NOVEMBER 2022

Sacajawea Audubon News

Sacajawea Audubon Society builds on an interest in birds to promote the conservation of our natural environment through enjoyment, education, and action.

Monday, November 14th, 2022, at 6:30 pm, Hope Lutheran Church:

Golden Eagles, Wolverine, and Lynx: Non-invasive methods of monitoring Montana's rare and elusive carnivores

with Kalon Baughan and Bret Davis

Kalon Baughan and Bret Davis met on the Bridger Ridge Hawk Watch in 2012 and became instant friends. They spent two seasons together counting migrating Golden Eagles, and since then have fostered a relationship geared towards wildlife conservation, with a special focus on non-invasive methods of monitoring rare and elusive carnivores. Now they have teamed up again by forming their own company: Wild Ideas, LLC. This time the animals of focus are wolverine and lynx, two of Montana's most threatened and iconic species. Their talk will discuss the novel ways they identify and monitor individual wolverines and lynx with photographs. Three years of work in the mountains along the Continental Divide in central Montana have given them a unique view into the world of these wild creatures, which they are excited to share with you. The animals' natural life histories, camera trap photographs (both with traditional game cameras and professional DSLR equipment), and their perspectives on current issues in conservation and preservation of Montana's wild ecosystems will be presented.

Kalon lives in his cabin outside Helmville, Montana along the shore of Nevada Creek Reservoir and works as a professional artist and photographer. On the side, he has dedicated the past 12 years to wildlife conservation, developing non-invasive methods of integrating trail camera technology for the use of monitoring rare forest carnivores.

Bret Davis (left) and Kalon Baughan on the Bridger Ridge.

Bret currently works in Bozeman as a research scientist in a physics laboratory. He has worked on numerous conservation projects—primarily with birds—throughout the state of Montana and from the Upper Peninsula of Michigan to the wild woods of Alaska.

The in-person meeting will be held Monday, November 14th at Hope Lutheran Church, 2152 W. Graf (off S. 19th). A social begins at 6:30 pm; the program begins at 7:00 pm. Attendees are encouraged to bring their own reusable cups.

For virtual attendance, please register at: https://attendee.gotowebinar.com/register/7584857384831244. You will receive a confirmation email containing information about joining the webinar. Attendees—whether in person or virtual—are encouraged to share their bird sightings at this and every monthly program. Share the program on social media using the hashtags #sasbirds #sacaaudubon #wolverine #lynx.

SAS monthly programs are free and open to the public, featuring a special guest speaker the 2nd Monday of each month, September through May. For more information, contact Kyle Moon at programs@sacajaweaaudubon.org.

A MESSAGE FROM SAS PRESIDENT CHRIS NIXON

YOU ARE WHY SACAJAWEA AUDUBON SOCIETY EXISTS! Were it not for each of you who make time in your busy lives to attend monthly programs, bird walks, the Bridger Raptor Fest, birding tours, Christmas bird counts, breeding bird surveys, birding classes, weed pulls, clean-ups, IAWP Busy Beaver activities, etc., **there would be no SAS.** Through the dedication of your time, volunteer hours, and financial support, this all happens. You are needed and you are much appreciated! I hope you continue attending SAS events and engaging with others in order to continue to make these programs possible. In this time of increased human impacts to the environments that birds and other wildlife depend upon, your efforts to recognize, appreciate, protect, and be a champion for birds is more and more important.

I ask that you go ahead and renew your local membership in SAS for the coming year. And please consider making an additional donation to one or more of the several target programs that rests near and dear to your heart *(see the membership renewal form on page 15).* **100% of your local SAS membership and gifts stay right here for projects in the Northern Yellowstone Ecosystem of Montana.** Also, consider joining the National Audubon Society if you are not already a member.

We on the SAS Board and other members want to know more about you. What are your interests? Why are you reading this? Why are you part of SAS? What first made you want to be a member of SAS?

We wish to continue highlighting our members (now approaching 1,000) in upcoming SAS newsletters. I encourage YOU to submit your story of why YOU are a member of SAS, along with a photo of yourself—activity shots are perfect—to newsletter@sacajaweaaudubon.org. Yours may be the next smiling face that we highlight. Smile and think about it!

SACAJAWEA AUDUBON SOCIETY OFFICERS AND COMMITTEE CHAIRS

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President	Chris Nixon pres@sacajaweaaudubon.org
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Janet Winnie	janetwinnie@sacajaweaaudubon.org

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SACAJAWEA AUDUBON SOCIETY

INDRELAND AUDUBON WETLAND PRESERVE

UPDATE: NOV. 2022

THE WETLAND PRESERVATION PROJECT (WPP) was initiated to accomplish Sacajawea Audubon Society's mission to protect and restore increasingly rare wetland and riparian habitats in our region, and to provide educational opportunities and enjoyment for generations to come. The IAWP is the first of our wetland protection projects.

Society of Wetland Scientists Tour the IAWP

by Loreene Reid

The Society of Wetland Scientists Rocky Mountain Chapter hosted a field tour at the Indreland Audubon Wetland Preserve (IAWP) on September 14th. Rich McEldowney, Senior Wetland Scientist with Confluence Consulting, Inc., led a walking tour and spoke about the "Challenges with Urban Wetland Restoration and Mitigation." Participants were informed of the many challenges that come with a complex project and enlightened about the benefits of working toward a common goal. The group learned about the future plans for this wetland, which will provide great habitat for birds and also deliver cold water to the East Gallatin River. Wetlands are critical for the health of our trout populations, which greatly benefit from the clean, cold groundwater inputs delivered by wetlands.

The Society of Wetland Scientists' mission is to promote best practices in wetland research, education, conservation, preservation, restoration, and management. Their vision is to "ensure that wetlands are understood, their importance recognized, and sound wetland science is used as a guide for wetland professionals and the general public to collaborate on research, conservation, preservation, restoration, and management of wetlands in our changing environment."

BUSY BEAVERS UPDATE

by Heather Priest

The IAWP Busy Beavers engage in a variety of opportunities around the Gallatin Valley, including projects hosted by organizations other than the Gallatin Watershed Council and the Sacajawea Audubon Society. Three volunteers in particular have been hard at work helping Trout Unlimited assess culverts in an effort to ensure that they are suitable for our local trout populations to pass through freely.

IAWP Busy Beavers Jennifer Abbott, Loreene Reid, and Janet Winnie have dedicated over 70 hours this summer getting their feet wet to assess culverts and record the data for Trout Unlimited and the "Aquatic Organism Passage Survey: Gallatin Watershed" project, managed by Connor Parish. The survey ends this month, to resume in June 2023.

Trout need access to tributaries for spawning, rearing juvenile trout, and for cold water access during our warm summer months. There are hundreds of stream-crossing structures that could potentially block trout from accessing critical upstream habitat.

