

Vertebrate Zoology Program Update



W Y N D D
Wyoming Natural
Diversity Database

Wyoming Natural Diversity Database
2026 Partners Meeting



PARTNERS AND COLLABORATORS





Personnel

- Ian Abernethy
- Associate Director and
Zoology Program Manager



Personnel

- Ellen Whittle
- Bat Project Manager





Personnel

- Katrina Cook
- Zoology Project Manager

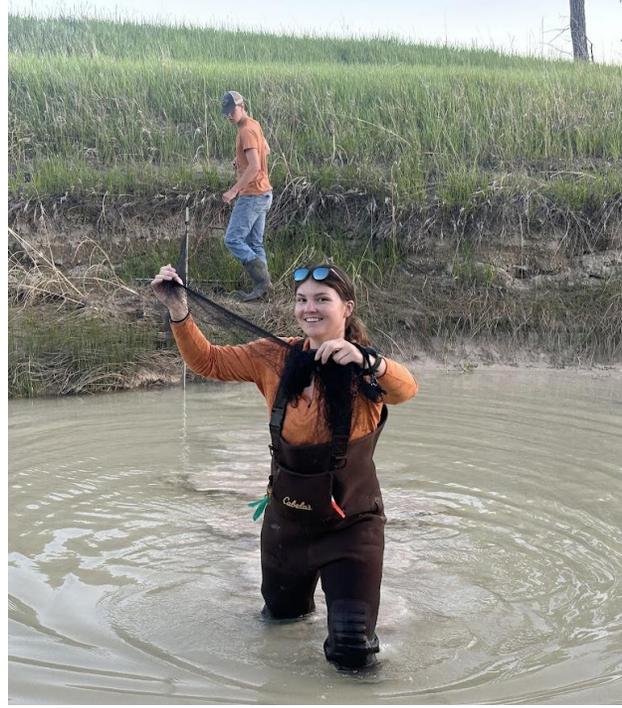


Personnel

- Renee Lile
- PhD Student

- **“Factors Influencing Population, Diet, Body Condition and Management of Bats in the Black Hills of South Dakota”**





Field and data technicians

- Point counts
- Capture surveys
- Acoustic stations
- Acoustic data processing and manual vetting

Vertebrate Zoology Projects—2025

Birds

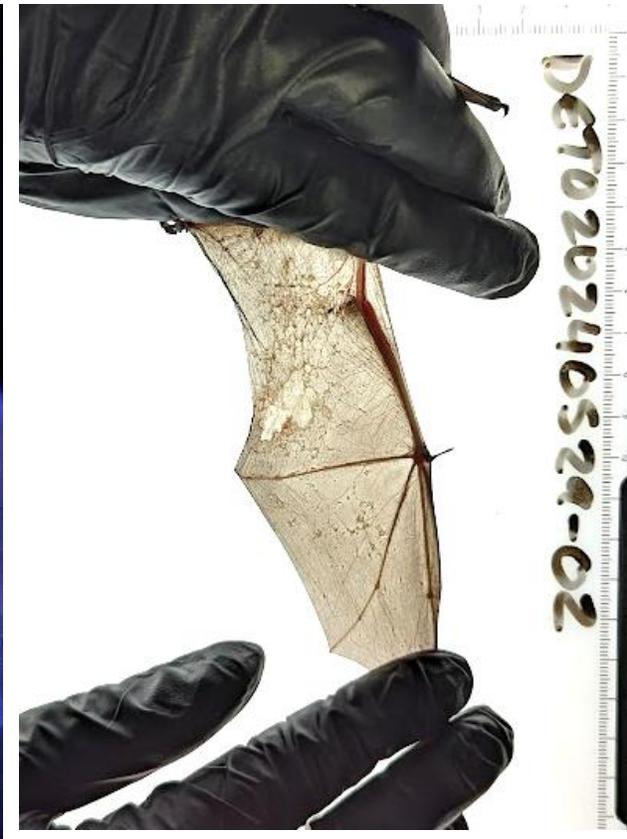
- Integrated Monitoring in Bird Conservation Regions

Mammals

- Acoustic Reference Call Library for Native Bat Species
- Endangered Northern Long-eared Bat Vaccination & Monitoring
- Fall Bat Inventory – Statewide (WY)
- Monitoring & WNS Surveillance in NGPIMN Parks
- NABat Acoustic Monitoring of NGPIMN Parks
- WNS Surveillance & Monitoring in the Bighorn National Forest

Herpetofauna

- Wyoming Field Guide Accounts



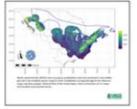
Long-term project highlights

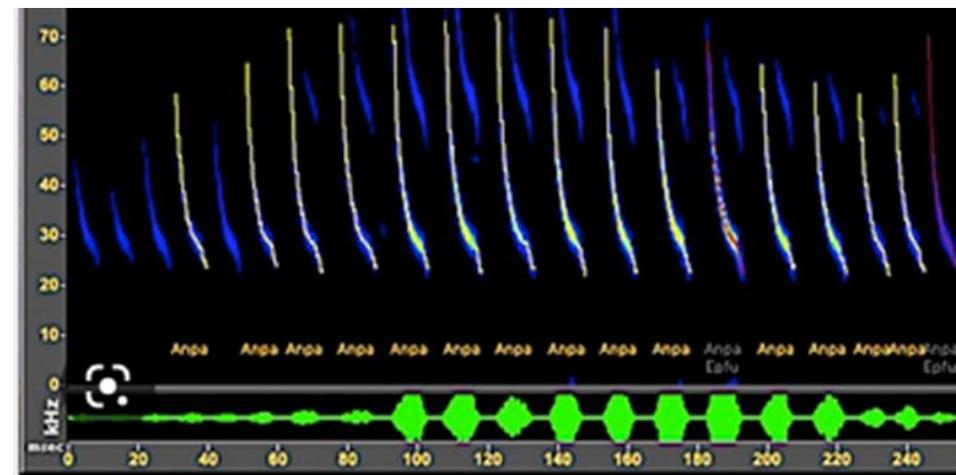
- White-nose syndrome surveillance at NGPIMN Parks
 - Initiated 2018
 - First detections of WNS in WY & SD
- White-nose syndrome surveillance in Bighorn National Forest
 - Initiated 2019

