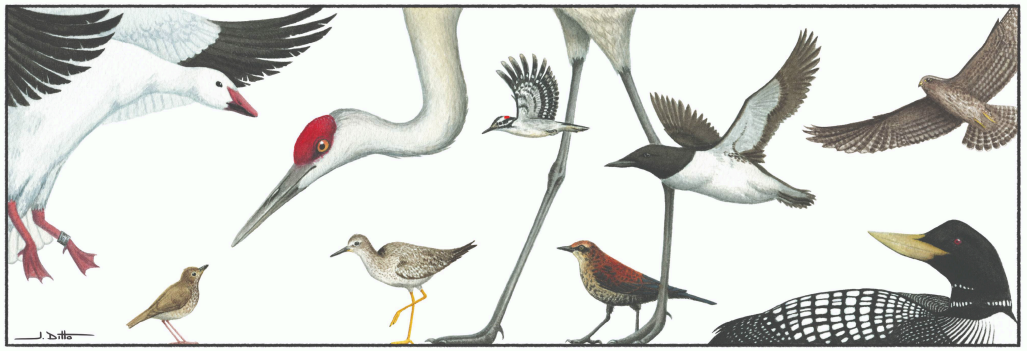
NEXT STEPS FOR BIRDS



ALASKA BIRD CONFERENCE

ANCHORAGE, ALASKA 2026



2026 Alaska Bird Conference
Oral & Poster Presentation Abstracts

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Tuesday, December 8

Doctoral Student (D)
Master's Student (M)
Bachelor's Student (B)
*denotes online presentation

Time	Title	Presenter
Working Session: Communication as a Conservation Strategy (Fairbanks Room)		
10:30–10:45am	Integrating culture, art, and science in avian conservation programs	Shelby Morgan & Trisha Blake
10:45–11:00am	What we heard: listening to partners to shape the delivery of the 2026 Birds of Conservation Concern report	*Deborah Kornblut & Callie Gesmundo
Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk (Fairbanks Room)		
1:30–1:45pm	Initiating Ducks Unlimited's Alaska initiative	Brandt Meixell
1:45–2:00pm	A wildlife task force partnership in Prince William Sound, Alaska	James Herbert
2:00–2:15pm	From aviary to Arctic: leveraging managed waterfowl and shorebirds to improve field research	Jacob Kraemer
2:15–2:30pm	Creamer's Field Migration Station at 35 years: recent observations and directions at North America's northernmost passerine banding station	Robert Snowden
2:30–2:45pm	***Break***	
2:45–3:00pm	Highly pathogenic avian influenza is established among wild birds in Alaska: implications and next steps	Andrew Ramey
3:00–3:15pm	Cumulative effects influence northern boreal breeding bird abundances in a mining impacted landscape	Austin Zeller
3:15–3:30pm	Better delineating anthropogenic risk to marine birds: ghost ships in the Bering Strait	Ben Sullender

ORAL PRESENTATION

Working Session: Communication as a Conservation Strategy

Integrating culture, art, and science in avian conservation programs

Shelby Morgan[1], **Tricia Blake**[1]

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The Alaska Songbird Institute (ASI)'s mission is to conserve Alaska's boreal birds through ecological research and education. Through two primary projects, the Creamer's Field Migration Station and the Tree Swallow Ecology Project, ASI engages youth and adult volunteers in hands-on research and community-based learning focused on bird conservation.

Too often, the science happening right outside our doors remains just beyond reach. By inviting more people into our research, we expand access to knowledge while fostering curiosity, connection, and a deeper investment in the natural world. In 2025-2026, we began efforts to increase access to our research and create more inclusive opportunities to observe, understand, and communicate their science-related experiences. We partnered with six local nonprofits: Boys & Girls Clubs of Alaska, Fairbanks Children's Museum, Effie Kokrine Charter School, Calypso Farm and Ecology Center, Northern Alaska Environmental Center, and The Folk School Fairbanks. We addressed barriers including transportation, equipment, and financial constraints. We increased cultural relevance by incorporating Alaska Native knowledge and art into classroom programs and internships, enabling students to connect multiple ways of knowing to their experiences in STEM.

ASI engaged more than 200 additional students and family members who may otherwise have been unable to participate. This project demonstrates how community partnerships, culturally responsive practices, and creative science communication expands who participates in science and deepens how people understand and engage with research and conservation.

ORAL PRESENTATION

Working Session: Communication as a Conservation Strategy

Hybrid presentation (in-person and online)

What we heard: listening to partners to shape the delivery of the 2026 Birds of Conservation Concern report

Callie Gesmundo[1], Deborah Kornblut[2]

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Amid ongoing and substantial declines in North American bird populations, the U.S. Fish and Wildlife Service (USFWS) is advancing a strengthened, partner-driven approach to conservation through the upcoming 2026 Birds of Conservation Concern (BCC) report. To ensure the report better supports conservation planning, the USFWS conducted a series of listening sessions in early 2026 with a variety of entities including States, Tribes, NGOs, Federal partners, and internal staff. Across 12 focus groups, more than 100 participants shared feedback that is helping inform how the upcoming BCC is delivered, accessed, and used. Participants emphasized the need for filterable, customizable, and geospatially interactive tools, such as dashboards that allow users to sort species by geography, threat, and organizational context. Feedback also pointed to notable barriers, including widespread "list fatigue" and an "ecosystem of lists". These insights are guiding the 2026 BCC team's efforts to refine delivery formats, improve clarity, and strengthen communication strategies so the upcoming report can more effectively meet diverse partner needs and support proactive, collaborative bird conservation.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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Initiating Ducks Unlimited's Alaska initiative

Brandt W. Meixell[1], J. Patrick Donnelly[2,3], Mark Petrie[4]

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Alaska is among the most important waterfowl breeding grounds in North America, contributing to the fall flight across the continent and functioning as the waterfowl factory of the Pacific Flyway. More than half of all wetlands in the United States occur in Alaska, and in some years nearly 20 percent of the continent's surveyed ducks settle in the state. To help sustain Alaska's importance to continental waterfowl populations, Ducks Unlimited recently launched its Alaska Born to Fly Initiative.

The Alaska Initiative represents Ducks Unlimited's commitment to Alaska's waterfowl and the habitats they depend on. The initiative aims to advance conservation through waterfowl research and monitoring, along with wetland restoration and protection of key habitats. To achieve these goals, Ducks Unlimited will seek to develop strong collaboration with public agencies, Native communities, universities, and industry leaders.

Ducks Unlimited began implementing the Alaska initiative in December of 2025 by hiring a full-time conservation staff member based in the state. We are now working to build and expand the program and have a suite of projects underway that include research to better understand changes in waterfowl populations and habitats, restoration efforts to prevent wetland drainage, and the support of multiple graduate student projects.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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A wildlife task force partnership in Prince William Sound, Alaska

James Herbert[1]

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Alyeska Pipeline Service Company's Ship Escort Response Vessel System (SERVS) partners with local fishermen and mariners in a program to train for and respond to oil spills in Prince William Sound, Alaska as part of local Contingency Plans. This was the location of the 1989 Exxon Valdez Oil Spill. A particular aspect of the SERVS program is a Wildlife Task Force as part of Nearshore response. This presentation will describe the training provided to fishermen and mariners who have valuable local knowledge. In field exercises they are expected to coordinate hazing to move waterfowl away from oiled areas. They are also tasked with recovering oiled birds and sea mammals for transport to rehabilitation units. Dead animals associated with the spill are recovered and follow a strict chain of custody as evidence in legal proceedings. Committed local citizens whose livelihoods depend on marine resources have a vested interest in oil spill prevention and in the case of an oil spill, a prompt and effective response. Oiled wildlife is often the face of an oil spill to the public so a proper response by a Wildlife Task Force is important for the responsible party. The Alyeska SERVS and local fishermen Wildlife Program is an excellent partnership that can be used in other regions.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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From aviary to Arctic: leveraging managed waterfowl and shorebirds to improve field research

Jacob Kraemer[1]

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Advancing research on Arctic-nesting waterfowl and shorebirds requires methods that can be tested and refined outside the constraints of remote field conditions. Pinola Conservancy maintains managed populations sea ducks, geese, and shorebird species, providing repeated access to known individuals for applied research.

This setting has supported transmitter trials conducted with multiple research partners on sea ducks, geese, and shorebirds. Evaluations of attachment methods have identified failures, behavioral responses, and potential longer-term effects that could be difficult to detect following release of wild birds. Recent trials have expanded beyond device retention to incorporate repeated health assessments and sampling, allowing evaluation of how attachment methods affect the bird itself.

Managed populations also provide opportunities to refine handling and sampling protocols and investigate growth, molt, behavior, health, and nutrition. Field and captive research can be directly integrated: biological samples and invertebrate data collected in Arctic Alaska can inform controlled studies in managed birds, with resulting hypotheses returned to the field for evaluation. Maintaining Arctic species at 32°N additionally allows investigation of responses to environmental conditions, disease vectors, and pathogen pressures outside their typical northern ranges. Managed populations therefore provide a complementary research platform for refining methods, testing hypotheses, and identifying potential problems before work is conducted on wild birds.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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Creamer's Field Migration Station at 35 years: recent observations and directions at North America's northernmost passerine banding station

Robert Snowden[1]

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The Alaska Songbird Institute (ASI) is a nonprofit based in Fairbanks whose mission is to conserve Alaska's boreal birds through research and education. This presentation will highlight recent trends and future directions ASI's core long-term projects is the Creamer's Field Migration Station (CFMS), a mist-netting and banding operation that is the continent's northernmost monitoring effort of its kind. During its 35 year operation, CFMS has logged over 125,000 capture records and is uniquely sited to document trends in population demographics and migration ecology and among boreal forest passerines. The station also offers a unique blend of early-career professional training, volunteer engagement and community education, offering the potential to increase direct public engagement with hands-on science and inspire conservation action.

In recent years, we have observed substantial interannual variation in species composition and capture rates at CFMS, along with substantial changes in habitat and environmental conditions that have challenged our sampling effort. Meanwhile, we are enthused about the collaborative research potential CFMS continues to provide, which can span from analyzing our multiyear dataset to understand changes in productivity or morphology, to exploring migratory connectivity through technologies like automated telemetry.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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Highly pathogenic avian influenza is established among wild birds in Alaska: implications and next steps

Andrew M. Ramey[1], Christina A. Ahlstrom[1], Kimberlee Beckmen[2], Megan Boldenow[3], Sarah Coburn[4], Bryan Daniels[5], Krista Dilione[6], Lisa Kercher[7], Kristina Lantz[8], Gay Sheffield[9], David Sinnett[10] Raphaela Stimmelmayr[11,12], Alison R Williams[13], Mia Kim Torchetti[8], David E Stallknecht[14], Rebecca L Poulson[14]

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[13]Izembek National Wildlife Refuge, U.S. Fish and Wildlife Service, Cold Bay, Alaska, USA
[14]Southeastern Cooperative Wildlife Disease Study, University of Georgia, Athens, Georgia, USA

Detections of highly pathogenic avian influenza (HPAI) have been spatiotemporally widespread among resident and migratory birds inhabiting Alaska since 2022. These detections have been made using samples collected from birds of diverse species found sick or dead as well as from apparently healthy waterfowl sampled during active surveillance efforts. Various sick or dead wild mammals have also been found to be affected by HPAI, presumably through the predation or scavenging of infected wild birds. HPAI has therefore become a potentially consequential established wildlife disease within Alaska with implications to animal health, sport and subsistence hunting, as well as wildlife-viewing based tourism. In this presentation, we briefly summarize detections of HPAI among Alaska birds during 2022–2026, discuss possible implications for conservation and management, and explore potential next steps for research and surveillance in response to recent changes in HPAI ecology.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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Cumulative effects influence northern boreal breeding bird abundances in a mining impacted landscape

Austin Zeller[1], Chrystal Mantyka-Pringle[1,2]

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[2]School of Environment and Sustainability, University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Resource extraction creates a mosaic of disturbance features that interact with the natural habitat to influence species abundances. In the northwestern boreal forest of Canada, mineral exploration and extraction represents several sources of anthropogenic disturbance, yet the cumulative effects of these disturbances on wildlife remain poorly understood. We conducted avian surveys across a mining impacted landscape in central Yukon to assess how disturbances (surface disturbance, roads, and re-vegetating areas) influence 41 bird abundances. Species associated with shrub and wetland habitats showed predominantly positive responses across all disturbance types, while coniferous-associated species and peatland specialists responded negatively to re-vegetation and surface disturbance. Five species demonstrated limits to disturbance tolerance. Bank Swallow abundance declined when re-vegetation covered over 36% of the survey area, Lincoln's Sparrow and Wilson's Warbler abundance declined when surface disturbance exceeded 37% and 27% area threshold respectively. Swainson's Thrush and Fox Sparrow abundance peaked when linear feature density was approximately 8.4-8.6 km/km^2. Interacting effects shaped responses between disturbance and species' habitat for four species, demonstrating the configuration of habitat and disturbance influences species abundance. Two species, Bank Swallow and Yellow Warbler, demonstrated complex non-additive cumulative effects of disturbance. These findings provide the first empirical assessment of avian responses to cumulative effects in the northern boreal region impacted by mining and offer management thresholds to inform conservation planning.

