

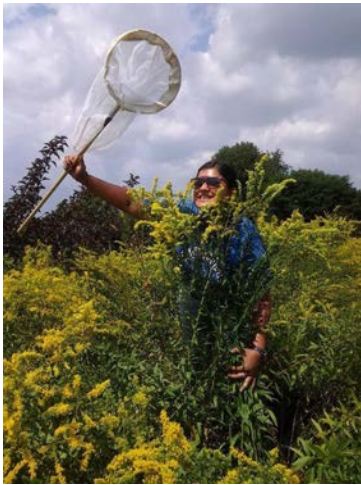


# Sacajawea Audubon News

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

*SAS Monthly Program: Monday, September 11th, Hope Lutheran Church*

## **“Native Bee Conservation for Garden Landscapes”** with Abiya Saeed



*Abiya Saeed*

**M**ontana is home to between 500 and 750 species of native bees, which can be found throughout our diverse ecosystems and landscapes. These important insects provide essential pollination services to agriculture, home gardens, and native plant biodiversity. Habitat loss is one of the leading issues impacting pollinators, and creating pollinator-friendly landscapes is a critical

component of conserving these important organisms. This presentation will focus on pollinator habitat needs, how you can integrate them into your yards and gardens, and how to keep pollinators safe from pesticides.

Abiya (Abi) Saeed is the Extension Horticulture Specialist for Montana State University. She assists home gardeners, commercial and private green industry professionals, and county and reservation extension offices with horticulture-related programming, questions, concerns, and diagnostics throughout Montana. Abi has a research background in pollinator conservation, integrated pest management, and pollinator health. Using her passion for pollinator conservation, Abi has built programming and publications through her roles in extension horticulture at Montana State University, Michigan State University, and Colorado State University. She is also a writer for the *Garden Professors Blog* and a recurring panelist on *Montana Ag Live*.

The in-person meeting will be held Monday, September 11th, at Hope Lutheran Church, 2152 West 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/259555925877288793>. After registering, you will receive a confirmation email containing information about joining the webinar.



*(top) A solitary bee collects pollen and nectar from a Black-eyed Susan. (bottom) A ground nesting bee peeks out of her nest. Photos by Abiya Saeed.*

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, #conservation, and #bees.

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 Ken Sinay at [programs@sacajaweaudubon.org](mailto:programs@sacajaweaudubon.org).

## PLEASE WELCOME OUR NEWEST BOARD MEMBERS



**Ken Sinay:** With an educational background in wildlife biology, Ken has applied his experience and knowledge toward educating and facilitating natural and cultural history experiences for people. His current tourism service is “Yellowstone Now!” His community services are offered through Audubon, the Bozeman Library, and his own programs.

As the new program chair for SAS, Ken is interested in subjects and people who may be appropriate for future presentations. Contact him at [programs@sacajaweaudubon.org](mailto:programs@sacajaweaudubon.org).



**Mikaela Gioia Howie:** Mikaela has been in Montana for nine years since moving to Bozeman to be an official observer for the Bridger HawkWatch in 2014. She is an ecologist and has spent most of her career working on research and monitoring projects focused on avian ecology. As a field biologist she has worked with all

sorts of birds: songbirds, shorebirds, raptors, and grouse. She has lived and worked all over the continent, from arctic Alaska to the swamps of Louisiana, from the desert of Arizona to coastal Maine. Since being in Bozeman she has worked for several local nonprofits and spent five years teaching as an adjunct faculty member at MSU in the Ecology and Chemistry departments. Her favorite part of teaching was designing and teaching a Field Biologist course, which took students to local birding hotspots and fostered in them a love for birding! She now has her own small ecological consulting firm (WISE, LLC), working primarily with private landowners to implement conservation actions on their lands that benefit birds and wildlife habitats. She is excited to be a new SAS board member!



**Ben Goodheart:** Ben is a PhD student here at Montana State University, studying the impacts of humans and dominant competitors on an African wild dog population in Zambia. He has been in Bozeman since 2019, and in western Montana since 2007. Birds became a passion after taking an Ornithology class

at the University of Montana from the legendary Dick Hutto. He has since worked on avian field projects throughout western Montana conducting point counts, banding, spot mapping, and nest searching. Currently he is a TA in Ornithology here at MSU and teaches field ornithology in the summers. He works to spread enthusiasm for avian ecology and conservation to his students, and hopes to contribute to the conservation of our local bird populations and habitats as a part of SAS!

## SACAJAWEA AUDUBON SOCIETY OFFICERS AND COMMITTEE CHAIRS

### Officers

President	Chris Nixon <a href="mailto:pres@sacajaweaudubon.org">pres@sacajaweaudubon.org</a>
Vice President	John Edwards <a href="mailto:vicepres@sacajaweaudubon.org">vicepres@sacajaweaudubon.org</a>
Treasurer (acting)	Loreene Reid <a href="mailto:treas@sacajaweaudubon.org">treas@sacajaweaudubon.org</a>
Secretary	Emma Narotzky <a href="mailto:sec@sacajaweaudubon.org">sec@sacajaweaudubon.org</a>

### Board Members

Aaron Clausen	<a href="mailto:aaronclausen@sacajaweaudubon.org">aaronclausen@sacajaweaudubon.org</a>
Ben Goodheart	<a href="mailto:bengoodheart@sacajaweaudubon.org">bengoodheart@sacajaweaudubon.org</a>
Mikaela Howie	<a href="mailto:mikalahowie@sacajaweaudubon.org">mikalahowie@sacajaweaudubon.org</a>
Frank Marchak	<a href="mailto:frankmarchak@sacajaweaudubon.org">frankmarchak@sacajaweaudubon.org</a>
Vicki Saab	<a href="mailto:vickisaab@sacajaweaudubon.org">vickisaab@sacajaweaudubon.org</a>
Ken Sinay	<a href="mailto:kensinay@sacajaweaudubon.org">kensinay@sacajaweaudubon.org</a>
Boardroom Bobcat member Jack Evans	<a href="mailto:boardroombobcat@sacajaweaudubon.org">boardroombobcat@sacajaweaudubon.org</a>

