

Black Rosy-finch Feeder Counts

Community Scientist Guide



**Utah Black
Rosy-Finch
Study**

January 2020

ACKNOWLEDGEMENTS

Development of the Utah Black Rosy-finch Study would not have been possible without our diverse partners, sponsors, and donors across the state. Utah Black Rosy-finch Study is funded through Tracy Aviary Conservation Fund, Utah Department of Natural Resources, Utah State University, Bridgerland Audubon, Great Salt Lake Audubon, Cross Charitable Foundation, and many other private donors. Through these groups, the Study is able to fund equipment and travel costs, seed to keep feeders full, professional scientists' staff time, and graduate student stipends. Thank you to all partners, sponsors, and donors for your contributions in making this study a success!

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Introduction

Black Rosy-finches (BLRF) are one of the least understood birds in North America. We understand little about its reproduction, demography, population status, survival rates, distribution, or migratory tendencies. These data gaps limit not only our understanding of the species, but also limit agencies' ability to conserve and manage the Black Rosy-finch. Questions about basic population status and distribution have been highlighted by state and federal agencies as critical data gaps for management. To fill some of these data gaps, the Utah Black Rosy-finch Study was founded in 2019. These community scientist feeder counts are one aspect of our larger study.

Black Rosy-finch Biology



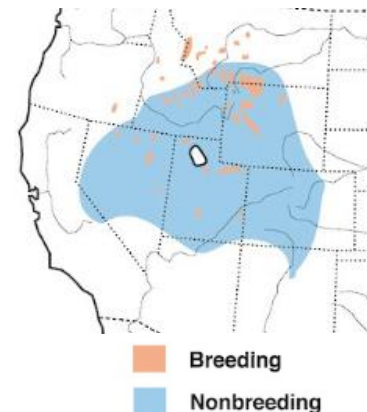
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IDENTIFICATION:

The Black Rosy-finch is one of seven rosy-finch species worldwide, and one of three rosy-finches in the United States. The Black Rosy-finch is a moderately sized member of the finch family (Fringillidae) with long legs, a short tail, and a stocky bill. Individuals have a striking black plumage in the summer and have a subdued dark brownish charcoal color in the winter months. This species, like the other rosy-finches, has wing, flank, and undertail feathers highlighted in a soft, yet bold rosy color from which they get their name. Black rosy-finches also have a light grey patch extending behind each eye. Bill color changes from yellowish in the fall and early winter to black

during the start of the breeding season. Males and females look similar to one another, except for females having a more muted brownish-gray overall as compared to the darker males.

BREEDING: The Black Rosy-finch is an alpine specialist. This species occupies very limited and isolated patches of mountain-top habitat within the Rocky Mountain and Great Basin regions. In the breeding season (May – July), the Black Rosy Finch range extends from its north-most limits in central Montana, south to the La Sal Mountains in southeastern Utah. In Utah, the Black Rosy-finch is known to breed in the Raft River, Uinta, Wasatch, Deep Creek, La Sal, and Tushar Mountains. Where they are found, these finches are usually at the confluence of talus slopes, rocky cliffs, open alpine tundra, and snowfields or glaciers. This type of habitat is extremely limited and hard to access, contributing to our lack of



knowledge about these birds. Black Rosy-finches form flexible territories and lay clutches of 4 to 5 eggs in a cup-shaped nest. Nests are placed in rock crevices amongst talus or on cliff faces, often overlooking glaciers and snowfields.

WINTERING: In The winter, these finches range more widely from southern Montana, southwest through Nevada, east to the front range of Colorado, and as far south as Albuquerque, New



Typical breeding habitat, King's Peak, UT.

Mexico. In Utah, they can winter anywhere throughout the state. Throughout the winter, Black Rosy-finches can be seen mixed into flocks of Gray-crowned Rosy-finches forming groups of dozens to thousands of individuals. Black Rosy-finches occupy two distinct habitat types in the winter; mountains, where most people associate them with, and open, rocky deserts. In mountainous areas, Black Rosy-finches travel up and down in elevation according to the weather and food availability. During clear day, these finches are often found high along windswept rocks searching for food. In heavy snowfalls, Black Rosy-finches are readily observed at lower elevations and in foothills, including at bird feeders. Black Rosy-finches roost at night in rock crevices, mine shaft, cliff swallow nests, and sometimes in human structures like open buildings, porches, and bridges. In deserts, rosy-finches can form huge flocks roaming exposed rocks in search of seeds.

DIET: Black Rosy-finches are primarily granivorous (seed-eating). During the summer, adult rosy-finches search along melting snowpack edges for newly exposed seeds to consume. Adult birds feed their chicks mostly insects, which are high in protein. Once the chicks fledge, they begin to increase the amount of seeds they consume. On migration, rosy-finches are often seen in huge numbers traveling through mountain meadows covered by the first snow of the season. Migrating flocks pick seeds from plants above the snow. In the winter, Black Rosy-finches search for seeds in windswept areas along mountain peaks and exposed rocky cliffs. When adverse weather covers up their food sources, rosy-finches are frequently seen eating black oil sunflower seed at bird feeders.



© Russ Morgan, Macaulay Library ML177689231. Used with permission. Black Rosy-finch foraging on native seeds on Steens Mountain, Harney, OR.

Conservation Concerns

Black Rosy-finches are a high priority for conservation. Because Black Rosy-finches are primarily found in rugged landscapes, they are one of the least-studied birds in North America. As such, the future wellbeing of Rosy-finches is hampered by an absence of even basic information. Identifying relevant conservation measures is particularly pressing in the face of climate change.

