YLW
Kelowna International Airport

Airport Wildlife Management Plan

Kelowna International Airport

#1 – 5533 Airport Way

Kelowna, BC V1V 1S1

Revision 2024.5 **November 2024**

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6	October 2022	All (full rewrite)
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4	February 2022	Distribution List, Amendment Record, 4, 4.1, Table 1, Table 12, 13.2, 14, 17, 18, Table 14, 19, Table 15
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1	August 2018	All (full rewrite)

REVISION APPROVAL

This certifies that the YLW Airport Wildlife Management Wildlife Plan has been reviewed and approved.

November, 2024

Mark Stella
YLW Senior Manager, Operations & Emergency Services

Date

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SECTION A – RISK ASSESSMENT

1. INTRODUCTION

In 2005, Transport Canada introduced the addition of a *Wildlife Planning and Management Regulation to the Canadian Aviation Regulations* (CARs), *Part III, Subpart 2 – Airports*. The reasons for the need for these new regulations are discussed in the following paragraphs.

- *The populations of some wildlife species that are particularly hazardous to aircraft are increasing at a rapid rate.*

  This includes species such as: White-tailed Deer, Canada Goose, Snow Goose, Mallard, gulls, Coyotes, owls and other large raptors, cranes and herons. Many of these species are also urban-tolerant, finding suitable habitat near human activity, including airports.

- *There is an increasing number of aircraft flying today, particularly turbine-powered aircraft that are most susceptible to damaging bird strikes.*

  Although, like many other industrial sectors, aircraft movements are likely to go through cycles of activity, overall, the number of aircraft movements is increasing worldwide. Dramatic shifts in aircraft movements can occur in airports of all sizes. It has been estimated that globally, the number of aircraft flying hours will double between 1996 and 2016.

- *Airport operators play a key role in the management of risks associated with wildlife.*

  Approximately 80% of all bird strikes take place in the landing or takeoff phases of flight. Airport operators, therefore, have a key role to fulfill in reducing exposure to hazards and managing wildlife strike risk. They also have a role to play in increasing general awareness of the wildlife hazard issue and influencing land use policies and practices in the vicinity of airports.

- *New information and management techniques are now available and all airports that meet the criteria should establish well-conceived, well-managed, wildlife management programs of consistent approach across Canada.*

  Much has been learned over the past few decades regarding the management of wildlife, the kinds of hazards that exist and the technique of risk assessment. Airports now have the knowledge to prepare a systematic, science-based approach to airport wildlife management.

2. SCREENING FOR THE APPLICATION OF THE WILDLIFE PLANNING AND MANAGEMENT REGULATION

Not all airports are required to prepare an Airport Wildlife Management Plan. However, the new regulations will apply to any certified site in Canada that meets one of the criteria below.

The following is a list of conditions under which the regulations apply:

- *Receives commercial passenger-carrying aircraft operating under Subpart 4 or 5 of Part VII of the CARs with more than 2,800 movements (a movement is defined as a takeoff or landing) annually.*

  Commercial passenger-carrying aircraft include aeroplanes (multi-engine and turbojet powered) certified under Canadian Aviation Regulations to carry more than ten passengers, e.g., regular commercial flights, commuter operations, sightseeing operations.

- *The airport has had an incident where a turbine-powered aircraft collided with wildlife other than a bird and suffered damage, collided with more than one bird or ingested a bird through an engine.*

  A wildlife strike has occurred when:

  - A pilot reports a strike;
  - Maintenance personnel report that aircraft damage is due to a wildlife strike;
  - Airport personnel report seeing a wildlife strike; and,
  - Airport personnel find wildlife remains on airside areas within 200 ft of a runway centre line and no other cause of death is identified.
  - Multiple strikes are any single bird strike incident involving more than one bird.

- *Where the presence of wildlife hazards, including those referred to in section 322.302 of the Airport Standards—Airport Wildlife Planning and Management, has been observed in an airport flight pattern or movement area.*

  The list ranks wildlife from most hazardous to least hazardous by species group and as such, identifies the species that should be of primary concern for the operator. The list provided in Standard 322.302 is as follows:

  a) deer;
  b) geese;
  c) gulls;
  d) hawks;
  e) ducks;
  f) coyotes;
  g) owls;
  h) rock doves and pigeons;
  i) bald and golden eagles;
  j) sandhill cranes;
  k) sparrows and snow buntings;
  l) shorebirds;

m) blackbirds and starlings;
n) crows and ravens;
o) swallows;
p) mourning doves;
q) herons;
r) turkey vultures;
s) American kestrels;
t) wild turkeys; and
u) cormorants.

- *Has a waste disposal facility within 15 km of the geometric centre of the airport.*

  Included as waste disposal facilities are landfill sites, garbage dumps, waste transfer and sorting facilities, recycling and composting facilities and commercial fish processing plants.

- *Is located in a built-up area.*

Kelowna International Airport (YLW) meets all the above criteria.

3. GOALS AND OBJECTIVES

The Goal of this Airport Wildlife Management Plan (AWMP) is to promote aviation safety for passengers and flight crews by reducing wildlife hazards and associated risks to aircraft and airport operations caused by wildlife activities on and in the vicinity of the airport.

The purpose of Section A of this report is to establish through a risk assessment procedure, and a screening process, whether the requirements of the Canadian Aviation Regulations (CARs), Part III, Subpart 2 – Airports, Section 302.304 – Airport Wildlife Planning and Management, apply to this airport.

When a wildlife management plan is required, the results of the risk assessment will be used to guide and inform the plan and as a tool to measure future changes in the hazard and risk assessments.

The objectives of Section A of the AWMP are to:

1. Identify and review existing sources of wildlife information for the area;
2. Identify wildlife hazards on and near the airport;
3. Identify seasonal patterns related to hazards; and
4. Undertake a risk assessment and prioritize wildlife management efforts.

4. DESCRIPTION OF AIRPORT OPERATIONS

The Kelowna International Airport (YLW) is owned by Transport Canada and is leased and operated by the City of Kelowna. The City also owns adjacent land on reserve for long-term airport development. YLW is classified as a National Airport and has CAR 705 scheduled carrier service. The Airport also serves other aviation operations, such as a flight training school and an aircraft maintenance provider. Kelowna International Airport is certified for Day and Night, VFR and IFR operations.

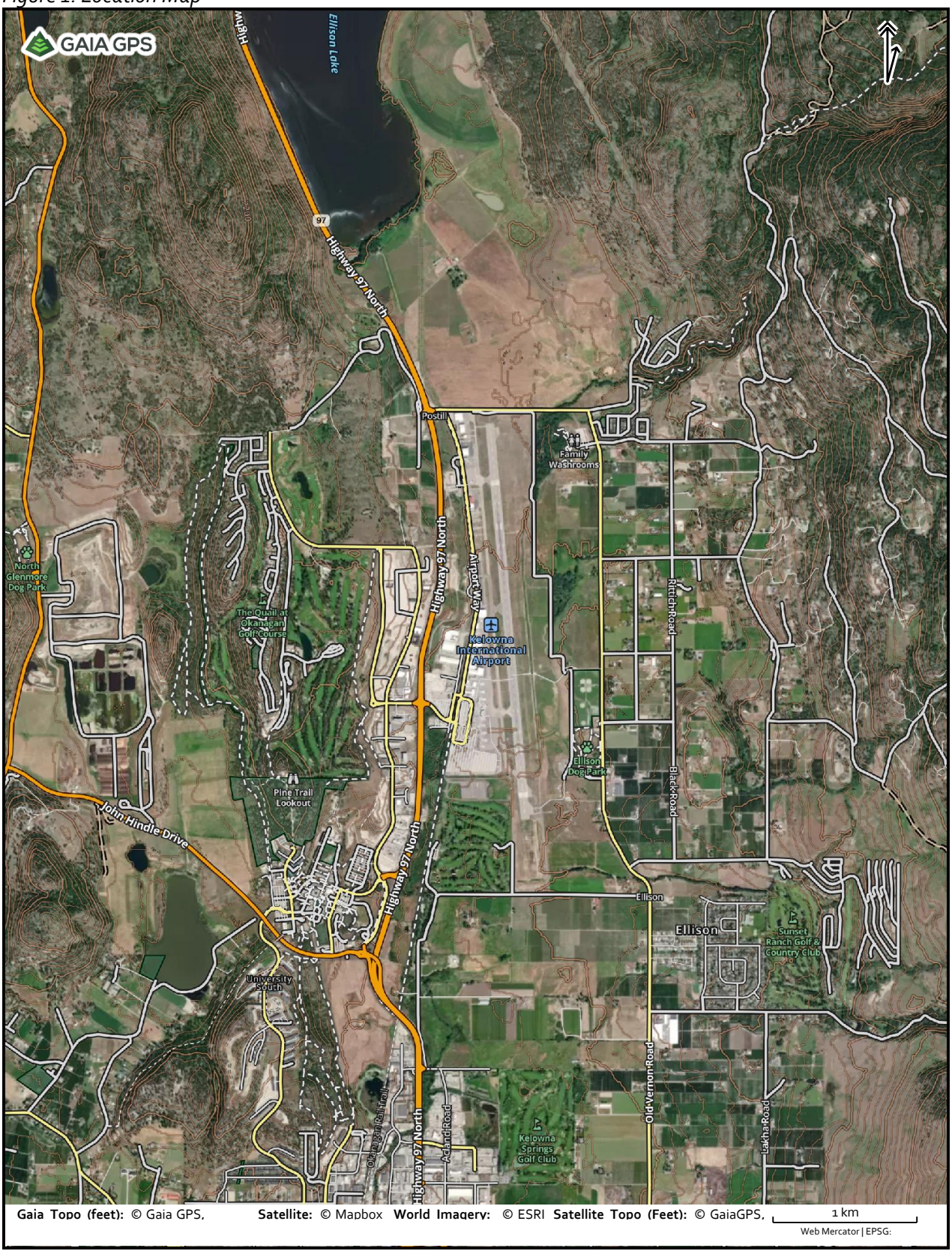
The Kelowna International Airport has a single 2,713m (8,900') runway. Displaced thresholds reduce the runway length available for landing to 2,252m (7,700'). Runway 16 is equipped with an Instrument Landing System to restricted landing limits of 251' A.G.L for Code A, B, & C aircraft and 501' A.G.L. for Code D aircraft. Helicopter operations are conducted from the runway to various locations at the airport. A helicopter training area has been established in the infield east of the runway.

The runway is certified as a 4D non-instrument, TP312 4th. The largest aircraft currently providing year-round passenger services are the Airbus A321 and Boeing 737 MAX8. (Code C, TP312 4th Edition)

The Kelowna International Airport is a thriving hub for local and international travel. Passenger movement growth before the Covid -19 pandemic had been robust, with a drastic downturn due to Covid-19. Passenger movements and flights are now rebounding successfully post-pandemic.

YLW is currently served by eight scheduled airlines: Air Canada, WestJet, Pacific Coastal Airlines, Air North, Central Mountain Air, Alaska Airlines, Flair Airlines and Swoop. These scheduled carriers, along with scheduled workforce charters, account for an average of approximately 60 arrivals and departures daily. Aircraft movements are distributed throughout the day. The airport is also home to several aviation-related businesses (e.g., KF Aerospace, Carson Air, Southern Interior Flight Centre, Aurora Aviation Academy, Coldstream Helicopters and Skyline Helicopters).

Figure 1. Location Map



5. AIRCRAFT MOVEMENTS AND TYPES

The different patterns of flight operation between local and itinerant traffic may affect exposure to wildlife hazards and should be considered in the risk assessment.

Without an effective AWMP, at any given airport, wildlife strikes are likely to increase as air traffic movements increase. Therefore, the risk assessment process needs to consider the number of aircraft movements currently and, to the extent that forecasts are available, in the future.

Aircraft are not equally susceptible to having a damaging strike occur. For example, relatively slow-moving piston aircraft are not as likely to strike wildlife as are faster moving jet aircraft.

Aircraft also vary greatly in their susceptibility to damage from a wildlife strike. For example, turbofan engines, especially when mounted under-wing with their large, intake areas, are at greater risk due to damage from a bird strike than turboprop and turboshaft engines.

To facilitate the risk assessment process Table 1 provides estimates on recent aircraft movements and types at this airport.

Changes in traffic profile, such as an increase in jet powered aircraft, large increases in traffic volume or special events such as air shows, can result in significant shifts in risk and would require a re-assessment of risk.

Table 1. Airport Traffic

Classification	Annual Movements 2019	Annual Movements 2020	Annual Movements 2021	Annual Movements 2022	Annual Movements 2023	Comments
Fixed Wing Piston	12,308	10,518	14,522	14, 608	14,776	2022-2023 +1.15%
Fixed Wing Turbine	8,942	7,554	8,802	9, 410	9,162	2022-2023 -2.64%
Fixed Wing Jet	32,752	14,864	17,296	26, 762	26,764	2022-2023 +0%
Helicopter	12,832	10,372	13,028	12, 234	11,240	2022-2023 -8.12%
Other	196	192	242			
Totals	66,834	43,308	53,648	63, 014	61,942	2022-2023 -1.7%

6. IDENTIFICATION OF SOURCES FOR EXISTING INFORMATION ON WILDLIFE

The hazard and risk assessment in this document are based on existing information sources and/or on wildlife inventories that have been undertaken expressly for the purpose of developing this AWMP. Data from information sources listed here will be used in Section 7 of the Plan, which is a description of wildlife habitat resources.

Table 2. Sources for Wildlife Information - On the Airport

Document/Source	Type of Information	Located
• Statistics Canada Aircraft Movement Statistics, Towers and Flight Service Stations	• Information on monthly aircraft movements at the airport	• Statistics Canada Website (TP141)
• YLW Bird Strike Data	• Summary of bird strikes recorded at YLW	• YLW Vortex Data
• On-site Staff	• Anecdotal information on • birds that frequent the airport	

Table 3. Sources for Wildlife Information - Outside the Airport

Document/Source	Type of Information	Located
• USGS, Patuxent Wildlife Research Centre, Patuxent Bird Identification Info Centre	• Information on bird's physiology and ecology	• Internet
• Canadian Wildlife Service – Hinterland Who's Who	• Information on wildlife in Canada	• Internet
• Cornell University Lab of Ornithology	• Information on birds	• Internet
• Peterson Field Guide – Mammals	• Text	• In office
• Birds of North America, A Guide to Field Identification	• Text	• In office

Table 4. Sources for Information on Wildlife Species of Conservation Concern

Document/Source	Type of Information	Located
BC Conservation Data Centre	Status of birds and mammals	https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data- centre
Federal Species at Risk data, COSEWIC reports	Status of birds and mammals	http://www.cosewic.gc.ca/

7. STRIKE DATA

The annual reporting of strike data is required by CARs. This data can be a valuable source of information on existing hazards. As a higher percentage of strikes are recorded and reported, this source of information will increase in value.

Table 5. Strike Table

Species	2024	2023	2022	2021	2020	2019	2018	TOTAL (2018-2024)
AMERICAN KESTRAL	1							1
AMERICAN ROBIN	2	1				1		4
BALD EAGLE					1			1
BATS		1				1		2
BLACK-BILLED MAGPIE		2		1			2	5
BOHEMIAN WAXWING		1						1
CALIFORNIA GULL				1				1
CANADA GOOSE						1		1
CHICKADEES	1	2						3
CHIPPING SPARROW		1				1		2
COOPER'S HAWK							1	1
COYOTE	1							1
DUCKS	1	2	1				1	5
EUROPEAN STARLING	1	5	3	3	3	6		21
GREAT BLUE HERON		1	4		1	1	1	8
GREAT HORNED OWL	1		1					2
HAWKS							1	1
HORNED LARK		1						1
HOUSE FINCH	2			1				3
MOURNING DOVE		1			1			2
NORTHERN FLICKER		1						1
NORTHWESTERN CROW		1				1		2
PIPITS		2						2
RATS		1						1
RAVENS	1							1
RED-TAILED HAWK	3	2	2	3	3	3	3	19
RING-BILLED GULL			1			1		2
ROCK PIGEON				1	1			2
RUFFED GROUSE			1					1
SONG SPARROW	3	3	4	2	2	5		19
SPARROWS							1	1
SWALLOWS	1	2			1	1	3	8
VESPER SPARROW		1						1
VOLE			1					1
UNKNOWN	7	12	12	6	3	14	18	72
TOTAL	**25**	**43**	**30**	**18**	**16**	**36**	**31**	***199***

In all reports, strike data and managed kills will to be species specific, where possible. If remains are not able to be identified, they will be sent for DNA analysis to confirm species. Photographs will be emailed to: WildlifeControl-Controledelafaune@tc.gc.ca. All reports will be recorded in YLW's Vortex Management System.

