

MURIE AUDUBON'S
PLAINS & PEAKS

November 2019 VOL. 53 ISSUE 6

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Rattlesnakes of Wyoming

UPCOMING EVENTS

November 8 Rattlesnakes of Wyoming

7pm at Izaak Walton Clubhouse, 4205 Fort Caspar
Road

November 9 Piggery Fence Repair

9 AM Morad Park

SPECIAL FEATURES

Kid's Corner pg 2

Species

Indigenous Rattlesnakes pg 6

Rattlesnakes of Wyoming

FROM THE PRESIDENT'S FIELD NOTES



Happy November Everyone!

Usually, I dread the winter. Icy roads, dark days, and bitter winds always leave me missing summertime. This year is different (so far). I can't wait for the snow to start and I've been planning my Thanksgiving meal for weeks now.

I have changed my perspective to enjoy this winter. I'm looking forward to wildlife watching in the snow. And those birds can no longer hide from me because the trees have no leaves. I'm looking forward to spending time with family, who also enjoy our wonderful Wyoming.

This change in perspective also allows room for gratitude. We are so fortunate to live in a place where we get to see wildlife every day, even in our "urban" areas. I just drove by Tom the Turkey, or one of his offspring the other day and had to smile. I'm also thankful for the people in our community, who value hard work and pitches in until the job is finished.

Murie is no different. I've seen our members work hard this year on presenting programs, organizing outings and bandings, updating our newsletter and website, diligently working through our bylaws and records, building a fence in the pouring rain, to name only a few. I'm so thankful for all your efforts. I'm so excited to see the progress of our goals.

May you have a wonderful Thanksgiving, may you add a bird to your life list, and may you enjoy the company of family and friends.

Cheers!

Jenny Edwards
President

KIDS CORNER



How do we recognize bird species from other animals?

Part of the process of identifying any species in the world involves sorting them by similarities and differences. Classification of species requires recognition of unique characteristics that allow you to group species together.

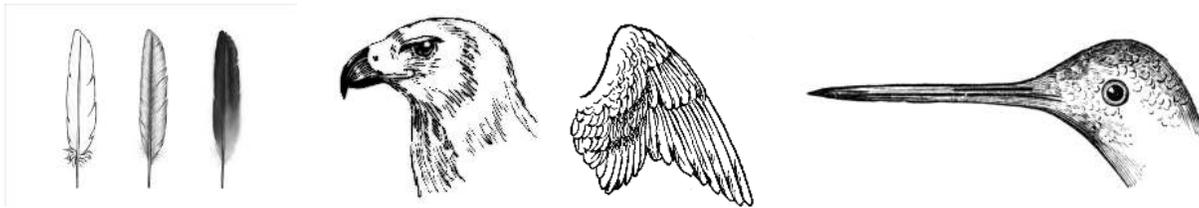
Several species of the Animal Kingdom are classified as vertebrates. A common characteristic among vertebrates is the presence of a backbone. Vertebrates can be subdivided into four groups: 1) Mammals, 2) Birds, 3) Reptiles and Amphibians and 4) Fish. Some sources include reptiles and amphibians separately making a total of five vertebrate groups. Which vertebrate group has the highest number of identified species? Let's consider birds first. The total number of recognized bird species in the world is estimated to be over 10,000.

Compared to the fish class this is just one third of the over 30,000 estimated number of identified species in the world. Reptiles and amphibians combined have a total of over 18,000 identified species worldwide. Mammals represent the smallest group of vertebrates with over 6,000 identified species worldwide.

Although there is great diversity among these vertebrate groups, each has some common characteristics that link them together such as milk production among mammals. Can you name a few common characteristics among birds that link them together as a vertebrate group.

