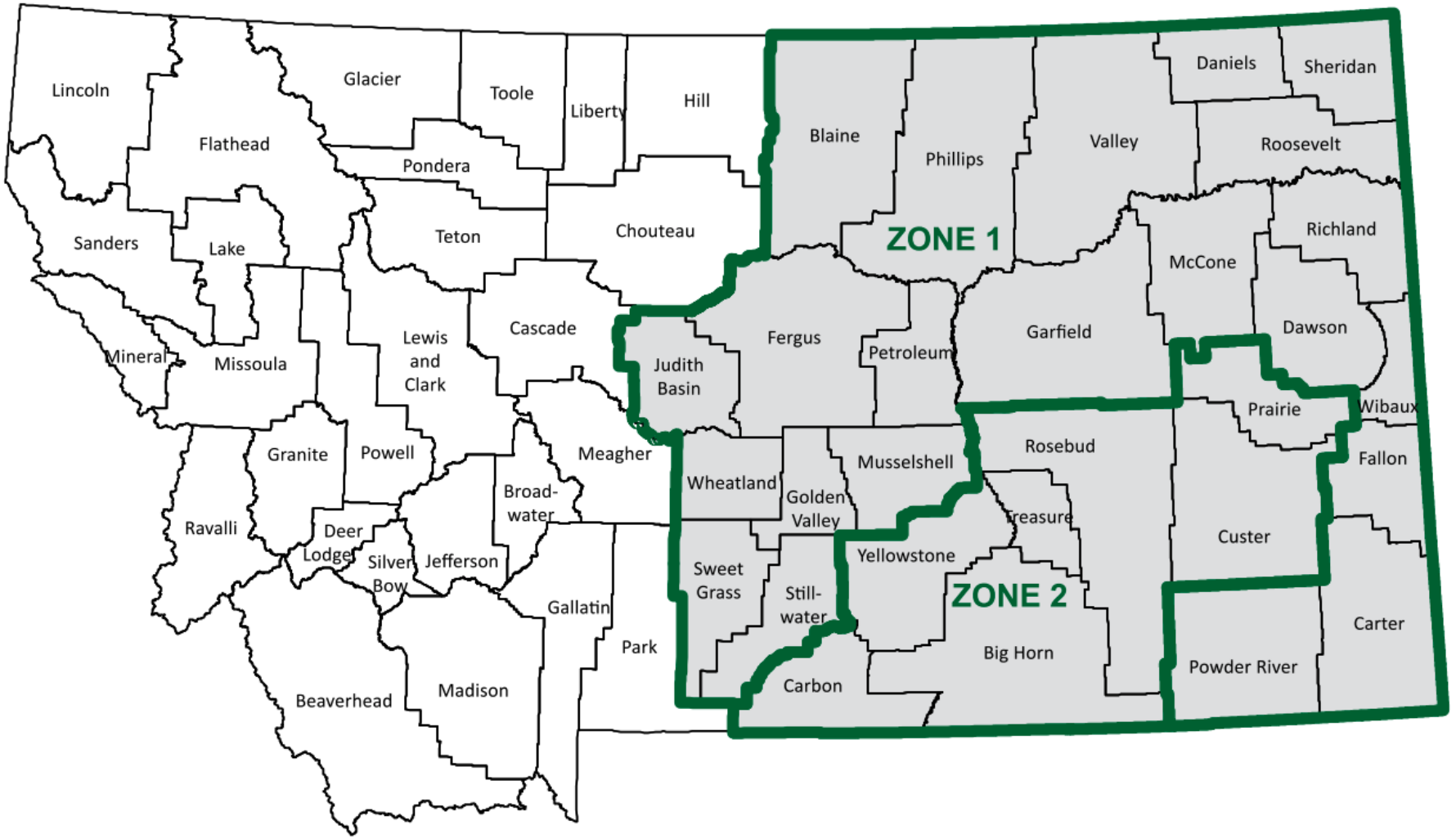
Waterfowl in Montana

Montana has apx **27 species** of waterfowl

Some ducks **migrate** through Montana, some ducks **nest** in Montana, and some ducks **winter** in Montana