Rosy-finches depend on alpine habitats to breed successfully. Based on their current distribution, scientists suspect Black Rosy-finches might have a strict temperature tolerance against warmer temperatures. If temperatures get too hot (such as at lower elevations) the birds might not be able to survive. With climate change, scientists predict alpine habitats will be pushed upward in elevation as woody vegetation advances upslope. With a 3°C increase in average annual temperature, it is predicted that the Black Rosy-finch will lose 94% of its current habitat ¹. This temperature increase is currently predicted to be reached before 2080.

In addition to breeding season concern, aspects of the Black Rosy-finch's migration and wintering tendencies are unknown. They may depend on critical habitats outside of the alpine zone, or in other areas between the breeding and wintering grounds. We also do not know how a changing climate will affect the birds and their wintering habitat. All of this uncertainty culminates in a lack of data on abundance of the birds. Without knowledge about how many rosy-finches there are, or that a region can support, we cannot establish or predict

trends over time. Filling data gaps about Black Rosy-finches distribution and abundance is especially critical in Utah and surrounding states to ensure that their populations can be sustained, even in the face of threats like climate change.

Currently, with what information we do know, the following agencies and organization have designated the Black Rosy-finch as:


IUCN – Endangered

U.S. Fish and Wildlife Service – “Species of Concern”

Utah – “Species of Greatest Conservation Need”

Partners in Flight – Yellow Watch List

COMMON NAME: Black Rosy-finch
SCIENTIFIC NAME: *Leucosticte atrata*



Size: A moderate sized, chunky finch.
Diet: Insects and seeds, especially black oil sunflower.
Breeding: Breed on alpine mountain tops in the Rocky Mountain Region. Pairs lay 4-5 eggs. Nests are placed in rocky crevices.



Winter: Migrates to lower elevation mountains in winter.
Behavior: Forms mixed flocks with other rosy-finches during the winter from dozens to thousands of individuals. Often seen along roadways eating grit and at bird feeders in the region.

NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	< ENDANGERED >	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX

¹ Brooke *et al.* 2019. North American Birds Require Mitigation and Adaptation to Reduce Vulnerability to Climate Change. Submitted to Conservation Science and Practice. <https://doi.org/10.1101/798652>

The Utah Black Rosy-finch Study

Though the Black Rosy-finch's distribution is small and predominantly on public lands, it also covers a mosaic of private and recreation-dominated lands, each with their own diverse stakeholders and conservation capacities. **Conservation of Black Rosy-finches cannot be accomplished without cooperation.**



Utah's Wildlife Action Plan has identified measures to prevent Black Rosy-finches, and other species, from being listed under the Endangered Species Act (Utah's Wildlife Action Plan Joint Team 2015). To fill the data gaps that currently limit effective management of Black Rosy-finch populations, a voluntary partnership of dedicated biologists developed the Utah Black Rosy-finch Study in 2019. The partnership, which includes the Department of Defense, Tracy Aviary, the U.S. Forest Service, Wild Utah Project, Utah State University, and the Utah Division of Wildlife Resources, is working with volunteer community scientists to build a shared knowledgebase. **You are now part of our partnership and conservation effort!**

The overall goal of our Study is to establish baseline demographic rates and seasonal movements for future management of Utah's Black Rosy-finches. This collaborative effort will benefit not only the Black Rosy-finch, but also the interests of public land stakeholders by providing data to respond to future listing petitions under the Endangered Species Act. Studying Black Rosy-finches on their breeding ground is extremely costly and difficult due to the inaccessibility of their nesting sites. In winter, however, flocks of Black Rosy-finches visit bird feeders at ski areas and private mountain residences. These feeders provide accessible study sites for data collection. To achieve our goals of determining population vital rates and informing future management, we will (1) establish a network of radio frequency identification (RFID)-enabled bird feeders, (2) collect RFID encounter data from marked birds, **(3) engage community scientists to help conduct counts of birds using the feeders**, (4) analyze and share results, and (5) continue to build diverse conservation and management partnerships.

This Study contributes to larger conservation efforts in the region by filling in critical data gaps that will inform conservation efforts across the West. Black Rosy-finches are also a Species of Concern in Nevada, Colorado, Wyoming, Montana, and Idaho. Our counterparts in Montana and Colorado have projects with congruent goals and our Study serves as an important complement to the conservation of Black Rosy-finch in the region. Black Rosy-finch habitats are also home to other species of conservation concern including American pika (*Ochotona princeps*), White-tailed Ptarmigan (*Lagopus leucura*), American marten (*Martes americana*), and Arctic poppy (*Papaver radicum ssp. Kluanense*). Understanding the many species that rely on these habitats is important for managing and conserving the entire alpine ecosystem.

The Feeder Count Study

Project Overview

Hello! Thank you for your participation in the Black Rosy-finch Feeder Counts, supported by the *Utah Black-Rosy Finch Study*. We are happy to have you on board and look forward to working with you. The purpose of this Study is to conduct standardized, scientifically-sound bird counts to assess range and population numbers of Black Rosy-finches.

For this Study, we want to count the number of Black Rosy-finches using feeders throughout their range. These feeders can be our Study feeders, a public feeder near you, or a feeder in your own yard. By getting systematic and repeated counts of rosy-finches, we hope to get a better estimate of rosy-finch numbers in the region. To this end, biologists are capturing Black Rosy-finches. Each captured bird will get a uniquely numbered metal leg band and a colored RFID (radio frequency identification) leg band. RFID technology is the same thing we use to microchip pets or to track a marathon runner's time. These bands sit like a bracelet on the bird's leg and can be seen with binoculars. The special RFID leg band has a unique code associated with it that is detected by our Study feeders if the bird lands on it.



