

2.12.1.2 Moose

The population of moose in the NWT is estimated to range from 20,000 to 40,000 (GNWT ENR 2010a). Densities of moose are relatively low in the NWT, ranging from 3 to 17 moose per 100 km² (GNWT ENR 2010a). A survey in the Gordon Lake area (over 20 km east of the YGP study area) in 1989 reported an average density of two moose per 100 km² (Case and Graf 1992). Stratified grid moose surveys were conducted more recently across much of the Taiga Shield ecoregion, including the YGP area in 2004 and 2007 (Cluff 2005). In 2004, moose densities were estimated at 2.75 moose per 100 km² (Cluff 2005). The ratio of calves to cows was 62 calves per 100 cows, and the ratio of bulls to cows was 56 bulls per 100 cows (Cluff 2005).

However, the ratio of bulls to cows is conservative since the aerial survey was conducted in March, when bull moose have dropped their antlers and classification errors by observers are likely (Cluff 2008). Estimated moose densities increased during the 2007 survey to 5.4 moose per 100 km² (Cluff 2008). In addition, the ratio of calves to cows increased in 2007 to 77.3 calves per 100 cows, and the number of bulls to cows increased to 77.1 bulls to 100 cows (Cluff 2008).

Harvests of moose are currently low and likely opportunistic; approximately 60 were taken by hunters in the West Kitikmeot-Slave Geological Province in 1996 to 1997 (A.D'Hont, personal communication, 1998). In addition, Yellowknife resident recreational hunter surveys estimate 80 to 100 moose are harvested annually; however, these surveys do not specify the harvested region (Cluff 2008). An increase in moose harvest is predicted with the decline in the Bathurst caribou herd population (Cluff 2008).

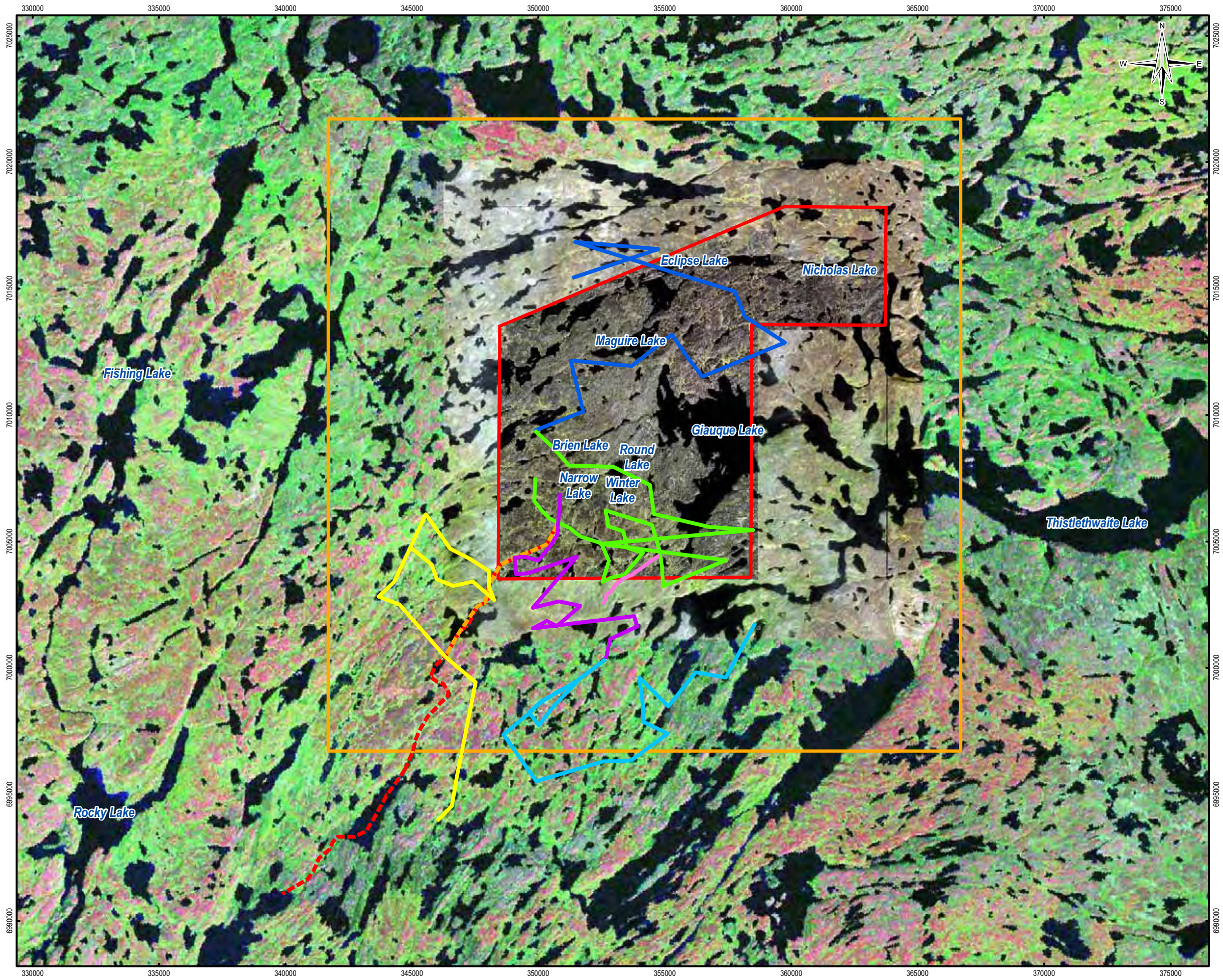
The few moose present in the area use a variety of habitats including lakeshores, river valleys and semi-open forests on a year-round basis (Britton 1983). Moose prefer aquatic vegetation, willows and other deciduous shrubs and trees for food, and conifer forests for winter cover (GNWT ENR 2010a). Areas with a high concentration of deciduous shrubs and trees, such as habitats in early successional stages support good moose foraging habitat. In particular, moose favour older (e.g., 15-30 years) burnt areas that are regenerating as shrub-dominated ecosystems (GNWT ENR 2010a). In late May or early June, calves are born in secluded areas in densely vegetated habitats.

Based on vegetation studies conducted in 2004 (EBA 2006), the majority of the habitat (75%) is forested spruce lichen, spruce moss, jack pine lichen and open lake; while willow riparian (favoured moose habitat) represents less than 2% of the study area. Conifer-dominated landscapes are sub-optimal moose habitat. However, a portion of the conifer-dominated habitat has been burnt. A total of 23% of the YGP study area (north and east sides of Giauque Lake) was severely burnt in 1998. Nevertheless, moose sign (pellets, browse, antlers and tracks) was observed across the YGP study area in the majority of ecosystem types.

A moose survey was flown in the YGP study area on November 16, 2004, with a Cessna 185 fixed-wing aircraft (Figure 2.12-5). The survey route was preselected based on the presence of key moose habitat, including lakeshores and rivers, and other areas with extensive willow, birch and alder. These results help to provide additional information on the numbers of moose and habitat utilization in the local area. A total of ten moose were observed along 273 km of transect. Initial results suggest approximate animal density of 3.7 moose per 100 km² in these pre-selected habitats.

Based on the YGP vegetation studies, the predominant moose habitat is considered to be poor quality, which corroborates the EBA survey results. Moose are believed to frequent the region at densities similar to those previously reported in lower quality habitat (Graf 1992). However, current moose densities are likely higher in the burn since this area has been regenerating for 12 years, and deciduous shrubs and trees favoured by moose are likely more abundant than during the aerial survey.

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LEGEND

- Local Study Area (LSA)
Regional Study Area (RSA)
- Transects**
- Route 1
 - Route 2
 - Route 3
 - Route 4
 - Route 5
 - Route 6
 - Powerline Route
 - Winter Road Route

NOTES

1. Imagery Source: IKONOS (July 27 and August 2, 2004);
Landsat TM (August 11, 2001).

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YELLOWKNIFE GOLD PROJECT

Transects Flown During
Moose Survey, 2004

PROJECTION UTM Zone 12		DATUM NAD83	
Scale: 1:150,000 <div><div>10.5012345</div><div></div></div> Kilometres			
FILE NO. V23201097-DAR-043.mxd			
PROJECT NO. V23201097	DWN SL	CKD GC	REV 0
OFFICE EBA-VANC	DATE February 15, 2011		



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Figure 2.12-5

2.12.1.3 Black Bear

Black bears are common throughout the boreal forests of the NWT, including the area of the YGP. The black bear population in the NWT is healthy and estimated at 10,000 (INAC 2007a).

Black bear populations in the NWT are monitored using harvest statistics as an indicator of population health (INAC 2007a). In the West Kitikmeot-Slave Geological Province, approximately 12 black bears were harvested by residents from 1996 to 1997 (A. D'Hont, personal communication 1998; FSC et al. 1999). Black bears are hunted on a limited basis in the boreal forest north of Yellowknife.