ORAL PRESENTATION

Scientific Program: Conservation Partnerships & Avian Health and Anthropogenic Risk

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Better delineating anthropogenic risk to marine birds: ghost ships in the Bering Strait

Benjamin K. Sullender[1], Kelly E. Kapsar[2,3]

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[3]Kelly E. Kapsar Consulting, Addison, Illinois, USA

Across much of Alaska's marine environment, vessel activity introduces major anthropogenic risks to marine birds, including bycatch, pollutant discharges, disturbance, artificial light at night, and the worst-case scenario of an oil spill.

Previous risk assessments quantified exposure to vessels using ship locations as identified by automatic GPS signals. However, nearly half of all North American vessels do not transmit their locations, creating a critical gap in our understanding as undetected "ghost ships" still impact the marine environment yet are absent from scientific analyses and conservation planning. These gaps are especially pressing in ecologically important areas such as the Bering Strait, where sea ice declines and industrial interest have substantially increased maritime commerce in recent years.

To address these conservation needs, Audubon Alaska is coupling satellite-borne synthetic aperture radar with Convolutional Neural Networks (CNNs) to detect non-transmitting vessels. Pilot analyses indicate that as much as 1/3 of all vessel traffic in the Bering Strait region can be considered non-transmitting, and ongoing work matching ghost ships to likely routes and vessel types will better quantify impacts and risks. Collectively, these efforts will allow conservation groups, coastal communities, and resource managers to better target potential routing measures, mitigation plans, and response resource allocation.

Wednesday, December 9

Doctoral Student (D)
Master's Student (M)
Bachelor's Student (B)
*denotes online presentation

Time	Title	Presenter
Working Session: Full Annual Cycle Conservation (Fairbanks Room)		
10:30–10:45am	Beyond the breeding grounds: how Southern Wings connects Alaska's long-distance migrants to hemispheric conservation	*Deborah Hahn & Bradley Wilkinson
10:45–11:00am	Full annual cycle habitat monitoring for shorebirds of the Pacific Americas - linking Alaska migrants to the Western Hemisphere	Patrick Donnelly
Scientific Program: Environmental & Ecological Traits (online & in-person; Fairbanks Room)		
1:30–1:45pm	Linking thermal physiology with avian distribution surveys to assess population vulnerability to rapid warming	Phred Benham
1:45–2:00pm	Recent population and ecological changes in American Dippers (*Cinclus mexicanus*) in southcentral Alaska	Anna Reichenbach (B)
2:00–2:15pm	Late-winter icing leading to a die-off of overwintering waterfowl at Izembek Lagoon	Alison Williams
2:15–2:30pm	***Break***	
2:30–2:45pm	Annual survival of threatened Spectacled Eiders during a period of low sea ice in the Bering Sea	*Daniel Rizzolo
2:45–3:00pm	Environmental conditions drive Dunlin (*Calidris alpina arcticola*) use of roadsides during the pre-nesting period in Alaska, USA	*Aaron Yappert
3:00–3:15pm	Effects of weather and smoke exposure on Tree Swallow fledging success	*Megan DiSaia (M)
Scientific Program: Avian Migration & Stopovers (in-person only; Denali/Kenai Room)		
1:30–1:45pm	Contrasting wintering strategies of Fork-tailed and Leach's Storm-Petrels from Gulf of Alaska breeding colonies	Brie Drummond
1:45–2:00pm	Does foraging landscape or somatic state have a greater influence on movement ecology in a long-lived Bering Sea seabird?	Danny Casner (M)
2:00–2:15pm	The role of tracking data in assessing important migratory stopover sites: an example with Alaska-breeding curlews and godwits	Dan Ruthrauff
2:15–2:30pm	***Break***	
2:30–2:45pm	Red Knot passage population size and migratory ecology underscore Controller Bay, Alaska as a vital stopover site	Jenell Larsen Tempel
2:45–3:00pm	GPS telemetry reveals social structure and movement patterns of territorial and floater Bald Eagle (*Haliaeetus leucocephalus*) and Golden Eagle (*Aquila chrysaetos*)	Stephen Lewis
3:00–3:15pm	Seasonal distributions of Lesser Canada and Taverner's Cackling Geese: assessing prior research using modern technology	Michael Guttery
3:15–3:30pm	"Dual-use" habitats of *Contopus cooperi* (Olive-sided Flycatcher): important spring stopovers of Alaska populations coincide with shrinking, high-occupancy breeding habitat in northern California	Julie Hagelin

ORAL PRESENTATION

Working Session: Full Annual Cycle Conservation

Online presentation

Beyond the breeding grounds: how Southern Wings connects Alaska's long-distance migrants to hemispheric conservation

Deborah Hahn[1], Bradley Wilkinson[1]

[1]Association of Fish and Wildlife Agencies, Washington DC, USA; dhahn@fishwildlife.org, bwilkinson@fishwildlife.org

Alaska provides critical breeding habitat for millions of migratory birds and for species such as the Blackpoll Warbler, Olive-sided Flycatcher, Hudsonian Godwit, and Swainson's Thrush, Alaska is intimately connected to non-breeding and stopover habitats across Latin America and the Caribbean through their migratory journeys. Effective conservation of Alaska's Species of Greatest Conservation Need (SGCN) requires a full annual cycle approach.

Southern Wings, a partnership program of state fish and wildlife agencies facilitated by the Association of Fish and Wildlife Agencies (AFWA), provides a proven, transparent mechanism to make hemispheric connections. Since its inception, Southern Wings has channeled millions of dollars into high-priority, on-the-ground conservation projects that protect critical non-breeding landscapes across Mexico, Central America, South America, and the Caribbean. By leveraging pooled state contributions alongside non-governmental organization partners, federal funds, and private philanthropy, Southern Wings ensures that investments directly safeguard shared priority species where they spend up to eight months of the year.

This presentation will introduce the Southern Wings framework to the Alaska bird conservation community, highlight key migratory linkages between Alaskan breeding sites and wintering bottlenecks in the Neotropics, and demonstrate how to engage with and support targeted hemispheric projects to achieve meaningful, durable population recovery.

ORAL PRESENTATION

Working Session: Full Annual Cycle Conservation

Full annual cycle habitat monitoring for shorebirds of the Pacific Americas - linking Alaska migrants to the Western Hemisphere

J. Patrick Donnelly[1,2], Matthew Reiter[3], Diana Eusse[3,4], Erin Cooper[5], Catherine Hickey[3]

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Migratory shorebirds across the Pacific Americas face severe multi-decade population declines. While survey frameworks track demographic trends, conservation managers lack a standardized system to evaluate habitat degradation and hydrological alteration across the full annual cycle. Because shorebirds depend on connected breeding, stopover, and wintering networks spanning over 120° of latitude—from sub-Arctic breeding grounds like the Y-K Delta to tropical estuaries—site-isolated management creates critical conservation blind spots.

To address this, we are developing an open-access, cloud-based monitoring platform in Google Earth Engine. Integrating 30+ years of optical and synthetic aperture radar imagery, the platform tracks inundation dynamics and estuarine changes at priority sites across the Western Hemisphere. Spatial outputs are formatted as environmental covariates that overlay existing shorebird count data, enabling diagnostic modeling to cross-reference habitat availability with migration chronology. This framework identifies whether population bottlenecks occur on breeding grounds, stopovers, or wintering sites.

To ensure lasting cross-border impact, an interactive dashboard delivers real-time habitat alerts. Additionally, a partnership between Ducks Unlimited and the University of Montana provides graduate fellowships for Latin American spatial ecologists, empowering partner nations to integrate Earth observation tools directly into flyway conservation strategies.

Scientific Program: Environmental & Ecological Traits

Linking thermal physiology with avian distribution surveys to assess population vulnerability to rapid warming

Phred M. Benham[1], Connor Bullard[1], Megan DiSaia[1], Kolibri Drobish[1]

[1]Institute of Arctic Biology & Department of Biology and Wildlife, University of Alaska Fairbanks, USA; fmbenham@alaska.edu

How Alaska's birds respond to the rapid pace of warming is a pressing conservation issue. Exposure to temperatures above historical norms can impose negative consequences for survival and reproductive success. Despite these potential risks, few studies have examined heat tolerances in northern birds. To address this gap, we take a two-pronged approach to study the potential effects of climate change on songbird species in interior Alaska. First, we use heat exposure experiments to determine temperature thresholds at which boreal birds (a) begin to experience energetic and water-budget costs from thermoregulation (upper critical temperature (UCT); and (b) lose the ability to thermoregulate (heat tolerance limit; HTL). Second, we conduct point-count surveys coupled with temperature loggers to assay how occupancy of different habitats exposes birds to temperatures exceeding their UCT or HTL. Preliminary data indicate that the boreal bird species measured to date are less heat tolerant than birds from more southern latitudes. However, migratory species (e.g., Swainson's Thrush), hit their UCT and HTL at higher temperatures than resident species (e.g., chickadees). When compared to survey and microclimate data, we find that occupancy of black spruce forest leads to increased exposure to higher temperatures than other forest types. Though preliminary, our results point to certain species that may be particularly vulnerable to the impacts of a rapidly warming Arctic. This highlights how integrating data on physiological responses to heat, microclimate, and avian surveys can help us more directly link the effects of warming to population trends in the boreal bird community.

Scientific Program: Environmental & Ecological Traits

Bachelor's oral presentation

Recent population and ecological changes in American Dippers (*Cinclus mexicanus*) in southcentral Alaska

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American Dippers (*Cinclus mexicanus*) are widespread throughout the northern tier of North America, but comparatively little is known about their behavior and foraging ecology in southcentral Alaska. These studies were initiated in 2014 and continue to the present. The research is centered on breeding populations in the Chugach National Forest and specifically Portage Valley. American Dippers feed almost exclusively on aquatic invertebrates in glacier streams, which in the focus study area, were open year-round. In our region, they serve as ideal samplers and indicators of stream quality and as target indicators for other insectivorous animals, such as Little Brown Bats (*Myotis lucifugus*). Our initial results indicate that this species is resident year-round, and population abundances until recently were stable throughout the year. While there is annual variation in numbers, particularly during winter, until recently post-breeding feeding flocks remained at approximately the same densities over the study period. In 2019, population numbers were dramatically smaller, ranging from about 25 - 75% less than in previous years, but populations appear to be gradually increasing since then. Our initial results suggest that the resident population of American Dippers in Portage Valley were most strongly negatively affected by abiotic factors (e.g., increased runoff caused by greater glacial melt) and were positively associated with presence and abundance of diet items.