YLW's AWMP will consistently identify all species, not just groups of species where possible.

Within some groups of species, there are Species at Risk (such as Bank and Barn Swallow), therefore differentiating between species within groups will be identified. The attached links will help to identify species at risk, Permits required, Species protected under the Migratory Birds Convention Act and the BC Wildlife Act.

Permits under the Migratory Bird Regulations:
https://www.canada.ca/en/environment-climate-change/services/migratory-bird-permits/application-forms.html

BC Wildlife Act:
http://www.bclaws.ca/Recon/document/ID/freeside/00_96488_01

Species protected under the Migratory Birds Convention Act:
https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/list.html

8. DESCRIPTION OF WILDLIFE HABITATS AND RESOURCES

It is important to understand the wildlife communities in as much detail as is practical so that consequences of management actions might be considered prior to implementation.

Using existing sources of information and including any wildlife studies undertaken for the purpose of this AWMP, the following sections will describe the functions (i.e., roosts, feeding habitat, breeding colonies, yarding areas) and attributes (i.e., species) associated with wildlife at three landscape categories. Interest is in determining the movement patterns, spatially and through time, of wildlife within the airport itself and across the landscape. In terms of wildlife hazards, habitat extends to buildings and agricultural lands as well as more typical wetlands, forests and meadows. All species known to be an issue at the airport should be described as some may not be direct hazards however, they may attract hazards (such as voles providing food for Coyotes and hawks).

The first category is the airport itself, where habitats and the wildlife using them will be described in detail. This will rely on site-specific field work and standard techniques for describing vegetation communities (e.g., Ecological Land Classification) and wildlife communities, their use patterns and seasonal variations that have been observed or that might be expected.

The second category is the nearby lands that are not under direct control of the airport. The physical area included in this category generally includes lands up to 8 km from the airport reference point, which should include an area of enough size to provide an adequate picture of wildlife movements through the airspace identified later in this document. This assessment is largely based on existing information and remotely sensed habitat analysis rather than site-specific field work. It will describe the location of moderately hazardous land use practices such as wastewater discharge plants and sewage lagoons, crop production, recreational sites and managed or created wildlife habitats. There is no requirement under the regulation to manage these lands however it is important to be aware of potentially hazardous off-airport land uses.

The third category is the determination of the presence of extremely hazardous land-use practices that may be many kilometres from the airport. At a minimum, food waste disposal sites, outdoor composting and commercial fish plants will be mapped when they occur within 15 km of the airport reference point. Such features may be mapped at greater distances where wildlife associated with them may become a hazard to aircraft using the airport.

The following sections of the AWMP provide the findings of these three categories.

9. ON THE AIRPORT

Figure 2 (Below) illustrates the primary habitats found on the airport lands.

Vegetation

Vegetation surrounding the runway consists primarily of agronomic and weedy grass and forb species. Species include Orchard Grass (Dactylis glomerata), Cheatgrass (Bromus tectorum), Pumpelly Brome (Bromus pumpellianus), Diffuse Knapweed (Centaurea diffusa), Yellow Salsify (Tragopogon dubius), among others. Vegetation is typically kept in a mowed state with heights averaging 14 cm in height.

Mill Creek

Mill Creek is a significant environmental feature within airport grounds. This creek enters at the northeastern corner of the airport grounds and runs parallel to the runway. At the south end of the runway, the creek flows under the runway (in culverts) in a westerly direction discharging to an open ditch on the west side of the runway. The creek then continues its westerly flow and exits the airport grounds. Mill Creek is a fish-bearing creek. The creek portion within the airport grounds has been channelized and, in some areas, banks have been reinforced with riprap. Riparian vegetation is maintained low, confined to bank slopes and is significantly less dense than riparian counterparts outside of the airport. Nevertheless, this modified habitat still attracts wildlife species, which in turn can pose risk hazards to aircraft operations.

YLW is in the arid Okanagan Basin, where a large proportion of BC's federally and provincially listed species are present. Within arid regions, sources of water provide critical habitat for these species at risk as well as other wildlife residents.

The presence of this stream section presents several management challenges that should address safety concerns as well as environmental issues (impacts to fisheries, and rare and endangered species). Therefore, it is important that management activities be tailored to maximize safety while minimizing impacts on fish and fish habitats. Table 6 outlines four management options and provides comments on benefits and environmental risks.

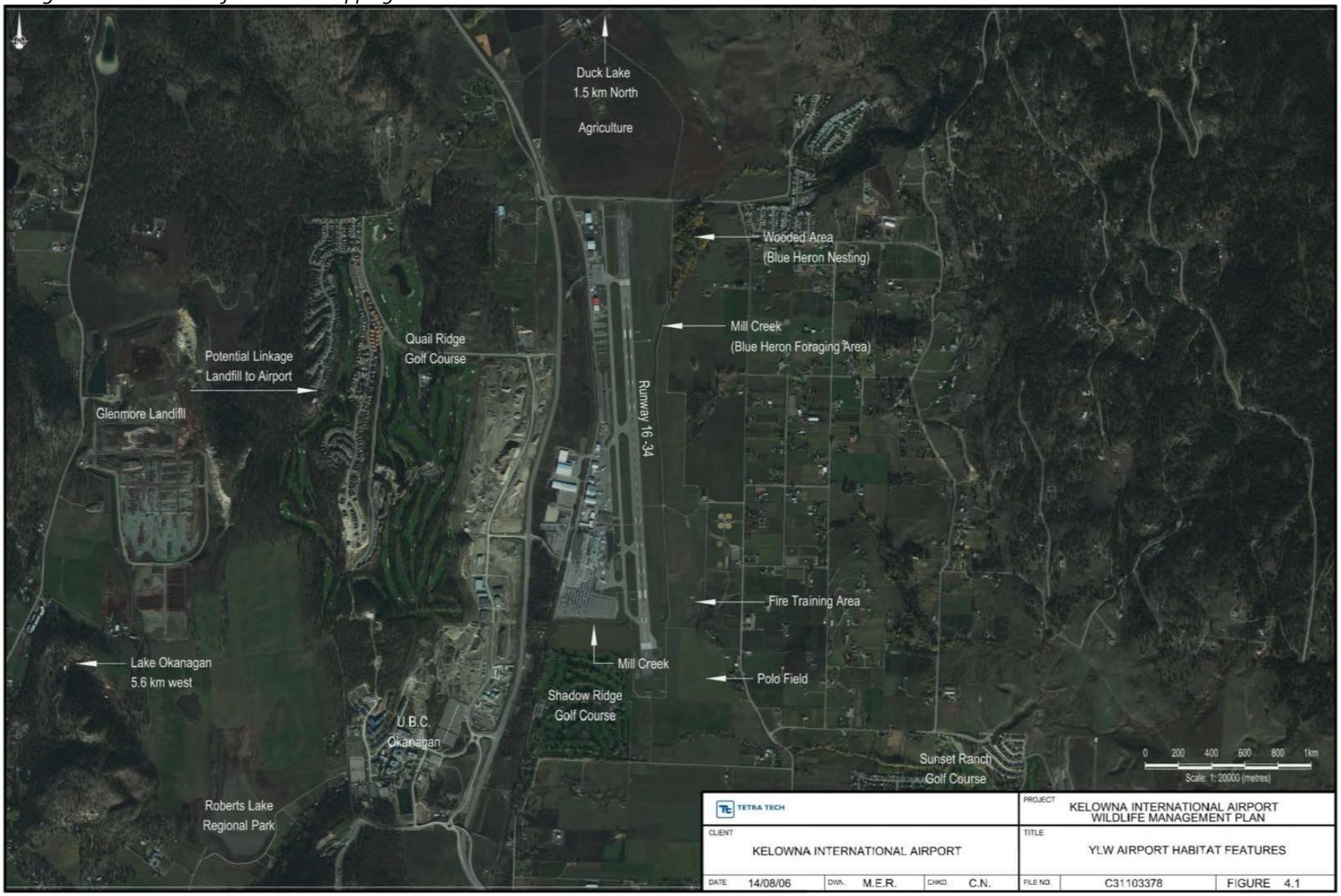
Table 6. Mill Creek Management Options

Management Option	Benefits	Risks
Place culverts along portions of creek within Airport Boundaries.	No wildlife utilization, reduced risk of collisions with species associated with riverine habitats.	Loss of fish habitat (e.g., spawning habitat) for Kokanee
Armour the entire channel and remove all vegetation.	This will result in limited wildlife utilization. Stream bank will be stabilized.	Armouring may result in further confinement that, in turn results in higher water velocities and increased risks of downstream flooding. Furthermore, a lack of riparian vegetation will contribute to elevated temperatures in the stream.
Place wildlife cage (trellis) over the entirety the of the stream. Plant creeping plant species or other low riparian species around trellis.	Will exclude larger wildlife species from utilizing while allowing smaller species of birds and small mammals to live within. Shadow provided will maintain water cool and maintain fish habitat. Stream banks will be stabilized.	The selection of plants must be carefully considered. Invasive species may spread. Some degree of maintenance will be required.
Continue current stream management.	Low cost.	Stream available to all wildlife. May involve flooding risks downstream during freshet and high-water events.

It is important to note that any modifications to the stream can result in impacts on fish and fish habitat and may contravene federal and provincial legislation. A second unnamed ephemeral stream runs perpendicular to the runway from the eastern property boundary and empties into Mill Creek via a culvert placed under an access road the streambed is dominated by Bulrush (Scirpus americanus) and Orchard Grass. The area is heavily vegetated with large cottonwoods, willows, and roses. YLW is exploring the possibility of relocating Mill Creek to the eastern boundary of the airport. At present, YLW has applied for a permit with the BC Ministry of Forests Lands and Natural Resource Operations (FLNRO) to dredge Mill Creek and the contributing streams throughout the airfield areas to allow for increased volume and flow.

Great Blue Herons regularly forage in and around the stream on the east side of Runway 16

Figure 2. Coarse Wildlife Habitat Mapping



Wildlife Species Occurring at Or in The Vicinity of YLW

Table 7 lists mammalian and avian species known to occur on the airport or have the potential to access the airport lands or fly across aircraft flight paths. The City of Kelowna has abundant populations of various birds and other wildlife. For the purposes of the study, we have identified those species observed during field surveys and by staff as well as those species most likely to be present at or near the airport.

Table 7. Overview of Wildlife Species Known to Occur at YLW

Common Name	Scientific Name	Seasonal Occurrence	Locations, Abundance
AMERICAN GOLDFINCH	Spinus tristis	Spring, Summer, Fall	Present in surrounding areas.
AMERICAN KESTREL	Falco sparverius	Spring, Summer, Fall	Cavity nester. Will use airport grounds for foraging spring and fall
AMERICAN ROBIN	Turdus migratorious	Spring, Summer, Fall	Breeds locally, may frequent runways after rains to feed on worms
BADGER	Taxidea taxus	Spring, Summer, Fall	Present in surrounding areas. Excluded from airport grounds by wildlife fence.
BALD EAGLE	Haliaeetus leucocephalus	Year Round	Occasional flyover. Commonly found at Kelowna landfill
BARN OWL	Tyto alba	Year Round	Present in surrounding areas.
BATS	Chiroptera	Spring, Summer, Fall	Present in surrounding areas.
BEARS	Ursus americanus	Spring, Summer, Fall	Present throughout British Columbia.
BLACK-BILLED MAGPIE	Pica hudsonia	Year Round	Breeds locally, frequents airport grounds
BOHEMIAN WAXWING	Bombycilla garrulus	Year Round	Breeds in Northern BC. Travels South for food. Will flock in large numbers.
BREWERS BLACKBIRD	Euphagas cyanocephalus	Year Round	Breeds locally. Will flock in large numbers in winter and fall
CALIFORNIA GULL	Larus californicus	Spring, Summer, Fall	Breeds locally, frequents airport grounds.
CANADA GOOSE	Branta canadensis	Year Round	Feeds in open fields. Large flocks year-round except for breeding season.
CATTLE	Bos taurus	Year Round	Present in surrounding areas.
CHICKADEES	Poecile	Year Round	Present in surrounding areas.
CHIPPING SPARROW	Spizzdella passerine	Spring, Summer, Fall	Breeds locally, mixed migratory flocks in spring and fall

Common Name	Scientific Name	Seasonal Occurrence	Locations, Abundance
COOPERS HAWK	Accipiter cooperi	Spring, Summer, Fall	Forest nester. Feeds primarily on small birds that may frequent open field ecotones
CORMORANTS	Phalacrocoracidae	Species are not present in the area	Coastal areas. No sightings have been recorded.
COYOTE	Canis latrans	Year Round	Common predator. Frequently digs under fence to access northern pocket gophers
DOMESTIC DOG	Canis lupus familiaris	Year Round	Rare encounters at the aerodrome
DUCKS	Anas platyrhynchos	Year Round	Occasional flyover. May use flooded areas for stopover. Flocks in early spring, late summer and fall.
ELK	Cervus canadensis	Year Round	Present in surrounding areas. Excluded from airport grounds by wildlife fence.
EUROPEAN STARLING	Sturnus vulgaris	Year Round	Breeds locally. Will flock in large numbers in winter and fall.
FROGS	Anura	Year Round	Outside of breeding season, can be found in a variety of habitats, often far from water. Woodlands, meadows, pastures, forests and even urban sites can provide suitable habitat.
GOLDEN EAGLE	Aquila chrysaetos	Year Round	No sightings have been recorded.
GREAT BLUE HERON	Ardea Herodias	Spring, Summer, Fall	Colonial breeder in large trees (cottonwoods). Frequents open fields near runways at airport to feed on mice, voles and insects. Blue listed in BC
GREAT HORNED OWL	Bubo virginianus	Year Round	Present in surrounding areas.
HORNED LARK	Eremophila alpestris	Year Round	Present in surrounding areas. Breeds locally, Present in surrounding areas.
HOUSE FINCH	Carpodacus mexicanus	Year Round	Breeds locally. Will flock in large numbers in winter and fall.
JAYS	Cyanocitta stelleri	Year Round	Forages mostly high in trees but also low or on ground. Opens hard seeds and acorns by pounding on them with bill
KILLDEER	Charadrius vociferous	Spring, Summer, Fall	Breeds locally on open ground within airports. Will frequent roads and gravel areas.
MOOSE	Alces Americanus	Year Round	Rare encounters on ground side perimeter of the aerodrome

Common Name	Scientific Name	Seasonal Occurrence	Locations, Abundance
MOURNING DOVE	Zenaida macroura	Year Round	Largely solitary will forage in open fields an along gravel roads.
MOUSE	Peromyscus maniculatus	Year Round	Abundant on airside. Provide food for coyote, hawks, owls, etc.
MUSKRAT	Ondatra zibethicus	Spring, Summer, Fall	Present in surrounding areas.
NORTHERN FLICKER	Colaptes auratus	Year Round	Present in surrounding areas. Widespread throughout much of British Columbia. Prefer forest edges and open woodlands.
NORTHWESTERN CROW	Corvus caurinus	Year Round	Opportunistic feeder
PEREGRINE FALCON	Falco peregrinus	Year Round	Very rare sightings. Feeds on migratory birds. Peregrine falcons nest on cliff ledges or tall structures, where they are safe from predators and human activity.
PIPITS	Anthus	Spring, Summer, Fall	Breeds locally, Present in surrounding areas.
POCKET GOPHERS	Thomomys talpoides	Year Round	Locally very common. Important prey item for coyotes and owls. Population rebounds quickly after poison application due to proximity to source populations outside of airport grounds
QUAILS	Coturnix coturnix	Spring, Summer, Fall	Present in surrounding areas.
RACCOON	Procyon lotor	Spring, Summer, Fall	Present in surrounding areas.
RATS	Rattus	Year Round	Present in surrounding areas.
RAVENS	Corvus corax	Year Round	Breeds locally, frequents airport grounds.
RED FOX	Vulpes vulpes	Year Round	Present in surrounding areas. Low numbers. Likely being displaced by Coyotes.
RED-TAILED HAWK	Bueo jamaicensis	Year Round	Breeds locally. Will use airport grounds and surrounding area for hunting. Perching areas include fences, large trees, and manmade structures.
RED-WINGED BLACKBIRD	Aeglaius	Spring, Summer, Fall	Breeds in marshes, will flock with blackbirds in summer and fall to feed in open fields
RING-BILLED GULL	Larus delawarensis	Spring, Summer, Fall	Breeds locally, frequents airport grounds.

