



2025 Citizen Science Final Report

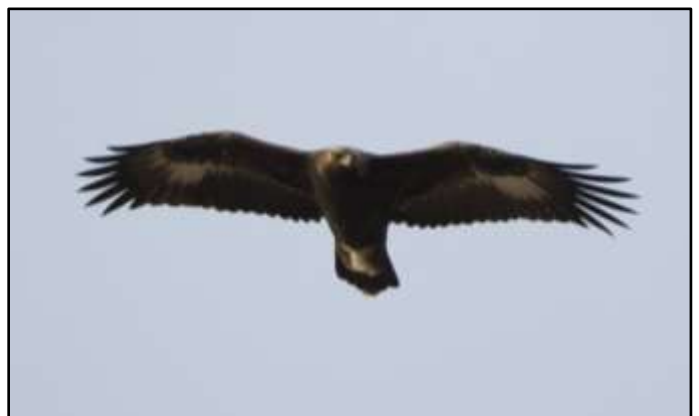
Program Overview

Since 2006, the Citizen Science Program at Glacier National Park has collected valuable data on emblematic wildlife species that call the park home. Armed with binoculars and spotting scopes, volunteers from the local community and beyond, travel to every corner of the park to collect data on focal species. Public participation in these research projects significantly increases the capacity of park biologists to monitor wildlife and strengthens community engagement in conservation in Glacier. Studies show that large numbers of volunteers can cover more ground than a small team of biologists while collecting data of comparable quality. While ours was one of the first, there are a growing number of active citizen science projects in the National Park Service (NPS); visit the [NPS Citizen Science webpage](#) to read more about the contributions of citizen scientists in parks.

During the 2025 field season the Glacier National Park Citizen Science Program ran three long-term studies, hosted the annual weed blitz and supported collaborative research on species including American Pikas (*Ochotona princeps*), dragonflies, huckleberries and bumble bees. We collect long-term data on population and nesting of Common Loons (*Gavia immer*), population trend and distribution of mountain goats (*Oreamnos americanus*) and bighorn sheep (*Ovis canadensis*), and counts of migrating raptors, especially Golden Eagles (*Aquila chrysaetos*).

Program Objectives

1. Conduct surveys for long-term population monitoring.
2. Engage public in conservation goals and collecting data for management uses.
3. Empower Glacier science allies and outdoor recreationists to collect high quality data by hosting one-day trainings on focal species biology, survey techniques and data collection apps.
4. Identify important habitat for loons, pikas, goats, raptors and other indicator species.
5. Collect quality data to use for monitoring population status.



Top: A loon spotted on Cosley lake (Chris Peterson). Center: Two mountain goats observed near Cosley Lake (Chris Nadasi). Bottom: A Golden Eagle flying overhead (Jake Bramante).

	VOLUNTEER HOURS	PARTICIPANTS	VALUE OF DONATED TIME
COMMON LOON			
	3,048	83	106,040
HIGH COUNTRY			
	3,791	81	131,889



Left: Renata Harrison conducts a loon survey on Middle Quartz Lake by packraft (Jami Belt). Middle: Volunteers participate in Common Loon training at Swiftcurrent Lake (Jami Belt). Right: Dee Baginski, River Naile, and Carley Tsiames canoe Quartz Lake for a loon survey (Jami Belt).



Left: A group participates in a goat survey at Firebrand Pass (Benjamin Williams). Middle: Dustin Smith observes goats at Cosley Lake (Dustin Smith). A single curious goat near the Sperry Chalet (Pat Van Eimeren).

TRAINING EVENTS HOSTED			
COMMON LOON	HIGH COUNTRY	HAWK WATCH	VOLUNTEER IN PARKS PROGRAM
			
4	4	2	3



Banner: A Common Loon family on a lake in Glacier National Park (Jeff Jones).

Common Loon Citizen Science



Left: A chick attempts to climb on the back of an adult loon (Chris Peterson). Right: Citizen Scientist conducts a Common Loon survey at Quartz Lake (Jennifer Schaffner).



The Common Loon Citizen Science Project is Glacier National Park’s first citizen science initiative. This project monitors loon populations to track long-term breeding success and habitat use. Common Loons, with their striking plumage and haunting calls, are the perfect candidate for long-term monitoring. Loons have strong site fidelity and often return to the same breeding lake every year. Montana contains the largest population of Common Loons west of the Continental Divide, but loons are vulnerable to range contraction here because the surrounding habitats no longer support loons. Only about 40-50 chicks are hatched in the entire state each year. Glacier National Park’s pristine lakes are vital habitat that support roughly 20 percent of the chicks hatched across the state. This project’s multi-decade dataset provides critical insight into population trends, nest success, and chick survival, supporting conservation and management decisions.

Common Loons in Glacier National Park

Common Loons are often seen as an indicator of true wilderness. They have specific habitat needs and preferences and are easily displaced due to human disturbance, environmental pollutants and habitat loss. Collaborative management efforts involving many agencies throughout the state provide critical data for monitoring and managing loon population health.