Black bear habitat quality is based primarily on the abundance of seasonally important food items. Black bears occupy a variety of habitat types in search of food items, and occur throughout much of the YGP area. In the spring, bears gravitate toward areas with early-emerging vegetation, such as roadsides and wetlands dominated by sedges, cottongrass, grasses, and horsetails, and may be found in sites such as meadows with over-wintered berries. In summer, bears typically consume a variety of species of grasses, sedges, horsetails, and forbs. Insect activity peaks during summer, and black bears feed heavily on colonies of ants, bees, and wasps. By fall time, their diet shifts as the nutritional quality of many plants decline and berries become ripe.

Disturbed habitats, including fire influenced habitats are known to provide good black bear habitat. Black bears benefit most from sites that have been burned at least 20 years prior (Laviviere 2001). These regenerating sites commonly provide summer and fall forage resources such as berries and ants in downed and burned trees. In addition, black bears benefit from higher moose densities and increased moose calf productivity from these regenerating sites (Nelson et al. 2008). Black bears are omnivores. In most areas, their diet is dominated by vegetation. However, meat, especially winter-killed ungulates during spring, moose calves, insects during summer, and possibly fish, can be locally important.

Black bears typically dig dens in till material available on eskers or drumlins, stream banks, or in natural cavities such as an upturned tree root. Black bears can be expected to den across much of the YGP area.

All incidental black bear observations were recorded during the 2004 and 2005 field surveys. A total of 54 black bear observations were documented including scat, claw marks, and feeding sites across the YGP study area; however, no black bears were seen.

2.12.1.4 Grizzly Bear

Grizzly bears typically occur above the tree line on the tundra; however, a few grizzly bears are known to occur and den within the forested zone of the Slave Geological Province. They have been observed at Snare Lake, Colomac Mine and Rae Lake, but are expected to be uncommon in the YGP study area.

The grizzly bear has been assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2010) as “Special Concern” because of its low resiliency to human-caused effects. This is largely a function of low population densities, low reproductive capacity and sensitivity to human activity. Grizzlies use a wide variety of habitats and show seasonal habitat preferences related to food availability and thermal shelter (Gau 1998; McLoughlin 2000).

Grizzly bears typically enter their dens in late October or early November and emerge in late April or early May (McLoughlin et al. 1997). Grizzly bear dens and denning areas are widely distributed throughout the Slave Geological Province (Banci and Moore 1997; McLoughlin et al. 1997; Penner and Associates 1998). In a WKSS study of radio-collared barren ground grizzlies, approximately 61% of 56 dens were located in heath tundra habitat with greater than 30% boulders (McLoughlin 2000). Only 7 of 56 dens were located in esker habitat, previously thought to be a major denning habitat. Five dens, approximately 9%, were located in spruce forest (McLoughlin 2000).

2.12.1.5 Grey Wolf

Grey wolf populations in the NWT are considered healthy (INAC 2007a). Wolves play a pivotal role in all levels of the food chain in subarctic and arctic ecosystems, and are the predominant predators of caribou (Williams 1990). Wolves are hunted and trapped and are important to local and regional economies.

In the YGP area, two different groups of grey wolves can be expected to occupy the YGP area: migratory and resident. Migratory wolves (also known as tundra wolves) follow the barren-ground caribou herds and would occupy the YGP area in the winter if caribou were present. The boreal resident wolves (also known as timber wolves) remain below the tree line year-round, including the YGP area and depend on non-migratory prey such as moose. Timber wolves maintain regular territories, which vary in size depending on prey densities. Tundra wolves do not maintain regular territories and travel extensively following the caribou herds.

An estimated 1,400 to 3,000 wolves are present within the annual range of the Bathurst caribou herd (Bromley and Buckland 1995). In 2006, the wolf population within the winter range of the Bathurst herd (including the YGP study area) was estimated at 211 ± 66 (Mattson et al. 2010). Recent evidence suggests the number and productivity of wolves occupying the Bathurst caribou range has decreased in concert with the Bathurst caribou herd population decline (Adamczewski *et al.* 2009, Cluff 2006/2007). However, timber wolf numbers and productivity respond positively to an increase in moose populations. As moose populations increase in the burned areas of the YGP, wolf numbers will likely increase in response.

Annual ranges for radio-collared tundra wolf males in the Slave Geological Province are large, reported to average over 63,000 km² (Walton 1999). Like most carnivores, wolves can be sensitive to disturbance, especially during their reproductive period (Chapman 1977). Nevertheless, their high productivity and dispersal capabilities ensure resiliency to sustained levels of moderate human disturbance (Weaver et al. 1996).

Tundra wolves are tied to specific areas only during the denning period; whereas, timber wolves maintain territories year-round. Wolf dens are traditional and may be used over many years (BHP 1995, 2000). Of 63 wolf dens found in the Bathurst caribou range, 26 were on the tundra, 28 in the tree line transition area and nine in the boreal forest (Heard and Williams 1992). The denning period for wolves typically begins in early May. Timber wolf dens are constructed in esker material, within a rock crevice, or an overturned stump, particularly near water or heights of land.

Grey wolf habitat, including denning habitat, exists throughout the YGP study area. A total of 37 incidental wolf observations were documented across the YGP study area, including a pack consisting of six individuals, a number of scats and tracks. No wolf dens were observed.

2.12.1.6 Wolverine

Wolverines are solitary omnivores that range over large areas throughout most of northern and western Canada. The wolverine has been assessed by COSEWIC (2010) as “Special Concern” and ranked as “Sensitive” by ENR (GNWT ENR 2010b) because of its low resiliency to human-caused effects. Wolverines live at low densities even under optimal conditions (Banci 1994). Reproductive rates are low, and sexual maturity is delayed compared to other mammalian carnivores. An estimated 2,100 to 4,000 wolverines exist in the NWT; however, the population estimate specific to the boreal zone is unknown (GNWT ENR 2010b).

Wolverines are scavengers and predators of birds and small and large mammals, and also forage on plant materials; relying on a diversity of foods to offset the uncertainty of availability in the harsh northern environment. The presence of large prey, such as ungulates, at least at some time during the year, appears to be important for the persistence of wolverine populations (Banci 1994).

Although wolverines occupy a variety of habitats within the boreal forest and on the barren lands year-round, little is known about their distribution and abundance. Studies have proved to be difficult and logistically expensive, more so than where access is readily available. Based on limited data, home ranges of wolverines in the central Arctic vary from 59 to 1,905 km², although some of the larger ranges reflect the activities of transient juveniles moving over very large areas. The longest recorded straight-line movement involved two wolverines travelling from Daring Lake to the Lutsel K'e area, a distance of more than 300 km (Mulders 1999). In 1998, movements of some individuals corresponded with the general distribution of Bathurst caribou and wolves during winter (R. Mulders, personal communication 1999).

Wolverines are important furbearers for local communities throughout the NWT and Nunavut. The majority of wolverines in the territories, approximately 70%, are hunted from snowmobiles during winter (Mulders 1999). Harvests are typically centred around the communities, although complete information on wolverine harvests is not collected. Hunting and trapping, followed by predation and starvation, are the major cause of mortality of radio-collared wolverines across western North America, including the NWT.

(SENEC Consultants Ltd. 2008). Based on 2005 and 2006 results from wolverine DNA mark-recapture programs on the tundra, Boulanger and Mulders (ND) suggest male wolverine populations are in decline possibly due to higher harvest rates. Results also suggest male wolverines display greater rates of movement and immigration compared to females, and therefore are at a greater risk of harvest (Boulanger and Mulders ND).

A total of two wolverines were recorded in the YGP study area in November 2004 and March 2005, respectively.

2.12.1.7 Foxes

Red fox commonly occur in the YGP area, and the Arctic fox is considered a rare visitor. The southern distribution limit of the Arctic fox is generally along the northern edge of the tree line; however, a few Arctic foxes can be found within the boreal zone during times of low prey numbers. Population estimates for both fox species in the NWT are unknown, but both populations are considered secure (GNWT ENR 2010b). Arctic fox numbers fluctuate widely following changes in lemming populations (approximately 4 year cycles), their primary food source (MacPherson 1969; Garrott and Eberhardt 1987; GNWT ENR 2010b); whereas, red fox numbers fluctuate in 8 to 10 year cycles (GNWT ENR 2010b). Red foxes, which are larger, may displace Arctic foxes in the barren lands, by usurping their dens and other limited habitat resources including food supplies (Rudzinski et al. 1982; Bailey 1992).

Pairs seek den sites beginning in February and March. Most pairs are established at den sites no later than early May (Garrott and Eberhardt 1987). Foxes require suitable substrate to establish their dens, and commonly reuse den sites in consecutive years. Fox dens are commonly found on eskers, riverbanks, and other areas with glacio-fluvial materials. Family groups focus much of their activity around dens until midsummer, when the pups begin to wander extensively. Juvenile foxes disperse in the fall.

Arctic and red foxes have been important species in the fur trade. Foxes are present year-round at all mine sites, camps and wherever people generate and dispose of garbage and food. Despite stringent regulations, history has shown that problems with people feeding foxes at mines, exploration camps and along the winter roads is inevitable. Arctic and red foxes are known to tolerate high levels of human disturbance and commonly live in the vicinity of camps and other developments.

