Hinton Wood Products
A division of West Fraser Mills Ltd.

Edson Forest Products
A division of West Fraser Mills Ltd.

Common Nighthawk
Habitat Conservation Strategy


Photo Credit © Cleber Ferreira

Version 1
September 24, 2014

Common nighthawk foraging habitat at Maxwell Lake, Hinton, Alberta. Common nighthawks are infrequently observed foraging over the water at dusk on warm evenings during the breeding season.

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SUMMARY

The common nighthawk (*Chordeiles minor*) is a migratory songbird that breeds on the FMA and winters in South America. Common nighthawk (CONI) populations in Canada declined at an annual rate of 4.2% over a 37 year period between 1968 and 2005 including a 49.5% population decline (6.6% annual rate) over the 10-year period from 1995 to 2005 (EC ref).

Reasons for the declines are not clear. Potential factors in Canada include changes in food availability (flying insects). Other factors include "*habitat loss and modification, particularly the reforestation of abandoned agricultural fields and harvested forests; fire-fighting efforts; intensive agriculture; and the gradual reduction of the number of buildings with flat gravelled roofs in urban areas. The increased predator population (specifically, domestic cats, striped skunks, raccoons, American crows, and common ravens) may contribute to this species' decline, particularly in urban areas. Other possible factors include collisions with motor vehicles and climate change*." (Environment Canada 2014). Factors related to migration and wintering habitat could also be important but little is known about these.

The Canadian population of the common nighthawk was designated as Threatened in SARA Schedule 1[1] in 2010. Environment Canada is developing a Recovery Strategy.

Common nighthawks catch flying insects, especially flying ants and beetles, captured while the birds are in flight. They are most active at dawn and dusk and are associated with open habitats during the breeding season. The species is widespread but uncommon on the FMA. Observations have occurred over water bodies and along water body margins, and in areas with burned forest, early seral cutblocks, and other open areas. No nests have been found.

Common nighthawks nest on the ground in open areas with no or sparse vegetation, including "*…a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks.*" (Environment Canada 2014).

Recent cutblocks, burned areas, and anthropogenic bared areas and flat-roofed structures are potential breeding habitat. Application of the Natural Forest Management approach should provide breeding opportunities for common nighthawk and also support production of preferred food resources. West Fraser maintains a record of sightings on the FMA.