Montana ranks #3 in producing ducklings

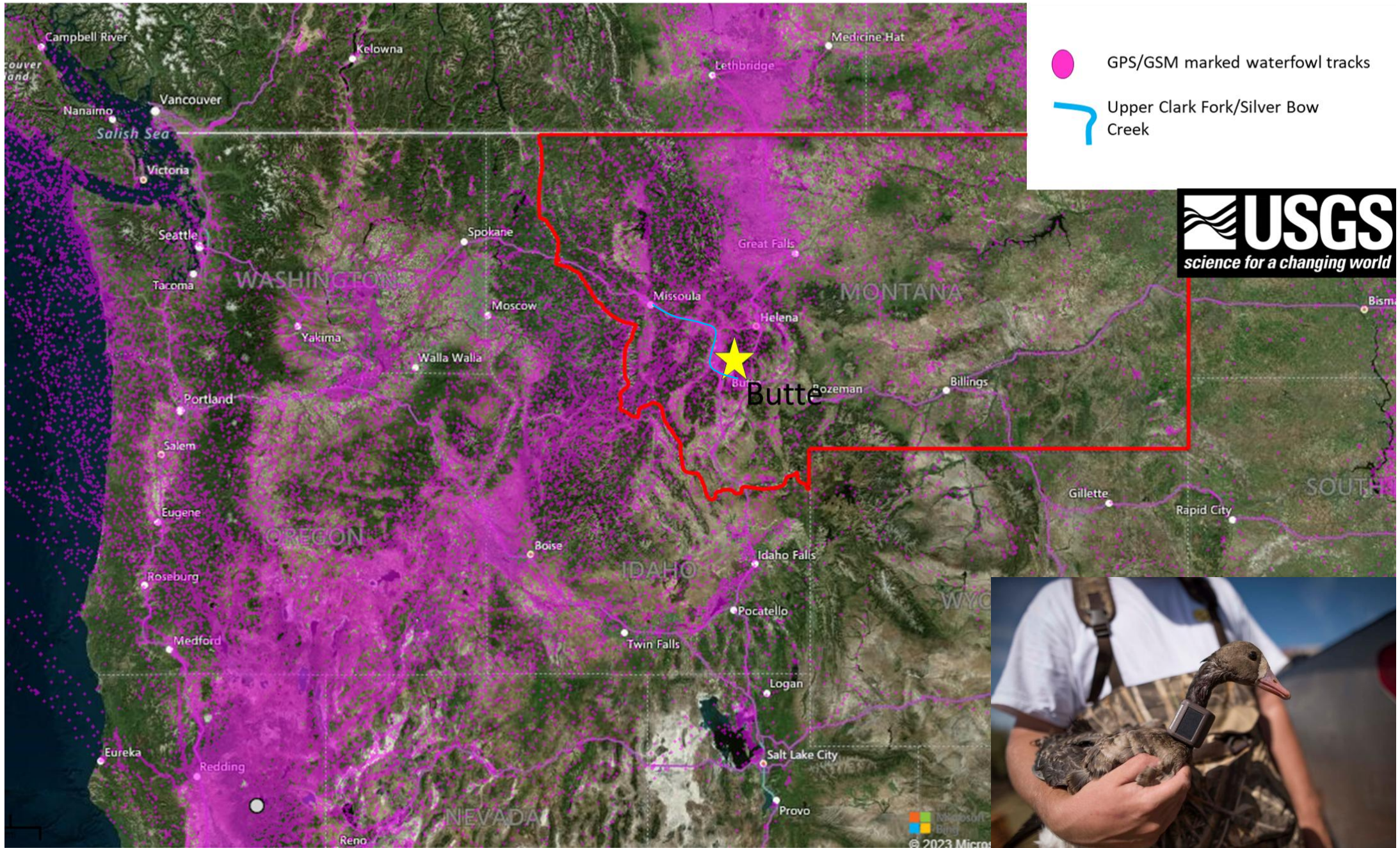
MONTANA WETLANDS & WATERFOWL



Pacific Flyway

Central Flyway

Butte, MT and Waterfowl Migration

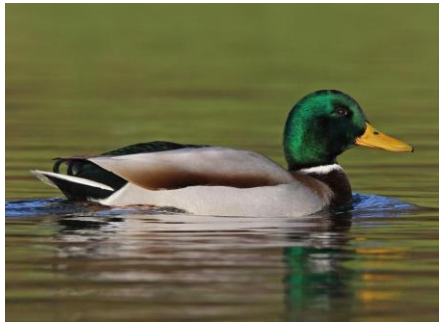


Hen Houses as an educational tool

What is a Hen House?

- Elevated hen tubes provide nesting habitat & protect vulnerable hens/eggs from predation – being over water is the protection
- **80%** use-rates (Delta Waterfowl)
- Boosts nesting success **40 – 90 %** compared to **5%** (South Dakota State University, SD Department of Game, Fish & Parks, Delta Waterfowl)
- Used by a variety of upland nesting ducks, sometimes cavity nesters

Species that Benefit:



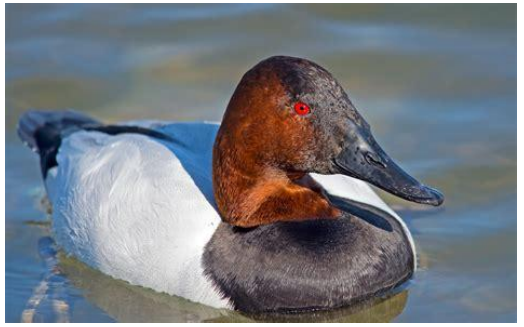
Mallard

Lesser Scaup
(population decline, restrictive hunting limits and seasons, nesting in Ramsay)

Redhead

Common Goldeneye

Wood Duck



Canvasback

Specifically designed so that Canada geese don't fit

Wild Waterfowl Workshop

Wild Waterfowl Workshop

Project Wild Educator Trainings

Conservation and the trades!

Cool, so what does this have to do with reclamation and restoration?

"The largest wetland creation project in the history of Montana" – me, enthusiastically

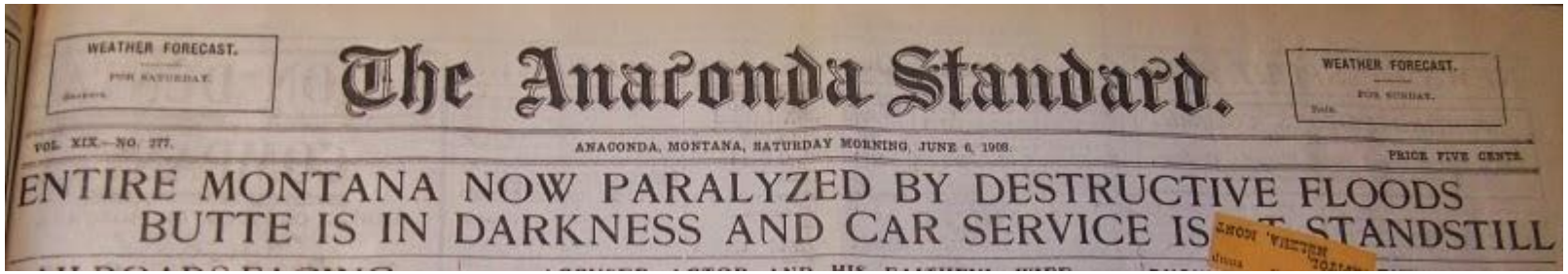
Before

After

- 10,000 miles of underground workings
- Waste rock (overburden) dumps
- 9 Smelters
- Sulfide ore body

