



Tracking Reclamation Progress- A Wildlife Approach

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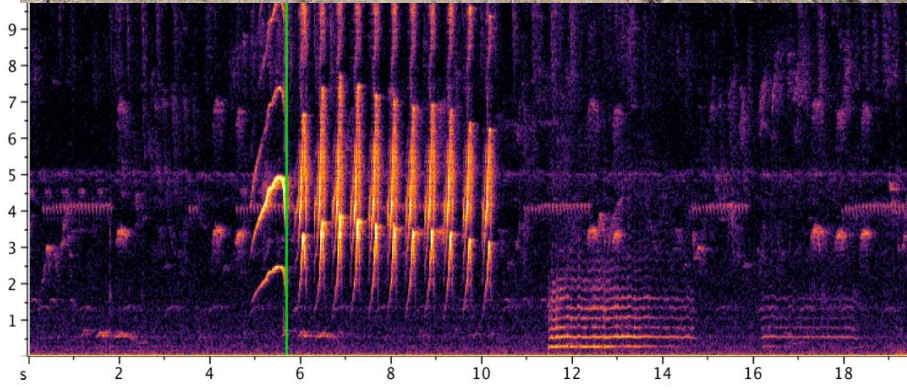


Reclamation and Habitat Restoration

- The original reclamation was completed in the 1990's and used traditional methods
- The response of habitat restoration in sagebrush steppe is often slow because the sagebrush plants are hard to reestablish from seed and are slow growing

Habitat Use by Breeding Birds Provides a Lens to Quantify Successful Reclamation

- We are using habitat occupancy by birds as an indicator of restoration progress
 - Over time shifts in bird communities and the occupancy of sagebrush associated birds on site will allow us to quantify restoration success
- Our approach relies on SwiftOne (Cornell Lab) Autonomous Recording Units (ARUs)
- Bird audio clips are identified to species using a machine learning program called BirdNET sound ID