By Kelly Keenan

Images from: <https://owips.com>



eBIRD; THE ONLINE NOTEBOOK FOR BIRDWATCHERS AND SCIENTISTS

My intention for this note is to give you a brief overview about what eBird is and how the free-access data stored in this project has a use for everyone. Initiated in 2002 by the Cornell lab of Ornithology at Cornell University (the same ones of the Handbook of Bird Biology) and the National Audubon Society (you probably know them very well), eBird is an online database of bird observations. This database provides amateur naturalists, like us, and researchers with real-time data about bird distribution and abundance around the world. In other words, you have access to any record where birdwatchers have seen birds and then added these observations to their eBird account. This is a free-access, real-time atlas of birds of the world. Pretty cool, huh?

Opening an eBird account is easy. First, you visit the eBird home page (<https://ebird.org/home>) from a computer and choose the option create account by clicking on the green button on the top right. Next, you need to provide a name; choose a username and password, as well as an email address. You will receive an email to confirm your account. Then, you can add a physical address or skip this option. After that you will be asked how you want to see the names of the birds; by common name, scientific name or both. Furthermore, eBird can also be installed in your cellphone as an app. Now you're ready to go "eBirding"!

This account is like an electronic notebook in that it allows you to store, share, and revisit your sightings, or explore records from species or habitats around the world. These sightings can be incidental or come from rigorous bird surveys. You can enter the presence by indicating an "x" or number and sex of birds. You can also add or explore comments and pictures to each sighting. Each eBird record needs information of locality and the time of the day. You will always need to include this information and have at least a good approximation. The location can be added to eBird as geographic coordinates (latitude and longitude, there are GPS apps for cellphones) or choose the

location in a map view configured in the program. This increases the validity of your observations. You should know from where your sightings are coming from!

eBird has provided a virtual platform with basic, filtered, and valuable information available to anyone with an internet connection. It is ideal for the occasional bird watching field trip because you can create a bird checklist by localities or for a scientific/conservation study of birds and habitats. As proof of the latter, you can search the keyword "eBird" in Google Scholar, a free web searcher for scholarly literature. Several thousands of results will be shown. Many of those results are actually peer-reviewed publications about the ecology and conservation of birds based on the data stored in eBird (hundreds of millions of records) from thousands of enthusiastic, competitive, or occasional birdwatchers. Thus, eBird is an excellent example of how citizens that enjoy bird watching and share their observations, can support education, science, and conservation of birds around the world. Do you want a try?

For more information please visit:

<https://ebird.org/home>
<https://en.wikipedia.org/wiki/EBird>

CHRISTMAS BIRD COUNT ID CLASS AND THANKFUL THURSDAY

Murie Audubon, in partnership with Audubon Rockies, will offer a bird identification course prior to the December 14th Casper Christmas Bird Count. If you are interested, please contact Zach Hutchinson at zhutchinson@audubon.org to register.

Here is our current class schedule (subject to change based on availability):

Date: 12/9 & 12/12
Time: 6 - 8 PM
Location: Izaak Walton League Lodge, Chapter 9
Address: 4205 Fort Caspar Road
Casper, WY 82604

Thankful Thursday Fundraiser at The Beacon

Audubon Rockies will be co-hosting a Thankful Thursday Fundraiser with The Beacon and Townsquare Media on January 16th, 2020. All Murie Audubon Society members are invited to join us for an evening of fun, raising awareness for our work in the community.

Date: 01/16/2020
Time: 5:00 PM - Night Begins
6:30 PM - Live Auction
Location: The Beacon Club

Zach Hutchinson
Community Naturalist c: 307.247.0700 Audubon Rockies, 116 N College Ave, Suite 1

MURIE AUDUBON PROGRAM PRESENTS



Rattlesnakes of Wyoming

RATTLESNAKES OF WYOMING

Like them or not, rattlesnakes are an important part of the ecosystem. Wyoming is home to two species of rattlesnakes: *Crotalus viridis viridis* (prairie rattler) and *Crotalus concolor* (midget faded rattler). This month's program will cover Wyoming rattlesnake ecology, mythology, and close encounters of the slithery kind.