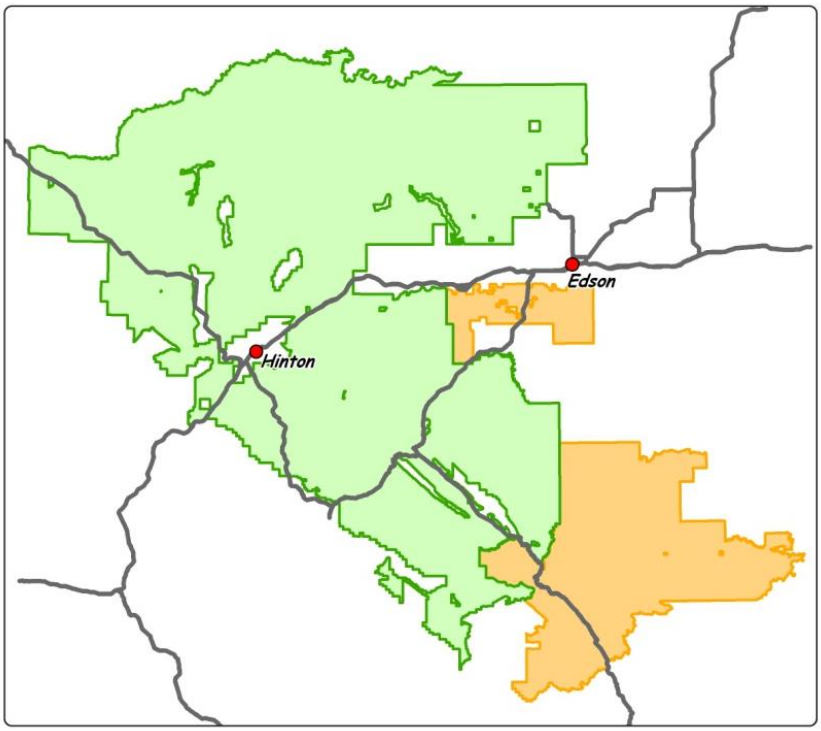
Photo Credit © Kent Keller

[1] http://www.sararegistry.gc.ca/default_e.cfm

PREFACE

Hinton Wood Products and Edson Forest Products are Divisions of West Fraser Mills Ltd. Hinton Wood Products manages Forest Management Agreement 8800025 and Edson Forest Products manages Forest Management Agreement 9700032. The Forest Management Areas (FMA) associated with the Agreements border each other in west central Alberta. Each has a separate Forest Management Plan. A single Woodlands Department (hereafter, West Fraser) representing Hinton Wood Products and Edson Forest Products manages both FMA.

West Fraser is certified to the Sustainable Forestry Initiative[2] Standard, which requires signatories to have biodiversity conservation programs, especially for species at risk designated by relevant governments. The West Fraser Species at Risk (SAR) Guide (West Fraser 2013) describes species and ecological communities that are mandatory content to meet SFI requirements, plus additional species and communities that West Fraser includes as voluntary good practice. The SAR Guide is a document that provides identification and basic forest management direction for each species or community. The SAR Guide references a more detailed Species Conservation Strategy, which contains additional information about West Fraser habitat management to direct forest management and conservation.



Hinton Wood Products (green) and Edson Forest Products (yellow) Forest Management Areas.

West Fraser has one target related to Species Conservation Strategies:

1. Target #1 – Complete species conservation strategies for all species at risk (SARA and Alberta designations) within 6 months of designation, update strategies at least every 2 years and report on results of strategies annually.

Species conservation strategies are developed by West Fraser and reviewed, endorsed, and approved as a cooperative program between West Fraser and Alberta Environment and Sustainable Resource Development.

[2] http://www.sfiprogram.org/

INTRODUCTION

The common nighthawk (*Chordeiles minor*) is a migratory songbird, the only member of the nightjar family that occurs in the FMA. It is a medium sized bird (24 cm length) slightly larger than a robin with a slender body, very long pointed wings, and a long tail. The overall colour is grey with black and buff barring. The wings have prominent white slashes that are only visible in flight. The bill appears to be very small in proportion to the head, but the bird is capable of opening its bill wide to catch insects. Common nighthawks perch motionless in the open during the day and their cryptic plumage provides excellent camouflage. In the breeding season the common nighthawk is conspicuous in flight with the white wing slashes. The birds are vocal in flight with a loud distinctive "*peet"* call and a booming sound created by wind rushing over wing feathers of males pulling out of a dive in courtship flight.

The common nighthawk breeds across Canada from the treeline south, the continental USA, and south along the Pacific Coast to Mexico and Central America (Figure 1). It winters in South America.