Sliver Bow Creek used for tailings disposal pre-environmental regulations

And then in 1908, it rained, and rained…



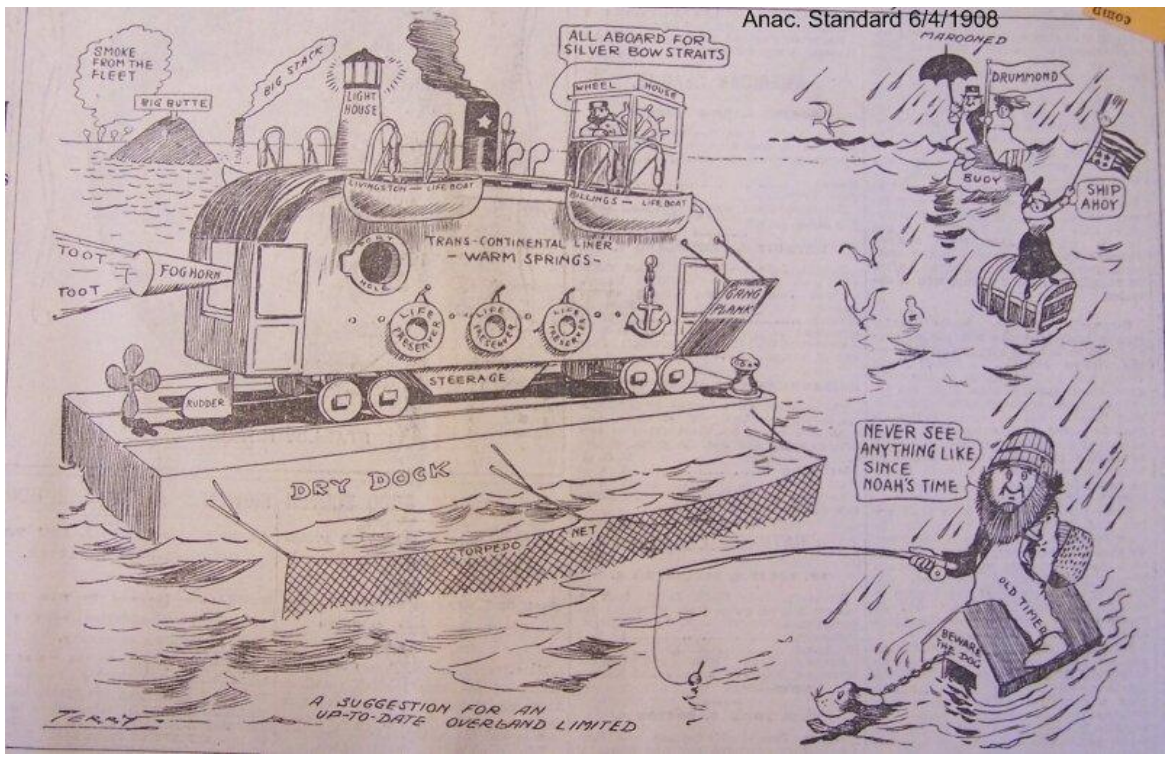
WEATHER FORECAST. FOR SATURDAY.

The Anaconda Standard.

WEATHER FORECAST. FOR SUNDAY.

VOL. XIX—NO. 277. ANACONDA, MONTANA, SATURDAY MORNING, JUNE 6, 1908. PRICE FIVE CENTS.

