



**Hinton Wood Products**  
*A division of West Fraser Mills Ltd.*



**Edson Forest Products**  
A division of West Fraser Mills Ltd.

## **Olive-sided Flycatcher Habitat Conservation Strategy**



Photo Credit: Northwest Territories

**Version 1**  
**October 21, 2014**



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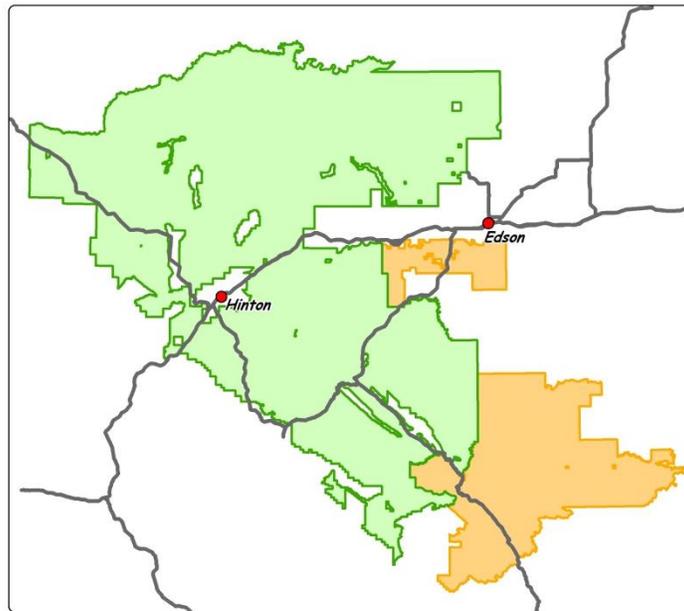
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## PREFACE

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<sup>1</sup> 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.

<sup>1</sup> <http://www.sfiprogram.org/>

## SUMMARY

The olive-sided flycatcher (*Contopus cooperi*) is a migratory songbird that breeds on the FMA and winters in northern South America. Olive-sided flycatcher (OSFL) populations in Canada declined by more than two-thirds from historic levels over a 30 year period before population size stabilized since approximately 2000. Most of the declines were in eastern Canada and no declines were evident in western Canada. Reasons for the declines are not clear. There has not been much change in breeding range habitat, especially in western Canada. Winter range habitat has been significantly altered. The Canadian population of the olive-sided flycatcher was designated as Threatened in SARA Schedule 1<sup>2</sup> in 2010. Environment Canada is developing a Recovery Strategy.

OSFL catch flying insects by hawking from prominent perches in snags and trees. OSFL are associated with open habitats during the breeding season. The species is widespread but uncommon on the FMA. Observations occurred in burned forest, along water body margins, and in early seral cutblocks.

Recent cutblocks with structure retention are potential breeding habitat. Application of the Natural Forest Management approach should provide breeding opportunities for OSFL. Retention of some naturally burned forest and structure retention when salvage harvesting burned forest should benefit the species.