Our speaker will be India Hayford, who works at Werner Wildlife Museum where she writes a quarterly wildlife newsletter called *The Howl*

Join us on Friday, November 8 at 7:00 p.m. at the Izaak Walton Clubhouse located at 4205 Fort Caspar Road to learn more about these fascinating animals.

Photo by Art Van Rensselaer

INDIGENOUS WYOMING RATTLESNAKES



By: India Hayford, Werner Wildlife Museum Assistant

There are three genera of pit vipers in the United States: copperheads (*Agkistrodon contortrix*), water moccasins (*Agkistrodon piscivorus*), and rattlesnakes (*Crotalus* sp. and *Sistrurus* sp.). American pit vipers have triangular heads containing retractable fangs and venom glands and the pits for which they are named. Located between the eyes and nostrils on each side of the face, these pits are the external openings of infrared-sensing organs, which allow pit vipers to detect and strike at prey whose body temperature is as little as .2 degrees Celsius higher than the ambient temperature. The most noticeable distinction between rattlesnakes and the other two American pit vipers are the rattles that give the rattlesnake its name. The genus *Crotalus* contributes the only two pit viper species native to Wyoming: *Crotalus viridus viridus* (prairie rattlesnake) and *Crotalus concolor* (midget faded rattlesnake).

C. viridus viridus is the Wyoming species most people are familiar with. The most widely distributed rattlesnake species in the United States, its range extends from the Canadian border to northern Mexico, and from the Great Divide deep into the Great Plains states. The eastern two-thirds of Wyoming is *C. viridus viridus* territory with individuals being found from the lowest elevations in the state to an altitude of 9000 feet above sea level. Though individuals in some locations may exceed 4 feet, an average adult is about 3 feet long and weighs roughly a pound. Coloration ranges from yellow-green to a darker brown-green depending upon where the snake is found. Rectangular to rounded motifs edged in white decorate the prairie rattler's back and narrow into bodywrapping bands near the tail.

Recent DNA studies suggest that *C. concolor* is entitled to its own species designation after decades of being lumped in with the subspecies of *C. viridus* or *C. oreganus*. (Herpetologists will argue this designation ad nauseum so please don't get a herp guy started unless you enjoy that sort of thing.) *C. concolor* limits its range to the rocky outcrops and thick sage country of the Green River Formation located in eastern Utah, western Colorado, and extreme southwestern Wyoming. A few *C. concolor* have been found in northern Arizona though blood work is necessary to make sure an individual is indeed *C. concolor* and not one of several other look-alike species. *C. concolor* is a small rattler, rarely reaching 24 inches in length, pale yellow-brown or tan in color with slightly darker oval dorsal blotches that may fade with age. The three states that contain most of the species' habitat forbid collection of the species so it is uncommon to see these snakes even in captivity. Unlike most rattlers whose venom is solely or mostly hemotoxic or cytotoxic (affecting blood and tissues), *C. concolor* venom contains a significant component of neurotoxin which affects the nervous system and adds an unwelcome double whammy to any bite. Fortunately, this species is relatively rare, has one of the longest known hibernation periods of any rattlesnake, and occupies areas with low human populations.

Both species of Wyoming rattlesnakes overwinter in natural cavities or dens dug by other animals. To be useable, the den must extend well below the frost line, be high enough above drainage areas to avoid spring floods, and preferably occupy a southern exposure to allow fall and early spring basking. Seasonal movements of prairie rattlers between dens to hunting grounds have been well documented by herpetologists using radio transmitters. Like Romans building roads, rattlers mostly travel in straight lines. During the spring journey away from the den, rattlers may make changes of direction in search of mates but autumn frosts and diminishing daylight impel rattlers in as straight a line as possible toward shelter.

