

**Spring Waterfowl Surveys
on Fort Richardson, Alaska
1996-1997**

Final Report

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Introduction

In addition to the Eagle River flats, Fort Richardson contains several lakes, ponds, and marshes that are valuable for migrating and breeding waterbirds, including loons, grebes, and ducks. Few studies have been conducted, however, on waterbirds outside of the flats. We conducted surveys on most of Fort Richardson's lakes and ponds to quantify the abundance and species composition of waterbirds on the base. In this report, we present our findings from 2 years of surveys.

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Study Area

Fort Richardson is located 16 Km north of Anchorage, Alaska (61°20'N, 149°40'W) and encompasses 24,300 ha of training and cantonment areas. Rising from sea level to >1,500 m, Fort Richardson contains a wide range of habitats, including tidal wetlands, muskegs, lakes and ponds, deciduous and coniferous forests, shrublands, and alpine tundra.

The study area consists of 13 bodies of water located throughout Fort Richardson and range from small (<1,000m²) and shallow ponds to large (>10,000m²) and deep lakes.

Methods

We surveyed 13 lakes and ponds (Fig. 2) for the presence of migrating waterfowl during spring 1996. We repeated surveys on 5 of the lakes/ponds in 1997. Surveys were not repeated on smaller, unproductive ponds (e.g. Web and Chain pond) in 1997. Because of late melting, we began surveys on 25 Apr; some lakes were not ice-free until 10 May. The latest survey occurred on 28 May. Accordingly, effort at individual lakes/ponds varied between 2 and 12 surveys over both years. The total number of all loons, grebes, and waterfowl were counted during each visit. We calculated the average number of individuals present on each lake/pond from the 2 years and determined the relative abundance, among all lakes/ponds, of each species.

Results

We conducted 52 surveys of 13 lakes/ponds on 6 days between 25 Apr and 23 May 1996, and 25 surveys of 5 lakes/ponds on 6 days between 27 Apr and 28 May 1997. We recorded 22 species of loons, grebes, and waterfowl (Table 1). Canada geese, American wigeons, mallards, red-necked grebes, and green-winged teals were the most abundant species observed and constituted >75% of total birds. A single Eurasian wigeon was recorded at Waldon lake in 1997. Otter lake was, by far, the site with the most species (16) and the greatest number of individuals on average (>75 birds per survey). McVeigh Marsh was the second most abundant site with 13 species and an average >35 birds/survey. Few species and individuals were detected on small, isolated ponds (e.g. Web and Chain).

Discussion

We found the ponds that offered the greatest interspersion of water and vegetation to be the

best for waterfowl. Otter lake and McVeigh Marsh were the 2 most populated sites, and each contains areas characterized by several small islands of vegetation with considerably more water/vegetation edge than the other lakes and ponds. Hemi-marshes of this type, are ideal for waterfowl since they offer the best combination of food, cover, and nesting habitat.

Diving ducks (e.g. scaup, goldeneye), grebes, and loons typically need deeper water to forage than do their dabbling counterparts. Otter lake was the most abundant site since it offers these deeper, more open waters to divers, in addition to the shallower hemi-marsh ideal for dabbling ducks. Although McVeigh marsh is ideal for dabbling ducks, it does not offer foraging opportunities for divers, and consequently contained fewer species than Otter Lake.

Lake Clunie did not host many species of waterbirds. The lake bottom rises too steeply to the land and does not provide the system of shallow marshes that appeal to dabblers, nor does it contain a suitable amount of edge habitat for nesting diving birds. Conversely, Waldon Lake is similar to Lake Clunie in its deepness and large amounts of open water, but has a more gentle slope and provides more shallow edge habitat and consequently has more birds.

Small, isolated ponds (e.g. web and chain pond) may simply be too small to host more than a few birds, and since waterfowl are attracted to where other waterfowl occur, few birds may take the initiative to homestead on these isolated, unpopulated ponds.

Table 1. Average abundance of waterfowl, and the (number of surveys) made, on individual lakes/ponds and relative abundance (all areas) of migratory waterfowl on Fort Richardson, Alaska, during spring, 1996-1997.

Species	Chain Pond (2)	Dishno Pond (5)	Golf Course Pond (4)	Gwen Lake (7)	Inter-change Pond (6)	Lake Clunie (3)	Lake Kiowa (8)
Common Loon						1.33	
Horned Grebe							
Red-necked Grebe		1.20		2.00			0.13
Greater White-fronted Goose							
Canada Goose	2.00	0.40	2.00		1.67	3.33	0.50
Green-winged Teal		4.00		0.29		0.67	1.38
Mallard	1.50	2.00		1.43	1.33	0.33	2.00
Northern Pintail							
Northern Shoveler					0.33		
American Wigeon	1.00	1.20	1.00	1.57	1.00	1.00	3.00
Eurasian Wigeon							
Canvasback							
Ring-necked Duck	1.00			0.14			3.00
Greater Scaup							
Lesser Scaup				0.29			
Harlequin Duck							
Oldsquaw							
Surf Scoter						1.00	
Common Goldeneye							
Barrow's Goldeneye							1.00
Bufflehead				1.00			
Common Merganser							
All species ¹	5.50	8.80	3.00	6.72	4.33	7.91	11.01

¹includes unknown individuals

Table 1 cont.

Species	McVeigh Marsh (12)	Otter Lake (12)	Dam (6)	Upper Lake Kiowa (3)	Waldon Lake (9)	Web Pond (2)	Relative abundance (%)
Common Loon		1.42			0.56		1.6
Horned Grebe	0.58						0.3
Red-necked Grebe	2.17	13.83		1.33	0.11		11.2
Greater White-fronted Goose		0.08					<0.1
Canada Goose	11.42	24.25	2.67		0.33		25.7
Green-winged Teal	5.92	6.00			2.44		11.1
Mallard	4.67	8.75	0.83		2.22		13.5
Northern Pintail		0.75			0.44		0.6
Northern Shoveler	2.00	0.42					1.5
American Wigeon	5.33	6.92		0.67	6.44		15.6
Eurasian Wigeon					0.22		0.1
Canvasback	0.83						0.5
Ring-necked Duck	2.92	9.58			0.11		9.0
Greater Scaup	0.08	0.17			1.67		1.0
Lesser Scaup		0.67			0.22		0.6
Harlequin Duck			2.83				1.5
Oldsquaw					0.11		0.1
Surf Scoter		0.17					0.5
Common Goldeneye		0.17	0.33				0.3
Barrow's Goldeneye	1.58	2.25	0.67		1.78	0.50	4.2
Bufflehead	0.67						0.9
Common Merganser			0.33				0.2
All species ¹	38.17	75.51	7.66	2.00	16.98	0.50	

¹includes unknown individuals