

# FALL 2025 UPDATE

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## First PIJA Reported at a New Site

Colored bands decorate the legs of Pinyon Jays that are too small to carry a GPS tag or are large enough to carry both. Each site gets a color – Meeteetse is green, the upper South Fork is yellow, the lower South Fork is red, and the North Fork is blue. One lone bird captured on the outskirts of Cody sports all white bands.

While Pinyon Jays display high site-fidelity, we suspect some individuals disperse to other flocks. On May 21, 2025, we had our first report of a color banded bird in a different flock. The bird was banded on June 24, 2024, on the South Fork as a juvenile weighing 101.3 grams. When spotted in May, #1713-07658 would be just about a year old. This is consistent with the idea that females in their second year are most likely to disperse. As the Blue Crow (Pinyon Jay) flies, the initial banding site is a minimum of 24 miles from the resighting. What a commute!



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112  
Banded Birds

1584  
GPS Points  
Collected

63  
Birds with  
GPS Tags

659  
Datasheets







## Surprise Guest



*Eric Atkinson*

*Professor &  
Biology Dept. Coordinator  
Northwest College*

Hail, friend, well-met. In the best sense of the idiom.

This season, we have experimented with a remote-controlled walk-in trap, known affectionately as the guillotine (don't worry, the blade is plexiglass and drops once the jay is fully in the trap), for selectively trapping jays that we've targeted (e.g., wearing a store-on-board tag or an Argos satellite tag) while also deploying Corey's modified crow trap hoping for multiple catches. Both modifications have benefited our capture success.

The crow trap (aka ladder trap) recently captured two surprise birds, namely a male Black-headed Grosbeak (*Pheucticus melanocephalus*) and a Lewis's Woodpecker (*Melanerpes lewis*)! The latter provided an extraordinarily exciting capture! Plumage characteristics indicated this woodpecker was a Female in her Second Year (SY; meaning she hatched in 2024) and proved the first Lewis's Woodpecker banded in the state of Wyoming since 1960! At this point, she may be a Wyoming-first as pre-1960 data are not digitally available (but a search request has been submitted to USGS—stay tuned).



*Right: The Lewis's Woodpecker lingers on the side of the Crow Trap, looking down at a buffet of morsels.*



### ***An Aerial Marvel***

Lewis's Woodpeckers are vibrant in color palette, color location, and behavior like no other woodpecker in our area. Named in honor of Meriwether Lewis, of course, these inhabitants of cottonwood gallery forests are often found along rivers where pines intermix with riparian zones. They have the lightest wing-loading of our woodpeckers. So light on their feathers, they are appreciated widely for their hawking of aerial insects like a large dark flycatcher or kingbird, and have been mistaken for jays-in-flight. Lewis's are almost moth-like in their foraging flights, and to me they take me back to the early 1990s when Melonie (my biologist-farmer wife) and I were surveying for Flammulated Owls (*Psiloscops flammeolus*). Camped out along the Salmon River (aka River of No-Return), we would watch these woodpeckers fly high above the roaring waters to snatch a miller moth or stonefly. When the caddis were in emergence, several woodpeckers would be twirling above our heads in the dusky evening light of the canyon. Several times, we observed courtships called 'circle flight displays' as we finished up our camp dinner, ready for owl surveys. Just the most magical woodpecker to me.



Above: Corey removes the Lewis's Woodpecker from a tasty tray of peanuts, corn, and sunflower seeds.



Above left: Eric prepares to release the newly banded Lewis's Woodpecker.

### ***Wyoming's First (since 1960)***

So, it was very special to capture this post-adolescent Lewis's Woodpecker and wonder from where she may have dispersed and what led to her choice in settling in the South Fork this year. Like our Pinyon Jays, Lewis's Woodpeckers often nest colonially and may even breed cooperatively, with non-parents feeding young. Like Pinyon Jays, too, they may gather in autumnal post-breeding flocks moving across the landscape. Perhaps this is how we met our subject. Or, is there a colony nesting in an appropriate cottonwood stand somewhere? Lewis's Woodpeckers are observed occasionally across the state of Wyoming, with known breeding across the state and studied in the Laramie Range. Only 39 eBird sightings have been reported for Park County of 620 Wyoming-wide, so it is still an uncommonly encountered species by most Wyoming birders.