Foxes regularly obtain food directly from people at camps, from improperly managed garbage; caribou kills left over by wolves, and gut piles left by human hunters. Such supplemental food has the potential to improve over-winter survival, as well as productivity (Eberhardt et al. 1983). The high mobility of the species (Eberhardt and Hanson 1978) suggests that individuals may come from long distances to access food. Arctic foxes are a primary vector of rabies, especially during population highs, which occur roughly every three years.

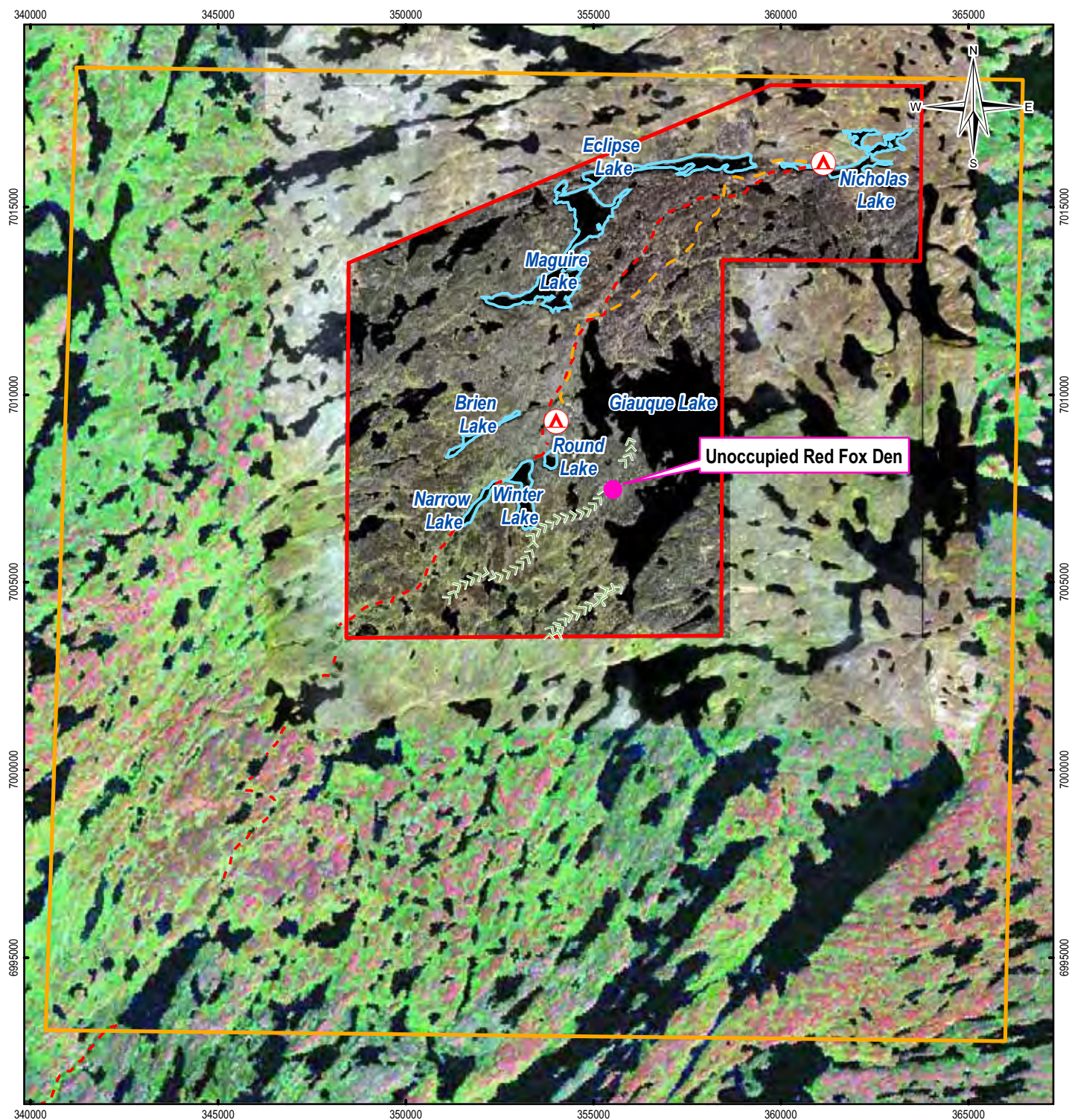
Twenty two observations of red foxes were documented within the YGP study area in 2004 and 2005, including a single observation of a red fox in March 2004, multiple scats and an abandoned den site. The den was located in esker material in an open canopy mixed jack pine and white spruce stand with a lichen-dominated understory. This den included nine entrance holes and was unoccupied in 2005 but was likely used in 2004.

2.12.1.8 Carnivore (Esker Survey)

Eskers and other glacio-fluvial deposits can provide important habitat for a variety of wildlife species. Two large eskers are located near the YGP area (Figure 2.12-6). There is a 4 km long esker located approximately 1.5 km southeast of Round Lake and a second esker (2.5 km long) located at the south end of Giauque Lake, about 4.5 km southeast of Round Lake. In general, eskers provide material appropriate for black bear, wolf and fox dens. In the boreal forest, den sites are also constructed in overturned trees, rock crevices, riverbanks, and other suitable microhabitats; however, these suitable microhabitats are difficult to survey.

To determine if these eskers were being used for carnivore dens or other wildlife needs, a series of surveys were conducted, including an aerial survey of the first esker on April 18, 2005, a ground survey of the first esker on July 12 and 13, 2005 and a ground survey of the second esker on August 3, 2005. The aerial survey completed on April 18, 2005 was conducted at a time concurrent with black bear spring emergence and optimal den site detection. The focus of the July ground surveys was to detect active wolf and fox dens, and the August survey was conducted to detect non-active carnivore dens or those recently abandoned.

One unoccupied fox den was found on the first esker and evidence of use by black bear, wolf and fox was recorded on both eskers. Based on the observations obtained from these three surveys and from other incidental observations recorded during other surveys, wildlife use of the eskers appears to be generally similar to that found elsewhere in the study area in terms of species diversity and number of observations.



LEGEND

- Camps
- Local Study Area (LSA)
- Ungulate Study Area
- 2004 Study Lakes
- Nicholas Lake Access Road
- Winter Road
- Esker Surveys
- Unoccupied Red Fox Den

NOTES

1. Imagery Source: IKONOS (July 27 and August 2, 2004); Landsat TM (August 11, 2001).
2. Figure from 2005 Wildlife Data Report.
3. Road routes are approximate.

ISSUED FOR USE

YELLOWKNIFE GOLD PROJECT

Esker Survey Location

PROJECTION UTM Zone 12	DATUM NAD83
Scale: 1:150,000	

FILE NO.
V23201097-DAR-028.mxd

PROJECT NO.
V23201097

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EBA Engineering
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Figure 2.12-6

2.12.2 Birds

The Ecoregions of the YGP area are home to approximately 150 species of birds, the majority of which are seasonal migrants. However, considerably fewer species are expected to occur in the YGP study area. The lakes and wetlands of the north provide habitat for a wide variety of waterfowl and shorebirds. A number of raptors utilize this region, either as residents or migrants. They include species such as the Bald Eagle (*Haliaeetus leucocephalus*), Northern Harrier (*Circus cyaneus*), Peregrine Falcon (*Falco peregrinus*), and Golden Eagle (*Aquila chrysaetos*). Only a few bird species, such as Rock and Willow Ptarmigans (*Lagopus lagopus* and *L. mutus*, respectively), Common Raven (*Corvus corax*), Northern Goshawk (*Accipiter gentilis*), Northern Hawk-owl (*Surnia ulula*), and the Three-toed Woodpecker (*Picoides tridactylus*), overwinter within this ecozone.

2.12.2.1 Upland Breeding Birds

For the purposes of this report, the term “upland breeding birds” refers to a group of birds that nest in upland habitats and includes perching birds, woodpeckers, kingfishers, grouse/ptarmigan, and nighthawks.

Upland breeding birds are widely distributed throughout the boreal forest, transition zone and tundra, and occupy all terrestrial habitat types. A total of 67 upland breeding bird species may potentially occur in the YGP study area, as summer or year-round residents (Table 2.12-2). Additional upland bird species that occupy the transitional and tundra zones may briefly occupy the YGP study area during spring or fall migration.

Upland breeding birds are common in the YGP study area during spring, summer and fall. All of the species listed in Table 2.12-2 could potentially be present during the summer. Fourteen species may over winter within the YGP study area.

In the NWT, two species that may occur in the YGP study area are ranked by ENR as “At Risk”⁵, one species is ranked as “May Be At Risk”⁶, and seven species are listed as “Sensitive” (Table 2.12-2). Sensitive species are “not at risk of extinction or extirpation but may require special attention or protection to prevent them from becoming at risk” (GNWT ENR 2010b). Two of these 67 species (Olive-sided Flycatcher and Common Nighthawk) have been listed by SARA (2010) as “Threatened”⁷, and one species (Rusty Blackbird) has been listed by SARA as “Special Concern”⁸. Species with special conservation status potentially occurring within the YGP study area are discussed further in Section 2.12.3.

⁵ Species ranked by ENR as “At Risk” are at risk of extirpation or extinction and have been assessed by COSEWIC as endangered or threatened.