The annual “Loon Days” is a statewide effort where staff and volunteers survey as many lakes with sufficient loon habitat as they can in a single weekend. This effort provides a snapshot of breeding success at each lake. In addition, we conduct surveys throughout the breeding season to provide more of an understanding of the resident population at each individual breeding lake. To learn more about loons in Glacier National Park check out our [Loons on the Edge StoryMap](#).



A loon training taking place in front of the Many Glacier Hotel (Jami Belt).

COMMON LOON SURVEYS IN GLACIER NP:			COMMON LOON SURVEYS ON BLACKFEET TRIBAL LANDS:			
320	94%	6%	30	50%	27%	23%
SURVEYS CONDUCTED	BY VOLUNTEERS	BY NPS STAFF	SURVEYS CONDUCTED	BY PIIKUNI LANDS SERVICE CORPS	BY VOLUNTEERS	BY NPS STAFF

Survey Methods

Each spring, Citizen Science volunteers receive training in loon ecology, identification, and survey methods before conducting one-hour surveys across 45 lakes in Glacier National Park. Armed with spotting scopes, tripods and binoculars volunteers go out to these lakes and carefully watch the loons. Observations begin with pair formation and nesting behavior in early spring, followed by monitoring incubation, hatching, and chick survival through late summer. These surveys provide critical data on breeding success, nest failures, and overall lake status. To support survey coverage, we developed an interactive web map to indicate recently surveyed sites (green) and those still requiring monitoring (red). Volunteers refer to this map when choosing where to survey next.

2025 Loon Banding Effort

Capturing loons to place distinctively colored bands on their legs allows for identification of individual birds from a distance and a health assessment. It can give us critical information about dispersal, site and mate fidelity, age, and pollutants affecting Common Loons. When volunteers report re-sighting of banded loons it also gives researchers insight into the movement patterns of specific individuals.



Biologist showing the banded leg of a loon chick (Jami Belt).

Biologists Jami Belt from Glacier National Park and Carl Brown from the Biodiversity Research Institute led the 2025 banding effort for the Montana Common Loon Working Group, a consortium of agencies and partners that focus on loon conservation. They attempted banding on four lakes across Northwest Montana. Two loons were successfully captured and banded, one adult and one chick. Both successfully banded birds were exciting firsts. After multiple attempts, we were finally successful this year at banding a loon at a backcountry lake, a difficult feat due to the extreme wariness of these less habituated loons. The second bird we banded outside of the Park, was Leucistic. Leucism is an abnormality in the deposition of pigment in the feathers which can be genetic or caused by damage to pigment cells during development. It causes partial or complete loss of all pigments in the feathers, but eyes, feet and bill will still have color.

Albinism is when no melanin can be produced at all. Leucism, while beautiful, can cause problems such as lack of camouflage and it may be harder to find a mate. It will be interesting to see if this bird survives to adulthood and returns to the area in three years.



An adult Common Loon with a white and a black chick on its back (Roy Morris).



A glassy Logging Lake (Dee Baginski).

2025 Logging Lake Spotlight

Almost all the successful loon nesting occurs in the North Fork region of the Glacier National Park. An exceptionally exciting find this year was not just one successful nest on Logging Lake, but two! Logging Lake is the only lake in Glacier National Park that hosts two successful breeding pairs. It was also thrilling because neither pair has been successful since 2018. Of the nine chicks born in the park this year, three of them came from Logging. The chicks were discovered on the July Loon Day survey. This was an important find because the USGS fisheries Lake Trout removal project takes place at Logging Lake. This project has been going on since 2015. The netting takes place in June and October to minimize wildlife disturbance and preserve wilderness character. They use a motorboat to get across the lake, habituating these loons more to the sight of boats than at other backcountry lakes. This fisheries project makes Logging Lake an ideal target for banding since there is a higher chance of catching birds on lakes with more human use. Having a banded loon on Logging will help us learn more about the valuable restoration of the native fisheries food web and how it affects loons.



A loon sitting on a nest (Jake Bramante).

2025 Nesting Highlights

There were five successful nests this year in Glacier National Park, three in the North Fork, and two in the Lake McDonald district. Just outside of park boundaries on Blackfoot Tribal lands there were also two successful nests. A surprising nest attempt was found at a new location in Many Glacier this year, representing one of only three nesting locations documented in Many Glacier since monitoring began over three decades ago. The nest ultimately failed, and the cause is thought to be predation. Loons

2025 Residential Loon Population

An adult loon with two stage three chicks (Gary Whitney).