Sagebrush Associate and Sagebrush Obligate Birds



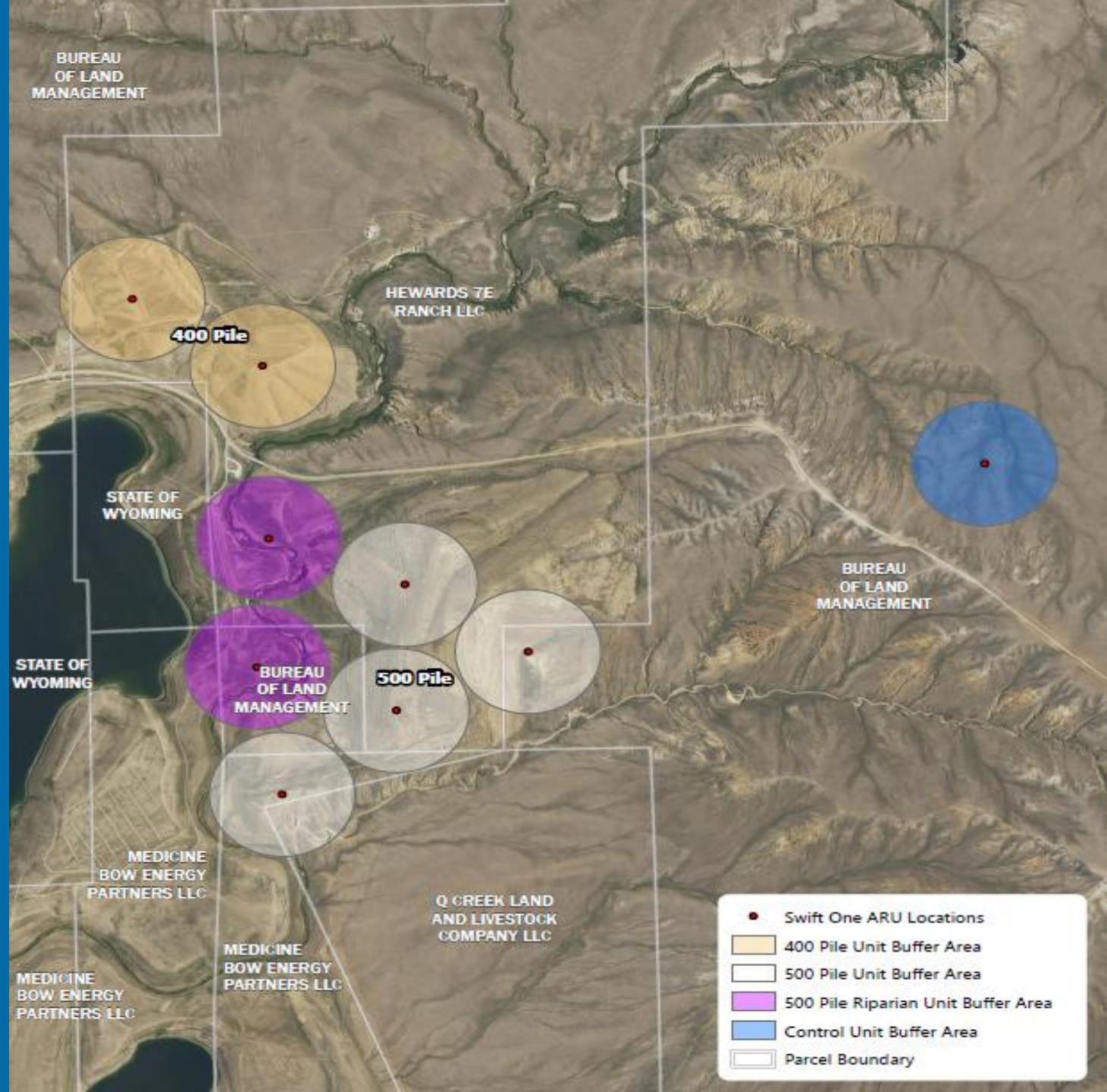
Site Location and History

Shirley Basin, WY



Monitoring Design 2025

- Unit Placement Locations
- Reference Area - Control ARU
- Deployment Time Period
- Before-After Control - Impact Design



Native Sagebrush Habitat Reference Area

2025 Detections

Sagebrush Obligates

- Sage Thrasher (27%)

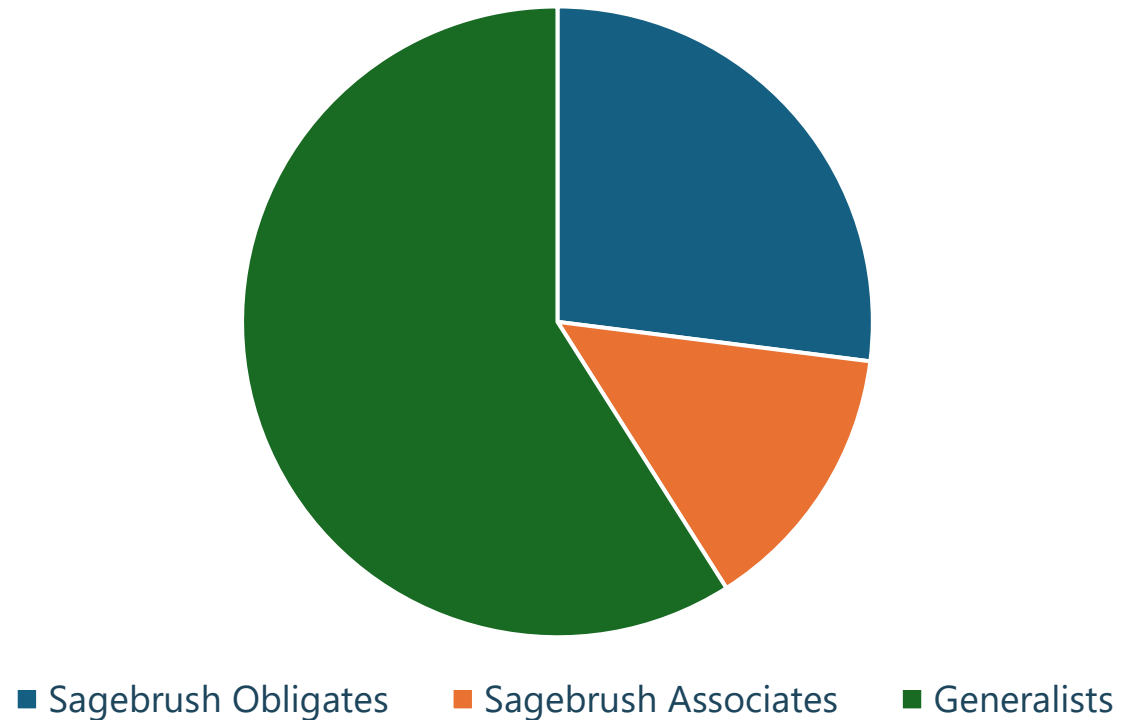
Sagebrush Associates

- Brewer's Sparrow (14%)