ORAL PRESENTATION

Scientific Program: Environmental & Ecological Traits

Late-winter icing leading to a die-off of overwintering waterfowl at Izembek Lagoon

Alison R. Williams[1], Brian D. Uher-Koch[2], Vijay P. Patil[2], and David H. Ward[2]

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Izembek Lagoon, an important staging and wintering area for waterfowl, has undergone a marked reduction in winter ice cover since the 2010s. Concurrently, increasing numbers of Pacific Black Brant (>40,000) and other waterfowl have wintered at Izembek Lagoon due to year-round access to eelgrass beds and benthic resources. Winter 2026 began with little or no ice in Izembek Lagoon; however, in March, a rapid temperature decline combined with persistent northerly winds led to rapid ice formation in the Bering Sea north of the Alaska Peninsula. This abrupt shift in conditions resulted in strandings and mortalities of birds and marine mammals. Diagnostic testing of bird and sea otter specimens indicated severe emaciation in all animals examined, and one Brant carcass tested positive for Highly Pathogenic Avian Influenza (HPAI).

In April 2026, surveys of 34 km of Izembek Lagoon's 230-km shoreline documented beach-cast birds to estimate species composition of avian mortality, assess age-specific mortality of Brant, recover bird bands, and collect feathers for stable isotope analysis to determine breeding origins of affected birds. Surveys documented 993 Brant carcasses, of which 11% were hatch-year birds. Median carcass density was 14.8 Brant/km of shoreline surveyed, with a maximum density of 309/km. Analyses are ongoing, but carcass counts suggest that total mortality exceeded 3,400 Brant and 3,000 combined from other waterfowl species. As winter conditions continue to change in the Bering Sea region, rare but extreme icing events may become increasingly important drivers of mortality for species exploiting newly available wintering opportunities.

ORAL PRESENTATION

Scientific Program: Environmental & Ecological Traits

Online presentation

Annual survival of threatened Spectacled Eiders during a period of low sea ice in the Bering Sea

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We examined apparent survival of Spectacled Eiders, a species listed as threatened under the U.S. Endangered Species Act (ESA), in relation to sea-ice cover in the Bering Sea, where the species winters. Survival estimates were derived from banding data collected from 1992–2025 at Kigigak Island, a long-term study site on the Yukon-Kuskokwim Delta. A previous analysis (1992–2015) suggested a nonlinear relationship between survival and sea-ice cover, with lower survival under both high and low ice conditions, though the low-ice effect was highly uncertain. To reduce that uncertainty, additional banding data were collected from 2019–2025, a period that included six of the ten lowest-ice winters in the past three decades. Results showed that apparent survival remained low following winters with high sea ice, consistent with earlier findings. However, survival did not decline following winters with low sea ice, although uncertainty around these estimates remained high and did not rule out a low-ice effect. During this recent low-ice period, the Spectacled Eider population breeding on the Yukon-Kuskokwim Delta has declined sharply since 2019. Work is underway to reconcile these patterns through an updated integrated population model for the species' upcoming 5-Year Status Review under the ESA.

ORAL PRESENTATION

Scientific Program: Environmental & Ecological Traits

Online presentation

Environmental conditions drive Dunlin (*Calidris alpina arcticola*) use of roadsides during the pre-nesting period in Alaska, USA

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Many Arctic-breeding shorebirds are experiencing widespread population declines, which have primarily been linked to factors on the non-breeding grounds. However, expanding human development and pronounced climate change effects on the breeding grounds may further influence shorebird populations. To assess how infrastructure may affect the movements and behaviors of shorebirds on the breeding grounds, we used GPS tracking devices to collect high-frequency movement data on 93 Dunlin (*Calidris alpina arcticola*) near Utqiaġvik, Alaska, USA from 2021-2024. We used hidden Markov models to classify behavior states and kernel density estimation to identify areas of high use by Dunlin during the pre-incubation period (late May to early June). Across all four years, Dunlin used primary (74 ha) and secondary (99 ha) core foraging areas located along gravel roads and other developed areas where snow had been removed during regular road maintenance activities. Dunlin spent more time in core areas and were closer to roads under conditions of high snow cover and low temperatures. Birds also made repeated flights between core roadside areas and their eventual nesting territories, but only early in the season when snow cover was extensive. These findings indicate roadside areas may serve an important function early in the breeding season by providing access to food resources; however, the consequences of congregating along roadways remain unknown and require further study.

ORAL PRESENTATION

Scientific Program: Environmental & Ecological Traits

Master's oral presentation; Virtual presentation

Effects of weather and smoke exposure on Tree Swallow fledging success

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Improving our understanding of how and when environmental stressors influence reproduction can help inform large-scale population dynamics and prescribed fire planning. This study analyzes a 10-year nest box monitoring dataset of Tree Swallows in Fairbanks, Alaska, to evaluate the effects of wildfire smoke, precipitation, and temperature on multiple components of reproduction. Fledging success was best explained by stressful events rather than mean environmental conditions across the nestling period. Exposure to elevated smoke ($PM_{2.5} \geq 35$ μg/m^3) for 3 days during the first 7 days post-hatch resulted in a 14% reduction in predicted survival. Prolonged rainfall also significantly reduced fledging success with a 9% reduction for 3 days of rain. In contrast, mean temperature showed weak and inconsistent effects. Breeding phenology also shifted with environmental conditions; lay dates occurred later in years with higher spring precipitation. These results highlight the importance of early developmental windows, when nestlings are especially vulnerable to stress and require consistent nutrition (Madden et al. 2026). As wildfire activity and precipitation continue to increase across Alaska (Feurdean et al. 2025; Wendler et al. 2017), the frequency of these stressors is projected to rise. Incorporating these effects into population models could improve predictions of how environmental change influences Tree Swallow population dynamics.

Scientific Program: Avian Migration & Stopovers

Contrasting wintering strategies of Fork-tailed and Leach's Storm-Petrels from Gulf of Alaska breeding colonies

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Seabirds are often well-studied at their breeding colonies, but even basic data on seabirds during the non-breeding season can be difficult to attain. Conditions during the non-breeding months can play an important role in seabird demography and population dynamics, so identifying where seabirds spend their months away from the breeding colonies can be crucial for seabird conservation. The Alaska Maritime National Wildlife Refuge conducts seabird monitoring during the summer months at a number of sites across Alaska, but little is known about where birds from those colonies spend the winters. In 2024-2026, the Refuge used Global Location Sensor (GLS) tags to track winter movements of two species of storm-petrels from two major breeding colonies in the Gulf of Alaska. While Fork-tailed Storm-Petrels (*Hydrobates furcatus*) stayed primarily in the North Pacific for the winter, Leach's Storm-Petrels (*H. leucorhous*) traveled roughly 5,000-8,000 km south to spend the non-breeding season off the coasts of Central and South America. Fork-tailed Storm-Petrels from different breeding colonies, located nearly 1,000 km apart on different sides of the Gulf of Alaska, showed considerable winter overlap. For both species, movement patterns were largely consistent between years. This study is the first to track winter movements of Alaskan storm-petrels and the contrasting strategies exhibited by the two species have important potential conservation implications.

Scientific Program: Avian Migration & Stopovers

Master's oral presentation

Does foraging landscape or somatic state have a greater influence on movement ecology in a long-lived Bering Sea seabird?

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In the heterogeneous marine environment, seabirds engage in directional flight to move efficiently over distance to predictable feeding grounds, and use meandering flight to search for food more intensively or forage on productive patches in dynamic landscapes. While environmental factors are known to influence movement, prior experimental research has also found that blood telomere length, a proxy for somatic state and fitness of individuals, to be an effective predictor of foraging movements in male but not female Black-legged Kittiwakes (*Rissa tridactyla*) breeding at a food-rich colony. In this analysis we broadened our study to include two Pribilof Islands colonies situated in different oceanographic domains and spanning three breeding seasons (2008-2010) when foraging conditions were relatively poor. Preliminary results indicate that despite large differences in foraging landscapes and temporal variability, the positive relationship between telomere length and directionality of flight during foraging trips occurred in males but not in females. We conclude that the somatic state is a reliable predictor of movement patterns expressed during foraging trips in male kittiwakes breeding under a wide range of foraging conditions. Whether foraging females use a fundamentally different foraging strategy from males that is decoupled from markers of somatic wear, or whether our current modeling of their behavior is properly accounting for such differences, remains to be examined.

The role of tracking data in assessing important migratory stopover sites: an example with Alaska-breeding curlews and godwits

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Identifying important shorebird staging sites is typically a function of the number of individuals using sites, but such an approach may overlook species that do not predictably gather during migration. For such species, tracking data can provide insights that may describe site importance in ways that raw counts cannot. Curlews and godwits (tribe *Numeniini*) are a globally threatened, highly migratory group of shorebirds for which detailed tracking information is now available. We compared the patterns of migratory stopover use by the six species of curlews and godwits breeding in Alaska (Upland Sandpiper, Bristle-thighed Curlew, Hudsonian Whimbrel, and Bar-tailed, Hudsonian, and Marbled Godwits) to identify important migration sites. We calculated the proportion of visits and proportion of time spent during migration for each site to describe relative site importance. Based on these metrics, we characterized species as either concentrated (Bristle-thighed Curlew, Bar-tailed and Marbled Godwits) or dispersed during migration (Upland Sandpiper, Hudsonian Whimbrel, Hudsonian Godwit). Unsurprisingly, these designations also correlated with the relative use of sites identified within the Western Hemisphere Shorebird Reserve Network. We tracked birds across five of the world's migratory flyways during their annual movements and detected little interspecific overlap in the use of sites during northward and southward migration. Despite the close genetic affinity and shared breeding origin of these six species, these species exhibited diverse migration patterns that underscored the complexity of identifying important stopover sites and the value of incorporating tracking data in such assessments.

Scientific Program: Avian Migration & Stopovers

Red Knot passage population size and migratory ecology underscore Controller Bay, Alaska as a vital stopover site

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Roselaari Red Knots (*Calidris canutus roselaari*) are a Species of Greatest Conservation Need in Alaska that rely on multiple coastal stopovers during migration. This study estimated passage population size, duration of stay, migratory timing, and key foraging areas used by knots in Controller Bay from 2022–2024. We conducted a Bayesian mark-resight analysis and used observer data to perform a kernel density estimate (KDE) for site fidelity. We also evaluated migratory connectivity with the Copper River Delta. Passage population sizes were ~8,928 knots (95% CrI: 4,937 - 16,833) in 2023 and ~16,588 (95% CrI: 12,398 - 22,777) in 2024. Duration of stay was estimated as 1.8 days in 2023 and 1.7 days in 2024. Motus-tagged birds (2023-2025) had a mean duration of stay of 1.01 ± 0.30 days in Controller Bay. KDE analysis identified three major foraging sites. Controller Bay supported 41% and 76% of the *roselaari* population in 2023 and 2024, making this location of critical importance to the population.

Scientific Program: Avian Migration & Stopovers

GPS telemetry reveals social structure and movement patterns of territorial and floater Bald Eagle (*Haliaeetus leucocephalus*) and Golden Eagle (*Aquila chrysaetos*)

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Life history theory posits that species evolve strategies to maximize lifetime fitness in response to environmental variability. Many species evolve complex social systems with adults that do not hold territories (floaters). Populations of Bald Eagle (*Haliaeetus leucocephalus*) and Golden Eagle (*Aquila chrysaetos*) often have floaters whose behavior and demography are poorly understood. To differentiate between different behavioral states, we applied a random forest algorithm to GPS movement metrics generated from 43 adult Bald Eagles and 94 adult Golden Eagles, tracked over 164 and 274 breeding seasons, respectively. Using these movement metrics, we accurately predicted behavioral states within breeding seasons and individual eagles, providing an objective approach for state classification. For Bald Eagles, we documented 101 (62%) territorial and 63 (38%) floater seasons. Within seasons when Bald Eagles were territorial, 66% nested and 34% did not nest. For Golden Eagles, we identified 178 (65%) territorial and 96 (35%) floater seasons. Within seasons when Golden Eagles were territorial, 68% nested and 32% did not nest. Across individual eagles (as opposed to eagle seasons), 49% of monitored Bald Eagles and 58% of Golden Eagles were exclusively territorial, 37% and 33% were exclusively floaters, and 19% and 14% showed both behaviors. Importantly, our findings emphasize that a substantial and dynamic portion of the adult eagle population exists in the floater state.