Common Name	Scientific Name	Seasonal Occurrence	Locations, Abundance
ROCK PIGEON	Columba livia	Year Round	Flocks in large numbers within and outside airport grounds. Forages in open fields.
RUFFED GROUSE	Bonasa umbellus	Year Round	Confined to upland riparian habitats. Unlikely to frequent airport lands.
SANDHILL CRANE	Grus canadensis	Species are not present in the area	No sightings have been recorded.
SHARP-SHINNED HAWK	Accipiter striatus	Spring, Summer, Fall	Breeds locally. Will use airport grounds and surrounding area for hunting. Perching areas include fences, large trees, and manmade structures.
SHOREBIRDS	Charadriiformes	Species are not present in the area	No sightings have been recorded.
SHORT-EARED OWL	Asio flammeus	Year Round	Present in surrounding areas.
SNOW BUNTING	Plectrophenax nivalis	Species are not present in the area	No sightings have been recorded.
SNOWY OWL	Bubo scandiacus	Year Round	Present in surrounding areas.
SONG SPARROW	Melospiza melodia	Spring, Summer, Fall	Breeds in riparian area, will flock during migration but confined primarily to riparian corridors.
SWALLOWS	Hirundinidae	Spring, Summer, Fall	Present in surrounding areas. Occasionally seen on runway.
THRUSHES	Turdidae	Year Round	Present in surrounding areas.
TURKEY VULTURE	Cathartes aura	Spring, Summer, Fall	Cliff nesters. Feed on carrion. Flyovers and thermal gliding above airport grounds.
VOLE	Microtus pennsylvanicus	Year Round	Abundant on airside. Provide food for coyote, hawks, owls, etc.
VESPER SPARROW	Pooecetes gramineus	Spring, Summer, Fall	Breeds in open grasslands and local fields. Will flock with other species and use open habitats.
WHITE-TAILED DEER	Odocoileus hemionus	Year Round	Present in surrounding areas. Excluded from airport grounds by wildlife fence.
WILD TURKEY	Meleagris gallopavo	Species are not present in the area	No sightings have been recorded.
WILSONS WARBLER	Wilsonia pulsilia	Spring, Summer, Fall	Breeds locally in riparian habitats. Flocks in fall.

Common Name	Scientific Name	Seasonal Occurrence	Locations, Abundance
YELLOW-BELLIED MARMOT	Marmota flaviventris	Spring, Summer, Fall	Abundant on airside. Provide food for coyote, hawks, etc. The marmots have become a major problem at the airport and an active trap and release program is in place.

9.1 Adjacent Lands and Hazardous Land use Practices

The airport is located on a valley bottom that runs in a north-south direction. Land use in the vicinity of airport grounds varies greatly. Along the valley bottom, native habitats have been altered significantly. Uses include golf courses, hay fields, recreation (baseball) fields, orchards, gravel pit, and building structures (University of British Columbia) and Hwy 97. Fields provide ample foraging opportunities for gulls, rock doves, raptors, and Canada geese all of which are of significant size to present a potential hazard to aircraft. Other potential environmental features near airport grounds that may influence daily migration routes for avian species and result in movements within airspace used by aircraft include lakes, landfills, etc.

Wooded Area

The wooded area at the northeast corner of the airport provides habitat for numerous wildlife species including deer, black bear (on occasion), Blue Herons (established rookery), hawks and perching birds. Wildlife using this habitat also use the airport property in search of food. Measures have been taken (e.g., placing asphalt millings along the security fence) to prevent small and large mammals from burrowing under the fence and entering airport property.

Wooded area at northeast corner of airport

Use of asphalt tailing at fence line

Polo Field

A polo field is located at the southeast corner of the airport property. The vegetation at this location is primarily grass however Canada geese and crows do frequent the area feeding on insects and vegetation and for general loafing purposes.

Polo field at southwest corner of airfield

Shadow Ridge Golf Course

The golf course is located at the southwest corner of the airport and provides ideal loafing and feeding habitat for Canada geese and other birds. Anecdotal information suggests the golf course is not a significant bird attractant.

Golf course southwest corner of airfield

Glenmore Landfill

The landfill site is located 3 km west of the airport and normally landfill sites would be considered a prime feeding location for gulls. Anecdotal information suggests there is no linkage between birds feeding at the landfill and flying to the airport for any purpose.

Agricultural Lands

Although some evidence suggests agricultural lands surrounding the airport may provide suitable habitat and food for numerous wildlife species there is no direct, significant correlation between these areas and wildlife using the airport.

General view of agriculture areas to the east

Lake Okanagan and Duck Lake

Although Lake Okanagan and Duck Lake are relatively close to the airport (e.g., 5.6 km and 1.5 km, respectively) there does not appear to be any direct linkage between the lakes and the airport. Birds flying from the lakes to the airport would be incidental.

10. SUMMARY OF KEY WILDLIFE HAZARDS

The previous steps of the AWMP will have identified most of the wildlife species found in and around the airport environment. Not all of these species are particularly hazardous to airport operations. Some species are more hazardous because they are large; others because they flock, or yet others because they soar at higher altitudes. A few are particularly hazardous because they fit all three of these descriptors (e.g., gulls and geese). Occasionally, an unusual food resource (e.g., an insect hatch) causes birds to concentrate in the airport environment that might not otherwise be considered a hazard (e.g., swallows).

The Wildlife Control Procedures Manual (Transport Canada, 2002) and the resource Sharing the Skies (Transport Canada, 2001b) provides information on the most effective management techniques for hazardous wildlife species in the airport environment.

Table 8 provides details of the key wildlife hazards, in no specific order, based on the previous steps in this AWMP.

Table 8. Key Wildlife Hazards at YLW Airport

Common Name	On-site Issue	Off-site Issue
AMERICAN GOLDFINCH	No	No
AMERICAN KESTREL	Yes	Yes
AMERICAN ROBIN	No	No
BADGER	No	No
BALD EAGLE	No	Yes
BARN OWL	Yes	Yes
BATS	No	No
BEARS	No	No
BLACK-BILLED MAGPIE	Yes	Yes
BOHEMIAN WAXWING	Yes	No
BREWERS BLACKBIRD	Yes	Yes
CALIFORNIA GULL	Yes	Yes
CANADA GOOSE	Yes	Yes
CATTLE	No	No
CHICKADEES	No	No
CHIPPING SPARROW	Yes	Yes
COOPERS HAWK	Yes	Yes

Common Name	On-site Issue	Off-site Issue
CORMORANTS	No	No
COYOTE	Yes	Yes
DOMESTIC DOG	No	No
DUCKS	Yes	Yes
ELK	No	No
EUROPEAN STARLING	Yes	Yes
FROGS	No	No
GOLDEN EAGLE	No	No
GREAT BLUE HERON	Yes	Yes
GREAT HORNED OWL	Yes	Yes
HORNED LARK	No	No
HOUSE FINCH	No	Yes
JAYS	No	No
KILLDEER	Yes	No
MOOSE	No	No
MOURNING DOVE	Yes	No
MOUSE	Yes	Yes
MUSKRAT	No	No
NORTHERN FLICKER	No	No
NORTHWESTERN CROW	Yes	Yes
PEREGRINE FALCON	No	No
PIPITS	No	No
POCKET GOPHERS	Yes	Yes
QUAILS	Yes	Yes
RACCOON	No	No
RATS	Yes	Yes
RAVENS	No	Yes
RED FOX	No	No

Common Name	On-site Issue	Off-site Issue
RED-TAILED HAWK	Yes	Yes
RED-WINGED BLACKBIRD	Yes	Yes
RING-BILLED GULL	Yes	Yes
ROCK PIGEON	Yes	no
RUFFED GROUSE	No	No
SANDHILL CRANE	No	No
SHARP-SHINNED HAWK	No	No
SHOREBIRDS	No	No
SHORT-EARED OWL	Yes	Yes
SNOW BUNTING	No	No
SNOWY OWL	Yes	Yes
SONG SPARROW	Yes	Yes
SWALLOWS	Yes	Yes
THRUSHES	Yes	Yes
TURKEY VULTURE	No	No
VESPER SPARROW	Yes	Yes
VOLE	Yes	Yes
WHITE-TAILED DEER	No	Yes
WILD TURKEY	No	No
WILSONS WARBLER	Yes	Yes
YELLOW-BELLIED MARMOT	Yes	Yes

Note: Elevated risk zones are the approaches for Runway 16 &34

11. DISCUSSION OF KEY HAZARDS

Each of the species (e.g., Turkey Vulture) or groups of similar species (e.g., gulls) appearing in Table 7 are discussed in this section.

This detailed discussion uses habitat information from Section 7 and addresses flight lines, flocking behaviour and use of seasonal food sources or other attractants. Seasonal, temporal (time of day) and spatial patterns of habitat use (where they are and why) will also be discussed.

This section also reviews observed or known behavioural characteristics of the species (e.g., flocking) and identifies the reasons for the presence of these species and their movement patterns or particular behaviour that has led to their designation as Key Hazards at this airport. This summary will rely on information already presented in this document, other reports if they are available (e.g., gull hazard assessments), and information that is available in the literature for these particular species (e.g., Transport Canada, 2001b; 2002).

Each species or group of species is addressed in the following tabular pattern, which is presented with one species per page.

11.1 Hazard Assessments

The Mass/flocking rank is a scale of 1 to 6 that considers the mass and flocking characteristics of a species. Those with the most mass that also flock are ranked 1 (highest) while the smallest non-flocking are ranked 6 (lowest). See , Risk Assessment, for more details.

AMERICAN GOLDFINCH

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** Migratory Birds Convention Act (Federal).
Seasonality (time of year): Spring, Summer, Fall	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): Open airfield areas and adjacent forest edge	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Crossing active maneuvering areas	
Discussion of Numbers (peak counts, low counts, breeding pairs): Sometimes mill about in large numbers near food sources	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): The goldfinch's main natural habitats are weedy fields and floodplains, where plants such as thistles and asters are common	
Sources of Information for Species in this Area (list reports and other sources): All About Birds	
Strike Summary: See strike table in appendices	
Other Comments: -	

AMERICAN KESTREL

Mass/Flocking Rank (1-6):	Species Protection Status:
5	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Open airfield areas and adjacent forest edge

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Watches for prey from tall perches, such as trees, telephone poles, and towers within airport grounds. Also, hovers and drops on prey

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 160-240 g (5.65-8.47 ounces) singles, pairs

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Large insects, small mammals, and perching areas are abundant

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

AMERICAN ROBIN

Mass/Flocking Rank (1-6): 5	**Species Protection Status:** Migratory Birds Convention Act (Federal).

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Most often encountered singly or in pairs. After nesting, it is seen in family groups.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

BADGER

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Most active at dawn and dusk.

Spatial (where in the area the hazard exists, hotspots):
Variety of habitats, including grasslands, shrub-steppe, dry open forests or open forest patches

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Breed in late July and August and give birth in late March or early April. Litter sizes range from one to five kit

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Badgers will eat pretty much any small creature they can catch, including voles, muskrats, rabbits, chipmunks, mice, birds, bird eggs, insects, and even snakes

Sources of Information for Species in this Area (list reports and other sources):
Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Strike Summary:
See strike table in appendices

Other Comments:
-

BALD EAGLE

Mass/Flocking Rank (1-6):	Species Protection Status:
2	BC Wildlife Act Section 34 (a and c) Section 34B Year-round nest protection

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Occasional visit the to airport. May frequent farms during calving season to feed on after birth. In, fall may frequent Mill Creek to feed on Kokanee fish carcasses

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Soaring behaviour. Likely, as an adult to obtain their food by hunting and killing; younger birds rely more on scavenging and piracy. The Bald Eagle feeds primarily on fish, aquatic birds, and mammals, which it may take alive or find dead.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 3000-6300 g (105.9-222.39 ounces) Infrequent observations at the airport.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Opportunistic feeders. Food is available near the airport.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

BARN OWL

Mass/Flocking Rank (1-6):	Species Protection Status:
4	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at night

Spatial (where in the area the hazard exists, hotspots):
Hunts on the fly, over open spaces at night.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Feeds on various sizes of mammals. Soaring over the airfield at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 1800-2246 g (32-80 ounces) Single or pairs.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
An abundance of food at and around the airport, e.g. small/medium-sized mammal populations.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Cornell Birds of North America Online Canadian Wildlife Service National Geographic Birds of North America

Strike Summary:
See strike table in appendices

Other Comments:
-

BATS

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act
Seasonality (time of year): Spring, Summer, Fall	
Temporal (time of day): Active at night.	
Spatial (where in the area the hazard exists, hotspots): Airfield areas	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Crossing active maneuvering areas	
Discussion of Numbers (peak counts, low counts, breeding pairs): Unknown and infrequent.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Ideal habitat and abundance of food	
Sources of Information for Species in this Area (list reports and other sources): ALL ABOUT BATS	
Strike Summary: See strike table in appendices	
Other Comments: -	

BEARS

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act
Seasonality (time of year): Spring, Summer, Fall	
Temporal (time of day): Active at all times	
Spatial (where in the area the hazard exists, hotspots): Open airfield areas and adjacent forest edge	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Climbing over the perimeter fence and crossing the maneuvering areas.	
Discussion of Numbers (peak counts, low counts, breeding pairs): Unknown and infrequent.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Ideal habitat and abundance of food. Inhabit forests nearby can search urban areas for easy sources of food.	
Sources of Information for Species in this Area (list reports and other sources): Wildsafe BC. BC Ministry of Environment, Lands and Parks	
Strike Summary: See strike table in appendices	
Other Comments: Very rare sightings.	

BLACK-BILLED MAGPIE

Mass/Flocking Rank (1-6):	Species Protection Status:
4	BC Wildlife Act Schedule C

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with urban areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines

Discussion of Numbers (peak counts, low counts, breeding pairs):
Most often encountered singly or in pairs. After nesting, it is seen in family groups.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Associated with urban areas and agricultural areas. Omnivorous. Will frequent recently mowed fields

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

BOHEMIAN WAXWING

Mass/Flocking Rank (1-6):	Species Protection Status:
2	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Most active at dawn and dusk.

Spatial (where in the area the hazard exists, hotspots):
In winter, Bohemian Waxwings form large flocks that range nomadically south in response to food supplies

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines

Discussion of Numbers (peak counts, low counts, breeding pairs):
Widely distributed across the plateaus and higher mountain ranges of northern British Columbia but is more sparsely and irregularly distributed in the Okanagan.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
In winter, Bohemian Waxwings form large flocks that range nomadically south in response to food supplies

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca All About Birds Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
-

BREWERS BLACKBIRD

Mass/Flocking Rank (1-6):	Species Protection Status:
4	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Most often encountered singly or in pairs during nesting in spring to early summer. At other times of the year (late summer, fall, and winter), often encountered singly or in pairs, some form small family groups or flocks.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Abundant food. Opportunistic feeder. Omnivorous. Eats meat, eggs, insects, grain, fruit, garbage, and carrion.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

CALIFORNIA GULL

Mass/Flocking Rank (1-6):	Species Protection Status:
3	Migratory Birds Convention Act (Federal).BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Move from roosts to feeding areas daily.

Spatial (where in the area the hazard exists, hotspots):
Concentrate on wet fields. Forage on the runway for worms (especially during and after wet weather), short and mown grass for invertebrates. May move across high-risk zones.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Flocking, use of airside areas, opportunistic feeding, and flight lines may be across high-risk areas.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Open fields near the airport to significant water bodies (Duck Lake).

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

CANADA GOOSE

Mass/Flocking Rank (1-6):	Species Protection Status:
1	

Seasonality (time of year):
Year Round

Temporal (time of day):
Most active at dawn and dusk. Generally, flocks to and from water bodies before sunset and after dawn.

Spatial (where in the area the hazard exists, hotspots):
Will forage on the airfield. No hotspots were identified.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Flocks, slow evasive actions, feeding in high-risk zones, flying through high-risk zones, but most tend to be lower than 100 m AGL.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 3000-9000 g (105.9-317.7 ounces) Few counts available, flocks usually less than 30.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Feeding in open grassy areas.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Geese are easily controlled using pyrotechnics or propane cannons.

CATTLE

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at all times

Spatial (where in the area the hazard exists, hotspots):
Present in local farms. Only an issue if they escape and gain access to airport property.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Common farm animal

Sources of Information for Species in this Area (list reports and other sources):
None

Strike Summary:
See strike table in appendices

Other Comments:
On extremely rare occasions, local Cattle may escape their field and be spotted near the airfield.