### Activity Leaders

Education Chair	<b>Looking for Volunteer</b> <a href="mailto:education@sacajaweaudubon.org">education@sacajaweaudubon.org</a>
Conservation Co-Chairs	Paulette Epple <a href="mailto:conservation@sacajaweaudubon.org">conservation@sacajaweaudubon.org</a> Lou Ann Harris <a href="mailto:louann@sacajaweaudubon.org">louann@sacajaweaudubon.org</a>
Field Trips, Bird Sightings	John Parker <a href="mailto:birdsightings@sacajaweaudubon.org">birdsightings@sacajaweaudubon.org</a>
Hospitality	<b>Looking for Volunteer</b> <a href="mailto:hospitality@sacajaweaudubon.org">hospitality@sacajaweaudubon.org</a>
Membership	Loreene Reid <a href="mailto:membership@sacajaweaudubon.org">membership@sacajaweaudubon.org</a>
Newsletter	Terri Narotzky <a href="mailto:newsletter@sacajaweaudubon.org">newsletter@sacajaweaudubon.org</a>
Programs	Ken Sinay <a href="mailto:programs@sacajaweaudubon.org">programs@sacajaweaudubon.org</a>
Website	Lou Ann Harris <a href="mailto:webmaster@sacajaweaudubon.org">webmaster@sacajaweaudubon.org</a>
Social Media/ Communications	Lou Ann Harris <a href="mailto:socialmedia@sacajaweaudubon.org">socialmedia@sacajaweaudubon.org</a>
Wetlands Preservation	Loreene Reid <a href="mailto:wetlands@sacajaweaudubon.org">wetlands@sacajaweaudubon.org</a>
IAWP/Busy Beavers Stewardship Coordinator	Emma Narotzky <a href="mailto:wetlands@sacajaweaudubon.org">wetlands@sacajaweaudubon.org</a>
Book Club	Elisabeth Swanson & Hilary Johnson <a href="mailto:bookclub@sacajaweaudubon.org">bookclub@sacajaweaudubon.org</a>
Newsletter Design	Amy Kelley Hoitsma <a href="mailto:aok@mcn.net">aok@mcn.net</a>



# September 2023 Message from SAS President Chris Nixon

**W**elcome to a new season of Sacajawea Audubon Society (SAS) programs and newsletters for 2023/2024!

Even though the SAS newsletters and monthly programs were paused over the summer, activities and accomplishments by SAS were not. If anything, activities grow more intense during the summer months.

There were bluebird boxes and American Kestrel boxes to be monitored, along with banding of the young and some of the adults not previously banded. Landscaping for birds and pollinators programs continued with new homeowners planting their yards for the birds, bees, and other pollinators, aided by information from numerous SAS programs and speakers presenting throughout the summer. More burdock was removed along numerous trails throughout the area. The diminished number of pounds removed indicates that the steady annual fight against burdock is indeed helping decrease its presence and spread along area trails.

Progress continues at the Indreland Audubon Wetland Preserve (IAWP) with new benches, bench railings, and a new pavilion being built and installed by volunteers. Water levels continued to be monitored. Breeding bird surveys were conducted and the 2nd Annual BioBlitz was a success with greater participation this year. Numerous groups from all over the immediate area—and even as far away as the University of Montana, Missoula—held educational classes at the IAWP. Busy Beavers and other groups pulled weeds, including burdock, at the IAWP. And, the biocontrol insects that were released in 2022 were monitored on the established plot.

We are continuing to make progress on agreements with Burlington Northern Santa Fe Railroad, which actively passes through the IAWP. The City of Bozeman and Montana Dept.

of Transportation both took steps to help make possible future construction at the IAWP. You can look forward to regular updates on developments at the IAWP in future newsletters.

Persistent involvement and encouragement by SAS, along with that from other interest groups, is really helping the City of Bozeman move forward with options and methods to protect wetlands within our local Upper Gallatin Watershed. SAS is undertaking no small feat in establishing the first Wetland Mitigation Bank within the Gallatin Drainage at the IAWP. This has the potential to be a game changer in retaining wetland services and benefits in our immediate watershed.

We welcome new Board members Mikaela Howie, Ken Sinay, and Ben Goodhart to the SAS Board. Members voted Mikaela and Ken in as Board Members (two year terms) at our annual membership meeting May 2023. Ben was appointed over the summer for a one-year term to fill the position vacated by Janet Winnie.

We would like to again thank Janet Winne and the three other outgoing board members—Travis Kidd, Billy Burton, and Kyle Moon—for their years of service with SAS!

I am happy to announce that oncoming Board Member Ken Sinay has stepped up to replace Kyle Moon as our Programs Committee Chair. So, if you have topics you feel would make good subject matter for monthly SAS membership meetings or potential speakers you would like to see present for a meeting, please contact Ken at [programs@sacajaweaudubon.org](mailto:programs@sacajaweaudubon.org).

I want to thank each of you who participated in our summer events and workshops. I encourage you to join in on the remaining summer and fall programs, birding trips, and events. Everybody wants to see you there!



*A Bioblitz 2023 plant team, led by Matt Lavin, at the Indreland Audubon Wetland Preserve. Photo by Loreene Reid.*



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.

## SUMMER OF 2023 AT THE IAWP

Story by Emma Narotzky; photos by Emma and Terri Narotzky

### Summer Events & Achievements

- IAWP kicked off its 2023 summer with two Busy Beavers volunteers orientation events at the IAWP. Special highlights of the evening were great views of beavers and a bobcat.
- SAS board member Ben Goodheart brought his MSU ornithology class to the wetland to perform mock point counts with SAS board members Loreene Reid and Vicki Saab.
- Twenty-four Bridger Bowl employees spent a full day working at the IAWP (see page 15).
- The second annual IAWP BioBlitz was held at the end of July (see page 6).
- Jennifer Jones, UM Ecologist and Project Manager with the Ecological Mapping, Monitoring and Assessment group, taught a workshop in which participants visited the IAWP to practice identifying wetland plants.
- Participants in the August biocontrol workshop with Todd Breitenfeldt released the second wave of root-boring weevils that target spotted knapweed (see page 8).
- Bird Nerds birding group joined board member Loreene Reid at the IAWP for an evening of birdwatching.
- Starlite Summer Camp explored the wonders of the wetland with Kevin Cox.

