

Culture- and place-based learning at schools and Indigenous communities: **Lili Naves**



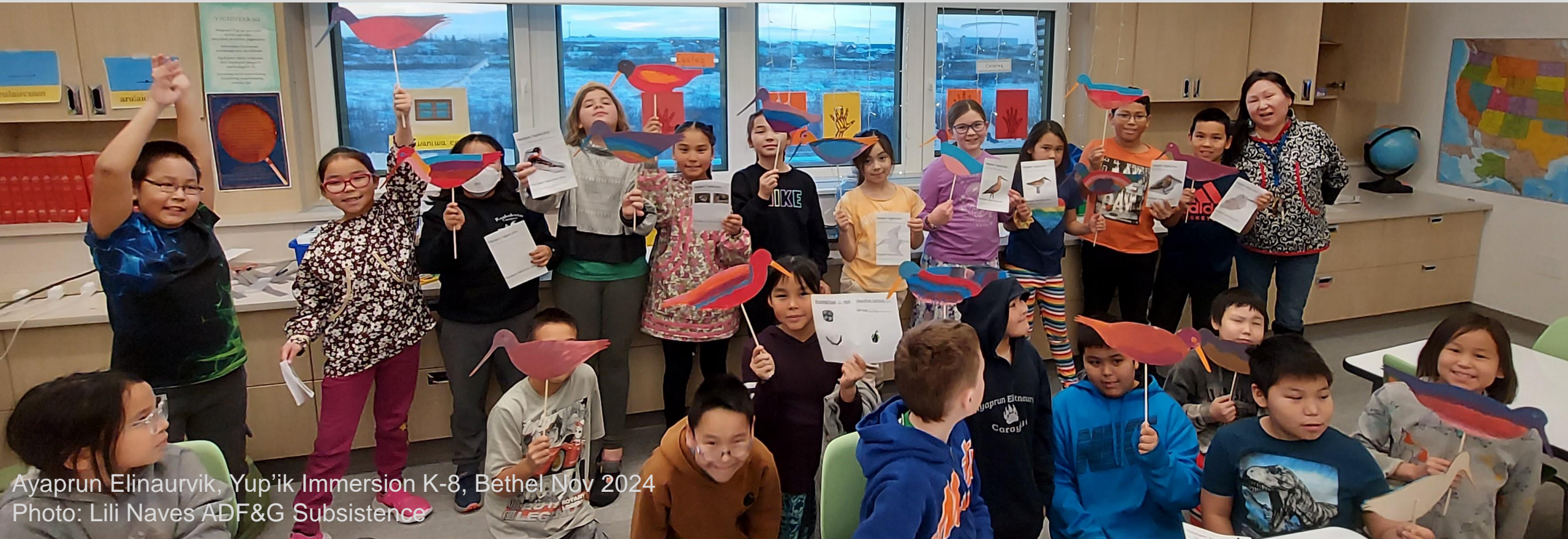
Shorebirds for today & tomorrow: Culture- and place-based learning at schools and communities in the Yukon-Kuskokwim Delta

Liliana Naves: Alaska Department of Fish and Game (ADF&G) Division of Subsistence

Richard Lanctot: U.S. Fish & Wildlife Service, Migratory Bird Management

Jerilyn Kelly: Native American Fish and Wildlife Society

Jen Curl, Deb Lawton: ADF&G Division of Wildlife Conservation-Wildlife Education & Outreach



Ayaprun Elinaurvik, Yup'ik Immersion K-8, Bethel Nov 2024
Photo: Lili Naves ADF&G Subsistence

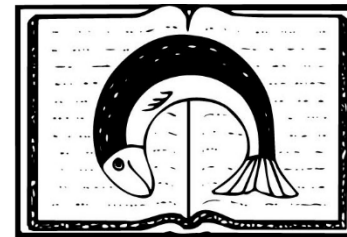


Pūkorokoro Miranda
Shorebird Centre

The **Cornell** Lab  of Ornithology



**ANCHORAGE
MUSEUM**



Lower
Kuskokwim
School
District

2017-2019



THE CONDOR
Ornithological Applications

AmericanOrnithology.org

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RESEARCH ARTICLE

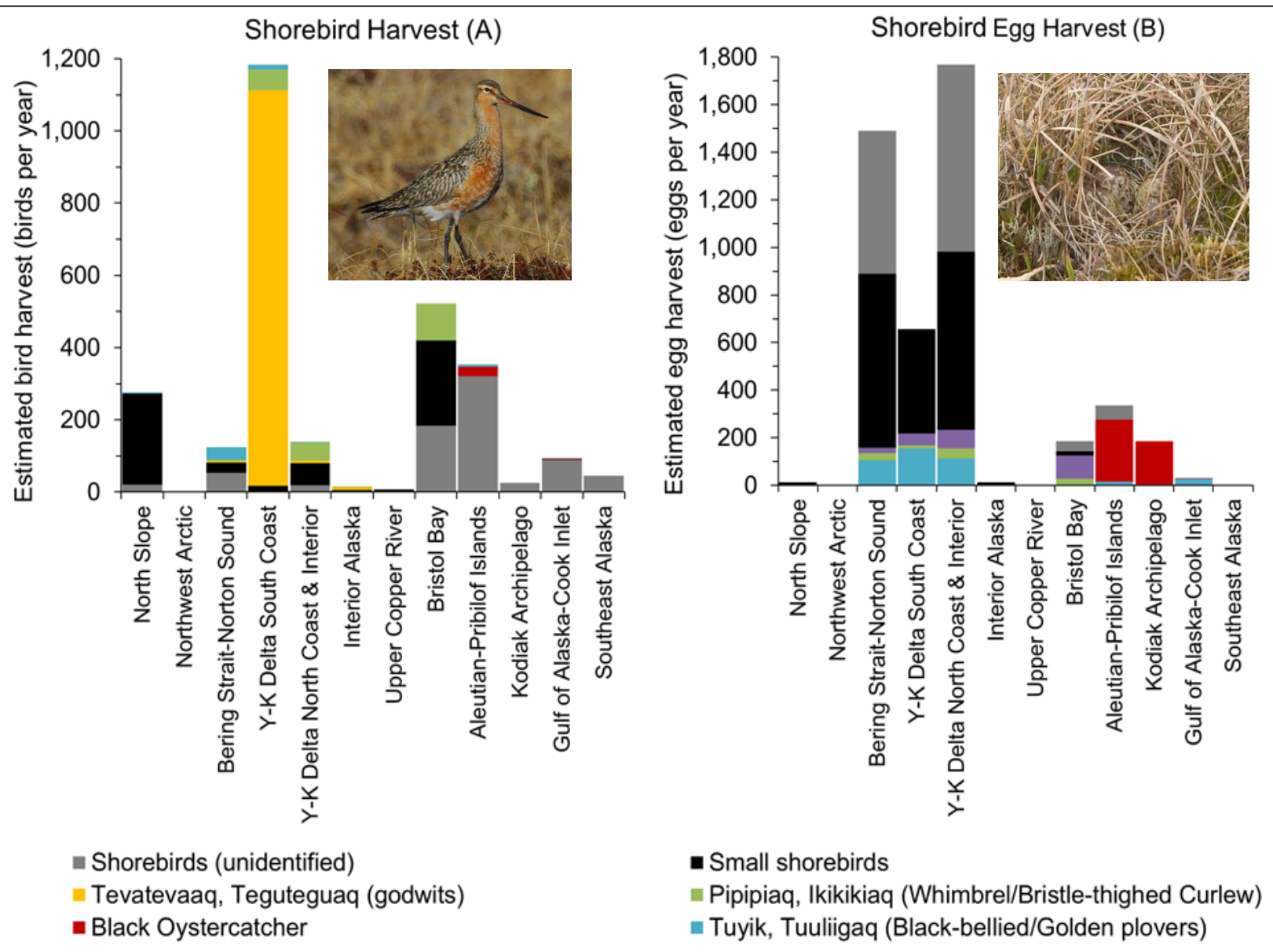
Shorebird subsistence harvest and indigenous knowledge in Alaska: Informing harvest management and engaging users in shorebird conservation