In Glacier National Park:	22 Pairs	11 Singles	9 Chicks
On Blackfoot Tribal Lands:	2 Pairs	1 Single	3

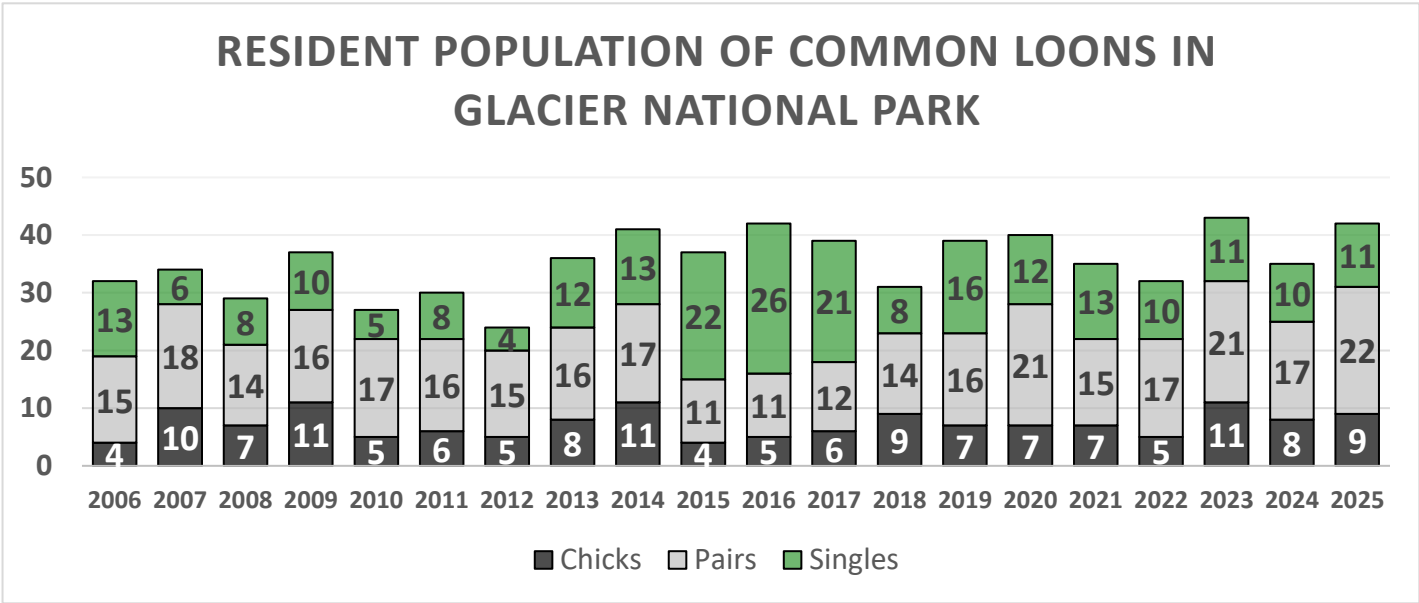
on Swiftcurrent Lake also attempted to nest, as it has done repeatedly over the last decade. We were very hopeful that that nest would succeed this year due to the lower recreation use brought about by construction closures, but it was also unsuccessful. Other nest failures included two nests in the North Fork and one in Two Medicine. These nests failed for unknown reasons.

Using Population data to inform Management



Loon coordinator, Dee Baginski, putting out buoys on Swiftcurrent (Jami Belt).

Information collected from loon surveys plays a vital role in park management decisions. Having long-term population data and nest locations allows biologists to strategize recreation management and infrastructure development and maintenance to minimize nest disturbance. This year we placed buoys around the nest at Swiftcurrent Lake, a very popular lake for recreation, to minimize the likelihood of recreation-induced nest failure. The Citizen Science Team worked with Glacier Park Boat Company to monitor the closure and educate visitors about the sensitivity of loons. NPS Rangers also placed trail closures at two lakes in Many Glacier and one in the North Fork to minimize disturbance for nesting loons.





Banner: A goat standing on a rocky ledge (Jane Ratzlaff).

High Country Citizen Science

Mountain goats are a uniquely adapted ungulate (hoofed mammal) found only in the northern latitudes of North America. Glacier National Park provides exceptional opportunities for its visitors to view this iconic species, as the park hosts the largest native population of mountain goats in the lower 48 states. Over the last few decades, wildlife managers in Montana documented a concerning decline in goat population counts in the park and in adjacent lands in the National Forest.

Park biologists decided that a long-term population monitoring program was necessary to understand the population trends, distribution, and threats to mountain goats in Glacier National Park. In 2008, they established the High Country Citizen Science Project to employ the power of citizen scientists to monitor mountain goats in their high elevation habitats. Mountain goats are highly specialized to alpine ecosystems which are threatened by climate change, altered wildfire regimes, and invasive plant intrusion. Additionally, rapidly increasing recreation in once secluded goat haunts has led to increased habituation and changes in goat behavior. We also monitor bighorn sheep, a species that is primarily found on the east side of the park but often shares habitat with mountain goats. By monitoring both species, we can track changes in their use of shared habitat and resources. Additional information about the project can be found on the [High Country Citizen Science project page](#).

Project Objectives

- 1) Enlist the help of volunteers to collect baseline information about mountain goats at sites across the park.
- 2) Monitor changes in population size of goats over time
- 3) Map park-wide distribution of mountain goats.
- 4) Document areas where bighorn sheep may overlap with goats and monitor changes in shared habitat use over time.
- 5) Collaborate with USGS to map genetic diversity and genetic structure of mountain goats.