Do you want to spend your free time in streams for the benefit of local species? You, too, can help resource managers identify structures that need to be replaced by watching a short training video, downloading a few apps to your phone, and using some simple equipment. Navigating streams isn't your thing? There are a variety of other opportunities that you can engage in as an IAWP Busy Beaver that don't require physical labor, including leading activities for children at events such as the Bridger Raptor Festival or at World Wetland Day. Learn more and reach out to Heather at heather@gallatinwatershedcouncil.org or sign up to be an IAWP Busy Beaver at gallatinwatershedcouncil.org/volunteer.

IAWP Busy Beavers (left to right) Jennifer Abbott, Loreene Reid, and Janet Winnie. Photo by Heather Priest.

SACAJAWEA AUDUBON SOCIETY

INDRELAND AUDUBON WETLAND PRESERVE UPDATE: NOV. 2022

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FALL MAMMAL ACTIVITY AT THE IAWP

by Frank Marchack

As fall continues, the wildlife in the Indreland Audubon Wetland Preserve (IAWP) are actively preparing for the colder weather. Muskrats are very social and live in large families. They make their homes in wet areas and cool burrows that they dig on the banks of water sources. They also build lodges from cattails and mud, and we have a family that's built a lodge in the center of the wetland, visible from the berm at the Northern Harrier Chronlog post.

IAWP Trail Cam captures Great Horned Owl with a muskrat in its talons.

Beavers, the largest rodents in North America, have had a demonstrable effect on the environment of the IAWP over the years. Currently, in addition to the beaver lodge at the far end of the historic railroad berm, we have a new beaver lodge in the Story Mill ditch near the split in the sewer line access road easement. The beaver at this location has been especially busy, actively taking down numerous trees in the area. To try and save some of the trees, SAS Board Members and a volunteer wrapped several trees in fencing, leaving the rest for the beaver's work.

A new beaver lodge has been built near the split in the sewer line access road easement. IAWP Trail Cam photo.

Beaver at the new lodge have been taking down numerous trees in the area. Photo by Frank Marchak.

Volunteers help wrap trees to protect them from beavers. (Left to right) John Edwards, Chris Nixon, Frank Marchak, Janet Winne, and Dillon Potter. Photo by Dillon Potter.

BIRD NOTES

by John Parker

Black-throated Blue Warbler photo by Ed Harper.

This fall there have been relatively few rare or uncommon birds to report. The primary reason is because of the fairly benign weather this year, with few major systems moving through or stalling over the region. Who complains about the beautiful weather? Well, birders who are looking for birds displaced by storms.

Regardless of the weather, most birds migrate. If you are fortunate, on a beautiful autumn day you can still find some great birds. Such was the case for Jim Manning on October 14th, when he found five **Surf Scoters** on Harrison Reservoir. In most years a few of these pelagic ducks move through southwest Montana in small numbers, but finding five together is exceptional.

Shorebirds moved through the region steadily from July through September without any great surprises. **American Golden Plover** are not seen annually in our area, and always in small numbers. The only American Golden Plover seen this fall was found at Harrison Reservoir on September 14 by Vic Fesolowitz. On that same trip Vic also saw a **Sabine's Gull** at the lake. Nine days later Dalton Spencer counted five Sabine's Gulls at Harrison Reservoir.

September 22nd was one of the stormier days of the early fall, so Andrew Guttenberg made the trip over to Harrison Reservoir hoping for something different. It proved to be a good decision. As Andrew arrived at the lake, he shortly spotted two **Parasitic Jaegers**. A life bird no less! As a bonus there were three Sabine's Gulls there.

Two rare warblers were discovered in Bozeman during this fall's migration. The first was a **Cape May Warbler** seen by John Parker as it was flycatching over the East Gallatin River in the woods east of Glen Lake, on September 9th. The second warbler was a **Black-throated Blue Warbler** found by Robin Wolcott in Graf Park on October 4th. The Cape May Warbler was a first for southwest Montana and the Black-throated Blue was only the second seen in this corner of the state. Luckily, the Black-throated Blue Warbler remained in a small patch of woods next to the trail for one more day allowing many local birders close looks at this stunning male, with his black mask and midnight blue back, offset by the ivory white belly. It should be noted that both of these warblers were observed eating berries, which they will sometimes do during migration to supplement their normal insectivorous diet. Not as unusual as the above warblers, but still a nice find for this far west, was the **Blackpoll Warbler** Harold Ziolkowski had in his Belgrade yard on September 14th.

Earier this summer, but still in the late spring migration period, two other striking birds made an appearance locally. Only occasionally seen in this area, the **Great Egret** discovered at the Cherry River fishing access site in Bozeman on June 12th was an impressive bird to see up close in breeding plumage.

Last, but certainly not least, was another first for southwestern Montana. During a period of unsettled weather on June 5th, Kevin Cox was amazed to see a brilliant male **Scarlet Tanager** off of Graf Street in south Bozeman.

Life after the Bridger Foothills Fire: bursting wildflowers, shrubs, and birds

by Victoria Saab and George Kelly

Photo 1: Victoria Saab in a stand of resprouting aspens in October 2022, two years after the Bridger Foothills Fire. Photo by George Kelly.

Two years ago the Bridger Foothills Fire ended with the onset of a cold front and rain in early October 2020. Almost instantaneously, a booster shot of nutrients created rich soil for new sprouting plants. Within days after the fire ended, we found sprouting aspen seedlings. Now those seedlings are more than 6' tall (*photo 1*).

We have been following the ecological changes of the bird and plant communities for the past two years on the Newhall property in the Bridger Mountains. Although we are not conducting a scientific study, our observations have been consistent with published, long-term research from recently burned forests elsewhere in the Rocky Mountain region *(see references at the end of this article).*

Spring of 2022 experienced a good rainy season, followed by a burst of blooming wildflowers and abundant growth of native shrubs (*photo 2*). The plants that first return after fire are considered "early successional species" or "post-fire specialists." Aspen and other post-fire specialists (*photo 3*) have rhizomes: horizontal stems tucked underground that stay protected