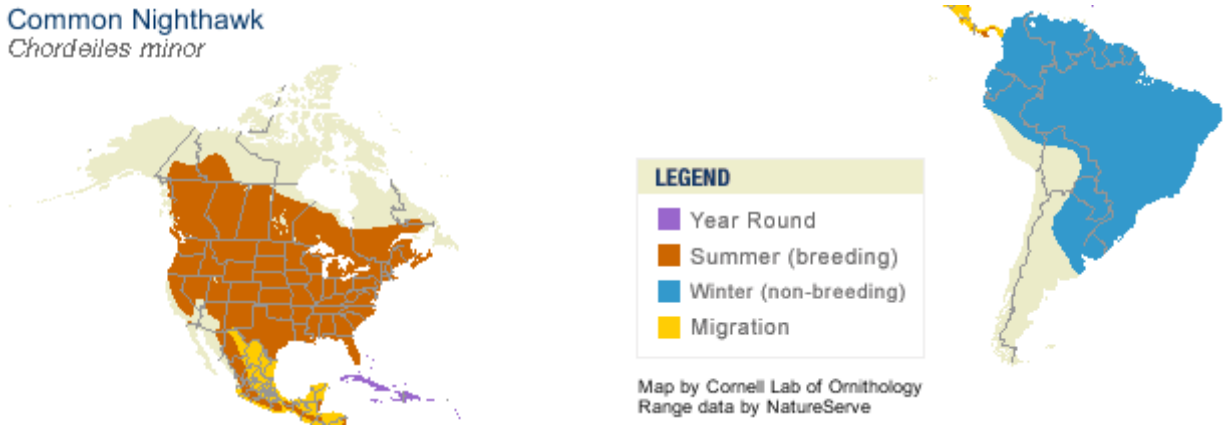


Figure 1 – *Global range of the common nighthawk (breeding range in orange on left and winter range in blue on right), from Cornell Lab of Ornithology (2014)*

The common nighthawk breeds in open areas with no vegetation or sparse vegetation. Potential sites on the FMA include gravel bars along waterways, recently burned areas and recent cutblocks, and various bared areas (roads, gravel pits, wellsites, pipelines, etc.) with low levels of human activity. This species does not build a nest, and clutches consist of 2 heavily spotted eggs laid directly on the ground. Both sexes are aggressively territorial at the nest site, so nests are located far from one another. The females do most of the incubation and often leave the eggs exposed when feeding in the evening. Females do not flush from nests until intruders are very close, and they often use a distraction display in an attempt to divert attention away from the nest. Both sexes hiss and dive at intruders near nests and young.

Alberta records usually occur from mid-May to September. Common nighthawks are most commonly seen in open areas with lots of flying insects on warm evenings. The species occurs infrequently in the FMA region (Figure 5, Appendix 3).

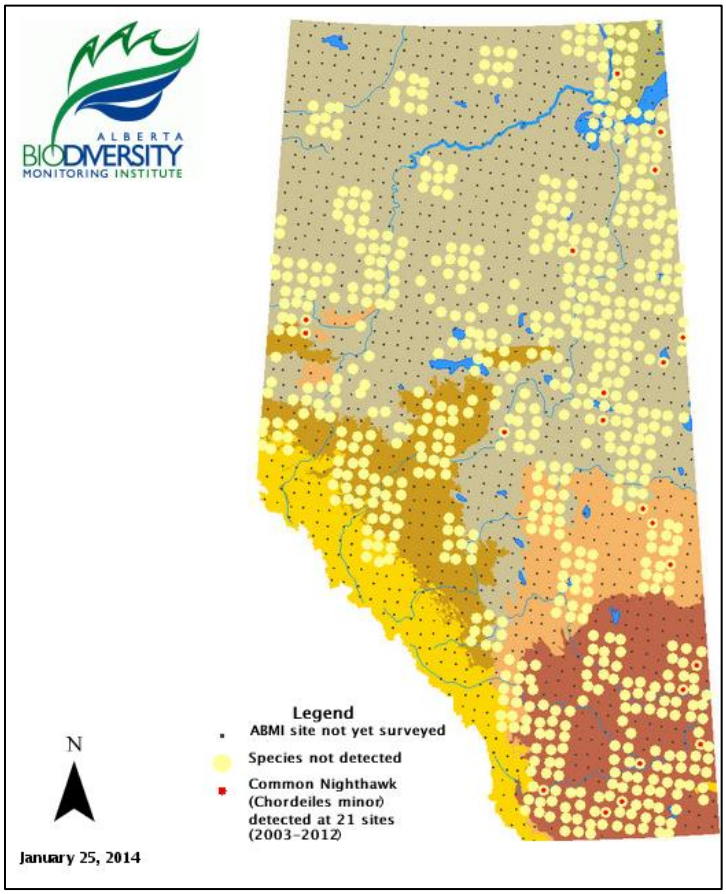


Figure 2 – *Common nighthawk observations in Alberta, Canada, from Alberta Biodiversity Monitoring Instityte 2014*

Figure 3 – *Common nighthawk nest. Eggs are laid directly on the ground, no nest structure is built*

CONSERVATION STATUS

The IUCN Red List of Threatened Species ranked the common nighthawk as Least Concern in 2012 (Bird Life International 2012). The Canada population of the common nighthawk was designated in the Species at Risk Act Schedule 1 as Threatened in 2010. The most recent Alberta general status evaluation for the common nighthawk was Sensitive (ASRD 2010). The common nighthawk has not been evaluated by the Alberta Endangered Species Conservation Committee and is not designated under the Alberta Wildlife Act.