- The new pavilion at the wetland was completed early in August. Assembly went smoothly thanks to Kevin Cox and the IAWP Busy Beavers (see photos below).
- Busy Beavers also got involved in weed pulls, volunteered for Knock Out Burdock, and started monitoring upland vegetation in our new Adopt-A-Patch program.
- Teens with the Travis Manion Foundation (empowers veterans and the families of fallen heroes to develop character in future generations) did a service project at the wetland. They learned how to measure water levels and manage beaver impacts. They also pulled weeds and worked on the berm trail and benches.
- MOSS camp, Aqua Adventures, toured and did a lesson at the IAWP on July 7 with board member Frank Marchak. Students learned how wetlands act as filters and are beneficial to water quality and surrounding ecosystems.
- Bozeman Library conducted two "Wednesday Walks" at the IAWP, led by wildlife expert, naturalist, and SAS board member Ken Sinay.

### Research

Volunteers continued collecting data for the wetland mitigation bank and began a new project to assess the effects of the restoration project and infrastructure changes.

(Below, left to right): Volunteers Taylor Foran, Kevin Cox, Frank Marchak, and Ryan Snow help construct the new IAWP pavilion; Emma Narotzky and Heather Swaason work on the pavilion deck; David Grier volunteers to help build the pavilion.





Those who dedicated time to water monitoring this summer include Busy Beavers Glenda Barnes, London Bernier, Carla Grier, David Grier, Frank Marchak, Chris Moriarty, Nathaniel Rausch, John Regan, Margie Regan, Michael Smith, Heather Swanson, August Tjernagel, and Kelsi Tjernagel. This season's water monitoring will continue through the end of September.

Paulette Epple, Conservation Committee Co-Chair, led general avian surveys and shared these observations:

*“Avian surveys this year at the IAWP once again captured the diversity and abundance of birds using the area. This year our volunteers recorded an awesome 74 species at the wetlands! When we started these surveys in 2019—from mid-April through mid-July—we recorded 63 species. At that time the wetland had little standing water and a culvert effectively drained much of the water from the property. Now, thanks to the resident beavers, the culvert is mostly dammed and much of the area is flooded with standing water. This has greatly increased the number of waterfowl and other birds using the area.*

*Highlights this year include nesting Wood Ducks raising young, numerous American Coots nesting and fledging young, nesting Northern Harriers, and frequent sightings of Ruddy Ducks, Cinnamon Teal, Green-winged Teal, Pied-billed Grebes, and Belted Kingfishers.*

*Our marshy area is prized by blackbirds, and we had high counts of 44 Yellow-headed Blackbirds and 71 Red-winged Blackbirds. Some of the more interesting songbirds using the area were Northern Waterthrush, American Redstarts, and Willow Flycatchers. The most unusual bird seen was a Sage Thrasher observed feeding on the ground under a stand of aspen and dogwoods. A wetland is a far cry from its typical dry sage-steppe habitat, but anything is possible during migration.”*

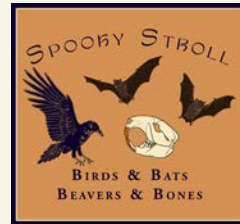
Thanks much to our survey volunteers: Brad Barth, Cherie Barth, Hobart Collins, Martha Collins, Paulette Epple, Tommy Griffith, Lou Ann Harris, Josiah Kiehl, Sam Koenen, Kristen

## NEW PROJECT SEEKING VOLUNTEERS

As we restore the IAWP, we will be attracting animals to a high-traffic area near the highway and railroad. We are collecting data on roadkill on or near I-90 next to the IAWP before, during, and after the highway department puts up wildlife fencing. We are looking for more volunteers to do these surveys throughout the year! For more information, contact Emma at [wetlands@sacajaweaadubon.org](mailto:wetlands@sacajaweaadubon.org).

## UPCOMING EVENTS

The IAWP is one of the locations for the **Gallatin Watershed Cleanup** on **September 9th** from **2:00-4:00 PM**. A celebration at Lindley Park will follow the cleanup. View the event and sign up at: [gallatinwatershedcouncil.org/fall-cleanup](http://gallatinwatershedcouncil.org/fall-cleanup)



Celebrate **Halloween** at the IAWP with **“Birds & Bats, Beavers & Bones Spooky Stroll,”** hosted by SAS and Montana Outdoor Science School (MOSS) on **October 27, 5:00–7:00 PM**.

Learn about corvids and bats, handle real animal skulls, meet a live spooky animal from MOSS, and more! Watch the crows come in to roost and the beavers become active around sunset.

Legg, Doug McSpadden, Stephanie Nelson, Peggy Olliff, Tom Olliff, Pam Spier, and Olivia Weitz.

Vicki Saab is running the IAWP avian point counts, which are ongoing through the end of October. Results will be shared when this season's counts are completed.

*(Left to right): Emma Narotzky marvels as the pavilion takes form; Stephanie Stout, Jennifer Abbott, and Loreene Reid install netting while enjoying the view overlooking the wetland; Frank Marchak, David Grier, Kathy Stamm, Kevin Cox, and Ken Sinay work on the roof and other finishing touches.*



# 2023 Indreland Audubon Wetland Preserve BioBlitz

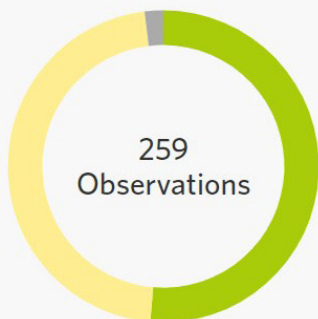
By Emma Narotzky

This summer marked the second annual BioBlitz at the Indreland Audubon Wetland Preserve (IAWP). A BioBlitz is a citizen science effort in which community members gather at a site to find and identify as many species as possible in a short amount of time. On top of being an educational event that engages the community with our urban wetland preservation project, an annual BioBlitz is a way to grab an ecological snapshot of a place at the same time every year. We will be able to compare these snapshots over the course of the wetland restoration project at the IAWP. The 2023 IAWP BioBlitz was sponsored and largely funded by the Wind Drinkers Earth Day Fun Run, organized by former SAS Board Member Janet Winnie.

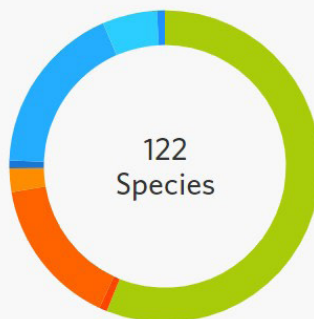
Todd Breitenfeldt from the Whitehall Weed Control Project kicked off the BioBlitz with an interactive presentation on biocontrol insects on July 21st (see page 8). For the next three days, participants flocked to the wetland in teams to look for nocturnal animals, birds, plants, aquatic invertebrates, mammals, and insects.

