



Montana Fish Wildlife & Parks hopes you enjoy your visit to Freezout Lake Wildlife Management Area and the spectacle of the white goose migration. With appreciation, respect and understanding you and the white geese can return to Freezout for many years to come.

For more information, visit:

fwp.mt.gov



**Montana Fish
Wildlife & Parks**

Many thanks to Michael T. Schwitters for his contributions to this publication

*Sai Yai ksi Q
Tsi tan Toh Pi*

“WHEN THE GEESE COME”
(Blackfoot)

The spring migration of white geese at Freezout Lake Wildlife Management Area Each spring, usually about mid-March, flocks of white geese begin to arrive at Freezout Lake Wildlife Management Area as they make their way from southern wintering areas to nesting areas in the far north. Some years their numbers reach more than 100,000 individuals. The bulk of these geese usually come through the last two weeks of March.



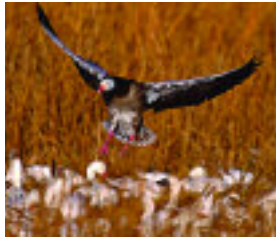
What are the white geese?

Lesser snow goose (*Chen caerulescens*): The lesser snow goose is the most common waterfowl species at Freezout Lake in spring and fall. The adult lesser snow goose is white overall with black primary feathers at wing's end. Another important distinguishing feature is its heavy pinkish bill that it uses to "root" or dig roots and tubers for food. This digging often stains the head a yellow-brown due to mineral oxides in the soils.

❏ *Why would geese be white? What factors in their natural history have made them evolve to be so visible? Interesting questions with no clear answers! Hint: They do not live in snow, or even like snow.*

Ross' goose (*Chen rossii*): The Ross' goose is a smaller species that resembles the lesser snow goose. To differentiate, look for a smaller and whiter head with a smaller bill. Ross' geese generally graze more and root less and tend not to stain their heads as lesser snow geese do. Ross' geese are more common in flocks seen after the start of April.

Blue goose: Some snow and Ross' geese are not predominately white. They are still lesser snow or Ross' geese but are dark color morphs of those species. These "blue" geese have dark bodies and wings with white heads. Here in the Pacific Flyway you'll find approximately one blue lesser snow goose to every 1,000 white lesser snow geese, and one blue Ross' for every 5-10,000 white Ross'.



W. STONE SHERMAN

Immature lesser snow or Ross' goose: You will likely see some white geese with light gray feathers, usually on the back and neck. These are not blue geese but rather birds-of-the-year, hatched the previous summer that have not yet "molted" (shed old feathers, grow a new set) into their full white plumage. These young birds will attempt to stay with their parents all year until they reach the nesting grounds the following summer. Mortality or separation breaks family units down over time and so immature birds tend to represent a higher percentage of flocks that pass through late in the migration.



SHAN CUNNINGHAM

Where are they coming from? Where are they going? What route do they take?

Most white geese that migrate through Freezout Lake in the spring have wintered in the Central Valley of California. Lesser snow geese prefer the Sacramento Valley, while Ross' geese mostly use the San Luis Valley.

As spring approaches in late February the flocks move to "staging" or gathering locations in northern California and southern Oregon. The next stop is Freezout Lake. The geese arrive here after a nonstop flight of about 600 miles in 15 to 18 hours.

From Freezout Lake, the white geese push north to the prairies of Saskatchewan and Alberta. They then move north to the arctic. Several distinct populations of geese are



KERRY E. NICKOU

part of this northward movement. The Ross' geese find their nesting grounds in the central Canadian arctic (the Queen Maude Gulf Migratory Bird Sanctuary). The bulk of the lesser snow geese nest in the western Canadian arctic (Bank's Island and the delta of the Anderson River). A small segment moves westward to nest within the Prudhoe Bay oil field of Alaska. A larger segment continues even further west to Russia's Wrangel Island. Geese begin to arrive on arctic nesting grounds in late May when midnight sun melts the remaining snow and provides long days to rapidly raise young.

move through Freezout Lake early in the white goose migration.

A **dark blue neckband** would be found on a snow goose from the Prudhoe Bay area of Alaska.

A few **yellow neckbands** on snow geese are seen in Pacific Flyway flocks. These geese were marked in the central Canadian arctic. Most of these birds migrate through the central part of North America.

A Ross' goose might carry a **bright blue** (central Canadian arctic) or a **yellow neckband** (western Hudson Bay). The most commonly seen collars on Ross' Geese at Freezout Lake are

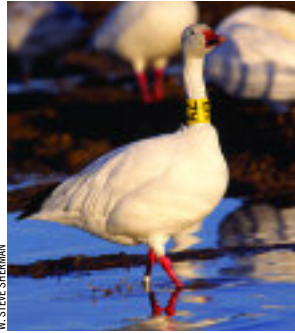
bright blue. Ross' geese neckbands are generally seen late in the migration.

