

# Windows to Wildlife



## The Cassia Crossbill Idaho's New Endemic Species

Written by Dr. Craig W. Benkman\*  
Professor and Robert B. Berry Distinguished Chair in Ecology  
Department of Zoology and Physiology, University of Wyoming

Formerly one of the 10 call types of Red Crossbill (*Loxia curvirostra*) in North America, the Cassia Crossbill (*Loxia sinesciurus*) was recently recognized to warrant species status by the American Ornithological Society (58th supplement to the AOS Check-list of North American Birds), giving Idaho its sole endemic species.

The Red Crossbill call types are distinguished by their vocalizations, especially their contact calls, and by their bill and body sizes and associated conifer preferences, and thus areas where they most commonly reside. General information on the call types can be found here: [North American Red Crossbill Types](#)

Most crossbills are nomadic and therefore cannot be found reliably in any single area. This is not true for the sedentary Cassia Crossbill, which relies on the stable seed production of Rocky Mountain lodgepole pine (*Pinus contorta latifolia*) in the South Hills and Albion Mountains year-round. Indeed, the Cassia Crossbill is the only crossbill in North America that you can count on finding year-round, year after year in the same forest.

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## A Unique Evolution

Key to the evolution of the Cassia Crossbill is the absence of red squirrels (*Tamiasciurus hudsonicus*) from the lodgepole pine forests in the South Hills and Albion Mountains. Here, Cassia Crossbills are about 20 times more abundant than Red Crossbills in similar forests in the Rocky Mountains. Unlike in the South Hills and Albions, one can walk several days in the lodgepole pine forests in the Rocky Mountains and not see or hear a crossbill. Moreover, many of the above-ground and open-cup nesting song birds are about twice as abundant as in the lodgepole pine forests in the Rocky Mountains, presumably in part because of the absence of red squirrels as nest predators.

Crossbills are seed predators, so trees that deter foraging crossbills have a reproductive advantage. Because crossbills occur in higher densities and consume more seeds in the South Hills and Albions than in lodgepole pine forests elsewhere, crossbills are especially important natural selective agents on the cones. Crossbills avoid foraging on cones having thicker scales at the distal end of the cone where most of the seeds are located (crossbills have greater difficulty spreading apart thicker scales to expose the underlying seeds). This favors the evolution of cones with thicker distal scales, which distinguishes the lodgepole pine cones in the South Hills and Albions from those elsewhere. The thicker cone scales in turn explain why the Cassia Crossbill has evolved a bill that averages about 0.6 mm deeper than that of Type 5, which specializes on lodgepole pine where red squirrels are present. This coevolutionary arms race between crossbills and pine in the South Hills and Albions has ultimately favored the evolution of the Cassia Crossbill.

## Distribution

The small area of lodgepole pine in the South Hills and Albions limits the distribution of the Cassia Crossbill to about 70 km<sup>2</sup> of forest. Even with relatively high densities, they number only about 6,000 individuals. This limited distribution and small population size makes them especially vulnerable to environmental change, such as more frequent and larger fires. Fortunately, pine beetle outbreaks have been more limited than in other lodgepole pine forests, perhaps because of the higher densities of insectivorous birds including the very abundant Hairy Woodpecker.



## How to Identify Cassia Crossbills

Along with Cassia Crossbills there are two other call types that occur regularly in summer in the South Hills, Type 2 (generally ponderosa pine associated) and Type 5 (Rocky Mountain lodgepole pine associated outside of the South Hills and Albions). Both of these call types average smaller than the Cassia Crossbill (bill depths average 0.3 and 0.6 mm less than in the Cassia Crossbill, respectively), but, because of extensive size overlap and no consistent plumage differences, one needs to rely on vocalizations.

Cassia Crossbill [contact call](#) (recording by Julie Smith)

Type 2 Crossbill [contact call](#) (recording by Julie Smith)

Type 5 Red Crossbill [contact call](#) (recoding by Julie Smith)

Playing these calls to try and get a response from the Crossbills does not work, you just have to listen for them.

Like many birds, crossbills are most active in the morning, relatively quiet by late morning, and then more active in the mid to late afternoon and then often quiet in the evening when other birds are active.

The lower mandible crosses to the right, as in this male Cassia Crossbill, in about half the crossbills, and to the left in the other half. © Craig Benkman





Lodgepole pine near the Porcupine Springs area in the South Hills. © Craig Benkman

## Where to Find Crossbills

Older and more open stands of lodgepole pine are preferred by Cassia Crossbills; they are uncommon in dense young stands as these crossbills rely mostly on seeds in old (gray) serotinous cones (such cones remain closed until heated, usually by fire), which accumulate for 10, 20 or more years on the branches.