ORAL PRESENTATION

Scientific Program: Avian Migration & Stopovers

Seasonal distributions of Lesser Canada and Taverner's Cackling Geese: assessing prior research using modern technology

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Despite the relative ubiquity of Lesser Canada and Taverner's cackling geese throughout Alaska and much of the Pacific Flyway, these geese have received little attention from researchers and managers. One of the primary issues limiting the informed management of these species is the difficulty of distinguishing between them in the field and, consequently, the lack of detailed information about each sub-species' distribution. Biologists consider Taverner's Cackling Geese to be tundra breeders, distributed throughout western and northern Alaska during summer whereas Lesser Canada Geese are thought to breed in the boreal forests of interior Alaska. Prior research led researchers to conclude that during winter, these species were separated by the Cascade Mountains, with Lesser Canada Geese primarily occurring east and Taverner's to the west. To evaluate the reliability of these conclusions, we began deploying GPS-GSM (cellular) collars on geese in 2022. To date, over 200 individual geese have been collared. Additionally, DNA samples have been collected from all geese for genetic species determination. Preliminary results add credence to some beliefs while contradicting others. Structure in the seasonal distributions of these geese may be determined by factors other than species, both providing new options for monitoring while also revealing other options to be untenable.

Scientific Program: Avian Migration & Stopovers

"Dual-use" habitats of *Contopus cooperi* (Olive-sided Flycatcher): important spring stopovers of Alaska populations coincide with shrinking, high-occupancy breeding habitat in northern California

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Despite potential conservation significance, little research to date has evaluated how different conspecific populations (migratory vs. breeding) may use the same habitat throughout the year. We evaluated such "dual-use" habitats for a long-distance, migratory passerine of conservation concern with sharp population declines range-wide. We found evidence that *Contopus cooperi* (Olive-sided Flycatcher) migrating to Alaska in May use the same high-elevation, open-forest habitats for stopovers in northern California that spatially correspond with high-occupancy breeding areas of local populations in June and July. We also found that availability of high-occupancy breeding habitat has shrunk and shifted to higher elevations in response to climate change. This trend has been apparently mitigated in part by the larger elevational range of the Sierra Nevada, which offers more available habitat compared to lower elevation sites in the Klamath Mountains. We recommend tests of habitat management treatments at dual-use sites for this species and others, because such efforts can potentially improve conditions and inform targeting of effective conservation actions for multiple conspecific populations during both the migratory and breeding phases of the annual cycle.

Associated Publication: Brett J Furnas, Julie C Hagelin, Michael T Hallworth, Andy Engilis, 2026. Dual-use habitats of *Contopus cooperi* (Olive-sided Flycatcher): Important spring stopovers for Alaskan populations coincide with shrinking areas of breeding habitat in Northern California, Ornithological Applications, 128:3 1–11, https://doi.org/10.1093/ornithapp/duag035

Thursday, December 10th

Doctoral Student (D)
Master's Student (M)
Bachelor's Student (B)
*denotes online presentation

Time	Title	Presenter
Working Session: Advancing Monitoring Methods		
10:15–10:30am	Strengthening Alaska's inventory and monitoring – the evolving role of eBird	Zak Pohlen
10:30–10:45am	eBird Alaska monitoring priority reflections: assessing user needs and improvements to drive widespread adoption of monitoring tool	Lauren Oldham
10:45–11:00am	Integrating participatory science and survey data to identify priority areas for waterfowl monitoring	Kylee Dunham
Scientific Program: Genetics & Life-History Characteristics (Fairbanks Room)		
1:30–1:45pm	Closing the annual cycle of the American Kestrel: integrated genomic and mark-recapture data link breeding populations to wintering regions	*Christen Bossu
1:45–2:00pm	Integration of genomic and telemetry data from Emperor Geese (*Anser canagicus*) reveals female philopatry and male-biased dispersal among Alaska breeding populations	Eleni Petrou
2:00–2:15pm	Comparing plumage color and genetics of Pribilof songbirds to mainland Alaska songbirds	Noelle Deane (M)
2:15–2:30pm	Song evolution in Beringia: a comparative genomics and bioacoustics study of the songbirds of St. Paul Island, Alaska	Ray Bennett (M)
2:30–2:45pm	***Break***	
2:45–3:00pm	What limits a declining shorebird population? An integrated population model for Lesser Yellowlegs	Jeff Wagner (D)
3:00–3:15pm	Migratory and dietary carry over effects on body condition and reproductive investment by Tufted Puffins	Rebecca Lavier (D)
3:15–3:30pm	The influence of birth-year and recruitment-year environment on probability of first reproduction in Black Brant	Jordan Thompson (D)
3:30–3:45pm	Wintering at the extremes: contrasting productivity and survival rates in Emperor Geese	Robyn Thomas (M)
Scientific Program: Population Monitoring (Denali/Kenai Room)		
1:30–1:45pm	Trends in boreal wetland birds using long-term citizen science data	Arin Underwood
1:45–2:00pm	Distance sampling errors bias population size estimates in avian point counts	Emily Weiser
2:00–2:15pm	Updated population trends from the Alaska Landbird Monitoring Survey for interior and southeast Alaska	Vijay Patil
2:15–2:30pm	Ducks like water: developing a systematic boreal waterfowl survey for the Yukon	Margaret Campbell
2:30–2:45pm	***Break***	
2:45–3:00pm	Kachemak Bay shorebird monitoring project from 2009-2026	George Matz
3:00–3:15pm	Broad-scale predictors of population trends in Alaskan breeding birds	Megan Milligan
3:15–3:30pm	By air, by sea, by land: a spatially balanced statewide survey for Aleutian Terns	Megan Boldenow
3:30–3:45pm	First estimate of Spectacled Eider abundance during winter accounting for survey coverage, flock detection, flock size estimation error, and availability in the survey area	Erik Osnas
3:45–4:00pm	Nest densities at Kigigak Island, Alaska, indicate a severe population decline of Spectacled Eiders (*Somateria fischeri*)	Sarah Hoepfner

ORAL PRESENTATION

Working Session: Advanced Monitoring Methods

Strengthening Alaska's inventory and monitoring – the evolving role of eBird

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Alaska's vast, largely roadless landscape presents significant challenges for understanding the status and trends of its bird populations. The North American Breeding Bird Survey (BBS) provides a valuable long-term dataset, but its inference is limited to the state's sparse road network. The Alaska Landbird Monitoring Survey (ALMS) was designed to extend structured sampling into remote areas, yet high access costs and declining agency capacity have constrained its implementation. From 2024–2025, an interagency group used Structured Decision Making to evaluate current and novel monitoring approaches. This process identified eBird as a high-value option aligned with shared objectives. This result prompted a series of eBird/Cornell Lab of Ornithology–USFWS/interagency listening sessions held during eBird Week in 2026 to better understand how formal support of eBird could help us achieve our shared goals in Alaska. Planned actions derived from these talks include the development of the Alaska Monitoring Priority Tool, which guides land managers, biologists, and the public to locations where observations would most improve eBird Status and Trends models; the Alaska eBird Atlas, a framework designed to broaden participation and improve data quality through prioritization and gamification; and the Alaska eBird Residency Program, which strategically places skilled observers in under-sampled regions, among other initiatives. Together, these efforts will strengthen eBird Status & Trends in Alaska and help it serve as a complementary addition to our existing monitoring programs.

ORAL PRESENTATION

Working Session: Advanced Monitoring Methods

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eBird Alaska monitoring priority reflections: assessing user needs and improvements to drive widespread adoption of monitoring tool

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In 2025, Cornell Lab of Ornithology and U.S. Fish and Wildlife Service in Alaska collaborated to create a web-based decision support tool to identify locations that have low eBird data coverage. This tool allows users to submit eBird checklists in locations and habitats that are less understood by eBird models, thereby improving the data quality in these locations and helping us to better understand where Alaska's birds are and how they are faring. Released in spring 2026, the interactive tool was accessed by hundreds of users throughout the summer and served as a pilot for using eBird as a monitoring tool. Looking toward summer 2027, we reflect on user feedback and lessons learned from the 2026 field season and consider paths for improving the platform to drive widespread adoption of eBird monitoring tools in Alaska and beyond. Proposed improvements include adding explicit rankings for Alaskan geographies, filtering out inaccessible locations, improving map visualizations for non-experts, and exploring devising metrics and visualizations to gauge the impact of submitting checklists to high-priority areas.

ORAL PRESENTATION

Working Session: Advanced Monitoring Methods

Integrating participatory science and survey data to identify priority areas for waterfowl monitoring

Kylee Dunham[1], Nicholas Masto[2], Kate Martin[3], Orin Robinson[1]

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The Waterfowl Breeding Population and Habitat Survey (WBPHS) has guided waterfowl management in North America since 1955, yet limited coverage constrains inference for some northern-breeding waterfowl, particularly sea ducks. As the survey undergoes evaluation and modernization, integrated approaches that improve species distribution estimates and identify priority areas for sampling can inform decisions about survey design, efficiency, and information gains. We integrated breeding-season eBird observations from 2009–2023, with telemetry, helicopter surveys, ground surveys, and other local and regional surveys to develop spatially explicit distribution models for six species: Northern Pintail, Lesser Scaup, Greater Scaup, Black Scoter, White-winged Scoter, and Surf Scoter. We used spatiotemporal exploratory models incorporating 154 environmental and survey-effort variables to generate distribution predictions at a 3 × 3 km resolution, integrating information from broad-scale citizen science data with telemetry and targeted surveys. We normalized and combined species-specific predictions to produce breeding-season abundance surfaces and identify areas of high concentration and diversity across the six species. Integrating complementary data sources improved distribution mapping relative to citizen science data alone and expanded the spatial inference of local and regional surveys. The resulting concentration area maps revealed opportunities to improve survey coverage for priority species and identify landscapes of collective importance across species. By identifying where additional sampling may most improve knowledge of understudied species, this approach can support evidence-based modernization of the WBPHS to improve waterfowl management and conservation decisions.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Online presentation

Closing the annual cycle of the American Kestrel: integrated genomic and mark-recapture data link breeding populations to wintering regions

Christen M. Bossu[1], Claire K. Labuda[1], Julie C. Hagelin[2], Amanda M. Carpenter[1], Johanna K. Beam[1], Kyle Shepard[3], Emma M. Rhodes[4], Blanca E. Hernández Baños[5], Julie A. Heath[6], John E. McCormack[7], Kristen C. Ruegg[1]

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Developing effective conservation strategies for migratory species requires understanding population dynamics at both breeding and nonbreeding grounds. We quantified population-level migratory connectivity in the American Kestrel (*Falco sparverius*), a species that has declined across North America over the past 60 years, with regional variation in severity, and that includes a genetically distinct Alaska breeding population. Despite previous attempts to assess migratory connectivity in American Kestrels, the full annual cycle remains unresolved. We combined SNP-based genetic assignments (n = 383) with mark-recapture banding data (n = 814) to estimate migratory connectivity among three genetically distinct American Kestrel populations (Alaska, West, and East). Genetic assignment linked nonbreeding birds to the Alaska breeding population and, for the first time, identified potential wintering regions for this population. Alaska individuals wintered and migrated along the coastal slopes of the Sierra Madre Occidental and Oriental in northern Mexico and southern Texas, and showed the strongest connectivity of any population. Transition probabilities also supported leapfrog migration and partial migration among mid-latitude individuals. Variation in migratory connectivity may contribute to regional declines in American Kestrels. These findings can support targeted, spatially explicit conservation and management strategies by identifying key wintering regions for breeding populations experiencing regional declines and enabling research to target threats and stressors in nonbreeding areas. More broadly, this research shows the value of integrating multiple data sources to close knowledge gaps in annual-cycle migration patterns and the importance of identifying migratory linkages that may influence regional population trends.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Integration of genomic and telemetry data from Emperor Geese (*Anser canagicus*) reveals female philopatry and male-biased dispersal among Alaska breeding populations