Most songbirds, like the rosy-finches, are too small to carry devices that transmit their location. These RFID bands allow us to “observe” a banded rosy-finch at a feeder even if there is no person there to see it. Plus, you can observe these marked birds with your binoculars! Knowing how many birds are banded versus unbanded is a critical piece to the population abundance puzzle we are trying to solve. **The RFID banded birds give us a record of their feeding visits. But, the feeders cannot tell us if there were more unbanded birds using it or if any birds were on the ground below eating fallen seed. That's where you, our volunteer community scientist come in!**

Our main goals for Black Rosy-finch counts are as follows:

1. **Obtain count data** across a wide spatial area (main focus UT, but also throughout the Rocky Mountain Region) to better understand Black Rosy-finches winter distribution and abundance.
2. **Recruit a network of dedicated volunteers** to conduct replicated counts throughout the winter.
3. Establish count protocols that:
 - a. **Are easy** to interpret, follow, record, and enter.
 - b. **Are reasonable** in length and frequency to foster continuing participation.
 - c. **Are compatible** with other count protocols (Project Feeder Watch, Great Backyard Bird Count, eBird³, Christmas Bird Count).
 - d. **Teach participants** the importance of data collection and zero counts.
 - e. **Are scientifically sound**, reproducible, and productive.

Getting started

In the next section, you will find two types of counts and how to conduct them. Most participants will be using **protocol #1: Personal Feeder Counts** at any standard feeder. Participants counting at a Study RFID feeder will be using a few additional steps outlined in **protocol #2: RFID feeder counts**.

When you first receive this information packet, we suggest reading the protocol and having a datasheet open to ensure everything is clear enough for you to collect data correctly. If you have questions while reviewing the protocol, please contact the Utah State University Black Rosy-finch team (rfid@gmail.com). Below is a brief overview of the data we are collecting and how it will be used:

- ❄ **Site Description:** The only site information we require is the location of each feeder (either geographic coordinates or a street address). With coordinates of feeders, we can extract the local elevation and classify surrounding habitat. Black Rosy-finches are high-elevation loving birds. But, in adverse weather they are known to descend and feed at lower elevations. With both habitat information and elevation, we will identify potential Black Rosy-finches use areas throughout the Rocky Mountain Region. You will record your site information in the **Site Description data sheet**. You will only need to do this for a non-Study RFID feeder.
- ❄ **Structured Black Rosy-finch Counts:** Standardized counts of Black Rosy-finches at feeders will serve as the link between where and when Black Rosy-finches are seen. By having all volunteers conduct counts during the same count windows and in the same way, we can begin to determine range patterns across the region.
- ❄ **Opportunistic Black Rosy-finch Counts:** Counting in a standardized and structured way allows us to use powerful methods to analyze the data. However, if you see Black Rosy-finches at your counting feeder outside your chosen count time that is great! These data are also useful and these optional counts allow you to contribute count data no matter when the finches show up.
- ❄ **Weather:** Black Rosy-finches move around quite a bit during the winter. Birders often observe Black Rosy-finches using feeders when conditions are not so kind outside. We are asking you to record temperature, wind speed, local snow depth, and type of precipitation during your count. Some of this data, like temperature and wind can be grabbed from your favorite weather app or wherever you get your weather information. Try to estimate the snow depth at your feeder. Local snowfall can be quite variable from what was predicted. If you have a yard stick, stick it in the snow. If not, try to estimate it the best you can.

Protocol #1: Personal Feeder Counts

Using this protocol, anyone can conduct a Black Rosy-finch count at a personal or local bird feeder. The feeder can be of any style, size, and anywhere you have permission to access. A feeder can be your own, at a local park, at a nature center, or in any other public space. The only requirement is that you are counting according to this protocol and your feeder is within the range of the Black Rosy-finch!

1. Select your count feeder(s)

Your Black Rosy-finch count site should be an area that is convenient and easy for you to observe. Select an area centered around the feeder as large as you can consistently observe from week to week. Please select a count feeder that you can observe from a single, stationary point. Choose some obvious boundaries, such as the border of your yard, a hedgerow, or tree line. Try to limit the counting area to be no larger than two tennis courts. Count areas can be as small as a single feeder and its immediate area, but somewhere in between is optimal. This will help you count all the birds present without counting them twice. Once you have chosen your site, count birds at this same site all season. If you want to submit counts at multiple locations, please submit separate counts.



2. Choose your count days

The Black Rosy-finch count season runs from mid-January to the end of April. This season is broken into five 3-week count windows. Please select 1 day within each 3-week window to survey. If possible, schedule your count days in advance and ensure consecutive counts are at least 5 days apart. Counts need not be conducted on the same day of the week or time of day as previous counts - select times and dates convenient to your schedule. Scheduling counts in advance will reduce bias of counting only when large numbers of birds at your feeder. Zero counts are OK and vitally important!

January							February							March							April						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4						1	1	2	3	4	5	6	7				1	2	3	4	
5	6	7	8	9	10	11	2	3	4	5	6	7	8	8	9	10	11	12	13	14	5	6	7	8	9	10	11
12	13	14	15	16	17	18	9	10	11	12	13	14	15	15	16	17	18	19	20	21	12	13	14	15	16	17	18
19	20	21	22	23	24	25	16	17	18	19	20	21	22	22	23	24	25	26	27	28	19	20	21	22	23	24	25
26	27	28	29	30	31	23	24	25	26	27	28	29	29	30	31	26	27	28	29	30							

3. Count Rosy-finches and Chickadees

On your count day, watch your feeder and the surrounding area for rosy-finches and chickadees for a total of **20 minutes**. If you are outside counting, try to sit or stand in one spot and limit your movement to not startle the birds. Count the **maximum number of each rosy-finch species you were able to see at once**. Do not add birds seen at different times. In addition to Black Rosy-finches, you are also welcome

to count Grey-crowned Rosy Finches, Brown-capped Rosy-finches and even chickadees. Just be sure to count Black Rosy-finches *first* before continuing to other species.