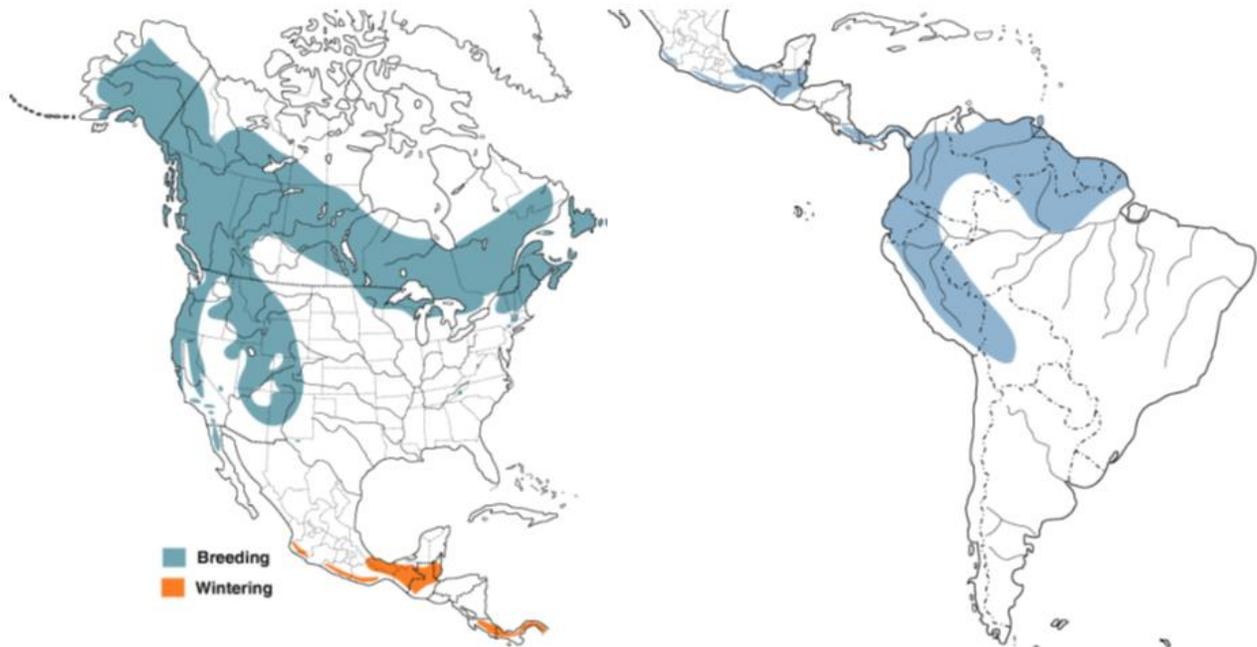
*Olive-sided flycatcher breeding habitat, White Creek area, Hinton Wood Products Forest Management Area, June 22, 2012. Male bird was calling and foraging from perches in snags along wetland border.*

<sup>2</sup> [http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm)

## INTRODUCTION

The olive-sided flycatcher (*Contopus cooperi*) is a migratory songbird, the largest member of the wood peewee genus. It is a large, stocky flycatcher with a relatively short tail. The overall colour is olive-grey. The breast is grey on the sides and white in the centre, giving a “vested” appearance. In the breeding season the OSFL is conspicuous with a loud call and typically perches on a prominent snag or tree in open areas.

The olive-sided flycatcher breeds across Canada and Alaska and down the west coast of the USA as far as northern Mexico (Figure 1). There are also isolated populations in several states in the eastern USA (IUCN 2011). It winters primarily in Panama and the Andes Mountains, from north and west Venezuela south through Ecuador to south-east Peru and west Bolivia. Casual wintering also occurs in Guiana, Trinidad, south Venezuela, Brazil and south Peru (IUCN 2011).



**Figure 1** – Global range of the Olive-sided Flycatcher (wintering range in orange on left and blue on right), from Altman and Sallabanks (2000).

The olive-sided flycatcher breeds along forest edges and openings, semi-open forest, water edges and harvested forest where some structure has been retained. Recently burned forest, especially burned coniferous forest, is a preferred main habitat. Prominent trees serve as singing and foraging posts. This species forages on large flying insects (bees, wasps, ants, large flies, beetles, dragonflies, etc) that it catches on the wing. Nests are placed on a branch in conifers, often spruce or fir, and living trees are preferred for nesting but not essential. Both sexes are aggressively territorial. The three-note male song is very loud and distinctive and can be heard for up to 1 km away.