Liliana C. Naves,^{1*} Jacqueline M. Keating,¹ T. Lee Tibbitts,² and Daniel R. Ruthrauff²



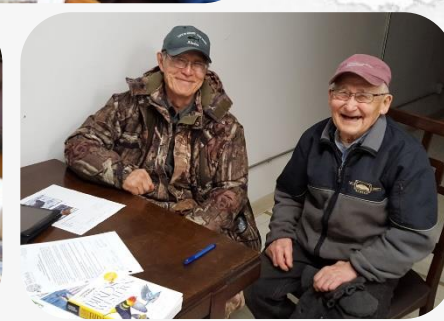
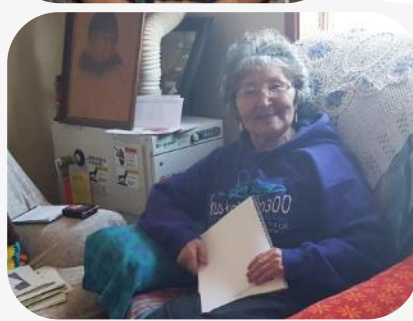
Shorebird harvest in rural Alaska, annual average 1990-2015

dataset = 775 community-years



- Alaska rural shorebird harvest = 2,783 birds/year
- godwits = 1,115 birds per/year
- Alaska rural shorebird egg harvest = 4,676 eggs/year

Yup'ik Indigenous knowledge about shorebirds



Shorebird harvest and uses

- shorebirds and their eggs are harvested in relatively small amounts, but supplement food sources
- used only for food
- Yup'ik families and children enjoy egg harvesting



Education: learning to hunt



Practice bird hunting with a slingshot, Gambell, Alaska, 1940s
Photo: Steve McCutcheon Collection, Anchorage Museum B1990.14.4.06263



Yup'ik values

Become a hunter

Elders

Sharing

People are part of nature

Tradition, culture, language

Frances Hale and granddaughters, Hooper Bay, Nov 2017

Photo: Lili Naves ADF&G Subsistence

A joyful soundscape



American golden plover / tuyik
Photo: Milo Burcham



Bodsworth (1955) Last of the curlews
Illustration: T. M. Shortt

Place- and culture-based shorebird conservation outreach:

- co-stewardship for shorebird ecology and conservation
- transmission of traditional knowledge, learning and use of Yup'ik language
 - youth interest in learning and in nature



Migratory shorebirds as learning subject

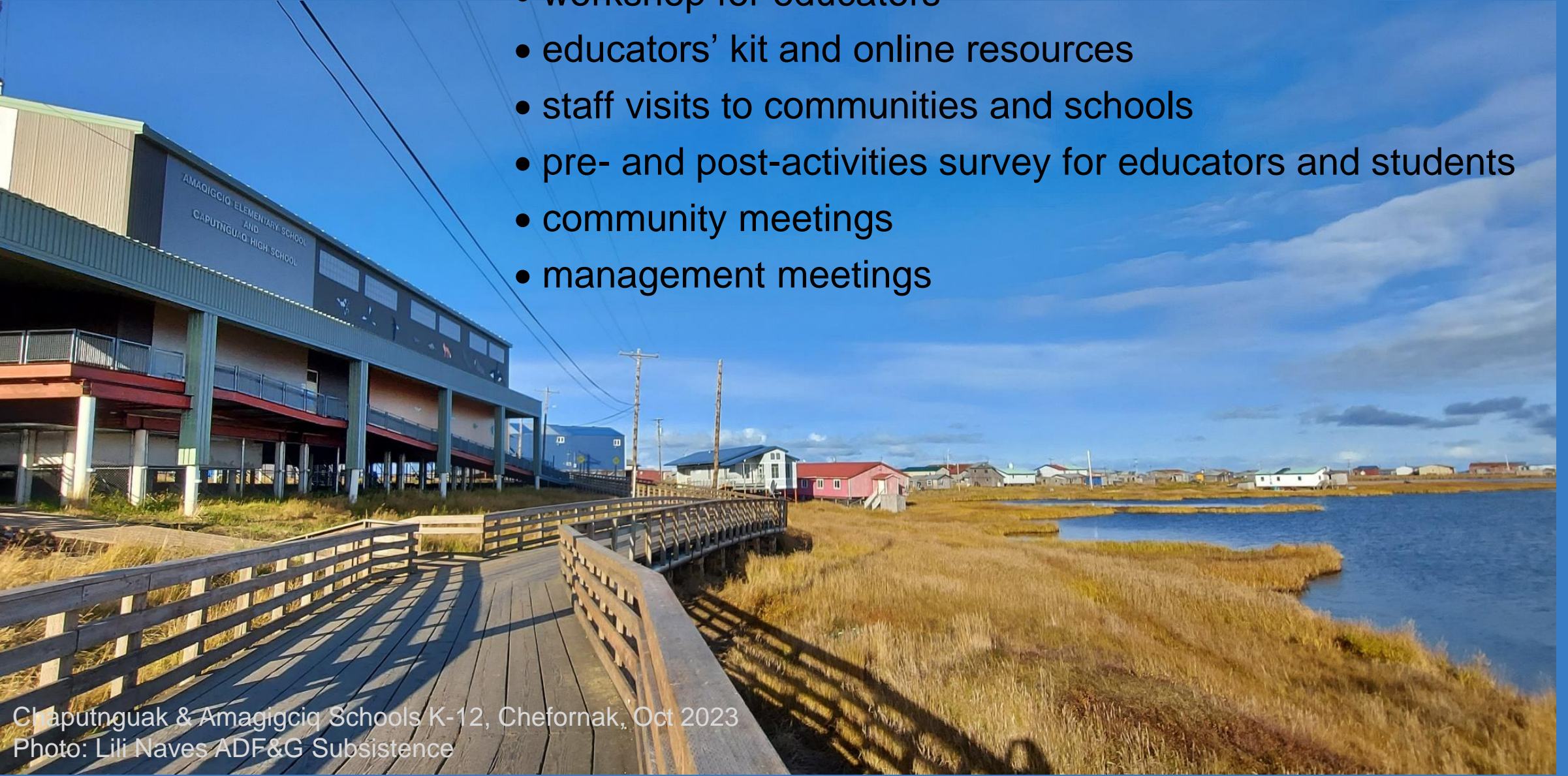
- Science
- Geography
- Math
- Language Arts:, English and Yup'ik
- Social Emotional Learning
- Yuuyaraq (Yup'ik Values, Personal Life Skills, and Health)