Survey Methods

Volunteers survey 37 sites distributed throughout the park, some involving short hikes of a few miles round trip, while other sites are more than 20 miles into the backcountry. The goal is to complete at least three surveys at each site between June and October, the period between birthing season and mating season (aka “the rut”), when behavior and movement are most consistent. Surveyors navigate to pre-designated observation points where they use binoculars and spotting scopes to sweep the mountainsides for goats and sheep for one hour. They record any goat or sheep detections, along with information about the habitat, location, ages, and sexes of the individuals in the group. Some of the 37 sites initially mapped in 2008 needed to be adjusted due to a decade of vegetation growth. In 2025, we moved the locations of four survey points improve visibility.



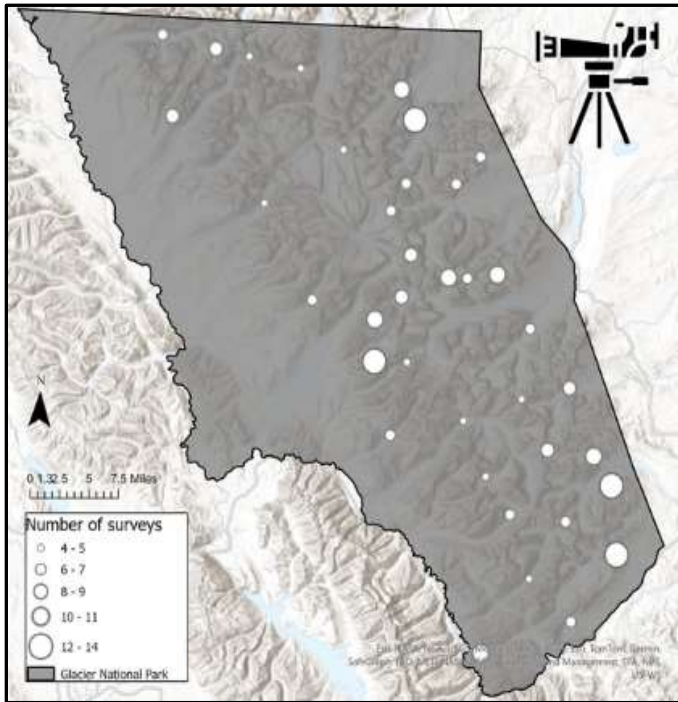
A volunteer scans for mountain goats and bighorn sheep at in a High Country Citizen Science survey (Jordan Perrego).

MOUNTAIN GOAT AND BIGHORN SHEEP SURVEYS:

283	91%	9%	3,787
SURVEYS	BY	BY	MILES
CONDUCTED	VOLUNTEERS	NPS STAFF	HIKED

Mobile Data Collection

Mapping apps are an essential tool we use to collect and share Citizen Science data in Glacier National Park. In 2025, we conducted all surveys for each of our projects using Survey123, a mobile mapping app that greatly increases the program's efficiency and capacity by allowing project coordinators to immediately review surveys and access data. Survey data is linked to a publicly available webmap that allows our volunteers to see when and where surveys have been completed so they can focus their efforts on sites that have not been surveyed recently. Our innovative use of mobile Geographical Information Systems (GIS) forms for Citizen Science goat monitoring was recognized by the NPS Geospatial Committee. [Click here to learn more.](#)



Map of 37 survey sites. Point size is proportional to number of surveys completed at each site.

Results

This year, volunteers conducted three or more surveys at every site, with some sites surveyed as many as 14 times. Many metrics can be drawn from this observational data including high counts at each site. A high count is the maximum number of goats and sheep observed at each survey site during the official one-hour survey period. High counts can be used to estimate the minimum population size and density of mountain goats in the park as well as track changes in these factors over time. In 2025, volunteers and staff observed goats or sheep in 55% of surveys, either during the survey period or while hiking to and from the survey site. The highest number of goats observed during a survey occurred at Sperry with 16 individuals, while the highest number of sheep seen during a survey occurred at Scenic Point with 17 individuals.

Our publication, authored by USGS staff and the Citizen Science Biologist, detailing the population trend of mountain goats in Glacier between 2008 to 2020 is now in press and we are very excited to share it with you all in the next few months.

Mountain Goat declines in a protected, interior, native populations

Ecosphere, 2025 (*in press*)

Tabitha A. Graves, William M. Janousek, Michael J. Yarnall, Jami Belt

Excerpt from Abstract:

"We used long-term (12 year) citizen science monitoring data and Bayesian N-mixture modeling to estimate population trends and drivers of population metrics among mountain goats in Glacier National Park. Median goats per site ($n = 37$ sites) declined by 45% (95% CRI=32%, 57%) from 77.8 (95% CRI= 64.4, 95.1) in 2008 to 42.3 (95% CRI= 34.3, 52.2) in 2019, with consistent declines from 2008 until 2015, when the number of estimated goats stabilized. The decline exceeds International Union for Conservation of Nature criteria for classifying a population as