Generalist

- Vesper Sparrow (36%)
- Horned Lark (17%)
- Common Nighthawk (4%)
- Lark Bunting (2%)

Reference Sagebrush Habitat



2021 and 2022 Reclamation Area 2025 Detections

Sagebrush Obligates

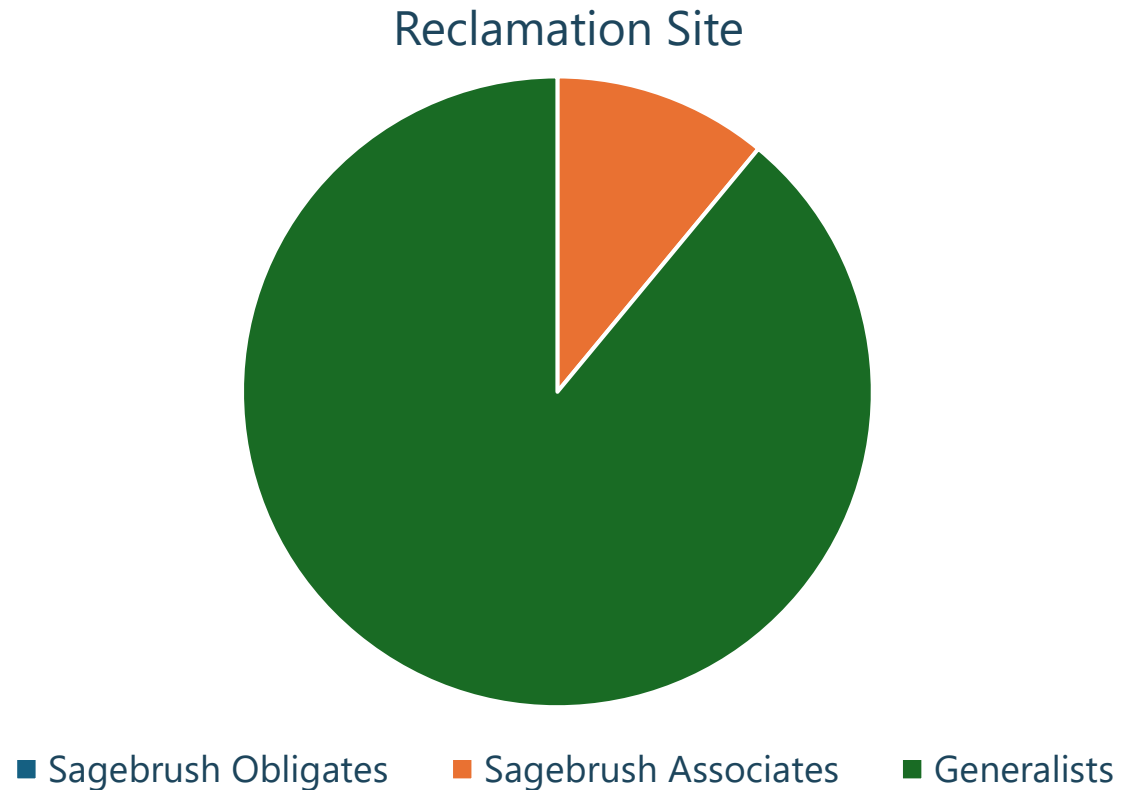
- None nesting on site (Yet!)

Sagebrush Associates

- Brewer's Sparrow (10%)