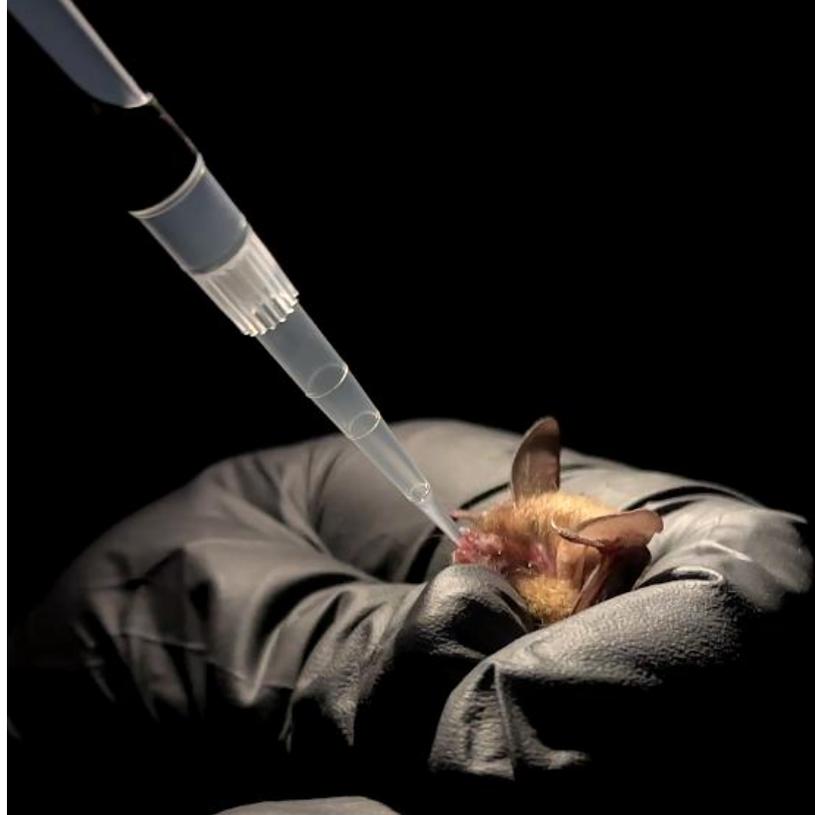
NABat Monitoring

- 6 NPS Units (NGPIMN)
 - 2014—Present (11 years)
 - Re-process entire dataset with current methods
 - Manually evaluate
 - Large-scale data analysis
 - Broad trends for species including SGCN & ESA



Species	Status Variable	Latest Map	Total Change (2016-19)	Total Change (2016-19)
Little Brown Bat  <i>Myotis Lucifugus</i> State/provincial Results	Summer Occupancy		-11.5% (CRI = -18.0% to -4.3%)	-19.0% (CRI = -27.2% to -10.8%)
	Summer Abundance	In Development	In Development	In Development
	Winter Abundance	In Development	In Development	In Development
Northern Long-eared Bat  <i>Myotis Septentrionalis</i> State/provincial Results	Summer Occupancy		+13.7% (CRI = -8.8% to 44.4%)	-20.0% (CRI = -41.9% to 1.9%)
	Summer Abundance	In Development	In Development	In Development
	Winter Abundance	In Development	In Development	In Development





Northern long-eared bat surveys

- Maternity habitat selection
 - (building on work initiated 2017)
 - Manuscript published!
- Vaccination intervention for WNS



OXFORD



Journal of Mammalogy, 2025, 106, 1128–1138

<https://doi.org/10.1093/jmammal/gyaf056>
Advance access publication 10 September 2025

Research Article

Research Article

Context matters: intrinsic and extrinsic factors modulate habitat choices in an endangered forest bat

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Neared bat surveys

manuscript published.

- Vaccination intervention for WNS



Wyoming Field Guide Species Accounts

- Narratives for Wyoming's snakes now available in the Wyoming Field Guide
- Authored by Katrina Cook and WGFD



Kingdom **Animals**
 Phylum **Vertebrate Animals**
 Class **Reptiles**
 Order **Snakes**
 Family **Colubrid Snakes**
 Species **Plains Hog-nosed Snake**

Plains Hog-nosed Snake - *Heterodon nasicus*



Plains Hog-nosed Snake on the Table Mountain Wildlife Habitat Management Area, Wyoming.
 © Katrina Cook - WYNDD
 Click an image to expand it to full-size.

