How can birds inspire the designs created by engineers? Marie Z. Bourgeois will describe biomimicry, an emerging science that takes inspiration from nature to create sustainable designs for human use. Birds are remarkable creatures, and biomimics copy their unique strategies in many products and processes. This presentation explains how this science is changing the design process and why observations of birders are a valuable part of the process to create a more sustainable world.

Marie Zanowick Bourgeois is a creative civil engineer with 25 years of experience working for the U.S. Environmental Protection Agency in the area of sustainability. She served as an EPA international expert to provide regulatory and sustainability assistance to developing countries. She combines her educational background from the University of Colorado in Biology and Public Health, her MS degree in Civil Engineering from Virginia Polytechnic Institute, and her MS from Arizona State University in Biomimicry with her regulatory experience and facilitation skills to produce innovative solutions to a wide range of challenges. Ms. Bourgeois uses biomimicry as the method of choice in solving environmental challenges.
Close your eyes for a minute and think back to when you were first smitten with the out-of-doors. Where were you? Who were you with? Did your experience involve “birds” or other animals, or what? What happened to your interest after that?

As I have asked that question to senior citizens, many respond with stories of when they were 8 to 12 years of age and an adult so inspired them that they have maintained that interest, at some level, for the rest of their lives.

The mission of the Montana Audubon Center, in Billings, is to connect youth with the natural world, and they are doing just that in a BIG way! This fall they have capacity to accommodate 42 pre-schoolers onsite, and the staff and children spend 80% of their time out-of-doors. Yes, even through the Montana winters! The Center has a contract with the Billings School District, and connects with EVERY 4th GRADER in Billings to inspire a love of birds and the natural world. Center Staff visit the classroom first, with an activity, and later each class visits the Center for a full day of learning – outside! The Audubon Center is now extending programs to Lewistown students as well.

The site is a 54-acre restored habitat campus along the Yellowstone River Corridor, complete with rocks, trees, three ponds, and all the natural inhabitants that live there.

The LCAS Board voted to support the Audubon Center with a donation at their recent Evening Under the Big Sky fundraiser, as we recognize children are a key component of building a conservation ethic in future generations.

We hope you agree.

Janice Miller
President, LCAS
**Carpenters for the Birds!**

Handy with a miter saw, drill, hammer and nails? Last Chance Audubon needs you!

The LCAS Board has apportioned funds to purchase necessary materials to construct bird nesting boxes for the K-Mart Wetlands area. Over the last years, many of the boxes that were placed at the wetlands have become unusable or have fallen apart altogether. As a result, reports of several bird species there have declined in recent years. While still seen occasionally, cavity-nesters such as Hooded Merganser, Tree Swallow, and Wood Duck are showing up noticeably less often than before. In an effort to assist with breeding opportunities, LCAS would like to replace boxes that have disappeared or will no longer support breeding birds. But we need your help!

If you have the necessary tools and know-how to construct bird nesting boxes and would like to donate your time to help us out, we would love to talk! LCAS will purchase all necessary materials, including wood, nails/screws and plans, and we will install the completed boxes around the wetland area. If you would like additional information about the project, please contact Stephen Turner at turnstonest@gmail.com. For more information about Montana’s nesting birds and how to help please visit Cornell Lab of Ornithology’s website [https://nestwatch.org/learn/all-about-birdhouses/](https://nestwatch.org/learn/all-about-birdhouses/).

**World Shorebirds Day**

Last Chance Audubon celebrated World Shorebirds Day on Sunday, September 9 with a field trip to Canyon Ferry Reservoir Wildlife Management Area (WMA). Nine birders gathered in the early morning hours and traveled to Lower Ray Creek Road to census shorebirds and other avian residents and migrants. They found twelve species of shorebirds at the WMA including Stilt Sandpiper, Pectoral Sandpiper, Greater and Lesser Yellowlegs, American Avocet, and a solitary Black-necked Stilt. It was a stellar day with warm temperatures and abundant sunshine. The group recorded a total of 54 bird species during the census. For a full recap of species seen (including amazing photographs by Dan Ellison and Sharon Dewart-Hansen) please follow this [eBird link](https://www.ebird.org). Plan to join us next fall as we take part in the sixth consecutive celebration of World Shorebirds Day.
Birdseed Sale

Last Chance Audubon Society, in partnership with Birds & Beasleys, is still taking orders for the chapter’s annual birdseed sale. Stock up on seed for your feathered winter guests and help our chapter raise money for educational and conservation projects. All profits from this sale go to LCAS. We'll have a sign-up sheet at the October meeting so you can place your order. Alternatively, you can call Birds & Beasleys (449-0904) or Sue Jackson (443-4486) – or if you're at the store buying birdseed, just let them know it's part of the LCAS fundraiser. The prices are the same as last year:
- 20# black oil sunflower seed, unshelled – $28.00
- 20# medium sunflower chips, shelled – $38.00
- 10# nyjer thistle – $20.00
- 20# nyjer thistle – $38.00
- 20# millet – $22.00

Please pick up your birdseed at Birds & Beasleys, 2 S. Last Chance Gulch, by Halloween. Thanks to Sandy Shull and her crew for helping with this event every year.