Rattlers rarely stray more than a couple of miles from the dens where they were born. The record holder for distance in Wyoming is a female prairie rattler who traveled eight miles from her home den. Except for the occasional individual that wanders further afield and overwinters in a new den, snakes return to the same dens each fall from which they emerged in late spring. If the wandering individual is a female that gives birth in her new den, her young will return to the new den. Faded midget rattlers generally reproduce no oftener than every two or three years and stay even closer to their home dens than do prairie rattlers.

During the months that they live away from the den, rattlesnakes eat an average of two to three times their body weight in rodents, lizards, insects, birds, and other snakes. To conserve energy, rattlers are ambush hunters, lying in wait for prey alongside established rodent trails or in prairie dog towns.

Rattlesnakes possess several primary senses. Thermosensitivity is provided by the pits as mentioned earlier. Chemoreception is a function of the rattlesnake's remarkable forked and constantly flicking tongue and the associated organ known as Jacobson's Organ, a chemoreceptor located in the roof of the snake's mouth. A very simplified explanation for a complex process is that the moist tongue takes in microscopic particles from the air and transfers them to the chemoreceptors to provide the snake with information about its environment. There is also evidence that the tongue receives electrostatic information from the environment that is processed by electroreceptors. While a rattlesnake's nostrils are used mostly for breathing, they are lined with olfactory cells that allow it to smell its environment. Despite lacking external ear openings and possessing a single inner ear bone known as a columella, rattlesnakes aren't deaf. The snake's body picks up surface vibrations and passes them to the columella and adjoining bones in the jaw and skull, resulting in sound perception. Lower pitched sounds transfer more clearly than high pitched sounds making it unlikely that one rattlesnake can hear the sound of another's rattle.

Vision differs from species to species but rattlesnakes generally cannot see with any clarity though they are capable of detecting movement up to 40 yards away. Depth perception is also poor thanks to

having eyes set on each side of the head. Rattlesnake sight is best adapted for the low light conditions of twilight and night, the times favored for hunting. There is good evidence that those amazing pits compensate for reduced vision by detecting infrared light (heat) and acting like night vision goggles to send images of prey and threats to the snake's brain.

Rattlesnakes are extraordinarily sensitive to the slightest touch, pressure, or other contact on their bodies. Touch sensors called mechanoreceptors are liberally distributed across the body and in the hinges between scales. In combination with the snake's circulatory system, these touch sensors allow the snake to control its body temperature by moving between environmental temperature gradients. Rattlesnakes are ectothermic creatures incapable of producing their own body heat. This makes them dependent on and vulnerable to environmental temperature. Optimum temperature for activity falls between 80 and 90 degrees Fahrenheit. Extremely high or low temperatures are equally undesirable though rattlers tolerate cold better than heat. Even snakes native to the world's hottest environments will die quickly once their internal temperature passes 110 degrees Fahrenheit. On the other hand, adult rattlers survive temperatures just above freezing though they move pretty slowly under those conditions.

Though well equipped to protect themselves, rattlesnakes are not invulnerable to predation. Species in the genus *Lampropeltis* (commonly known as kingsnakes) are the best-known predator but according to Brian Hubbs' book, "Harmless Snakes of the West," Wyoming is not home to any species of kingsnake. (Contrary to popular belief, Wyoming bullsnakes are not natural enemies of rattlesnakes but instead harmoniously coexist and even den up for the winter with them.) Coyotes, badger, feral hogs, feral cats, turkeys, and various raptor species are also known to prey on rattlesnakes. More surprising perhaps is the threat posed by deer, antelope, and domestic equine species such as donkeys and horses, all of which will stomp a rattler if sufficiently threatened. The biggest predator of rattlesnakes, however, is humankind.

This article was originally published in the August 2017 edition of The Howl, the newsletter of the Werner Wildlife Museum, and is reprinted here with permission of the author.

Photo by Art Van Rensselaer.

FIELD TRIPS

Murie Audubon is going to try to have a field trip the day following the regular meeting every month. Depending on the season and where we are going, the times will vary, but we hope to have a field trip once a month, even in the summer. When the birding is good, during the spring and fall migration, we will probably have additional field trips. If anyone has ideas about a good field trip (we are open to ideas that don't include birding), or would like to lead one, please contact Stacey Scott at hustace@gmail.com or 262-0055.