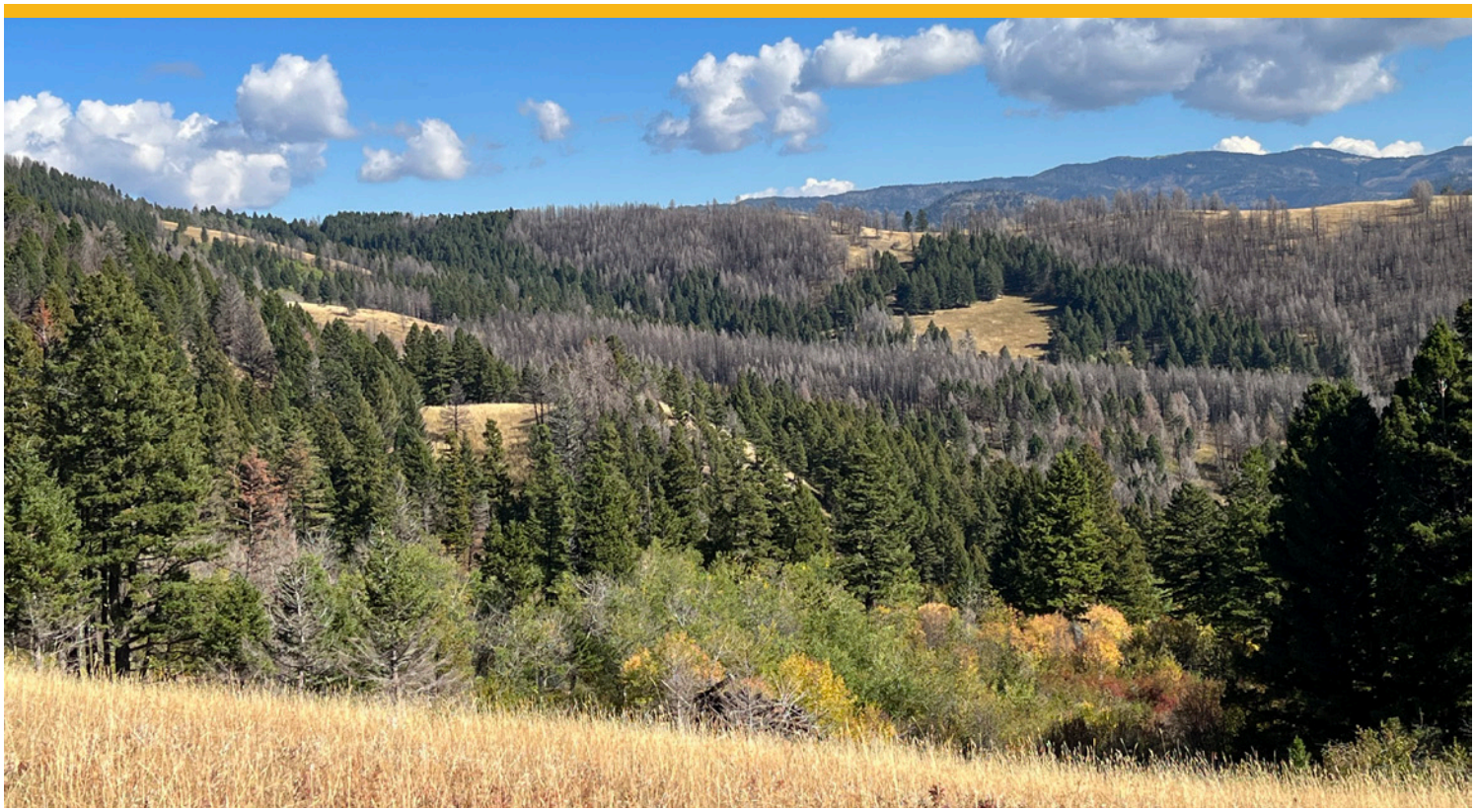
Photo 2: Wildflowers and shrub regrowth in July 2022, two years after the Bridger Foothills Fire. Photo by Victoria Saab.

Photo 3: Western Showy Aster in summer 2021, resprouted from rhizomes one year after the Bridger Foothills Fire. Photo by Matthew Lavin.

during a fire and allow these species to thrive soon afterward. Additionally, plants take advantage of increased sunlight and availability of soil nutrients. The diversity of wildflowers has been dazzling with color and beauty. Glacier lilies, pasqueflower, and prairie smoke were profuse in the early spring, followed by an abundance of larkspur, arrowleaf balsamroot, sticky geranium, and many more! Native shrubs that are prospering after the fire include ninebark (*Physocarpus malvaceus*), serviceberry (*Amelanchier sp.*), chokecherry (*Prunus virginiana*), hawthorn (*Crataegus sp.*), and Rocky Mountain Maple (*Acer glabrum*). These plants are now sources of food and cover that will benefit wildlife for many years into the future.

Bird communities of Rocky Mountain forests co-evolved with wildfire under less severe conditions than exist with recent climate change. Fortunately, burn severity of the Bridger Foothills Fire (based on vegetation change from pre- to post-fire) was within expectations of a mixed-severity fire regime *(see references).* The mixed severity burn created a mosaic of habitat conditions (*photo 4*). Mosaic patterns are mixtures of totally burned, somewhat burned, and unburned green sections of a landscape. This helps create greater diversity in wildlife habitat once regrowth begins, including the creation of places for foraging, hiding cover, and nesting areas for many different species of wildlife.

Importantly, the mixed severity fire created forest conditions that maintained the entire suite of avian species. Birds occupying the landscape prior to the fire have shifted their distributions but are still present in the area, while new species have colonized the burned landscape. The fire created snags (standing dead trees) that are more easily excavated than live trees for nest



cavities of woodpeckers. Dead and dying trees provide substrate for bark- and wood-boring beetles, whose larvae are valuable food resources for beetle-foraging species such as Black-backed and American Three-toed Woodpeckers. The birds are feeding on millions of insect larvae. The post-fire shrub regrowth and associated flying insects also provide foraging opportunities for aerial insectivores such as bluebirds and flycatchers.

As anticipated, we observed cavity nesters and aerial insectivores in the burn that were rare or absent before the fire (Beneficiaries), including Black-backed Woodpecker, American Three-toed Woodpecker, American Kestrel, and Olive-sided Flycatcher. Northern Flicker, Hairy Woodpecker, and Mountain Bluebird appear even more abundant since the fire. These Beneficiaries are taking advantage of more severely burned sites, corresponding with predicted increases in nesting substrate and foraging opportunities. In contrast, canopy-nesting foliage gleaners such as Ruby-crowned Kinglets, and pine seed consumers such as Cassin's Finches (Disadvantaged), are less common than before the fire but are still present in the nearby unburned patches.

Other bird observations are consistent with patterns recorded in recently burned Rocky Mountain forests. For example, Lazuli Bunting (*left*) and MacGillivray's Warbler are known for colonizing recently burned forests and both appear more abundant in the Bridgers since the fire. As species that nest and forage in shrubs or near the ground, they are taking advantage of the densely sprouting shrubs, and insects, fruit, and seeds associated with the post-fire shrub growth.

Green-tailed Towhees are possibly less abundant than before the fire. They are often associated with sagebrush, which was mostly consumed by the fire. The Green-tailed Towhee, however, is known to use recently disturbed areas with an abundance of shrub species. With time, we expect their numbers to increase as shrub growth continues throughout the burn.