Global: **G5** [info](#)
 State: **S4** [info](#)
 Wyoming Statutory Designations: **Nongame**
 Wildlife [Statutory info](#) [WGFD info](#)
 Agency Status:
 WGFD NSS: **NSSU(U)** [NSS info](#)
 WGFD NSS Tier: **II**

External Links

[NatureServe Species Report](#) [Google for more Images](#)
[Google for more Web Pages](#) [View in other Field Guides](#)
 Montana
 Utah
 Idaho

Link Comments

ditional status or rank considerations.



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 rid Snakes
 ern Milksnake

Snake - *Lampropeltis gentilis*

names: *Pale Milk Snake*
 names: *Lampropeltis triangulum multistriata*



Western Milksnake in Platte County, Wyoming.
 © Matt Cage
 Click an image to expand it to full-size.

Global: **G5** [info](#)
 State: **S3** [info](#)
 Wyoming Contribution Rank: **High** [info](#)
 Wyoming Statutory Designations: **Nongame**
 Wildlife [Statutory info](#) [WGFD info](#)
 WYNDD Status: **SOPC** [status info](#)

Agency Status:

WGFD NSS: **NSS3(Bb)** [NSS info](#)
 WGFD NSS Tier: **II**

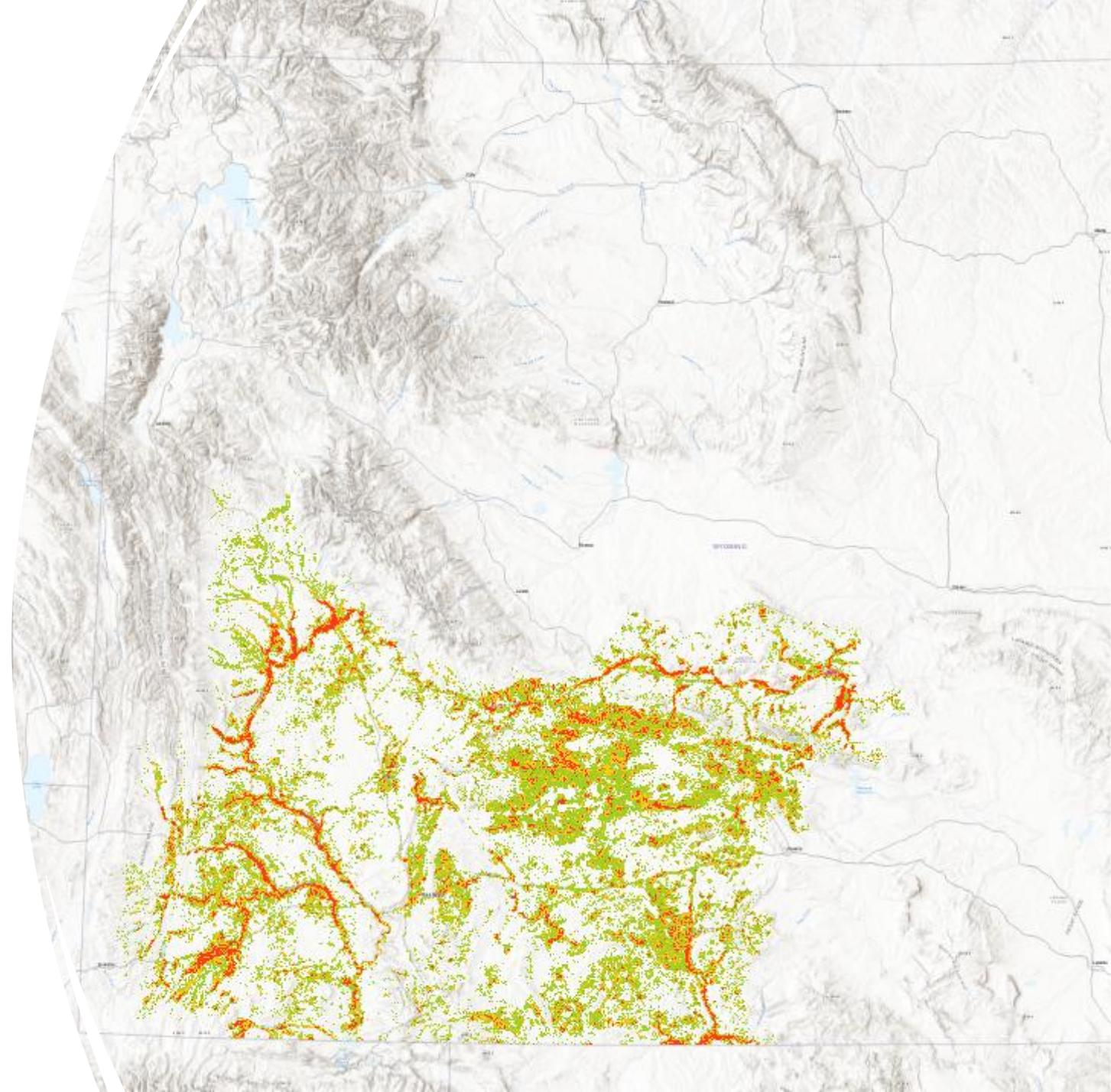
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[NatureServe Species Report](#) [Google for more Images](#)
[Google for more Web Pages](#) [View in other Field Guides](#)
 Montana
 Utah
 Idaho