CHICKADEES

Mass/Flocking Rank (1-6):	Species Protection Status:
6	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Cavity nester. Associated with open habitats

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent. Weighs about 10g

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Ideal habitat and abundance of food

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca All About Birds Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
-

CHIPPING SPARROW

Mass/Flocking Rank (1-6):	Species Protection Status:
1	

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Movements are throughout airport lands and perimeter

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Migration is explosive (large numbers) but brief. Will utilize open fields and Mill Creek.

Discussion of Numbers (peak counts, low counts, breeding pairs):
May number in thousands in a given day

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Migration habitat is adequate

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Observed at the airport during site visit (in small numbers). Confined to riparian vegetation along Mill Creek.

COOPERS HAWK

Mass/Flocking Rank (1-6):	Species Protection Status:
4	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Various forest habitats, especially mature forests.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Medium-sized, broad-winged, long-tailed hawk. Flies with several flaps and short glide and also soar frequently. Perches silently, waiting and watching for prey. Switches perches after brief periods. Descends on prey rapidly, maneuvering through forest vegetation or willingly crashing through it.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 631-1364 g (22.27-48.15 ounces) Single or paired

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Hunts primarily birds and small mammals along the forest edge and riparian habitats (Mill Creek).

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Observed in riparian habitats of Mill Creek (outside of Airport Grounds).

CORMORANTS

Mass/Flocking Rank (1-6):	Species Protection Status:
1	BC Wildlife Act

Seasonality (time of year):
Species are not present in the area

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight 0.35–5 kilograms (0.77–11.02 lb). No sightings have been recorded.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Species are not present in the area. No sightings have been recorded.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
Click or tap here to enter text.

COYOTE

Mass/Flocking Rank (1-6):	Species Protection Status:
1	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
A male coyote weighs from 9 to 23 kg, has an overall length of 120 to 150 cm (including a 30- to 40-cm tail), and stands 58 to 66 cm high at the shoulder. The female is usually four-fifths as large. Coyotes are stealthy and typically remain undetected. However, points of entry (digs under the fence) suggest that several individuals hunt within airport grounds.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Coyotes frequent the airport grounds to prey on northern pocket gophers and other small mammals, which are abundant on airport grounds

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
-

DOMESTIC DOG

Mass/Flocking Rank (1-6): 0	**Species Protection Status:** None
Seasonality (time of year): Year Round	
Temporal (time of day): Active at all times	
Spatial (where in the area the hazard exists, hotspots): Airfield areas	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Crossing active maneuvering areas	
Discussion of Numbers (peak counts, low counts, breeding pairs): Unknown and infrequent.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Common domesticated animal	
Sources of Information for Species in this Area (list reports and other sources): None	
Strike Summary: See strike table in appendices	
Other Comments: On rare occurrences, domestic dogs gain access airside.	

DUCKS

Mass/Flocking Rank (1-6): 2	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Most active at dawn and dusk. Although it will fly at all times of the day.

Spatial (where in the area the hazard exists, hotspots):
Concentrate in wet/flooded fields. Move across high-risk zones (perpendicular to the airstrip). Concentrated primarily in ponds and lakes north and west of the airport (Duck Lake, Robertson Lake, etc.).

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Flocking

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 300-1000 g. Unknown

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Open fields, flooded areas, and agricultural lands adjacent to the airport.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Dabbling ducks usually are easily controlled using pyrotechnics.

ELK

Mass/Flocking Rank (1-6):	Species Protection Status:
1	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Travels through the surrounding area foraging for food

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
If Elk access the airfield, there is the possibility of encroachment on the runway in poor light conditions and at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
There are two basic herds in the Central Okanagan area. One is in the Okanagan Mountain Park/Myra Canyon area while the other, called the Black Mountain herd, ranges from the Joe Rich area all the way up to Oyama, Kalamalka Lake and some go as far as Falkland.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Ideal habitat and abundance of food

Sources of Information for Species in this Area (list reports and other sources):
Wildsafe BC

Strike Summary:
See strike table in appendices

Other Comments:
Adult bull Elk stand about 140 cm high at the shoulder and weigh 265 to 410 kg; cows stand about 130 cm high and weigh 190 to 270 kg.

EUROPEAN STARLING

Mass/Flocking Rank (1-6):	Species Protection Status:
4	BC Wildlife Act Section 34 (a and c) Schedule C

Seasonality (time of year):
Year Round

Temporal (time of day):
During daylight hours

Spatial (where in the area the hazard exists, hotspots):
Cavity nester. Associated with open habitats

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Highly gregarious. Often flocks with other species, particularly after young have fledged. It flocks my number in the thousands.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Abundant

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Availability of open fields

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Sharing the Skies Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

FROGS

Mass/Flocking Rank (1-6): 6	**Species Protection Status:** BC Wildlife Act
Seasonality (time of year): Year Round	
Temporal (time of day): Active at all times	
Spatial (where in the area the hazard exists, hotspots): General airfield areas.	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Crossing active maneuvering areas	
Discussion of Numbers (peak counts, low counts, breeding pairs): Weight 0.35g. Very low numbers. Solitary	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Nearby wetlands make ideal habitat	
Sources of Information for Species in this Area (list reports and other sources): canadianherpetology.ca, inaturalist.org	
Strike Summary: See strike table in appendices	
Other Comments: Click or tap here to enter text.	

GOLDEN EAGLE

Mass/Flocking Rank (1-6): 2	**Species Protection Status:** BC Wildlife Act
Seasonality (time of year): Year Round	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): General airfield areas	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): The most significant concern would be birds crossing flight lines.	
Discussion of Numbers (peak counts, low counts, breeding pairs): Weight 3.6 – 6.7 kg (Female), 2.8 – 4.6 kg (Male). No sightings have been recorded.	
Reasons Why Species is Present in Area (e.g., food source, landfill, roost): No sightings have been recorded.	
Sources of Information for Species in this Area (list reports and other sources): birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology	
Strike Summary: See strike table in appendices	
Other Comments: Click or tap here to enter text.	

GREAT BLUE HERON

Mass/Flocking Rank (1-6):	Species Protection Status:
2	Migratory Birds Convention Act (Federal). BC Wildlife Act Section 34 (a and c) Blue-Listed in British Columbia.

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Daytime hours

Spatial (where in the area the hazard exists, hotspots):
Family observed foraging near runway. Heronry occurs on cottonwood riparian habitat stand adjacent to eastern property boundary

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Will fly from heronry to feeding areas within the airport. Will frequent Mill Creek shoreline

Discussion of Numbers (peak counts, low counts, breeding pairs):
High (in relative terms). Heronry nearby supporting approximately 12 pair.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Traditional breeding grounds. Suitable foraging habitat

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Blue-listed species. Mitigation measures should be considered and implemented.

GREAT HORNED OWL

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at night

Spatial (where in the area the hazard exists, hotspots):
Hunts on the fly, over open spaces at night.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Feeds on various sizes of mammals. Soaring over the airfield at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 1800-2246 g (32-80 ounces) Single or pairs.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Abundance of food at and around the Airport e.g. small/medium sized mammal populations.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Cornell Birds of North America Online Canadian Wildlife Service National Geographic Birds of North America

Strike Summary:
See strike table in appendices

Other Comments:
-

HORNED LARK

Mass/Flocking Rank (1-6):	Species Protection Status:
5	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Observed flying over the airfield. Airfield areas, All open fields.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent. Can flock in large numbers.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of breeding/nesting habitats. Open fields.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca All About Birds Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
-

HOUSE FINCH

Mass/Flocking Rank (1-6): 3	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Most often encountered singly or in pairs during nesting in spring to early summer. At other times of the year, (late summer, fall, and winter) ,often encountered singly or in pairs, some form small family groups or flocks.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Airport and vicinity provides a variety of wildlife habitats

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

JAYS

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act
Seasonality (time of year): Year Round	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): Observed flying over the airfield	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): The most significant concern would be birds crossing flight lines.	
Discussion of Numbers (peak counts, low counts, breeding pairs): Most often encountered singly or in pairs during nesting in spring to early summer. At other times of the year, (late summer, fall, and winter), often encountered singly or in pairs, some form small family groups or flocks.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Airport and vicinity provides a variety of wildlife habitats	
Sources of Information for Species in this Area (list reports and other sources): Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds	
Strike Summary: See strike table in appendices	
Other Comments: -	

KILLDEER

Mass/Flocking Rank (1-6):	Species Protection Status:
4	Migratory Birds Convention Act (Federal).BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Primarily diurnal (will be active at night if nest disturbed)

Spatial (where in the area the hazard exists, hotspots):
Observed flying over the airfield

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Territorial defence, nest defence

Discussion of Numbers (peak counts, low counts, breeding pairs):
Moderate, up to 3 pair within airport grounds

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Ideal nesting habitat (open fields, gravel roads)

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

MOOSE

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Potential access to the airfield

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Moose are rarely seen around the airport. Mainly passing through the area.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
-

MOURNING DOVE

Mass/Flocking Rank (1-6): 3	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
High. Associated with agricultural and urban areas.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

MOUSE

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Indirect. Prey for raptors and carnivores

Discussion of Numbers (peak counts, low counts, breeding pairs):
Numerous throughout the airfield.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Available food and habitat.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
-

MUSKRAT

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Adult muskrats weigh about 1 to 1.5 kg and are about 50 to 60 cm in length from tip to tip.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Airport and vicinity provides a variety of wildlife habitats

Sources of Information for Species in this Area (list reports and other sources):
Wildsafe BC

Strike Summary:
See strike table in appendices

Other Comments:
-

NORTHERN FLICKER

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act Section 34 (a and c)
Seasonality (time of year): Year Round	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): Throughout. Associated with every habitat, including the airport building and structures.	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): The most significant concern would be birds crossing flight lines.	
Discussion of Numbers (peak counts, low counts, breeding pairs): Unknown and infrequent.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Airport and vicinity provide a variety of wildlife habitats	
Sources of Information for Species in this Area (list reports and other sources): birdatlas.bc.ca All About Birds Cornell Lab of Ornithology	
Strike Summary: See strike table in appendices	
Other Comments: -	

NORTHWESTERN CROW

Mass/Flocking Rank (1-6):	Species Protection Status:
3	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Observed airport areas during a site visit

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Soaring behaviour. Feeding on grounds after mowing. Gregarious. Very smart bird and control measures are often difficult.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 689-1625 g (24.32-57.36 ounces). Seasonally abundant

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Abundant food. Opportunistic feeder. Omnivorous. Eats meat, eggs, insects, grain, fruit, garbage, and carrion.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

PEREGRINE FALCON

Mass/Flocking Rank (1-6): 3	**Species Protection Status:** BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines while hunting.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Low and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide food and nesting habitat. Conservation work in BC has been slowly increasing numbers.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins, Sharing the Skies, Patuxent Info Centre, Canadian Wildlife Services, Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Very rare sightings.

PIPITS

Mass/Flocking Rank (1-6):	Species Protection Status:
5	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas, All open fields.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent. Can flock in large numbers during migration.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of breeding/nesting habitats. Open fields, abundance of insects.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca All About Birds Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
-

POCKET GOPHERS

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at night. Rarely seen due to fossorial behaviour.

Spatial (where in the area the hazard exists, hotspots):
All open fields.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
None directly. Are staple diets for several raptor and mammal species that present potential risks to aircraft.

Discussion of Numbers (peak counts, low counts, breeding pairs):
High. Population numbers fluctuate considerably. Low populations (resulting from rodenticides applications) rebound quickly.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Open fields, an abundance of resources.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
Difficult to control populations.

QUAILS

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Large number in the area

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Airport and vicinity provides a variety of wildlife habitats

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

RACCOON

Mass/Flocking Rank (1-6): 0	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
High. Associated with agricultural and urban areas.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Wildsafe BC

Strike Summary:
See strike table in appendices

Other Comments:
-

RATS

Mass/Flocking Rank (1-6): 0	**Species Protection Status:** None
Seasonality (time of year): Year Round	
Temporal (time of day): Active at all times	
Spatial (where in the area the hazard exists, hotspots): Airfield areas	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Crossing active maneuvering areas	
Discussion of Numbers (peak counts, low counts, breeding pairs): High. Associated with agricultural and urban areas.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Ideal habitat and abundance of food	
Sources of Information for Species in this Area (list reports and other sources): Wildsafe BC	
Strike Summary: See strike table in appendices	
Other Comments: -	

RAVENS

Mass/Flocking Rank (1-6):	Species Protection Status:
3	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Soaring behaviour. Feeding on grounds after mowing. Gregarious, smart bird: control measures are often difficult.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 689-1625 g (24.32-57.36 ounces). Seasonally abundant

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Abundant food. Opportunistic feeder. Omnivorous. Eats meat, eggs, insects, grain, fruit, garbage, and carrion.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

RED FOX

Mass/Flocking Rank (1-6): 2	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Dusk to Dawn

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Crossing active maneuvering areas

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent. Extremely rare sightings

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Ideal habitat and abundance of food. Feeds on small mammals and bird eggs.

Sources of Information for Species in this Area (list reports and other sources):
Wildsafe BC

Strike Summary:
See strike table in appendices

Other Comments:
Shy and mostly nocturnal nature can make them hard to spot.

RED-TAILED HAWK

Mass/Flocking Rank (1-6):	Species Protection Status:
3	BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Year Round

Temporal (time of day):
Birds are active throughout the day.

Spatial (where in the area the hazard exists, hotspots):
Sit-and-wait predator, usually watching from elevated perch. Hovers in strong wind soars in thermals.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Feeds on small and medium-sized mammals, birds, and reptiles.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 690-1460 g (24.36-51.54 ounces) Single or pairs

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Abundance of food at airport e.g. high vole, mice, and mole populations.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Improved identification of carcasses to species level is necessary.

RED-WINGED BLACKBIRD

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Marshes (breeding), Open Fields (foraging)

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Gregarious in Fall, Summer, and Spring (except during breeding season). From large mixed species flocks

Discussion of Numbers (peak counts, low counts, breeding pairs):
May appear sporadically. Mixed flocks may number in the thousands.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Food availability

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Juveniles may be difficult to identify and can be confused with other species or taxons.

RING-BILLED GULL

Mass/Flocking Rank (1-6): 2	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Move from roosts to feeding areas daily.

Spatial (where in the area the hazard exists, hotspots):
Concentrate on wet fields. Forage on the runway for worms (especially during and after wet weather), and short-mown grass for invertebrates. May move across high-risk zones.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Flocking, use of airside areas, opportunistic feeding, and flight lines may be across high-risk areas.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Open fields in the proximity of the airport to significant water bodies (Duck Lake).

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Need information on flight paths and movement patterns

ROCK PIGEON

Mass/Flocking Rank (1-6): 3	**Species Protection Status:** BC Wildlife Act Schedule C

Seasonality (time of year):
Year Round

Temporal (time of day):
Daytime hours

Spatial (where in the area the hazard exists, hotspots):
Foraging in large flocks in open fields. Noted nesting in the old aircraft mock-up used for firefighting training

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Flocking behaviour, particularly active at dawn and dusk when moving to and from roost sites.

Discussion of Numbers (peak counts, low counts, breeding pairs):
High. Associated with agricultural and urban areas.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Suitable habitat (open fields) and roosting sites (large outbuildings such as barns).

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

RUFFED GROUSE

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

SANDHILL CRANE

Mass/Flocking Rank (1-6):	Species Protection Status:
1	BC Wildlife Act

Seasonality (time of year):
Species are not present in the area

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight 2.7 to 6.7 kg (6.0 to 14.8 lb). No sightings have been recorded.

Reasons Why Species is Present in Area (e.g., food source, landfill, roost):
Species are not present in the area. No sightings have been recorded.

Sources of Information for Species are this Area (list reports and other sources):
birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
Click or tap here to enter text.

SHARP-SHINNED HAWK

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** BC Wildlife Act Section 34 (a and c)
Seasonality (time of year): Spring, Summer, Fall	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): Observed flying over airfield	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Hunting/Diving for small prey in active maneuvering areas.	
Discussion of Numbers (peak counts, low counts, breeding pairs): Unknown and infrequent.	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Abundance of food at and around the Airport e.g. small bird populations.	
Sources of Information for Species in this Area (list reports and other sources): birdatlas.bc.ca All About Birds Cornell Lab of Ornithology	
Strike Summary: See strike table in appendices	
Other Comments: -	

SHOREBIRDS

Mass/Flocking Rank (1-6): 5	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Species are not present in the area

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight 50-300g. No sightings have been recorded.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Species are not present in the area. No sightings have been recorded.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
Click or tap here to enter text.