Below are several recommended areas to search for crossbills. Weekdays (Monday to Thursday) are best because ATV traffic (and the dust) can be considerable on weekends. Avoid holidays: Memorial Day, the 4th of July, and Labor Day.

1- The most accessible location to find them in the South Hills is to drive to the end of the paved road – G3 – south from Hansen and Rock Creek (directions are in the Forest Service links following each campground). The lodgepole pine around [Porcupine Springs Campground](#) and Diamondfield Jack at the end of the paved road have been good areas to see crossbills although they are not as common there as they used to be 10 plus years ago.

Recently, a more reliable location has been in the lodgepole pine off the dirt road to Pike Mountain. Just before Diamondfield Jack, a dirt road branches off of G3 to the east (to Pike Mountain where the view from the top provides a good perspective on the landscape and the isolation of the South Hills and Albion Mountains [tallest range to east]). Take this road and then take the first left (only about ~150 meters from G3) and drive ~150 meters further to where the pine forest starts. Park here and walk north along the dirt road along the west edge of the forest. Crossbills often forage on the serotinous lodgepole pine cones on fallen branches by the edge of the forest that open in summer when in direct sunlight.

2- [Bostetter Campground](#) and [Father and Sons Campground](#) are better but less accessible than those at the south end of Rock Creek. Crossbills often go for water in the creek that starts near Father and Sons and runs down the valley to Bostetter. The lodgepole pine in both campgrounds and in between are excellent areas to see Cassia Crossbills. You can access these two campgrounds from either the west (starting at Diamondfield Jack; this road is not passable until late June or July) or from the east (Forest Service Road 500, Oakley – Rogerson Road) starting from Oakley. If driving from the west, the lodgepole pine where forest roads 538 and 533 intersect is often excellent too.

3- In the Albion Mountains, the lodgepole pine in and around [Thompson Flat Campground](#) is an excellent location, especially when there are leaks in the water faucets that provide a water source for the crossbills.

## Photographs of Banded Crossbills Wanted

If you have photographs of crossbills in the South Hills that show the bands on their legs, and you can see both legs and their bill in the photograph, please send high resolution copies to Craig Benkman [[cbenkman@uwyo.edu](mailto:cbenkman@uwyo.edu)] with information on the date and location. Resighting information is valuable for studies on survivorship of these birds. Thank you.

## Additional Information

Craig Benkman contributed the above information. He discovered the Cassia Crossbill in 1997, and he and his students have been studying them since. For further information on the Cassia and other crossbills visit his [website](#) for access to scientific papers.

Below are links to a podcast, articles, and a teaching module about the Cassia Crossbill (formerly South Hills Crossbill).

For the Birds Radio Program: [Cassia Crossbills: of pinecones and squirrels](#)

High Country News: [The West's Newest Species](#)

Wired Magazine: <https://www.wired.com/2016/09/bird-evolving-seriously-bizarre-way/>

CourseSource: <http://www.coursesource.org/courses/coevolution-or-not-crossbills-squirrels-and-pinecones>

Female Cassia Crossbill removing seed from a cone. © Craig Benkman



# Fall Wildlife Events

## Boise WaterShed

11818 West Joplin Rd., Boise; (208) 489-1284

<http://bee.cityofboise.org/watershed/events/calendar-of-events/>

### October 21- WaterShed Weekend: Fall Festival

Come celebrate the beautiful fall colors at the Boise WaterShed from 10:00 a.m.– 1:00 p.m. Create festive fall-themed arts and crafts, explore the exhibit hall, and take a silly harvest photo! Meet some live reptiles in the theater with Reptile Adventures! Finally, take a fun hay ride tour on the outskirts of the Water Renewal Facility at 10:15, 11:00, 11:45 and 12:30 to learn what happens when you flush. Tours limited to first 25 people, weather-permitting. Free. No registration is required.

### November 18- WaterShed Weekend: Map Mania

Trek your way to the Boise WaterShed from 10:00 a.m.– 1:00 p.m. for a day of mapping to celebrate GIS Day! This year's event will have a safari theme! Travel into the wild with your adventure passport and create your own habitat and savannah maps, then monkey over to make jungle cookie maps, take a safari quiz, and play wildlife games for cool prizes. At 11:30, take a water renewal facility tour. Brought to you by the Southwest Idaho GIS Users Group. Free. No registration is required.