Status and Rank Comments

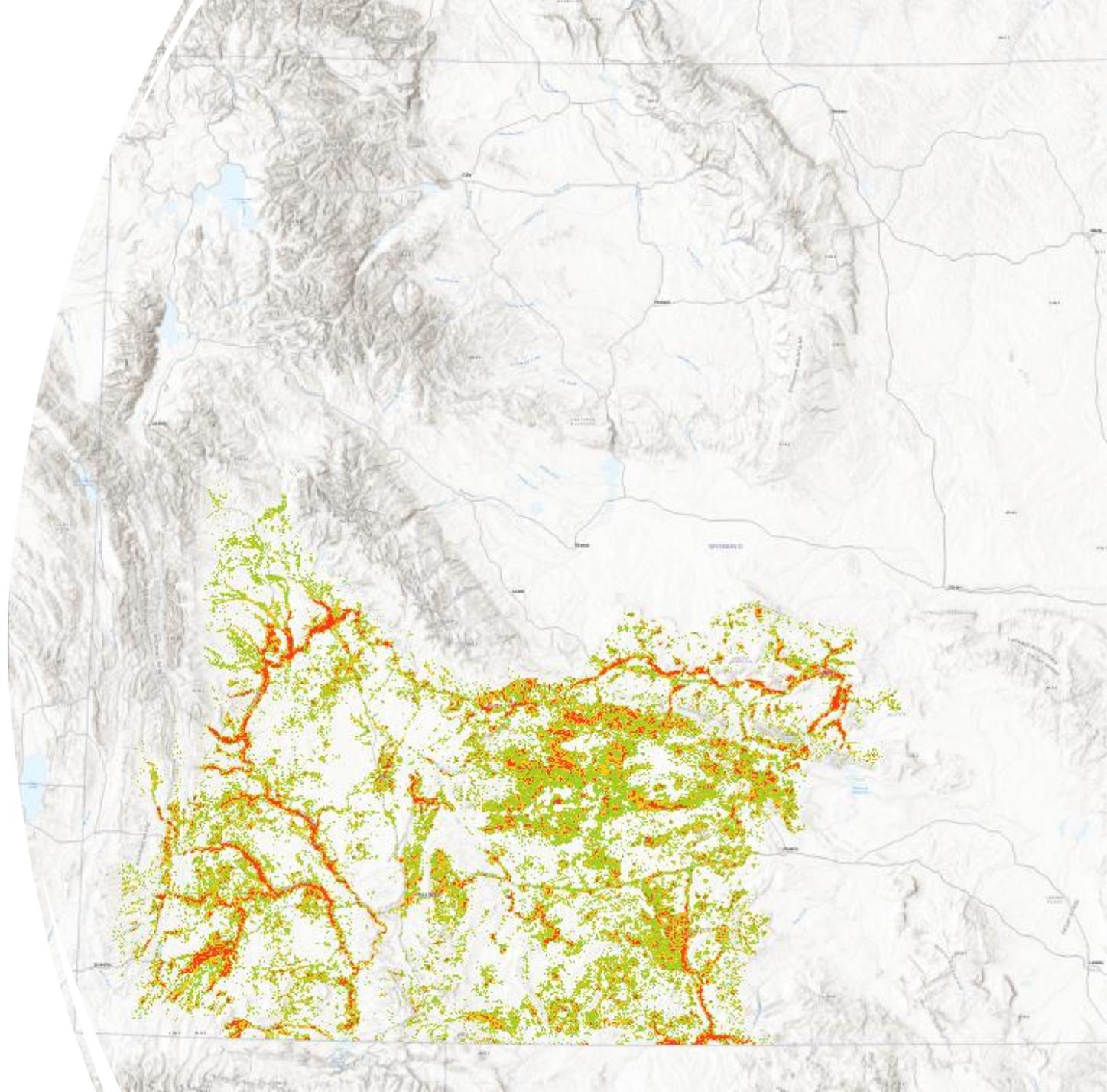
Updated Distribution Models for Wyoming's Species of Greatest Conservation Need

