

Summary of Sea Duck Joint Venture Research Projects for FY2022

PROJECT # and TITLE	COLLABORATORS	DESCRIPTION	ESTIMATED COST TO SDJV IN FY2022
<p>SDJV #168: Characterization of the migratory patterns, connectivity, philopatry and timing of the western Harlequin Duck population throughout the annual cycle</p>	<p>Western Washington University, Washington Dept of Fish and Wildlife, Environment and Climate Change Canada, National Park Service, Montana Fish Wildlife and Parks, Biodiversity Research Institute, Wyoming Game and Fish Dept</p>	<p>Using existing PTT data from Harlequin Ducks marked along the Pacific coast, this project will characterize migratory connectivity among individuals, map migratory routes, and identify specific regions of significance utilized during various stages of the annual cycle, such as wintering, breeding, moulting, and staging. The PIs plan to compare the movement data collected from PTT transmitters implanted into the male Harlequin ducks and light-level geolocators attached to the leg bands of their female mates. Such information could help inform other aspects of Harlequin Duck migration phenology such as the timing and location of breeding pair reunion and the length of time males and females remain together during the winter and breeding seasons. Analysis will be conducted by a graduate student at Western Washington University, with data contributed by several PIs.</p>	<p>\$60,000</p>
<p>SDJV #169: Engaging a transboundary expert network to prioritize coastal and marine habitat management for sea ducks in the Salish Sea</p>	<p>Birds Canada, University of Washington/USGS Cooperative Research Unit, Washington Dept of Fish and Wildlife, Audubon Washington, Environment and Climate Change Canada, Ducks Unlimited Canada, Pacific Birds Habitat Joint Venture</p>	<p>This project proposes to link two sea duck habitat suitability modeling initiatives, one in British Columbia and one in Washington. They will identify and assess compatibility of relevant bird and environmental datasets and engage management agencies to understand how to integrate sea duck habitat values into six linked, on-going planning processes that present opportunities to improve conservation of sea duck habitats. They will complete detailed preparation of the data layers for inclusion in the sea duck model(s), make them available in a geodatabase accompanied by a technical report describing the data integration framework for the model(s), and deliver a webinar to the management agencies focused on how project and model outputs can best inform conservation planning.</p>	<p>\$46,574</p>

<p>SDJV #170: A Bioenergetic Model to Evaluate Winter Food Limitation in Barrow's Goldeneyes and Consequences of Climate Change</p>	<p>USGS Alaska Science Center, British Columbia Institute of Technology, National Park Service, Environment and Climate Change Canada</p>	<p>This study proposes to evaluate Barrow's Goldeneye (BAGO) consumption of their winter prey using a bioenergetic model that builds on previously collected data on BAGO and mussel physiology and energetics from throughout the Pacific BAGO range. Estimates of location-specific consumption by wintering BAGO will be contrasted with estimates of mussel standing stock at those locations. Importantly, one site will be in the Strait of Georgia, British Columbia, where extensive, climate-driven mortality of intertidal marine life, including mussels, was observed because of an exceptional warm period during summer 2021. This study will have important management implications for understanding: (1) whether this high priority species is limited by winter food, which could be subject to direct management action; (2) whether climate projections lead to predictions about changing habitat quality and subsequent changes in BAGO fecundity, survival, or distributions; and, (3) whether this bioenergetics approach to evaluating carrying capacity and potential effects of climate change might be applicable to other sea ducks with more complex trophic interactions, i.e., a higher diversity of prey species.</p>	<p>\$64,088</p>
<p>SDJV #164: Assessing Hunting Pressure on Common Eiders in Chukotka, Russia</p>	<p>Wildlife Conservation Society – Beringia Program</p>	<p>Common Eiders are an important subsistence species across their range, although detailed knowledge about harvests in Chukotka (Russian Federation), Alaska, and Arctic Canada are poorly understood. Consequently, population modeling and management of this species is constrained by lack of information about mortality rates. This project focuses on understanding hunting pressure on Pacific Common Eiders from the population shared with North America, while wintering in coastal Chukotka waters. The primary objective of the study is to design and implement a comparable survey tool to those used in North America that can be reliably administered in Russia. The survey will be implemented through WCS's Russian partner Birds Russia. The key product will be a statistically defensible estimate of the magnitude of eider hunting in Chukotka, along with ancillary information on distribution of that</p>	<p>\$17,008 (year 2 of 2)</p>

		pressure, any sex bias in the harvest, and any observations of change over time.	
SDJV #166: Advancing Trans-boundary Sea Duck Conservation Actions: Surf Scoter Habitat Use and Movement Patterns in the Salish Sea.	Washington Department of Fish and Wildlife, Canadian Wildlife Service	The primary goal of this project is to identify critical habitat features and timing of habitat use for Surf Scoters in the Salish Sea. Objectives include: 1) Deploy a minimum of 60 GPS-GSM transmitters on Surf Scoters between Padilla Bay, Washington, US north into the Juan de Fuca Strait and the Strait of Georgia, British Columbia, Canada; 2) Create detailed spatial data products that can be used to identify critical habitat features to inform marine spatial planning, emergency preparedness and response, and other relevant conservation planning initiatives in the Salish Sea; and, 3) Establish relationships with regionally-relevant interpretive centers using data collected from marked Surf Scoters.	\$25,257 (year 2 of 2)
SDJV #167: Estimating Sea Duck Productivity in Eastern North America Using a Photographic Survey	State University of New York-Brockport, USFWS Migratory Bird Management, Maine Department of Inland Fisheries and Wildlife	The primary goal of this project is to obtain annual estimates of productivity for the four target species of sea ducks at the eastern North America scale (Black Scoter, Surf Scoter, White-winged Scoter, and Long-tailed Ducks). Ground-based photographs of sea ducks will be collected, analyzed, and used to classify age and sex cohorts in eastern North America. This effort expands the spatial extent of a pilot survey conducted the fall and winters of 2018/19 and 2019/20, and data collection within the current extent, through the addition of personnel resources. Objectives are to evaluate the current survey design, increase sample sizes, and improve data analysis. This survey may lead to annual surveys of productivity, or a method to correct annual Parts Collection Survey estimates of productivity based on differential vulnerability to harvest of cohorts.	\$50,091 (year 2 of 2)