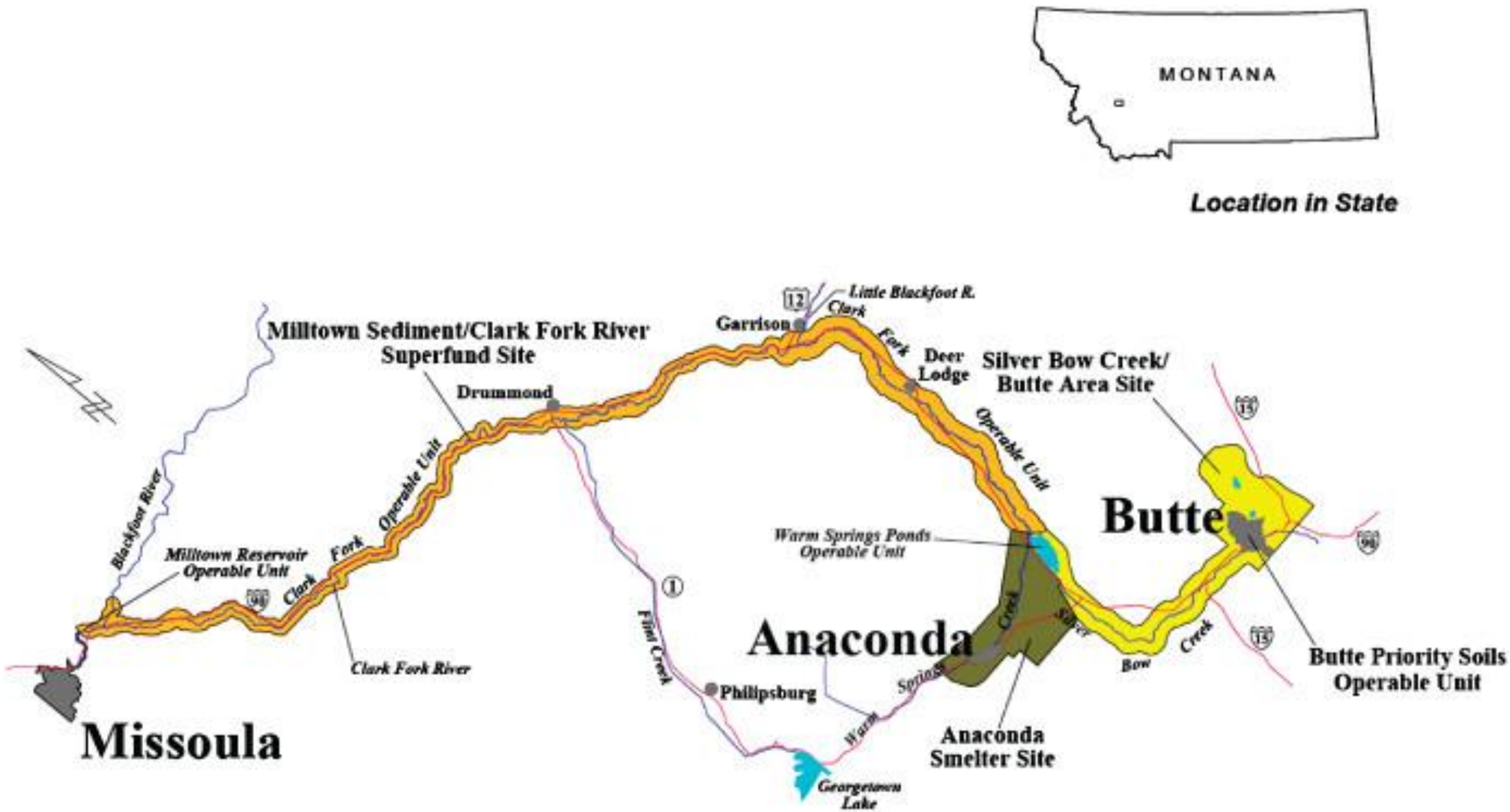
ENTIRE MONTANA NOW PARALYZED BY DESTRUCTIVE FLOODS
BUTTE IS IN DARKNESS AND CAR SERVICE IS [illegible] STANDSTILL



1908 Flooding all the way down and past Missoula

Dry Cottonwood Cr Ranch circa 2013

Superfund Operable Units of the Clark Fork River Valley



Remediation and Restoration in the Clark Fork Valley

- Created/restored NEW and amazing waterfowl habitat
- Diverse array of ponds/wetlands and expansive scale
- Focus area for hen houses

MT Standard

Habitat influencing and hen house project

Opportunities for wetland habitat enhancement and management
in the Upper Clark Fork Valley, Montana