We will continue to follow the ecological changes of the Bridger Foothills Fire, from an open shrubland and snag forest to a canopy forest with meadows. Post-fire forests are special places with high biodiversity. The Bridger Mountains post-fire forest is providing a range of habitat for pollinators (Calliope Hummingbird) to plant-loving ungulates (elk and mule deer) and for large predators (black bears). We have an extraordinary opportunity to watch this process unfold. Keep your eyes and ears open as you visit the Bridger Mountains to witness the resiliency of nature.

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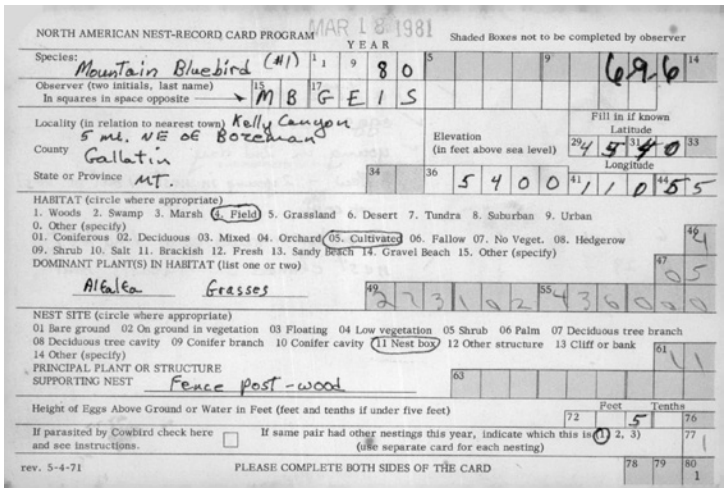
SACAJAWEA AUDUBON SOCIETY BLUEBIRD TRAIL HISTORY

This is the second installment in a series by Lou Ann Harris on the rich history of the Sacajawea Audubon Society Bluebird Trail Project.

Early 1970s

In the early 70s, a trail was started in the Pass Creek area NW of Bozeman. The Bird House Committee reported installing 10 bird houses in 1971, and that bluebirds had already been seen up there. Louis Moos said that 32 houses were added on Trail Creek. Eleven boxes were put up at the Fish Hatchery (now Bozeman Fish Technology Center), being placed where they could be seen by people driving through the hatchery. Some of these original boxes can still be found scattered around the property. About that time Sacajawea Audubon Society (SAS) members built several dozen nesting boxes from discarded grain chutes from a local mill. These boxes had smaller internal dimensions than recommended for bluebirds, but they seem to like them as well or better than the larger boxes, and many of them were still in use well into the 2010s. The old grain chute wood has proven to be nearly indestructible, though the added bottoms and lids have had to be replaced.

In 1973, Mary Geis placed 12 nest boxes at the top of Kelly Canyon near her home. By 1980, that had increased to 180 boxes along Kelly Canyon Road north to Bridger Canyon. Starting from seven pairs of Tree Swallows and one pair of House Wrens in 1973, the number of nesting pairs increased to 62 swallows (producing 227 nestlings), 58 pairs of wrens (producing 370 nestlings), and 13 pairs of Mountain Chickadees (producing 44 nestlings) in 1979. The boxes were used less by bluebirds, and Mary reported nine nesting pairs of Mountain Bluebirds (producing 36 nestlings) in 1980. As Mary noted in later years, bluebirds in the Kelly Canyon/ Bridger Canyon area didn't do as well due to marginal habitat, competition with swallows & wrens, more human activity, and perhaps more than enough nesting boxes.



NORTH AMERICAN NEST-RECORD CARD PROGRAM — MAR 18 1981 — Shaded Boxes not to be completed by observer

Species: Mountain Bluebird (#1) — YEAR: 80 — 696

Observer (two initials, last name) In squares in space opposite → MBGEIS

Locality (in relation to nearest town): Kelly Canyon 5 mi. NE of Bozeman

County: Gallatin

State or Province: MT.

Elevation (in feet above sea level): 5400 — Fill in if known: Latitude 45 40 — Longitude 111 05 55

HABITAT (circle where appropriate)
1. Woods 2. Swamp 3. Marsh (4. Field) 5. Grassland 6. Desert 7. Tundra 8. Suburban 9. Urban
0. Other (specify)
01. Coniferous 02. Deciduous 03. Mixed 04. Orchard (05. Cultivated) 06. Fallow 07. No Veget. 08. Hedgerow
09. Shrub 10. Salt 11. Brackish 12. Fresh 13. Sandy Beach 14. Gravel Beach 15. Other (specify)
DOMINANT PLANT(S) IN HABITAT (list one or two): Alfalfa, Grasses — 4, 05

NEST SITE (circle where appropriate)
01 Bare ground 02 On ground in vegetation 03 Floating 04 Low vegetation 05 Shrub 06 Palm 07 Deciduous tree branch
08 Deciduous tree cavity 09 Conifer branch 10 Conifer cavity (11 Nest box) 12 Other structure 13 Cliff or bank — 11
14 Other (specify)
PRINCIPAL PLANT OR STRUCTURE SUPPORTING NEST: Fence post - wood

Height of Eggs Above Ground or Water in Feet (feet and tenths if under five feet): Feet 5, Tenths

If parasited by Cowbird check here ☐ — If same pair had other nestings this year, indicate which this is (1, 2, 3) (use separate card for each nesting) — 1

rev. 5-4-71 — PLEASE COMPLETE BOTH SIDES OF THE CARD — 1

A bluebird nest card filled out by Mary Geis in 1980.

Mary Geis (left) and Lou Ann Harris on the Bluebird Trail in 2007.

Mary began banding under Louis Moos in 1977, and under her own permit by 1979. Later, she was assisted by Ginny Havens as a sub-permittee. Ethel Fogelsong and Mary Ahlers began helping Louis in 1988 and continued to monitor and expand the trails after his death in 1990.

About Mary Geis

Mary was a trailblazing woman in the male-dominated field of biology. She attended the Yosemite School of Field Natural History in the late 1940s and later received her graduate degree from the University of Montana. She settled in Bozeman with her husband, Tony, teaching at a public school. It was here that she became involved with SAS and met Louis Moos.

Mary had a natural curiosity about bluebirds in the Gallatin Valley and started her own bluebird trail in Kelly Canyon *(see above)*. She took over the SAS bluebird trail project from Louis in 1979. Mary loved crunching numbers and created many charts and graphs tracking bluebird, swallow, wren and chickadee nesting statistics. Using her nesting data, she concluded that local Tree Swallows consumed 1,000 pounds of insects each summer. Each nest record she collected was carefully written down and sent in to the Cornell Lab of Ornithology. According to Cornell, Mary submitted nearly 1,500 Mountain Bluebird records during a 30 year span.

To be continued in a future newsletter...