Table 1 – *Conservation status of the common nighthawk*

Year	IUCN	Year	COSEWIC/SARA	Year	Alberta Wildlife Act
2012	Least Concern	2010	SARA - Threatened	2010	Sensitive[1]
		2007	COSEWIC - Threatened	2005	Sensitive[1]

[1] This is a prioritization ranking from the General Status of Alberta Wild Species reports (ASRD 2005, 2010). It is not an official designation under the Alberta Wildlife Act.

POPULATION STATUS

A widespread and consistent overall common nighthawk population decline of 80% (4.2% average annual decline) from 1968 to 2005 was estimated using Breeding Bird Survey (BBS) data. The causes of the decline are uncertain (COSEWIC 2007). The estimated world population was about 4,000,000 in 2005, with 400,000 (10%) breeding in Canada (COSEWIC 2007).

More recent updates in BBS trends (Figure 5, Environment Canada BBS 2014) show that the long-term decline continued at a lower rate.

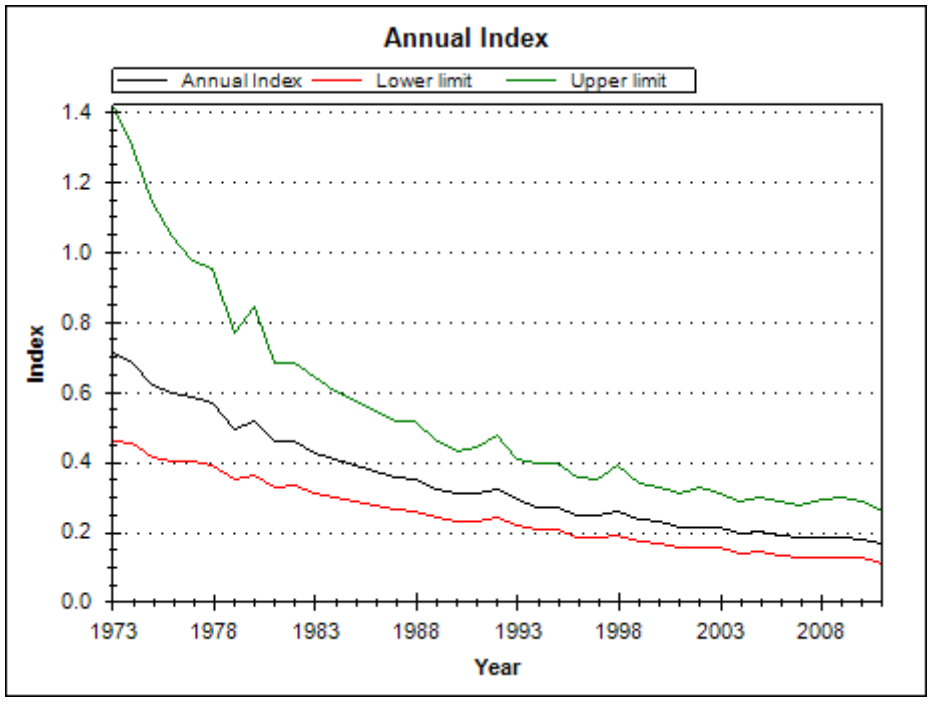


Figure 4 – *Annual indices of population change for the common nighthawk in Canada based on Breeding Bird Survey data 1973–2011, from Environment Canada Bird Trends Database 2014*

The common nighthawk was recorded as part of the Alberta Breeding Bird Atlas project throughout Alberta (Semenchuk 1992, Federation of Alberta Naturalists 2007).

The common nighthawk was detected at 21 of 721 sites surveyed by the Alberta Biodiversity Monitoring Institute from 2003-2012 (Figure 2).