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Breeding populations of waterfowl often differ in abundance and harvest pressure, requiring multiple management strategies per species. Quantifying dispersal among breeding populations is therefore essential, as it influences demographic and evolutionary processes and can buffer metapopulations against local declines. We integrated satellite telemetry and genomic data to evaluate connectivity in the Emperor Goose (*Anser canagicus*), a species of long-standing conservation concern. In Alaska, emperor geese nest in two primary areas separated by ~600 km: the Yukon-Kuskokwim Delta and the Seward Peninsula. Telemetry of adult females (n =193) showed strong site fidelity, with all females returning to the same breeding area across years and no dispersal detected across breeding populations. Genomic data from females (n = 210) revealed low but significant autosomal differentiation between breeding populations, no differentiation at Z-chromosomal markers, and spatial clustering of related females within breeding sites. These results indicate strong female philopatry, with male dispersal likely homogenizing allele frequencies across populations. Telemetry indicated intermixing of birds from different breeding areas at overwintering and staging areas, suggesting that male-mediated gene flow may occur through pair formation in these shared habitats. To place recent demographic trends in a broader temporal context, we reconstructed historic effective population size (Ne), revealing substantial variation through time, including a low during the Little Ice Age, a peak in the early 20th century, and a decline in the late 20th century. Our study highlights the value of combining genomics and telemetry to assess dispersal, gene flow, and long-term population dynamics in Arctic-breeding birds facing ongoing management challenges.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Master's oral presentation

Comparing plumage color and genetics of Pribilof songbirds to mainland Alaska songbirds

Noelle Deane[1], Ray Bennett[1], Isaiah A. Faso-Formoso[1], Iqra Dubed[1], Elle Kauppi[1], David Kim[1], Douglas Causey[1], Veronica Padula[2], Jess McLaughlin[1]

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Gloger's Rule refers to the trend of endotherms displaying darker plumage when in cold and humid environments. St. Paul Island is a remote island in the Bering Sea with a cold, humid climate. Despite having multiple genetically distinct songbird populations that are described as darker than their mainland counterparts, studies relating to Gloger's Rule in songbirds on the island are few and far between. In this study, the plumage color and genetics of songbirds on St. Paul Island will be compared to their intraspecific counterparts on the mainland. The focus species for this study will be Gray-crowned Rosy-Finch (*Leucosticte tephrocotis*), Pacific Wren (*Troglodytes pacificus*), Snow Bunting (*Plectrophenax nivalis*), and Lapland Longspur (*Calcarius lapponicus*). Color-corrected photographs of songbirds will be taken of both live birds on St. Paul Island and mainland Alaska. RGB numbers will then be taken from these photographs and compared to determine if there is a difference in plumage color between the two populations. Whole-genome sequences of St. Paul Island songbird samples will be compared to reference genomes from mainland museum specimens to determine if key melanogenesis genes are diverging between the two populations. This study will provide insights into the evolution of plumage color in understudied high latitude areas.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Master's oral presentation

Song evolution in Beringia: a comparative genomics and bioacoustics study of the songbirds of St. Paul Island, Alaska

Ray Bennett[1], Noelle Deane[1], Malachi Cochran[1], Iqra Dubed[1], Isaiah Faso-Formoso[1], Jennifer Fowler[1], Maggie Gibson[1], Elle Kauppi[1], David Kim[1], Nicole Vreeman[1], Veronica Padula[2], Jess McLaughlin[1]

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St. Paul Island is an exceptional location for studying the factors impacting speciation due to its remote location in the Bering Sea, proximity to Eurasia and North America, an open soundscape, and glacial history. In collaboration with the Indigenous Aleut Community of St. Paul Island, this study will describe the genetic variation and acoustic communication patterns of the island's songbird populations – Pacific Wren (*Troglodytes pacificus)*, Snow Bunting (*Plectrophenax nivalis*), Lapland Longspur (*Calcarius lapponicus*), and the Gray-crowned Rosy-Finch (*Leucosticte tephrocotis*). Then we will compare each species relative to mainland North America and Russia populations. We expect to find significant changes, most likely in the island residential species, between the island and mainland populations indicative of genetic and cultural isolation, and historical patterns of mainland contact. Overall, these populations remain understudied, giving insight into the evolution of reproductive isolation via both episodic gene flow, an altered soundscape of a treeless island, and providing the establishment of a new working relationship to continue this monitoring into the future.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Doctoral oral presentation

What limits a declining shorebird population? An integrated population model for Lesser Yellowlegs

Jeff Wagner[1,2], T. Lee Tibbitts[3], Katie Christie[4]

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Lesser Yellowlegs (*Tringa flavipes*) have declined 63% in four decades, yet their demographic rates remain poorly understood. We built an integrated population model (IPM) for a breeding population near Anchorage, Alaska, combining volunteer counts, adult mark-resight histories, and nest monitoring from 2014 to 2025. Chicks color-banded in two periods (139 in 1995–1998; 133 in 2018–2025) informed local recruitment probability. Adult apparent annual survival averaged 0.70 (95% CRI 0.62–0.77) and population growth was slightly negative (λ = 0.96, 0.91–1.03). Young entered the breeding population at ages one and two in near-equal proportion, with total local recruitment probability near 0.05. A transient life-table response experiment attributed 76% of λ to adult survival, 17% to immigration, and 7% to local recruitment, with demographic stochasticity dominating interannual variance. The marked-chick data separated recruitment from immigration, which the counts alone could not resolve. Adults carrying GPS tags had lower apparent survival than untagged birds (0.40 vs 0.70; odds ratio 0.29, 0.15–0.55). Together our results describe a population sustained largely by immigration, where local habitat management alone is unlikely to reverse decline.

Scientific Program: Genetics & Life-History Characteristics

Doctoral oral presentation

Migratory and dietary carry-over effects on body condition and reproductive investment by Tufted Puffins

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Advances in miniaturized tracking technology provide insight into seabird non-breeding movements and distributions, enabling tests of how migratory effort and winter environments might carry-over to influence reproductive outcomes. The Tufted Puffin (*Fratercula cirrhata*) is a coastal-pelagic predator in the Gulf of Alaska, where breeding populations are in decline. To examine how non-breeding movements and diet are shaped by body size, and subsequently carry-over to influence reproductive condition and investment, we evaluated variation in body size, body condition, and egg volume relative to spring migratory effort and diet using geolocation and stable isotope (δ^{15}N, δ^{13}C) values from feather and blood tissues across two seasons (2018–2020). Non-breeding feather isotope values predicted female structural size – larger females had higher δ^{13}C and lower δ^{15}N values. Female body condition (BCI) during incubation was negatively related to spring migratory distance and was lower in 2020 than 2019. For males, null models best explained variation in structural size and BCI regarding migratory distance, seasonal timing, and feather isotope metrics. Pre-laying blood isotopes explained little variation in body size or condition for either sex. Findings suggest that body size mediates late-winter foraging and spring migratory distance influences condition in females only. Final analyses will examine egg volume, testing whether female condition and/or diet shape reproductive investment.

Scientific Program: Genetics & Life-History Characteristics

Doctoral oral presentation

The influence of birth-year and recruitment-year environment on probability of first reproduction in Black Brant

Jordan M. Thompson[1], David N. Koons[1]

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The age of first reproduction is a critical yet understudied life history trait in populations of long-lived birds. Environmental conditions experienced during the developmental period or in the year of a potential reproductive attempt may affect the age at which individuals reproduce for the first time, although these effects are not often considered in tandem. We parameterized a hierarchical capture-mark-reencounter model to estimate the age-specific probability of first reproduction (i.e., recruitment probability) for Black Brant banded on the Yukon-Kuskokwim Delta, and partitioned variation in recruitment probabilities into among-birth-year and among-recruitment-year variation. Our results suggest that most Brant reproduced for the first time before age 5, although the distribution of age at first reproduction exhibited a significant right skew, with just less than 10% of individuals delaying reproduction past age 10. We found that among-recruitment-year variation in recruitment probabilities was much greater than among-birth-year variation, suggesting that environmental conditions in the year leading up to a potential reproductive attempt may have a greater effect on accession to reproduction than long-term effects of environmental conditions experienced during the birth year. Variation in recruitment probabilities resulted in significant among-cohort variation in expected age at first reproduction. Our modeling framework and findings may be broadly applicable to understanding life history variation in many long-lived species with delayed reproduction.

ORAL PRESENTATION

Scientific Program: Genetics & Life-History Characteristics

Master's oral presentation

Wintering at the extremes: contrasting productivity and survival rates in Emperor Geese

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Emperor Geese populations have fluctuated over the last 40 years, resulting in several prolonged harvest closures. These fluctuations may be influenced by conditions on their wintering grounds, yet we know little about demographic performance during this period. We conducted age-ratio surveys and resighted banded individuals to estimate annual production and survival at two locations at the geographic extremes of the species' wintering range: Shemya Island in the western Aleutians and Women's Bay in the Kodiak Archipelago. We also examined relationships between survival and seasonal climate conditions using the Aleutian Low–Beaufort Sea Anticyclone (ALBSA) index. Juvenile-to-adult ratios were consistently lower on Shemya than Kodiak, with juveniles comprising 3–13% of geese on Shemya compared with 17–28% on Kodiak. Apparent annual juvenile survival on Shemya was nearly half that of Kodiak, while adult survival was more similar between sites. Seasonal climate conditions were associated with survival at both locations, but patterns differed between regions: survival on Shemya was associated with conditions across multiple seasons, whereas Kodiak survival was associated primarily with winter conditions. These results indicate that wintering location is an important source of variation in productivity and survival, particularly for juveniles, and suggest there are substantial differences in demographic performance across wintering regions.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Trends in boreal wetland birds using long-term citizen science data

Arin K.P. Underwood[1], Katie S. Christie[1]

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Citizen science bird monitoring programs have grown exponentially in recent years and can be a useful tool in long-term monitoring while also engendering sustainable public participation in conservation action. We evaluated these contributions through a wetland monitoring program focused on Lesser Yellowlegs (*Tringa flavipes*) in southcentral Alaska. From 2014 to 2026, 36 volunteers trained in bird identification and standardized survey protocols monitored 50 wetlands during four survey periods within a 24-day window each spring. Reported observations were analyzed using a Bayesian approach with a generalized linear mixed model to estimate a trend in the relative abundance of Lesser Yellowlegs in the study area. Volunteers began using eBird in 2021 and were surveyed before and after program participation to evaluate their experiences and continued engagement with eBird. Analysis of the Lesser Yellowlegs data showed a 95% chance of a decline in abundance with a high detection probability that was similar from year to year. Social science surveys suggested that participation in a local citizen science project like Birds 'n' Bogs is a gateway into more sustained eBird use as well as additional conservation actions. Together, these findings demonstrate the potential for community-based monitoring to provide long-term data on local bird populations while supporting continued participation in bird monitoring beyond a structured program.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Distance sampling errors bias population size estimates in avian point counts

Emily L. Weiser[1]

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When surveying wild populations, imperfect detection is often accounted for with distance sampling, which involves recording the distance from the observer to each animal. In avian point counts in forest or shrub habitats, birds are often out of sight and thus distances are estimated rather than empirically measured. Observer estimates of distance are subject to error, typically via systematic over- or underestimation rather than random error, even after observer training. The consequences of error in distance estimation have not been demonstrated. I simulated avian point-count datasets under various scenarios of distance estimation error, with small and large point count radii, and with small and large distance bands. Random error in distance estimation resulted in unbiased population density estimates, but this situation is expected to be rare in the field. In contrast, systematic over- or underestimation of distance resulted in strong biases in estimated population density. Using a smaller survey radius or larger distance bands did not reduce bias. Moreover, the accuracy of distance estimates could not be inferred from the dataset nor model fit, meaning a field study could not identify or correct errors after data collection. To produce accurate population estimates, bird monitoring programs could either minimize error in all surveys (e.g., with triangulation between two observers) or measure error in a subset of surveys (e.g., using triangulation or playback at known distances) and use a modeling framework that accounts for that error.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Updated population trends from the Alaska Landbird Monitoring Survey for interior and southeast Alaska