Team leaders Cedar Mathers-Winn, Frank Marchak, Ben Goodheart, Kevin Cox, Aaron Clausen, Matt Lavin, Sam Fritz, and Todd Breitenfeldt educated their groups on wetland species, sampling methods, finding animal sign, and more as the teams made observations and entered them into iNaturalist.

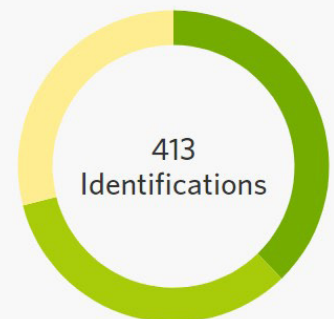
A wrap-up at Lockhorn Cider House concluded the weekend as team leaders and participants enjoyed sharing observations and experiences over dinner.



- Research Grade
- Needs ID
- Casual



- Unknown
- Protozoans
- Fungi
- Plants
- Chromista
- Mollusks
- Insects
- Arachnids
- Ray-Finned F...
- Amphibians
- Reptiles
- Birds
- Mammals
- Other Animals



- Improving
- Supporting
- Leading
- Maverick





(Above) BioBlitz Aquatic Team members Sam Fritz, Travis Wade-Kidd, and Ken Sinay sample water and observe species at the IAWP. Photo by Emma Narotzky. (Previous page, top) Belted Kingfisher photo by Christy Howard; (bottom) Aquatics Team leader Sam Fritz holds a Columbia spotted frog. Photo by Emma Narotzky.

One BioBlitz participant said that the IAWP is “a treasure in the city of Bozeman for many reasons. The ecological benefits, community engagement, and educational opportunities are all very exciting and inspiring.” Another said: “Having learned about the impact of wetlands loss, it is both encouraging—and amazing, considering land values—that this is being preserved.”

One participant said of the IAWP: “It means we are learning to save our wetlands in all aspects. We have a responsibility to take care of nature and live with birds, plants, insects, and the greater biosphere.”

To check out the results of this year’s BioBlitz, visit: <https://www.inaturalist.org/projects/indreland-audubon-wetland-preserve-bioblitz-2023>

Next year’s IAWP BioBlitz will be held **July 19-21, 2024**. Participation is open to anyone age 8 and up who is curious about wetland biodiversity and wants to get involved in citizen science. Contact Emma at [wetlands@sacajaweaudubon.org](mailto:wetlands@sacajaweaudubon.org) for details.

You don’t have to wait for next year’s BioBlitz to contribute your observations from the wetland! **iNaturalist** is a free app from *National Geographic* that lets you submit photos of the species you see; other users will have the opportunity to review your observations and add to, correct, or confirm your ID.

Anytime you upload an observation on iNaturalist from the wetland, it will appear in the ongoing project here: <https://www.inaturalist.org/projects/indreland-audubon-wetland-preserve-of-bozeman>

Head to the wetland whenever you are inspired, and submit observations to contribute to our knowledge of what species can be found at the IAWP. If you want to walk down past the gate onto the sewer line road, arrange in advance for an SAS Board member or Busy Beaver to go with you.

**Wetland Preservation Project Committee:**

[BozemanWetlands.org](http://BozemanWetlands.org) | (406) 600-6666  
[wetlands@sacajaweaudubon.org](mailto:wetlands@sacajaweaudubon.org)

**Committee members:** Loreene Reid, Chris Nixon, Billy Burton, John Edwards, Aaron Clausen, Frank Marchak, Emma Narotzky, Bill Simkins

**Consultants:** Rich McEldowney (*Confluence, Inc.*); Wendy Weaver and Jeannette Blank (*MT Freshwater Partners*); Pat Byorth (*Trout Unlimited*); Marty Matsen (*Fall Creek Planning*); Chris Hildebrandt (*Ducks Unlimited*)



# Close-up and Personal with Specialist Insects at the Indreland Audubon Wetland Preserve

## *SAS/IAWP Biocontrol of Noxious Weeds Workshop*

by *Carla Hoopes*

**O**n a beautiful Thursday evening (August 10, 2023), IAWP Stewardship Coordinator Emma Narotzky introduced Todd Breitenfeldt, of the Whitehall Biocontrol Project, to 15 members of the Bozeman area community who hoped to learn more about noxious weeds and specialist insects that feed on them in order to reduce negative impacts over time. The workshop was a partnership between Sacajawea Audubon Society (SAS), Indreland Audubon Wetland Preserve (IAWP), Whitehall Biocontrol Project, and Kids In Action Initiative, with the purpose of bringing together kids and communities for fun scientific events and activities at the IAWP's evolving outdoor laboratory.

After Emma described the purpose of the workshop—to engage the community in learning about and supporting the monitoring of a new specialist insect (biocontrol of spotted knapweed) release site created in 2022 at the IAWP—Todd led a discussion on the differences between weeds and legally named noxious weeds. Each participant had the opportunity to inspect and handle live weeds collected from local areas the day prior to the workshop. We conducted this portion of the workshop in the parking lot so we wouldn't carry any noxious plant parts into the wetland.

Todd demonstrated where and how to locate biocontrol insects in the various parts of noxious weeds where the biocontrols are doing desirable damage at this time of year. Participants got an up-close look at larvae in roots, galls in stems, and much



*Todd Breitenfeldt (left) of the Whitehall Biocontrol Project teaches workshop participants about noxious weeds and specialist insects that feed on them.*

more. The noxious weeds targeted by these biocontrol insects include Spotted knapweed, Canada thistle, other thistles, St. Johnswort, Common mullein, Houndstongue, Cheatgrass, and Leafy spurge.

Once everyone understood the benefits and limitations of biocontrols (and thus, the purpose of the release site on the IAWP), Todd gave each participant the assignment of augmenting last year's release of insects on the site.

With a discussion of expectations and annual monitoring required to understand changes over time, Emma asked everyone to consider joining the SAS/IAWP Busy Beavers volunteers to help monitor this site each fall. Each participant received a handful of spotted knapweed root-boring weevils (*Cyphocleonus achates*) and instructions to release them after moving from the parking lot into the release site. Todd confirmed earlier in the day that the weevils were present and doing well after their initial release on this site in the fall of 2022.