Generalist

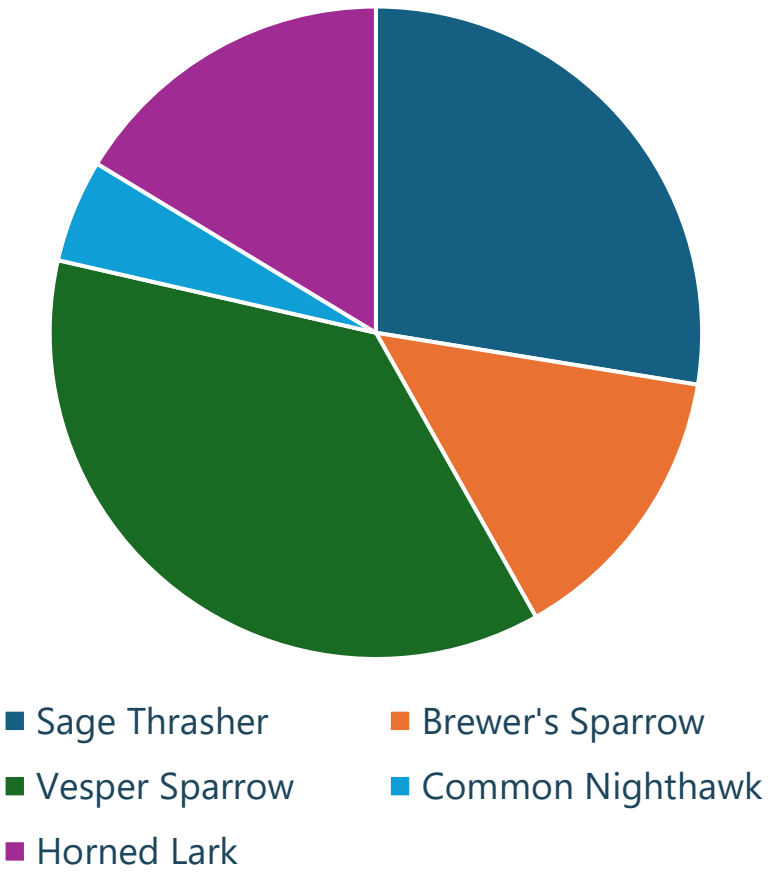
- Horned Lark (54%)
- Vesper Sparrow (21%)
- Western Meadowlark (7%)
- Rock Wren (2%)



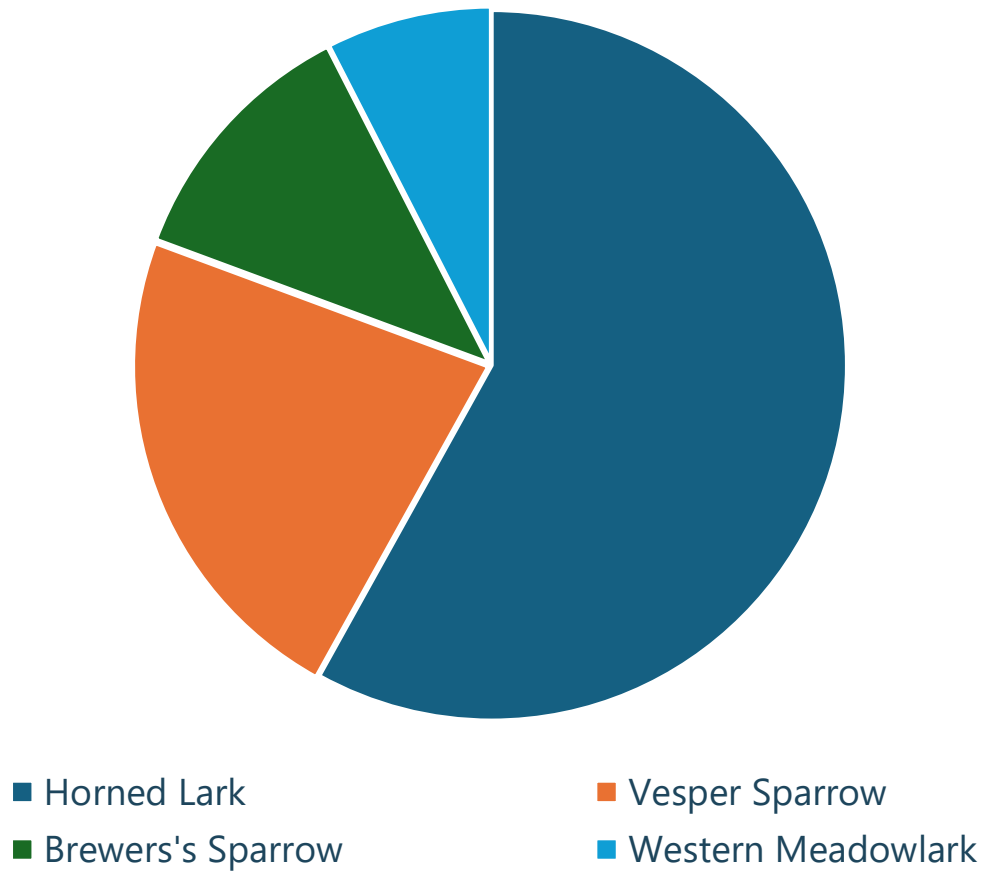
Reference Habitat vs. 2021 and 2022 Reclamation Area