For help differentiating the species of, see the **ID Guide** section. Counts of Black Rosy-finches is our priority, so please ensure you are confident of your count before moving to other species. If you are overwhelmed by the number of birds, limit the count area to a size you can manage reasonably or use the “blocking method” outlined in the **Counting Tips** section of this guide. Make every attempt to not double-count birds if they are moving around. If the flock flies off before you finished counting, **use the highest number you counted to**.



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A mixed flock of Black, Gray-crowned, and Brown-capped Rosy-finches at Sandia Crest, NM.

If you do not see any rosy-finches of any species, do not fret! Believe it or not, counts with 0 rosy-finches gives us valuable data too. If there are no rosy-finches, record the number of Mountain and Black-capped Chickadees using the feeder. If you want to record more species, feel free!

4. What not to count

Please only include birds which are totally visible and identifiable. Do not count birds flying over your count area that are not interacting with your feeding area. Perching in the vegetation is fine. Please do not add birds seen outside your count period within that day or other days. If you see Black Rosy-finches outside your scheduled count, you can conduct this same protocol, but submit the count under the “Opportunistic Protocol” (see Opportunistic Counts).

5. Fill out a datasheet

During each feeder count, you should keep track of your data on a datasheet or notebook. We have provided a datasheet in your packet. Be sure to record the protocol type (“Non-RFID Structured”), date/time, location, weather data, your maximum count Black Rosy-finches, and maximum counts of any other species you were able to count. It may be helpful to write totals of birds as you go, counting the flock several times over the 20 minutes,

and then taking the highest of those counts. If you do not see any Black Rosy-finches or other rosy-finch species during your count, we want to know that too! Please be sure to record and submit these “Zero Counts”. There is as much data in zero counts as positive counts, and zero counts are critical to our understanding of the Black Rosy-finch’s movements and tendencies!

1. Report your counts

Once you have conducted your count, you will need to ensure your datasheet is filled out and emailed to one of the Volunteer Coordinators; either **Jaince Gardner** (janice@wildutahproject.org) or **Cooper Farr** (CooperF@tracyaviary.org). To ensure the Black Rosy-finch Study gets your counts, please use the datasheet and submit it. We encourage everyone to contribute data to other citizen science projects as

well including eBird, Christmas Bird Count, Backyard Bird Count, Project FeederWatch, iNaturalist, and others after submitting data to our Study.

Protocol #2: RFID Feeder Counts

Several publicly accessible sites in Utah have RFID feeders installed at them. These sites are locations where biologists are capturing and marking Black Rosy-finches with microchip leg bands. For this Study, we need to know how many birds around these feeders have bands in relationship to those that are unbanded. If you are counting at one of these RFID feeders, **please use these additional steps to Protocol #1 (Personal Feeder Counts).**

1. Arrival

When you arrive at the RFID feeder, open the electronics box and take out the “Test Tag” which will be fixed to a notecard. This is one of the RFID bands researchers are banding Black Rosy-finches with. Pass the tag over an antenna perch and watch for a green LED light (see image to right) to flash on the circuit board. The flash means the tag got scanned. If you do not see a flash, try for approximately 30 seconds before giving up. If there still is no flash, email a project coordinator so we can assign someone to troubleshoot the issue. By scanning your tag when you start and end your count, we can see which banded birds arrive at the RFID feeder during your count. Step back to a good viewing location and wait 5 minutes to let the birds resume feeding before starting your count.

2. Count total birds, number of banded birds, & record

Conduct your count the same as protocol #1: Personal Feeder Counts, outlined previously and record your counts on the datasheet. After the 20 minute survey (or during if things are slow) look at the legs of **Black** Rosy-finches for bands. Count birds as you go and only look at a **maximum of 100 birds** for bands or look for a **maximum of 10 minutes**, whichever comes first. Start with the Black rosy-finches closest to the feeder. Some individual Black Rosy-finches may have leg bands. Record the number of banded Black Rosy-finches and the total Black Rosy-finched surveyed for bands (100 max).

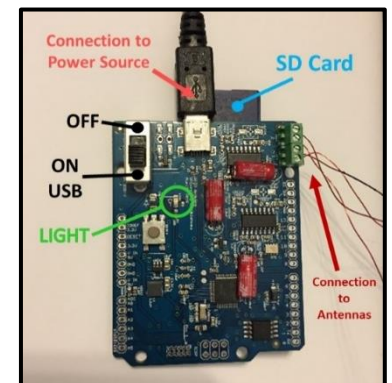
A banded bird will have a silver aluminum band on one leg and a solid colored RFID band on the other. The RFID bands could be red, blue, pink, green, or yellow. If birds are moving around a lot, use the colors to try to see if there are multiple individuals banded. You might also see a band on other species too, including Gray-crowned Rosy-finches and chickadees. Please *do not* include these in the total banded Black Rosy-finch count. Feel free to note other banded birds you see in a comment on your datasheet. Thanks!

For example, let's say you saw two green banded birds at the same time. Then you saw a red, a blue, a green, and a blue banded bird but the birds were moving too quickly to keep track of individuals. You



Above: A set up RFID feeder with antennas in the perch (1), a circuit board (2), and a power source (3).