- Reptiles & Amphibians
- Bird and Mammal SGCNs



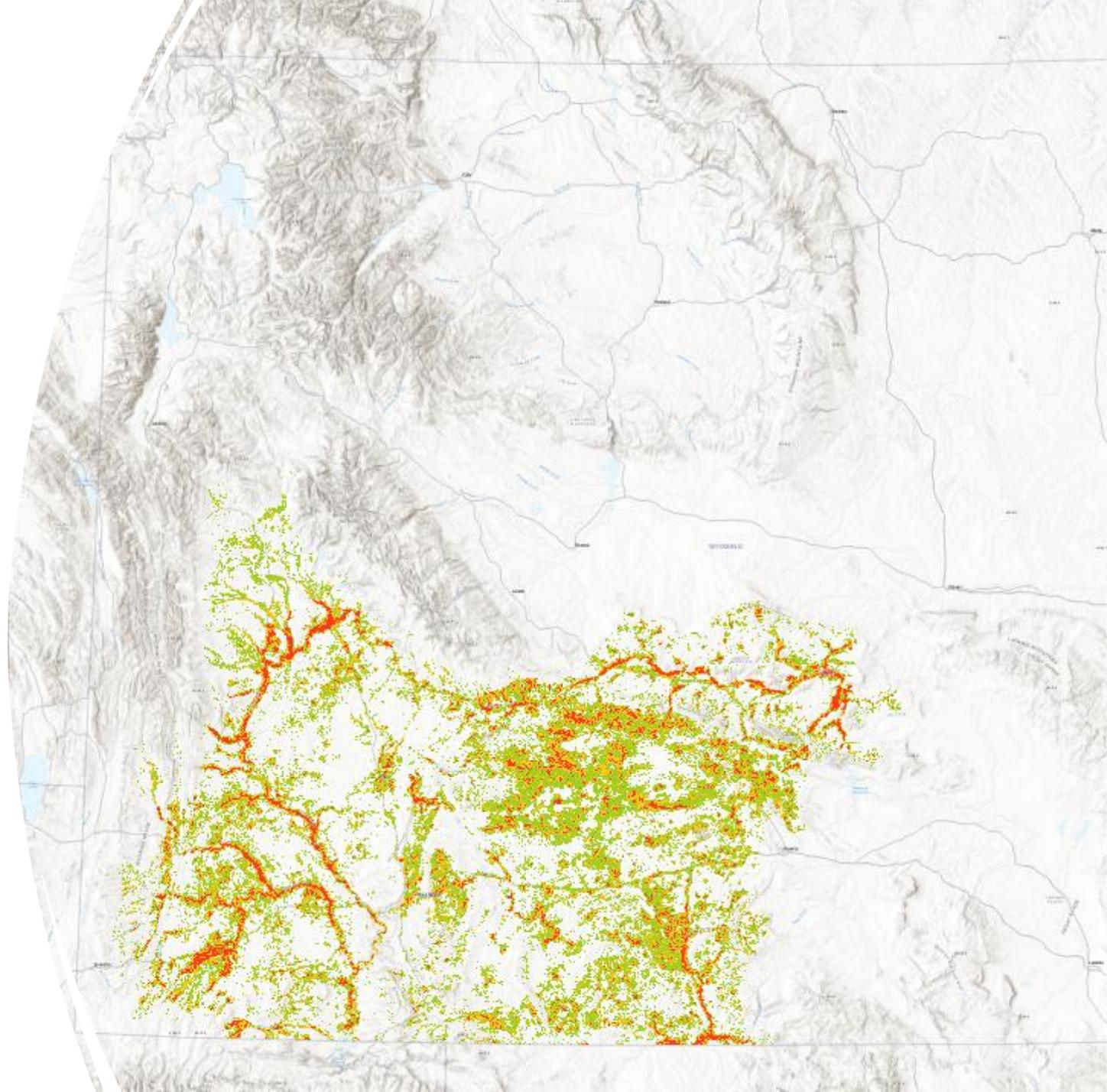
Updated Distribution Models for Wyoming's Species of Greatest Conservation Need

- Maximum Entropy
- Presence only training and test data
- Environmental predictors



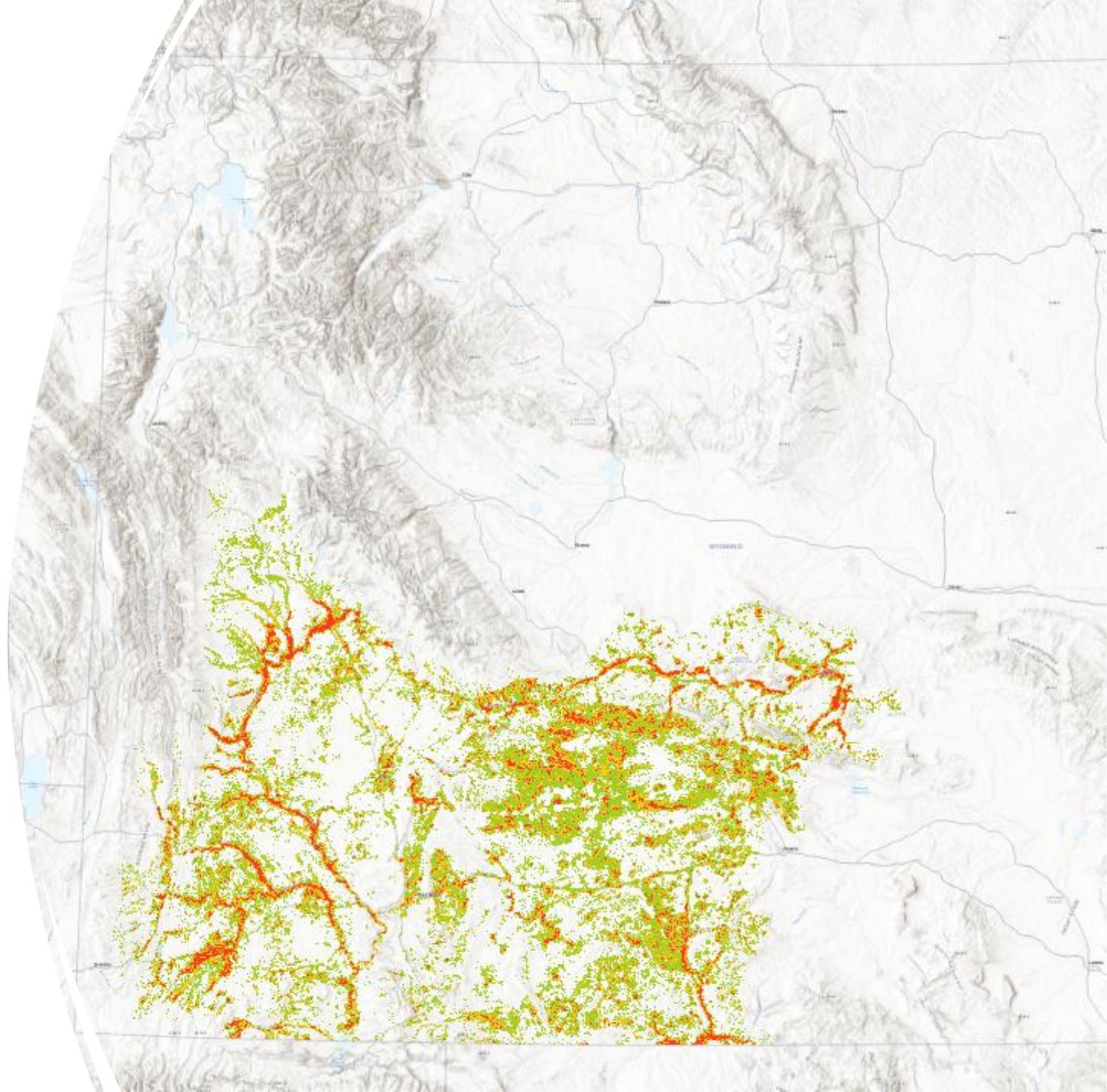
Updated Distribution Models for Wyoming's Species of Greatest Conservation Need