2025 Detections

Reference Sagebrush Habitat



Reclamation Area



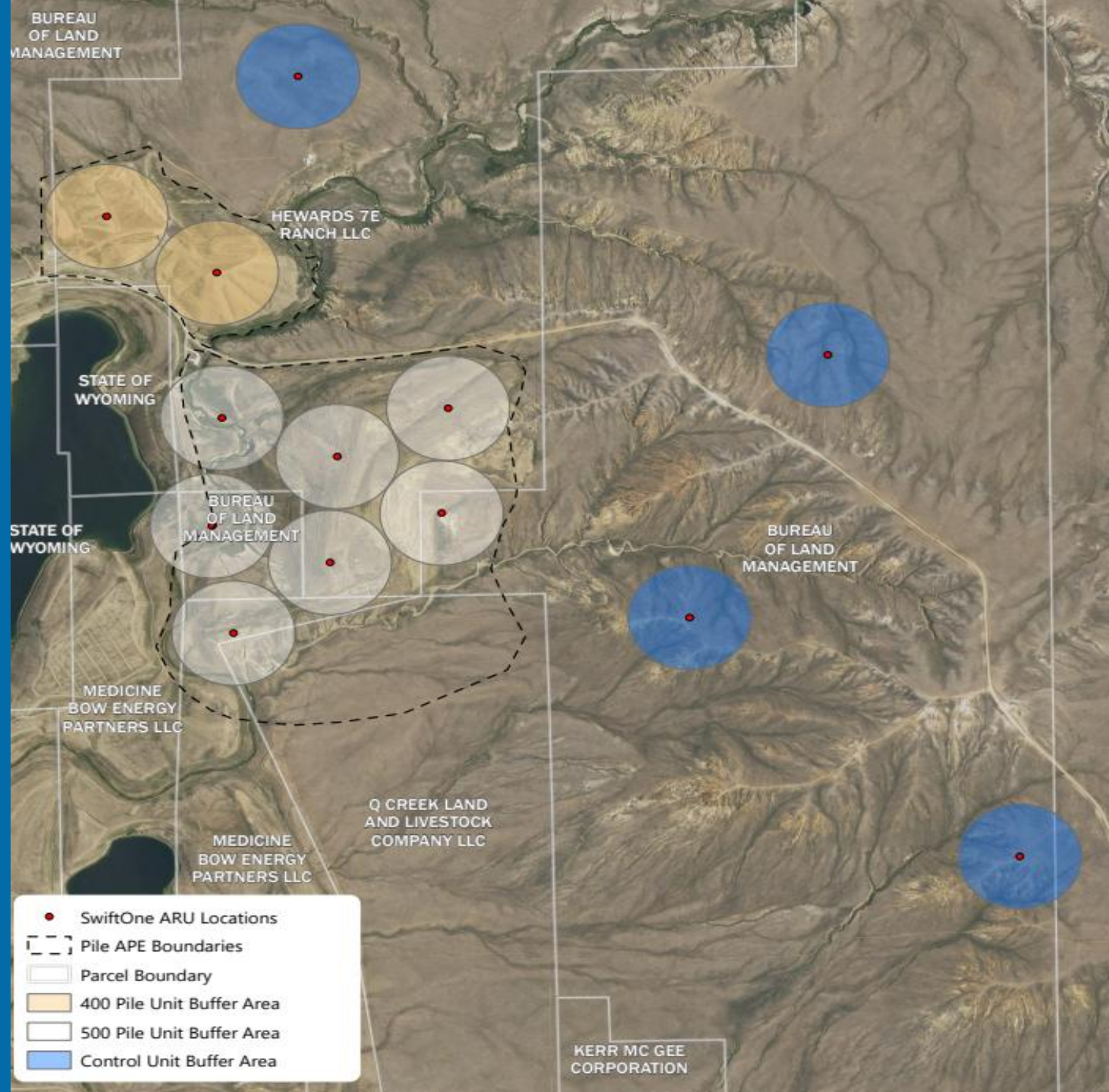
Benefits of this Approach

- Fewer On-site Hours
- Less Disturbance
- Vegetation Monitoring
- Support Regulatory Compliance



Future Monitoring

- **2026**
 - 500 Pile
 - 400 Pile
 - Reference Location Expansion
- Riparian ARUs
- 600 Pile



Thank you!

Private Landowners

Agencies/Organizations

- Wyoming DEQ-AML
- Wyoming Game and Fish Dept.
- Rawlins BLM Office

Partners

- Kirol Applied Ecological Research

Contact - phunter@herrerainc.com