FMA OBSERVATIONS

The common nighthawk was observed (6), possible breeding (4), probable breeding (0), or confirmed breeding (1) in 11 of 60 100 km2 squares that overlap the FMA surveyed for the first Alberta Breeding Bird Atlas (Semenchuk 1992) and observed (1), possible breeding (7), and probable breeding (5), or confirmed breeding (1) in 14 of 47 squares for the second Atlas (Federation of Alberta Naturalists 2007). There were declines in the Boreal Forest, Foothills, Grassland, and Parkland Natural Regions between the two Atlas periods.

In 2011 West Fraser started to maintain a database of FMA sightings (Appendix 2) which will be entered into the eBird[3] online database and updated as new observations are recorded.

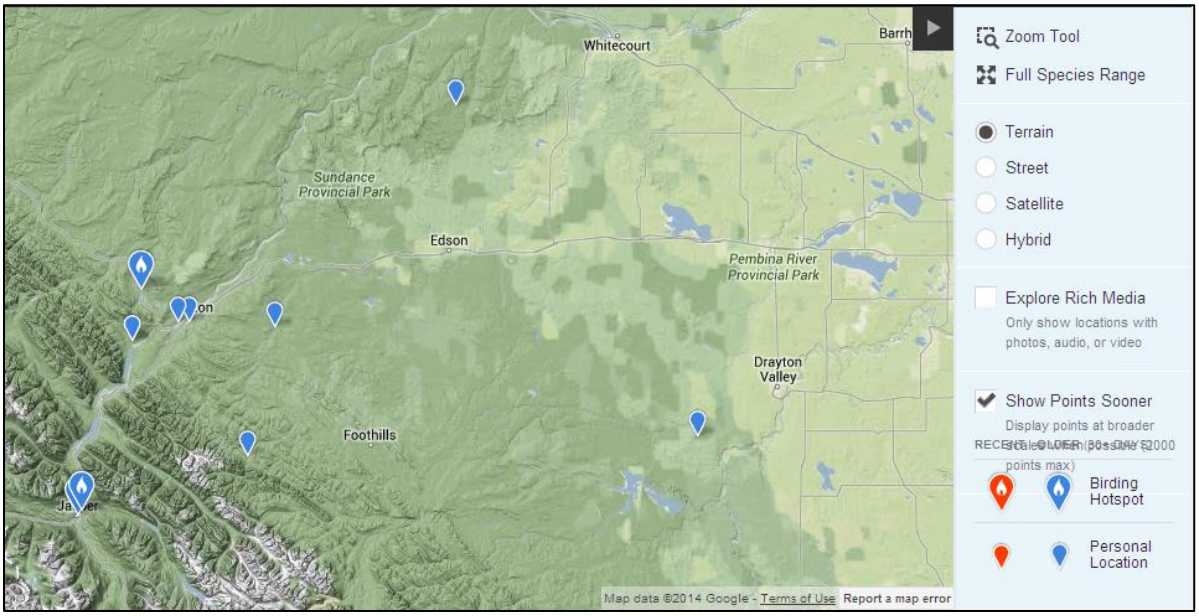


Figure 5 – *Common nighthawk occurrences in FMA region from eBird online database, downloaded on January 21, 2014*

LIMITING FACTORS

Habitat Loss and Alteration

Breeding Range – The breeding distribution of the common nighthawk is extensive and has not significantly changed over time (Brigham et al. 2011). There is no quantified estimate of changes to breeding range habitat, but experts (COSEWIC 2007) think that the overall amount of habitat on breeding range may have declined in portions of the range, particularly in the eastern part of North America. Afforestation of abandoned agricultural fields, fire suppression, and reforestation of cutblocks were cited as potential factors associated with forest management (COSEWIC 2007).

Common nighthawks nest in recently harvested cutblocks with low vegetation cover and also in bared areas associated with roads, landings, borrow areas, wellsites, pipelines, etc. No nests have been found in the FMA region. Little is known about the specific habitat needs that govern nest site selection, including proximity to foraging areas. Specifically, there is currently no information that could help forest managers create suitable habitat through harvest design and silviculture practices.

Winter Range – The winter range for the common nighthawk in South America is large (Figure 1). Distribution in South America is not well understood because it is difficult to distinguish between common nighthawk and the similar lesser nighthawk (*Chordeiles acutipennis*), and between migrant and resident common nighthawk (Brigham et al. 2011). Habitat loss

[3] eBird http://ebird.org/content/canada

and alteration on winter range is not well understood (COSEWIC 2007). Habitat loss or alteration on the wintering grounds is suspected as a main cause for the population decline, but the theory remains unproven.