Bridger Raptor Festival 2022

Story and photos by Paulette Epple

The Bridger Raptor Festival was a wildly successful event this year, with ideal warm and sunny October weather bringing out thousands of festival-goers.

A young carpenter builds a chickadee nest box.

Once again, Sacajawea Audubon Society (SAS) provided a variety of educational activities for young and old attendees to enjoy. Kids learned to sketch birds, built chickadee nest boxes, used binoculars to solve a word puzzle, and played the Great Migration Game where they took on the role of a raptor winging its way south. Bird study skins at our table provided a fascinating chance for everyone to see birds up close. One of our displays demonstrated how to treat windows to prevent bird strikes.

Our study skins provided endless fascination!

While the Bridger Bowl lodges and grounds were a bustle of activity, high on the Bridger Ridge our raptor surveyors and numerous hardy hikers and volunteers counted 111 raptors migrating through during the two days, including 47 Golden Eagles. Visitors are always welcomed at the count site on the ridge above the Bridger Lift to help our official counters spot and identify the birds.

Thanks to Bridger Bowl for hosting this fantastic event celebrating raptors! And a huge shout out of "THANKS!" to all of our volunteers for all their hours of dedicated work that make the event such a huge success. It wouldn't happen without you!

SPECIAL THANKS to Simkins-Hallin Lumber for donating all the lumber and hardware for our nest box kits, and to Travis Kidd for putting the nest box kits together.

Kids learned about raptor banding from Sherry Staub.

ACTIVITY COORDINATORS

Oakley Strausser: *Festival Coordinator;* Janet Winnie: *SAS Table;* Beth Madden: *Great Migration Game;* Leo Freeman: *Build a Nifty Nest Box;* Emma Narotzky: *Sketch a Bird;* Aaron Clauson: *Binocular Blitz;* Loreene Reid: *Passport to Education.*

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Jennifer Abbott; Lynn Arthur; Brad Barth; Roger Blank; Noreen Breeding; Roger Breeding; Raelyn Brown; Kristen Brush; Gina Carolan; David Cole; Kam Dorrington; John Edwards; Sarah Elgin; Paulette Epple; Brooke Everest; Julie Fathy; Christian Ferrene; Guy Hamilton; Stacey Hannebaum; Jennifer Heiss; Margaret Hillhouse; Rebecca Himsl; Catherine Hogan Kalmanson; Shelby Howard; Kay Lansverk; Marvin Lansverk; Anthony Licata; Marijka Lynch-Pastoor; Kelsey Lynne Clark; Adam Makhluf; Frank Marchak; Renae Mattimoe; Hannah McWhorter; Chris Nixon; Peggy Osbourn; Tess Parker; Bennett Peterson; Eden Potratz; Dillon Potter; Sarah Rife; Kassie Robakiewicz; Erin Robinson; Vicki Saab; Tara Sadera; Becky Saleeby; Evie Sanchez; Jana Senft; Richard Senft; Grace Shisler; Michael Smith; Dillon Shaffer; Cathy Stamm; Sherry Staub; Jean Sternhagen; Kessie Strausser; Brandon Swanzer; Sandy Taylor; Judy Tsiang; Judy Tucker; and Paul Tully.

2022 Bridger Raptor Migration Project Update

by Steve Hoffman

A Sharp-shinned Hawk soars above the Bridgera. Photo by Kyle Dudgeon.

Where have the Eagles gone?

With only 15 days remaining before the end of the 2022 Bridger raptor migration count (31st consecutive season), it seems appropriate to take a hard look at this season's migrant raptor count results thus far. As of October 16th, we have recorded average (or better) numbers for: Turkey Vulture, Osprey, Northern Harrier, Broad-winged Hawk, Red-tailed Hawk, American Kestrel, and Peregrine Falcon. Counts were well below their long-term averages for: Sharp-shinned and Cooper's Hawks, Bald Eagle, Golden Eagle, Northern Goshawk, Rough-legged Hawk, Merlin, and Prairie Falcon.

At this point, we can only speculate regarding possible causes for some of the low counts. For example, in the case of the Golden Eagle and Sharp-shinned Hawk, our 2022 counts are among the lowest ever recorded in the 31-year history of this count. The long-term average count for the Sharp-shinned Hawk is 366, and thus far for 2022 we have recorded a total of only 216 sharpshins—the second lowest count EVER for the project. Even more remarkable/concerning, our Golden Eagle count thus far is only 547. Our lowest count ever was 638 (in 2009), which we will likely barely exceed by October 31st (the last day of the count). What is going on?

First, it is important to note that one year's data does not make a long-term trend. Furthermore, wind and other atmospheric conditions likely may have had significant adverse impacts on our 2022 counts. For example, during the first three weeks of September the count was almost daily plagued by thick wildfire smoke—a result of many large wildfires in California and Idaho—substantially reducing the thermal lift needed by the migrating birds and also likely greatly reducing the observers' ability to see the more distant migrants.

Regarding Golden Eagles, we hypothesize that, due to an unusual preponderance of both stronger thermal lift—due to more frequent clear skies during the seasonal peak of the Golden Eagle migration in mid-October—as well as more northerly (and to a lesser extent northeasterly) winds throughout this fall, Golden Eagles may have chosen a slightly different route. Based on previous satellite telemetry research by Missoula-based Raptor View Research Institute and others, we know that some Golden Eagles prefer a route that takes them in a more easterly direction along the Crazy Mountains. If this route was used significantly more in 2022, fewer eagles would have likely used the Southern Bridger Flyway. Is this perhaps an impact of climate change?

There is, of course, a chance that 200-300 more Golden Eagles will be counted between now and the end of October; this does not seem likely, however. We hope to continue the Bridger Raptor Migration Project for many more years; additional data, including satellite radios on more eagles, may help us understand the patterns and nuances of this raptor flyway and the implications for evaluating these counts in an effort to determine long-term changes in raptor populations using this important flyway.

We wish to sincerely thank Sacajawea Audubon Society members for their continued sponsorship and financial support for the 2022 count, as well as our three stalwart observers: Luisa Frankenburg, Joshua Jaeger, and Jessica Lewis for their outstanding efforts to conduct this season's count. Additionally, critical generous financial support for the 2022 Bridger raptor count was received from: M. Jean Setter, Bill Simkins & Erna Smeets, Gallatin National Forest, GCC Trident Cement, Nick Bolgiano, Gina Carolan, Scotty & Carolyn Heppel, and Mitchell Stocks. We also wish to extend our deepest appreciation to volunteer observers Paulette Epple, John Parker, Oakley Strausser and many others.

GET YOUR BRIDGER RAPTOR PROJECT RAFFLE TICKETS!

