Sea Duck Joint Venture
Annual Project Summary for Endorsed Projects
FY 2007 - (October 1, 2006 to Sept 30, 2007)

Project Title: Central Arctic Waterfowl Breeding Population Surveys
Sea Duck Joint Venture Project 98
Arctic Goose Joint Venture Project 77

Primary Contacts for Survey: Tim Moser, U.S. Fish and Wildlife Service, tim.moser@fws.gov; 303 275-2391 or Lynne Dickson, Canadian Wildlife Service, lynne.dickson@ec.gc.ca; 780 951-8681

Partners: Sea Duck Joint Venture (SDJV), Arctic Goose Joint Venture (AGJV), U.S.Fish and Wildlife Service (USFWS), Canadian Wildlife Service (CWS), Central Flyway Council (CFC)

Survey Objective: Obtain population size estimates and monitor long-term population trends of several arctic nesting migratory bird species including the Long-tailed Duck, King Eider, Cackling Goose and Greater White-fronted goose.

Project Description: During summers of 2002-2006, the AGJV, SDJV, USFWS, CWS, and other partners conducted aerial surveys of migratory birds throughout a large expanse of important lowland habitats in Canada's central and western Arctic. These efforts and those of previous helicopter surveys were drawn upon to begin development of an operational survey of migratory birds in these regions. Here, we report on the first year of a joint project of the AGJV, SDJV, and other partners.

In 2007, we conducted surveys using the turbine-powered de Havilland beaver aircraft that has been used for associated surveys since 2005. Survey procedures followed U.S. Fish and Wildlife Service protocol for waterfowl breeding pair surveys (USFWS and CWS 1987). Each transect was flown at 30-45 m above ground level and at a speed of 145-170 km/hr, using a Global Positioning System (GPS) in the aircraft panel to navigate along transects to preprogrammed endpoint coordinates. Both pilot and observer recorded observations of all waterbirds, raptors, and ptarmigan within 200 m of the flight path. Each observation was recorded as an electronic wave file, linked with simultaneous GPS coordinates, and stored via separate on-board computers for each observer.

Preliminary Results: We successfully surveyed all locations scheduled for completion in 2007 (Eastern areas: Victoria Island-southeastern units, Kent Peninsula, Queen Maud Gulf, Adelaide Peninsula, King William Island, and Rasmussen Lowlands, Fig. 1). To enable survey of this expansive area, survey intensity was reduced by 50% compared to surveys conducted since 2002. Transects were spaced at 20 km (2002-2006 survey transects were spaced at 10 km intervals, but conducted over a less area) yielding a spatial sample of 2%. We conducted surveys from 19 June (Victoria Island) to 26 June (Rasmussen Lowlands).

In addition, the crew also surveyed 14 transects on the Tuktoyaktuk Peninsula (16-17 June) within 2 days of a helicopter survey of the same transects (Hines et al., CWS, Pers. Comm.). Both aircraft used additional backseat observers to employ the double-observer (mark-resight) method for investigating detection probability of several target species. Results of these "matched" surveys will help interpret results of current fixed-wing surveys versus previously conducted helicopter surveys. Detection probability surveys in the fixed-wing aircraft were also conducted on Kent Peninsula, western Queen Maud Gulf, and portions of Victoria Island. Double-observer efforts are used to evaluate variance in detection among years, observers, and behaviours of geese when observed (i.e., on the ground versus flying).

Migration and nesting phenology was reported as approximately 1 week later than average near the Tuktoyaktuk Peninsula and among the latest recorded in the Central Queen Maud Gulf. Snow cover during the survey was generally from 0-20%. We suspect that 2007 surveys were conducted during the first and second weeks of goose incubation periods.

Project Status: Results of the 2007 fixed-wing surveys are not yet available. However, pilots and observers again report that the survey logistics were reasonable and that the survey can be conducted safely. Fixed-wing survey efforts were not constrained substantially by weather conditions in 2007, nor were they constrained in 2005-2006. Despite a requirement for substantial commercial travel of observers in 2007, the survey was conducted within the allocated budget. The 2007 survey required a total of 88 hours of flight time (including ferry time to and from Alaska).

Based on the information being gained through these surveys there is substantial support for continuing these efforts using turbine-powered fixed-wing aircraft, and developing these surveys into an operational monitoring method for several migratory bird species and populations. As indicated in SDJV monitoring proposal #7 (submitted in Sept 2007), the first priority for operations in 2008 is the survey of western areas (western Victoria and Banks Islands). Simultaneous survey of western and eastern areas will be completed in 2008 if the schedule for certification of the Quest Kodiak (turbine aircraft) remains on schedule. Companion surveys in the ISR on the western Canadian mainland are also planned to continue in 2008.