Kuinerrarmiut Elitnauryiak 27 Quinhagak, Nov 2024
Photo: Lili Naves ADF&G Subsistence

Program components, audience-specific

- workshop for educators
- educators' kit and online resources
- staff visits to communities and schools
- pre- and post-activities survey for educators and students
- community meetings
- management meetings



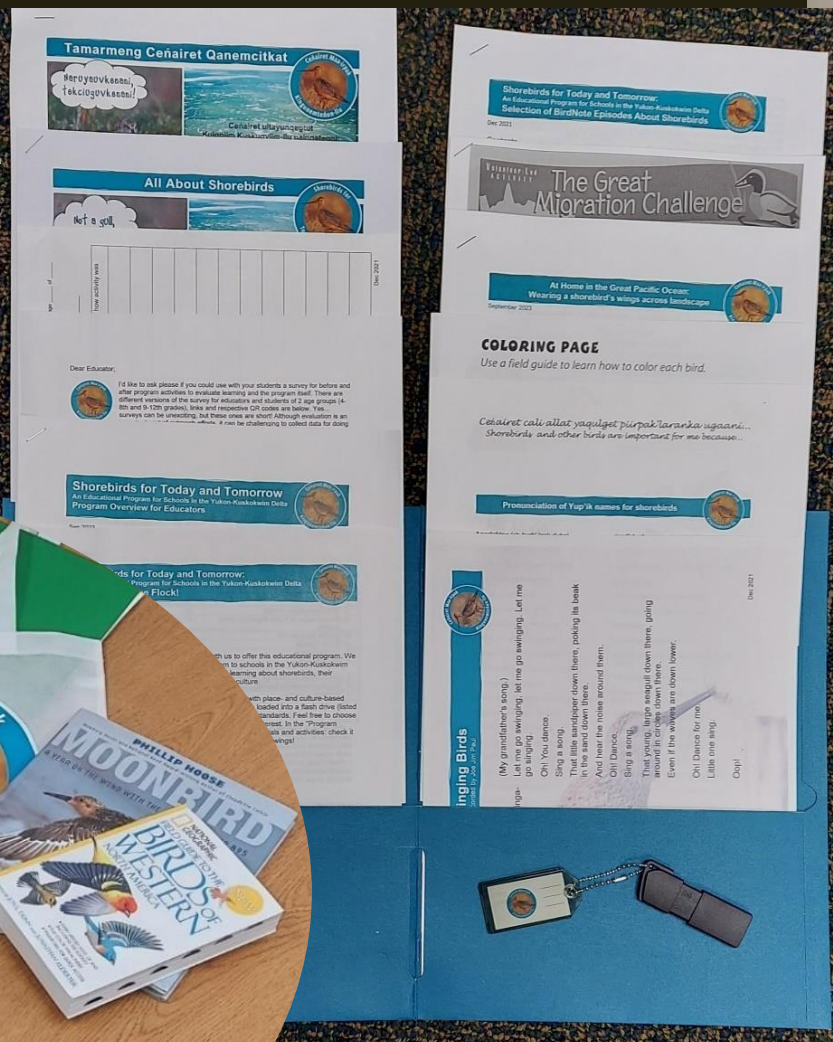
Activities & materials

(blue: also in Yup'ik)

- 6-page pamphlet + bird ID key
- companion slides
- movie festival, *Voices of the Pacific Flyway*
- bird vocalizations (audio)
- Yup'ik shorebird names (audio)
- swinging Birds (song)
- coloring sheets
- counting eggs in your bucket
- migration challenges (games)
- stickers
- godwit flock
- shorebird models
- empathy essay