HIGH GOAT COUNT: 153



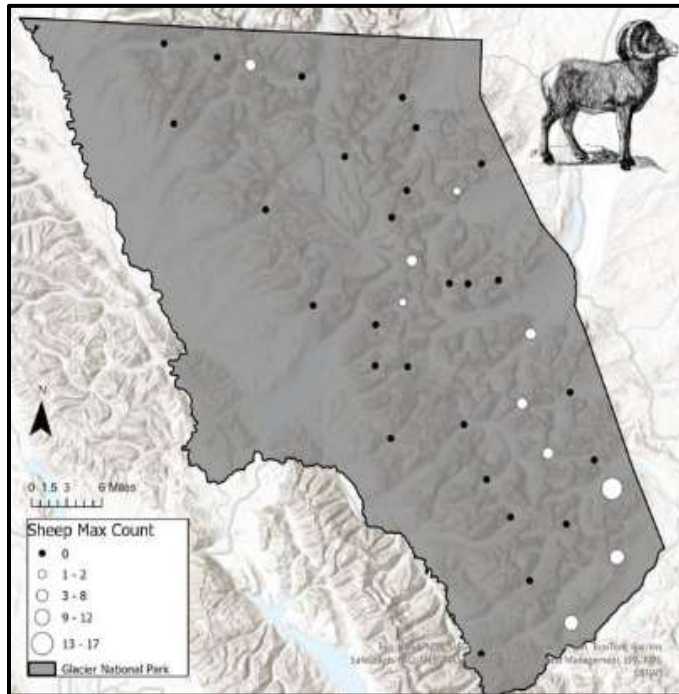
HIGH SHEEP COUNT: 73



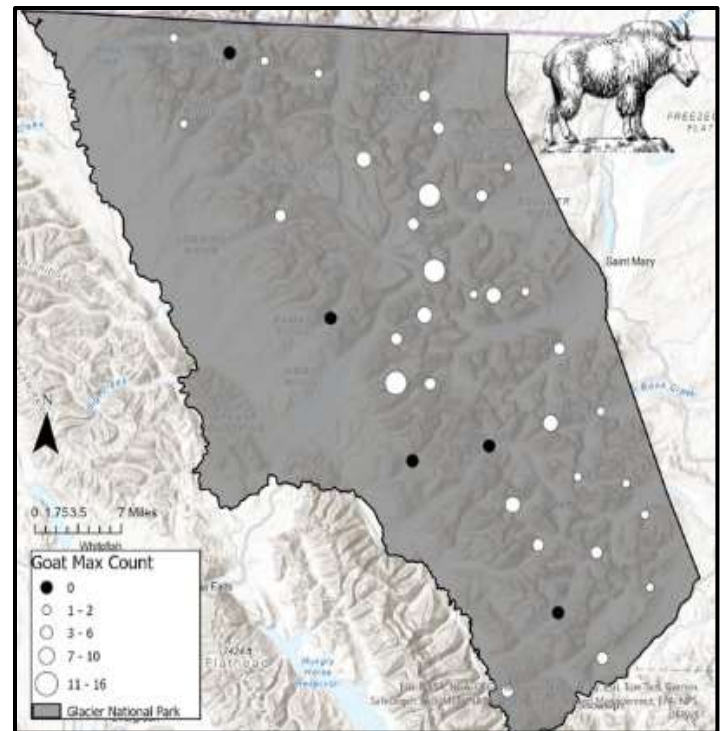
130+ WILDLIFE OBSERVATIONS

Goat and Sheep High Counts

The sum of goat high counts was 153 individuals. The sum of sheep high counts was 72 individuals, much lower than the 120 recorded in 2024. Observers also noted over 130 instances of other wildlife detections during surveys or during their travels to and from the observation points. These sightings included 16 species of birds, 15 species of mammals, one toad species and one salamander species. A few notable species observed are lynx, least weasel, Golden Eagle, Clark's nutcracker, and long-toed salamander



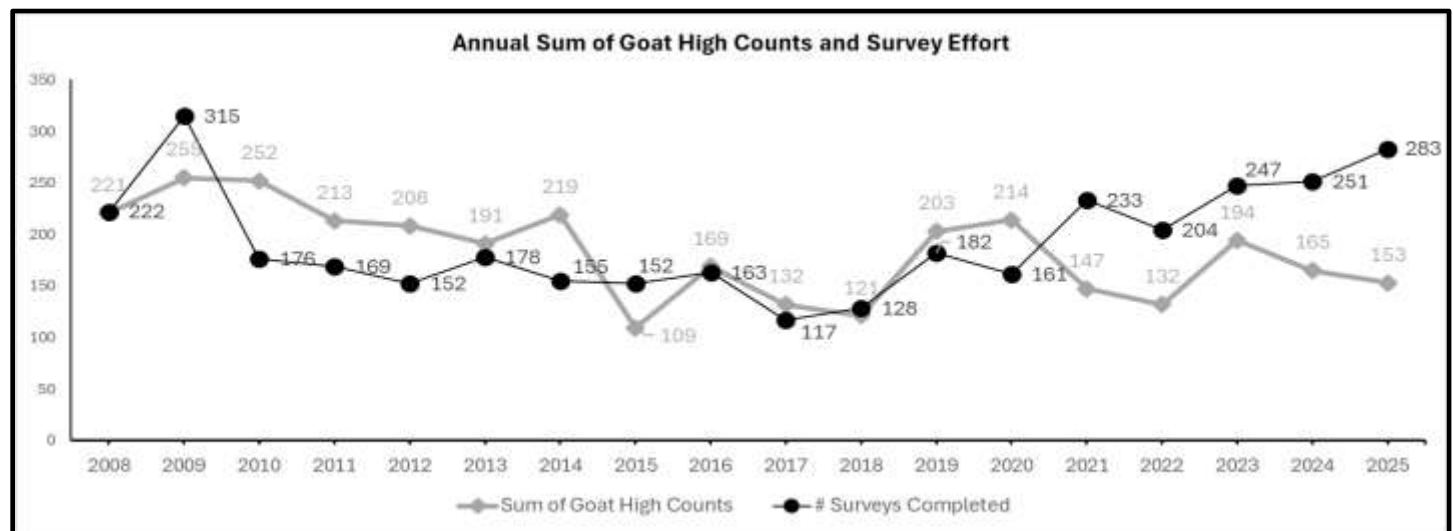
Map of distribution of bighorn sheep high counts at each of the 37 survey sites. Point size is proportional to number of sheep observed.