Migration Habitat – Little is known about common nighthawk habitat requirements and use during migration. The species does not store sufficient resources to make long-distance flights and is typically not well-represented in migration monitoring station data.

Food Supply

The common nighthawk is an aerial insectivore (catches flying insects on the wing for food). There has been a general decline in aerial insectivore bird species since the mid 1980s and long-distance migrant species from the east and north of North America have declined the most (Nebel et al. 2012). Nebel et al. (2012) speculated that wide-spread changes in populations of flying insects related to acid rain or pesticide use could be a potential factor in aerial insectivore declines.

Predation

There is no information related to predation of adult common nighthawks. Potential predators of adults, nestlings, and eggs include most mammalian and avian species that would take prey of this size.

Other Factors

There is no information on the role of accidents, parasites and diseases, human activity, weather, etc. in relation to the common nighthawk.

HABITAT CONSERVATION STRATEGY

Roles and Responsibilities

West Fraser has no responsibility for management of common nighthawk. Commitments made in this document relate specifically and only to West Fraser management of the FMA and potential associated impacts on common nighthawk conservation. Other factors that may affect conservation of the common nighthawk are beyond the responsibility of West Fraser. As part of the West Fraser stewardship commitment West Fraser will consider and may partner with Alberta and others in their conservation programs.

West Fraser and Alberta are jointly responsible for developing, implementing, monitoring, and improving this HCS. Periodic revisions will be endorsed by the parties and the most current version of the HCS will be approved as part of FMP revisions.

West Fraser and Alberta will work together to implement a monitoring program and related investigations that may be commenced if conservation objectives are not being met.

Goals

The West Fraser goal is to contribute to long-term conservation of common nighthawk by applying the Natural Forest Management approach to manage the FMA. This will provide a continual supply of potentially-suitable common nighthawk breeding habitat. The HCS will be reviewed and revised as new information is acquired.

Forest Management Plan

Common nighthawks are associated with bare ground and recently disturbed open habitats, especially after burns and other disturbances and near edges and openings. This type of habitat is produced after forest fires and harvesting, as well as in areas with bared areas including natural areas (e.g. gravel bars) and anthropogenic areas (e.g. roads, landings, gravel pits, wellsites).

The Natural Forest Management approach will be applied to manage a continuing supply of suitable nesting habitat over time.

Landbase Designation

Common nighthawk habitat management does not require adjustments to the FMP landbase designation.

Management Strategy

The FMP Management Strategy includes the following considerations for common nighthawk habitat:

Active Landbase

- Apply the natural pattern approximation approach to develop the Spatial Harvest Sequence.

Passive Landbase

- Cooperate with any government-led activities to disturb the passive Landbase.

Natural Disturbance Salvage

- The cumulative total area of unsalvaged natural stand replacing disturbances will be at least 25% of area disturbed based on a 20 year rolling average.
- Apply Natural Forest Management procedures and practices to ensure retention of un-salvaged trees and patches at the salvage planning and operations stages.

Human Footprint

- Maintain some inactive and deactivated footprint sites that may provide nesting sites for common nighthawks. The normal practice of minimizing footprint should still provide adequate nesting opportunities for common nighthawk.

Habitat Risk Assessment

Common nighthawks breed in early seral habitat produced by harvesting but little is known about nesting success and local habitat characteristics (amount of structure retention, proximity to water, age window following harvest, etc) that distinguish between used and non-used habitat. Possible conservation issues include:

1. Harvest-origin and other anthropogenic-origin habitat may not have appropriate low vegetation areas to attract breeding common nighthawks.
2. Harvest-origin and other anthropogenic-origin habitat may attract larger numbers of predators that may impact breeding success, creating an ecological trap situation.
3. Suitable nesting sites may not be located close enough to foraging areas where nesting birds can obtain enough food to reproduce.

The conservation risks of the identified issues are discussed individually in this HCS and a risk assessment matrix is included in Appendix 1.