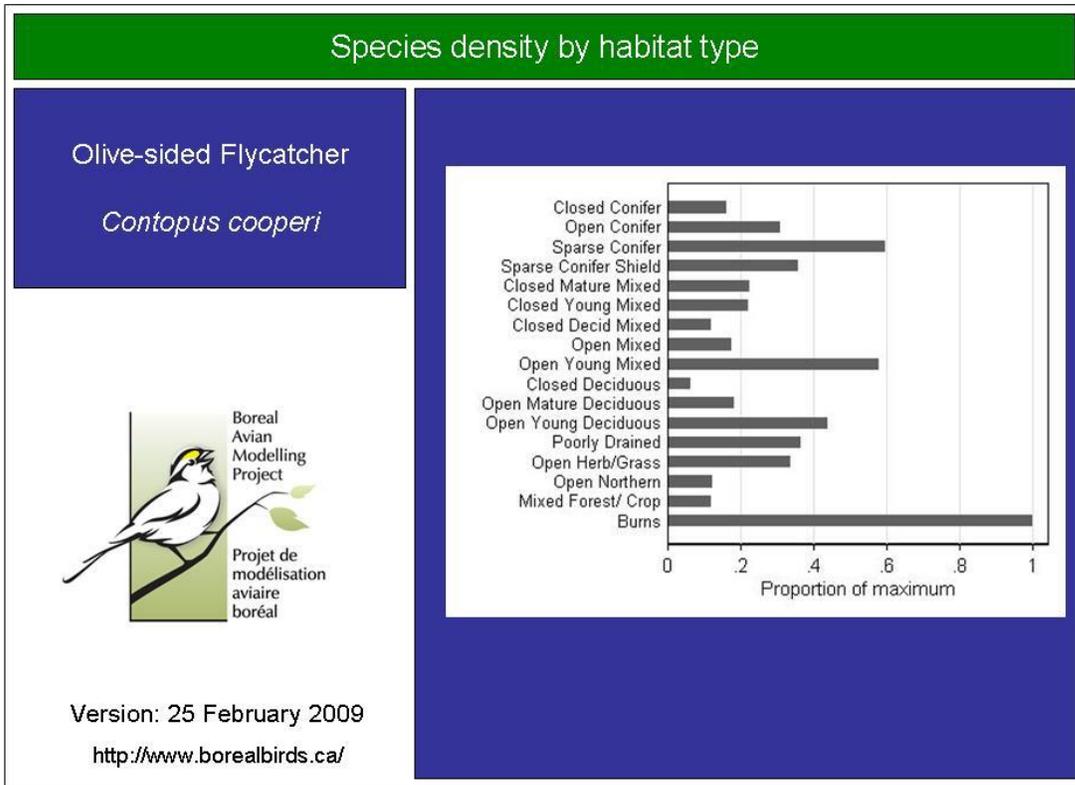


Figure 2 – Olive-sided flycatcher habitat associations in Canada, from Boreal Avian Modelling Project 2013.

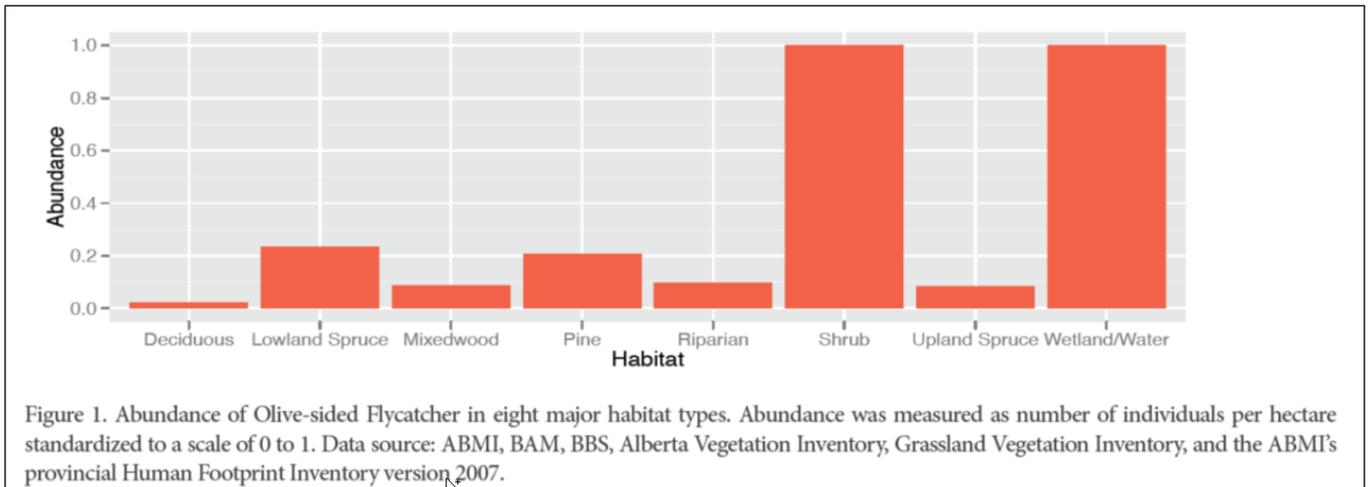


Figure 3 – Olive-sided flycatcher abundance in Alberta habitat types, from ABMI 2013.