-- Sue Jackson

Initiative 186

Initiative 186 is a proposal that seeks to hold new hard rock mines responsible for water pollution their operations cause. On the ballot in November, this initiative aims to protect Montana’s water and taxpayers by ensuring that mining companies will be accountable for clean-up of toxic messes related to new mines. Last Chance Audubon supports I-186. Montana has 3,500 abandoned mines, and over 200 are known to be discharging contaminants and polluting our clean water. We have nearly 2,500 miles of streams polluted by acid mine drainage, lead, arsenic, and mercury from abandoned mines.

Brian Shovers, LCAS Conservation Chair, spoke to the history of mine contamination in a letter to the editor, excerpted here:

In 1998 Pegasus Gold declared bankruptcy, leaving the citizens of Montana to treat the polluted water in perpetuity for two very profitable gold mines at Zortman-Landusky in central Montana and the Beal Mountain Mine south of Fairmount Hot Springs, while offering their executives bonuses totaling over $1 million. The Zortman mine produced over $300 million in profits for Pegasus, and to date has cost Montana taxpayers over $33 million to treat polluted water. At Beal Mountain the $6 million bond has not covered the $18 million spent by the taxpayers to treat the water polluted by the cyanide heap-leach mine.

To find out more about Initiative 186, visit https://www.yeson186.org/.
October Board Meeting

The LCAS Board will meet on Tuesday, October 16 at 7:00 p.m. The meeting is open to anyone interested in attending. For details on the meeting location, contact Sue Jackson (suejacksonmt@gmail.com).

Montana Audubon and GEMS

With autumn settling in, it is time for the Golden Eagle Migration Survey (GEMS), now in its fourth season. This year, Montana Audubon has partnered with Montana Fish, Wildlife, and Parks and the Helena-Lewis and Clark National Forest to continue the project. The count location is located along a 75-mile long northwest-southeast ridgeline where raptors harness prevailing winds to increase lift and speed during migration. This behavior often brings birds very close to observers, allowing their species, age, and occasionally sex to be determined as they pass by.

In 2017, observers counted 2,929 raptors during 41 of 47 survey days between September and October 31. They counted 16 species, including 2,159 Golden Eagles. The GEMS site, well known as a primary migration area for migrating Golden Eagles, recorded more of this species than any other U.S. migration site in 2017.

Unlike last season, which began with 18” of fresh snow on the ridge, the weather during the first two weeks of the 2018 GEMS count was pleasant and sunny, despite some haze blown in from fires in Idaho. Partners will be surveying four days a week and the count, launched on September 5, will continue through early November, weather permitting.

You can follow the progress of daily counts at http://dunkadoo.org/explore/golden-eagle-migration-survey/radio-tower-west-slope-raptor-count-2018. You can also follow this season’s progress by joining Montana Audubon on Facebook and Instagram. To learn more about the project and to view reports from our past survey seasons, visit mtaudubon.org and search “GEMS”. MT Audubon will be holding a raptor ID workshop in Helena on the evening of October 12, followed by a field trip on October 13. Find more information here.

Questions? Contact Amy Seaman, aseaman@mtaudubon.org.
Moist morning at Sevenmile Creek, by Shane Sater.

The View from Sevenmile Creek: September

Note: The surveys on Sevenmile Creek are a collaboration between LCAS and Prickly Pear Land Trust (PPLT). PPLT acquired the Sevenmile property in 2016 for open space and habitat purposes. Stream restoration activities in the area are ongoing, and public access is not permitted at this time. PPLT provides access to LCAS volunteers specifically to conduct these bird surveys. Questions? Contact Nate Kopp, nate@pricklypearlt.org.

The rain battered the highway in the black mid-September night as we drove home from Bozeman. I wondered about the warblers and sparrows migrating around us. Were they forced to leave the sky and take refuge somewhere? The rain was lighter in Helena, but I went out to Sevenmile Creek the next morning with high hopes. Compared to the survey two weeks before, the field was still and quiet. No flocks of Savannah and Vesper Sparrows perched on the fence and seeped from the grasses. A single American Pipit passed overhead, calling sip-it. The stream was quiet, too, interrupted from time to time by little bouts of activity. A Gray Catbird mewed and chattered. Fifteen robins rose up from the chokecherries. A House Wren bounced through a box-elder, and a few White-crowned Sparrows popped into sight in the bushes.