⁶ Species ranked by ENR as “May Be At Risk” are potentially at risk of extirpation or extinction and are ranked as the highest priority for a more detailed assessment.

⁷ Species assessed as “Threatened” are likely to become endangered if factors leading to its extinction or extirpation are not reversed.

⁸ Species listed as “Special Concern” may become threatened or endangered because of a combination of biological characteristics (*e.g.* low reproductive rate) and threats.

TABLE 2.12-2: UPLAND NESTING BIRDS THAT POTENTIALLY OCCUR IN THE YGP STUDY AREA

Common Name	Scientific Name	ENR Status ¹	COSEWIC Status ²	SARA Status ³
Olive-sided Flycatcher*	<i>Contopus cooperi</i>	At Risk	Threatened	Threatened
Common Nighthawk*	<i>Chordeiles minor</i>	At Risk	Threatened	Threatened
Rusty Blackbird*	<i>Euphagus carolinus</i>	May Be At Risk	Special Concern	Special Concern
Barn Swallow	<i>Hirundo rustica</i>	Sensitive	Not Assessed	No Status
Boreal Chickadee* ^w	<i>Parus hudsonicus</i>	Sensitive	Not Assessed	No Status
American Pipit	<i>Antus rubescens</i>	Sensitive	Not Assessed	No Status
Blackpoll Warbler*	<i>Dendroica striata</i>	Sensitive	Not Assessed	No Status
American Tree Sparrow*	<i>Spizella arborea</i>	Sensitive	Not Assessed	No Status
White-throated Sparrow	<i>Zonotrichia albicollis</i>	Sensitive	Not Assessed	No Status
Harris's Sparrow	<i>Zonotrichia querula</i>	Sensitive	Not Assessed	No Status
Ruffed Grouse ^w	<i>Bonasa umbellus</i>	Secure	Not Assessed	No Status
Spruce Grouse* ^w	<i>Falcapennis canadensis</i>	Secure	Not Assessed	No Status
Willow Ptarmigan ^w	<i>Lagopus lagopus</i>	Secure	Not Assessed	No Status
Rock Ptarmigan ^w	<i>Lagopus muta</i>	Secure	Not Assessed	No Status
Sharp-tailed Grouse ^w	<i>Tympanuchus phasianellus</i>	Secure	Not Assessed	No Status
Sandhill Crane	<i>Grus Canadensis</i>	Secure	Not Assessed	No Status
Belted Kingfisher*	<i>Megaceryle alcyon</i>	Secure	Not Assessed	No Status
Yellow-bellied Sapsucker*	<i>Sphyrapicus varius</i>	Secure	Not Assessed	No Status
Downy Woodpecker ^w	<i>Picoides pubescens</i>	Secure	Not Assessed	No Status
Hairy Woodpecker* ^w	<i>Picoides villosus</i>	Secure	Not Assessed	No Status
American Three-toed Woodpecker ^w	<i>Picoides dorsalis</i>	Secure	Not Assessed	No Status
Northern Flicker*	<i>Colaptes auratus</i>	Secure	Not Assessed	No Status
Yellow-bellied Flycatcher*	<i>Empidonax flaviventris</i>	Secure	Not Assessed	No Status
Alder Flycatcher*	<i>Empidonax alnorum</i>	Secure	Not Assessed	No Status
Least Flycatcher	<i>Empidonax minimus</i>	Secure	Not Assessed	No Status
Eastern Phoebe	<i>Sayornis phoebe</i>	Secure	Not Assessed	No Status
Eastern Kingbird	<i>Tyrannus tyrannus</i>	Secure	Not Assessed	No Status
Northern Shrike	<i>Lanius excubitor</i>	Secure	Not Assessed	No Status
Warbling Vireo	<i>Vireo gilvus</i>	Secure	Not Assessed	No Status
Red-eyed Vireo	<i>Vireo olivaceus</i>	Secure	Not Assessed	No Status
Gray Jay* ^w	<i>Perisoreus canadensis</i>	Secure	Not Assessed	No Status
Common Raven* ^w	<i>Corvus corax</i>	Secure	Not Assessed	No Status
Horned Lark	<i>Eremophila alpestris</i>	Secure	Not Assessed	No Status
Tree Swallow*	<i>Tachycineta bicolor</i>	Secure	Not Assessed	No Status
Bank Swallow	<i>Riparia riparia</i>	Secure	Not Assessed	No Status
Cliff Swallow	<i>Hirundo pyrrhonota</i>	Secure	Not Assessed	No Status
Ruby-crowned Kinglet*	<i>Regulus calendula</i>	Secure	Not Assessed	No Status

TABLE 2.12-2: UPLAND NESTING BIRDS THAT POTENTIALLY OCCUR IN THE YGP STUDY AREA

Common Name	Scientific Name	ENR Status ¹	COSEWIC Status ²	SARA Status ³
Grey-cheeked Thrush*	<i>Catharus minimus</i>	Secure	Not Assessed	No Status
Swainson's Thrush*	<i>Catharus ustulatus</i>	Secure	Not Assessed	No Status
Hermit Thrush*	<i>Catharus guttatus</i>	Secure	Not Assessed	No Status
American Robin*	<i>Turdus migratorius</i>	Secure	Not Assessed	No Status
Bohemian Waxwing	<i>Bombycilla garrulus</i>	Secure	Not Assessed	No Status
Tennessee Warbler*	<i>Vermivora peregrina</i>	Secure	Not Assessed	No Status
Orange-crowned Warbler*	<i>Vermivora celata</i>	Secure	Not Assessed	No Status
Yellow Warbler*	<i>Dendroica petechia</i>	Secure	Not Assessed	No Status
Magnolia Warbler	<i>Dendroica magnolia</i>	Secure	Not Assessed	No Status
Yellow-rumped Warbler*	<i>Dendroica coronata</i>	Secure	Not Assessed	No Status
Palm Warbler	<i>Dendroica palmarum</i>	Secure	Not Assessed	No Status
American Redstart	<i>Setophaga ruticilla</i>	Secure	Not Assessed	No Status
Northern Waterthrush*	<i>Seiurus noveboracensis</i>	Secure	Not Assessed	No Status
Wilson's Warbler*	<i>Wilsonia pusilla</i>	Secure	Not Assessed	No Status
Chipping Sparrow	<i>Spizella passerina</i>	Secure	Not Assessed	No Status
Clay-colored Sparrow	<i>Spizella pallida</i>	Secure	Not Assessed	No Status
Savannah Sparrow*	<i>Passerculus sandwichensis</i>	Secure	Not Assessed	No Status
Fox Sparrow*	<i>Passerella iliaca</i>	Undetermined	Not Assessed	No Status
Lincoln's Sparrow *	<i>Melospiza lincolni</i>	Secure	Not Assessed	No Status
White-crowned Sparrow*	<i>Zonotrichia leucophrys</i>	Secure	Not Assessed	No Status
Dark-eyed Junco*	<i>Junco hyemalis</i>	Secure	Not Assessed	No Status
Snow Bunting	<i>Plectrophenax nivalis</i>	Undetermined	Not Assessed	No Status
Red-winged Blackbird*	<i>Agelaius phoeniceus</i>	Secure	Not Assessed	No Status
Pine Grosbeak	<i>Pinicola enucleator</i>	Undetermined	Not Assessed	No Status
Purple Finch*	<i>Carpodacus purpureus</i>	Undetermined	Not Assessed	No Status
Red Crossbill ^w	<i>Loxia curvirostra</i>	Secure	Not Assessed	No Status
White-winged Crossbill ^w	<i>Loxia leucoptera</i>	Secure	Not Assessed	No Status
Common Redpoll*	<i>Carduelis flammea</i>	Secure	Not Assessed	No Status
Hoary Redpoll ^w	<i>Carduelis hornemanni</i>	Undetermined	Not Assessed	No Status
Pine Siskin*	<i>Carduelis pinus</i>	Secure	Not Assessed	No Status

Source: 1. GNWT ENR (2010b); 2. COSEWIC (2010); 3. SARA (2010)