There were more discussions and more in-depth, hands-on identification of other biocontrol insects and their respective target plants.

A tour of the wetland followed, allowing participants to practice their new identification skills. Feedback was enthusiastic, with participants expressing appreciation for the program, the workshop, and for building inclusive and far-reaching educational activities at the IAWP.

*(left) Participants observe noxious weeds and biocontrols at the upland release site at the IAWP. Photo by Emma Narotzky.*





# MONITORING WELLS AND PIEZOMETERS AT THE IAWP

by Frank Marchack

As part of the upcoming Indreland Audubon Wetland Preserve (IAWP) restoration, several types of measurements are being collected regarding the current state of the wetland in order to provide a baseline to document changes. Avian point counts are being used to sample the existing bird populations to determine factors such as trends and habitat preferences. In addition, wells and piezometers provide data about the hydrological characteristics of the wetland and the interaction between surface water and groundwater.

A well, in the context of monitoring a wetland, is a vertical shaft that is dug into the ground to access groundwater. It is typically a cylindrical hole lined with materials such as PVC to prevent collapse and contamination of the well. Wells play a crucial role in monitoring wetlands because they provide direct access to the groundwater table or aquifer beneath the wetland area.

A piezometer is a specialized type of well that is designed specifically for measuring the pressure or hydraulic head of groundwater. Unlike traditional wells, piezometers focus on monitoring the pressure exerted by the water in the subsurface. They are often used to determine the direction of groundwater flow and to estimate the elevation of the water table. In the context of wetland monitoring, piezometers serve to measure the hydraulic head of groundwater. This is the potential energy of groundwater at a specific point relative to a reference point.

There are four wells on the North Parcel and five piezometers on the South Parcel. Over the past three years, the water levels in both have been measured weekly from May through September by Busy Beaver volunteers. Measurement involves visiting each well or piezometer weekly on the same day and at the same time, using a tape measure to determine the height of the pipe sticking up from the ground and the depth of the water inside from the top of the pipe. The difference is the water level. (Figure 1, below).

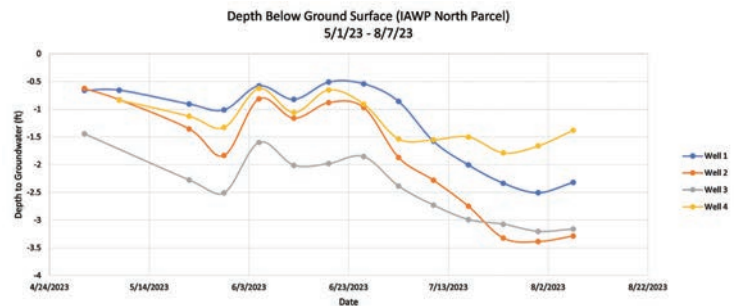


Figure 2

The water levels from May through August 7 are shown for the North Parcel in Figure 2. Water levels were fairly stable from May through the end of June, then dropping through July with a slight increase in August. Hydraulic depth below ground surface for the South Parcel are shown in Figure 3. Due to one of the resident beaver's blocking of the outlet culvert, Piezometers 1 and 2 are submerged and were not measured. Levels were constant through June, with Piezo 4 and 5 showing a decrease in water level through July while Piezo 3 showed an increase. All three were increasing through the beginning of August.

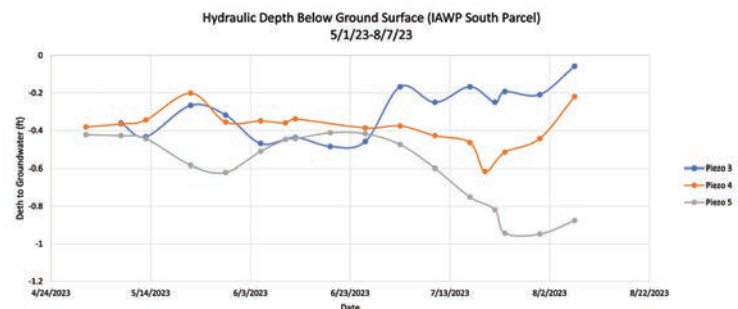


Figure 3

Note that the wells and piezometers were not continuously monitored, so the lines connecting the dots show the general trends in groundwater data and are not intended to imply actual depths to groundwater.

Data from 2020 and 2021 can be found in a post by Rich McEldowney on the hydrology of the IAWP at:

<https://bozemanwetlands.org/WP/2022/07/01/hydrology-of-the-iawp/>







# BIRD NOTES

..... by John Parker

There were a handful of unusual warblers this past spring, starting with the **Black-throated Gray Warbler** that Matt Ruuhela and Dave Benes found May 4th at the Big Sky Community Park. This small park next to the waste water treatment plant features ponds and a nice section of riparian habitat along the West Fork of the Gallatin River.

Two different **Blackpoll Warblers** were seen during the peak of the spring migration. The first was spotted outside of Peter Sellin's office window, south of the MSU stadium, on May 23rd. Four days later another Blackpoll Warbler was spotted working its way through John and Tamie Parker's bio-hedge south of Bozeman.

On June 13th, while visiting Story Mill Community Park in Bozeman with a tour group from Illinois, Nathan Goldberg heard a singing **Northern Parula**.

The Sacajawea Audubon Society field trip up Jackson Creek on June 4th, led by Lou Ann Harris, was a great success. During this morning walk the group spotted an amazing 55 species, highlighted by a soaring juvenile **Broad-winged Hawk**.

Locally, the rarest bird this spring was a **Red-headed Woodpecker** seen on June 6th. Carla Grier saw this showy woodpecker along Fort Ellis Road east of Bozeman. This is only the second record for Red-headed Woodpecker in Gallatin County.

**Baltimore Orioles** are rarely seen in southwest Montana, and the male seen by Dennis Shirley was a big surprise—especially for the late date of June 24th and the odd location in the lodgepole pines next to the Madison Arm of Hebgen Lake.

An **Eastern Phoebe** was seen for only the third time in Gallatin County. Jerry Webb found and photographed this bird near the Chestnut Mountain trailhead east of Bozeman on July 8th.