Fellow birders Tom and Will Kreissler joined me for part of the survey. Will, the youngest member of our party, found a Spotted Sandpiper bobbing its tail along the newly restored stream section. Five Wilson’s Snipes flushed from grassy cover. Four Killdeer frequented a shallow puddle nearby, where water seeped out from an irrigation ditch. Half an hour later a streamlined, long-tailed hawk flew past, landed on a post, then disappeared in a thicket. A few minutes after, a flurry of dee calls and the flight of all four Killdeer announced that the young Cooper’s Hawk had been unsuccessful in its ambush.

The low, moist clouds broke up and the sun heated the earth. The bushes remained quiet, holding tens of passerines rather than the fallout of hundreds I had imagined. A few lingering Barn Swallows passed overhead, and two late Warbling Vireos gleaned from chokecherry leaves while a Wilson’s Warbler chipped nearby. I retraced my steps, past the thicket where a Great Horned Owl stared back at me last winter, past the dead alder where the swallows perched in the summer. Before I reached the big willow where the collared-doves nested this spring, I caught a gray flit of movement behind the shrubs. I thought “Accipiter!” Rounding a corner, I proved to be correct – another Cooper’s Hawk, this one an adult. It perched for minutes on a chokecherry branch, moving nothing but its head. Then it was airborne – swift strokes from the base of the wing, gliding, wingbeats, circling… It found a thermal and receded from the earth, becoming just a speck overhead. I lay down and watched it, hoping to see where it would go. Then I blinked, and it vanished.

What signs of migration are you seeing? Keep your eyes open, and don’t forget to look up!

-- Shane Sater
**LCAS Board Meeting Highlights**

- $500 donation approved to support MT Audubon Center in Billings.
- 2018 Fall Fundraiser planned to support projects such as a viewing blind and/or installing a bench at the Regulating Reservoir, and/or replacement bird boxes at Kmart ponds.
- Approved: NEW member dues, paid in the last quarter of a year, will also be effective for the following calendar year. Membership RENEWALS, due after Jan 1, effective ALL calendar year.
- GEMS: Information for this year’s program available on the LCAS website and MT Audubon website. Raptor ID workshops & field trips offered by MT Audubon on Sept. 28 & 29 and Oct 12 & 13 (limit: 16 participants each).
- The board discussed the Helena Middle School Bobcat Birders program for this year and support for student research at Carroll College.

**Membership Report**

Please welcome **Last Chance Audubon Society new members**: Ed Rumberger, Teri Vore and William Fairbanks.

Sincere thanks to **Last Chance renewing members**: George Blyman, Jim & Suzi Stanger, Bob Martinka, Tom Bump & Lavina Clark, Tom & Marilyn Pearson,

Please also welcome **National Audubon Society new members**: Peggy Adams, John Hollow and Kara Perry.

Sincere thanks to **National Audubon Society renewing members**: Dorothy Brock, Tim Speyer, Mike & Helen Murray, Robert Caldwell, Kristin Bakula, Ellen Taylor, Richmond Franklin, Jerry Wozniak and Robert Graffi.

**LCAS MEMBERSHIP**: A new membership or renewal is $15 per household and is current for one year, January 1st through December 31st. Please be sure we receive all your correct contact information by filling out a registration form located either in this newsletter or printed from [www.lastchanceaudubon.org](http://www.lastchanceaudubon.org). Please send completed registration form and your $15 check to: LCAS, PO Box 924, Helena, MT 59624.

**PRINTED and ELECTRONIC NEWSLETTERS**: We want all our members to stay informed about chapter news and happenings. If you do not have access to email, staying current with your chapter membership to Last Chance Audubon Society guarantees that you will continue to receive a printed version of our newsletter. If you do have email access, please help us keep printing costs to a minimum and opt to receive our newsletter electronically. Those dollars we save will be spent for important bird habitat, education and outreach. Thank you.

**NAS MEMBERSHIP**: If you would like National Audubon Society membership information or to renew with them, please direct an email to [www.customerservice@audubon.org](http://www.customerservice@audubon.org) or contact them directly by phone at 1-844-428-3826. We are unable to forward memberships to National Audubon.

Sharon Dewart-Hansen, Membership Chair, smdewarthansen@charter.net
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PO Box 924
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https://www.facebook.com/lastchanceaudubon
Website: http://www.lastchanceaudubon.org/

MEMBERSHIP FORM
Clip and mail to:
PO Box 924, Helena MT 59624 with check for $15.
All contributions are tax deductible.
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