Below: Details of the circuit board and its components.



would record seeing 4 banded birds (2 green, 1 red, 1 blue). Overall, be conservative. **If the flock happens to fly off** after you look at 26 Black Rosy-finches for bands, simply record 26 as your number of Black Rosy-finches sampled for bands. Please record your protocol as “RFID Structured”. If this was an additional count use opportunistic.

3. Exiting

When you have completed your overall and band count after 20 - 30 minutes, scan the Test Tag again, making sure to see the LED flash. **Be sure to put the tag where you found it in the box.** Once you have conducted your count, you will need to ensure your datasheet is filled out and emailed to one of the Volunteer Coordinators; either Jance Garder (janice@wildutahproject.org) or Cooper Farr (CooperF@tracyaviary.org).

Opportunistic Feeder Counts

Bird surveys often have no bird observations. These “**Zero Counts**” are just as interesting and important as counts when birds are present! We highly encourage you to schedule your Structured Counts in advance to not bias your counts to times Black Rosy-finches are using your count feeder.

But, we also recognize that submitting positive counts is truly rewarding as well. So, if you see Black Rosy-finch at your count feeder outside of your selected count time, feel free to conduct the same counts you would normally do, using the same protocol outlined previously. When you enter the data, **be sure to mark the protocol as “Opportunistic”** instead of “Structured”. You can submit as many opportunistic counts as frequently as you like. The more data we can collect the better our estimates will be.

If you encounter rosy-finches out birding and not at your usual counting feeder, please enter that data into your preferred citizen science website, like eBird. We can only work with data at repeatedly visited feeder sites, but submitting your data can help rosy-finch research in the future!



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Two Black Rosy-finches and a Gray-crowned Rosy-finch foraging.

Supporting Materials

Protocol at a Glance



Choose your Feeder

Pick a location with a feeder such your yard, a public park, or nature center to count at for the season.

Schedule Your Counts

Pick one count day in each 3-week survey window. They can be at any time or day of the week, just make sure count days are at least 5 days apart.



Count Black Rosy-finches

On your count day, observe your feeder for 20 minutes. Count the maximum number of Black Rosy-finches visiting at the same time during the count. Continue with other finch and chickadee counts.

Record & Submit Data

Fill out your data sheet with your protocol, date, time, location, weather data, maximum Black Rosy-finches seen, and max number of other species see. Submit your data online.



RFID Protocol at a Glance



Choose your Feeder

Pick a location with a feeder such your yard, a public park, or nature center to count at for the season.

Schedule Your Counts

Pick one count day in each 3-week survey window. They can be at any time or day of the week, just make sure count days are at least 5 days apart.



Count Black Rosy-finches

On your count day, use a Test Tag to check in to your count. Wait 5 minutes and start you count. Observe your feeder for 20 minutes. Count the maximum number of Black Rosy-finches visiting at the same time during the count. Record other species counts in addition.

Look for Banded Birds

After your 20 minute count, look for legs bands. Count Black Rosy-finches as you go and look for aluminum or colored bands. Survey a maximum of 100 individuals or for 10 minutes whichever comes first. Use the Test Tag to check out of your count.



Record & Submit Data

Fill out your data sheet with your protocol, date, time, location, weather data, maximum number of each species seen, number of finches surveyed for bands, and number of banded birds. Submit your data online.

Bird Counting Tips & Tricks

Counting birds can be a tricky process. Birds group up and obscure each other, they move around, they might enter and exit the count area quickly. All these factors present potential errors into the data we collect. But there are several methods professionals have established to help count birds more accurately. The following trips draw heavily from or are reproduced from eBird, U.S. Fish and Wildlife Service, and others. If you want more practice or further reading, find the original source material from the footnotes below. **Don't worry, counting is challenging and no matter how well we are trained at counting, our data may only sometimes really reflect the number of individuals present. But we can always strive to get better! Happy counting!**

Things to Keep in Mind

Why is counting important?

Obviously, we want to know how many Black Rosy-finches there are. And counting them helps get us closer to that estimate. Your numeric estimates help us judge relative abundance and are an important part of our count data.

“What if my numbers are way off the mark,” you say? Think of it this way: what do counts of birds mean biologically? Biologically, there is a huge difference between zero and one. The species was either not present, or only one was detected. Either way, this tells us that the species in question is not particularly “common” in the area you sampled at the time of your observation, or at least you didn’t detect it commonly. There is an almost equally significant difference between one and two. A record of one Painted Bunting in New Jersey could well be chalked up to a vagrant outlier, but two would be an event!



In our Study, we do want numbers to be as accurate as possible. Even if those end up being estimates within a huge flock of birds.

Write Things Down

It is always a good habit to write things down. How many times have you gone to the grocery store and come home without that one item you went for? Too often birders go out birding without a notebook and then try to recreate what they’ve seen after returning home. This is a bad habit to get into. Even those of us with the best of memories can easily forget a number or get counts of two species mixed up in our heads. This type of data loss is far too common and can be avoided by keeping a simple list as you see birds. Consider jotting down a list of species as you see them and follow each with a tally as you detect individuals. For this Study, we want to ensure these counts are the maximum seen at once. This method gives us a more accurate depiction of how many individuals there are. **If we sat at a feeder for 20 minutes and observed chickadees using the feeder 254 times that does not mean there were 254 chickadees.** Likely, there were a handful of individuals feeding frequently. By recounting the flock every few minutes, and recording these “sub-counts”,

we can easily look at all the counts for your survey and see the max! For example, your survey notes might look something like:

Black Rosy-finch: 0, 0, 2, **10**, 3

Gray-crowned Rosy-finch: 20, **23**, 7, 2, 10

Mountain Chickadee: 3, **7**, 2, 1, 3,

We can see that there is a max for each species we observed. And that is what we will report on our Data Sheet. We want the maximum count at one time. There is room on your datasheet to make these sub-counts, or you can erase a count you wrote down if you count a larger number. If you're out birding on your own, give this method a try. And if you are traveling a long distance, list these sub-counts and add them together at the end for a total. You will be surprised just how many more (or less) birds you are actually observing.