There is nothing quite like observing fall raptor migration in the Bridger Mountains of Montana! For the past 31 years one of the most important localities to monitor migrating Golden Eagles in the western United States has been the Bridger Mountains, northeast of Bozeman, Montana. The Bridger monitoring site is located at the top of the ridge adjacent to the Bridger Bowl Ski area.

The elevation at the monitoring site is approximately 9,000 feet and is reached after a 2-mile hike that gains about 2,000 feet of elevation from the Bridger Bowl parking area. Two raptor identification experts count passing raptors from 17 species every day, weather permitting, from late August to early November. The raptor monitoring program data is used to prepare an annual report covering raptor population trends and is submitted to the Custer/Gallatin National Forest and Hawkwatch International. The report is available to Sacajawea Audubon Society members.

The Bridger Mountains Raptor Survey is funded and managed by Sacajawea Audubon Society and we are committed to continuing this management role for the foreseeable future.

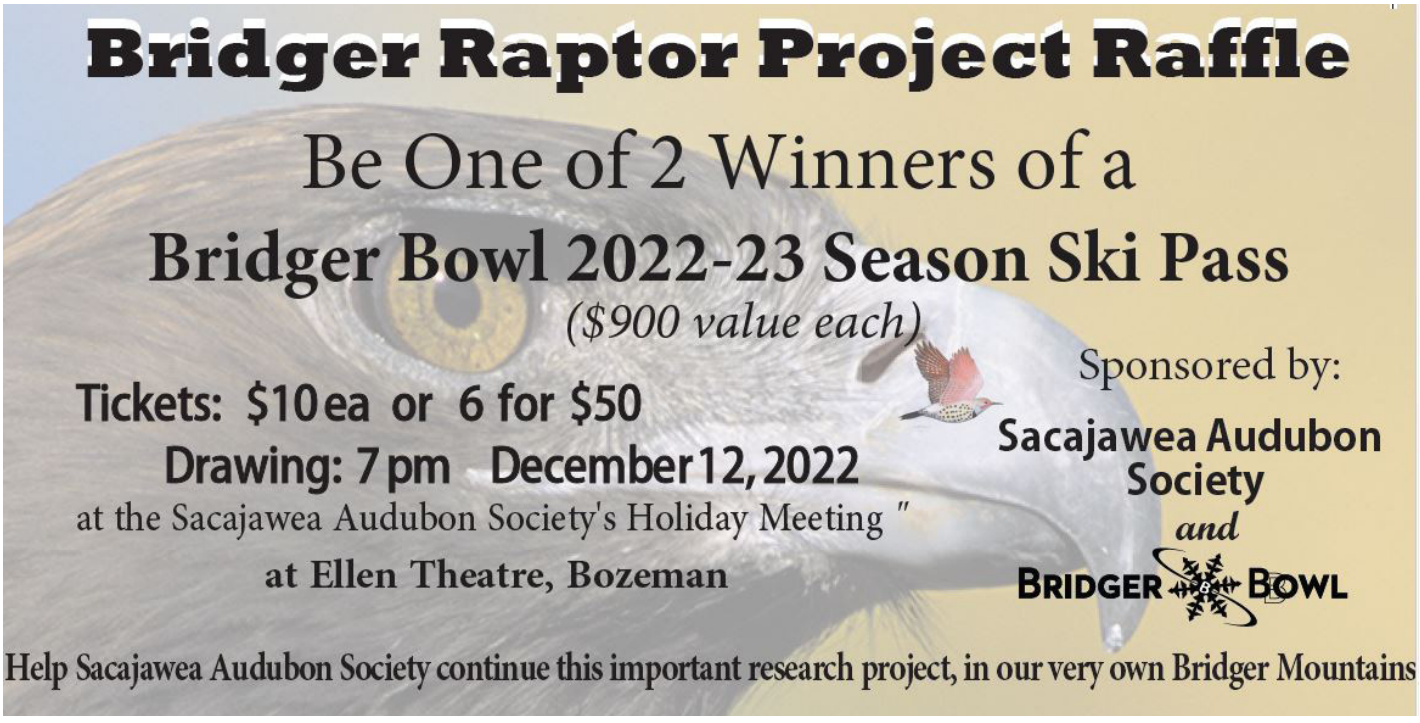
Continuation of this monitoring program is critical to provide the data needed to assess population trends in Golden Eagles and other raptors. **To help pay for the continuation of this program, for the past several years Bridger Bowl Ski Area has generously donated two Season Passes, valued at $900 each. We are extremely grateful for their contribution to this important project!**

You, too, can support the continuation of this project by purchasing a **Bridger Raptor Project Raffle Ticket**. Tickets are **$10 each or 6 for $50**.

You can get raffle tickets several ways:

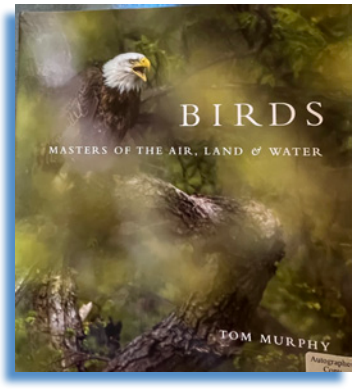
1. Enter online using only a debit card by scanning this QR code:
2. Email membership@sacajaweaaudubon.org and we'll mail you tickets;
3. Call or text (406) 600-6666 for tickets; or
4. Purchase raffle tickets at the SAS meeting on November 14th or before the drawing at the December 12th special meeting at The Ellen.

BE ONE OF TWO WINNERS OF A 2022/23 ADULT SEASON SKI PASS TO BRIDGER BOWL! Note: if you have already purchased your season pass, Bridger Bowl will reimburse you if you win!



SACAJAWEA AUDUBON SOCIETY BOOK CLUB NEWS

Our next SAS Book Club meeting will be held **November 16th at Hope Lutheran Church from 6:30 to 7:45 PM**. We hope you can join us in person or virtually for a discussion of *Birds: Masters of the Air, Land and Water* by Tom Murphy (2020), with a foreword by journalist and author Jim Robbins and an essay by Douglas Smith, Senior Wildlife Biologist, Yellowstone National Park, titled *"My Life-Long Love of Birds or Why Birds Make Life Better."*



Tom is a Livingston-based photographer whose passion and specialty is capturing images of Yellowstone. As Tom's bio notes: "Since 1975 he has traveled extensively within its 3,400 square miles, hiking and skiing thousands of miles on hundreds of extended overnight trips in the backcountry." Tom's work also reflects his travels to wild places on six continents. To experience a visual feast and to glimpse the range, depth, and beauty of Tom's portfolio, visit his website at tmurphywild.com.