### December 16- WaterShed Weekend: Handmade Holiday

Jingle all the way to the Fort Boise Community Center between 10:00 a.m. and 1:00 p.m. to spend some time crafting handmade gifts and ornaments for the holidays! Make a wreath, beautiful ornaments and decorations from recycled or reusable household items. Take a free photo with Santa and Mrs. Claus. Enjoy holiday carols provided by a local choir group as well as tasty treats for all! Join the Boise Environmental Education partners to ring in the Holiday Season! Note: Boise WaterShed closed today. Free. No registration is required.

## Craters of the Moon National Monument & Preserve

1266 Craters Loop Road, Hwy 20/26/93; (208) 527-1335

[https://www.fws.gov/refuge/Deer\\_Flat](https://www.fws.gov/refuge/Deer_Flat)

### October 14: Earth Science Week Hike

Join a park geologist for a special geology hike on Saturday, October 14. The hike will cover about 2.5 miles and involve some off-trail hiking. Check the weather forecast for appropriate layers and wear sturdy shoes. Hike is limited to 25 people. Call (208) 527-1335 to make a reservation. Participants will meet at the Tree Molds Trailhead at 9:30 a.m. and the hike will conclude around 11:30 a.m. Active as recently as 2,000 years ago, Craters of the Moon is the largest post-ice age basaltic lava field in the lower 48 states. The lava originated from the Great Rift, the deepest known land-based open volcanic rift in the world. Craters of the Moon National Monument and Preserve protects remarkable volcanic features including lava tubes, hornitos and tree molds all of which you will observe on this hike.

### November 11: Fee Free Day

Free admission on January 16 (MLK day), February 20 (Presidents Day), April 15-16 & April 22-23 (National Park Weekends), August 25 (National Park Service Birthday), September 30 (National Public Lands Day), and November 11-12 (Veterans Day weekend). The visitor center will be open on each of these days. Come out and enjoy your park! Please note that there is no entrance fee charged when the 7 Mile Loop Drive is closed to automobile traffic which is typically from November through April.

## Deer Flat National Wildlife Refuge

13751 Upper Embankment Rd, Nampa; (208) 467-9278

[https://www.fws.gov/refuge/Deer\\_Flat](https://www.fws.gov/refuge/Deer_Flat)

### October 28: Creepy Critter Encounters

A free event for kids and kids at heart to learn about “creepy” and nocturnal critters. See live “creepy critters,” learn about wildlife on a spooky hike, earn candy, make crafts, and howl for coyotes. Wear your costume and come rain or shine! Event runs from 3-6 PM. For more information (or to find out about volunteering for the event), contact [deerflat@fws.gov](mailto:deerflat@fws.gov) or 208-467-9278.

## Jim Hall Foothills Learning Center

3188 Sunset Peak Rd., Boise; (208) 493-2530

<http://bee.cityofboise.org/foothills/events/calendar-of-events/>

### **October 4- Birding Series with Terry Rich: Winter Range and Conservation**

From 9:00 –10:00 a.m., Our free birding program is great for experienced and novice birders alike. Terry Rich, our local ornithologist, provides information and tips on birds in the Boise area and beyond! Come to one or all sessions! Bird books and binoculars are available to borrow. No registration necessary. Where do our local species go as winter approaches? Discover winter ranges for Idaho species. Some birds are local migrants and others are long distance migrants. Learn about conservation issues and opportunities in Mexico, Central and South America.

### **October 7- Foothills Family Days: Creepy Crawly Creatures**

From 10:00 a.m. –1:00 p.m. Spiders, Earwigs, and Beetles, Oh My! Join us as we explore some scary specimens. From pollination to pest control, come learn about why we need these eerie insects. While you are here, make some creepy crawly crafts & dress up like your favorite beastly bug! Family friendly, drop in/ no pre-registration needed. Please- no pets.

### **October 19- Tour of the Reserves- A Hiking Series: Hulls Gulch Reserve**

From 5:30-6:30 p.m., Pre-registration required! Please call Lana Weber at (208) 345-6933 Ext. 16 to sign up. All hikes are no more than 3 miles, free, and family friendly. Get to know your backyard as The Foothills Learning Center and Idaho Conservation League team up to offer these short hiking “tours” of City owned foothills reserves. These eleven reserves are a growing and interconnected system that provides environmental, social, health, economic and related benefits. Maybe you are already familiar with the trails, but you don’t know the history and plan for these special places. Come find out! Hulls Gulch: The majority of this reserve was acquired through a citizen effort from 1991 to 1993, and many acres through citizen grassroots fundraising efforts.