- 11 amphibian taxa
- 27 reptile taxa



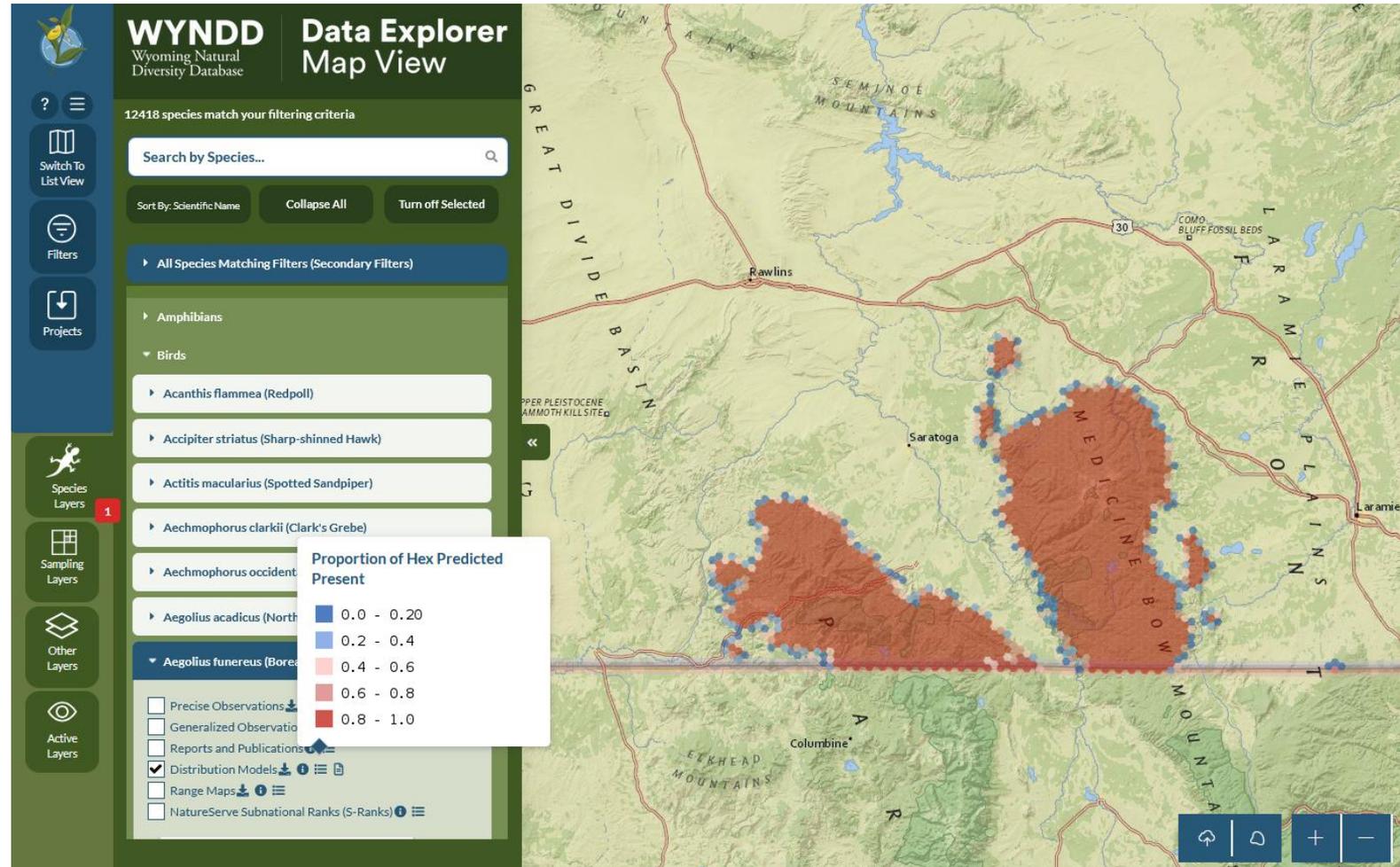
Updated Distribution Models for Wyoming's Species of Greatest Conservation Need