Map of distribution of mountain goats high counts at each of the 37 survey sites. Point size is proportional to number of goats observed

Ongoing Research

USGS and park biologists continue to add to our efforts to monitor mountain goats in the park. They are in the process of analyzing genetic results from fecal samples collected in 2023 and 2024 to estimate the park's mountain goat population structure and size. We are excited to share a report with [preliminary results](#) from the population structure analysis. One of our citizen scientists also collected as many samples as possible along the Sperry- Gunsight trail to add to a three-year dataset to look at mountain goat survival using population genetics.



Sum of all mountain goat high counts across the park shown for each year of the project alongside the total number of surveys conducted in that year.



Pika Collaborative Research

The Pika Pellet Patrol was not a funded Citizen Science project this year. However, thanks to the Glacier National Park Conservancy, pika research continued behind the scenes. The Citizen Science team has been collaborating on pika research with a team from the US Forest Service Rocky Mountain Research Station (USFS) led by Dr. Gavin Jones and Dr. Lucas Moyer-Horner. Initial work started in 2007 as Dr. Moyer-Horner conducted his dissertation research. In 2023, we had a unique opportunity to work with the same team to begin a follow-up study on pika occupancy and genetic connectivity and investigate the effects of warming temperatures over the last ten years on pika populations. Citizen Science assisted in this effort by collecting genetic samples (aka pika poop) from talus fields that the research team did not have the capacity to survey.



Dani Owens (left) and Dr. Gavin Jones (right) stand in front of a mountain (NPS Photo).

2025 Effort

Since 2023, we have had researchers from the USFS team every summer. This year, Dani Owens, a research technician from 2023-2024 and a Master's student with Dr. Gavin Jones's Applied Quantitative Ecology Lab at the University of New Mexico, returned to the park to conduct research for her thesis. Her project continues to quantify changes in pika occupancy and persistence based on comparative data from the 2023-2025 work and the 2007-2010 dataset. The study will identify the primary environmental mechanisms driving these changes by testing whether characteristics like talus depth and thermal buffering or broader regional climate variables are the strongest predictors of pika persistence. This year, she and her team collected 69 additional scat samples to fill known spatial gaps in the existing genetic dataset from the 2023-2024 effort. They also deployed game cameras, acoustic recording units (ARUs), and dataloggers to observe pikas more closely with the hope of

gaining new understanding of talus patches and pika behavior. Their analysis is still ongoing, and results are to come.

Citizen Science Pika Pellet Patrol Updates

Data analysis for the Pika Pellet Patrol is still ongoing. Thanks to our dedicated volunteers (yes, you!) we collected a total of 206 samples in 2023 and 206 samples in 2024 for a grand total of 412 samples from Citizen Science. The USFS team collected approximately 800 samples over the same period leaving us with over 1200 pika genetic samples to test. This data is invaluable as it will give us previously unknown insight into pika genetic diversity, dispersal patterns, habitat connectivity and reproductive trends. Right now, the DNA is being extracted from samples for further analysis at the National Genomics Center in Missoula, Montana.

We were also able to send samples to Dr. Lucas Moyer-Horner's lab at Kenyon College for specialized microbiome analysis to better understand how potential diversity of gut microbiomes related to habitat may provide resilience for pikas. While analysis is still ongoing, initial results provide evidence that the pika gut microbiome is similar across the park despite the differences in the soil and vegetation types across the distinct talus field habitats where pikas live. This echoes work done by Kohl et al. in Oregon, Colorado, and southern Montana.

[The Plight of the Pika: An ArcGIS StoryMap](#)



In an effort to fully encapsulate Glacier's pika research and Citizen Science work, we have just published a [StoryMap](#) complete with interviews with the biologists and the cutest pika photos and videos we could find (Thank you, Jeff Jones). Click the link to explore and learn more!