SHORT-EARED OWL

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at night

Spatial (where in the area the hazard exists, hotspots):
Hunts on the fly, over open areas at night.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Feeds on various sizes of mammals. Soaring over the airfield at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 1800-2246 g (32-80 ounces) Single or pairs.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
An abundance of food at and around the Airport e.g. small/medium-sized mammal populations.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Cornell Birds of North America Online Canadian Wildlife Service National Geographic Birds of North America

Strike Summary:
See strike table in appendices

Other Comments:
-

SNOW BUNTING

Mass/Flocking Rank (1-6):	Species Protection Status:
5	BC Wildlife Act

Seasonality (time of year):
Species are not present in the area

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight 1.1-1.6 oz (31-46 g). No sightings have been recorded.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Species are not present in the area. No sightings have been recorded.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
Click or tap here to enter text.

SNOWY OWL

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Active at night

Spatial (where in the area the hazard exists, hotspots):
Hunts on the fly, over open areas at night.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Feeds on various sizes of mammals. Soaring over the airfield at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 1800-2246 g (32-80 ounces) Single or pairs.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
An abundance of food at and around the Airport e.g. small/medium-sized mammal populations.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Cornell Birds of North America Online Canadian Wildlife Service National Geographic Birds of North America

Strike Summary:
See strike table in appendices

Other Comments:
-

SONG SPARROW

Mass/Flocking Rank (1-6):	Species Protection Status:
1	Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight: 1800-2246 g (32-80 ounces) Single or pairs.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

SWALLOWS

Mass/Flocking Rank (1-6): 5	**Species Protection Status:** Migratory Birds Convention Act (Federal). Species at Risk Act BC Wildlife Act Section 34 (a and c)
Seasonality (time of year): Spring, Summer, Fall	
Temporal (time of day): Throughout the day	
Spatial (where in the area the hazard exists, hotspots): Movements are throughout airport lands and the perimeter.	
Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway): Will utilize open fields and Mill Creek.	
Discussion of Numbers (peak counts, low counts, breeding pairs): May number in thousands each day	
Reasons Why Species are Present in Area (e.g., food source, landfill, roost): Migration habitat is adequate.	
Sources of Information for Species in this Area (list reports and other sources): Transport Canada Wildlife Bulletins Patuxent Info Centre Sharing the Skies Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds	
Strike Summary: See strike table in appendices	
Other Comments: Observed at the airport during the site visit (in small numbers).	

THRUSHES

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
During nesting in spring to early summer, most often encountered singly or in pairs. At other times of the year (late summer, fall, and winter), often encountered singly or in pairs, some form small family groups or flocks.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

TURKEY VULTURE

Mass/Flocking Rank (1-6): 3	**Species Protection Status:** BC Wildlife Act Section 34 (a and c)

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Observed soaring over airfield

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Low and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Suitable nesting areas nearby <5km from airport. Open fields at and near airport

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
Usually soar at high altitudes

VESPER SPARROW

Mass/Flocking Rank (1-6):	Species Protection Status:
1	Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
During nesting in spring to early summer, most often encountered singly or in pairs. At other times of the year (late summer, fall, and winter), often encountered singly or in pairs, some form small family groups or flocks.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

VOLE

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
Indirect. Prey for raptors and carnivores

Discussion of Numbers (peak counts, low counts, breeding pairs):
Numerous throughout the airfield.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Available food and habitat.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
-

WHITE-TAILED DEER

Mass/Flocking Rank (1-6): 1	**Species Protection Status:** BC Wildlife Act

Seasonality (time of year):
Year Round

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Move from resting areas to forage. Also, use wetland ponds for feeding and avoiding biting insects.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
If deer access the airfield, there is the possibility of encroachment on the runway in poor light conditions and at night.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Unknown and infrequent.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Ideal habitat and abundance of food

Sources of Information for Species in this Area (list reports and other sources):
Wildsafe BC

Strike Summary:
See strike table in appendices

Other Comments:
-

WILD TURKEY

Mass/Flocking Rank (1-6):	Species Protection Status:
2	BC Wildlife Act

Seasonality (time of year):
Species are not present in the area

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
General airfield areas

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
Weight 2.5-11kg. No sightings have been recorded.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Species are not present in the area. No sightings have been recorded.

Sources of Information for Species in this Area (list reports and other sources):
birdatlas.bc.ca, All About Birds, Cornell Lab of Ornithology

Strike Summary:
See strike table in appendices

Other Comments:
Click or tap here to enter text.

WILSONS WARBLER

Mass/Flocking Rank (1-6): 4	**Species Protection Status:** Migratory Birds Convention Act (Federal).BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Throughout the day

Spatial (where in the area the hazard exists, hotspots):
Throughout. Associated with every habitat, including the airport building and structures.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
The most significant concern would be birds crossing flight lines.

Discussion of Numbers (peak counts, low counts, breeding pairs):
During nesting in spring to early summer, most often encountered singly or in pairs. At other times of the year, (late summer, fall, and winter) often encountered singly or in pairs, some form small family group or flocks.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
The airport and vicinity provide a variety of wildlife habitats. Abundant food

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Patuxent Info Centre Canadian Wildlife Services Cornell Lab of Ornithology, All About Birds

Strike Summary:
See strike table in appendices

Other Comments:
-

YELLOW-BELLIED MARMOT

Mass/Flocking Rank (1-6):	Species Protection Status:
0	BC Wildlife Act

Seasonality (time of year):
Spring, Summer, Fall

Temporal (time of day):
Diurnal

Spatial (where in the area the hazard exists, hotspots):
All open fields.

Behaviour of Concern (flocking, loafing on apron, flight lines, feeding in grass, crossing runway):
None directly. Are staple diets for several raptor and mammal species that present potential risks to aircraft.

Discussion of Numbers (peak counts, low counts, breeding pairs):
High. Population numbers fluctuate greatly.

Reasons Why Species are Present in Area (e.g., food source, landfill, roost):
Open fields., abundance of resources.

Sources of Information for Species in this Area (list reports and other sources):
Transport Canada Wildlife Bulletins Sharing the Skies Canadian Wildlife Services

Strike Summary:
See strike table in appendices

Other Comments:
This animal is proving difficult to manage at the airport. The airport has initiated an active trap and release program.

12. RISK ASSESSMENT

In the context of the AWMP, a hazard is a condition (e.g., the presence of gulls) with the potential to cause injury to personnel or damage to equipment or structures. Reducing exposure to hazards is a component of risk management.

Risk is the likelihood of injury or loss occurring, which is a function of exposure to the hazards, as well as the likelihood of a strike occurring and the magnitude or severity of the strike. It follows then, that high risk species are those that are frequently involved in strikes, as well as those that cause most damage.

Risk assessment is an important part of this plan because it serves to ensure that wildlife management activities are directed at the species that create the highest risk, in a prioritized fashion.

Risk is strongly influenced by the type of aircraft and their operations. The likelihood of a catastrophic wildlife strike accident occurring with a small piston-powered aircraft is much less than with turbine powered aircraft.

Table 9 summarizes airport traffic into three broad risk-categories based on their vulnerability to damaging wildlife strikes. All classes have been retained in the risk assessment matrix in case use patterns should change in the future. In addition, the severity or consequences are much less.

Table 9. Airport Traffic

Aircraft Classification		Strike Susceptibility Level	Approximate Annual Movements	Other Considerations
1	Turbofan and Turbojet	High	28,022	
2	Helicopter and Turboprop	Moderate	21,826	
3	Piston	Low	12,014	

In addition to the immediate airport environment, the risk assessment must consider the area outside of the airport. For this reason, the typical approach and takeoff routes for all runways and both types of air traffic (i.e., local and itinerant) need to be considered. The YLW approach patterns follow the north/south orientation of the Okanagan Valley.

We are primarily concerned with biomass that can affect safe flight. The following are general characteristics of high-risk species or behaviour:

a) larger species which tend to cause greater damage due to higher impact forces(e.g., waterfowl, gulls and hawks);

b) flocking of birds (e.g., gulls, swallows, Snow Buntings) or herds of animals;

c) large, slow-flying birds that are less maneuverable (e.g., herons, hawks);

d) species that habitually hunt or forage on or over the airfield, especiallyinexperienced animals (e.g., meadowlarks, Snow Buntings, Snowy Owls); and

e) birds that habitually fly or soar into airspace used by aircraft (e.g., gulls orwaterfowl on flight lines, vultures and gulls soaring).

If a hazardous species is particularly numerous (e.g., Rock Dove), then it might be considered a high risk. Conversely, one or two pairs of doves nesting on the airport property might be considered a hazard, but one with a low associated risk.

For the species considered to represent an elevated risk at YLW Airport, Table 10 provides several risk assessment tools. These are described in the following paragraphs.

Mass/Flocking Hazard Rank

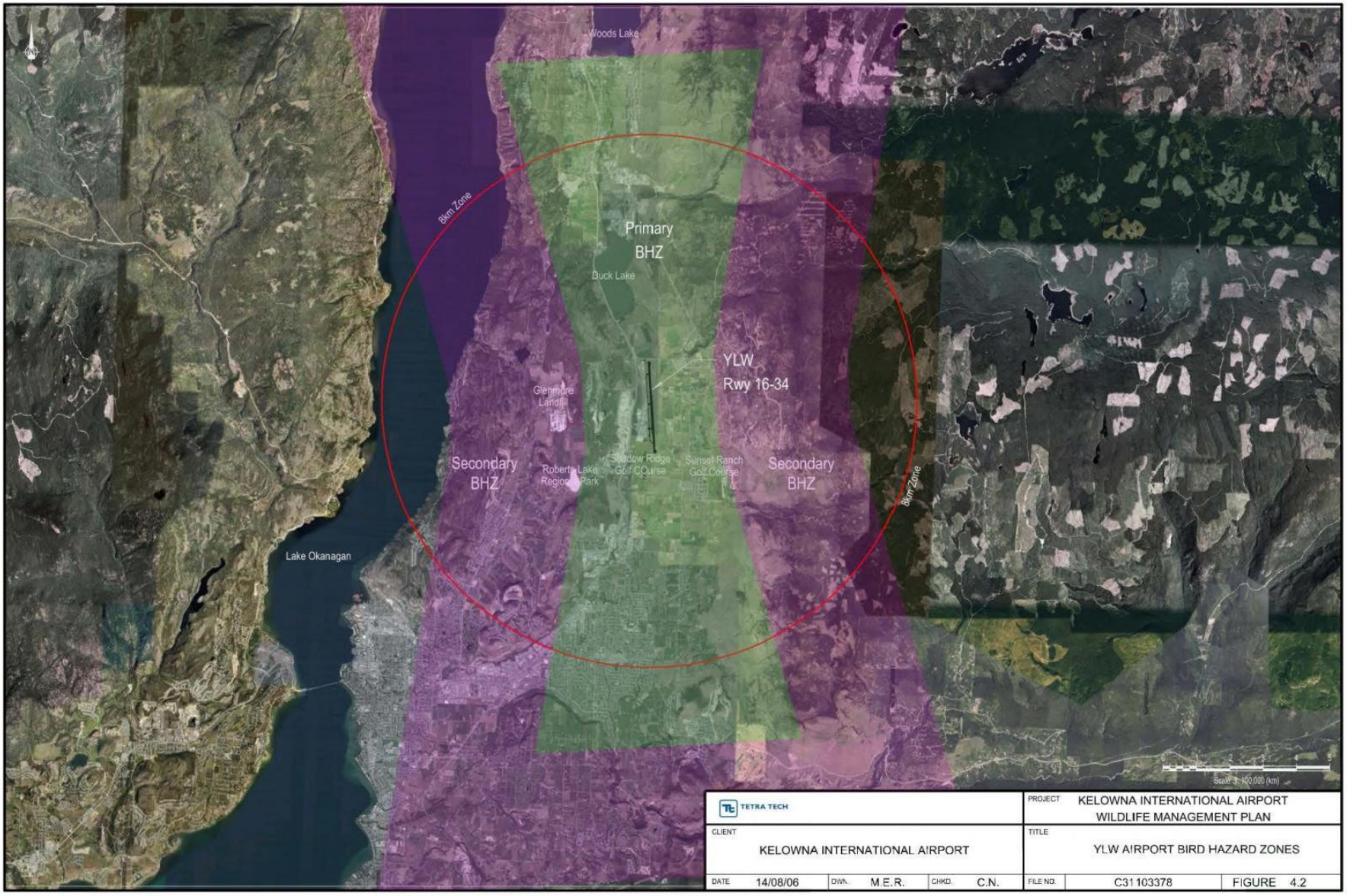
This ranking system uses flocking characteristics and mass to provide a relative index of risk should an aircraft strike the species. Examples are provided in Table 9.

Table 10. Risk Assessment Using Flocking Characteristics and Mass

Level of Risk	Characteristics	Example Species
Level 1	Very large (>1.8 kg), flocking	Canada Goose
Level 2	Very large (>1.8 kg), solitary or Large (1-1.8 kg), flocking	Ring-billed Gull Mallard Duck Turkey Vulture
Level 3	Large (1-1.8 kg), solitary or Medium (300g –1 kg), flocking	Red-tailed Hawk
Level 4	Medium (300g –1 kg), solitary or Small (50 g – 300 g), flocking	Northern Harrier Brewers Blackbirds Red-winged Blackbirds
Level 5	Small (50 g – 300 g), solitary or Very small (<50g), flocking	American Kestrel White-crowned Sparrow Swallows (Barn, Bank, Tree, Violet-green, Cliff, Northern Rough Winged)
Level 6	Very small (<50g), solitary	Yellow Warblers

Note: Based on Kelly, 2004.

Figure 3. Elevated Risk Zones



Relative Hazard Score

This is sourced from Dolbeer *et al.* (2000). In the study, strike data were analyzed and assessed for relative risk associated with 21 different species groups. This analysis examined damage to aircraft, major damage, effects on flight, and from these data determined a composite ranking. It is important to remember that this assessment is entirely based on recorded strikes. That is, all these species' present proven risks to aircraft. They effectively occupy the top portion of a list of potentially hazardous species that occur on airfields in Canada.

Transport Canada Hazard Rank

Transport Canada rank for most hazardous wildlife (1 through 20, with 1 being the highest hazard) is provided, based on Airport Wildlife Management and Planning Standard 322.321. This list ranks wildlife from most hazardous to least hazardous by species group and as such, identifies the species that should be of primary concern for the operator. All listed species are thought to be hazardous, and the status of some species may have changed since the ranks were established (e.g., Turkey Vulture is an increasing hazard in many areas of Canada, however it is yet to become a strike risk at most airports).

Two columns are also provided for specific assessments for this airport for relative abundance (H-M-L) and hazardous behaviour (H-M-L) based on the previous sections of this report. The following criteria are used to help assess the risk levels at this airport.

Relative Abundance

- *High* Frequently present in conflict areas; may be seasonal; multiple daily observations; often numerous;
- *Medium* Occasionally and regularly present in conflict areas; not present daily, but presentweekly; sporadically numerous; and,
- *Low* Occasionally and infrequently present; usually not numerous.

Hazardous Behaviour

- *High* Frequently flocking in conflict areas; regular flight lines through conflict zone; unpredictable response to aircraft (e.g., inexperienced birds); frequently active in poor light;
- *Medium* Sporadic flocking in conflict areas (e.g., when food supplies dictate); sometimes active in poor light; and,
- *Low* Rarely or never flocking; seldom feeding close to conflict zone; usually active only in daytime.

The final three columns in the risk matrix represent qualitative assessments based on air traffic type and volume at this airport (using the three categories provided in Table 9). The following criteria are used to help determine risk by aircraft type and traffic volume:

- *Severe* Frequent high-risk aircraft movements coinciding with high values for other risk factors(i.e., relative abundance, hazardous behaviour, risk/hazard rankings);
- *High* Frequent high or moderate risk aircraft movements coinciding with high or moderatevalues for other risk factors;
- *Moderate* Occasional or regular moderate risk aircraft movements coinciding with moderate orsometimes high values for other risk factors; and,
- *Low* All other categories.

The risk assessment matrix does not provide numerical computations and none of these values are absolute. Therefore, the purpose of the table is to draw attention to high risk species for management purposes and to guide management priorities rather than absolutely quantify the risk.

In many cases, the behavior of an animal resulted in a "high" risk rating and the possible risk to aircraft was rated "high" even though this species (e.g., bald eagle) may be a rare visitor to the airport.