* Birds species recorded during 2004 and 2005 field surveys

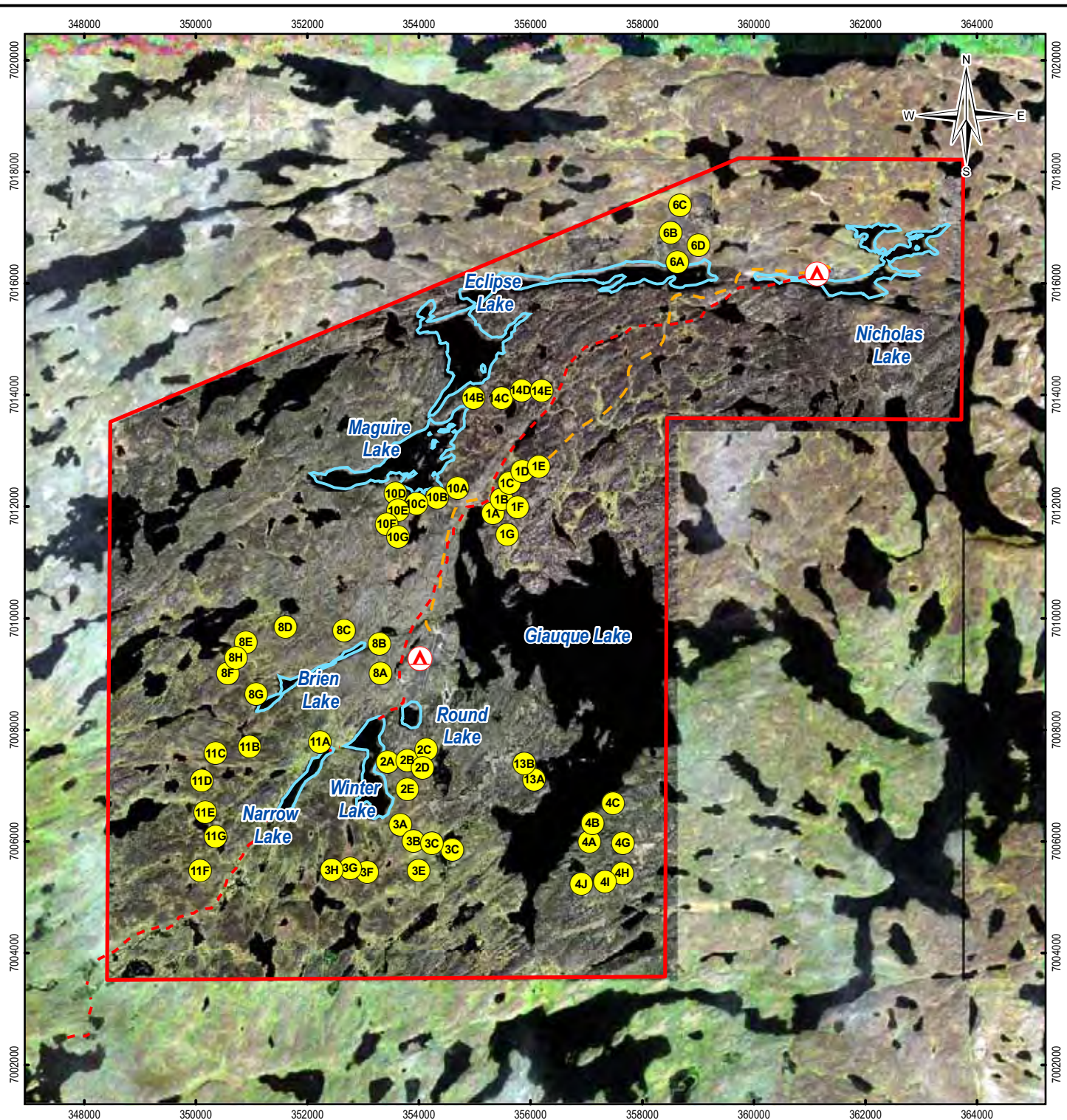
^w Winter residents in the region (Bromley and Trauger ND, Sibley 2000)

Species list based on Sibley (2000)

Species arranged based on species status and secondly by phylogenetic order

Fifty-nine breeding bird point count plots were surveyed from June 8 – 16, 2005 (Figure 2.12-7). The majority of plots were located within dry coniferous woodlands and burns. These two habitat units represent approximately 70% of all terrestrial areas within the local study area. There were three plots located in each of the mixed and deciduous woodland and treed fens and bogs. Two plots were located in complexes, areas that contained more than one habitat type. A total of 187 birds were documented within the sample plots, representing 31 different species. Blackpoll Warbler, White-crowned Sparrow, Chipping Sparrow, Palm Warbler, Swainson's Thrush, and Ruby-crowned Kinglet were the most common species. Table 2.12-3 indicates the number of observations by species and habitat.

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LEGEND

- Camps
- Breeding Bird Survey Location
- Local Study Area (LSA)
- 2004 Study Lakes
- Nicholas Lake Access Road
- Winter Road

NOTES

1. Imagery Source: IKONOS (July 27 and August 2, 2004); Landsat TM (August 11, 2001).
2. Figure from 2005 Wildlife Data Report.
3. Road routes are approximate.

YELLOWKNIFE GOLD PROJECT

Breeding Bird Survey Locations, 2005

PROJECTION UTM Zone 12	DATUM NAD83
Scale: 1:100,000	

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Figure 2.12-7

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TABLE 2.12-3: NUMBER OF BIRD OBSERVATIONS BY SPECIES AND HABITAT TYPE, 2005¹

Species	Habitat (Number of Point Count Locations in Habitat)					
	Burn (20)	Dry coniferous woodland (31)	Mixed and deciduous woodland (3)	Treed fens and bogs (3)	Complex (2)	Grand Total (59)
Spruce Grouse		1				1
Ptarmigan species		1				1
Lesser Yellowlegs ²				1		1
Solitary Sandpiper ²				1		1
Unknown shorebird ²		1				1
Olive-sided Flycatcher		1				1
Yellow-bellied Flycatcher		1				1
Alder Flycatcher		3			1	4
Gray Jay		1	1			2
Tree Swallow	1					1
Ruby-crowned Kinglet		10	2	1		13
Gray-cheeked Thrush	4		1	1		6
Swainson's Thrush	6	9				15
Hermit Thrush	6	1	2			9
Unknown thrush species	1					1
American Robin	3	6	1			10
Bohemian Waxwing		1				1
Orange-crowned Warbler		1				1
Yellow Warbler		1			1	2
Yellow-rumped Warbler		6	2		2	10
Palm Warbler	9	5		1		15
Blackpoll Warbler	6	11	3	1		21
Northern Waterthrush					1	1
Wilson's Warbler	2	1			1	4
Chipping Sparrow		11	1	2	1	15
Savannah Sparrow		1				1
Fox Sparrow		9	1	1	1	12
Lincoln's Sparrow	2	2				4
Harris's Sparrow	1					1
White-crowned Sparrow	12	6	1	2		21
Dark-eyed Junco	1	2				3
Rusty Blackbird		4			1	5
White-winged Crossbill				1		1
Unknown			1			1
Total number of observations	54	96	16	12	9	187

Species arranged based on phylogenetic order.

1. Does not include incidental bird observations recorded during the breeding bird survey. Only those species recorded within the survey plot and during the specified survey interval are included in the table.

2. For the purposes of this report, these species are considered waterbirds and are discussed further in the appropriate section (Section 2.12.2.3).

Mixed and deciduous woodland had the highest average number of birds, followed by treed fens and bogs. The burn areas had the lowest average number of bird observations.

The highest average species richness was found in treed fens and bogs, followed by mixed and deciduous woodland and complex. Burn areas had the lowest average species richness. The results for mixed and deciduous woodland, treed fens and bogs and complex must be interpreted with caution as each had few sample locations.

Birds, including upland breeding birds, raptors, waterfowl, and shorebirds were also recorded separately as incidental observations from the point counts while en-route to survey stations, during the survey but beyond the plot-sampling radius (100 m), and within survey stations but not within the 10-minute sampling time interval. A total of 250 incidental bird observations were recorded and are listed in Table 2.12-4. Species not detected during the point counts are listed here. Although these observations cannot be factored into the quantitative point count analysis, they do contribute to the overall list of bird species known to occur in the Project area.

TABLE 2.12-4: INCIDENTAL BIRD OBSERVATIONS, 2004 AND 2005

Common Name	Common Name
Tree Swallow	Common Nighthawk
American Wigeon	Osprey
Bonaparte's Gull	Pacific Loon
Canada Goose	Red-necked Grebe
Common Loon	Ruffed Grouse
Common Raven	Sandhill Crane
Wilson's Snipe	Surf Scoter
Eastern Phoebe	Tennessee Warbler
Herring Gull	White-throated Sparrow
Mallard	White-winged Scoter

2.12.2.2 Raptors

Raptors, also known as “Birds of Prey,” make up a small but important group of birds frequenting the YGP area (2.12-4). Although this group covers a small number of species, it is diverse and includes hawks, eagles and osprey (Accipitridae), falcons (Falconidae) and owls (Strigidae).

A total of 15 raptor species potentially occur within the YGP study area, of which one species, the Short-eared Owl, is listed as “Special Concern” by SARA (Schedule 3⁹), and another species, Peregrine Falcon, is assessed by COSEWIC as “Special Concern”

⁹ Legal protection is afforded to species officially listed in Schedule 1 under the *Act* as Extirpated, Endangered or Threatened (those listed as Special Concern under Schedule 1 do not benefit from full legal protection under the *Act*). For the purposes of this report, all SARA status designations are in Schedule 1, except if noted otherwise. Species listed under Schedules 2 and 3 of the *Act* may have been designated at risk by previous COSEWIC assessments (prior to the standardization of protocols); however, a reassessment by COSEWIC is required. Species listed under Schedules 2 and 3 are not yet protected under the *Act*, but may be protected in the future.

(Table 2.12-5). The remaining species are ranked as “Secure” within the NWT. Species with special conservation status potentially occurring within the YGP study area are discussed further in Section 2.12.3.