It is true that each of Murphy's photographs in *Birds: Masters of Air, Land and Water* is worth a thousand words. However, readers will be equally impressed with the short notation accompanying each image, which blends field observations, scientific knowledge, and storytelling. Murphy's ability to tell a compelling story through photography and text is especially evident in a 40-page photo essay embedded in the book about a Bald Eagle family safely nesting and raising their young on the grounds of a conservation-aware window glass factory. Another attribute of Murphy's work is the time he spends in the field, which gives him knowledge of individual birds and families because he has observed them over many seasons. Murphy's photos not only capture moments in time, but add another layer: the life stories of individual birds, populations, and environments he has observed over an extended period—in some instances over decades.

Tom often donates the use of his photography to environmental groups for fundraising to support their efforts. **This autumn Tom is offering Sacajawea Audubon Society (SAS) members a discounted price of $35 for his book, or up to the list price of $65.** Members can choose a price within this range, and 100% of the funds generated will go to SAS. To reserve your copy, contact Elisabeth at elsswa@gmail.com or (406) 570-8325. Bring a check made out to Sacajawea Audubon Society for your price of $35–$65 per copy. We will have copies of the book at the monthly SAS meetings on November 14th and December 12th. To make an alternative arrangement for pick up, contact Hilary Johnson at ralphhilary@gmail.com or (406) 599-1446.

November marks the last Book Club meeting of the year. We will resume Book Club discussions in January 2023. If you would like to be included in monthly email reminders or to attend the meeting virtually, please email Elisabeth Swanson at elsswa@gmail.com or call her at (406) 570-8325. For other questions, you can email our other leader, Hilary Johnson, at ralphhilary@gmail.com, or call her at (406) 599-1446.

BAM
BOZEMAN ART MUSEUM

Thanks to Rebecca Himsl who manned a table for Sacajawea Audubon Society at the Bozeman Art Museum opening reception for **BIRDS IN ART**. This national exhibit will continue at BAM through December 15. The museum is located at 2612 W. Main St., Suite B. Hours are Tuesday through Saturday, 11:00 AM–5:00 PM. Admission is free.

Photo by Rebecca Himsl

NEW SACAJAWEA AUDUBON SOCIETY INTRO TO BIRDING CLASSES

Curious about birding but not sure if you're ready to commit to our 3-week Beginning Birding Session in springtime? Want to learn some common birds without the overwhelm of spring migrants? This class is for you! We'll focus on identifying common—but never boring!—birds who live in Bozeman during fall and winter and their fascinating lifestyles. Chickadees, nuthatches, and waxwings, oh my! We begin with a classroom session to learn some basics and then venture out for a field trip.

Fall Class

Classroom: Thurs., Nov. 10th, at Wild Birds Unlimited

Field Trip: Sat., Nov. 12th, or Sat., Nov 19th (we'll choose based on weather), at Storymill and Cherry River Parks

Winter Class

Classroom: Thurs., Feb. 23rd, at Wild Birds Unlimited

Field Trip: Sat., Feb. 25th, or Sat., March 4th (we'll choose based on weather), at Storymill and Cherry River Parks

Cost: $45 for Sacajawea Audubon Society members; $55 for non-members. **Maximum 8 students.** Supply lists will be provided upon registration. Binoculars available to borrow.

Above: Ashley Martens. Photo by Sadie Palmer. Inset: Red-breasted Nuthatch. Photo by Nonnie Thompson

To register for classes, visit https://secure.lglforms.com/form_engine/s/3U9FGQ4-5-vMoit2a3a0rg or scan this QR code:

Contact Ashley Martens at ashmartens@yahoo.com for more information.

MARK YOUR CALENDARS:
Monday, December 12th, 2022 Special Holiday Program at The Ellen Theatre
featuring Denver Holt, Founder and President of the Owl Research Institute (ORI)

Snowy Owl photo courtesy of the Owl Research Institute.

Denver Holt is the founder and president of the ORI, a nonprofit he started 30 years ago. Today it is one of the premier owl research centers in the world, just as Holt is one of the leading experts. At this special Sacajawea Audubon Society monthly program, Holt will present "Climate Change, Snowy Owls, and Arctic Ecosystems." We will share more information about this special program on the SAS website and in the December newsletter.

The December program is also an opportunity to purchase **Bridger Raptor Project Raffle Tickets** for your chance to win one of two **2022/23 adult season ski passes to Bridger Bowl!** *(See page 11)* Also available for purchase—while supplies last—will be Livingston photographer Tom Murphy's book, *Birds: Masters of the Air, Land and Water.* The book will be available at the December program, and 100% of the proceeds benefit SAS!

IN MEMORIAL: LYNN MUGAAS

by Ashley Martens

As I sit here writing this, the golden aspen leaves outside my window are quaking in the breeze in that magical way that captivates the eyes. Lynn would tell us not to focus on her, but to keep observing, keep appreciating Nature. So I continue to pause, look up and out at the autumn splendor, and think of her and her inspirational life of learning and service.

I knew Lynn as a student in my SAS birding classes and as a fellow naturalist, but I knew her first as a family friend. She and her husband John moved to Bozeman about a decade ago to be close to and support their son Aaron Mugaas, his wife Julie Kleine, and their growing family. We celebrated the Solstices as well as Thanksgiving together every year. Lynn never hesitated to share her gratitude for life during circle. She rarely drew attention to herself, but instead highlighted Nature and her grandchildren—the taste of a sweet cicely seed pod, a proud hike with her grandson, the sound of Sandhill Cranes calling, her granddaughter's discovery of fairy slipper orchids, the sight of a chipmunk peering out from behind a rock.

Lynn not only honored the natural world through sharing her observations, she also worked to conserve and restore it. Heather Priest, Education and Outreach Coordinator at the Gallatin Watershed Council, recently shared with me that Lynn, at age 80, was the most dedicated of volunteers in the Indreland Audubon Wetland Preserve (IAWP) Busy Beavers volunteer program. In fact, Heather reported, "This year she won the Name it and I'll Be There award." Over the past year and a half Heather watched Lynn attend every single event that was held. "She pulled weeds in the hot sun. She traipsed through the wetland to collect groundwater data. She planted trees and lugged five-gallon buckets full of water to nourish newly planted trees. She waded through streams to install beaver dams and kept our watershed clean through a variety of cleanup events." Lynn offered service with a smile and Heather will always remember her welcoming, friendly face that eased her nerves when she spoke during events. "She showed up at every event with a great attitude, and with a big hug. She was a dedicated volunteer, a reliable friend. Lynn was a vertebrae in the backbone of our community, and although we will carry her spirit and dedication with us, she will be greatly missed."

Lynn's study of and service to Nature did not begin in Bozeman. She was the first person in West Virginia, where she lived for 33 years, to become a fully certified Master Naturalist in 2005. She participated annually in Christmas Bird Counts, helped conduct state-wide dragonfly and damselfly surveys, assisted in conducting mammal surveys in the Cranberry Glades Wilderness, and for several years monitored a set of twelve Saw-whet Owl nest boxes. She carried her dedication with her to the Montana conservation community.

