

**Sea Duck Joint Venture  
Annual Project Summary  
FY2023 (October 1, 2022 – December 31, 2023)**

**SDJV Project #154: Integrating Fixed-Wing and Helicopter Survey Platforms to Improve  
Detection and Species Identification of North American Breeding Scoters**

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**Project Description:**

Populations of North American breeding scoters appear to be declining although a large degree of uncertainty remains around estimates of population size and overall trends (Bordage and Savard 1995, Savard et al. 1998, Caithamer et al. 2000). We conducted experimental fixed-wing and helicopter integrated breeding surveys over portions of the core breeding range, in Québec-Labrador, northern Manitoba, and the Barrenlands of the Northwest Territories (fig 1), of all three North American scoter species. The overarching objective of the project is to produce recommendations for the development of breeding surveys for scoters and other Boreal/Arctic waterfowl.

**Project Objectives:**

There are 6 main objectives for this study:

1. Identify the optimal timing for breeding scoter surveys, based on data from previous nesting and productivity studies
2. Develop and evaluate methodology to accurately assess species identification and composition from an integrated fixed-wing and helicopter survey
3. Develop and evaluate methodology for estimating detection probabilities from an integrated fixed-wing and helicopter survey. This will address the perception bias component in both fixed-wing and helicopter components as well as availability bias from the fixed-wing component, allowing the estimation of visibility correction factors
4. Evaluate annual and geographic variation in species composition and detection probabilities to determine whether these components would need to be measured annually and/or across the range in an operational survey
5. Derive baseline abundance estimates for the experimental survey areas for all three populations of eastern scoters
6. Develop habitat selection models and test hypotheses about factors influencing scoter distribution across the survey area
7. Develop monitoring recommendations with partners based on study results.

**Project Status:**

Progress towards achieving study objectives 1-6 was reported in the FY22 Annual Report. The objective for FY23 was to convene a workshop to develop monitoring recommendations based on results of the study. This was completed Nov 4-5, 2023 at a meeting in Montreal, Canada. See the attached workshop report for results, recommendations, and next steps. A full summary of the project accomplishments and deliverables will be included in the Final Report due in April 2024.

**Project Funding Sources (US\$).** Complete only if funded by SDJV in FY23. This is used to document: 1) how SDJV-appropriated funds are matched, and 2) how much partner resources are going into sea duck work. You may include approximate dollar value of in-kind contributions in costs. Add rows as needed for additional partners.

SDJV (USFWS) Contribution	Other U.S. federal contributions	U.S. non-federal contributions	Canadian federal contributions	Canadian non-federal contributions	Source of funding (name of agency or organization)
Not funded by SDJV in FY23					

**Total Expenditures by Category (SDJV plus all partner contributions; US\$).** Complete only if project was funded by SDJV in FY23; total dollar amounts should match those in previous table.

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
<b>Banding</b> (include only if this was a major element of study)					
<b>Surveys</b> (include only if this was a major element of study)					
<b>Research</b>					

## **Experimental scoter surveys in the Taiga Plains/Shield ecozones: summary of work planning meeting, Montreal, November 4 and 5, 2023**

Attendees: Mark Koneff (USFWS), Eric Reed (CWS), Scott Gilliland (CWS), Christine Lepage (CWS), Kate Martin (USFWS), Margaret Campbell (CWS), Megan Ross (CWS), Emily Silverman (USFWS – virtual presence), David Safine (USFWS – virtual presence)

Regrets: Amelia Cox (CWS), Christian Roy (CWS), Walt Rhodes (USFWS)

### **Objectives of the meeting:**

Plan the development of an improved monitoring strategy for scoters and other sympatric waterfowl breeding in boreal and sub-arctic regions. This includes clarifying the scope of the strategy, review progress of analytical work based on the experimental scoter surveys and earlier work, identify knowledge gaps and needs to allow the completion of a strategy, set timelines and identify tasks for remaining technical work, writing, and partner engagement.