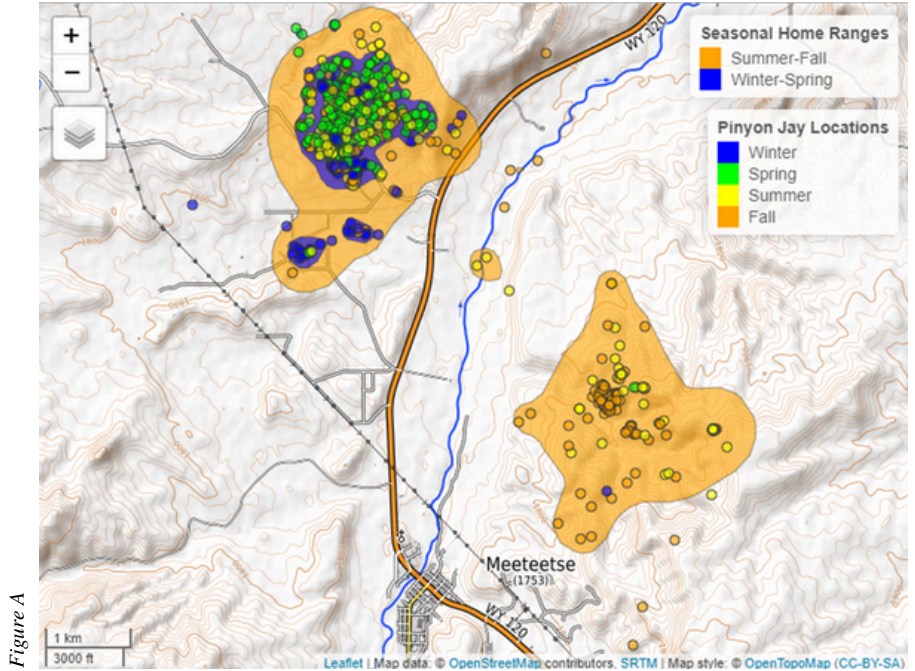
This just proves the wonders of field work when serendipity visits our planned out research broadening our perspectives and minds with yet, another unanswered question.

# A Year in the Life:

## *The Meeteetse Pinyon Jay Flock*



**Jason Riggio**  
Assistant Project Scientist,  
Museum of Wildlife & Fish Biology  
University of California, Davis



Over two trapping seasons between March 2024 and June 2025, we captured and banded a total 59 Pinyon Jays from a single flock near Meeteetse, Wyoming. We were able to deploy GPS tags on 27 of these birds and were fortunate enough to recover 5 store-on-board GPS tags and receive data transmitted from three Argos satellite tags. Two of the store-on-board tags came from birds first captured in 2024 and recaptured the following breeding season, giving us the rare opportunity to track the same individuals across multiple years.

After filtering out low-accuracy and outlier locations, we recovered a total of **1,001 high-quality GPS fixes** spanning **May 27, 2024, to June 26, 2025** (Figure A). This dataset offers the most detailed look to date at how a Pinyon Jay flock uses space across seasons in Wyoming's Bighorn Basin.

The flock's movements revealed a dramatic shift between breeding and non-breeding seasons. During the **summer and fall (June–November)**, birds ranged widely across the landscape, occupying a home range of approximately **968 hectares** (Figure A – orange polygon). Their activity centered on the open pine-juniper woodlands north of Meeteetse, where they frequently **crossed Highway 120** to access high-quality foraging habitat—especially limber pine stands rich in seeds.

In contrast, **winter (December–February)** brought a sharp contraction in the flock's range. During this time, all eight birds remained nearly exclusively **northwest of town**, in south-facing woodlands and visiting backyard birdfeeders. By **spring (March–May)**, the flock began to shift again, revisiting breeding territories used the prior year. Their combined **winter-spring home range measured just 189 hectares, less than 20%** the size of their summer-fall range (Figure A – blue polygon). The flock's tight clustering suggests a strong reliance on familiar roost sites, nesting locations, and backyard birdfeeders.

Across the full annual cycle, the Meeteetse flock used habitat spanning from the floor of the Greybull River Valley to the pine-juniper uplands above town, moving strategically with seasonal shifts in temperature, food, and social behavior. While their **total observed annual range** covered nearly **1,000 hectares**, most of their winter and breeding activity remained confined to a much smaller **core area northwest of Meeteetse**.

From just eight tagged birds, we've gained an unprecedented year-round view into the behavior and ecology of a single Pinyon Jay flock. These data highlight the importance of both **upland pine-juniper woodland habitat and backyard birdfeeders**—as well as the connectivity between adjacent woodland patches—for supporting this declining species. With future seasons of tracking, we hope to learn even more about how Pinyon Jays navigate this landscape.





# Research Project Update



*Corey Anco*

*Curator, Draper Natural  
History Museum*

Two years ago, this project set out to gather basic information about the Pinyon Jay, a species of greatest conservation need in Wyoming, following an estimated 85 percent global population decline over the past 50 years.

During the first year of the study, we surveyed 17 plots on BLM land that contained pine-juniper woodlands. We observed the presence of Pinyon Jays either by sight or sound in 11 of those plots. Enthusiastic landowners turned **vigilant community scientists began submitting nearly daily observations** of Pinyon Jay activity at backyard bird feeders across the western edge of the Bighorn Basin.

The survey and feeder datasheets provided a solid foundation of flock size and activity throughout the year. The next step was to characterize habitat use by Pinyon Jays across pine-juniper woodlands and compare Pinyon Jay movement data with existing datasets for Greater Sage-Grouse (*Centrocercus urophasianus*). Where are we to date?

Both goals required us to track the movements of birds. If you've ever tried to follow a bird for any length of time, you know this is no easy feat. With the help of different landowners, **we were able to deploy 63 GPS tags across five flocks** to gather critical movement data.