TABLE 2.12-5: RAPTOR SPECIES THAT POTENTIALLY OCCUR IN THE YGP STUDY AREA

Common Name	Scientific Name	ENR Status ¹	COSEWIC Status ²	SARA Status ³
Short-eared Owl	<i>Asio flammeus</i>	Sensitive	Special Concern	Special Concern Schedule 3
Peregrine Falcon ^M	<i>Falco peregrinus anatum</i>	Sensitive	Special Concern	No Status ⁴
Osprey*	<i>Pandion haliaetus</i>	Secure	Not Assessed	No Status
Bald Eagle*	<i>Haliaeetus leucocephalus</i>	Secure	Not At Risk	No Status
Northern Harrier*	<i>Circus cyaneus</i>	Secure	Not At Risk	No Status
Sharp-shinned Hawk	<i>Accipiter striatus</i>	Secure	Not At Risk	No Status
Northern Goshawk*	<i>Accipiter gentilis</i>	Secure	Not At Risk	No Status
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Secure	Not At Risk	No Status
Golden Eagle ^M	<i>Aquila chrysaetos</i>	Secure	Not At Risk	No Status
American Kestrel*	<i>Falco sparverius</i>	Secure	Not Assessed	No Status
Merlin*	<i>Falco columbarius</i>	Secure	Not At Risk	No Status
Great Horned Owl*	<i>Bubo virginianus</i>	Secure	Not Assessed	No Status
Northern Hawk Owl*	<i>Surnia ulula</i>	Secure	Not At Risk	No Status
Great Gray Owl*	<i>Strix nebulosa</i>	Secure	Not At Risk	No Status
Boreal Owl	<i>Aegolius funereus</i>	Secure	Not At Risk	No Status

Sources: 1. GNWT ENR (2010b); 2. COSEWIC (2010); 3. SARA (2009)

4. In 2007, COSEWIC reassessed *Falco peregrinus anatum* and *F.p. tundrius*, as a single unit and ultimately upgraded the status of *F.p. anatum* from “Threatened” to “Special Concern”. SARA has yet to list the status of this single *anatum/tundrius* unit.

M denotes species considered migrants through the region, and may occasionally occupy the YGP study area on a seasonal basis

* Bird species recorded during 2004 and 2005 field surveys

Species list based on Sibley (2000)

Species arranged based on species status and secondly by phylogenetic order

Raptors breed throughout the YGP study area, with select areas attracting higher breeding densities (i.e., riparian zones) than other areas (i.e., jack pine stands). Raptors can be expected to breed wherever their habitat requirements are met. Some species are year-round residents, while others are transient migrants. Little is known about the local population abundance of individual species. Seasonally and locally they can be abundant, common, or occasional. Some are summer residents, appearing as early as mid-April and departing in October, while others overwinter in the region (Clark and Wheeler 2001; Sibley 2000). Other raptors are spring and/or fall migrants and may appear in the YGP study area passing through, to and from their breeding ranges.

Raptors, as a group, are diverse. Some species are diurnal while others are nocturnal; some nest in trees, while others nest on cliffs and on the ground; some begin egg-laying as early as March, while others not until May.

Occurrence and breeding success of raptors are typically governed by prey abundance and availability of suitable nesting habitat (Blood and Anweiler 1994; Campbell et al. 1990). Small mammals, small birds, ducks, ptarmigan and fish are the primary prey for northern raptors (Bromley and Buckland 1995). Nest sites and food are the main resources that naturally limit breeding populations of Peregrine Falcon (Bromley 1992) and likely other raptors.

Raptors exhibit nest site fidelity, returning to the same nest site each year. Nests are typically large, some even massive, and often made of sticks. Falcons do not construct nests with sticks, but simply scrape out an area on a ledge. Tree structure may be more important than tree species in determining nest site selection (Gerrard et al. 1975; Anthony et al. 1982).

Most raptor species are fairly common, with the exception of the Sharp-shinned Hawk, Northern Goshawk and Red-tailed Hawk, which have the status "Occasional" (species observed infrequently and in low numbers). All raptors are considered predators, and some, such as the Bald Eagle, also scavenge. Prey items vary from species to species but commonly include fish, waterfowl, muskrats, hares and squirrels (Blood and Anweiler 1994; Terres 1982). As scavengers, they feed on carcasses of dead animals, commonly carrion.

Incidental raptor observations (including nests) were recorded during the 2004 and 2005 field surveys, in particular, an active Osprey nest was found on an abandoned power pole. Additional raptors observed occupying the YGP study area were: Northern Goshawk, Bald Eagle, Merlin, American Kestrel, Northern Harrier, Great Horned Owl, Great Gray Owl, and Northern Hawk Owl.

In addition to the incidental raptor observations, an owl survey was completed on the night of April 18, 2005 at seven locations along the winter road leading to the YGP property. At each location, standard owl survey protocols (Resources Inventory Committee 2001) were followed, including broadcasting a series of owl territorial calls using a CD player connected to a megaphone. Although the survey date was timed to coincide with the period that breeding owls should be defending territories, no owls responded to the recorded territorial calls at any of the call playback survey stations.

However, visual observations of Great Horned, Great Gray, and Northern Hawk owls occupying the YGP were documented during other survey events. Low prey densities in the local area are a possible explanation for the lack of owls responding to the broadcast calls. Small mammal prey populations were their lowest in the Gordon Lake area in 2005 (Carriere 2010). Great Horned Owls, Boreal Owls, and some other raptor species, do not breed or fully engage in territorial or courtship calling when prey densities (hare and/or small mammal) are at their lowest (Doyle 2000).

2.12.2.3 Waterfowl and Waterbirds

The term "waterfowl" is used in a general sense; species are grouped together and treated collectively. Waterfowl is typically used in the context of swans, geese and ducks (Anseriformes); however, for this report it also includes loons (Gaviiformes) and grebes

(Podicipediformes). The term “waterbird” includes rails and cranes (Gruiformes), and shorebirds, gulls and terns (Charadriiformes).

A total of 38 waterfowl and waterbird species may occur within the YGP study area (Table 2.12-6). One species, Horned Grebe, was assessed by COSEWIC as “Special Concern”; whereas, ENR has ranked eight species as “Sensitive”. The remaining waterfowl and waterbird species are ranked as “Secure” and or “Undetermined” in the NWT. Species with special conservation status potentially occurring within the YGP study area are discussed further in Section 2.12.3.

TABLE 2.12-6: WATERFOWL AND WATERBIRD SPECIES THAT POTENTIALLY OCCUR IN THE YGP

Common Name	Scientific Name	ENR Status ¹	COSEWIC Status ²	SARA Status ³
Horned Grebe*	<i>Podiceps auritus</i>	Secure	Special Concern	No Status
Northern Pintail	<i>Anas acuta</i>	Sensitive	Not Assessed	No Status
Lesser Scaup*	<i>Aythya affinis</i>	Sensitive	Not Assessed	No Status
Surf Scoter*	<i>Melanitta perspicillata</i>	Sensitive	Not Assessed	No Status
White-winged Scoter*	<i>Melanitta fusca</i>	Sensitive	Not Assessed	No Status
Long-tailed Duck*	<i>Clangula hyemalis</i>	Sensitive	Not Assessed	No Status
Lesser Yellowlegs*	<i>Tringa flavipes</i>	Sensitive	Not Assessed	No Status
Least Sandpiper	<i>Calidris minutilla</i>	Sensitive	Not Assessed	No Status
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Sensitive	Not Assessed	No Status
Canada Goose*	<i>Branta canadensis</i>	Secure	Not Assessed	No Status
Tundra Swan*	<i>Cygnus columbianus</i>	Secure	Not Assessed	No Status
American Wigeon*	<i>Anas americana</i>	Secure	Not Assessed	No Status
Mallard*	<i>Anas platyrhynchos</i>	Secure	Not Assessed	No Status
Blue-winged Teal*	<i>Anas discors</i>	Secure	Not Assessed	No Status
Northern Shoveler*	<i>Anas clypeata</i>	Secure	Not Assessed	No Status
Green-winged Teal*	<i>Anas crecca</i>	Secure	Not Assessed	No Status
Canvasback	<i>Aythya valisineria</i>	Secure	Not Assessed	No Status
Ring-necked Duck*	<i>Aythya collaris</i>	Secure	Not Assessed	No Status
Greater Scaup*	<i>Aythya marila</i>	Secure	Not Assessed	No Status
Bufflehead*	<i>Bucephala albeola</i>	Secure	Not Assessed	No Status
Common Goldeneye	<i>Bucephala clangula</i>	Secure	Not Assessed	No Status
Common Merganser*	<i>Mergus merganser</i>	Secure	Not Assessed	No Status
Red-breasted Merganser*	<i>Mergus serrator</i>	Secure	Not Assessed	No Status
Red-throated Loon	<i>Gavia stellata</i>	Secure	Not Assessed	No Status
Pacific Loon*	<i>Gavia pacifica</i>	Secure	Not Assessed	No Status
Common Loon*	<i>Gavia immer</i>	Secure	Not At Risk	No Status
Red-necked Grebe*	<i>Podiceps grisegena</i>	Secure	Not At Risk	No Status
Sora	<i>Porzana Carolina</i>	Secure	Not Assessed	No Status
Sandhill Crane*	<i>Grus Canadensis</i>	Secure	Not At Risk	No Status
Semipalmated Plover	<i>Charadrius</i>	Secure	Not Assessed	No Status