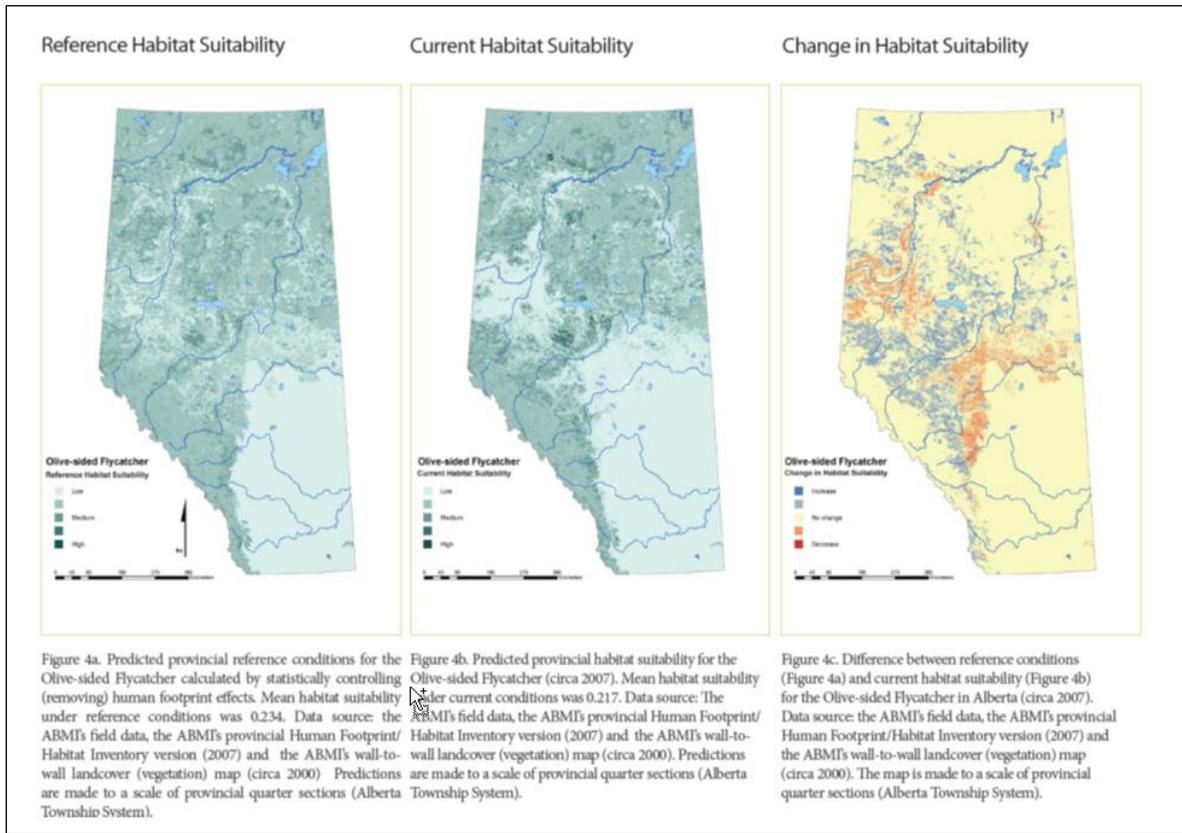


Figure 4 – Predicted Alberta olive-sided flycatcher habitat suitability, from ABMI 2013

## CONSERVATION STATUS

The IUCN Red List of Threatened Species ranked the olive-sided flycatcher as Near Threatened in 2004 and 2008 (IUCN 2011). The Canada population of the olive-sided flycatcher was designated in the Species at Risk Act Schedule 1 as Threatened in 2010. The most recent Alberta general status evaluation for the olive-sided flycatcher was May be at Risk (ASRD 2010). The olive-sided flycatcher 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 olive-sided flycatcher