Lynn Mugaas (left) and Sherry Staub volunteer with the IAWP Busy Beavers. Photo by Heather Priest.

Lynn passed on the Autumnal Equinox, September 22, 2022. Her husband John wrote, "Today as the sun reached its zenith over the equator and transitioned into the southern hemisphere, changing our season, so also did Lynn reach the zenith of her life and transition into death, leaving in her wake a tidal wave of love and fond memories. In her niece Dee Dee's yard, a plant that had been growing in her garden all summer, bloomed for the first time, and the evening primroses in our garden opened an exceptionally large number of blossoms; both fitting hurrahs for a life well lived." Those were not the only plants that burst forth in Lynn's honor. Within days of her death, Lynn's friend, Hilary Johnson, shared with me: "This spring she gave me starts and I was afraid they had not taken. But yesterday I saw that they had come up. They will be a reminder of this friend of birds, people, and the environment." Hilary also reflected on the fun she had with Lynn driving to birding field trips and the Sacajawea Audubon Society's Book Club meetings and her "gentle humor, which was most often directed at herself or life's foibles."

Lynn was buried at Mountain View Cemetery in Dillon, MT, not far from her hometown of Wise River, on a beautiful autumn day. Unsurprisingly, it was important to her to have a green burial. She was the first person to be buried in the green burial section. Her gravesite has a great view of the southern end of the Pioneer Mountains where she adventured with her family and husband-to-be and the peaks that she has climbed: Baldy Mountain, Torry Mountain, and Tweedy Mountain. That section of the cemetery is not landscaped, but instead remains covered with native grasses that were shining in autumn browns. John chuckled that he was "sure everyone found a few spear-grass seeds in their socks" after the service.

Memorial donations can be made to Sacajawea Audubon Society and Gallatin Watershed Council.

IT'S TIME TO RENEW YOUR 2023 SAS MEMBERSHIP

For more than 55 years, Sacajawea Audubon Society (SAS) members have embraced the mission of protecting birds and the places they need right here in the Greater Yellowstone Ecosystem of Montana. Your membership and donations fund many programs focused on science, advocacy, education, and on-the-ground conservation in the place we call home. Your support lets us stand up for birds, defending the clean water, clean air, healthy habitat, and stable climate they—and we all—require.

Renew or join today: Together we can build on an interest in birds to promote the conservation of our natural environment through enjoyment, education, and action.

Sacajawea Audubon Society encourages everyone to enjoy our field trips and monthly programs, and to support our conservation work. When you join or renew your SAS local chapter membership at a basic or supporting level, 100% of your membership and any additional donations go ***directly*** to support local SAS education and conservation programs.

SAS Members Are ...

- Protecting working lands for birds and other wildlife.
- Preserving and protecting bird species and their habitats.
- Supporting bird-friendly communities in Montana with our bird-friendly landscape program.
- Contributing to environmental education programs for all ages and abilities on birds, wildlife, and habitat.
- Partnering with other environmental groups, citizens, and local governments to protect community health.
- Advocating for environmental issues locally and regionally.

SAS Members Enjoy ...

- Opportunities to meet new people and become part of a friendly group with shared interests.
- Free monthly keynote speakers.
- Free "Birding Hotspots of Gallatin Valley" guide to birding around the Gallatin Valley & beyond.
- Free monthly member e-newsletter (9 per year).
- Member-only discounts on educational courses, programs, and special events.
- Savings on purchases and access to member-only sales.
- Participation in many citizen science projects.
- Free guided birding field trips.

Sacajawea Audubon Society is an independent 501(c)(3) nonprofit organization with its own board of directors, membership, budget, and programs. SAS membership does not include membership in the National Audubon Society, although we are a NAS chapter and fully value and support their work and advocacy. Why not become a member of both!

Visit sacajaweaaudubon.org/join-sas. Membership questions? Contact membership@sacajaweaaudubon.org

SACAJAWEA AUDUBON SOCIETY MEMBERSHIP 2023

Individual or Family | January–December 2023

❒ **Basic Membership** **$25**

❒ **Supporting Membership** **$50**
(Supporting local conservation & education projects)

❒ **Thank You for Considering an Additional Donation $_____**

❒ Bridger Raptor Study
❒ Education Projects
❒ Story Mill Park Bird Feeding Station
❒ Wetland Campaign
❒ Conservation Projects
❒ Wherever is Needed

Name _____

Address _____
(Street or PO Box)

_____
(City) *(State)* *(Zip)*

Phone (_____) _____

Email _____

Sacajawea Audubon Society Newsletter is sent by email. ❒ I would like a paper newsletter mailed to me.

*We do not share your information except with National Audubon Society, so your contact information is safe with us. Please check this box ❒ if you do **NOT** want your information shared with the National Audubon Society.*

❒ **YES! I have included another $20 to join National Audubon Society**

Mail this form and your check to: Sacajawea Audubon Society, Attn: Membership
PO Box 1711, Bozeman, MT 59771-1711

Thank you for your membership and donation. We look forward to birding with you!

Sacajawea Audubon Society
P.O. Box 1711
Bozeman, MT 59771-1771

Change Service Requested

Sacajawea Audubon Society, affiliated with the National Audubon Society, meets on the second Monday of each month, September through May.

Sacajawea Audubon Society's Monthly Newsletter is available electronically to all Sacajawea Audubon Society members, September through May.

Deadline for article submission is the 15th of the month preceding the month the articles will appear. Send articles electronically to newsletter@sacajaweaaudubon.org.

Change of Address: If you have a change of address or are away, please notify membership@sacajaweaaudubon.org. Undeliverable mailed newsletters are returned to us for an extra fee.

Find more at the **Sacajawea Audubon Society website** at sacajaweaaudubon.org

"Managing Rangelands to Include Wildlife" November 16, 2022, 7:00 PM

The November meeting of the **Fall 2022 Science Inquiry Series** will most certainly be of interest to our Sacajawea Audubon Society members.

How can working rangelands be managed to include grouse, songbirds, and other range-dependent wildlife? Dr. Lance McNew, MSU Associate Professor of Wildlife Habitat Ecology, will discuss the importance of functional rangeland and public and private land management for critical species.

The Science Inquiry Series is held on scheduled Wednesdays at 7 PM at the Museum of the Rockies' Hager Auditorium. Explore cutting-edge science topics, their latest developments, and their relevance to society through speaker presentations followed by a question-and-answer period.

For more information visit https://www.gallatinscience.org

Sponsored by the Gallatin Valley Friends of the Sciences. Co-sponsored by the Museum of the Rockies and Hopa Mountain. **Free to the public.** Face masks are recommended but not required.

Sharp-tailed Grouse photo by Megan Milligan.