Be Conservative – False Precision & Double Counting

Everyone in tends to either over-estimate or under-estimate numbers. And this tendency might even vary by what species or taxa we are counting. We want to promote **conservative counting**. The idea is for you to give us your best count of the birds you saw during your survey. The goal is not to record the highest count of a given species, but to provide an accurate count of what is present at your site at that time. Even if we saw a rosy-finch take off in one direction and one come to the feeder from another shortly after, we cannot assume they were different birds. Only if you can still see that first bird can you count the second with confidence. This an example of potential double counting.

Double counting is exactly what it sounds like – counting one bird twice. Inevitably, it is going to happen. But keeping this in mind can help you reduce how often it happens in your counts. Double counting can also happen when a flock is jostling around for position at the feeder. Sometimes it's good to take an overall estimate of the flock as a whole before diving into a more direct count. From there you can focus on counting individuals and trying to track them as they move around. If your count much higher than your estimate, it is possible you counted birds twice as they moved around. Or perhaps you noticed additional birds hiding among the snow piles or behind each other. You can always count and estimate again and see what you get!

False precision happens when we combine estimates and direct counts. For example, you estimated 70 birds in a flock and you watch 6 more birds fly in. If you report your count as $70 + 6 = 76$ birds, this is false precision. You should report this number as 80 if you were estimating by tens, or 75 if by fives. This is a tough concept to pin down. But, we hope all of our community scientists will do their best to estimate and then get a more direct count of the birds you are observing. In an ideal situation, we would want everyone to count every individual bird. However, we recognize wholeheartedly that this is a rare occurrence. We just ask that you take pride in your data and report your numbers to the best of your ability. Oh, and have fun doing it!

The Blocking Method

When counting flocks, one of the best ways to estimate birds is by using the “Blocking Method”. This entails selecting a section of the flock and counting them up to a number you can easily visualize. For instance, if the flock is a moderate size, count a group of 10 birds. See how much space they occupy in the flock. Then draw an imaginary block around them and move that block around the flock to count in groups of 10. If you counted 4 total blocks of 10, then your estimated count is 40 birds. This works best in single species flocks, or to get an estimate of the total birds before you start a more direct count. When you have a blocked count and a more direct count of the same species, you should report whichever count you think is the more accurate count.

Let’s practice some blocking! Look at the flock images on this page.

1. Write down how many birds you think there are without blocking or counting.
2. Form a block and estimate how many birds there are.
3. On the following page, we will see how well we estimated!



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Count the Black Skimmers (black birds)



© Kim Savides, Used with permission



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- Here, I counted in blocks of 5, and estimated 5 blocks. So, my estimate would be 25 birds.
- Upon closer inspection, there were actually 31 birds! Some are hiding with their heads down in the feeder. But an estimate of 25 put us on the right track. And our direct count improved our estimate.



© Kim Savides, used with permission

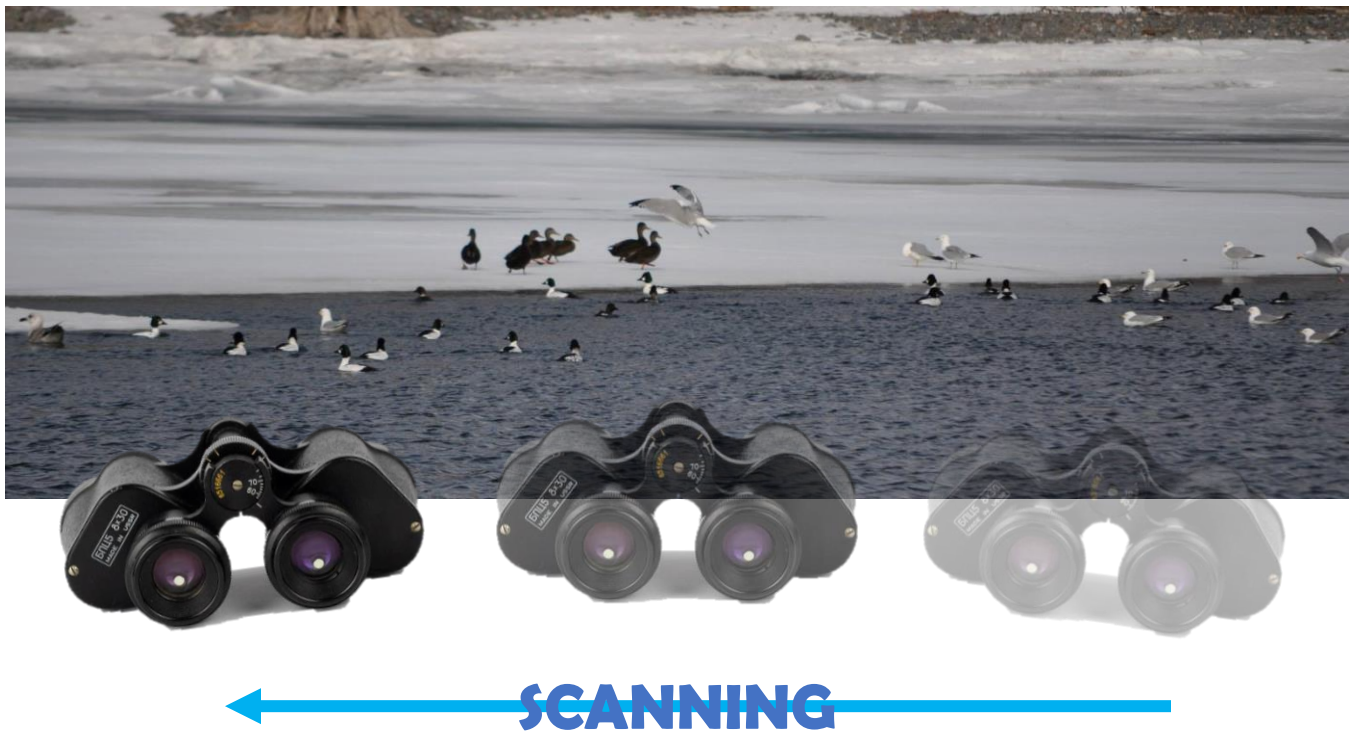
- This flock is tricky because there are a lot of birds and the flock has different densities. In front there are few birds and in the back a lot. We can make different sized block and stretch those blocks to cover roughly the same amount of birds. I first counted two groups of 50 birds (yellow), and then use the density of those birds to make a block of 100. And at the left, I estimated that block to be the size of my 50-bird block. So, in the end, I estimated the flock to be 550 birds.
- When I actually counted them all, there were 547 birds in the image. So the estimate was good! Keep in mind that estimates tend to get worse and worse as flock size increases. For surveyors new to counting birds, we may expect a count from 380 to 600 birds. You will get better with practice and experience! And, as much as we hope you encounter a huge flock of rosy-finches, it is more likely you will see a couple dozen at a time—much more manageable than these Black Skimmers!