TABLE 2.12-6: WATERFOWL AND WATERBIRD SPECIES THAT POTENTIALLY OCCUR IN THE YGP

Common Name	Scientific Name	ENR Status ¹	COSEWIC Status ²	SARA Status ³
	<i>semipalmatus</i>			
Killdeer	<i>Charadrius vociferus</i>	Secure	Not Assessed	No Status
Spotted Sandpiper	<i>Actitis macularius</i>	Secure	Not Assessed	No Status
Bonaparte's Gull*	<i>Larus philadelphia</i>	Secure	Not Assessed	No Status
Mew Gull*	<i>Larus canus</i>	Secure	Not Assessed	No Status
Herring Gull*	<i>Larus argentatus</i>	Secure	Not Assessed	No Status
Arctic Tern*	<i>Sterna paradisaea</i>	Secure	Not Assessed	No Status
Solitary Sandpiper*	<i>Tringa solitaria</i>	Undetermined	Not Assessed	No Status
Wilson's Snipe*	<i>Gallinago delicata</i>	Undetermined	Not Assessed	No Status

Sources: 1. GNWT ENR (2010b); 2. COSEWIC (2010); 3. SARA (2009)

* Bird species recorded during 2004 and 2005 field surveys

Species list based on Sibley (2000)

Species arranged based on species status and secondly by phylogenetic order

Waterfowl and waterbirds breed throughout much of North America with specific geographic areas attracting higher breeding densities. These include areas such as the Prairie Pothole and Parklands Region in central Canada, the Peace-Athabasca Delta and the Mackenzie Delta (NAWMPC 1998). Within the YGP area, waterfowl and waterbirds breed throughout the area in varying densities, and can be expected to breed wherever their habitat requirements are met.

Migration is influenced and governed by weather (Terres 1982). Birds advance northward as the weather warms and ice recedes from the wetlands and lakeshores. The speed of migration varies among species and is influenced by the annual prevailing weather patterns.

The corridors between wintering and breeding grounds are traditional and are used each year. By the time birds reach the NWT, the large flocks associated with more southerly locations begin to disband and disperse across nesting territories. Most waterfowl will return to the same marsh where they hatched, and in many cases, adults return to the same nest site (Terres 1982).

In the Yellowknife region, waterfowl and waterbirds begin to return as early as mid-April and may continue until the last week of May, depending on the weather. Birds follow a progression that indicates a sequence of early, mid-season and late nesters. In general, waterfowl begin arriving in the NWT a week or more before the waterbirds (Bromley and Trauger ND). Arrival dates for each species occurring in the YGP study area are expected to be similar to those experienced in the Yellowknife region. Most species remain in the north as long as food and open water are available.

Aquatic vegetation accounts for approximately three-quarters of waterfowl diets, with aquatic invertebrates and minnows providing the balance (Lamoureux 1970). Pondweeds (*Potamogeton* spp.) comprise the largest single component, followed by bulrushes (*Scirpus* spp.) and smartweeds (*Polygonum* spp.) (Lamoureux 1970). Many researchers believe that pondweeds are the single most important component in the diet of waterfowl in North America (Lamoureux 1970). In general, the majority of waterfowl exploit food resources

found in the shallow waters of lakes, ponds, marshes, sedge meadows, and bogs. Shallow bays containing emergent and submerged vegetation are also important feeding areas.

Waterbirds are a diverse group of species, and each species vary in their choice of habitats. In general, they are found along the shores of lakes, ponds, wetlands and rivers feeding on aquatic and terrestrial invertebrates, seeds, berries, small fish and frogs. Gulls are opportunistic feeders and will also feed on carrion, small mammals and eggs.

Four waterfowl reconnaissance surveys were conducted during several periods of time including: July 31 to August 1, 2004, August 13, 2004, June 10 to 15, 2005 and July 18 to August 3, 2005 to document species of waterfowl utilizing water bodies in the general YGP study area (Table 2.12-6). Waterbirds were recorded incidentally during the waterfowl surveys. A number of lakes, including Nicholas, Eclipse, Maguire, Giauque (portions of), Round, Winter, Narrow, and Brien lakes, and nine small boreal ponds were surveyed.

The waterfowl reconnaissance methodology involved the use of three different techniques and was dependent upon the size and location of the lakes. A “Look-See” approach was used on small lakes that could be accessed on foot. This involved hiking into the predetermined lake and surveying it from a vantage point using a spotting scope. Typically, these unnamed ponds were located adjacent to the larger lakes surveyed. For the larger lakes, such as Eclipse, Maguire, Winter, and Narrow, a motorboat was used to document waterfowl species on the lakes. A fixed wing aircraft was used to survey remote lakes such as Brien and Nicholas.

Based on these waterfowl surveys, Nicholas, Eclipse, Maguire, Giauque, Narrow, and Brien lakes are rated as possessing relatively poor quality waterfowl habitat. These lakes are generally deep, with extensive rocky shorelines and limited areas of emergent vegetation, which are not preferred by waterfowl. Consequently, relatively few waterfowl were documented on these lakes.

Winter and Round lakes provide better quality waterfowl habitat, as they are shallow with a less rocky shoreline and more extensive submerged and emergent vegetation. The small ponds surveyed adjacent to the lakes in the YGP study area were typically rated as possessing the highest quality habitat for waterfowl. These ponds are very shallow, with extensive submerged and emergent vegetation providing better nesting habitat.

In 2004, 42 and 17 ducks were observed on Winter and Round lakes, respectively, including: Greater Scaup, White-winged Scoter, Surf Scoter, Tundra Swan, and Ring-necked Ducks. Nicholas, Eclipse, Maguire, and Giauque lakes are more typical of Canadian Shield lakes and were being used by a smaller number of waterfowl. Diving waterfowl species such as Common Loons, Red-breasted Mergansers, Surf Scoters, and White-winged Scoters were most common on these larger lakes. No waterfowl were observed on Narrow Lake in 2004. Two additional waterfowl surveys were conducted during the periods of June 10 – 15, 2005 and July 18 – August 3, 2005. Both surveys focussed on Round Lake, Winter Lake, Narrow Lake, Brien Lake, and nine separate ponds in the vicinity of the YGP.

The total number of birds observed during the first survey period in June 2005 was 193. The most abundant waterfowl species recorded were Lesser Scaup, Surf Scoter and Greater Scaup. The total number of birds observed during the second survey period (July 18 - August 3, 2005) was 133. The most abundant waterfowl species recorded during this period were scaup species, Surf Scoter, Ring-necked Duck, and Pacific Loon. Sixteen waterfowl species were observed in 2005. In general, the results for 2005 were similar to those reported in 2004.

Incidental observations of waterbirds during the 2004 waterfowl surveys included Arctic Terns, Mew Gulls, Herring Gulls, Least Sandpiper and a Wilson's Snipe. In 2005, Lesser Yellowlegs and Bonaparte's Gulls were also observed during the waterfowl survey. Additional incidental waterbird species documented during all other 2004 and 2005 surveys included Sandhill Crane and Solitary Sandpiper.

2.12.3 Species with Special Conservation Status

2.12.3.1 Barren-ground Caribou

The YGP lies within the wintering range of the Bathurst Barren-ground caribou herd. Bathurst caribou are ranked by ENR as "Sensitive" under the general status program (GNWT ENR 2010b, Working Group on General Status of NWT Species 2006), but have not been assessed by COSEWIC (COSEWIC 2010). Recent scientific evidence suggests the Bathurst herd has been in decline since at least 1986, likely the result of natural cycling (Adamczewski et al. 2009). To date, the Bathurst herd is estimated at $31,900 \pm 11,000$ individuals (GNWT ENR 2010a).

Both natural and anthropogenic factors may threaten the Bathurst herd population, including climate change, predation, disease, over hunting, and land development. The YGP lies within the Bathurst herd's winter range. However, winter occupation of the YGP varies between years. In addition to the YGP, additional proposed, operating, and closed mines, exploration camps, hunting camps, and the Tibbitt to Contwoyto winter road and its associated secondary roads are also present within the Bathurst herds range. Ten Aboriginal communities also exist on or near the annual range of the Bathurst herd (Bathurst Caribou Management Planning Committee 2004).

Detailed information of this herd is presented in Section 2.12.1.1.

2.12.3.2 Wolverine

The wolverine has been assessed by COSEWIC (2010) as "Special Concern" and ranked as "Sensitive" by ENR (GNWT ENR 2010b, Working Group on General Status of NWT Species 2006) because of its low resiliency to human-caused effects and decreasing caribou populations. Reproductive rates are low, and sexual maturity is delayed compared to those for other mammalian carnivores. However, wolverines are not protected under SARA.

Wolverines live at low densities even under optimal conditions (Banci 1994). However, wolverines are expected to occur across the YGP study area. A single wolverine was observed in both 2004 and 2005 while conducting aerial surveys. A species account is provided in Section 2.12.1.6.