Participants agreed on the need to develop a monitoring strategy for CWS and USFWS to consider. The consensus was that the strategy needed to address not just scoters but also other sympatric species. Large gaps in coverage in the Boreal and sub-Arctic areas of North America have also been identified through the Waterfowl Breeding Population and Habitat Survey (WBPHS) review, which align very well with the breeding ranges of several species that are not currently well monitored (e.g. scoters, mergansers, goldeneyes, scaup). Therefore, the group decided that a monitoring strategy would focus on breeding ground surveys for species currently not well covered, namely areas of BCR 7 in the Canadian Barrenlands as well as some areas in northern Ontario and north-central Quebec as well as Alaska.

Mark Koneff gave a bleak outlook of staff and budget for FY 2025 and beyond. Expectations are that resources may be cut back and that all current programs could potentially be reviewed or scaled back. The budget situation is compounded by a shortage of pilots that could make running a full-scale survey a challenge in coming years. Budget cuts have also been announced for ECCC/CWS over the next few years and although details of how those may be implemented are not presently known, they could eventually have ramifications on the delivery of Migratory Birds programs in Canada.

These budgetary constraints are likely to affect the federal agencies' capacity to deliver surveys as they have been in the past. It also seems clear that new initiatives to address information gaps can only be considered in the context of cost-neutral or cost-reducing scenarios for monitoring breeding waterfowl in North America. The group thus felt that it was imperative that a strategy for improved monitoring of breeding Boreal and sub-Arctic waterfowl be developed as soon as possible, to ensure that it would be considered in the context of the ongoing review of the WBPHS and under further reviews that may be necessitated due to declining budgets. The group thinks it is possible and useful to view such a strategy

in a resource limited context and find ways to deliver a survey that fills current gaps while maintaining the quality of information from other parts of North America at a level sufficient to support harvest and other key management decisions. This monitoring strategy thus can't be developed as a stand-alone strategy but must be viewed within the larger context of the WBPHS review. It therefore will provide one of the elements necessary to decision-makers when/if planning changes to the WBPHS. It will need to dovetail with other efforts in the Eastern Survey Area (ESA) and the Traditional Survey Area (TSA) to allow an overall evaluation of information needs and available resources.

It is important to note that knowledge gained through the SDJV-funded Scoter experimental survey project could be effectively used to develop more efficient approaches in the WBPHS as a whole. Further development of some of these approaches could result in efficiencies in the ESA and TSA that could allow known gaps to be addressed. Finally, it was recognized that the North American waterfowl monitoring program could be optimized by integrating existing but independent surveys (e.g., Alaska waterfowl surveys, Northern Quebec AP Canada Goose survey). While we have identified a possible approach to addressing some known WBPHS deficiencies (methods and spatial coverage) and made some progress on some key elements, there is research needed to assess its feasibility. As such, we are proposing to develop a study plan that will identify resource needs to complete the strategy, clarify how it will link with other efforts in the ESA and TSA and provide timelines for completion of the work. This will be shared with key partners.

#### **Revised scope of monitoring strategy**

Based on these discussions, the group agreed on a revised scope for the monitoring strategy. The monitoring strategy will:

- Aim to develop a cost-neutral or cost-reducing monitoring approach that maximizes existing assets and resources for monitoring of breeding waterfowl in North America while ensuring coverage is adequate for under-monitored boreal and sub-arctic species
- Recommend consistent and improved survey design, data collection and analytical protocols within expanded survey areas of the Taiga ecoregion and areas currently surveyed in the WBPHS TSA and ESA (i.e., it will not advocate for a new independent survey) (Fig 1)
- Provide continental breeding ground population estimates for each species of scoters (three spp), scaup (two spp), mergansers (three spp), goldeneyes (two spp) also other species with sympatric breeding ranges
- Whenever possible and efficient, integrate other regional surveys with the WBPHS to address geographic gaps (e.g. Alaska waterfowl surveys, Atlantic Population Canada goose survey)
- Formally, and consistently across the TSA and ESA, integrate multiple survey platforms, specifically ground surveys in areas with road access such as the prairies and parklands.
- Seek cost efficiencies through integration of citizen science derived data (e.g., ebird) with count data from established probabilistic waterfowl aerial and ground surveys.
- Be co-developed by CWS and USFWS staff and to address North American waterfowl management needs