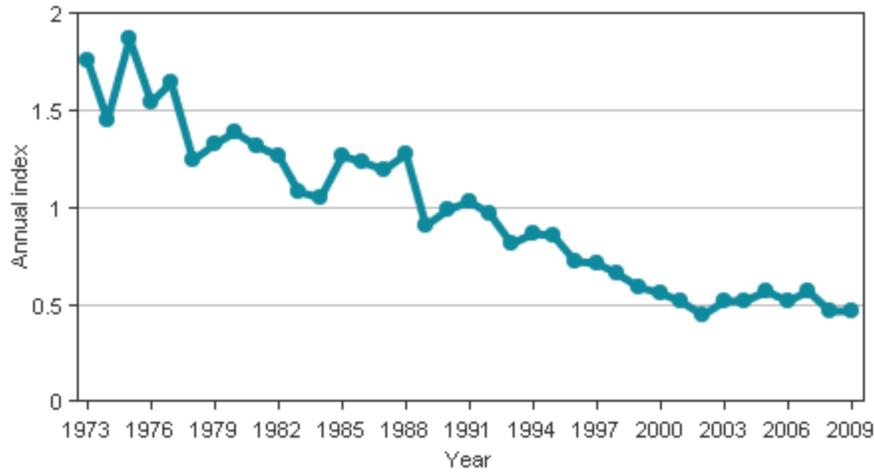
Year	IUCN	Year	COSEWIC/SARA	Year	Alberta Wildlife Act
2008	Near Threatened	2010	SARA - Threatened	2010	May be at Risk <sup>1</sup>
2004	Near Threatened	2007	COSEWIC - Threatened	2005	May be at Risk <sup>1</sup>

<sup>1</sup> 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.

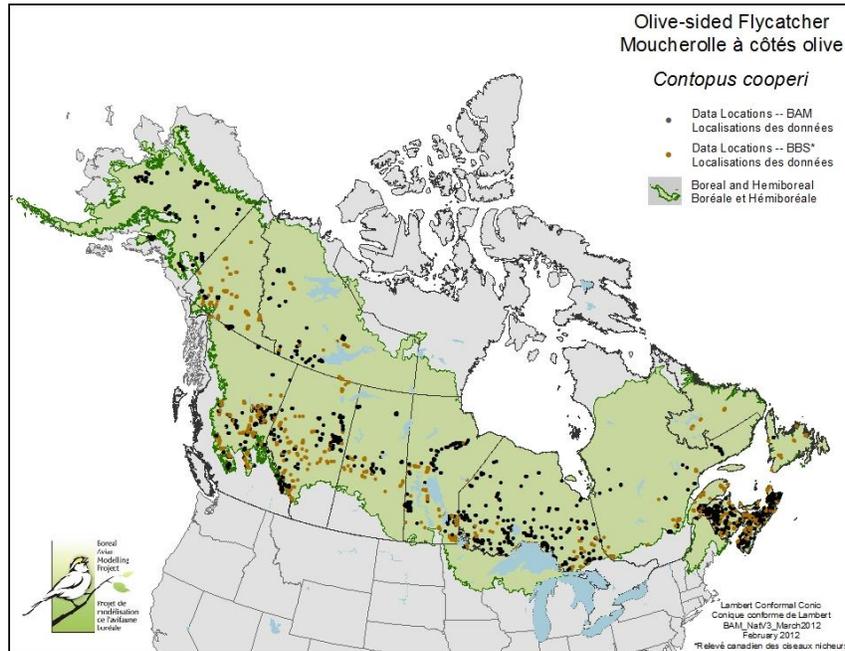
## POPULATION STATUS

A widespread and consistent overall olive-sided flycatcher population decline of 79% (4.0% average annual decline) from 1968 to 2006 was estimated using Breeding Bird Survey (BBS) data. The decline from 1996 to 2006 was estimated at 29% (3.3% average annual decline). The causes of the decline are uncertain (COSEWIC 2007). The estimated world population was about 700,000 in 2005, with 450,000 breeding in Canada (COSEWIC 2007).

More recent updates in BBS trends (Figure 5, Downes et al. 2012) show that the long-term decline likely ended in about 2000 and populations appear to have been relatively stable since then.



