

**2023 Alaska Bird Conference**  
**Oral & Poster Presentation Abstracts**

All oral presentations are grouped by theme and order presented



## Lead exposure continues to threaten Spectacled Eiders on the Yukon-Kuskokwim Delta

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We examined rates of lead exposure (> 0.2 ppm) in Spectacled Eiders (*Somateria fischeri*) on the Yukon-Kuskokwim Delta using blood samples collected during the breeding season 2018–2022 to compare with rates measured in the 1990s. In the 1990s, eiders were exposed to lead from spent shotgun pellets ingested while feeding in ponds with an estimated regional exposure rate of 11.8% and observed local exposure rates ranging 3–28%. We expected lower exposure rates given that over the previous decades, regulations prohibiting the use of lead ammunition have been in place, outreach and lead-for-steel ammunition exchange programs were implemented, and experimental studies indicated that previously deposited lead pellets should have settled in ponds and become unavailable to eiders. Contrary to our expectation, lead exposure rates measured in 226 blood samples remained similar to those observed in the 1990s indicating continued illegal use of lead ammunition during the past decade and/or that lead pellets remain available for very long periods of time. The temporal pattern of exposure was similar to the 1990s with exposure rate increasing with time spent on the breeding area. These results indicate the regulation of lead shotgun ammunition was likely ineffective and lead poisoning continues to impact Spectacled Eiders despite 30 years of protection under the Endangered Species Act.

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## Epizootic of beak deformities in wild birds: a review of avian keratin disorder worldwide

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An epizootic of debilitating beak deformities in wild birds has been documented in recent decades. Avian keratin disorder (AKD) is characterized by overgrowth of beak keratin and was first observed in clusters among Black-capped Chickadees (*Poecile atricapillus*) in Alaska. The prevalence of beak deformities is higher among Black-capped Chickadees and American Crows

(*Corvus brachyrhynchos*) in Alaska than in any other population ever recorded. Reports of birds with similar beak deformities have also been documented across North America, in South America, and in Europe. We compiled reports from community-science programs, bird monitoring studies, and scientific literature to summarize the current geographic scope and bird species affected by AKD-like beak deformities. From 1946 to 2021, >3,300 community-science observers reported 290 species with beak deformities, comprising >4,000 birds in Alaska, 1,900 elsewhere in North America, and >1,700 from outside of North America. We also examined the occurrence of beak deformities in populations of Red-tailed Hawks (*Buteo jamaicensis*) in the Pacific Northwest, Red-cockaded Woodpeckers (*Dryobates borealis*) in North Carolina, and Austral Thrushes (*Turdus falcklandii*) in Patagonia. Clinical signs of AKD in Black-capped Chickadees have been strongly associated with the occurrence of a novel picornavirus, which has now been detected in multiple species exhibiting morphologically similar beak deformities. Our detailed compilation, including geographic occurrence of individuals and species apparently affected, will help identify research and conservation actions required to evaluate and mitigate impacts of beak deformities on wild birds.

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### **Avian Parasites in seasonal flux in a subarctic lake**

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Birds naturally serve as hosts to several suites of parasites, which change seasonally as host geographic location (migration) and behaviors (dietary and mating) change. This is a consequence of changes in their densities and contact rates with one another and their environment. Additionally, the food items they encounter change in space and time as they respond to spatial and climactic constraints. Finally, birds are also agents of dispersal for other organisms that drop propagules from body surfaces or excretions. An excellent natural laboratory occurs in subarctic lakes (Cheney Lake, Anchorage, AK), where turnover of biomass changes drastically between seasons. Few birds are resident on Cheney Lake during winter; however, several hundred birds inhabit or are regular visitors to this waterbody once the lake ice retreats in summer. As such, the fish and invertebrate assemblages change from season to season, as thermal regimes shift throughout the year and avian predation rates are more frequent when birds are more abundant. Here, we review the seasons of Cheney Lake as documented over the last 3 years through the populations of its inhabitants, ranging from invertebrates, fishes, and avifauna. Additionally, we explore the utility of the tapeworm *Schistocephalus solidus* as a mechanism for energy and nutrient circulation within the organisms of Cheney Lake, ultimately modulating biomass turnover and ecosystem processes.

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