2.12.3.3 Grizzly Bear

The grizzly bear is ranked by ENR as “Sensitive” in response to a moderate level of threat to their population and habitats from over-hunting, defence kills and development activities GNWT (ENR 2010b). COSEWIC has also assessed grizzly bears as “Special Concern” because of their low resiliency to human-caused effects. This is largely a function of low population densities, low reproductive capacity and sensitivity to human activity. However, grizzly bears are not protected under SARA.

Grizzly bears are expected to be uncommon visitors to the YGP study area. No grizzly bears or their sign were observed within the YGP study area during the 2004 and 2005 field programs. A species account of the grizzly bear is provided in Section 2.12.1.4

2.12.3.4 Common Nighthawk

The Common Nighthawk is listed by SARA as “Threatened”, and ENR ranks Common Nighthawks as “At Risk” since the NWT is at the species’ northern range, and the species is considered threatened throughout its remaining Canadian range. A large decline in their population has been shown over the past 30 years across much of Canada (GNWT ENR 2010b).

Common Nighthawks migrate into the NWT in mid-May to early June to breed (CWS and GNWT ENR 2008). Preferred habitat includes: open forests, forest clearings, recent burn areas, rock outcrops, wetlands and marshes, lakeshores and gravel areas (including airports, quarries and roads) (CWS and GNWT ENR 2008). Nests are prepared directly on soil, sand, gravel and bare rock. Common Nighthawks are insectivores, and actively pursues flying insects at dawn and dusk, particularly over bodies of water. By mid-August to mid-September, Common Nighthawks depart the NWT (CWS and GNWT ENR 2008).

Common Nighthawk feeding and breeding habitat exists throughout the majority of the YGP study area. A pair of Common Nighthawks was observed in 2004 and 2005 feeding above small boreal ponds, and a single observation of a Common Nighthawk was recorded in August 2005 near the southwest end of Giauque Lake.

2.12.3.5 Olive-Sided Flycatcher

The Olive-sided Flycatcher is listed by SARA as “Threatened”, and is ranked by ENR as “At Risk” (ENR 2010b). In the north, potential threats to the population includes: fire suppression practices and extreme weather during breeding (CWS and GNWT ENR 2008).

In the NWT, typical Olive-sided Flycatcher habitat includes regenerating forests after a forest fire, and open areas (including man made openings) with surrounding large trees and standing snags (CWS and GNWT ENR 2008). Olive-sided Flycatchers forage from a high prominent perch from which it pursues flying insects such as bees, wasps and ants once sighted. Olive-sided Flycatchers arrive in the NWT in late May and early June and departs late July and early August (CWS and GNWT ENR 2008). For reasons unclear, Olive-sided Flycatcher populations have declined considerably, particularly in its southern range.

Olive-sided Flycatcher habitat exists throughout much of the YGP study area. A single Olive-sided Flycatcher was recorded in the YGP study area during the breeding bird surveys. Six other observations of Olive-sided Flycatchers were incidentally recorded near Winter, Brien and Giauque lakes.

2.12.3.6 Rusty Blackbird

The Rusty Blackbird is listed by SARA as “Special Concern”, and is ranked by ENR as “May Be At Risk” (SARA 2009; GNWT ENR 2010b). Threats to Rusty Blackbirds within the NWT include habitat alteration (GNWT ENR 2010b; Avery 1995). A NWT population estimate is not known; however, populations across southern Canada have declined 90% over the last 30 years (GNWT ENR 2010b).

They occur in wet coniferous and mixed forests from the northern edge of the tundra southward to the beginning of deciduous forests and grasslands. Preferred habitat includes fens, shrubby bogs, muskegs, beaver ponds, and other openings in the forest such as swampy shores along lakes and streams (Avery 1995). Rusty Blackbirds occur throughout the YGP study area from approximately May to September (Bromley and Trauger ND, Alexander et al. 2003, Salter et al. 1973), wherever their preferred habitat occurs.

Rusty Blackbirds typically nest close to water. Nests occur in living and dead trees, shrubs and on stumps. They use spruce, fir, tamarack, willow, birch, alder, and other species, depending on location. Vegetation is customarily dense and thick, and nests are often situated among a network of many small side branches (Avery 1995).

Rusty Blackbirds feed opportunistically on plants and invertebrates. Summer diet is primarily aquatic insects and other animal food (Avery 1995).

Rusty Blackbirds were documented within the YGP study area during the baseline surveys. A total of eight Rusty Blackbirds were observed occupying small boreal ponds during the breeding bird and waterfowl surveys. Based on ELC data collected within the YGP study area, approximately 3% of the available habitat may be suitable for Rusty Blackbirds.

2.12.3.7 Peregrine Falcon

In 2007, COSEWIC combined the subspecies *Falco peregrinus anatum* (boreal forest zone) and *F.p. tundrius* (tundra zone) into a single sub-population complex and ultimately upgraded the recommendation of the *F.p.anatum* from “Threatened” to “Special Concern” (SARA 2009; CWS and GNWT ENR 2008). SARA has yet to list the status of this single *anatum/tundrius* unit. In the NWT, Peregrine Falcons are ranked as “Sensitive” GNWT (ENR 2010b). In the NWT, threats to Peregrine Falcon populations are limited; however, falconry and habitat loss due to land development may be a concern (GNWT ENR 2010b).

There is an increasing trend in population numbers across Canada since 1980 (GNWT ENR 2010b). There are over 220 documented breeding pairs of Peregrine Falcon in the NWT, Yukon, Nunavut and northern Quebec, including 83 pairs of known breeders in a 600 km length along the Mackenzie Valley (GNWT ENR 2010b). Breeding densities of peregrines appear to vary with the available food supply through territorial behaviour, with pairs spacing themselves more widely in years with lower prey densities (Bromley 1992).

Peregrines have three main habitat requirements:

- proper nesting sites on cliff ledges near water;
- nesting ranges; and,
- a home range.

Peregrine nesting ranges are actively guarded and can extend up to 1 km from the nest. The home range is not defended by the birds, but they do hunt within it. The home range overlaps the nesting range and can extend up to 27 km from the nest. Peregrines mainly hunt other birds in the air; so clearings and waterways in forested areas are important habitats.

The YGP study area lies outside the known breeding range of the Peregrine Falcon (CWS and ENR 2008); however, individuals may be present in the area during migration (May and September) and non-breeding individuals may occasionally reside as floaters. No Peregrine Falcons were observed during the 2004 and 2005 surveys, and no suitable nesting habitat was documented within the YGP study area.

2.12.3.8 Short-eared Owl

The Short-eared Owl is listed by SARA as “Special Concern” (Schedule 3), and is ranked by ENR as “Sensitive” (COSEWIC 2010; GNWT ENR 2010b). Under SARA Schedule 3, the Short-eared Owl requires assessment or re-assessment by COSEWIC and is not yet protected under SARA. Therefore, species listed under Schedule 3, including the Short-eared Owl may be protected under SARA in the future, following re-assessment.

The Short-eared Owl arrives in the NWT to breed by late April or May and depart by late October (CWS and GNWT ENR 2008; Bromley and Trauger ND). Short-eared Owls occur wherever an abundance of small mammals are present, particularly in bogs, marshes, and other non-forested areas (CWS and GNWT ENR 2008). Nests are normally located in dry open sites with enough vegetation to conceal an incubating female. Although potential threats to Short-eared Owls in the NWT are limited, alteration of preferred habitat to agriculture and pastures and human disturbances at nest sites in their southern ranges may be limiting populations (CWS and GNWT ENR 2008).

The NWT population status of these owls is difficult to assess because individuals are nomadic and prone to annual fluctuations in numbers. Populations have declined throughout much of Canada; however, population trends in northern Canada still need to be confirmed. The NWT Short-eared Owl population is unknown but estimated to be between 1,000 and 10,000 individuals (Carrière 2000).

No Short-eared Owls were observed within the YGP study area during the 2004 and 2005 surveys. Within the YGP study area, Short-eared Owl habitat exists along lake shorelines and in open wetlands. Based on ELC mapping, approximately two percent (354.87 ha) of the YGP study area includes habitats potentially suitable for Short-eared Owls.

2.12.3.9 Horned Grebe

The Horned Grebe was assessed by COSEWIC in 2010 as “Special Concern”, and was last ranked by ENR in 2005 as “Secure” (COSEWIC 2010, GNWT ENR 2010b). Threats to the population include: habitat alteration and loss, droughts.

Horned Grebes occupy shallow boreal ponds, marshes and beaver ponds feeding on aquatic insects, fish, frogs and crustaceans. Open water bodies 0.1 to 2.0 hectares (ha) in size are preferred breeding ponds (Fournier and Hines 1999).

Horned Grebes arrive in the NWT in May, and engage in egg-laying and brood-rearing in mid to late June (Fournier and Hines 1999). Fournier and Hines (1999) observed adults leaving the young well before they had fledged in late July and early August. These adults may remain at larger water bodies immediately prior to fall migration. Once fledged, the young depart the NWT in late August or early September (Fournier and Hines 1999). Three Horned Grebes were documented at two boreal ponds during the 2004 waterfowl surveys, both ponds were likely breeding sites. In addition, two pairs of Horned Grebes were recorded on Round Lake in July 2005. These observations were likely adults that had already abandoned their young or were failed breeders.