Bob Schaap first noticed a **Rose-breasted Grosbeak** in his yard on July 6th, which seemed to be hanging with one of the **Black-headed Grosbeaks** that come to the feeders. Rose-breasted Grosbeaks frequently pass through this area in the spring and occasionally in the fall, but what makes this bird notable is that it is only the second one recorded in July.

2023 has seen the greatest expansion of **Great-tailed Grackles** into southwestern Montana yet, with birds seen at four different locations and one just over the border at Henry's Lake, Idaho. Bozeman's first 2023 sighting was the single Great-tailed Grackle Erin Robinson saw on May 7th at Cattail Creek Park



*Scott's Oriole photo by Hobart Collins.*

in northwest Bozeman. Then, on July 26th, Robin Wolcott discovered two Great-tailed Grackles at the Walmart parking lot, just over a mile from the earlier sighting.

Two new birds were added to the Montana state list, which now totals 445 species. The first to appear was a **Scott's Oriole** that showed up in Linda Rebich's yard in Dillon on May 25th (eating orange slices intended for Bullock's Orioles). The second new bird this year for the state was a **Bell's Vireo**, discovered three days later by Logan Kahle, while doing bird surveys on a private ranch west of Baker. Ed Harper was fortunate to be in the area; he returned later in the morning with Logan, and obtained excellent photos documenting this exciting find. Both the Scott's Oriole and the Bell's Vireo were at the top of the list for next most likely birds for Montana, as their known breeding ranges lie just outside of Montana in Idaho and the Dakotas, respectively.

A bit closer to home, researchers with the Yellowstone Bird Program have been adding a wealth of knowledge about Yellowstone's birds over the past decade. This summer, field technicians Louis Kreemer and Alexander Sowers had a very thrilling find while doing point counts up Slough Creek in the northeast corner of Yellowstone. Early on the morning of June 28th they heard a song that sounded like a **Sedge Wren**, and then flushed a bird that didn't look like the expected Marsh Wrens. After finishing their count, they returned to the spot and relocated not one but two Sedge Wrens. This location surrounded by the Absaroka Mountains is over 300 miles from their typical prairie breeding range. Whoever does the survey next year is sure to be listening very carefully.



# Sacajawea Audubon Society Launches 32nd Season of Raptor Migration Counts atop Bridger Bowl

By Steve Hoffman

**S**acajawea Audubon Society (SAS) celebrates the start of the 32nd consecutive annual Bridger Raptor Migration Count. Alex McTavish, Anna Wolke, and May Buckingham have been recruited as the three official, season-long biologist-observers for the fall 2023 migration season. They will be documenting all raptors migrating along the crest of the Bridger Ridge—above Bridger Bowl Ski Area— from 27 August through 31 October.

All three individuals have tremendous passion and enthusiasm for raptor research and conservation, and SAS is thrilled to have them on board throughout the 2023 raptor migration season!

The primary goals of the Bridger Project are to: a) assess the status and long-term trends of Golden Eagles and other fall migrant raptor species using this portion of the Rocky Mountain flyway, and b) to monitor landscape-level environmental changes using these widespread, apex predators as valuable indicators of ecological health.

SAS is partnering with HawkWatch International (HWI) to continue this critically important project. HWI initiated these science-based, season-long daily counts in 1992. A total of 17 raptor species are recorded each season, including Golden and Bald eagles, as well as many species of hawks and falcons, including Sharp-shinned and Cooper's hawks, Red-tailed and Rough-legged hawks, Northern Harriers, Northern Goshawks, American Kestrels, Turkey Vultures, Ospreys, Peregrine and Prairie falcons, and several other raptor species. These migrants originate primarily from breeding areas throughout the U.S. Pacific Northwest, western Canada, and Alaska. Over-winter destinations include a wide range of latitudes (varying by species and breeding origins), from the western U.S. and Mexico to Central and South America.

## Golden Eagle Count Trends

**A**utumn Golden Eagle counts in the Bridger Range have generally totaled from 1,000 to 1,800 per season, with up to 150 or more tallied on a single migration day. The largest Golden Eagle numbers are generally observed during the first 2–3 weeks of October. However, it is noteworthy that autumn



*Golden Eagle photo by David Brandes.*

migration counts of Golden Eagles at this and other western sites have shown highly significant declines, particularly from 2000–2010.

Importantly, during the most recent decade, Golden Eagle counts seem to have stabilized. The cause of the long-term Golden Eagle decline is not fully understood; our Bridger findings (and counts conducted elsewhere in the western U.S.) have inspired in-depth Golden Eagle research being conducted by the US Fish & Wildlife Service across the western United States and Alaska.

## Raptor Viewing Tips for the Bridgers

**T**he best overall raptor viewing for a variety of migrant raptors atop the Bridgers is from mid-September through mid-October. The general public is invited to join Alex, Anna, and May to witness one of nature's most spectacular phenomena as these majestic birds migrate south over the Bridgers!

Additional volunteer observers are always needed—and most welcome—to help conduct these counts. For those in good physical condition, it is a 1.5–2 hour hike to the observation point (2,000-ft. elevation gain). Anyone wishing to volunteer should contact Project Coordinator Steve Hoffman at [swhoffman0322@gmail.com](mailto:swhoffman0322@gmail.com) or (406) 461-5714. Folks are welcome to visit [hawkcount.org](http://hawkcount.org) or [sacajaweaudubon.org](http://sacajaweaudubon.org) to obtain the daily count totals.

## Project Funding

**I**t's always a challenge to find support for our long-term Bridger raptor population monitoring efforts. The 2023 budget for this important work is \$19,500. Contributions in any amount are greatly appreciated!! Please send your check (with Bridger Raptor Count on memo line) to: **Sacajawea Audubon Society, PO Box 1711, Bozeman, MT 59771. THANK YOU!!**







## 2023 SACAJAWEA AUDUBON SOCIETY FALL NATURALIST WORKSHOPS

All courses will be taught by Ashley Martens, M.S., an experienced birder, naturalist, and outdoor educator. Ashley's approach to teaching engages all your senses to tune in to what you see, hear, and love about the wild beings around us to foster deeper connections and relationships with nature. Contact Ashley at [truenatureed@gmail.com](mailto:truenatureed@gmail.com) or (208) 883-4998 for more information. Register for all classes at: [https://secure.lglforms.com/form\\_engine/s/z6-Cv3H9dCAFcdyulrTijQ](https://secure.lglforms.com/form_engine/s/z6-Cv3H9dCAFcdyulrTijQ)

### AUTUMN BIRDING SERIES

Come explore the wonders of autumn birding with us! Migrants are busy moving through, meaning unexpected treasures often pop up in unusual places. Our year-round residents are steadily preparing for winter in Montana. We'll begin with a classroom session introducing concepts around fall migration, plumage changes, and strategies for surviving winter in northern latitudes. Then we'll head out for a series of field trips to watch it all happen!