Shorebird educators' kit



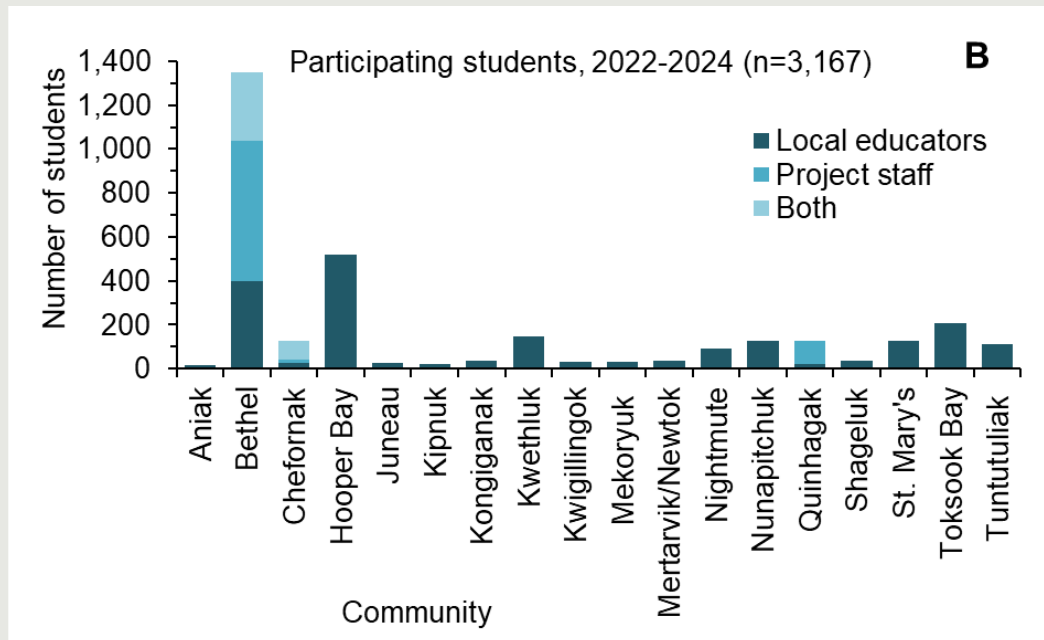
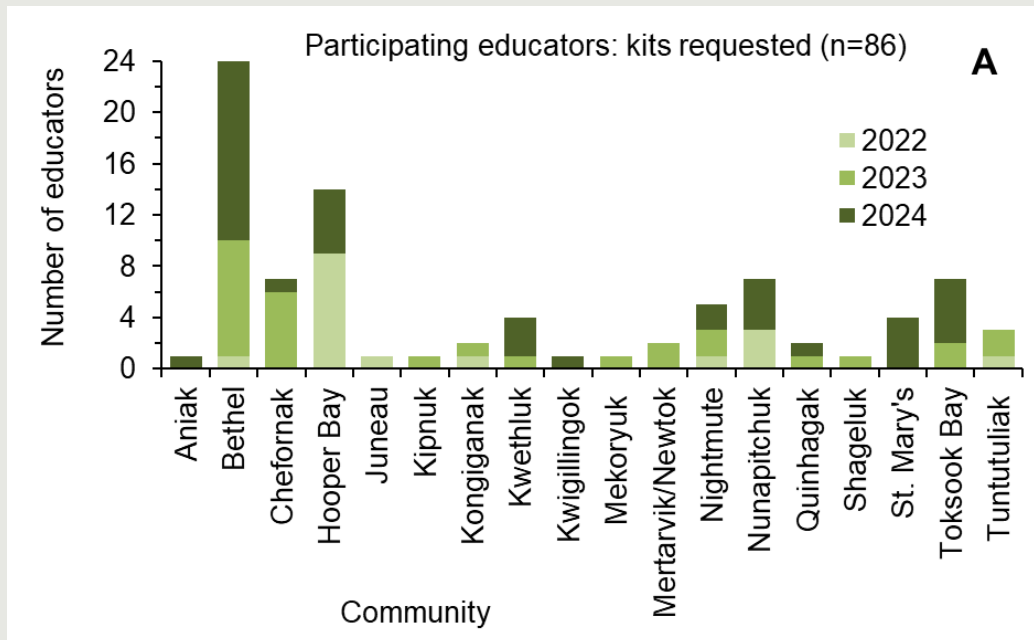
Measures of effort 2022-2024

youth

- total 3,167 students in 18 communities
- 87 educator kits distributed: 2,407 students in 18 communities
- 76 in-person classroom activities by project staff: 1,158 students in 3 communities
- Pukorokoro Centre presentation: 174 students, 4 communities

adults

- Lower Kuskokwim (2019, 2022-2024) and Kuspuk (2024) school districts conferences
- 96 educators attended 9 workshops
- 8 community meetings, 145+ people
- harvest management meetings AMBCC, AVCP-WCC



Early-1900s Yup'ik dance mask connects Indigenous tradition and shorebird conservation

- collections, museum archives
- ethnographical, art history literature
- shorebird life history
- traditional Yup'ik worldviews
- shorebird conservation history



Ikamrailnguq, Napaskiak, early 1900s. Sugg'erpak, long-billed shorebird (MAI 9-3415, MQB 70.2006.41.1)
Photo: Pauline Guyon, musée du quai Branly-Jacques Chirac

Next steps

- Wrap up 2024-2025 fall-winter cycle
- Anchorage Museum partnership
- Seek funding for upcoming years



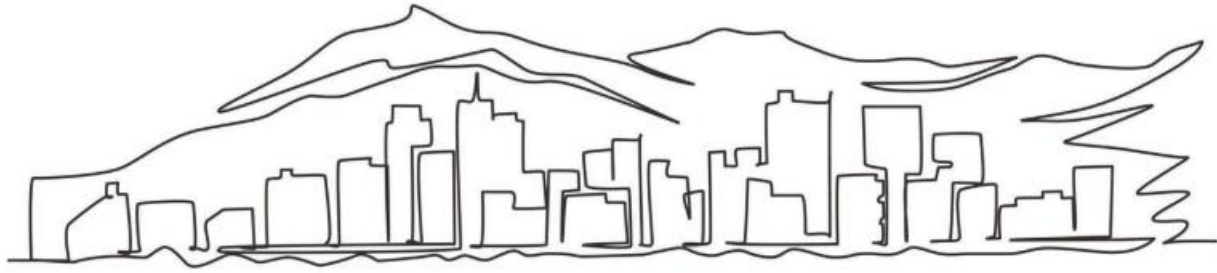


Thank you!
liliana.naves@alaska.gov

Ayaprun Elinaurvik, Yup'ik Immersion K-8, Bethel Nov 2024
Photo: Lili Naves ADF&G Subsistence

Alaska Birding Trail: **Callie Gesmundo**





Bird Walk Anchorage

Discover, Protect, Inspire

A birding trail that empowers conservation by raising awareness and encouraging action.

Callie Gesmundo, U.S. Fish and Wildlife Service
ASG Annual Meeting 2024

WETLAND WANDERER

LESSER YELLOWLEGS OF BASHER BOG

BOREAL BIRTHPLACE

Lesser Yellowlegs make their summer home in the forest-tundra habitats across Canada and Alaska, including wetlands around Anchorage like Basher Bog. Wetlands throughout southcentral Alaska provide important habitat for this species to nest and raise chicks. The chicks, feathered and walking within hours of hatching, learn to fly in just 22 days! Once flighted, the chicks become independent from their parents and migrate later, without parental guidance along the way.

EPIC MIGRATIONS

These feathered ambassadors leave Alaska in late summer and travel south to their wintering grounds, stopping periodically before reaching the southern United States, Mexico, Caribbean Islands, and South America. Local biologists discovered where Anchorage-breeding Lesser Yellowlegs stop during their migrations and where they spend the winter by attaching GPS transmitters to birds. Some birds will travel up to 16,500 miles annually! For a 15-year-old bird, that is the equivalent of flying to the moon!



CONSERVATION

The Lesser Yellowlegs is one of the fastest declining shorebirds in North America. They face many threats during their annual lifecycle including habitat loss, agrochemical pollution at migratory and wintering sites, unregulated hunting in some countries, and even our beloved pets. When visiting wetlands in and around Anchorage, you can help by keeping your dog on a leash. When at home, they also benefit from having your cat kept on a leash or indoors.

DID YOU KNOW?