### **November 1- Birding Series with Terry Rich: Supporting Wintering Backyard Birds**

From 9:00 – 10:00 a.m., bird books and binoculars are available to borrow. Free. No pre-registration required. Interested in strategies as to how to support winter resident birds? Join us for this session where you will get recommendations about the best bird seed and feeder choices for the birds in your backyard. Having difficulty figuring out who is who at the feeder? Terry will provide helpful identification tips.

### **November 12- Second Saturday Series: Idaho’s Land Before Time**

10 a.m. - 1:00 p.m. Free, family friendly, drop in/no pre-registration needed. Learn about rocks, soil, erosion, and what Idaho looked like before people were here. We’ll have dirt painting, rock displays, water erosion demos, and a guided hike to Red Cliffs!

### **November 16- Tour of the Reserves- A Hiking Series: Hillside to the Hollow Reserve**

From 5:30-6:30 p.m., Pre-registration required! Please call Lana Weber at (208) 345-6933 Ext. 16 to sign up. All hikes are no more than 3 miles, free, and family friendly. Get to know your backyard as The Foothills Learning Center and Idaho Conservation League team up to offer these short hiking “tours” of City owned foothills reserves. These eleven reserves are a growing and interconnected system that provides environmental, social, health, economic and related benefits. Maybe you are already familiar with the trails, but you don’t know the history and plan for these special places. Come find out! Hillside to Hollow: Revered for its abundance of trails, views into Boise and unique experiences such as steep trails and large off-leash areas. 317 acres total, the City of Boise owns 258 acres, with the Land Trust of the Treasure Valley (LTTV) owning 59 acres. Join us for a hike on the all-weather trail and hear how LTTV acquired this property!

### **December 6- Birding Series with Terry Rich: Idaho Bird Counts**

From 9:00 – 10:00 a.m., bird books and binoculars are available to borrow. Free. No pre-registration required. So how are bird populations doing? This session will provide information about bird population monitoring and population trends. Who collects data? How is data collected? Where is it kept? What does it tell us? How can you contribute? You’ll learn about ways to participate in data collection events like the Christmas Bird Count, Big Backyard Bird Count, Breeding Bird Survey and eBird.

### **December 10- Second Saturday Series: Handmade Holiday**

Jingle all the way to the Fort Boise Community Center between 10:00 a.m. and 1:00 p.m. to spend some time crafting handmade gifts and ornaments for the holidays! Make a wreath, beautiful ornaments and decorations from recycled or reusable household items. Take a free photo with Santa and Mrs. Claus. Enjoy holiday carols provided by a local choir group as well as tasty treats for all! Join the Boise Environmental Education partners to ring in the Holiday Season! Free. No registration is required.

### **December 13- Sunset Series: Avian Adventures Abroad in Brazil**

From 7-8:30 p.m., fun, free, adult education. From the Amazon rainforest to the dry shrub land of the Catinga, Brazil has an amazing array of biomes to explore. Terry Rich, former bird specialist with U.S. Fish and Wildlife Service, will share his birding experiences in Brazil, where there are over 1800 species of birds!

## Protect Bats and Protect Yourself

by Rita Dixon PhD\*,  
State Wildlife Action Plan Coordinator , Idaho Department of Fish and Game



Left: Silver-haired bat © Rita Dixon, IDFG Center: Hoary bat © (CC-BY-SA) Nessie Grace on Flickr CC Right: Myotis cluster © Sandy Amdor.

**N**ews of recent cases of rabid bats in various parts of Idaho have left residents nervous about encountering bats inside or outside their homes. It is important that people understand how to best handle a bat that is found in their home, including what precautions to take to prevent exposure to rabies.

Improving rabies awareness and preventing human exposure to rabid bats is a public health priority. At the same time, conservation of bats and the benefits they provide is increasingly important due to declining populations of many bat species.

If a bat is found, the first thing to determine is whether the bat had direct contact with people or pets. Bats that have not had contact with humans or pets can be captured and released outside.

Capture the bat without touching it by using a cardboard box, or other container, with small air holes. Then slide a folder or piece of cardboard over the opening of the box to secure the bat inside.

Carry it outside, then step back and remove the folder. The bat may not immediately fly away until it becomes familiar with its surroundings. The open box can be left outside and retrieved later.

If a bat is suspected, or known, to have had direct contact with a person or pet, a risk assessment should be done with the Idaho Department of Fish and Game and the Idaho Department of Health and Welfare.

If the risk is deemed high, the bat should be safely captured without touching it with bare hands (you can use leather gloves), and it should be tested for rabies.

Capture a live bat as described above, but instead of releasing it, close and secure the top of the box or container. Then call an Idaho Department of Fish and Game office.