Vijay Patil[1], Joe Eisaguirre[1], Rachel Richardson[1], Katie Christie[2]

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Migratory bird populations have declined dramatically across North America since the 1970s, and robust population trends are needed to identify species of conservation concern. The Alaska Landbird Monitoring Survey (ALMS) was designed to produce unbiased population estimates for roadless areas in Alaska while accounting for imperfect detection and was intended to complement the road-based Breeding Bird Survey (BBS). We provide updated annual trend estimates (2003-2025) derived from ALMS, BBS, and a joint ALMS-BBS model for 31 species in Bird Conservation Regions (BCRs) 4 and 5 and make data available in a set of updatable online repositories. The ALMS model identified 12 of 39 species/BCR combinations with >95% probability of a decreasing trend and 5 with increasing trends. For the BBS, we detected 20 decreasing trends and 4 increasing trends out of 46 species/BCR combinations. A joint ALMS/BBS model improved trend precision for roadless areas surveyed by ALMS. All models (joint, ALMS, and BBS) identified more species/BCR with declining trends compared to published estimates for 2003-2015, but this could be partly due to increased power from a longer time-series. Next steps include a power analysis of ALMS survey effort and a comparison with contemporary eBird trends, which will inform future bird population monitoring strategies in Alaska.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Ducks like water: developing a systematic boreal waterfowl survey for the Yukon

Margaret Campbell[1]

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The Canadian Wildlife Service (CWS) identified significant gaps in population and habitat data for boreal waterfowl in northern Canada. Until 2017, systematic waterfowl surveys in the Yukon were limited to the U.S. Fish and Wildlife Service Waterfowl Breeding Population and Habitat Survey transects in Old Crow Flats leaving the remainder of the territory unsampled. We used data from roadside waterfowl surveys and the North American Trumpeter Swan Survey to develop an aerial waterfowl survey. The Yukon Boreal (and Arctic) Waterfowl Monitoring Survey is a modification of the Boreal Optimal Sampling Strategy and the CWS's national boreal landbird monitoring program. Sample units are chosen using a 5 km diameter hexagon grid and a stratified random sampling design combining spatial balance, habitat type and cost of access. Helicopter surveys were completed in 9 ecoregions in the Yukon and Northern BC from 2017–2024 using a standardized double-observer method. The survey has filled data gaps in waterfowl distribution, abundance, and habitat association in the Yukon and northern BC. In 2026 the survey was adapted for Arctic coastal ecoregions on the Yukon North Slope and Tuktoyaktuk Peninsula in the NWT. This presentation is an overview of lessons learned (the good/bad/ugly/crazy) while developing a multi-species monitoring in northern Canada with limited/no road access, minimal historical data, and a reputation as somewhere with "not many ducks".

ORAL PRESENTATION

Scientific Program: Population Monitoring

Kachemak Bay shorebird monitoring project from 2009-2026

George Matz[1]

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When the Kachemak Bay Birders organized in 2008, they wanted to include a citizen science project in their list of activities. It became obvious that monitoring Kachemak Bay's spring shorebird migration was the best choice. Organizing began with a strategic plan to 1) attain a better understanding of the status of shorebird populations in Kachemak Bay, and 2) provide local birders with more opportunities to observe and enjoy shorebirds. Next came developing a protocol based on using volunteers. We decided on a modified version of the International Shorebird Survey protocol and to use teams for different habitat sites. A key issue was adjusting to the extreme tides in Kachemak Bay. Our first monitoring year was 2009, when we had 14 birders monitoring six Kachemak Bay sites for nine sessions from mid-April to late May. The project has grown since then using the same protocol. In 2026, we had 70 birders monitoring the same sites plus the intertidal area of the Anchor and Kasilof Rivers. This presentation will summarize what we have learned over the last 18 years, with an emphasis on trends and how we have used our data.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Broad-scale predictors of population trends In Alaskan breeding birds

Megan C. Milligan[1], Katherine S. Christie[2], Julie C. Hagelin[3]

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Long-term monitoring can provide important insights into the dynamics of wildlife populations at large spatial and temporal scales, which is critical for management. The Breeding Bird Survey is a long-term, road-based monitoring program that has been tracking population trends of breeding birds in Alaska since the 1990s. We evaluated coarse predictors of species-level trends in both the state of Alaska and in key Bird Conservation Regions that represent common biomes in Alaska. We assessed the effects of both life history characteristics and habitat variables (e.g., tree loss in non-breeding ranges) to estimate which factors were most closely related to long-term declines in breeding birds. There was strong evidence that multiple factors were associated with declining trends in Alaskan breeding birds. Species that were long-distance migrants, insectivores, and which had experienced more tree loss on their non-breeding range were more likely to have declining population trends. In contrast, species that were residents and short-distance migrants, herbivores and omnivores, and which had non-breeding ranges at higher elevations were more likely to have positive population trends. These results can provide important insights into broad factors influencing species-level declines and inform prioritization of management actions. Information is preliminary and provided for best timely science.

ORAL PRESENTATION

Scientific Program: Population Monitoring

By air, by sea, by land: a spatially balanced statewide survey for Aleutian Terns

Megan Boldenow[1], Robin Corcoran[2], Michael Goldstein[3], Robert Kaler[4], Trent McDonald[5], Elizabeth Moore[6], Susan Oehlers[7], Erik Osnas[4], Heather Renner[8], Anne Schaefer[9]

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The Aleutian Tern (*Onychoprion aleuticus*) is a rare, migratory seabird nesting along subarctic coasts of Alaska and eastern Russia. Known Alaska colonies have declined steeply since the 1970s. No range-wide monitoring exists, and the species' remote, patchy distribution leaves population size and the importance of undocumented colonies uncertain. To address this gap, we conducted a large-scale survey spanning the species' historical breeding range in Alaska. We first modeled a resource selection function from known current and historical colony locations to guide survey coverage. We then flew fixed-wing aerial surveys of coastal habitat from Glacier Bay to Point Hope, supplemented by boat-based surveys in the Aleutian Islands. Because colony size estimation and differentiation of Aleutian from Arctic Terns (*Sterna paradisaea*) are not possible from the air, ground observers visited a spatially balanced random sample of detected colonies. During 2023-2025, we detected 480 putative tern colonies, surveyed 142 colonies on the ground, and confirmed Aleutian terns at 66 colonies. Double-observer distance-sampling from the aerial surveys allow inference of total colony number and density, while ground surveys provide mean colony size and mean species proportions. These results will be integrated with estimates from other areas to produce the first statewide estimate for this species of conservation concern.

First estimate of Spectacled Eider abundance during winter accounting for survey coverage, flock detection, flock size estimation error, and availability in the survey area

Erik E. Osnas[1], Daniel J. Rizzolo[2], David E. Safine[1]

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The Spectacled Eider (*Somateria fischeri*) is a threatened sea duck whose global population gathers each winter in a small area of the Bering Sea south of St. Lawrence Island. This concentration provides a rare opportunity to estimate the species' global abundance, including the poorly monitored breeding population in Arctic Russia. Previous winter surveys reported simple counts without accounting for birds that may have been missed, making it impossible to determine whether low counts reflected population declines, incomplete detection, or other error processes.

We conducted a replicated aerial survey in 2023 and developed a statistical approach that accounts for missed birds, uncertainty in flock-size estimates, repeated observations, and the proportion of the population outside the survey area. Simulations indicated that the approach produced accurate estimates and reliable uncertainty intervals.

We estimated that approximately 231,000 Spectacled Eiders wintered in the region, with a 95% credible interval of about 203,000–365,000 birds. This is the first model-based abundance estimate for this wintering aggregation and provides an explicit measure of uncertainty rather than an unadjusted minimum count. The results demonstrate the value of accounting for imperfect detection when surveying large groups of animals and provide a framework that can be applied to other aerial surveys of aggregated wildlife.

ORAL PRESENTATION

Scientific Program: Population Monitoring

Nest densities at Kigigak Island, Alaska, indicate a severe population decline of Spectacled Eiders (*Somateria fischeri*)

Sarah Hoepfner[1], Daniel Rizzolo[1]

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Spectacled Eiders (*Somateria fischeri*) are a species of sea duck that breeds in Alaska along the central coast of the Yukon-Kuskokwim Delta (YKD) and Arctic Coastal Plain. The YKD population experienced a severe decline during the 1970s–1990s which motivated their listing as threatened under the U.S. Endangered Species Act. Breeding Spectacled Eiders have been monitored at Kigigak Island on the YKD since 1992. Using the Horvitz-Thompson estimator, we adjusted standardized annual nest counts based on nest survival rates to determine nest abundance. From 2009–2026 nest abundance on Kigigak Island varied from an estimated low of 85 nests in 2026 to a high of 385 nests in 2015, with an average of 209 nests per year. From 2015 to 2026 nest abundance declined by 78%, at a rate of 6.5% per year. The pattern of decline in nests corroborates aerial survey results and both show patterns similar to the decline seen in the 1990s; however, the recent decline appears more extreme. These findings show that Spectacled Eiders are undergoing a severe population decline and more effort is needed to determine the contributing factors.

Poster Session

Wednesday, December 9, 4:00–6:00pm

Doctoral Student (D)
Master's Student (M)
Bachelor's Student (B)

Location	Title	Presenter
1A	Emergent algal toxins threaten seabirds, marine mammals and fish in the Bering Sea	Danielle Gerik & Sarah Schoen
1B	Alaska's 2025 State Wildlife Action Plan	Julie Hagelin & Eva Allaby
1C	Multi-species foraging dynamics in a sub-Arctic sound during the non-breeding season	Anne Schaefer
1D	Influences of body mass and nest success on population dynamics of Spectacled Eiders	Arrow Myers (M)
2A	Comparison of physiological response to warming temperatures between Boreal and Black-capped Chickadees	Kolibri Drobish (M)
2B	Using point of care (POC) devices to measure body condition of nesting Pacific eider species	Mairin Murphy (D)
2C	Avian community response to Arctic beaver colonization	Sebastian Zavoico (D)
2D	Diet of breeding Red-throated and Pacific Loons along the Beaufort Sea coast inferred from stable isotope and fatty acid analyses	Brian Uher-Koch (D)
3A	Pacific Common Eider in a changing Arctic: long-term patterns in breeding ecology, climate, and human influence	Kayla Shively
3B	Stable δ^2H isotope analysis of American Tree Sparrow (*Spizelloides arborea*) feathers shows a broad range of summer nesting grounds in Alaska	Lillian Downing (B)
3C	Differential migration strategies and effects on demography and population dynamics of Pacific Black Brant	James Golden (D)
3D	From the boreal to the tropical: survival and migration of Alaskan Blackpoll Warblers, a pilot study	Kassie Colson
4A	The phenology and phenomenon of Sandhill Crane spring migration along the Tintina Trench at Faro, Yukon Territory	Rachel Anderson
4B	After AI: from automated counts to population estimates	Charles Frost
4C	Avian diversity and abundance in Portage Valley and Whittier following road construction using comparative point counts	Elle Kauppi (B)
4D	Pioneering Anna's Hummingbirds in Cordova, Alaska	Katherine McLaughlin
5A	The influence of wintering location on annual productivity of Emperor Geese	Riley Marcus (M)
5B	Seabird declines track changing ocean conditions in Prince William Sound, Alaska	Robb Kaler
5C	Next step for U.S. Fish and Wildlife Service Alaska historical bird data	Tamatha Patterson

Location 1A

Emergent algal toxins threaten seabirds, marine mammals and fish in the Bering Sea

Danielle Gerik[1], Sarah Schoen[1], Matthew Rustand[2], Danielle Donadio[2], Elizabeth Bretscher[2], Evangeline Fachon[3], Thomas Farrugia[4], Barbara Bodenstein[5], Robert Kaler[6], Heather Renner[2]

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Driven by rapidly rising ocean temperatures, harmful algal blooms (HABs) are expanding northward into the Alaskan Arctic and sub-Arctic, increasing in frequency and severity. Multispecies wildlife mortalities linked to HABs have historically been uncommon in Alaska, but the Pribilof Islands recently experienced back-to-back die-offs in 2024 and 2025 concurrent with *Alexandrium catenella* blooms. On St. Paul Island in 2024, fish were found dead on beaches alongside northern fur seals (*Callorhinus ursinus*), marking Alaska's first confirmed marine mammal saxitoxin (STX) poisoning event. In the following year on St. George Island, >130 seabirds (13 species) were found dead alongside dozens of seals and thousands of Pacific Sand Lance (*Ammodytes personatus*), although true mortality during both die-offs was likely much higher. To evaluate STX impacts on seabirds, a vital cultural and subsistence food resource for resident Unangan communities, we synthesized STX data across trophic levels collected during die-offs. Pacific Blue Mussel (*Mytilus trossulus*) STX concentrations were >20 times the Seafood Safety Regulatory Limit (SSRL; 80 µg/100g) in 2024 and >60 times the SSRL in 2025. Sand Lance approached 10 times the SSRL in 2025, the highest ever recorded in Alaska, revealing a potent vector to top predators. STX was detected in 17% of live birds in 2024, and 50% of live and 25% of dead birds in 2025. Notably, a dead Parakeet Auklet (*Aethia psittacula*) exhibited the highest kidney STX concentration documented in wild or experimentally dosed birds. We suspect toxin-associated multispecies mortality in this region may become a persistent ecosystem feature rather than isolated anomalies.