**Classroom Session:** Thursday, September 7th, 5:30–7:00 PM at Hope Lutheran Church

**Field Trips:** Friday mornings, 9–11 AM on September 8, 15, and 22 at various locations

**Cost:** \$80 members and \$90 nonmembers for the series. Maximum 9 students.

*Photo above: Becky Saleeby graciously shares photos of her incredible experience seeing this Great Blue Heron rookery near Alder Montana at the end of April 2023.*

### DEEP NATURE CONNECTION AUTUMN SERIES

For 4 weeks, we will gather in community and practice routines to develop a deeper understanding of and connection to wild nature and natural cycles. We will investigate nature through mindfulness practices, play, observation, and inspiring instructions. We will learn about edible and medicinal plants (and even make some tea and/or tinctures), animal tracking, bird language, and the many ways that nature teaches us.

**FIELD SESSIONS:** Tuesday mornings, 9–11 AM, on September 12, 19, 26 and October 3

**Week 1** – Observing & Sit Spot

**Week 2** – Wandering & Edible/Medicinal Plants

**Week 3** – Listening & Bird Language

**Week 4** – Connecting with Natural Cycles

**Course Materials:** Blank journal and writing utensils for recording/sketching thoughts and observations, bag or backpack for collecting, field guides, and binoculars if you have them.

**Cost:** \$95 members; \$125 nonmembers for the series. Maximum 9 students. Near-town location TBA.



# Sacajawea Audubon Society

## Fall Field Trips

By John Parker

To reserve a spot on a trip or for more information, please contact the trip leader.



### Glen Lake Rotary Park

**Saturday, September 9, 2023**

**Trip Leader:** Woody Martyn, (406) 224-1476,  
[woodymartyn@hotmail.com](mailto:woodymartyn@hotmail.com)

Meet at 8:00 AM at Glen Lake (3-4 hours; easy walking)

This park is arguably the premier spot in Bozeman for fall migration birding. There is abundant cover along the East Gallatin River, around Glen Lake, and the fields in between. This is an ideal spot for songbirds to forage and rest during their long migration. At this time in September, warblers, sparrows, and many species come through in waves that often include some surprises.

*Participants limited to 10.*

### Harrison Reservoir

**Saturday, September 16, 2023**

**Trip Leader:** John Parker, (406) 586-5863,  
[conundrumjp@gmail.com](mailto:conundrumjp@gmail.com)

Meet at 7:45 AM at the Museum of the Rockies. Carpool and leave at 8 AM.

The emphasis of this trip will be on waterfowl and shorebirds, while exploring all the shorelines and other habitats around Harrison Reservoir. September is the peak of the fall migration, so we will likely be making other stops on the way to and from Harrison Reservoir to look for other migrants. This trip will last until late afternoon, so bring a lunch and anything else you may need for a day in the field. Scopes will be especially useful on this trip, as many of the birds will be distant.

*Participants limited to 10.*

**SAVE THE DATE: SEPTEMBER 28, 2023**

### THE BIRD AND THE TREE: AN EVENING FOR WHITEBARK PINE

*Hosted by the Ricketts Conservation  
Foundation & American Forests in association  
with Yellowstone National Park*

Join us for a special evening to recognize Whitebark pine and learn about ambitious conservation efforts underway to save this threatened species

The event will feature an exclusive screening of the Cornell Lab of Ornithology's short film "The Bird and the Tree," which tells the story of one of nature's greatest duos. Following the screening, a panel of leading experts will discuss what is needed to restore Whitebark pine in the Greater Yellowstone Ecosystem and across its range.

A reception with food and drinks will follow.

September 28, 2023, 6-9 P.M., at the Museum of the Rockies in Bozeman, Montana

Contact: [iposton@americanforests.org](mailto:iposton@americanforests.org)



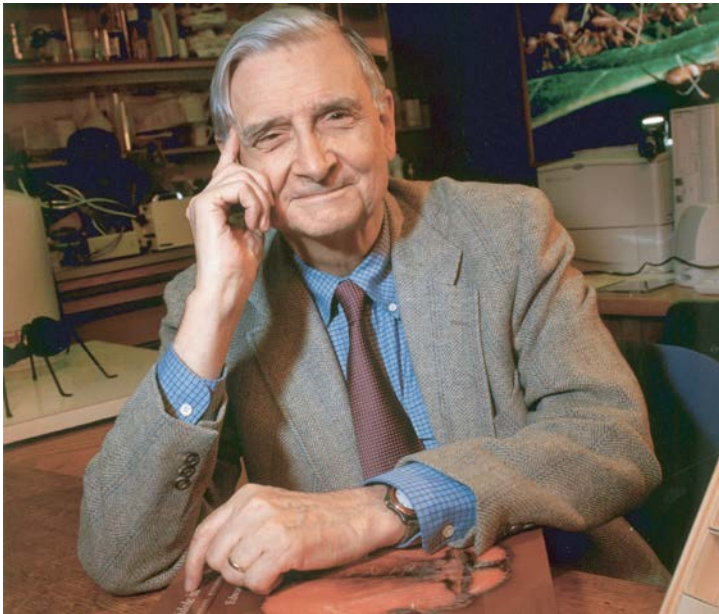
*Top: Whitebark pine photo by Richard Sniezko, US Forest Service.  
Bottom: Whitebark pine detail by Jane Shelby Richardson.*



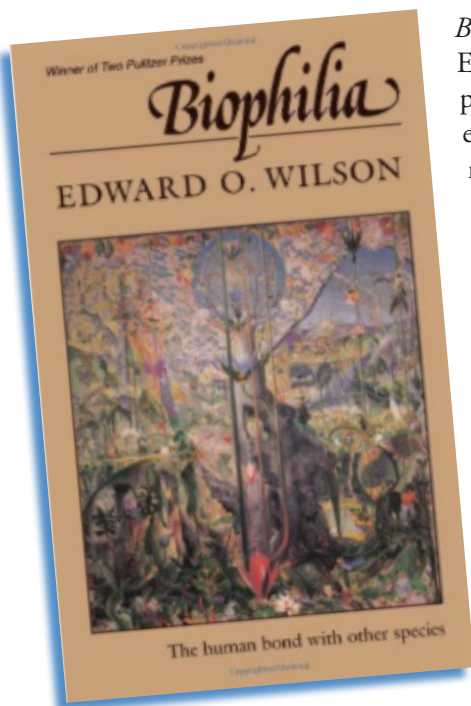


## SACAJAWEA AUDUBON SOCIETY BOOK CLUB UPDATE

The first SAS Book Club meeting of the new season will be held on September 20th 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 *Biophilia* (1984) by Edward O. Wilson. Dessert will be provided. Please bring your own hot or cold drink.