Table 11. Risk Assessment Matrix for YLW Airport

Common Name	General Risk and Hazard Ranking Tools			For This Airport		Risk Assessment by Aircraft Type 4 and Volume		
	Mass/Flock Rank 1	Relative Risk Score 2	TC Hazard Rank 3	Relative Abundance	Hazardous Behaviour	Jet Aircraft	Turbo Prop Aircraft	Piston Aircraft
AMERICAN GOLDFINCH	5	10	N/A	M	M	L	L	L
AMERICAN KESTREL	5	14	19	L	M	L	L	L
AMERICAN ROBIN	5	20	N/A	L	L	L	L	L
BADGER	0	45	N/A	L	L	L	L	L
BALD EAGLE	2	31	9	L	H	H	H	M
BARN OWL	4	16	N/A	L	H	H	H	H
BATS	4	10	N/A	L	L	L	L	L
BEARS	1	100	N/A	L	L	L	L	L
BLACK-BILLED MAGPIE	4	12	14	M	L	L	L	L

Common Name	General Risk and Hazard Ranking Tools			For This Airport		Risk Assessment by Aircraft Type 4 and Volume		
	Mass/Flock Rank 1	Relative Risk Score 2	TC Hazard Rank 3	Relative Abundance	Hazardous Behaviour	Jet Aircraft	Turbo Prop Aircraft	Piston Aircraft
BOHEMIAN WAXWING	2	20	N/A	L	M	M	L	L
BREWERS BLACKBIRD	4	9	13	M	M	L	L	L
CALIFORNIA GULL	3	22	N/A	M	H	H	H	H
CANADA GOOSE	1	52	2	M	H	H	H	M
CATTLE	1	100	N/A	L	L	L	L	L
CHICKADEES	6	5	N/A	L	L	L	L	L
CHIPPING SPARROW	6	4	11	H	L	M	M	M
COOPERS HAWK	4	25	4	L	H	H	M	M
CORMORANTS	1	50*	N/A	L	L	L	L	L
COYOTE	1	20	6	M	M	L	L	L
DOMESTIC DOG	2	45	N/A	L	L	L	L	L
DUCKS	2	37	5	M	M	M	M	M
ELK	1	100	N/A	L	L	L	L	L
EUROPEAN STARLING	4	9	13	H	H	H	H	H
FROGS	6	5	N/A	L	L	L	L	L
GOLDEN EAGLE	2	45*	N/A	L	L	L	L	L
GREAT BLUE HERON	2	22	17	H	H	H	H	H
GREAT HORNED OWL	4	16	6	L	H	H	H	H
HORNED LARK	5	10	N/A	L	L	L	L	L
HOUSE FINCH	3	10	N/A	H	L	M	M	M
JAYS	4	15	N/A	L	L	L	L	L
KILLDEER	4	12	12	L	L	L	L	L
MOOSE	1	100	6	L	L	L	L	L

Common Name	General Risk and Hazard Ranking Tools			For This Airport		Risk Assessment by Aircraft Type 4 and Volume		
	Mass/Flock Rank 1	Relative Risk Score 2	TC Hazard Rank 3	Relative Abundance	Hazardous Behaviour	Jet Aircraft	Turbo Prop Aircraft	Piston Aircraft
MOURNING DOVE	3	17	N/A	M	M	M	M	M
MOUSE	6	5	N/A	L	L	L	L	L
MUSKRAT	5	35	N/A	L	L	L	L	L
NORTHERN FLICKER	4	15	N/A	L	L	L	L	L
NORTHWESTERN CROW	3	12	14	H	M	L	L	L
PEREGRINE FALCON	3	35	N/A	L	L	M	L	L
PIPITS	5	10	N/A	L	L	L	L	L
POCKET GOPHERS	4	45	N/A	M	L	L	L	L
QUAILS	5	20	N/A	L	L	L	L	L
RACCOON	4	45	N/A	L	L	L	L	L
RATS	5	5	N/A	L	L	L	L	L
RAVENS	3	12	14	L	L	L	L	L
RED FOX	2	45	N/A	L	L	L	L	L
RED-TAILED HAWK	3	25	4	M	H	H	H	M
RED-WINGED BLACKBIRD	4	9	13	M	M	L	L	L
RING-BILLED GULL	2	22	3	M	H	H	H	M
ROCK PIGEON	3	24	8	M	H	M	M	M
RUFFED GROUSE	2	25	N/A	L	L	L	L	L
SANDHILL CRANE	1	50*	17	L	L	L	L	L
SHARP-SHINNED HAWK	4	20	N/A	L	L	L	L	L
SHOREBIRDS	5	15*	N/A	L	L	L	L	L
SHORT-EARED OWL	4	16	N/A	L	H	H	H	H
SNOW BUNTING	5	10*	14	L	L	L	L	L

Common Name	General Risk and Hazard Ranking Tools			For This Airport		Risk Assessment by Aircraft Type 4 and Volume		
	Mass/Flock Rank 1	Relative Risk Score 2	TC Hazard Rank 3	Relative Abundance	Hazardous Behaviour	Jet Aircraft	Turbo Prop Aircraft	Piston Aircraft
SNOWY OWL	4	16	N/A	L	H	H	H	H
SONG SPARROW	5	4	11	H	L	M	M	M
SWALLOWS	5	2	11	H	L	M	M	M
THRUSHES	4	15	N/A	H	L	M	M	M
TURKEY VULTURE	3	35	N/A	L	L	M	M	M
VESPER SPARROW	5	4	11	H	L	M	M	M
VOLE	5	5	N/A	L	L	L	L	L
WHITE-TAILED DEER	1	100	6	M	M	L	L	L
WILD TURKEY	2	45*	20	L	L	L	L	L
WILSONS WARBLER	4	10	N/A	M	L	M	M	M
YELLOW-BELLIED MARMOT	2	45	N/A	M	L	L	L	L

Note: 1 This mass/flocking score is based on mass and the propensity of a species to flock. The scale is based on 1 being the highest hazard and 6 being the lowest hazard

2 The Dolbeer Ranking System for relative risk; 100 is the highest, and 2 is the lowest. Any ranking with an. (has no reported sightings at YLW)*

3 Transport Canada hazard list;1 is the highest, 20 the lowest, all are hazardous, and the status of some species has changed since the ranks were established.

4 This summary risk rank is based on the three aircraft categories listed in Table 9 and considers the type and number of traffic movements. The scale is based on severity: high, moderate, and low.

The final management priorities provided in Table 12 will be consistent with the information provided in the Risk Assessment Matrix. A change in habitat conditions, wildlife attractants or aircraft type using the airport (e.g., an increase in commuter jets) will result in a re-assessment of risk.

Overall, the final management priority rank should make sense in the context of the information provided in the previous sections of this AWMP. The final rank does not consider how manageable the species might be, just what the current assessment of priority is for this airport.

Table 12. Wildlife Management Priorities for YLW Airport

Management Priority	Species Group
High	European Starling
	Great Blue Heron
	Owls
Medium	Canada Goose
	Hawks/Eagles
	Gulls
	Sparrows and Swallows
	Ducks
	Rock Dove (Pigeons)
	American Kestrel
Low	American Crow
	Black-billed Magpie
	American Goldfinch
	Brewers Blackbird
	Jays
	Coyote
	Pocket Gopher
	White-Tailed Deer
	Domestic Dog
	Moose

In summary, this assessment has:

- screened out those species not considered to be an elevated risk;
- considered the type and volume of air traffic movements at the airport;
- applied a risk assessment matrix to hazardous species; and
- identified management priorities based on the risk assessment.

However, any wildlife species (even those not considered to be an elevated risk) may still, from time to time, represent a risk to aircraft safety or may increase in abundance or change their behaviour and become an immediate concern.

Some of the risk assessments by aircraft type were severe or high, primarily due to the aircraft types and volumes using the airport and existing management activities.

SECTION B – AIRPORT WILDLIFE MANAGEMENT PLAN

13. GOALS AND OBJECTIVES

The Goal of this Airport Wildlife Management Plan (AWMP) is to promote aviation safety for passengers and flight crews by reducing wildlife hazards and associated risks to aircraft and airport operations caused by wildlife activities on and in the vicinity of the airport.

The purpose of Section B is to identify management techniques that will be implemented to address the hazards and risks identified in Section B of this document.

The objectives of Section B of the AWMP are to:

- Determine and implement wildlife management actions for the airport;
- Identify required actions around the airport;
- Establish a monitoring program for all aspects of the AWMP, including performance monitoring and annual reporting;
- Establish communication procedures with respect to wildlife hazards;
- Describe the training program, roles and responsibilities; and
- Identify research needs that would assist the improvement of the YLW Airport Wildlife Management Plan.

14. REVIEW OF AVAILABLE WILDLIFE MANAGEMENT MEASURES

Generally, there are tools and techniques available to manage wildlife hazards associated with airports at an acceptable risk level. Approaches to minimizing the potential for serious strikes at airports have focused on five primary areas (after Jackson, 2001). These are:

- Manipulating habitat and access to habitat at or near the airport ("passive");
- Dispersing, removing or excluding wildlife from the airport ("active");
- Influencing land-use decisions around the airport where they may increase the hazard to aircraft;
- Development of systems to warn of bird strike potential; and
- Development of aircraft and engines able to withstand bird strikes.

In this AWMP, the concern is related to the first three approaches.

Critical to the success of any wildlife management program is the human factor and the development of a Safety Management Systems approach (see Transport Canada, 2001a). This encourages the application of the three "Cs" of leadership. These are:

- **Commitment:** Wildlife management requires commitment at all levels from Senior Management to technical field staff. The available tools must be made to work effectively;
- **Cognizance:** recognizing the hazards and risks and what needs to be done, when, and how, are key to wildlife successful wildlife management; and

- **Competence:** having adequately trained staff that have the ability to "out-think" the wildlife, identify and properly apply the appropriate tools is critical to successful wildlife management. For example, this may involve considering any consequential effects of managing one species on the abundance of another.

In this Section of the AWMP a brief overview of wildlife management techniques is provided in tabular format, based primarily on the Wildlife Control Procedures Manual (Transport Canada, 2002). The Manual provides much more detail on these techniques and should be consulted directly. However, they are repeated here to provide a ready summary of available techniques to compare against the hazard and risk assessments for this airport. It is important to link the actions being taken back to the hazard and risk assessment, as these prioritize the actions to be undertaken.

The active methods are primarily directed at the immediate airport environment. Additional techniques may be available for specific off-site applications (e.g., over-wiring active landfill facilities).

14.1 Passive Techniques

These techniques are generally those that alter habitat or permanently exclude entry (Table 13). Experienced wildlife managers know very well that measures to deter or exclude one species (e.g., short grass) will inevitably attract another species. There is an overriding principle that should be followed with habitat alteration: the minimization of habitat diversity. More diverse habitat means more diverse wildlife species. Managing one group of wildlife species can be easier than addressing a mosaic of species attracted by a variety of habitats through the seasons.

Table 13. Passive Wildlife Management Techniques

Examples	Suggested Approaches (see Wildlife Control Procedures Manual for more details)
Cropland	• Generally, none within 365 m of a runway • Limit to hay, alfalfa, flax, soy, fall rye, wheat, barley, and other cereals, not corn or oats • Avoid ploughing require night-time ploughing, haying; other harvesting controls and no standing bales
Grass	• Manage height according to hazards at the airport • Adaptive management, experimental manipulation at individual airports • Avoid allowing grass to set seed, seed-head suppression • Utilize raptor decoys
Buildings	• Ensure entry holes/crevices are blocked, screened, netting • Influence design of new buildings, slope ledges • Porcupine wire, electric shocking, sticky caulking
Open water, ponds, ditches, stormwater ponds, and poorly drained areas	• Drain, improve drainage • Fill, over-wire, netting, Bird Balls™ • Grade slopes steeply, remove vegetation • Trap mammals (e.g., American Beaver and Muskrat) • Utilize raptor decoys
Shrubs, trees, brush, hedges, woodland	• Remove, including undergrowth and understory layers • Reduce biodiversity, habitat niches

Examples	Suggested Approaches (see Wildlife Control Procedures Manual for more details)
Infield perching features	• Remove • Apply spikes when required
Waste storage	• All disposal containers must be wildlife-proof • Eliminate dumps on the airport
Outdoor picnic areas	• Signage • Provide wildlife-proof garbage containers
All remaining habitats, airport perimeter	• Chain-link fencing, high-tensile fixed knot fencing, • Electro Braid™ fencing, • Buried fences • One-way gates, cattle gates.
Aircraft	• Ensure that bird nesting does not occur within parked aircraft, generally from April 01 to July 30 in Canada. A Requirement for Damage or a danger permit for nest or egg destruction is required because an Airport Permit does not provide authorization for the destruction of either nests or eggs of migratory birds under the Migratory Birds Convention Act.

14.2 Active Techniques

Active techniques fall into two major subgroups. These are:

- Dispersal (various kinds of deterrents, hazing); and
- Removal (live capture, culling)

In the following table (Table 14), the relative efficacy of various techniques is also indicated. Many of these techniques are effective when used as part of an integrated program (e.g., playback of distress calls), but can be markedly ineffective when used incorrectly. For example, birds easily habituate to the playback call in the absence of other management techniques.

Because wildlife species often habituate to non-lethal threats within a few weeks, in the long-term, dispersal techniques are seldom effective unless a clear and present danger is presented to the target species (e.g., with a dog, raptor or live gunshot). The management challenge is to keep wildlife guessing when the threat is real, and when it is not.

Table 14. Active Wildlife Management Techniques

	Technique	Primary Targets	Effect
Non-lethal	Pyro techniques	Birds, some mammals	High
	Gas cannons	Birds, especially migrants	Moderate
	Report Shells	Soaring birds (e.g., gulls)	High
	Lasers	Birds, especially roosting	Moderate
	Falconry	Birds	High
	Border Collies	Birds, some mammals	High to moderate
	Live trapping	Birds, some mammals	Low to moderate
	Playback of distress calls – remote system	Birds	Low to moderate
	Playback – mobile	Birds	Moderate to high
	Flags	Birds	Low to moderate
	Dead specimen birds	Birds	Moderate
	Radio-controlled models	Birds	Low (can be higher)
Lethal	Lethal trapping	Small mammals	Low
	Earthworm sweeping	Earthworms on hard surfaces	Moderate to high
	Surfactant water sprays	Roosting birds	Moderate
	Live-ammunition shooting	Birds, some mammals	High

The advantages and disadvantages of each of these techniques, and the different forms of these techniques, are discussed and reviewed in the *Wildlife Control Procedures Manual* (Transport Canada, 2002b) and in Aerodrome Safety Circular 98-004- TP13029- *Evaluation of the Efficacy of Products and Techniques for Airport Bird Control* (1998).

14.3 Firearms

Firearms are heavily restricted and special permits are required. Special training is required before they are used in or around this airport.

In addition, the use of firearms in Canada (e.g., shotguns, but not typical pyrotechnic launchers) requires the possession of a PAL (Possession and Acquisition License). To obtain this license it is necessary for the individual license holder to undertake the Canadian Firearms Safety Course. A Federal Registration Certificate is also required for individual firearms that identifies to whom they belong. More information can be accessed at: http://www.cfc-ccaf.gc.ca/en/default.asp.

When using firearms, empty casings shall be recovered; they can cause serious damage when ingested into turbine aircraft engines.

Transport Canada's Aerodrome Safety Circular on Pyrotechnic and Firearm Safety at Canadian Airports (ASC 2004-023) should be used as a guide. It provides airport operators with pyrotechnic and firearm safety guidelines to be applied during wildlife management activities. The circular recommends and describes effective strategies to reduce safety risks associated with the use of firearms and pyrotechnics in airport environments.

14.4 Other Permit Requirements

Wildlife management personnel must ensure that all appropriate permits are in place and current prior to operations commencing. This should include the following.

Migratory Birds – Migratory Birds Convention Act (Federal).

Regulations under this Act protect most bird species, including gulls (but excluding, for example, crows and blackbirds) and Permits are required for active scaring as well as the collection, destruction and disposal of migratory birds, eggs, and nests.