Soon after Lesser Yellowlegs chicks hatch, their parents take them on a journey to seek out freshwater ponds that provide plentiful food. On this trek, the flightless chicks sometimes need to cross busy roads and encounter dangerous predators.



If you hear a bird calling repeatedly near you, you might be close to its nest or chicks! Back away slowly and be careful where you step!



If a 737 series 800 commercial jet was traveling the same distance as a Lesser Yellowlegs migrates in a year, it would have to refuel 5 times using 37,000 gallons of fuel!

Look and listen for Lesser Yellowlegs perched on the tops of trees standing guard over their territories, nests, or young chicks.



THIS PANEL WAS MADE POSSIBLE BY THE FOLLOWING AGENCIES:



WETLAND WANDERER

LESSER YELLOWLEGS OF BASHOR BOG

BOREAL BIRTHPLACE

Lesser Yellowlegs find their spawning grounds in the rich, acidic, boggy habitats of wetlands and shallow marshes. Wetlands throughout the world provide important habitat for this species to nest and raise chicks. The birds are most abundant in the wetlands of the Pacific Northwest and walking within hours of hatching, they fly to the coast of the United States. They become independent from their parents and migrate to the west without parental guidance along the way.

EPIC MIGRATIONS

These wetland dependents have adapted to jet streams and travel south to their wintering grounds, ranging periodically between the southern United States, Mexico, California, and South America. Great distances traveled, often a distance of 10,000 miles, are not unusual. They are able to fly to the west coast of the United States in the winter of 1971. They are able to fly to the west coast of the United States in the winter of 1971.

DID YOU KNOW?

Lesser Yellowlegs are one of the most abundant shorebirds in North America. They face many threats during their annual lifecycle including habitat loss, agricultural practices in migration and wintering sites, unregulated hunting in some areas, and even oil field development. When visiting wetlands to understand the bird, you can help by keeping your dog on a leash. When it goes out here on a leash or indoors.

Look and listen for Lesser Yellowlegs perched on the tops of trees standing guard over their territories, nests, or young chicks.

THIS PANEL WAS MADE POSSIBLE BY THE FOLLOWING AGENCIES:

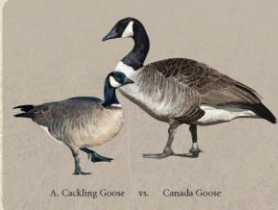
BIRDS OF EARECKSON AIR STATION



Aleutian Cackling Goose *Branta hutchinsii leucopareia*

When and Where?

The Aleutian Cackling Goose is Shemya's summer goose and can be found here from March through October. Peak numbers occur in May and September when birds are migrating. On clear sunny days in May and September, look for Aleutian Cackling Geese migrating in flocks of hundreds of birds over the island.



Look Familiar?

The Aleutian Cackling Goose is a subspecies of Cackling Goose, which is a close relative of the more familiar Canada Goose. Differences between them are size and color. Aleutian Cackling Geese are smaller, darker, and have a black neck color beneath the whiteneck collar.

Migration

Aleutian Cackling Geese only breed in the Aleutian Islands and migrate across the North Pacific Ocean to wintering grounds in California and Oregon.

Almost Extinct

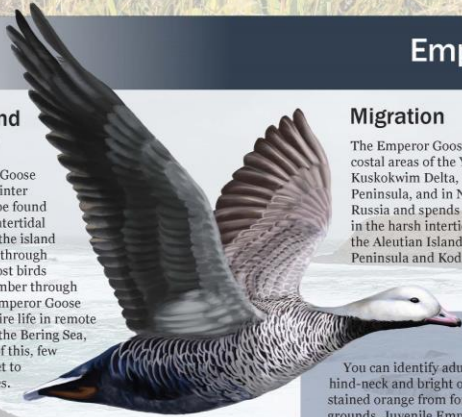
After the introduction of Arctic Fox to the Aleutians by Russian Fur trappers around the 1800s, the population of Aleutian Cackling Geese plummeted to the brink of extinction. The United States Fish and Wildlife Service listed the Aleutian Cackling Goose as endangered in 1967 and began removing the invasive foxes from the Aleutian Islands and transplanting captive reared geese fox-free islands. These actions resulted in the population rebounding and the Aleutian Cackling Goose was removed from the Endangered Species List in 2001. These conservation measures resulted in one of the greatest conservation success stories of the 20th century.



Emperor Goose *Anser canagicus*

When and Where?

The Emperor Goose is Shemya's winter goose. It can be found in the rocky intertidal areas around the island from October through April, with most birds present November through March. The Emperor Goose spends its entire life in remote areas around the Bering Sea, and because of this, few people ever get to see this species.



Migration

The Emperor Goose nests in coastal areas of the Yukon-Kuskokwim Delta, Seward Peninsula, and in Northeast Russia and spends its winters in the harsh intertidal areas of the Aleutian Islands, Alaska Peninsula and Kodiak Island.



Easy to Identify

You can identify adult Emperor Geese by their striking white head and hind-neck and bright orange legs. In the summer, their white head becomes stained orange from foraging in iron-oxide rich pools on the breeding grounds. Juvenile Emperor Geese have speckled gray heads and less vibrant orange feet. Juveniles will replace the gray feathers on their head and neck gradually during their first winter until they are nearly all white for their first northbound migration back to the breeding grounds.



BIRDS OF EARECKSON AIR STATION



Lapland Longspur *Calcarius lapponicus*

Female



When and Where?

Lapland Longspurs are the most common breeding bird on Shemya Island. It is estimated that around 500 pairs breed on the island each year. You can often see males in summer performing their territorial flight display where they fly up in the air and slowly glide back to the ground while singing a complex series of jumbled notes.

What's in a Name

The Lapland Longspur gets its name from the Lapland Region of Scandinavia, where it was first discovered, and its unusually long claw on its hind toe.



Plumage Differences

During the summer, male Lapland Longspurs sport a striking look with a black head and throat and reddish nape of the neck. While females have a more subdued brown and streaked appearance, with less contrast than the males. In the fall, both sexes replace their feathers into a less vibrant, light brownish winter plumage.

Snow Bunting *Plectrophenax nivalis*

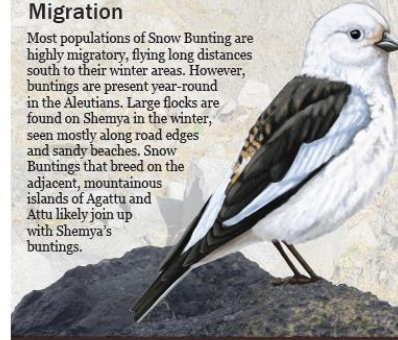
Migration

Most populations of Snow Bunting are highly migratory, flying long distances south to their winter areas. However, buntings are present year-round in the Aleutians. Large flocks are found on Shemya in the winter, seen mostly along road edges and sandy beaches. Snow Buntings that breed on the adjacent, mountainous islands of Agattu and Attu likely join up with Shemya's buntings.