- 85 bird taxa
- 40 mammal taxa



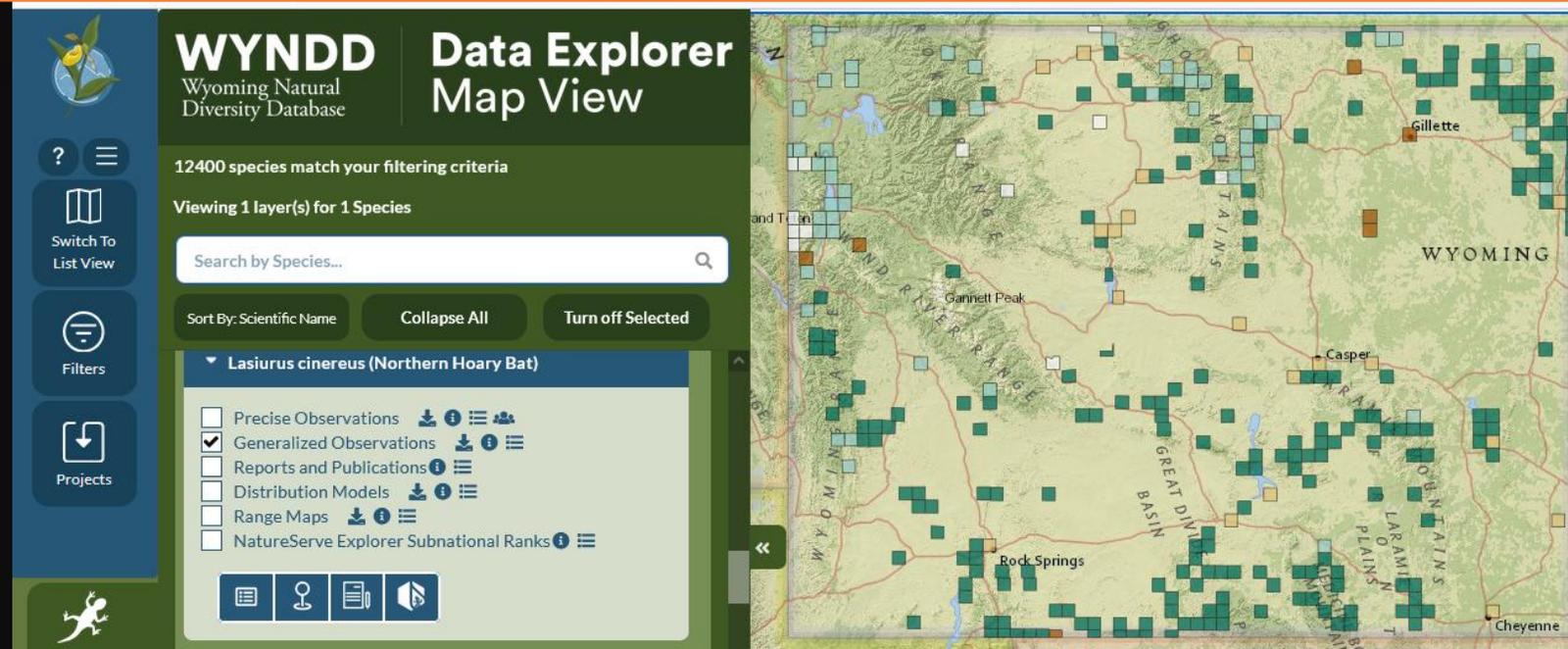
Updated Distribution Models for Wyoming's Species of Greatest Conservation Need