Other Glacier National Park Pika Research

Pikas & Plastic

Amid the main pika research efforts in the park a few smaller projects have emerged. During field work in 2023, Dr. Gavin Jones, Dr. Lucas Moyer-Horner, and Dani Owens discovered something abnormal. A pika in a remote Glacier location, near a wilderness campground, found a plastic hairbrush and stocked the green bristle tips in its haypile, possibly mistaking them for vegetation. A paper detailing their findings and the implications related to wildlife's access to human trash has been published in the Northwest Naturalist. Click the link to view or email us for the full unlocked PDF: <https://doi.org/10.1898/NWN25-11>

Year-Round Pika Observation

During her time as the "Scientists-In-Parks" Biology Assistant, Campbell Melton was also researching pika, in continuation of research started by a previous 2024 intern. Through remote game camera installation and subsequent behavioral analysis, she observed an entire life cycle of a pika hay pile and a year's worth of pika behavior. This work provides previously unseen

insight into the day-to-day happenings of a pika and their ability to adapt to a variety of ecological challenges. Monitoring is still ongoing, and we hope to expand these findings as time goes on. At this time, Campbell has compiled a paper detailing her results and hopes to publish in a scientific journal. While this process has just begun, we will be sure to update you with results when they become available.



A still image of a pika and haypile from a game camera (NPS Photo).



2025 pi-ku's from Flathead High School Students! Artwork courtesy of our very own, talented, Carley Tsiamas!

Noxious Weed Blitz



Left: Volunteers walking the path searching for noxious weeds (Terry Peterson). Right: Volunteers pulling Oxeye Daisy, a common invasive plant species (NPS Photo).

The Citizen Science Program hosts an annual Noxious Weed Blitz, inviting volunteers for a day of hands-on learning about local invasive weeds. Volunteers learn from park botanists how to distinguish native plants from invasive plants. Native plants are those that have existed historically in the area and provide food and habitat for native wildlife. Invasive plants were introduced into the area by human actions and have spread aggressively, threatening the growth of native plants, thus endangering the health of Glacier's ecosystems. This year, 39 participants helped to protect these ecosystems by learning to identify and pull five of the Park's most prolific invasive weeds including Spotted Knapweed, Oxeye Daisy, St. John's Wort, Houndstongue, and Yellow Toadflax. This year's crew worked hard and pulled many bags of weeds along the Apgar bike path.

Hawk Watch



Left: Pack mules deliver all the supplies needed for the 2025 Hawk Watch season at the Mt. Brown lookout. Right: Whitney Formon, Connie Ward, and Jami Belt stand below the Mt. Brown lookout after surveying raptors during the season kick off day in early September (Jami Belt).

Hawk Watch is a global collaborative effort to track raptor migration during both the spring and fall seasons. Glacier National Park officially established its Hawk Watch site in 2021, following pilot monitoring at several locations that began in 2017. Each fall, park biologists and Citizen Science staff train volunteers to identify diurnal raptor species migrating through the park. To engage the community, the program also hosts an annual open house featuring live raptors and educational activities focused on migration. Glacier plays a critical role as a migration corridor for Golden Eagles, first documented by park biologists in the 1980s. From September through October, volunteers stationed at Lake McDonald Lodge or the Mt. Brown observation point record thousands of Golden Eagles and other raptors, collecting details such as age, sex, and color morphs. Migration counts are logged in the app Trektellen, where live updates are available on the [Trektellen Website](#).

Dragonfly Mercury Project



Left: A MCC crew member wades through Johns Lake and collects dragonfly larvae (Carley Tsiamas). Right: Members of the MCC crew measure and identify dragonfly larvae in small groups (Carley Tsiamas).

The Dragonfly Mercury Project is a nationwide citizen science study coordinated by the NPS Air Quality Division focused on collecting dragonfly larva for mercury analysis. Since establishment in 2009, the project has engaged over 6,000 volunteers across 140 national parks. This year, 16 student volunteers and their two Montana Conservation Corps (MCC) Youth Expedition Crew leaders assisted as 60 dragonfly larva and six water samples were collected from three of Glacier's water bodies. Staff members from the Volunteer Office, Science and Resources Management division, Interpretation, and Glacier National Park Conservancy also helped. This year, staff scouted for and established a new collection site in the North Fork within wilderness. After settling in a water body, atmospheric mercury can be transformed into a more toxic form called methylmercury, which can then bioaccumulate, endangering animals at the top of the food chain, including humans and wildlife. Dragonfly larva are useful for biomonitoring because they are found ubiquitously in high concentrations. As mid-level predators of the aquatic ecosystem, they can be a good indicator of the mercury levels in the local food web. They are also relatively easy to find and sample which makes them an excellent target population for large Citizen Science efforts, especially with younger audiences. For more information about this project, visit the [USGS Dragonfly Mercury Project Story Map](#).

Huckleberry Phenology Citizen Science



Left: A school group surveying huckleberries at Rocky Point (Jami Belt). Right: Freshly picked huckleberries on Mount Brown (Whitney Formon).