The Scanning Method

Our counting method is a perfect example of when the “Scanning Method” can work wonders. When conducting a rosy-finch count, our priority is Black Rosy-finches. The scanning method is where you systematically scan a flock, such as from left to right, for a particular species. As you scan, keep a running tally of the number of individuals you are searching for. Once you have scanned the flock and gotten a number of that species, repeat the same process with another, and so on.

The advantage of this count style is that once you get a mental search image for the species you are targeting; you can rapidly scan through the flock and get a number of individuals of that species. This works particularly well in large groups of birds when the species you want is in low proportions. This also works well if individuals in the flock are moving around a bit but staying in the same area. By rapidly scanning for your target birds, you reduce the chances of double counting.

Here, we can scan for American Black Ducks (they are the large dark ducks). By scanning, we can quickly count the 7 American Black Ducks. We could then switch to counting gulls or Bufflehead (the smaller back and white ducks). There are 22 Bufflehead and 12 gulls.

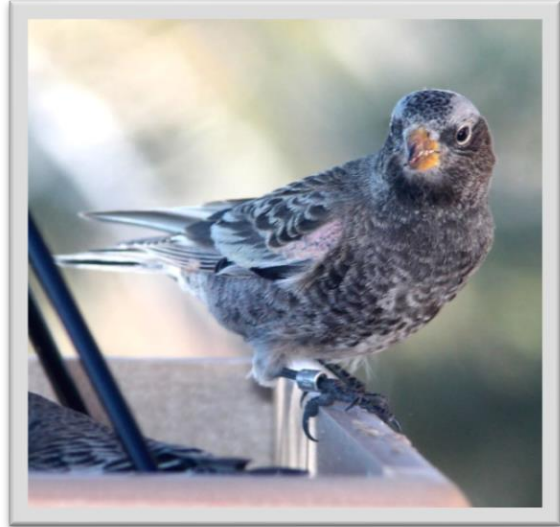


For more info about counting or for practice examples, visit the following webpages (they really help!!!)

1. USFWS Aerial Observed Training: <https://www.fws.gov/waterfowlsurveys/forms/counting.jsp?menu=counting>
2. eBird Counting 101 and 201: <https://ebird.org/news/counting-101/> <https://ebird.org/news/counting-201/>

ID Guide

Photos top left to bottom right: © Steve Valasek / Flickr (CC BY-NC-ND 2.0), by [Alan Schimierer](#) / Flickr (Public Domain), © [Tom Benson](#) / Flickr (CC BY-NC-ND 2.0)



Black Rosy-finch

Black Rosy-finches can vary in color by age, sex, and time of year. **Overall, they have a darker, and cooler color palate than the other two Rosy-finches.** Adult males will have bolder and blacker body feathers than females and younger males. The top right is an example of a young male or a female. Its body feathers are a light charcoal over all, and it only has a little bit of the rosy highlighting.

The other two images show older males. The bottom is a good example of an older male later in the winter with dark black feathers and bold rosy highlights. The first image shows an adult male with some fresher feathers, which are edged in brown. Over time, these brown edges wear down, leaving the bird with jet black feathers in time for breeding season.

As seen here, Black Rosy-finches can have a variable amount of brown in the backs. **But this brown has a cooler hue and is often mixed with grays, as compared to the Gray-crowned Rosy-finch.**

Photos: © Donna Pomeroy / Flickr, used with permission



Gray-crowned Rosy-finch

Gray-crowned Rosy-finches can be easily confused with the other two species of rosy-finch. **Look for the abundance of warm brown tones in the backs and chests of this finch.** This is a contrast to the cooler

brown backs of the younger Black Rosy-finches. There are two subspecies of Gray-crowned Rosy-finch that occur in the Rocky Mountains: Interior and Coastal (Hepburn's). You can tell them **apart by the amount of gray they have in their head.** The interior form (left) has a swath of gray from the eye going around the back of the head. The Coastal (Hepburn's) form (right) has gray covering most of the head.