The bat will be humanely euthanized and transferred to the nearest Public Health District for submission to the Idaho Bureau of Laboratories for rabies testing. If the bat is dead, homeowners can contact the nearest Public Health District directly so it can be submitted for testing.

Some inaccurate generalizations about bats and fear that all bats have rabies has resulted in negative perceptions, which can lead to the indiscriminate killing of bats and barriers to bat conservation.

It's important to clear up some of those common misconceptions. Although bats are primarily nocturnal, they are occasionally active during daylight, so seeing an active bat during the day does not mean it is sick or rabid. This is especially true during late summer and early fall as they prepare to migrate, and when young bats are leaving their maternity colonies for the larger landscape.

Also, bats do not "carry" rabies. Bats, like other mammals, can contract and die from rabies. Across North America, only about 0.1 percent of wild bats have rabies. However, bats are considered a significant wildlife reservoir for rabies across the United States, and they are the only known natural reservoir of rabies in Idaho. Therefore, human and domestic animal contacting bats should be minimized, and bats should never be handled by untrained and unvaccinated persons, or be kept as pets.

Rabies is 99.9 percent fatal, but 100 percent preventable through prompt, appropriate medical care. People should call their health care provider immediately if they have:

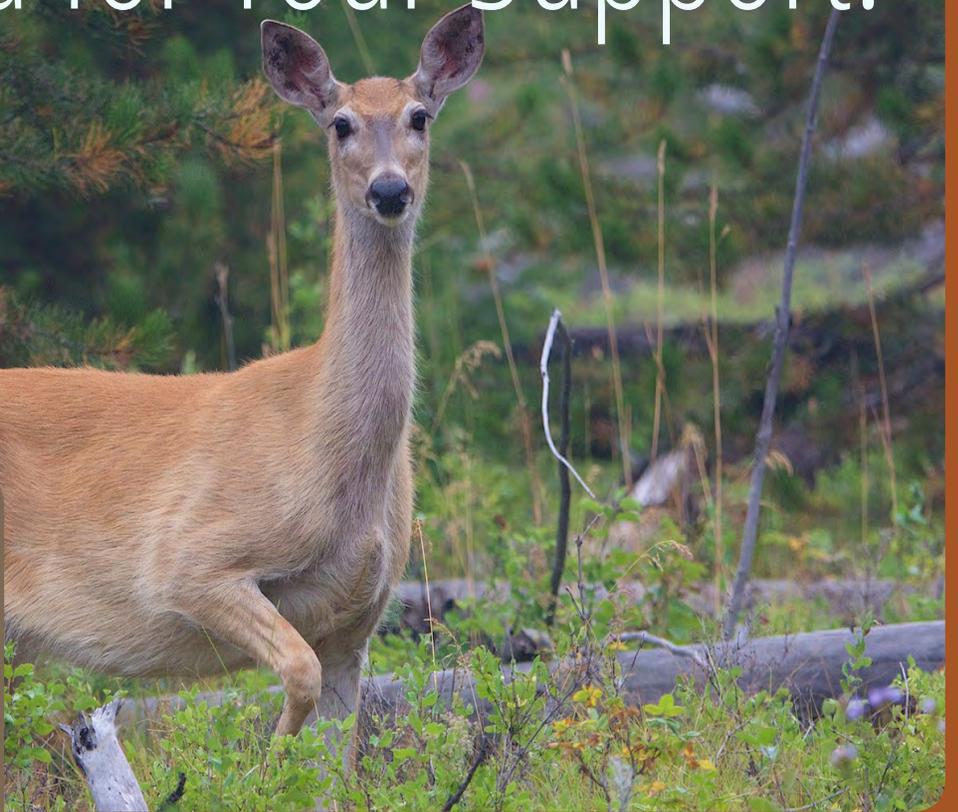
- been bitten or scratched by a bat.
- when saliva, or other potentially infectious material (such as brain tissue) from a bat has come into contact with an open wound, abrasion, scratch, or mucous membrane.
- woken up to find a bat in the room.
- witnessed a bat in the room with a previously unattended child, mentally challenged person, or intoxicated individual.

For exposure of pets to bats, people should call their veterinarian for advice.

Related Video: "I Found a bat in my house! What do I do?" **Click on the image below to watch the video.**



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White-tailed deer © Mike Morrison

## Windows to Wildlife

Wildlife Diversity Program  
P O Box 25  
Boise, ID 83707-0025

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Deniz Aygen — Editor

deniz.aygen@idfg.idaho.gov  
208•287•2750

To submit an article, obtain a subscription, or notify us of address change, contact the Editor at the above address.

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