When and Where?

Snow Buntings are found in polar regions worldwide. They nest in rocky crevices and fissures in boulder fields. Where human structures are present, they will use artificial crevices like pipes, barrels, and construction rubble. On Shemya, Snow Buntings utilize both natural and artificial nesting habitat.

Female



Unique Plumage Changes

Most birds change between breeding and winter plumages by dropping old feathers and growing new ones, also known as molting. However, male Snow Buntings use an additional technique: feather abrasion. Males will rub their bellies and heads in the snow, wearing down their brown, winter feathers revealing bright white feathers below.

Song Sparrow *Melospiza melodia maxima*



When and Where?

Song Sparrows are a common bird throughout North America, with the Near Islands representing the westernmost point in its range. The species lives on Shemya year-round and can often be found hopping around rocky beaches in the inter-tidal.

Unique Threats

With its whole life dependent on intertidal and near-tidal areas, this subspecies is prone to catastrophic local events, particularly oil and fuel spills—unique among Alaskan songbirds.



Bigger in Alaska

The subspecies of Song Sparrow that occurs in the outer Aleutians, the Giant Song Sparrow *Melospiza melodia maxima*, is unique in its size and habits. The Giant Song Sparrow is the largest of all subspecies and is over 50% larger than most subspecies found in the Lower 48.



THE COMMON GOLDENEYE PROJECT

A Collaboration Benefitting Birds and People



US Army Corps of Engineers

FLIGHT TO THE INTERIOR

The Common Goldeneye is a medium-sized sea duck that breeds worldwide in boreal forests. They nest in natural tree cavities, but hens will also use artificial nest boxes. These boxes allow scientists to study them during breeding and help better manage the species.

In 1997, the U.S. Fish and Wildlife Service in collaboration with the U.S. Army Corps of Engineers installed Common Goldeneye nest boxes on the Chena River Flood Control Project. Nest boxes are monitored each summer to track how many are used, the date nests are started, if nests survive, and if hens and ducklings return to the area each year.

Common Goldeneyes arrive in the interior of Alaska in mid-April after spending their winter in the northern Pacific Ocean. Hens start their nests in late April, laying 8 eggs, and then incubating for about 28 days. Males leave the breeding area before eggs hatch, migrating to molting areas where they drop and regrow their wing feathers.



- Summer
- Year-round
- Winter

BRACE FOR IMPACT



Within 24 hours of hatching, a hen will fly repeatedly to the nest entrance hole, eventually sitting or swimming below the cavity and calling. Ducklings jump from their natural cavity or nest box one after another to the ground, bouncing off vegetation, and quickly follow the hen to nearby water.



Scan to see a hen with her ducklings!

THE FUTURE IS BRIGHT

Besides a better understanding about Common Goldeneye nesting and population ecology, this study provides students with training and field experience.

Many who have worked on this project are now professionals working in universities, federal and state agencies, and national and international migratory bird and wetland conservation organizations.

Did You Know?

Common Goldeneye hens often use the same nest box each year. One hen came back to the same box and successfully hatched ducklings every year for over 10 years!



Buffleheads, Common Mergansers, Boreal Owls, and Red Squirrels also benefit by using Common Goldeneye nest boxes.



In flight, Common Goldeneye wings make a distinct whistling sound. Listen by scanning below!



Table with columns for months (J, F, M, A, M, J, J, A, S, O, N, D) and rows for various bird species like Thrushes, Starlings, Pigeons, Waxwings, etc.

Birds of Anchorage, Alaska CHECKLIST. The Anchorage area offers a surprising diversity of habitat from tidal mudflats along the coast to alpine habitat in the Chugach Mountains bordering the city.

Anchorage Coastal Audubon Important Bird Area and State Wildlife Refuge BIRD CHECKLIST. Including Potter Marsh. Strung between the Ship Creek industrial center downtown and the busy Seward Highway south of the city is the incredibly rich Anchorage Coastal Important Bird Area (IBA).

Alaska Department of Fish and Game Viewing Home. Anchorage & Mat-Su Valley Wildlife Viewing. It could take a lifetime to see all the wildlife that Alaska has to offer but Anchorage is a good place to start.



- https://www.anchorageaudubon.org/about-2
https://anchorageparkfoundation.org/2023/04/birding-in-our-parks/
https://www.anchorageaudubon.org/s/anchorage-bird-checklist-high-res.pdf
https://www.anchorageaudubon.org/s/anchorage-coastal-iba-checklist-highres-final-for-web.pdf
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https://www.adfg.alaska.gov/index.cfm?adfg=birdviewing.hotspots
https://www.adfg.alaska.gov/index.cfm?adfg=viewinglocations.anchorage
https://www.alaska.org/guide/birding
https://www.anchorage.net/blog/post/why-your-birding-big-year-should-include-a-trip-to-anchorage
https://birdinghotspots.org/region/US-AK
https://www.ebird.org

Anchorage Birding Map. A detailed map of Anchorage with numbered birding sites and a legend for site types.

Alaska Department of Fish and Game Viewing Home. Where to Go Wildlife Viewing. Deciding where to go isn't always easy in Alaska. The state encompasses almost 590,000 square miles.