Species at Risk Act

The Species at Risk Act (SARA) was proclaimed in June 2003 and is one part of a three-part Government of Canada strategy for the protection of wildlife species at risk. Under this Act, there are several prohibitions that include the destruction of federally threatened or endangered species and their residences. For further details of this act and permitting processes see: http://www.sararegistry.gc.ca/the_act/HTML/Part9a_e.cfm

Fisheries Act

The Fisheries Act prohibits the deposit (direct discharging, spraying, releasing, spilling, leaking, seeping, pouring, emitting, emptying, throwing, dumping or placing) of deleterious substances into waters frequented by fish, such as oceans, rivers, lakes, creeks, and streams, or into storm drains that lead to such waters. A deleterious substance would alter or degrade water quality such that it would harm fish or fish habitat. A deleterious substance can also be stormwater, wastewater, or another effluent that contains a substance in such quantity or concentration that it would, if deposited to waters frequented by fish, degrade or alter fish or fish habitat. Furthermore, the act prohibits impacts to fish habitat including alteration, disruption, and destruction to streams and their respective riparian habitats. Prior to any works conducted within the high-water mark of a stream or riparian habitat, the Department of Fisheries and Oceans may require notification. For further details regarding the issues discussed above, see Sections 34 to 40 of the Fisheries Act at: http://laws.justice.gc.ca/en/F-14/text.html

Provincial and Territorial Regulations

Provincial and Territorial regulations may require a Small Game License or similar to hunt or trap crows, selected blackbirds and most mammals. The use of some chemicals may also be controlled, and provincial or territorial regulations should be consulted.

BC Wildlife Act

Under new Permit Regulations, two basic types of permits may be granted. One can obtain permits that authorize conducting specific activities or exemptions from having to comply with certain regulations. Most permits apply for limited periods of time – usually not more than 5 years.

Authorization permits include:

- Capturing, possessing or importing live wildlife;
- Trapping, hunting or killing wildlife for any of the following reasons: crop protection, population control, scientific research, public safety, or ceremonial, educational or humane purposes; and
- Conducting field dog trials (hazing is not permitted under the Wildlife Act).

Under certain conditions, an exemption permit may be granted:

- Destroying beaver dams or muskrat dens;
- Destroying types of bird nests or eggs; and
- Discharging firearms in a no-shooting or restricted area, or from a vehicle or powerboat.

Species at Risk

The following birds and mammals are listed in the BC Conservation Data Centre. List of elements are either endangered or threatened (Red List), special concern (Blue List) or not at risk (Yellow List) in B.C.

- Blue List: List of ecological communities and indigenous species and subspecies of special concern (formerly vulnerable) in BC.

- Red List: List of ecological communities and indigenous species and subspecies that are extirpated, endangered or threatened in BC. Red-listed species and sub-species may be legally designated as or may be considered candidates for legal designations as Extirpated, Endangered or Threatened under the Wildlife Act. Not all red-listed taxa will necessarily become formally designated. Placing taxa on these lists flags them as being at risk and requiring investigation.

- Yellow List: List of ecological communities and indigenous species that are not at risk in BC.

Table 15. BC Species at Risk

Species	COSEWIC	SARA	BC List
Burrowing Owl	Endangered	Schedule 1	Red
Flammulated Owl	Special Concern	Schedule 1	Blue
Lewis's Woodpecker	Threatened	Schedule 1	Red
Short-eared Owl	Special Concern	Schedule 1	Blue
Yellow-breasted Chat	Endangered	Schedule 1	Red
Western Screech Owl (McFarlane subspecies)	Threatened	Schedule 1	Red
Rusty Blackbird	Special Concern	Schedule 1	Blue
Common Nighthawk	Threatened	Schedule 1	Yellow
American Bittern	None	None	Blue
Barn Swallow	Threatened	None	Blue
Olive-sided flycatcher	Threatened	Schedule 1	Blue
American Avocet	None	None	Red
Great Blue Heron, Herodias Subspecies	None	None	Blue
Swainsons's Hawk	None	None	Red
Canyon Wren	Not at Risk	None	Blue
Lark Sparrow	None	None	Red
California Gull	None	None	Blue
Grizzly Bear	Special Concern	None	Blue
Nuttall's Cottontail	Special Concern	Schedule 1	Blue
Spotted Bat	Special Concern	Schedule 1	Blue
Western Harvest Mouse	Special Concern	Schedule 1	Blue
Woodland Caribou (southern mountain population)	Threatened	Schedule 1	Red
Wolverine (luscus subspecies)	Special Concern	None	Blue
Townsend's Big-eared Bat	None	None	Blue
Merriam's Shrew	None	None	Red
Northern Bog Lemming, artemisiae subspecies	None	None	Blue
Preble's Shrew	None	None	Red
Wolverine	Special Concern	None	None
Fisher	None	None	Blue
Western Small-footed Myotis	None	None	Blue
Fringed Myotis	Data Deficient	Schedule 3	Blue
Bighorn Sheep	None	None	Blue
Great Basin Pocket Mouse	None	None	Red

Integrated Land Management Bureau (ILMB)

In British Columbia, ownership of water and most streambeds is vested in the Crown (Province). The primary provincial statute regulating water resources is the Water Act. Section 9 of the Water Act regulates 'changes in and about a stream' and includes:

- Any modification to the nature of the stream including the land, vegetation, natural environment, orflow of water within the stream; or
- Any activity or construction within the stream channel that has or may have an impact on a stream.

Based on the nature of works in and about a stream, ILMB may require either a Section 9 notification or permit application.

For further details see: http://www.lwbc.bc.ca/03water/licencing/section9/

Riparian Areas Regulations

The Riparian Areas Regulation (RAR), enacted under Section 12 of the Fish Protection Act in July 2004, calls on local governments to protect Riparian Areas during residential, commercial, and industrial development by ensuring that proposed activities and riparian setbacks are subject to a science-based assessment conducted by a Qualified Environmental Professional.

For more information see:
http://wlapwww.gov.bc.ca/habitat/fish_protection_act/riparian/riparian_areas.html

Local By-Laws – Discharge of Firearms

Discharge of firearms within Kelowna city limits is restricted with Bylaw 9779. However, section 4.1 c provides an exemption for: "Any person holding a valid permit, in the form attached hereto as Schedule "A", for the discharge of Firearms issued by the Chief of Police for:" Further part (iv) of the section clarifies "a person who has received authorization, in writing, from the City of Kelowna Airport Manager, for the discharge of a firearm on any land owned or leased by the City of Kelowna at the Kelowna International Airport complex for the purpose of destroying animals or birds which may be or have become a hazard to aviation".

As such, the discharge of firearms may be allowed with suitable permits issued by the city in place.

Official Community Plan

The Kelowna Official Community Plan (OCP) provides regulations regarding riparian setback requirements. However, the city has also adopted the Riparian Areas Regulations (RAR); therefore, setbacks identified in the OCP may be superseded by RAR.

14.5 Outside Airport Boundaries

Although most wildlife management activities detailed in this plan will take place within the airport limits, where most wildlife strikes occur, the immediate surroundings of airports are increasingly being

scrutinized as critical sources for wildlife species that either visit the airport or pass through conflict zones.

In some circumstances, airports may extend their active or passive wildlife management activities beyond the airport boundary. However, the typical tool kit for influencing land use activities outside of the airport includes regulation, outreach, education (wildlife hazard awareness program), discussion and persuasion. The following approaches can be used to influence activities outside the airport.

Airport Zoning Regulations

Airport Zoning Regulations that are established under the Authority of the Aeronautics Act, Section 5.4(2) could be enacted to prohibit land use activities that have been identified as hazardous to aircraft operations. As of July 2004, 55 airports across Canada have a Waste Disposal Clause contained within their zoning regulations.

Government Planners

Engagement in the local planning process is critical to influencing land use change around the airport. The airport operator can open a dialogue with planners, provide materials and copies of the AWMP, and provide a presentation every two years or so on land use issues that affect the airport. It is important to keep this information current and to include all planning partners (i.e., in the case where the airport zone of influence straddles two jurisdictions or where there are two or more tiers of planning authority). In some cases, local Official Plans refer applicants to seek consultation with the Airport Managers when certain changes in land use activities are proposed near the airport.

Local Government

Providing an occasional presentation on wildlife issues at the airport to local, city or regional councils is an important step in influencing future land use change applications; many proponents will "test the water" with local politicians prior to launching a full-scale development application. Having wildlife concerns identified at the earliest possible stage will help encourage positive outcomes.

Land Users

The users of land around the airport can be engaged in a dialogue with the airport. This may be more easily facilitated when these landowners have a direct interest in the airport (e.g., a local farmer who also crops hay within the airport boundary). However, this does not mean that other land users should be excluded. An open house to discuss hazard issues, safety, potential liability, what land users can do to help and how the airport might be able to assist the land users is a useful start. Specific problems may indicate a need to contact individual land users.

Regulatory Agencies

Regulatory agencies may influence a variety of projects from wildlife habitat creation to the design of stormwater management facilities. Without knowledge within the agency of wildlife strike issues, proponents of land use change may find themselves pulled in two different directions. The kinds of agencies that need to be regularly updated on airport wildlife issues include federal, provincial and municipal authorities such as the Federal Department of Fisheries and Oceans, provincial ministries

responsible for natural heritage and land and water resources and Conservation Authorities (or other flood and fill-oriented agencies).

Non-Governmental Organizations (NGOs)

Some of the larger national or provincial NGOs may be involved in habitat creation initiatives and may be included in a stakeholder group (e.g., Ducks Unlimited Canada). Others, such as natural history groups or humane societies, may become important to the airport if wildlife control, especially lethal control, is included as part of the AWMP. Organized public opposition can influence a variety of permit applications, it is therefore important to ensure that these groups are included when appropriate.

In some circumstances, the establishment of a stakeholder committee (a "Wildlife Management Committee") may help foster awareness and support for management actions, and the airport will consider establishing such a committee should the need arise.

15. DETERMINATION OF WILDLIFE MANAGEMENT ACTIVITIES FOR YLW AIRPORT

Section A of this AWMP has presented detailed information on:

- aircraft movement statistics, including types;
- wildlife hazards and their habitats and movements; and
- a risk assessment for this airport.

In Section 14, typical management tools that can be used on and off the airport have been discussed. In the following chapters, management activities that are intended to remove or manage the hazards and mitigate risks created by those hazards will be detailed.

This section has been divided into first, second, and third priorities. The planned activities have been developed from a review of the problem species, what attracts them to the conflict zone (whether on or off the airport), and steps taken to address both the attractants (e.g., short grass, open water, small mammals or worms as food) and the species themselves (e.g., dispersal of gulls).

It is important to note that steady improvement in wildlife management at the airport does not mean that all activities need to be undertaken in the first place. This plan is intended to provide guidance on management priorities. Over the next several years, progress will be made toward plan objectives, as amended from time to time.

15.1 High Priority

Gulls

Management Priority: High

Control techniques to be undertaken:

- Use mechanical sweeping to remove worms from the runway and taxi surfaces.
- Pyrotechnics and report shells (reinforced with lethal control) should be usedwhenever

gulls are seen during wildlife patrols.

- If a gull carcass is recovered, display the carcass in a suitable location visible toother gulls but out of reach of Coyotes may be an effective deterrent.
- Patrols specifically for gulls should be increased when monitoring shows increasedgull activity at the airport.
- All garbage bins on site will be wildlife-proof.

Hawks

Management Priority: High

Control techniques to be undertaken:

- Hawks are perching birds, and the removal or modification of perching sites is recommended.
- Projections placed on post tops effectively discourage perching.
- Minimize food supplies by reducing small-animal populations through vegetation and water-body management.
- Given the broad diet of hawks and the difficulty managing all their food sources, food-supply management should be considered only one aspect of an overall control program.

European Starlings

Management Priority: High

Control techniques to be undertaken:

- Scare tactics, such as shell crackers and noisemakers, are effective with this species, although flocks may simply move from one part of the airport to another.
- Fill holes and cavities and place screens on vents to prevent starlings from nesting in buildings.

Great Blue Heron

Management Priority: High

Control techniques to be undertaken:

- Reduce habitat values in areas frequented by herons.
- Crews should actively scare off birds from the area.
- Pyrotechnics should be used whenever herons are seen during wildlife patrols.

15.2 Moderate Priority

Ducks

Management Priority: Moderate

Control techniques to be undertaken:

- During Peak migratory periods, scare tactics, such as shell crackers, have proven effective in clearing ducks from runways and fields.

Canada Goose

Management Priority: Moderate

Control techniques to be undertaken:

- A zero-tolerance policy will be implemented for geese at the airport.
- Wildlife personnel will use pyrotechnics (if required, reinforced with lethal control) whenever geese are observed in the airfield or reported by staff or pilots.
- Patrols specifically for geese will be increased during fall migration when geese begin to regularly visit the airport.
- Discouraging of nesting should be a priority.

Sparrows and Swallows

Management Priority: Moderate

Control techniques to be undertaken:

- Modify identified roosting sites (e.g. windowsills, ledges, etc.)
- Remove nests as soon as detected (requires permits).
- Place netting on eaves where cliff swallows nest.

American Kestrel

Management Priority: Moderate

Control techniques to be undertaken:

- No direct control possible.
- Indirect control should focus on reducing insect and rodent populations (see rodent section below).
- Modify potential perches using linear spike products.

Rock Doves

Management Priority: Moderate

Control techniques to be undertaken:

- Population control should be implemented to reduce populations.
- Modify identified roosting sites (e.g., windowsills, ledges, etc.) using linear spike products.
- Encourage neighbouring landowners to implement similar dove control measures.

Coyote

Management Priority: Moderate

Control techniques to be undertaken:

- Continue using asphalt tailings at base of perimeter fence to eliminate burrowing.
- Conduct frequent fence inspections to ensure no new entry attempts are made.
- Harass coyotes as required.
- Lethal control may be necessary as a last resort.

15.3 Low Priority

Yellow-belly Marmot

Management Priority: Low

Control techniques to be undertaken:

- Continue the trap and release program.
- Lethal control may be used as a last resort including lethal trapping, poison and firearms.

16. MONITORING

Monitoring is a critically important wildlife management tool. It provides information to assist the Wildlife Management Officer (WMO) in adjusting the program in response to shifts in hazard and risk. Monitoring also provides a tool to demonstrate to regulators and others what the airport has been doing to minimize risks and maximize safety for its staff and the travelling public. This can be particularly important should a litigious situation arise.

16.1 Vortex Wildlife Module

The first step in a good monitoring program is good records–keeping. Strikes will be documented on the day they occur using the Vortex Management System. Regular Daily Wildlife Inspections will be completed to monitor the airfield and approach areas.

16.2 Monthly Review

At the end of each month, the Senior Manager, Operations & Emergency Services (or delegate) will review the Vortex Wildlife Module for any environmental changes or unusual conditions that may have led (or might lead) to unusual wildlife hazard situations or changes in risk assessment.

This review will also ensure changes to the AWMP are captured and addressed in a timely manner.

The monthly review provides an opportunity for any new information on policies, new laws, changes in the status of rare species known to frequent the airport, training programs or management reviews to be written and stored in a readily accessible location.

16.3 Wildlife Strikes

The regulations now require airport management to report all wildlife strikes to Environment Canada (as part of the Kill Permit requirements) and Transport Canada as they occur or to file an annual report detailing all wildlife strikes by March 01 of the following year.

All wildlife strikes are to be recorded in the YLW Operations Software, Vortex. As of 01 October 2018, monthly reports will be automatically sent to TC through the program. However, as a backup option:

When reporting a wildlife strike, the Transport Canada form titled Bird/Wildlife Strike Report number #51-0272 can be used and is available online at: *https://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/bsis/s_r.aspx*

Any information that the airport operator has that is outlined on the form should be included. If strike data become increasingly reliable sources of information, they will also assist in the risk analysis procedure for this airport and future updates to this AWMP.

CADORS will be monitored daily by the Senior Manager, Operations & Emergency Services for wildlife strikes and incursions.

Wildlife strikes are now defined by Transport Canada as occurring when:

- a pilot reports the striking of wildlife;
- aircraft maintenance personnel identify damage to an aircraft as having been caused by a wildlife strike;
- personnel on the ground report seeing an aircraft strike wildlife; or
- wildlife remains are found on an airside pavement area or within 200 feet of a runway centerline unless another cause of death is identified.

Strike data will be entered into the wildlife management database with the required fields of information provided (see Appendix 3 of the *Wildlife Control Procedures Manual*). The software discussed in the preceding section includes a data entry window for wildlife strikes.

At YLW, regular wildlife patrols will note any dead wildlife found within 200 m of the runway centerline, for struck wildlife species. Notation will also be made of any animal remains that are considered non-strikes, prior to their removal.

Where the identity of remains of wildlife species that have been struck is in doubt, parts will be preserved for identification. After taking a digital photograph for the Wildlife Report, remains will be bagged in zip-lock bags (i.e., bones, fur, feathers of different types, bill and feet, but not soft tissues). Specialists may be able to identify a bird from a single small feather, so even if they look unidentifiable, remains should be recovered. Local biologists (ornithologists) should be consulted to identify the remains.