Data gathered in 2007 and 2008 (and previous fixed-wing and helicopter surveys) will be used to implement an operational survey and to secure funding from current and additional partners for 2009 and beyond.

Project Funding Sources for FY 07:

SDJV (USFWS) Contribution	Other U.S. Federal contributions	U.S. non-federal contributions	Canadian federal contributions	Canadian non-federal contributions	Source of funding (agency or organization)
$15,000					SDJV
	$15,000				AGJV
	$15,000				FWS Region 9
		$15,000			CFC
			$3,000		CWS

[1]Budget does not include cost of surveys in ISR near the Mackenzie River Delta in 2007-2008 (48,000 USD, Hines et al.), but does reflect in-kind contribution of double observer effort near the Tuktoyaktuk Peninsula in 2007

Total Expenditures (SDJV plus partner contributions) by Category in FY 07:

ACTIVITY	BREEDING	MOLTING	MIGRATION	WINTERING	TOTAL
Banding					
Surveys	$63,000				$63,000
Research					
Communication					
Coordination					

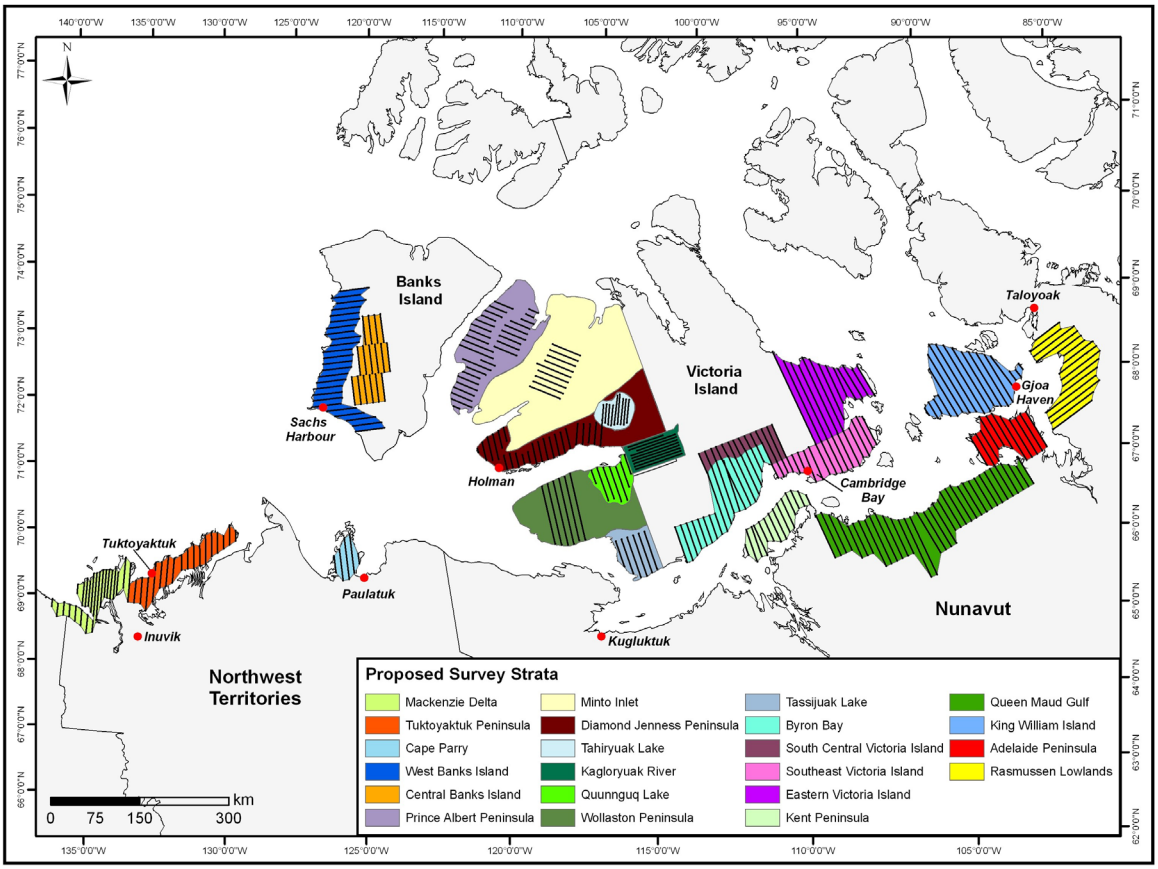

Fig. 1. Locations of spring aerial transects flown via turbine aircraft during 2007 (eastern areas), and proposed for 2008 operations (western and eastern areas).