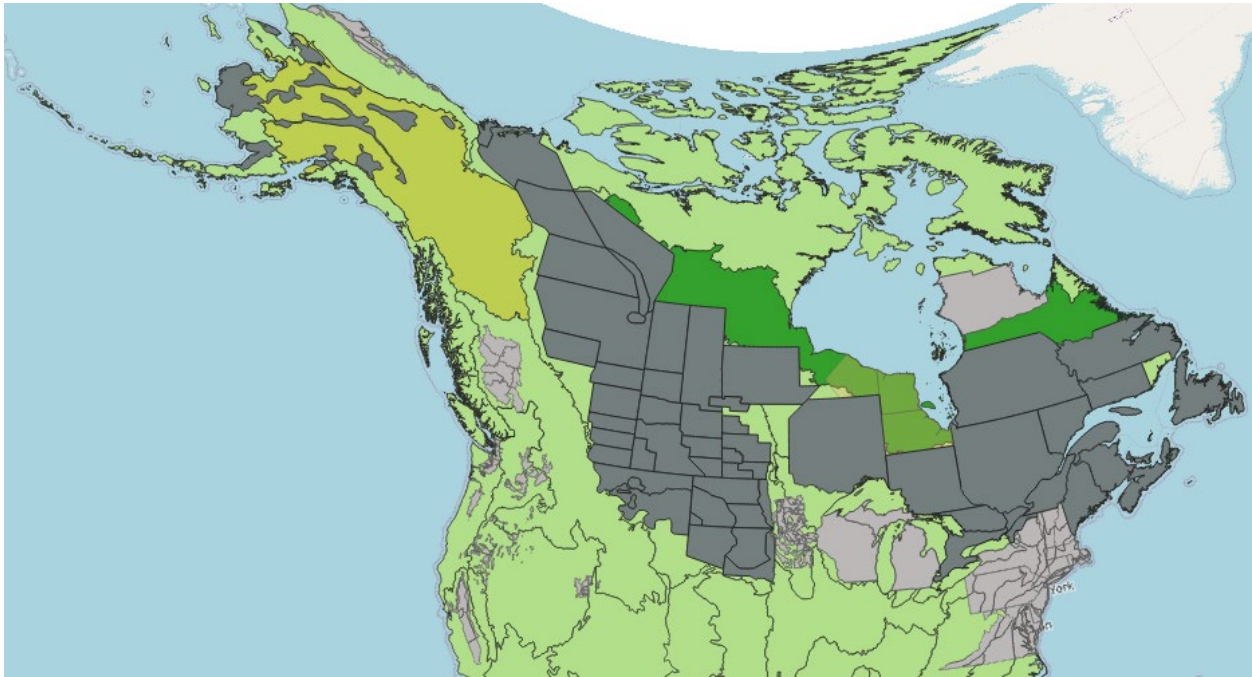


Figure 1. The monitoring strategy will focus on filling gaps in Alaska, the Canadian Barrenlands in NWT and NU, northern Ontario and northern Quebec. Dark grey areas represent currently surveyed WBPHS strata

**Timeline for completion**

January 2024: USFWS and CWS identify common data quality targets from the WBPHS to support management decisions

February 2024: Study plan outlining technical support required to advance a revision of the WBPHS is presented to SDJV Management Board, BDJV Management Board, USFWS and CWS leadership for funding consideration. The study plan will address all three major components of the review: ESA, TSA and northern survey area) and identify specific objectives and needs related to each

March - June 2024: Technical work begins to address key issues

September 2024: Develop monitoring scenarios and begin to assess of feasibility

November 2024: Update on northern boreal and sub-arctic monitoring strategy is presented and discussed at SDJV (other components of the review will be presented at respective partner meetings and within federal agencies).

March 2025: Draft strategy for an improved monitoring protocol for boreal and sub-arctic survey areas is shared and discussed with partner organizations (SDJV, BDJV, Flyway Councils). It is expected that

progress on other components of the review also be discussed with the appropriate partners at that time.

September 2025: Final version of monitoring plan is released.