Harvest Design and Schedule

Common nighthawk habitat management does not require adjustments to the Spatial Harvest Sequence harvest design and schedule.

Access Management

Common nighthawk habitat management does not require adjustments to access management. The normal practice of minimizing footprint should still provide adequate nesting opportunities for common nighthawk, including inactive and deactivated sites.

Final Harvest Plans

Common nighthawk habitat management does not require adjustments to Final Harvest Plans.

Harvest Planning and Operating Ground Rules

Common nighthawk habitat conservation does not require changes to the Harvest Planning and Operating Ground Rules, which will be applied with site-specific judgment. Common nighthawks may breed in harvested areas for a few years post-harvest.

MONITORING

FMA sightings will be reported to the eBird online database.

RESEARCH AND CONTINUAL IMPROVEMENT

Knowledge needs include:

- Characterization of any breeding sites on the FMA.

New information related to these and other questions will be regularly reviewed and incorporated into revisions of the common nighthawk conservation strategy.

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Appendix 1 – *Common nighthawk risk assessment matrix*

Activity	Aspect	Impact	Probability	Severity	Risk	Strategy
Harvesting and site preparation	Insufficient bared areas to attract breeding CONI	Fewer breeding sites	Improbable – most cutblocks have bared areas associated with block roads	Low – CONI are very uncommon	D	Continue normal practices
Harvesting and site preparation	More nest predators than in natural habitats	Reduced nesting success	Unknown – no information	Low – CONI are very uncommon	D	Continue normal practices
Fire suppression	Less burned forest over time	Fewer breeding sites	Occasional – Fire occurrence is reduced compared to natural range of variation	Low – CONI are very uncommon	D	Replace burned forest with harvested forest
Access management	Reduced access footprint	Fewer breeding sites	Probable – Minor differences over time	Low – CONI are very uncommon	D	Apply access management
Other footprint management	Reduced footprint	Fewer breeding sites	Improbable – postfire salvage retention will occur	Low – CONI are very uncommon	D	Apply postfire retention practices

Activity – an activity that may result in a negative effect on conservation.
Aspect – the presumed result of the activity.
Impact – the negative conservation effect.
Probability – the frequency that the impact may occur. Nil: Activity not currently undertaken; Improbable: Likely to never happen; Remote: Less than once a year; Occasional: Monthly to yearly; Probable: Weekly to monthly; Frequent: Daily to weekly.
Severity – the level of severity that the impact could cause. Each of 5 severity aspects is rated on a scale of 1 – 3, with 1 = low, 2 = medium, and 3 = high. Aspects are: size of the impact, duration of the impact, cost of changing the impact, likelihood of recovery after the impact occurs, and length of time for recovery to occur. Each aspect is scored, and the total Severity score is Negligible 0 – 6; Minor 7 – 9; Major 10 – 12, and Catastrophic 13 – 15.
Risk – a combination of Probability and Severity according to the Risk table:

Risk evaluation table

Probability of impact	Severity of impact			
	Catastrophic	Major	Minor	Negligible
Frequent	A	A	A	C
Probable	A	A	B	C
Occasional	A	A	B	D
Remote	A	B	C	D
Improbable	B	C	C	D

Appendix 2 – *Common nighthawk sightings on the HWP and EFP FMAs*

Date	Observer	Location	Description
1974-06-10	Wayne Renaud	Windfall Creek	Species observed
2012-06-20	Rick Bonar	McLeod River riparian trials	1 bird flying over pond
2011-05-29	Gerald Romanchuck and Steve Knight	Cadomin	Species observed
2000-06-17	Beth MacCallum	Switzer Park	1 bird Jarvis Creek
2008-05-30	Beth MacCallum and Linda Morgan	Solomon Pond	1 bird observed
2010-09-14	Rick Bonar	Maxwell Lake	1 bird flying over lake
2010-06-10	Rick Bonar	Maxwell Lake	2 birds flying over lake
2010-06-08	Rick Bonar	Maxwell Lake	1 bird flying over lake
2010-06-07	Beth MacCallum	Moberly Drive, Hinton	1 bird observed