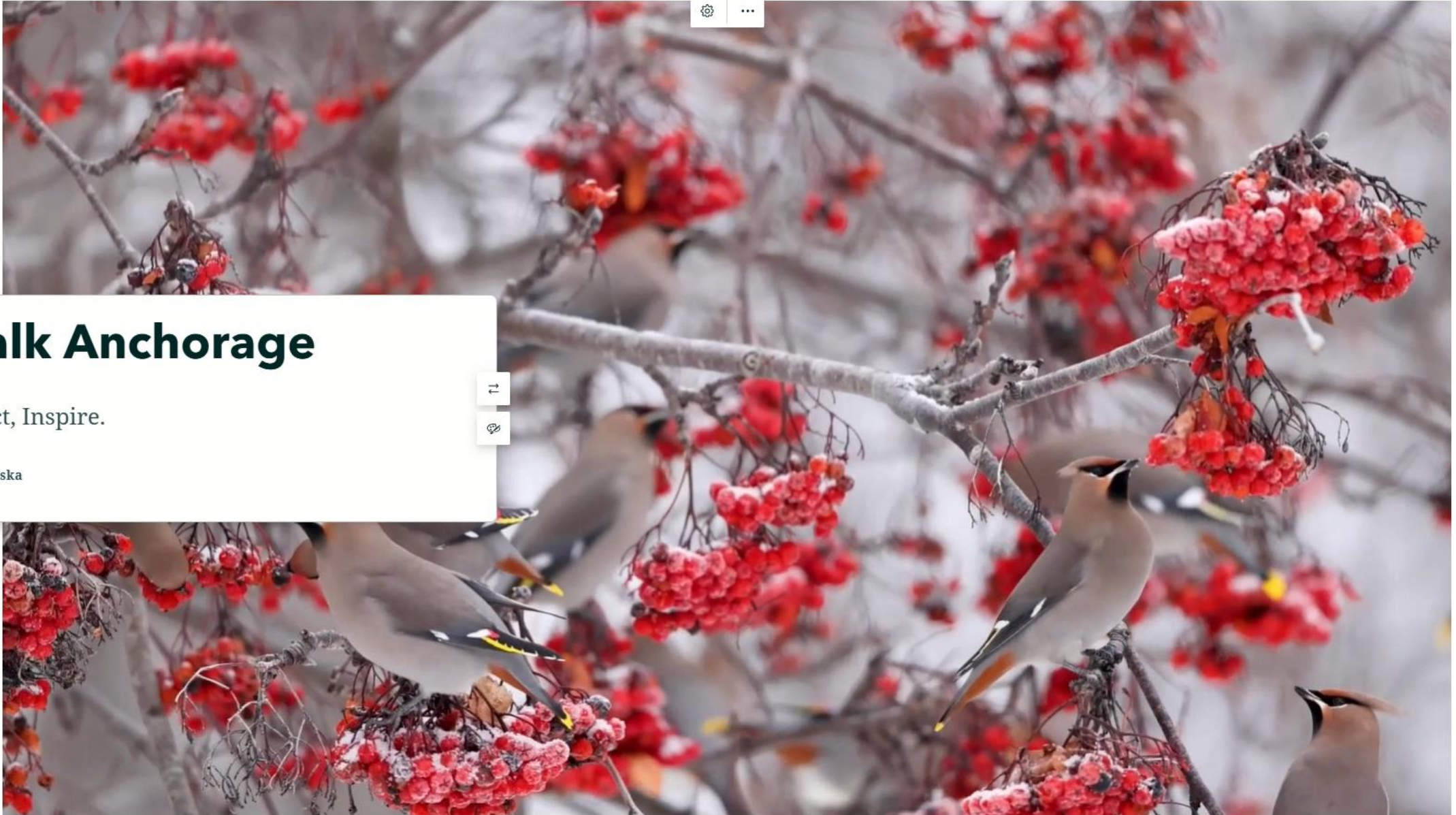
Map of Anchorage showing numbered birding locations (1-15) around the city and waterfront.

AllTrails Best bird watching trails in Anchorage. Explore the most popular bird watching trails near Anchorage with hand-curated trail maps and driving directions.

Map of Anchorage showing birding hotspots with green markers and labels like 'Palmer Flax Flats Refuge'.

Alaska's Birding Hot Spots. A map of Alaska with blue dots indicating birding hotspots across the state.

Bird Walk Anchorage



Bird Walk Anchorage

Discover, Protect, Inspire.

U.S. Fish and Wildlife, Alaska
Draft





Bird Walk Anchorage

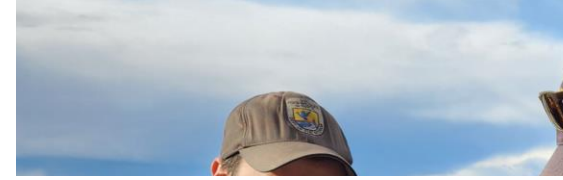
Discover, Protect, Inspire




A birding trail that empowers conservation by raising awareness and encouraging action.

Migratory Bird Day birding events: **Callie Gesmundo & Zak Pohlen**








 **U.S. Fish & Wildlife Service Alaska** 
 May 5 · 

The tide is high and we're holding on... to spring bird migration in Anchorage! This week's evening tides will provide ✨excellent✨ conditions for viewing waterfowl and shorebirds up close. Welcome back the birds and join the [USFWS Migratory Birds Program](#) at the Audubon Wayside observation platform in addition to several places along the Coastal Trail for safe views for mudflat observation. Don't forget your binoculars, spotting scopes, family, and friends!

 **Where:** Audubon Wayside observation platform along the Chester Creek Trail near Westchester Lagoon


 **When:** - Tuesday, May 7, 6:00 p.m. - 7:30 p.m.
 - Wednesday, May 8, 6:30 p.m. - 8:00 p.m.
 - Thursday, May 9, 7:30 p.m. - 9:00 p.m.
 - Saturday, May 11 (World Migratory Bird Day), 7:30am - 10:30am

Photo by Callie Gesmundo/USFWS





U.S. Fish & Wildlife Service

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HOME SERVICES SPECIES VISIT US GET INVOLVED NEWSROOM INITIATIVES I WANT TO SEARCH

World Migratory Bird Day 2024: Protect Insects, Protect Birds



Changing Menus: When a Migratory Feast Turns to Famine

Learn how the Semipalmated Sandpiper, a Migratory Bird Day focal species, is affected by changes to the insect community on their breeding and migration areas

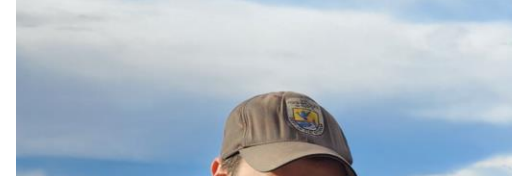
May 2, 2024


Written By



Shorebirds are probably not the first group of birds that come to mind when thinking of ‘insectivorous birds’. Just like the more recognizable aerial insectivores—flycatchers, swallows, and swifts—many shorebirds also rely on insects to provide their basic energy needs. This is especially true while they complete their impressive long-distance migrations and when chicks are growing rapidly, transitioning from vulnerable flightless young to winged acrobats of the air.





 **U.S. Fish and Wildlife Service** •
May 9 • 🌐



“In years when spring arrives exceptionally early, shorebirds arrive late to the party, and a mismatch happens between peak insect emergence and shorebird nests hatching. Our research has shown that chicks hatching after peak insect emergence have lower growth and survival.”

[U.S. Fish & Wildlife Service Alaska](#) Bird Biologist, Dr. Sarah Saalfeld speaks about her work studying Arctic-breeding shorebirds and what she and her colleagues have discovered about species’ inability to adapt to a warming Arctic.

Decades of field studies and countless hours behind the computer go into analyzing these critical, long-term datasets. Don’t sleep on shorebirds this [#WorldMigratoryBirdDay!](#) Learn more about Sarah’s research and some actions we can take to “Protect Insects, Protect Birds.” 🦋 🍌 🍌 Link in the comments.