Prepared by:
Montana Wetlands and Waterfowl

MONTANA WETLANDS & WATERFOWL

Prepared for:
Montana Natural Resource Damage Program

November 2023


Ramsay Flats 2002
Ramsay pre-remediation in 2002
RAMSAY
Montana Livestock Auction Company
90
SILVER
Port of Montana
Google Earth
Image © 2022 Maxar Technologies
N
1000 ft


Ramsay Flats 2014
Ramsay Flats post-remediation in 2014
RAMSAY
Montana Livestock Auction Company
Port of Montana
BRAND NEW WETLANDS!
Google Earth
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1000 ft

Restorative action

- Ducks and nest site fidelity
- These are still heavily impacted areas which tend to favor mesopredators (skunks, coyotes, etc.)
- Everything eats ducks!!
- 15% nesting success overall to sustain a population (mallards)

Research Opportunities

- Use rates, success rates, brood size, and location
  - Collab with OSU and Delta Waterfowl
- Metals bioaccumulation Pilot Study
  - Collab with UM
- Telemetry and banding
  - Collab with MTFWP and USFWS

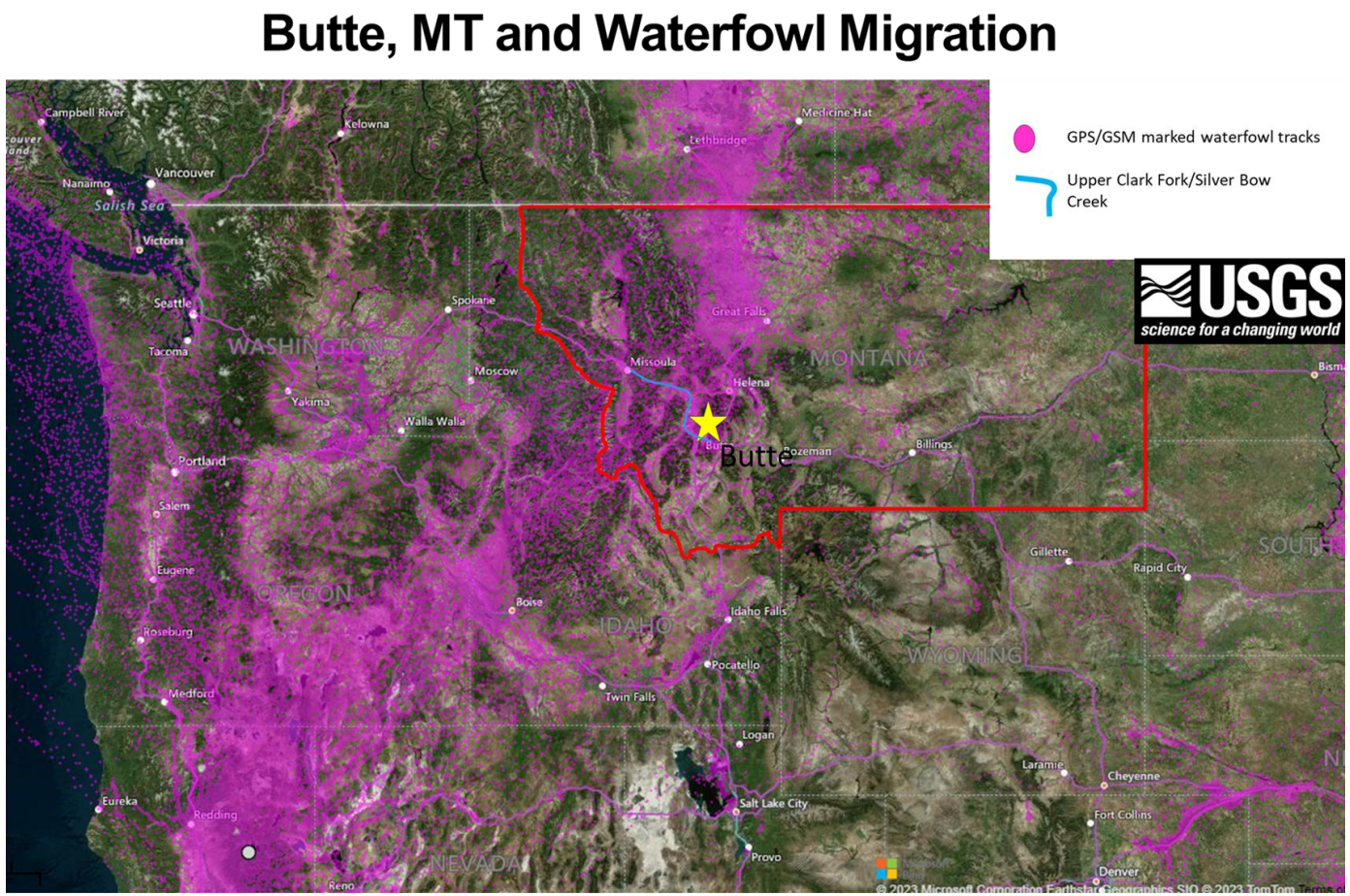
Metals Bioaccumulation Pilot

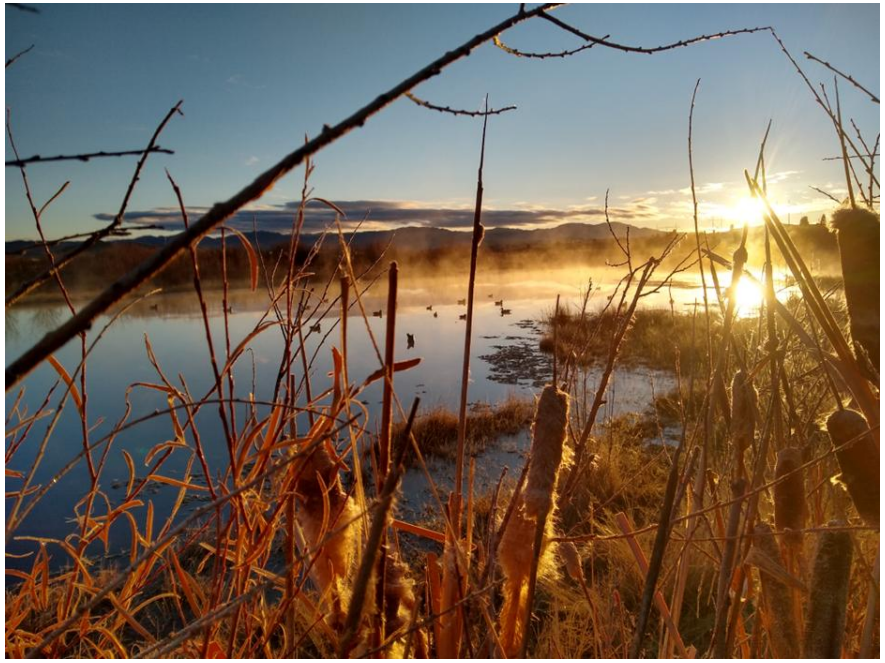
- Duck hens switch to protein diet (macroinvertebrates) in nesting area before nest initiation
- Successful hens stay and molt (flightless) all summer near nest sites
- Metals bioaccumulation can be measured passively with eggshells and feathers
- Locally nesting waterfowl are harvested in the first few weeks of the season
- Initial results coming 2025/26

MONTANA WETLANDS & WATERFOWL

BIRD ECOLOGY LAB
UNIVERSITY OF MONTANA

Imagine duck hunting here!






JSI


MAP
EJ GRANTS HUB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USGS
science for a changing world


NATURAL RESOURCE DAMAGE PROGRAM
MONTANA DEPARTMENT OF JUSTICE


BUTTE-SILVER BOW
THE RICHEST HILL ON EARTH
MONTANA


DELTA
WATERFOWL


U.S.
FISH & WILDLIFE
SERVICE
DEPARTMENT OF THE INTERIOR


DEQ
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Montana Fish,
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Thank you!