Since 2022 Glacier National Park and the USGS have collaborated to collect data with Survey123, tracking how weather and other environmental factors influence the timing of huckleberry flowering and berry production. Volunteers record the presence of huckleberry shrubs within a 10-foot circle every one hour during their hikes along trails. The resulting data from submitted surveys is used to compile final reports regarding huckleberry phenology (or life cycle timing) in the park and to ground truth predictive maps of huckleberry distribution to inform understand of availability of food for grizzly and black bears. The program began with surveys across the entire park but has since developed into a formal monitoring effort at several established sites. Each summer, staff and partners focus on gathering consistent long-term data at each site during different seasons, while also engaging youth through field trips and educational programs. In 2025, a total of 40 huckleberry phenology surveys were conducted with school and service groups, engaging 376 participants who collected a total of 202 huckleberry phenology records. As interest in Glacier National Park Citizen Science continues to increase, huckleberry phenology surveys will serve as an entry project for first-time volunteers.

Montana Bumble Bee Atlas



Left: Two bumblebees pollinating showy aster (*Eurybia conspicua*) (Tyler Hannum). Right: A bumblebee pollinating white thistle (*Cirsium hookerianum*) (Tyler Hannum).

The bumble bee atlas is a conservation initiative by the Xerces Society and partners including Glacier National Park. Volunteers conducted netting surveys for bumblebees and photographed them for identification. This information supports the understanding of numbers and distributions of each of the 28 bumble bee species documented so far in the park. In coordination with U.S. Geological Survey researcher Dr. Tabitha Graves, volunteers completed 10 bee surveys at 7 locations, supporting over half of the surveys conducted in Glacier National Park this year. USGS plans to evaluate how the distribution of Western bumble bee, a species of concern still common in the park, is influenced by landcover and the other bumble bee species. For more information about this project, visit the [Bumble Bee Atlas](#) website.

Waste Water Inspections



Left: Bright green tracing dye used for testing wastewater systems (NPS Photo). Right: Tracing dye traveling underground shown in a wastewater system (NPS Photo).

Glacier National Park, in conjunction with the US Public Health Service and Flathead County Health Department, has completed water and wastewater system inspections on private properties with commercial eating, drinking, and lodging operations within the park. Citizen Science volunteers assisted commercial services staff with inspections including wastewater dye tests on 10 properties to verify their safety and sanitation and confirm that wastewater is not degrading the park's natural resources.

Collaboration And Outreach



The Piikuni lands service corps members conduct a loon survey at Swiftcurrent (Jami Belt).

Piikuni Lands Service Corps

The Piikuni Lands Service Corps (PLC) is a Montana Conservation Corps crew of seven young adult members of the Blackfeet Nation. During two weeks of their summer service term, they conduct loon surveys at lakes on Blackfeet Tribal Lands. They completed 15 loon surveys and surveyed 10 lakes in June and July.



MCC members perform a goat survey at Avalanche Lake (Carley Tsiames).

Montana Conservation Corps

A crew of six young adults from the Montana Conservation Corps conducted high country surveys for two weeks in September across Glacier National Park. The crew completed nine surveys and assisted with testing updated locations for sites that have become too overgrown by vegetation to survey.



A group photo of students gathered during their hike to Hidden Lake (Mike Rentz).

Iowa State University

16 students from a field-based summer course at Iowa State University joined us for a full day of high-country training alongside Citizen Science volunteers. In the following days they conducted mountain goat surveys at six different sites throughout the park.



The RMGA group ready for their goat survey day at Cobalt Lake (Jordan Perrego).

Rocky Mountain Goat Alliance

Each summer, members of the Rocky Mountain Goat Alliance join Citizen Science staff to conduct mountain goat counts. This year, they conducted two surveys in the park from August 22nd to 24th. The four-person group backpacked from Two Medicine to Upper Park Creek to conduct a survey at Cobalt Lake and one of the more remote surveys at Upper Park Creek.



Students from Bozeman Field School gathered around at the group camp site at St. Mary Campground (Zoe Pritchard).

Bozeman Field School

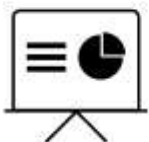
16 students from an Advanced Placement Environmental Science course at Whitefish High School joined us in May to learn about common loon conservation and monitoring efforts in Montana. The group conducted two surveys at Lower and Upper Howe Lakes. In August, students returned to conduct pika surveys in the Two Medicine Valley.



Flathead High School hiked Oldman Lake Trail and Piegan Pass Trail to do goat and pika surveys (Whitney Formon).

Flathead High School

26 International Baccalaureate students in an Environmental Science class at Flathead High School conducted goat and pika surveys at Dry Fork and on the Piegan Pass Trail. Second year students designed their own research projects on pikas, exploring how different environmental conditions affect pika.



5 PRESENTATIONS
181 ATTENDEES
OUTREACH



Thank you to Glacier National Park Conservancy for funding and supporting all our citizen science projects!



A group of Glacier National Park Conservancy staff in West Glacier, Montana (Geneva Thompson).

More Information

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