Specific banding efforts come and go as relevant management needs and questions are identified and funds become available. A neckband may be on a surviving goose from a completed study or it may be recently applied for

continued or new investigations. As long as there are management responsibilities and commitments to the geese, the useful research tool banding is will likely remain in the continued pursuit of our better understanding.

So back to the question— why is a white goose white?

We are not entirely sure, but they may have evolved white to find one another. For a white goose, safety comes in numbers. They are highly “gregarious,” meaning they associate together in large numbers. The flock is all-important to these geese. It means safety from predators (many eyes keep watch) and it means food (many individuals to find the best food sources). Geese can quickly find other geese simply by looking for the large patch of white that is the flock. Not unlike the geese but for different reasons, you also take advantage of this coloration as you search for white geese during their annual appearances throughout the Freezout Lake area.



W. STEVE SHERMAN

WHITE GEESE MIGRATION ROUTES



GRAPHIC DESIGN AND LAYOUT BY LUNE DURAN



Why Freezout?

Travel can be an arduous undertaking. At the end of each leg of our own journeys we like to find a place to refuel, a safe motel with perhaps a pool and a nice restaurant close by. It is the same with the geese. The fuel they use to flap their wings over long distances is body fat. Geese must replenish this fat to continue their journey. Additionally, in the spring they must build fat reserves to sustain them during nesting when they do not eat for more than three weeks while the eggs incubate.

The safe motel with a pool is Freezout Lake. The flocks find safety in the lakes and ponds of the Wildlife Management Area.

The good restaurant is found in the agricultural fields of the Greenfields Bench a few miles to the east. Each day the geese fly to the harvested malt barley fields to feed on waste grain from the previous fall's harvest. These forays represent their refueling stop. Large quantities of grain are consumed and some fertilizer is left behind!

The geese feed twice a day. They leave the lake at sunrise and return between approximately 10:00 and 11:30 a.m. The return flight in late morning is often very spectacular. They loaf most of the day on the lakes and ponds before returning to the fields between approximately 4:00 and 5:00 p.m., and then fly back to the lake again after dark. This routine is repeated daily. On average a white goose spends about four such days at Freezout Lake.

What else do we know about the white geese?

How many are there? How long do they live?

There have never been as many white geese in North America as there are now. In the Pacific Flyway (including Freezout Lake and the rest of this western half of Montana) there are 6-

700,000 snow geese and several hundred thousand Ross' geese. And the populations are increasing! Some biologists estimate the rate of growth exceeds ten percent per year. Further east, the population of white geese that migrates through the central part of the continent and nests around Hudson Bay has reached over six million individuals! These vast numbers of Missouri and Central Flyway geese are causing conflicts with agriculture and serious long lasting—if not permanent—damage to the arctic habitats where they summer. In an ironic twist, the nutritional boost they receive from agriculture has enhanced winter survival such that those populations are now out of balance with their fragile arctic nesting and brood-rearing areas.

Snow and Ross' geese mate for life. Pair bonds are formed on wintering grounds when the birds are approaching three years old. If one of a pair dies, the surviving bird may form a new pair bond.

“How long do they live?” does not have a straightforward answer. For arctic nesters, if the hatch comes late and the arctic winter comes early, most of an entire generation of young may be left behind to perish. For geese that live to adulthood there are many sources of mortality. Predators, disease, hunger, injuries and hunting all take their toll. The question might best be answered with an experiment: Start with 100 adult white geese. In two years half will have died. In five years there will only be ten remaining. At the end of ten years there may only be one bird alive out of the original 100.

How do we learn about the lives of the white geese?

State and national wildlife agencies conduct studies of white geese and other wildlife species. Information learned is used to understand how people and wildlife may coexist on the landscape. Studies are funded through hunting license sales, taxes on hunting related goods, state wildlife grants, and private contributions. One technique proven useful in the study of the white geese is the marking of individual birds with leg bands or neckbands, or both. Radio collars with signals detected by handheld receivers or satellites are also utilized.

As you look at the white geese migrating through Freezout Lake you might see a goose with a neckband. The color of the neckband will tell you where the goose came from. The geese are generally banded on arctic nesting grounds in summer, with each area having a specific neckband color.

Black neckbands are found on snow geese coming from the western Canadian arctic. These are the most common neckbands seen in Freezout's migrating flocks.

Red neckbands were placed on snow geese from Wrangel Island, Russia. There are not many of these. Wrangel Island is in remote northeast Russia where research cost is high. The Russian geese