Photo 1. Lisa Kennedy/USFWS 2. Courtesy of Dr. Sarah Saalefeld



  You, USFWS Migratory Birds, Pacific Birds and 411 others 9 comments 26 shares



SHARED SPACES



Creating Bird-friendly
Cities and Communities

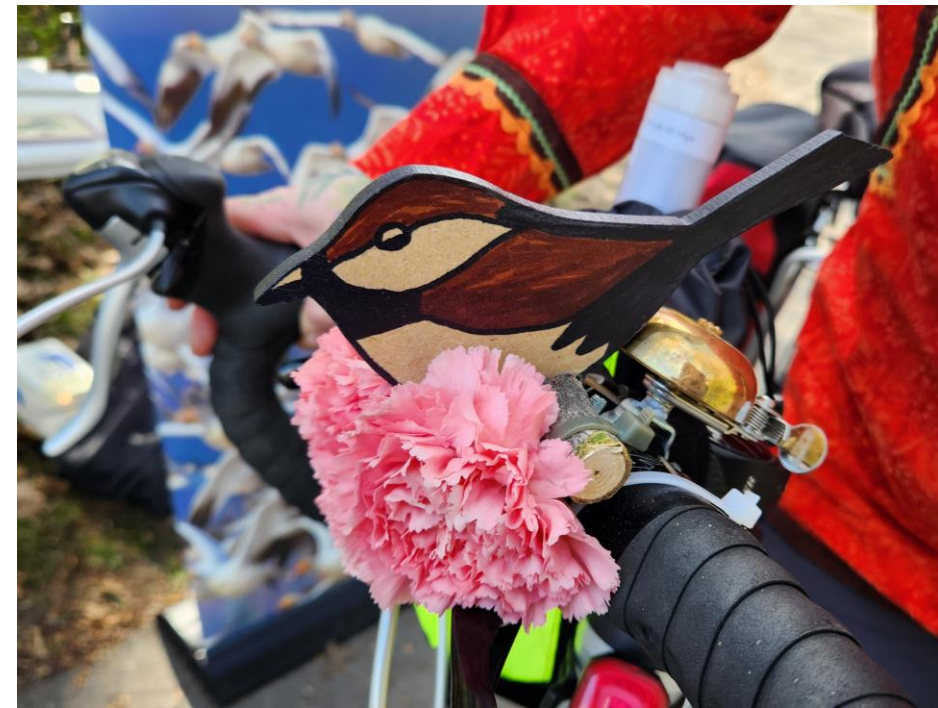
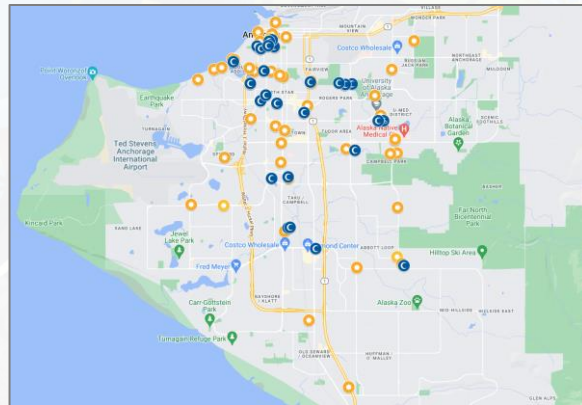
WORLD MIGRATORY BIRD DAY 2025

Anchorage Bird to Work Day: **Callie Gesmundo & John Pearce**





- ❖ May 17th, 2024
- ❖ Municipality – Health Department
- ❖ “Treat Stations”
7-9am & 4-6pm



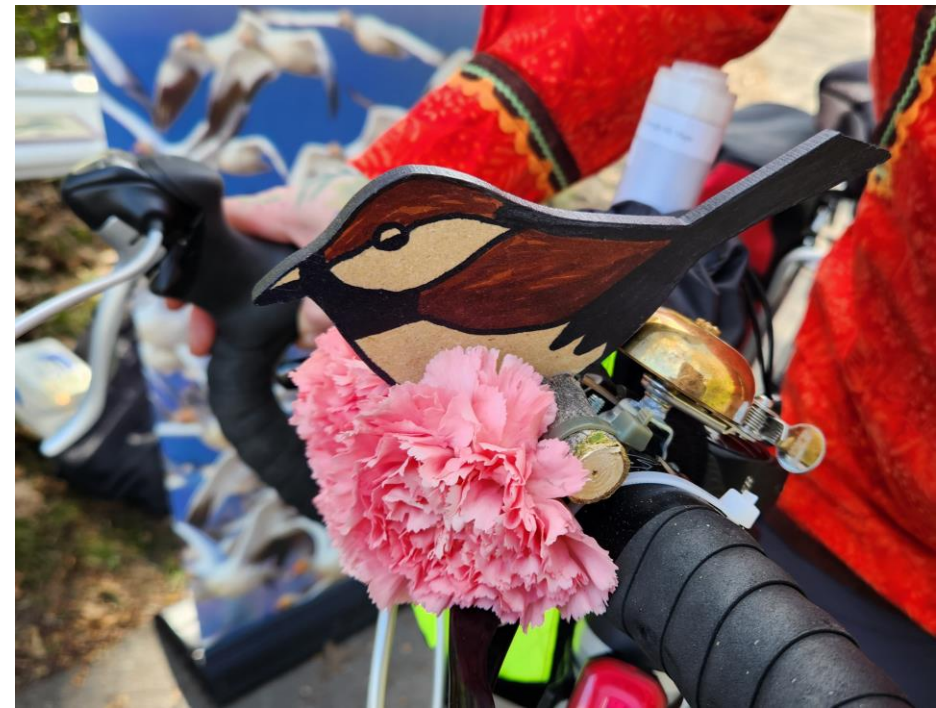


2024

- ❖ Thousands participated
- ❖ ~100 ppl
- ❖ 55+ web (3 mins avg)
- ❖ Stream gauge
- ❖ ebird/Merlin (handout)
- ❖ Bird friendly coffee (cards & stickers)
- ❖ Loons, Lines, Lead (stickers, handouts)

2025

- ❖ Stream gauge
- ❖ eBird/Merlin
- ❖ Bird Friendly Coffee & Chocolate (samples)
- ❖ Loons, Lines, Lead (handouts)
- ❖ Collisions (feather friendly handouts)





2024

- ❖ ~100 ppl
- ❖ 55+ web (3 mins avg)
- ❖ Stream gauge
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2025

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- ❖ eBird/Merlin
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- ❖ Loons, Lines, Lead (handouts)
- ❖ Collisions (feather friendly handouts)