Prior to this study, there was very little information known about Pinyon Jays at the northern extent of their range. Most of what we knew came from studies conducted by Russell Balda and John Marzluff in the 1970s and 1980s near Flagstaff, Arizona.

While Pinyon Jay behaviors are likely similar across their distribution, the habitats these birds occupy can vary widely. For starters, as the name implies, Piñon Pines (*Pinus edulis*) are a major food source to Pinyon Jays in the southwest; however, this species of pine is not native to northwestern Wyoming. For years, Destin Harrell, Wildlife Biologist with the U.S. Fish and Wildlife Service and a Principal Investigator on this project, had observed Pinyon Jays throughout Park County, Wyoming, making use of Limber Pine (*Pinus flexilis*) stands.

In the Bighorn Basin, Limber Pines are frequently found interspersed with juniper, resulting in the classification of its own distinct habitat type: pine-juniper woodland. To understand the jay, we need to understand its habitat requirements.



## *Cyclical Activities*

Courtship and breeding occurs in the spring, and in the southwest is associated with large nesting colonies. Failed breeders form satellite colonies and either attempt to breed again or join up with newly fledged birds to form nursery groups, called *creches*. Over the summer, the flock coalesces as pine crops ripen. During the fall months, Pinyon Jays stay busy caching pine nuts for the winter months. Some immature birds disperse to find a more suitable flock, often driven by sex ratio imbalances in their natal flock. Flocks again split into multiple groups, with some pairs attempting autumn breeding. As winter approaches, fall breeders, non-breeders, and fledglings coalesce and roam their home range until warming spring temperatures and increased daylight trigger courtship activities, restarting the annual cycle.



*Above: Jason Riggio, Corey Anco, and Eric Atkinson characterize a nest site.*

## *Characterizing Habitat Use*

Characterizing habitat use means understanding where the birds are, how the birds use different areas of the landscape, and how use changes over the course of a year.

To date, we have **recaptured 14 birds with GPS tags**. Over the last two newsletters, Dr. Jason Riggio shared the data and maps from these tags and discussed the seasonality of habitat use and home range size for the Cedar Mountain and Meeteetse flocks. Some interesting patterns were immediately noticeable.

- 1) Pinyon Jays used high-elevation roosts during the heat of the summer.
- 2) Pinyon Jays display strong site-fidelity.
- 3) Preferred roost sites and home ranges varied with the seasons.
- 4) Backyard bird feeders are frequently visited and important food sources.





During the breeding season, the team surveyed several clusters of GPS locations, some of which were identified as roost sites. Importantly, **the team also located several nesting colonies complete with nests, eggs, and recently hatched young!** Birds fledged over the next few weeks, and we were able to approach the nesting colonies to begin characterizing nest sites.

We will merge the GPS data with vegetation and topographic data layers using GIS, or geospatial information systems. GIS is a powerful tool that allows us to ask and answer questions using spatial data. However, we also need to **confirm the validity of the data** layers we use by conducting “boots on the ground” vegetation surveys.

The vegetation surveys involve visiting GPS clusters and nesting sites. From a central point (e.g., a nest in a tree or GPS point from a bird), **we record and describe 18 distinct measurements within a 50-meter radius**, partitioned into quadrants (e.g., northeast, northwest, southwest, and southeast). Measurements include the distance to the nearest tree; the diameter, height and species of the tree; snags; presence of cones or disease (e.g., mistletoe, bark beetle, blister rust, juniper disease); among others.



*Top: Corey records data. Middle: Eric and Jason measure the height of a Limber Pine. Bottom left: Jason measures the diameter of a snag. Bottom right: Parasitic Dwarf Mistletoe is noted in some sites but not all.*







*Left: Landowners talk with Jason about curious behavior while a recaptured GPS tag downloads a year's worth of data. Right: Eric discusses the release of a PIJA with landowners.*

Collecting these data provide an accurate assessment of the habitat occupied by roosting or nesting Pinyon Jays in northwest Wyoming.

Our landowners have all contributed wonderful, almost-daily updates on Pinyon Jay behavior. However, sometimes the birds seem to disappear from feeders for extended periods of time. On the North Fork, the once regular Pinyon Jays disappeared from March until July this year. Similar absences were noted on the South Fork. Thankfully, during these absences, our GPS tags are still recording locations. Then, it becomes a matter of recapturing the birds to find out where exactly they go!

Between attempts to recapture birds, our team is continuing to characterize nest sites and will publish results in a scientific peer-reviewed journal in the near future.

### ***Movement Comparisons***

As we gather enough GPS data representing the different flocks of tagged Pinyon Jays, we will begin analyzing the movement data with Greater Sage-Grouse habitat use. This may take several years to gather a large enough bank of movement data from every tagged flock. Pinyon Jays may move differently one year compared to another for a variety of reasons including food accessibility, weather, and wildfires.

## **Resources**



[List of Banded Birds](#)



[Behaviors and Interactions](#)



[Datasheets](#)