Yukon Flats: Expanded Scoter and Scaup Survey: Boreal Alaska and Old Crow Flats, Canada

HEADER:

1. Station: Yukon Flats NWR	**2. Org Code (FBMS):** 75635 FF07RYKF00/FXRS126107BIOL1/178	**3. Amount Requested:** $6,000
4. Project Title: Expanded Scoter and Scaup Survey: Boreal Alaska and Old Crow Flats, Canada		
5a. Project Officer: Mark Bertram	**5b. Phone:** 907 456 0446	**5c. email:** Mark_bertram@fws.gov
6. I&M Staff Name:	**7. PRIMR Survey ID:** FF07RYKF00-031	**8. Station Project Ranking:** 2

PROPOSAL BODY:

9. Problem Statement and Objectives

Waterfowl were a primary purpose for the establishment of Yukon Flats National Wildlife Refuge due to high densities of breeding birds. In particular, Yukon Flats has the largest breeding population of white-winged scoters (*Melanitta deglandi*) and lesser scaup (*Aythya affinis*) in Alaska (Bellrose 1980, King and Lensink 1971, Lensink 1965, Palmer 1976). Whitewinged scoters were identified as a high priority conservation species by Sea Duck Joint Venture (Sea Duck Joint Venture Management Board 2008, Sea Duck Joint Venture 2013); Migratory Bird Management (MBM) developed a white-winged scoter Action Plan in 2011 to address critical information needs (USFWS 2011); and USFWS, Alaska Region, identified white-winged scoters and lesser scaup as priority species in 2013. In 2016 conservation framework plans were developed for lesser scaup and white-winged scoter. White-winged scoters and scaup are of conservation interest because:

1) They have exhibited substantial population declines throughout their North American breeding grounds, with the steepest decline in the Canadian western boreal forest and a more gradual decline in the Yukon Flats, Alaska (Afton and Anderson 2001, Alberta Sustainable Resource Development 2002, Austin et al 2000),
2) They breed primarily in boreal forests of Canada and Alaska (Bellrose 1980), where ecological shifts from projected climate change are expected to be the greatest,
3) Little is known about white-winged scoter populations, with basic information lacking about their natural history, vital rates, population status and trends,
4) White-winged scoters' breeding range has retracted north since 1900 (Alberta Sustainable Resource Development 2012),
5) Breeding population estimates for combined scaup species (lesser and greater scaup) have been below the North American Waterfowl Management Plan population goal of 6.3 million since the late 1970's (U.S. Fish and Wildlife Service 2013), and

6) Both species are hunted throughout their range, including spring subsistence waterfowl hunts on Yukon Flats, where white-winged scoters are the preferred species.

Existing large scale waterfowl monitoring surveys such as the Alaska-Yukon Waterfowl Breeding Population Survey (Mallek and Groves 2011) are not temporally designed to monitor scoters and scaup, which are among the latest migrants to arrive on their breeding grounds (Lensink 1965). Surveys are timed for peak detectability of dabbling ducks, whose breeding chronology is approximately 3 weeks earlier than for scoters and scaup (Mallek 2003). Scoter and scaup estimates during these surveys are expected to be highly variable due to birds migrating through, or having not yet arrived, at the surveyed breeding area (Kehoe 2002, Afton and Anderson 2001).

To provide regional population context to the Yukon Flats survey and better document the distribution of white-winged scoters and scaup in interior Alaska, an expanded survey was conducted in 2014. Results of these surveys are reported in Guldager et al. 2016 (attached). **The only remaining substantive survey area yet to be completed is Old Crow Flats, Canada.**

Objectives:
1) map potential white-winged scoter and lesser scaup breeding areas in boreal Alaska and Canada using existing waterfowl survey data and GIS data-layers (the only remaining survey areas to be completed in Old Crow Flats, Canada),
2) design and implement an inventory of identified breeding areas, and
3) design an expanded breeding pair monitoring survey to make regional population inference.

10. Methods/Scope of Work

Seventeen transects with 6 km spacing and total transect length of 775 km are planned for the Old Crow Flats area. The survey will be flown at 100-150 feet above ground level at 90-105 mph. Aircraft navigation and altitude will be maintained with a Global Positioning System (GPS) and altimeter, respectively. Scoters and scaup observations will be recorded during the survey, additionally, loons and swans will be recorded. We propose to fly for approximately 6 hours over the Old Crow Flats between June 5-15, 2017. The initiation of the survey will be dependent on weather and completion of surveys scheduled for the Yukon Flats June 4-7. Detailed methods for the proposed work at Old Crow Flats are in Guldager et al. 2016 (attached).

11. Partnerships and Roles

Nikki Guldager, Wildlife Biologist / Pilot, R7, Yukon Flats NWR
Mark Bertram, Supervisory Wildlife Biologist, R7, Yukon Flats NWR
Anna-Marie Benson, Biometrician, R7, Regional Inventory and Monitoring Program
Emily Silverman, Biometrician, R9, Migratory Bird Management
Brad Scotton, Wildlife Biologist / Pilot, R7, Koyukuk / Nowitna NWR
Tim Bowman, Sea Duck Joint Venture Coordinator, R7, Migratory Bird Management
Bob Platte, Wildlife Biologist, R7, Migratory Bird Management

Dave Mossop, Research Biologist / Professor, Yukon Research Center, Yukon College, Whitehorse, YT
Chris Harwood, Wildlife Biologist, R7, Kanuti NWR
Megan Williams, Vuntit Grithchen Government, providing research permit to access lands,
Ian McDonald, Wildlife Biologist, Parks Canada, providing research permit to access lands and providing lodging

12. Products and Schedule

1) map of White-winged Scoter breeding areas in boreal Alaska and Canada ,
2) population inventory of identified breeding areas,
3) spatially-explicit habitat model of White-winged Scoter breeding habitat in Alaska and Boreal Canada, and
4) an expanded breeding pair monitoring survey for making regional population inferences.

Following completion of the Old Crow Flats survey in 2017 expanded survey data will then be used to assess the design and feasibility of conducting an expanded monitoring survey of white-winged scoters and lesser scaup in Alaska and Canada.

PROPOSAL APPENDICES:

13. Literature Cited (Not included in page limit)

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Sea Duck Joint Venture Management Board. 2008. Sea Duck Joint Venture Strategic Plan 2008 – 2012.USFWS, Anchorage, Alaska; CWS, Sackville, New Brunswick. 95 pp.

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Smith, G. W. 1995. A critical review of the aerial and ground surveys of breeding waterfowl in North America. Biological Science Report 5, National Biological Serv., Washington DC.

U. S. Fish and Wildlife Service – Canadian Wildlife Service. 1987. Standard operating procedures for aerial waterfowl breeding ground population and habitat surveys in North America. Unpubl. Manual.

U. S. Fish and Wildlife Service. 1999. Population status and trends of sea ducks in Alaska. Unpubl. Rept., Anchorage, AK.

U.S. Fish and Wildlife Service. 2011. Action plan for white-winged scoter. U.S. Fish and Wildlife Service, Anchorage, Alaska. Unpublished report. 41 pp.

U.S. Fish and Wildlife Service. 2013. Waterfowl population status, 2013. U.S. Department of the Interior, Washington, D.C. USA.

14. Budget (1 page)

Aircraft availability, flight hours including transit, fuel, and lodging = 6K

This project has been funded by R7 I&M annually since 2014.

15. Station Project Leader Approval

Matthew Shores 4/18/2017