E.O. Wilson in 2003. Wikimedia photo.



*Biophilia* is considered E.O. Wilson's most personal book, an evocation of his own response to nature and an eloquent statement of the conservation ethic. Wilson argues that our natural affinity for life—biophilia—is the very essence of our humanity and binds us to all other living species. Wilson was 55 years old when he wrote this slender volume. His kinship with the

natural world began as a young boy, exploring the tidepools and woods of Alabama, and continued

during decades of field work as a biologist, ecologist, and entomologist. In *Biophilia*, Wilson chronicles his own process of deepening his affiliation with all life not just as a scientist but as a human being. For Audubon readers of this book, the theme of building deep relationships with nature over a lifetime will feel intuitive, yet you will appreciate Wilson's personal account of this complicated process. In his case, Wilson's deep and abiding love of the natural world caused him to swerve his professional efforts mid-career toward public advocacy for endangered wildlife and their habitats.

**Cost:** \$5–\$20 hardback or paperback.

Also available on Kindle.

**Awards:** E.O. Wilson won two Pulitzer Prizes—one for *On Human Nature* (1979), and another for *The Ants*, with Bert Holldobler (1991).

If you would like to be included in monthly email reminders or want to attend the meeting virtually, please email Elisabeth Swanson at [elsswa@gmail.com](mailto: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](mailto:ralphhilary@gmail.com), or call her at (406) 599-1446.

### Meeting dates and reading list for the SAS Book Club 2023-2024 Season

**October 11** – *Halcyon Journey: In Search of the Belted Kingfisher* by Marina Richie

**November 15** – *Fen, Bog and Swamps: A Short History of Peatland Destruction and Its Role in the Climate Crisis* by Annie Proulx

**January 17** – *Fox and I: An Uncommon Friendship* by Catherine Raven

**February 21** – *Woman, Watching: Louise de Kiriline Lawrence and the Songbirds of Pimisi Bay* by Marilyn Simonds

**March 20** – *The Tiger: A True Tale of Vengeance and Survival* by John Valliant

**April 17** – *Silent Spring* by Rachel Carson

# Thanks to Bridger Bowl's Employee Work Crew at the IAWP!

**S**acajawea Audubon Society (SAS) would like to thank Bridger Bowl employees for bringing their skills, abilities, and compassion to the Indreland Audubon Wetland Preserve (IAWP). Twenty-four staff members spent a full day working on the pavilion deck, clearing beaver dam materials from the culvert by the railroad, installing benches and railings for benches, weeding, and maintaining trails.

We want to welcome Bridger Bowl's new General Manager, Hiram Towle, to Bozeman. (Hiram is pictured with the weed whacker.)

Bridger Bowl employees worked hard, but enjoyed the beauty the wetland has to offer. Their contribution is an inspiration to all of us.

We also thank Bridger Bowl for donating two Season Passes for our annual raffle that helps support the Bridger Raptor Count (see page 11). Bridger Bowl hosts and organizes the annual Raptor Festival, which heightens awareness of the importance of raptors.

Other businesses that wish to follow Bridger Bowl's lead and organize a work event at the IAWP can reach out to [wetlands@sacajaweaaudubon.org](mailto:wetlands@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 \$** \_\_\_\_\_

- |  |  |
|--|--|
| <input type="checkbox"/> Bridger Raptor Study                    | <input type="checkbox"/> Wetland Campaign      |
| <input type="checkbox"/> Education Projects                      | <input type="checkbox"/> Conservation Projects |
| <input type="checkbox"/> Story Mill Park<br>Bird Feeding Station | <input type="checkbox"/> Wherever is Needed    |

Name \_\_\_\_\_

Address \_\_\_\_\_  
*(Street or PO Box)*

\_\_\_\_\_  
*(City) (State) (Zip)*

Phone (\_\_\_\_\_) \_\_\_\_\_

Email \_\_\_\_\_

Sacajawea Audubon Society's 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!*

SEPT '23 newsletter

September 2023





**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 10th of the month preceding the month the articles will appear. Send articles electronically to [newsletter@sacajaweaudubon.org](mailto:newsletter@sacajaweaudubon.org).

**Change of Address:** If you have a change of address or are away, please notify [membership@sacajaweaudubon.org](mailto:membership@sacajaweaudubon.org). Undeliverable mailed newsletters are returned to us for an extra fee.

Find more at the **Sacajawea Audubon Society website** at [sacajaweaudubon.org](http://sacajaweaudubon.org)

BRIDGER **RAPTOR**  
**FEST 2023**  
*a migration celebration*



*Golden Eagle photo by Kyle Dudgeon.*

## SAVE THE DATE!

The **Bridger Raptor Festival** will be held **October 7 & 8, 2023**. Once again, Sacajawea Audubon Society will be bringing fun, educational activities to the Festival.

There are various ways you can help before, during or immediately after the Festival. If you'd like to volunteer or have questions about volunteer opportunities, please contact Emma at [sec@sacajaweaudubon.org](mailto:sec@sacajaweaudubon.org) to learn more and join in!

Throughout the **Bridger Raptor Survey** during September and October, you are invited to hike up to the Bridger Ridge raptor viewing station to watch the raptor flight and help the dedicated surveyors spot birds. The total hiking distance is about 2 miles, with a 2,000-ft. elevation gain.

For more information: [bridgerraptorfest.com/current-events](http://bridgerraptorfest.com/current-events)



*Golden Eagle photo by Nick Bolgiano.*