Saturday, Nov. 9 at 9:00 AM. We are going to work on the fence between the Piggery and the Morad dog park. We need to put in a couple of braces and some woven wire fence to try and reduce the dogs in our bird sanctuary. We will see if woven wire with a visible top smooth wire will be enough to keep most of the dogs out. You can park in Morad Park or on top of the hill near the Quonset Hut. Call Stacey Scott at 262-0055 for more details.

CHRISTMAS BIRD COUNTS

The Casper Christmas Bird Count will be Saturday December 14, 2019. The first Casper CBC was January 2, 1949, so this will be our 72nd year. The Casper Circle is 15 miles in diameter with the Country Club on the east and Speas Warm Spring on the west with part of Coal Mountain and Casper Mountain west from about Crimson Dawn. The circle is split into many parties so that we have pretty good coverage of the whole circle. We need as many people as we can in order to cover these areas. You don't need to be a good birder because we have pretty good birders in each group. We are also in need of people who will count their own feeders. We do need to coordinate these feeder watchers so we don't count a feeder twice. We will finish with a pot luck supper where we compile the results. I really enjoy this finish of the day because it is so interesting to find out what can be found, and sometimes missed, by having so many people cover all the habitats we have. Please contact Bruce Walgren at 234-7455 or Stacey Scott at 262-0055 if you are interested.

The Bates Hole Christmas Bird Count will be Wednesday, January 1, 2020. This count is one of the only rural counts in the country. The first count was in 1978 and the circle is centered southeast of the Two-Bar Headquarters. For those interested in owling, we usually find quite a few Great-Horned Owls, and occasionally Saw-whet or Eastern Screech Owls. We will meet at Charlie Scott's house on the Two-Bar at 7:30 AM to split into the different parties. We will meet back at Charlie's about noon, so it is easy to do a half day if you would like. Usually the weather is horrible in Casper with strong southwest winds and clouds, but Bates Hole will be calm and sunny. Come out for some pleasant winter birding and a great way to start the New Year. We will finish with supper at the Two-Bar and compile the results. For more information, call Charlie Scott at 473-2512 or Stacey Scott at 262-0055.



BIRD EXTERNAL ANATOMY WORD SEARCH PUZZLE

A I Y U Z F G K U B G W E U A K U V X G
B P A V Q H A T K S Y W P Q L N C I P T
N D G U Q G O D B T C W Z H U B M X Q T
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G G T J C F N S C A P U L A R S M W C U

Abdomen Alula Auricular Beak Breast Cere Coverts Crown Flank Forehead Lore Malar Mantle
Nape Primaries Rectrices Rump Scapulars Secondaries Supercilium Supraloral Tail Tarsus Tertials
Throat Undertail Uppertail

From Luis Alza

MAS VISION STATEMENT

The vision of Murie Audubon Society is to instill a passion for nature in present and future generations through awareness, enjoyment, understanding, appreciation, conservation, and advocacy.

MAS MISSION STATEMENT

The mission of Murie Audubon Society is to promote the conservation of birds and other wildlife through education and enhancement of natural habitats, understanding, appreciation, conservation, and advocacy.

NOTICE TO MEMBERS OF MURIE NEWSLETTER RECIPIENTS

Those who have not paid in one year or more should see "Exp:" and a date of expiration on your mailing label, on the same line as your name. You will only receive one more issue after the expiration date. If you feel this is in error, please contact Harry Martin 307-258-1255 to update details.

Please be patient if you have renewed your membership. It could take up to 60 days for the renewal to be updated in our database. A good reason to renew before your expiration date.

ABOUT MURIE AUDUBON

Please See: <https://murieaudubon.org/about/>

E-Mail: murie@murieaudubon.org

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