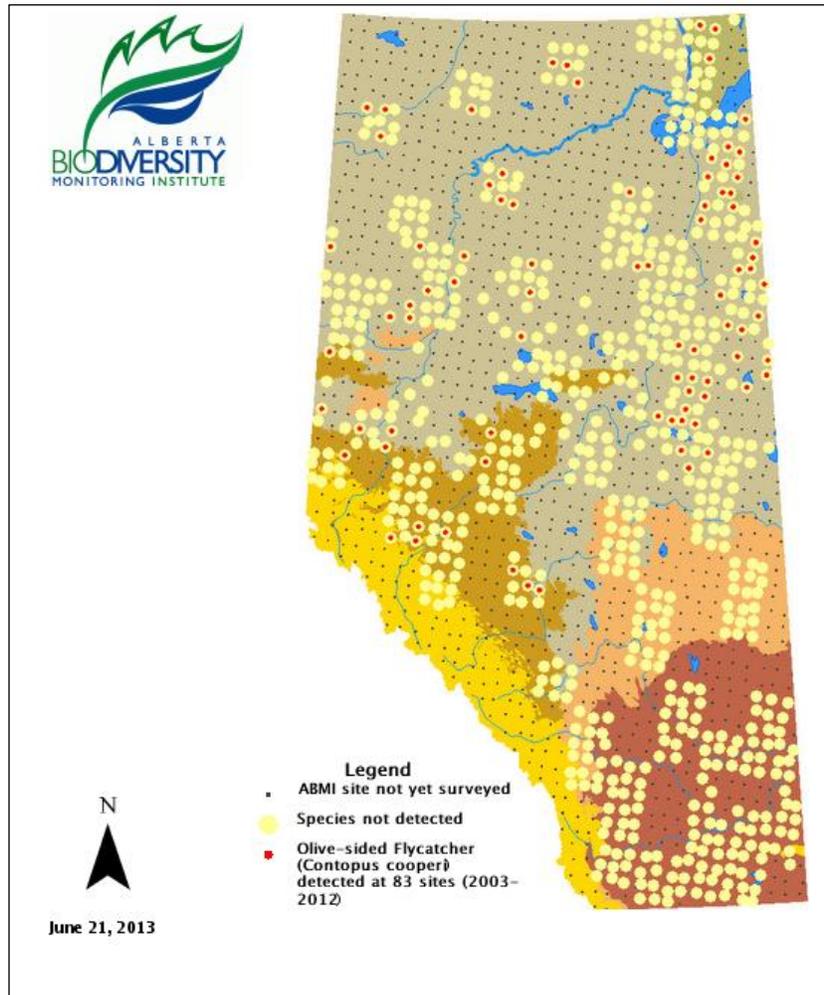
**Figure 5** – Annual indices of population change for the Olive-sided Flycatcher in Canada based on Breeding Bird Survey data 1973–2009, from Downes et al. 2012.



**Figure 6** – Olive-sided flycatcher occurrences from Boreal Avian Modelling Project database (2012). Hinton Wood Products is a data contributor to the BAM.

The Olive-sided Flycatcher was recorded as part of the Alberta Breeding Bird Atlas project throughout most forested areas of Alberta (Semenchuk 1992, Federation of Alberta Naturalists 2007). The population trend for olive-sided flycatcher in Alberta from 1970 to 2009 was +0.3% indicating population stability over the evaluation period (Canadian Bird Trends Database 2012).

The olive-sided flycatcher was detected at 83 sites surveyed by the Alberta Biodiversity Monitoring Institute (Figure 7).



*Figure 7 – Olive-sided flycatcher occurrences in Alberta from ABMI 2013.*

## FMA OBSERVATIONS

The olive-sided flycatcher was observed (0), possible breeding (19), probable breeding (15), or confirmed breeding (1) in 35 of 60 100 km<sup>2</sup> squares that overlap the FMA surveyed for the first Alberta Breeding Bird Atlas (Semenchuk 1992) and observed (3), possible breeding (11), and probable breeding (2) in 17 of 47 squares for the second Atlas (Federation of Alberta Naturalists 2007). The reduction in occurrence at the FMA scale from 58% of squares surveyed in the first atlas to 36% in the second Atlas may have been related to a reduction in overall survey effort or change in timing as BBS surveys over the same time period did not detect a decline. There was no detectable change on a provincial scale 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<sup>3</sup> online database and updated as new observations are recorded.