Location 1B

Alaska's 2025 State Wildlife Action Plan

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Alaska's 2025 State Wildlife Action Plan (SWAP) provides a strategic, science-based framework for conserving and managing Species of Greatest Conservation Need (SGCN) over the next decade. The SWAP identifies SGCN, key habitats, and priority threats to SGCN, enabling early conservation actions to support Alaska's diverse fish and wildlife. The SGCN list (Appendix A) contains 183 birds, including those in the Alaska Landbird and Shorebird Conservation Plans. New to the 2025 revision is an emphasis on full-lifecycle conservation to identify and mitigate drivers of decline, which may occur during non-breeding periods. There is greater prioritization of partnerships that support proactive, landscape-level conservation and management actions, including with Indigenous knowledge holders, such as Alaska Native and First Nations communities, as well as with industry sectors such as tourism, mining, and oil. Habitats across the state are now evaluated by bioregion using spatial heatmaps of SGCN richness to identify conservation opportunities. Species assessments now employ the Alaska Species Ranking System (ASRS), a transparent, science-based tool that evaluates conservation status and vulnerability. As a nonregulatory tool, the goal of the SWAP is to promote proactive conservation and management of fish and wildlife, in a manner that reduces reliance on future federal Endangered Species Act listings, supporting Alaska's constitutional mandate for sustained yield. Developed with engagement from agencies, Tribal entities, NGOs, species experts, industry, and the public, the 2025 SWAP provides a collaborative, forward-looking blueprint for sustaining Alaska's birds and other wildlife.

Location 1C

Multi-species foraging dynamics in a sub-Arctic sound during the non-breeding season

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Understanding the functional relationships between marine birds and mammals during the nonbreeding season is crucial due to limited direct knowledge of prey resources and changing marine ecosystems. We examined the foraging dynamics of multi-species feeding aggregations during fall and winter in Prince William Sound, Alaska. Our goals were to determine whether Humpback Whales (*Megaptera novaeangliae*) use seabird foraging flocks to locate prey or vice versa and to identify flock characteristics associated with whale presence. We found that whales consistently used seabird flocks as cues to locate scattered prey. In all cases, a single whale surfaced through an established feeding flock, disrupting the group and causing it to disperse. Whales were more likely to be associated with flocks that were larger and farther from shore than flocks without whales, suggesting that these larger aggregations indicate a larger fish school or create a stronger auditory or visual signal for the whales to detect. Interestingly, this study followed the dissipation of the 2014-2016 Pacific Marine Heatwave which disrupted both prey and predator communities. Continued exploration of multi-species feeding dynamics as the ecosystem recovers may provide insight into how upper trophic-level foraging dynamics may alter as the marine climate shifts and heatwaves increase in frequency and intensity. If functional roles shift in response to changes in the prey base, multi-species foraging dynamics could serve as indicators of marine ecosystem productivity.

Location 1D
Master's poster presentation

Influences of body mass and nest success on population dynamics of Spectacled Eiders

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Shifts in coastal wetland habitat due to increased storm-surge frequency on the Yukon-Kuskokwim Delta, Alaska, have raised concerns for the breeding success of many waterfowl species. Spectacled Eiders (*Somateria fischeri*), in particular, have experienced significant population declines leading to their listing as threatened under the Endangered Species Act in 1993. Previous studies have identified several possible causes of decline, including sea ice conditions, wetland salinity, and lead poisoning. However, the broader population-scale impacts of these factors are less understood, especially on breeding grounds. Using comprehensive mark-recapture, morphometric, and remotely sensed datasets collected over the last 34 years at a key breeding site, we aim to 1) evaluate the influence of body mass on apparent survival of Spectacled Eiders, 2) identify factors affecting body mass, and 3) determine possible reproductive parameters and habitat characteristics that impact nest success. With recent further declines in abundance detected from aerial surveys, it is vital that sources of population decline be identified to inform management decisions for this globally important breeding area. Information is preliminary and provided for best timely science.

Location 2A

Master's poster presentation

Comparison of physiological response to warming temperatures between Boreal and Black-capped Chickadees

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Arctic regions are warming at rates higher than the global average, posing threats to cold-adapted species. Birds, as ecosystem indicators, are especially sensitive to ecosystem disruptions such as temperature extremes. Species may vary in their sensitivity to warming based on differences in migratory strategy, behavior, or habitat specialization, but this remains poorly studied in boreal birds. To evaluate the influence of habitat specialization on heat stress response, I compare vulnerability between the Black-capped Chickadee (*Poecile atricapillus*), a habitat generalist, and the Boreal Chickadee (*P. hudsonicus*), a boreal forest specialist, at the northern end of their distribution in Interior Alaska. I predicted that Boreal Chickadees have lower adaptability to environmental temperature change, exhibiting reduced thermoregulatory capacity and lower heat tolerance limits, compared to Black-capped Chickadees that may be more heat tolerant due to a wider ecological niche. Our results suggest that Boreal Chickadees have lower heat tolerance limits compared to Black-capped Chickadees, as shown by a reduced ability to offset acute heat stress in respirometry heat challenges. Our point count data reveals that Boreal Chickadee breeding habitat (coniferous-dominated forests) has higher ambient temperature during the day suggesting that this species may be exposed to higher temperatures during the breeding season. These early findings highlight the uneven impacts of climate warming on northern bird populations and point to greater vulnerability to climate change in boreal specialist species.

Location 2B
Doctoral poster presentation

Using point of care (POC) devices to measure body condition of nesting Pacific eider species

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Eider species overwintering in the Bering Sea, Alaska, are known to prefer sea ice levels and wintering conditions that are within a "Goldilocks Zone," - not too little, not too much. While indirect effects of these conditions have been measured previously via nesting success and adult survival, it is difficult to measure the effects of good or poor sea ice conditions directly as birds begin the breeding season. Here, we pilot a study using medical at-home "Point of Care" devices conventionally dedicated to measuring cholesterol and glucose levels in people with heart conditions, to measure metabolite levels in Common (*Somateria mollissima v-nigrum*) and Spectacled (*Somateria fischeri*) Eiders as they return from their wintering polynyas and during incubation. We have begun to sample and monitor females through the nesting season to determine how body condition influenced by poor or favorable wintering conditions may directly alter their nesting success and incubation latency. If the device is successful in measuring relative body condition in waterfowl species, it may increase opportunities for scientists studying birds in remote regions (such as Alaska) to learn more about bird physiological characteristics in the field using cost- and logistically-efficient tools.

Location 2C
Doctoral poster presentation

Avian community response to Arctic beaver colonization

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Avian communities across the Arctic are experiencing rapid changes associated with a warming climate. The recent proliferation of beaver engineering in Arctic Alaska and Canada is emerging as a major driver of habitat change, accelerating processes like shrubification that alter the distribution of avian communities. Areas of greatest impact by beavers include small streams, where beavers convert narrow riffles into vast wetlands. While occupied ponds increase surface water extent, thaw permafrost and increase vegetation productivity surrounding waterways, abandoned ponds drain and create unique, highly productive meadows. Resulting pond complexes create a diverse mosaic of habitat that may harbor unique assemblages of avian taxa. To characterize the impacts of beaver engineering on avian communities, we monitored riparian areas adjacent to streams unimpacted by beaver engineering, and active and drained beaver ponds in northwest Alaska over three years using Autonomous Recording Units (ARUs). Comparing beaver-impacted areas with control areas, we hypothesize decreases in arctic specialist songbirds (e.g., Lapland Longspur *Calcarius lapponicus*) and increases in generalist songbirds (e.g., White-crowned Sparrows *Zonotrichia leucophrys*), and a general increase in presence of waterfowl and shorebirds. Analysis is ongoing and preliminary analysis is planned for this conference.

Location 2D

Doctoral poster presentation

Diet of breeding Red-throated and Pacific Loons along the Beaufort Sea coast inferred from stable isotope and fatty acid analyses

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Red-throated Loons (*Gavia stellata*) are a species of conservation concern, with breeding populations experiencing declines along Alaska's Beaufort Sea coast. Sympatrically breeding Pacific Loon (*G. pacifica*) populations are stable or increasing, highlighting the need to understand drivers of Red-throated Loon population decline. Dietary analyses can provide information about habitat use, foraging behavior, and response to changing environmental conditions. Prior research has documented long-term shifts in fish community composition and abundance in the Beaufort Sea, suggesting that changes to the nearshore prey fish community may be affecting loon population dynamics. Because loons capture prey underwater, direct observation of adult diet is impossible, necessitating alternative methods. We used bulk stable isotopes (δ^{13}C and δ^{15}N) and quantitative fatty acid signature analysis (QFASA) of breeding adult Red-throated and Pacific Loons and their potential prey to estimate diet composition at multiple study sites representing contrasting biogeographic landscapes along the Beaufort Sea coast and adjacent National Petroleum Reserve-Alaska inland sites. Red-throated Loons fed predominantly on marine fish, while Pacific Loons used a substantially broader array of prey including both marine and freshwater fish and invertebrates. Species with flexible foraging behaviors and generalized diets, like Pacific Loons, may have greater adaptive capacity to buffer changes in prey availability. In contrast, Red-throated Loons' strong dependence on marine prey likely ties their breeding success directly to marine foraging conditions. Planned future analyses of nearshore habitat use, foraging effort, and prey availability will help identify how marine conditions are affecting loon populations along the Beaufort Sea coast.

Location 3A

Pacific Common Eider in a changing Arctic: long-term patterns in breeding ecology, climate, and human influence

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The Pacific Common Eider is a long-lived, colonial sea duck that inhabits coastal Arctic and sub-Arctic ecosystems where rapid environmental changes and expanding human activities are reshaping reproductive success and population dynamics. In Arctic Alaska, Pacific Common Eiders are both an ecological sentinel, whose life history is more tightly linked to marine dynamics than any other sea duck, and a culturally important subsistence species that provides food, materials, and continuity of knowledge for coastal Iñupiat communities. In this region, they rank among the waterbird populations most vulnerable to climate pressures, as shifts in sea ice phenology, storm frequency, and coastal habitat quality increasingly influence nesting success and colony distribution. We present a synthesis integrating multi-year monitoring data from the late 1960s through the present for a comprehensive review of Pacific Common Eider breeding ecology in the Chukchi and Beaufort seas in Arctic Alaska and western Canada. Our dataset spans key marine bird habitats, including the Arctic National Wildlife Refuge and Special Areas of the National Petroleum Reserve – Alaska, and Prudhoe Bay, the largest oilfield in North America. These landscapes are simultaneously critical to eiders, subsistence users, and ongoing and prospective industrial development. We analyze spatial and temporal trends in nesting parameters, distribution, and productivity, and compare contemporary patterns with historical breeding strongholds to identify shifts linked to changing sea ice, storm exposure, nest predator dynamics, and human activity.