- Preparing for Data Explorer

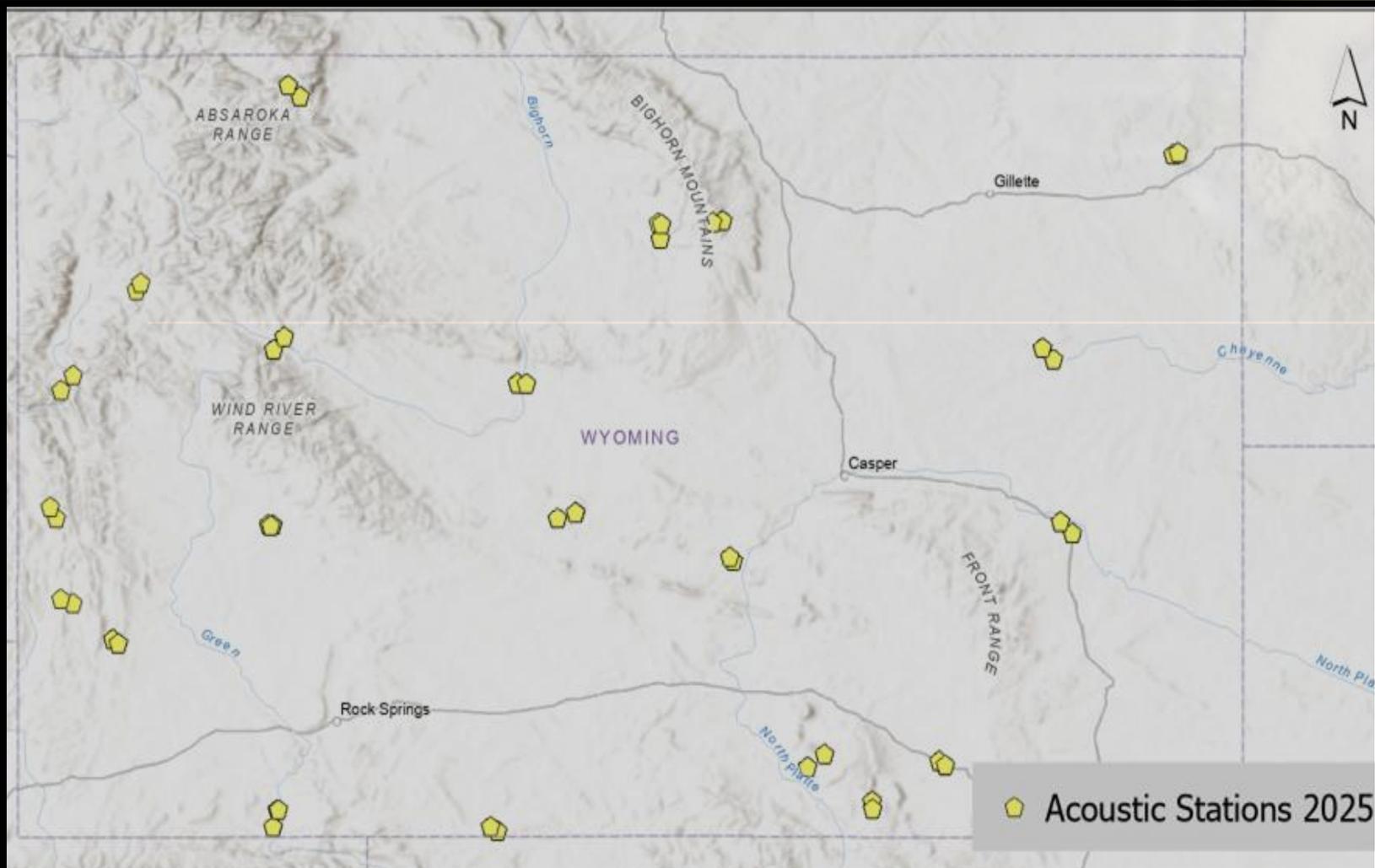


USFWS Bat Inventory

Timing and locations of migration



USFWS Bat Inventory

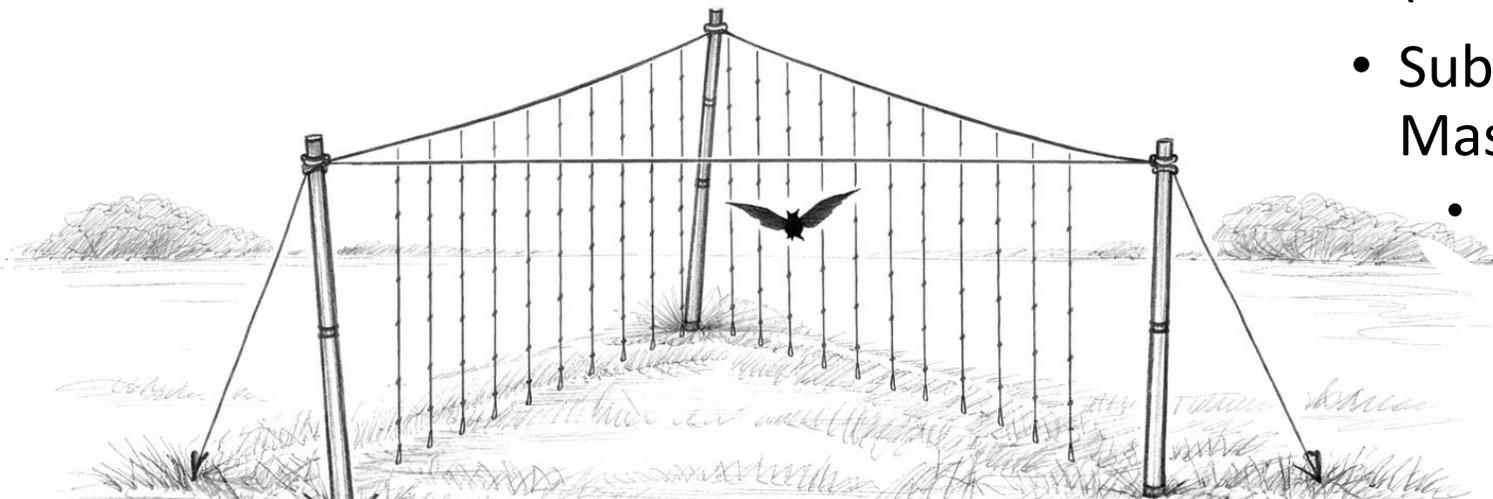


- • 42 acoustic recording stations
- 21 Nabat cells
- ~6 weeks (Aug-Sept)
- Migrating bats (ESA nexus)
- WGFD equipment and collaboration to record data



Acoustic reference library of native bats

- 382 hand-released calls
 - 216 in 2024 and 166 in 2025
 - WY, NE, ND, & SD
- Recorded and prepped by Josh Elledge (undergrad CSU)
- Subset of calls will be submitted to the Master Test Library (FWS)
 - The rest available as regional reference



Vertebrate Zoology Projects—2026

Birds

- Modeling Future Distribution of Habitats and Bird and Mammal Species of Greatest Conservation Need

Mammals

- Acoustic Reference Call Library for Native Bat Species
- Endangered Northern Long-eared Bat Monitoring
- Bats in the Black Hills of South Dakota
- NABat Monitoring of NGPIMN Parks
- WNS Surveillance in the NGPIMN Parks
- WNS Surveillance & Monitoring on the Bighorn National Forest
- USFWS Bat Inventory
- Modeling Future Distribution of Habitats and Bird and Mammal Species of Greatest Conservation Need

Herpetofauna

- Wyoming Field Guide Accounts
- Assessing Recolonization of Breeding Ponds by Wood Frogs after the Mullen Fire



Data & Core Product Priorities -2026

- Modeling Future Distribution of Habitats and Bird and Mammal Species of Greatest Conservation Need
- Wyoming Field Guide
 - Lizards and Turtles
 - Fishes
 - Birds
 - Mammals



Questions & Comments