<sup>3</sup> eBird <http://ebird.org/content/canada>

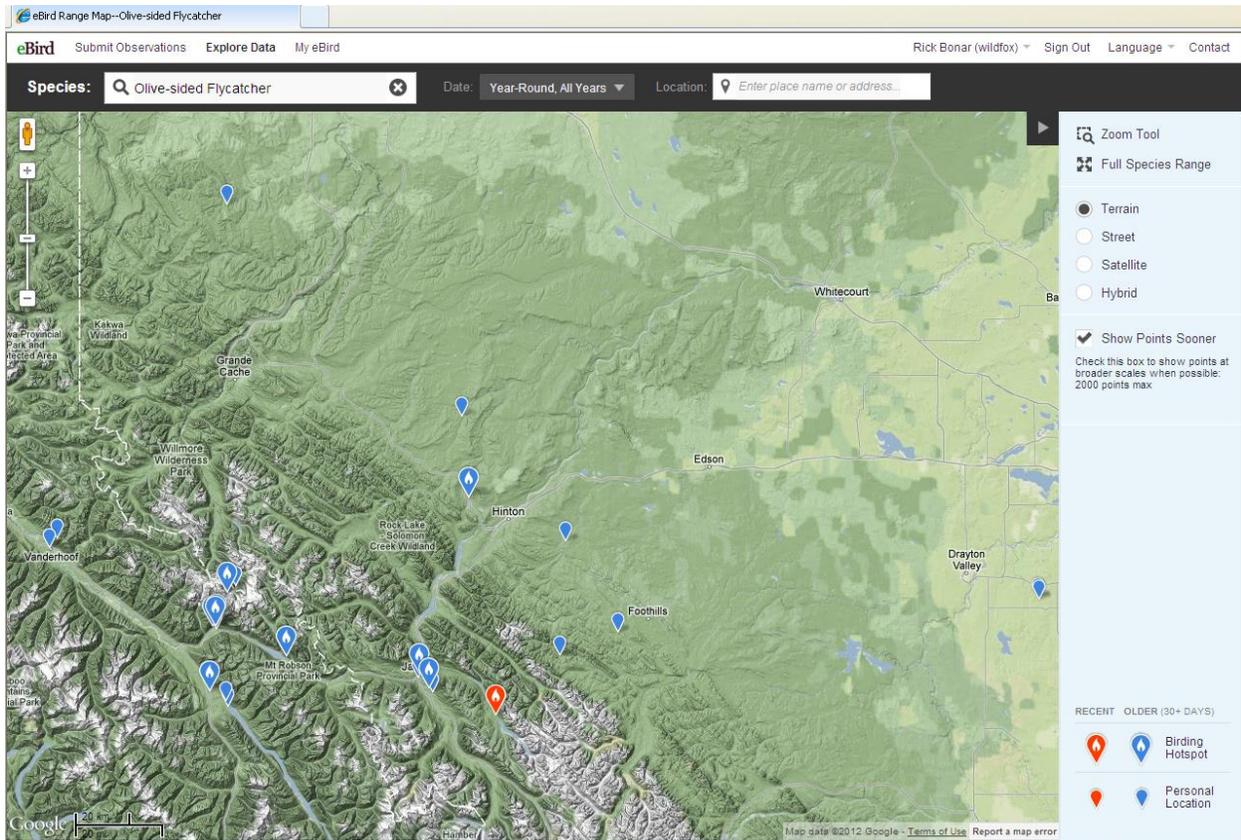


Figure 8 – Olive-sided flycatcher occurrences in FMA region from eBird online database, downloaded on June 24, 2013.

## LIMITING FACTORS

### Habitat Loss and Alteration

**Breeding Range** – The breeding distribution of the olive-sided flycatcher is extensive and has not significantly changed over time (Figure 1, Altman and Sallabanks 2000). 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 has not declined significantly and may have increased: *“Olive-sided flycatchers are generally associated with sparse canopy cover, suggesting that they may respond positively to forest management like timber harvest. Abundance of olive-sided flycatchers is often higher in young stands following wildfire or commercial timber harvest. The continued declines in the population of olive-sided flycatchers, despite apparent increases in the amount of suitable potential habitat on the breeding grounds, are therefore puzzling”* (COSEWIC 2007). See Box 1 for the full COSEWIC (2007) discussion of this issue.