Brown-capped Rosy-finch

Brown-capped Rosy-finches are rare in Utah and are most often found in Colorado. They can be easily confused with Gray-crowned Rosy-finches. **Brown-capped also have the warm browns of the Gray-crowned, however they lack the bold gray crown and face.** Instead they have a rich warm brown to grayish brown head. Brown-caps also have more extensive rosy coloring in the flanks than the other two rosy-finch species.



Rosy-finch Feeder Counts

Feeder Site Description Datasheet

Please fill out the following datasheet once for each non-RFID feeder you are going to conduct counts at. This information will help us understand where your feeder is and allow researchers at Utah State University to get environmental data for the surrounding area. **Please ensure your feeder is somewhere within the winter range of the Black Rosy-finch (see map below).** The shaded area shows the normal winter range, while the dashed line represents the range extent of the Black Rosy-finch. Locations of feeders on private property will never be shared. If you have concerns with sharing location information, please contact a project coordinator to discuss options.



RFID Feeders: You do not have to fill out this sheet for an RFID-enabled feeder. One has already been filled out for you.

Name: _____

Email: _____

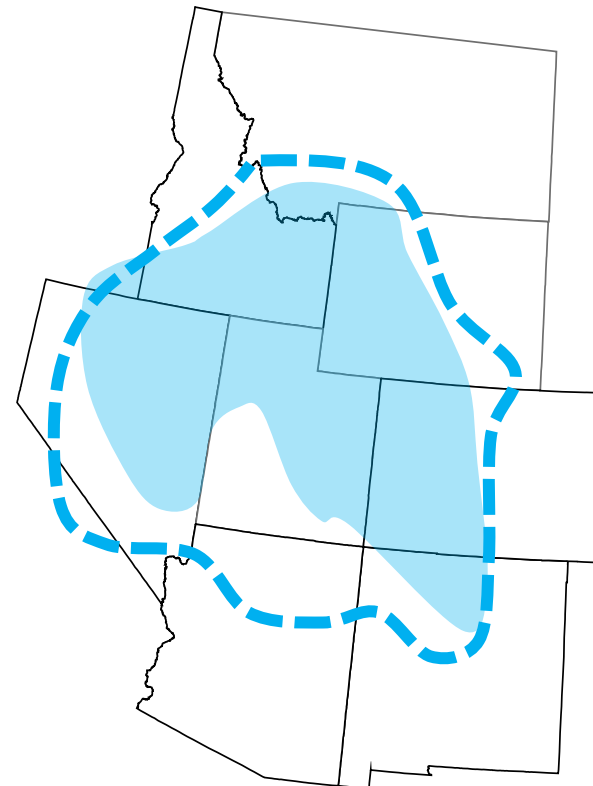
Feeder Name * : _____

State: _____

Coordinates: _____ °N

_____ °W

Elevation (if available): _____ feet



* If this is a public feeder, use the place's name [i.e., Stokes Nature Center].
If this is your personal feeder, use your last name.

Rosy-finch Feeder Counts

Survey Datasheet



Please fill out the following datasheet at least once during each 3-week count window. A different sheet must be used for each count you conduct. **Record weather information** during your count. You can use your favorite weather app for local conditions. Estimate snow depth to the best of your ability. During the 20-minute count, **record the highest number of individuals of Black Rosy-finch**, followed by Gray-crowned and Brown-capped Rosy-finches, and chickadees. Feel free to record other birds you see too, but Black Rosy-finch is the priority.

RFID Feeder Counts: Be sure to use the “test tag” inside box to check in and check out of your count. During or after your 20-minute count, look at the legs of a max of 100 rosy-finches, or for 10 minutes surveying for banded birds. Record the # birds banded and the # of birds surveyed (max 100).

Name: _____ Feeder Name: _____ Date (mm/dd/yy): _____

Start Time (24-hr, hh:mm): _____ Protocol Type (Circle one): RFID – Structured Non-RFID – Structured

End Time: _____ RFID – Opportunistic Non-RFID – Opportunistic

Weather

Temperature °F

Wind Speed mph

Wind Direction

Snow Depth "

Precipitation (circle all that apply)
 Clear Cloudy
 Wintery-
 Rain Mix
 Snow Fog

Bird Counts

Species	Highest # Observed
Black Rosy-finch	<input type="text"/>
Gray-Crowned Rosy-finch	<input type="text"/>
Brown-capped Rosy-finch	<input type="text"/>
Black-capped Chickadee	<input type="text"/>
Mountain Chickadee	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>
_____	<input type="text"/>

RFID Feeders Only	
# Birds Banded	# Birds Surveyed
<input type="text"/>	<input type="text" value="(max 100)"/>

Points of Contact

The Black Rosy-finch Study is supported by a number of dedicated partners. If you have questions or concerns, please contact one of the science staff below.

If you have questions about the study and how we are collecting data and why, contact Kim Savides of Terri Pope. If you have a question regarding data collection, entry, or a feeder issue, contact Janice Gardner or Coper Farr.

Name	Agency / Organization	Contact
Kim Savides Master Student Project Coordinator	Utah State University	kim.savides@gmail.com
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Cooper Farr Ecologist & Volunteer Coordinator	Tracy Aviary	CooperF@tracyaviary.org (801) 596-8500 x110
Terri Pope Biologist	Utah Division of Wildlife Resources	tpope@utah.gov (385) 321-3289