For assistance identifying a species, photographs may be emailed to Transport Canada at (WildlifeControl-Controledelafaune@tc.gc.ca) for assistance in wildlife identification. For DNA sample analysis, remains may be sent to the Guelph University Canadian Centre for DNA Barcoding. The cost for a DNA sample is $250 (in 2018). More information can be found in Advisory Circular (AC) 302-028.

An alternative method for bird remains is feather sampling. Contact the Cowan Tetrapod Avian Forensics Morphology Initiative at the University of British Columba at ildiko@zoology.ubc.ca and indicate the details of your collection

Ildiko Szabo, Assistant Curator
Cowan Tetrapod Collection UBC Beaty Biodiversity Museum
2210 Main Mall, Vancouver, BC V6T 1Z4

WMOs should also consider the collection of any strikes (even those identified) should stomach contents or bird age be a factor for future consideration (i.e., what food source was attracting the bird to the airport?).

In addition to any studies, research, or other new information that is available, the Vortex database and the Monthly Summaries will be carefully examined for information that will assist the required two-year update to this AWMP.

CARS 302-305 (6) (b)

As per Canadian Aviation Regulation 302-305 (6)(b): The operator of the airport shall amend the plan and

submit the amended plan to the Minister within 30 days of the amendment if, an incident has occurred in which a turbine-powered aircraft collided with wildlife other than a bird and suffered damage, collided with more than one bird or ingested a bird through an engine.

17. ESTABLISHMENT OF PERFORMANCE INDICATORS AND SELF-ASSESSMENT

The establishment of performance indicators is critical to help determine the need for enhancement or modification. It is also very necessary because actions to reduce one wildlife hazard will inevitably result in improved conditions for some other wildlife species. When inadvertent effects such as these result in an increase in hazards, this must be recognized and addressed.

The seven primary measurements of performance in this plan are:

- The number of wildlife strikes;
- Strike rate;
- Damage associated with strikes;
- Individual species' hazard assessments;
- Feedback from airport users;
- Risk rankings for this airport; and
- The status of action items that have been recommended in the plan.

Strike data will be generated from the monitoring program and the annual strike report that must be filed with the Minister prior to March 01 of each following year. Although this airport is interested in reducing the overall strike rate independent of air traffic movements, it is true that more strikes are likely when air traffic increases. Therefore, the strike rate will also be measured per 10,000 air traffic movements. A discussion of damage related to strikes will also be provided, as strikes that do not produce much or any damage may not be treated with the same level of concern as damaging strikes.

The hazard and risk assessment will be updated and compared to the previous assessments in the AWMP every two years (or earlier if there is a significant change in hazards or risk). A discussion of any changes will be provided.

Feedback from airport users will be sought and reported in time for each two-year update this will help determine if the wildlife program is being responsive to their needs.

The final performance measurement will be the extent to which action items in the plan have been instigated. A list of action items is provided in Section 17; this will be put into tabular form for the updated AWMP and the status of the proposed actions will be noted.

Taken together, these seven measurements will form an effective and objective measurement of performance of the AWMP for this airport.

18. SUMMARY OF ACTIVITIES AND APPROACHES

Several of the proposed management techniques in the previous sections are duplicated. For example, removing a habitat feature, such as a pond, will reduce the hazards and risks associated with several groups of species (e.g., geese, ducks, and blackbirds).

This section provides a brief bullet point summary of activities and other requirements, such as permits.

Passive

- Continue applying asphalt millings along fence lines to minimize burrowing opportunities.
- Short grass length at the airport will be maintained at 5 cm height.
- A grass management plan will be developed to reduce forbs and promote good grass growth without the use of fertilizer. Seed-head suppression technology will be investigated for application to grass.
- Efforts will be made to find a grass-cutting method for tall grass in wet conditions.
- Riparian vegetation associated with drainage features will be managed to reduce habitat use by species that present collision risks.
- No cereal crops will be grown at the airport.
- All garbage bins on site will be wildlife-proofed.
- Airport policy to ban the feeding of wildlife by staff and visitors.
- Entry holes for starlings and swallows will be identified and filled or covered.
- Deploy predator decoys in infield and ponding areas

Active

- Wildlife patrols will be maintained at irregular intervals throughout the times when the airport is open.
- Sweeping of runway and taxiway areas will be undertaken in spring and fall following the mass emergence of earthworms.
- Wildlife patrols will note any dead wildlife as strikes within 200 ft of the runway or pavement edge.
- Wildlife patrols will photograph any struck wildlife and if necessary, bag some specimen material for identification by specialists.
- Any animal carcasses on the airport or the adjacent road will be recorded, removed by wildlife patrols and disposed of in a manner that makes them unavailable to scavengers.
- Pyrotechnics and report shells (reinforced with live shooting where appropriate) will be used whenever high or moderate-risk species are seen during wildlife patrols.
- Active Coyote dens within the airport will be destroyed during the summer.

Other

- The airport will log data and prepare reports using Vortex.
- Wildlife personnel will identify all, as practical, bird and other mammal species involved in a strike.
- Prepare monthly summaries of bird and wildlife activities and distribute this information to all staff members participating in the wildlife control program.
- An annual strike report will be prepared and submitted to Environment Canada and Transport Canada by March 01 of the following year.

- The AWMP will be reviewed and updated prior to February 2023.

Equipment, Contract Requirements and Permits

- Federal firearm permits and federal kill permits for migratory birds will maintained and include additional species (kill permits for gulls, geese, mallard, and nest destruction permits for Canada Geese, and Cliff Swallows).
- Provincial hunting licenses, trapping permits and other applicable permits will be maintained.
- City of Kelowna permits for discharge of firearms will be obtained prior to any discharge of a firearm.
- Appropriate permits to manage wildlife and to conduct in stream works will be obtained prior to work initiation.

19. COMMUNICATION PROCEDURES

The following communication procedures have been established for the purposes of wildlife management at this airport.

- Information will be provided directly from the field staff on duty to Air Traffic Services (ATS) via radio contact.
- Field staff will be responsible for ensuring that updated wildlife information is provided to ATS immediately if an urgent situation arises and on a regular basis depending on the current conditions, or when requested by ATS. ATS will also relay any information received regarding wildlife observations to field staff in a timely manner.
- ATS will provide information to pilots on current wildlife hazards and will ask pilots to report any wildlife observations to ATS (or UNICOM), especially those observed while taxiing.
- Wildlife activity will be regularly updated on the Automatic Terminal Information Service (ATIS) and or UNICOM.
- YLW Is currently reviewing strike data and proactive response data and determining the best means to communicate hazardous wildlife to pilots (aeronautical publications, NOTAM, etc)

20. TRAINING PROGRAM

The Wildlife Management and Planning Regulation requires that a training program be established for the AWMP in accordance with the airport standards. Properly trained staff to implement the plan, to reassess risks and to provide updates to this plan every two years, is an essential and required part of the regulation.

Effective wildlife management is critically dependent on staff with the tools, knowledge and motivation to complete the task at hand. Transport Canada has a standard training program that is available for wildlife management staff.

The program will address the following:

- Nature and Extent of the Wildlife Management Problem;
- Regulations, Standards and Guidance;
- Ecology and Biology of Key Species;

- *Wildlife Control Procedures Manual* (TP 11500) and *Sharing the Skies* (TP 13549);
- Species of Conservation Concern;
- Liability;
- Habitat Management;
- Issues Outside of the Airport Boundary;
- Active Management;
- Removal Techniques;
- Firearm Safety (a pre-requisite being the Canadian Firearms Safety Course);
- Wildlife Management Planning;
- Development and Implementation of Awareness Programs;
- Monitoring; and,
- Training Record and Schedule.

In addition to training directly associated with wildlife behaviour and the application of management techniques as part of the AWMP, it is essential that safety requirements are fully reviewed and addressed. This should include at a minimum:

- Safe use and storage of pyrotechnics.
- Safe use, storage and maintenance of pyrotechnic launchers; and
- Identification and mandatory use of safety equipment.

The following table (Table 16) details the staff who have attended the training program or are proposed to do so.

Table 16. Training Program

Name	Responsibility/ Title	Attended Training Program	Will Attend Training Program by
Cory Monteith	AOS/FF	June 15, 2023	2027
Cameron Smith	AOS/FF	June 15, 2023	2027
Barb Haley	AOS/FF	June 15, 2023	2027
Tom Bradshaw	AOS/FF	June 15, 2023	2027
Kim Szabadi	AOS/FF	June 15, 2023	2027
Jeff Everett	AOS/FF	June 11, 2023	2027
Dustin Blair	AOF/FF	June 11, 2023	2027
Peter Mazar	AOS/FF	June 11, 2023	2027
Chris Luehr	AOS/FF	June 11, 2023	2027
Wyatt Stewart	AOS/FF	June 15, 2023	2027
Blair Balehowsky	AOS/FF	June 15, 2023	2027
Cody Anderson	AOS/FF	June 15, 2023	2027
Nic Agar	AOF/FF	June 11, 2023	2027
Thomas King	AOS/FF	June 11, 2023	2027
Scott Schlosser	AOS/FF	June 11, 2023	2027
Gregg Bessie	AOS/FF	June 11, 2023	2027
Brent Shannon	AOF/FF	June 11, 2023	2027

Name	Responsibility/ Title	Attended Training Program	Will Attend Training Program by
Justin Reynolds	AOT	June 11, 2023	2027
Shawn Hampson	AOT	June 11, 2023	2027
Leon Smit	AOT	August 10, 2023	2027
Nolan Weidmann	AOT	August 10, 2023	2027
Steve Smith	Chief OPS/Fire	August 10, 2023	2027
Mark Stella	Senior Manager	August 10, 2023	2027

Possession & Acquisition Licence (PAL):

- Cory Monteith
- Cameron Smith
- Barb Haley
- Tom Bradshaw
- Kim Szabadi
- Jeff Everett
- Dustin Blair
- Peter Mazar
- Chris Luehr
- Wyatt Stewart
- Blair Balehowsky
- Cody Anderson
- Nic Agar
- Thomas King
- Scott Schlosser
- Gregg Bessie
- Brent Shannon
- Justin Reynolds
- Shawn Hampson
- Leon Smit
- Nolan Weidmann
- Steve Smith
- Mark Stella

21. ROLES AND RESPONSIBILITIES

The Senior Manager, Operations & Emergency Services, will be responsible for implementing this AWMP. This includes acquiring various permits, providing training and awareness programs, and reviewing and submitting the annual strike reports and AWMP updates.

The MOES, or designate, will be responsible for coordinating, supervising and the overall management of the AWMP on a long-term and daily basis at the site-specific level. This will include the co-ordination of training, safety assurance and ensuring that the necessary equipment is available.

The Senior Manager, Operations & Emergency Services will be responsible for:

- Establishment and maintenance of the Vortex Wildlife Module (e.g., including strike data, details on wildlife numbers and activity; AWMP measures undertaken, firearm use details; details on the use of lethal reinforcement and monthly summaries);
- Co-ordination of the entire monitoring program;
- Preparation of the annual strike report;
- Ensuring that Airport operations are consistent with the requirements of the AWMP;
- Ensuring that the appropriate permits are current and present on-site;
- Undertaking deterrent activities;
- Ensuring all activities are undertaken following standard practices and safety protocols; and

- The identification of equipment, resources and training needs.

The following table identifies the key roles and responsibilities under this plan.

Table 17. Key Roles and Responsibilities

Name and Contact Telephone Number	Title	Key AWMP Responsibilities
Mark Stella **250-807-4318** **Steve Smith** **250-807-4319**	*Senior Manager, Operations & Emergency Services* *Chief Operations & fire*	• Implementation of this AWMP • Acquisition of the various permits • Provision of training and awareness programs • Review and submission of the annual strike reports and two-year updates • Coordinating, supervising and the overall management of the AWMP. Nomination of the key Wildlife Management Officer(WMO) (Nic Agar or designated crew captain) • Co-ordination of training, safety assurance • Ensuring that the necessary equipment is available
	Wildlife Personnel AOS/FF AOT	• Maintenance of the Vortex Wildlife Module (e.g., including strike data, details on wildlife numbers and activity; AWMP measures undertaken, firearm use details; details on the useof lethal reinforcement and monthly summaries); • Co-ordination of the monitoring program; • Preparation of the annual strike report; • Ensuring that Airport operations are consistent with therequirements of the AWMP; • Ensuring that the appropriate permits are current and present on-site; • Undertaking deterrent activities; • Ensuring all activities are undertaken following standardpractices and safety protocols; and, • The identification of equipment, resources and training needs. • Filling in for WMO during vacations, lunch, sick time etc.

22. AIRPORT POLICY THAT PROHIBITS THE FEEDING OF WILDLIFE AND THE EXPOSURE OF FOOD WASTE

As per CAR 302.306(e), an airport policy regarding a ban on the feeding of birds/Wildlife by staff and visitors should be posted at the terminals as well as outside of the fence where the public often watches aircraft takeoffs and departures. Recreational fields, Dog Park and Shadow Ridge Golf Course must be managed to eliminate access to food waste and litter in the area. All waste disposal containers should be covered, and signs should be posted making the public aware of the hazards associated with feeding the birds/Wildlife.

23. RESEARCH PROJECTS

Occasionally a research need will be identified. This may be related to a proposed change in habitat management. A good example is changes to grass height, which are very much airport specific. When a target grass height is increased for infield grass to dissuade certain species (e.g., European Starlings and Killdeer), this may increase habitat opportunities for other species (e.g., Sandhill Cranes and deer). A small-scale research project may be needed to determine which option works best in the overall framework of wildlife management.

Any necessary studies to ensure that the proposed habitat change has no unacceptable effects and does not outweigh the benefits will be documented in this section in future updates to this AWMP. Documentation will include a summary of the purpose and objectives of any initiatives, the methods to be employed to satisfy the objectives, and timelines for the project. Future updates or special reports (e.g., to Bird Strike Committee Canada) will provide the results of the research.

Current priorities for research at this airport are:

- Blue Heron habitat mitigation/population control;
- Spatio-temporal movement patterns for flocking birds;
- Evaluation of fence modification on coyote entry frequencies;
- Evaluation of in-stream modifications on wildlife abundance and use; and
- Impacts of habitat quality reduction (installation of gravel) on rodent populations.

APPENDIX A: BIBLIOGRAPHY

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APPENDIX B: YLW WILDLIFE MANAGEMENT PLAN SIGN-OFF SHEET

The following individuals have read this Plan and understand their role in implementing it at this airport.

Signature	Responsibility/Title	Date

APPENDIX C: STRIKE TABLE

Species	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
AMERICAN KESTREL	1										1			1					
AMERICAN ROBIN	2	1				1				1		1							
BALD EAGLE					1														
BATS		1				1													
BLACK-BILLED MAGPIE		2		1			2	4							1				
BOHEMIAN WAXWING		1																	
CALIFORNIA GULL				1															
CANADA GOOSE						1													
CHICKADEES	1	2																	
CHIPPING SPARROW		1				1													
COOPER'S HAWK							1												
COYOTES	1																		
DUCKS	1	2	1				1	1	3		2							2	
EUROPEAN STARLING	1	5	3	3	3	6													
GREAT BLUE HERON		1	4		1	1	1	2	1	1				1		1		1	
GREAT HORNED OWL	1		1							1			1			1			
GULLS									2		1	1	2		1				
HAWKS							1	4	1	2							1	1	
HORNED LARK		1																	
HOUSE FINCH	2			1						1									
MOURNING DOVE		1			1									1					
NORTHERN FLICKER		1																	
NORTHWESTERN CROW		1				1													
PIPITS		2																	

PIGEONS								1	1				1		2			1	1
QUAILS																		1	
RATS		1																	
RAVENS	1																		
RED-TAILED HAWK	3	2	2	3	3	3	3												
RING-BILLED GULL			1			1													
ROCK PIGEON				1	1														
RUFFED GROUSE			1																
SNOWY OWL													1						
SONG SPARROW	3	3	4	2	2	5													
SPARROWS							1	1	4	8	8	5	1	1	8	2	2	2	
STARLINGS								2		11	3		1	3	1	1	2	1	
SWALLOWS	1	2			1	1	3			2	3	3		2		3		2	1
THRUSHES																		1	
VESPER SPARROW		1																	
VOLE			1																
UNKNOWN Species	7	12	12	6	3	14	18	6	15	35	16	14	10	10	5	15	9	7	13
TOTAL	**25**	**43**	**30**	**18**	**16**	**36**	**31**	**21**	**27**	**62**	**34**	**24**	**17**	**19**	**18**	**23**	**14**	**19**	**15**