Location 3B

Bachelor's poster presentation

Stable δ^2H isotope analysis of American Tree Sparrow (*Spizelloides arborea*) feathers shows a broad range of summer nesting grounds in Alaska

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Many songbird populations are declining across North America due to habitat loss and climate-driven changes. Understanding current and potential future impacts of these changes requires understanding how birds make use of habitat across their range. The American Tree Sparrow (*Spizelloides arborea*) has declined steeply since 1970 and is categorized as a common bird in steep decline. Importantly, climate change is occurring rapidly in the Arctic and affecting songbird nesting habitat in Alaska, where around 38% of American Tree Sparrows breed. On summer breeding grounds, adult sparrows molt (including rectrices) while chicks grow their first basic plumage. These new feathers incorporate, through diet and drinking water, the stable hydrogen isotope value (δ^2H) of summer breeding locations. Values of δ^2H from precipitation form distinct elevational and latitudinal gradients, allowing for migration studies. We collected rectrix feather samples from adult and juvenile American Tree Sparrows on their southward migration from their breeding to their wintering grounds in the fall of 2024 and 2025. Sampling was done in partnership with the Alaska Songbird Institute's migratory songbird banding efforts in Fairbanks, Alaska. Our analysis of rectrix δ^2H values shows that American Tree Sparrows breed across a wide range of isotopically distinct locations in Alaska ranging from -101‰ to -60‰ precipitation δ^2H values extending from interior (Fairbanks) to western Alaska. We found no correlation between age, body condition, or capture date and feather δ^2H values. This study provides a new perspective on summer breeding habitat use of the American Tree Sparrow.

Location 3C
Doctoral poster presentation

Differential migration strategies and effects on demography and population dynamics of Pacific Black Brant

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The Pacific Black Brant (*Branta bernicla nigricans*, hereafter Brant) undergoes large migrations annually from Holarctic breeding sites to wintering areas along the Pacific coast. With increasing frequency, Brant exhibit differential migration strategies that utilize different wintering and stop-over locations. Historically, the largest proportion of migrating Brant overwintered at eelgrass-rich lagoons of Baja, Mexico. More recently, there have been shifts in wintering distributions of Brant, including a large portion of the continental population overwintering at the premier autumn stop-over habitat in and around Izembek Lagoon, Alaska. Despite the apparent short-stopping and changes in migration strategies, factors driving these changes and resulting demographic and population-level effects remain relatively understudied in Brant and other species. My objectives are to (1) evaluate drivers of winter location choice and examine plasticity in migration tactics, (2) examine the effects of differential migration patterns and associated carry-over effects (COE) on Brant reproduction (and possibly survival), and (3) evaluate the effects of differential migration on population dynamics of Black Brant. To reach these objectives, I will integrate multiple sources of spatial, tracking, mark-recapture and other demographic data within Bayesian hierarchical modeling frameworks. Results from these models will help illuminate individual- and landscape-level processes correlated with observed changes in Black Brant wintering distributions and provide inference on how individual migration choices impact population dynamics.

Location 3D

From the boreal to the tropical: survival and migration of Alaskan Blackpoll Warblers, a pilot study

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Blackpoll Warblers (*Setophaga striata*) have undergone dramatic declines since the 1970s, yet features of their life history and population dynamics are unknown, especially for the breeding population in Alaska. To understand the demography of the Alaska population and to identify the migratory timing, routes and nonbreeding locations, we conducted a pilot study to determine the feasibility of finding active nests and target netting a sufficient number of birds for a capture-mark-resight study, and deployment of archival geolocators. We began searching Palmer Hay Flats State Game Refuge for Blackpoll Warblers on May 22, 2026, and first detected them May 29. Between June 10 and July 31 we used conspecific playback, decoys, and flushed females from nests to target and band 51 birds (46 m, 4 f, 1 unk); 25 of these males were fitted with geolocators. We located and monitored 7 nests, typically between 0.5 and 1 m above ground in low shrubs or epicormic sprouts, containing a median of 5 eggs. Future project challenges include capturing more females and dedicating efforts to nest location and monitoring.

Location 4A

The phenology and phenomenon of Sandhill Crane spring migration along the Tintina Trench at Faro, Yukon Territory

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Migration is a critical period for survival in the annual life cycle of birds such as Sandhill Cranes. Regardless of population status, climate change will impact migration phenology through rapid shifts in weather and resources. More investigation is needed regarding the migratory behavior of Sandhill Cranes along major international migratory corridors such as the Tintina Trench fault line that divides the Yukon Territory (YT) and extends into Alaska. We studied the daily and seasonal movement of approximately 200,000 Sandhill Cranes at the remote site of Faro, Yukon during Spring migration in May and April of 2018 and 2019. We used observational sampling to estimate the number of cranes migrating and acoustic recording sampling to compare detections and determine peak activity timing. Observer and acoustic sampling methods differed slightly in estimating peak migration activity, but we determined that the migration of cranes in Faro, Yukon peaks in early May (3rd - 8th) in the morning and evening hours daily (3-4 hours after sunrise (~9 am) and again at 14-15 hours (~8pm)). Studying migration phenology at migratory hotspots is critical to understanding population dynamics over time. Furthermore, we need to ensure international geologic corridors such as the Tintina Trench remain a stronghold for long-distance migratory species through continued monitoring and standardization of sampling methodologies.

Location 4B

After AI: from automated counts to population estimates

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Reliable population estimates for harvested species require survey methods that are not only feasible to execute in the field, but transparent and defensible in how observations become an estimate with quantified uncertainty. We present a workflow for estimating the fall staging population of Pacific Brant (*Branta bernicla*) at Izembek Lagoon, tracing the path from aerial photographs to population estimates. Since 2017, systematic transects have been flown across Izembek Lagoon, capturing thousands of photographs per survey. We apply a trained YOLO-v5x object detection model to count Brant in each photo and use human validation on subsamples to quantify the model's false positive and false negative rates. This yields correction factors that adjust the automated counts for detection error and capture flight-to-flight variation in model performance that are applied to each survey replicate. We then use a classical ratio estimator to extrapolate a population estimate across the full lagoon, with bootstrap resampling to generate confidence intervals that reflect both sampling variability and correction factor uncertainty. We further validate this pipeline by simulating known, spatially-realistic Brant populations and passing simulated survey data through the identical detection, validation, and estimation workflow to confirm that the approach recovers the true population size with minimal bias. We describe each stage of this pipeline, from camera trigger to final confidence interval, as a template for other surveys seeking to combine automated detection with defensible statistical estimation.

Location 4C

Bachelor's poster presentation

Avian diversity and abundance in Portage Valley and Whittier following road construction using comparative point counts

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This project compares avian diversity and abundance in two areas near Whittier and one in Portage Valley, Alaska. In one area of Whittier (upper Prince William Sound), road construction has led to the demolition of trees and extreme impacts on habitat. Our comparison area is located across the sound and has experienced no such impacts. Our surveys will use sites in Portage Valley as a null comparison, in the nearby region unimpacted by this localized road construction. This project will use both double observer point counts and passive acoustic monitoring. These will be compared to determine if there are significant differences in diversity or abundance potentially related to road construction and industrial use. These comparative studies are planned to take place in October - January, after the end of the breeding season; thus results will be based on local, year-round species.

Location 4D

Pioneering Anna's Hummingbirds in Cordova, Alaska

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Since the 1960s, the Anna's Hummingbird (*Calypte anna;* ANHU) population has increased annually by > 2% and currently has an estimated population of 1.5 million. Corresponding with this increase, the species' range has expanded over 700 km northward. ANHU are non-migratory. The first documented sighting of ANHU in Cordova, Alaska, occurred in 1971, and the species has been recorded regularly on the Cordova Christmas Bird Count since 1991. In 2016, the Alaska Hummingbird Project (AHP) captured and banded the first ANHUs in Cordova. As of September 30, 2026, 22 ANHUs have been banded, with 86% of captures being male (4 adults/15 hatch-year) and 14% female (2 adults/1 hatch-year). Data suggest that the species is overwintering and may also be breeding in Cordova. One male ANHU was banded and tracked by trail camera through the winter of 2023/24 and another male was banded and later recaptured during the winter of 2025/26. Adult male ANHUs were first photo-documented performing courtship displays in Cordova in June 2017. Continued sightings of males singing and displaying occurred throughout 2025 and 2026. On 23 August 2026, a hatch-year female was captured that displayed a yellow gape and had more than 80% of her culmen showing corrugations, both indicators of recent fledging. Taken together, this suggests that ANHU is becoming an established population in Cordova.

Location 5A

Master's poster presentation

The influence of wintering location on annual productivity of Emperor Geese

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Emperor Geese are an important resource in Alaska for both subsistence and recreation hunters alike. Populations of Emperor Geese have undergone several fluctuations in abundance over recent decades, and most recently have fallen below a management threshold leading to complete harvest closures. Annual survival of adult female Emperor Geese has remained stable and high over the past 5–10 years, suggesting that reduced adult survival is not the main cause of recent population declines. Instead, low rates of recruitment and juvenile survival may be primary factors limiting population growth. Initial research has shown stark contrasts in juvenile survival and juvenile-to-adult ratios at the two geographic extremes of their wintering range, raising the question of whether these sites are outliers or representative of a broader geographic pattern across the winter range. Thus, we will be further assessing the geographic and temporal variation in juvenile production over the next two years by collecting age ratio data from sites throughout their winter range, from Kodiak to the Aleutians. These results will provide valuable insights into population dynamics, including potential drivers behind recent population trends, while also informing harvest management of Emperor Geese. Information is preliminary and provided for best timely science.

Location 5B

Seabird declines track changing ocean conditions in Prince William Sound, Alaska

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Since 1989, the U.S. Fish & Wildlife Service has conducted standardized marine bird surveys in Prince William Sound (PWS) as part of a long-term monitoring program established after the T/V Exxon Valdez oil spill, designed to track recovery of affected species and identify ongoing concerns. Kittlitz's Murrelet (*Brachyramphus brevirostris*) experienced steep declines beginning before the spill, with earlier estimates of 18% annual decline from 1972–2007 and 31% from 1989–2007; since 2012, abundance has been highly variable, ranging from 1,997 birds in 2016 to 39 in 2025. Because Marbled Murrelets (*B. marmoratus*) are more abundant but difficult to distinguish from Kittlitz's Murrelets, combined *Brachyramphus* murrelet counts serve as a proxy for long-term trends, declining from 159,433 (95% CI: 111,568–217,978) in 1993 to a low of 32,909 (25,884–41,879) in 2022. Arctic Terns (*Sterna paradisaea*) peaked at 8,558 (4,348–15,091) in 1993, fell to a low of 884 (278–1,673) in 2014, and remained low at 1,304 (540–2,312) in 2025. Tufted Puffins (*Fratercula cirrhata*) declined from a high of 5,770 (3,422–8,482) in 1996 to a low of 551 (195–996) in 2023. For several species, inflection points coincide with shifts in ocean conditions, including a 2007–2013 cool phase and an extreme 2014–2016 marine heatwave. Long-term monitoring in PWS indicates that changes in the piscivorous seabird community reflect broad-scale shifts in prey availability and food-web conditions. Continued monitoring through the Gulf Watch Alaska program will support understanding of marine ecosystem change over time.

Location 5C

Next step for U.S. Fish and Wildlife Service Alaska historical bird data

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The USFWS Alaska Migratory Bird Management program (AK-MBM) has surveyed bird populations for decades via plots and transects on the ground, boat-based transects, coastline and colony surveys, and aerial surveys of waterfowl, among others. While this data was collected for a specific purpose, it has value beyond its original intent. This presentation will share how data is being preserved and shared publicly at AK-MBM, how it is being repurposed for broader data sharing such as inclusion in eBird, and how others can do the same. The presentation will illustrate how historical data contributes added value to eBird products.