Olive-sided flycatchers breed in recently harvested clearcuts that have retention of trees and snags and also in partially harvested stands. Little is known about the composition, structure, and age of harvest-origin habitats that are favoured by olive-sided flycatchers. 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 olive-sided flycatcher is smaller than the breeding range (Figure 1). Habitat loss and alteration on winter range is not well understood (COSEWIC 2007), but approximately 85% of the montane forests in the Andes where many flycatchers winter may have been significantly altered by 1985 (Orejuela 1985). 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 olive-sided flycatcher 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.

**Box 1 Text from COSEWIC (2007):** *“In eastern North America, Olive-sided Flycatcher habitat has changed with alterations to forest structure, urbanization, loss of wetlands and their associated edge habitats and the reforestation of abandoned farms. This may explain declines in the Atlantic Provinces, as well as parts of southern Ontario and southern Quebec. However, Gauthier and Aubry (1996) have suggested that the large-scale clearcutting of older forests in eastern Canada may have changed forest structure to favour the Olive-sided Flycatcher and may explain the peak in their abundance in Quebec in the 1980s.*

*Hutto and Young (1999) have speculated that Olive-sided Flycatchers are an early post-fire dependent species that is attracted to managed (harvested) forests that have similar structural conditions to early post-fire habitat, but that these habitats may function as ecological sinks. In a Montana study, Robertson and Hutto (2007) found that Olive-sided Flycatchers preferred to nest in selectively logged habitats, but that breeding success in that habitat was only half of that in natural burned openings. Their data suggested that increased nest predation in the logged habitats was the reason for reduced success. These findings are supported by data from Altman and Sallabanks (2000), who report that nest success for Olive-sided Flycatchers was highest in early post-fire habitats (62%, n=16) in the Cascade Mountains of west-central Oregon compared to semi-open forest (49%, n=33), to harvest units that retained trees (39%, n=89) or at forest edge (33%, n=31). Conversely, in northwest California, Meehan and George (2003) found that the probability of nest loss was lower in unburned habitat (early seral forest) than in burned habitat (formerly predominantly clearcut). These differences may be explained by different amounts of standing trees following fire in a clearcut versus fire in a mature stand, although this has not been tested. Burned habitat in the Californian study also had reduced arthropod biomass and lower foraging rates than unburned forest.*

*The continued decline of Olive-sided Flycatchers across their breeding range despite the continued addition of early seral habitat (through harvest) to the landscape suggests that forest management practices may be a significant factor in population decline. Regional differences in population trends, though difficult to assess because of low sample sizes, may result from differing forest harvest practices that could impact nest predator and insect prey populations in different ways.”*

## Food Supply

The olive-sided flycatcher 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 OSFL.

There is some indication that olive-sided flycatchers that breed in selectively logged habitats in lieu of natural openings such as patches of burned forest or wetland edges may have lower nesting success (Box 1). In Montana pairs nesting in selectively logged habitats had about half the nesting success of pairs nesting in natural openings (Robertson and Hutto 2007), which the authors thought may have been attributed to higher populations of potential nest predators (red squirrel, gray jay, common raven) in the selectively logged habitats compared to burned habitats. Robertson (2012) urged caution about extrapolating findings from his study to other areas. There is no information evaluating OSFL nesting success in variable retention clearcut habitats, which are the most abundant harvest-origin habitat on the FMA.

## Other Factors

There is no information on the role of accidents, parasites and diseases, human activity, weather, etc. in relation to the olive-sided flycatcher.

## **HABITAT CONSERVATION STRATEGY**

### **Roles and Responsibilities**

West Fraser has no responsibility for management of olive-sided flycatcher. Commitments made in this document relate specifically and only to West Fraser management of the FMA and potential associated impacts on olive-sided flycatcher conservation. Other factors that may affect conservation of the olive-sided flycatcher 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 olive-sided flycatcher by applying the Natural Forest Management approach to manage the FMA. This will provide a continual supply of potentially-suitable olive-sided flycatcher breeding habitat. The HCS will be reviewed and revised as new information is acquired.

### **Forest Management Plan**

Olive-sided flycatchers are associated with early-seral habitat, especially after burns and other disturbances and near edges and openings. Tall snags and residual live trees are essential foraging and nesting requirements. This type of habitat is produced after forest fires and harvesting with structure retention. There is also suitable habitat on the FMA in open wetlands, along water body edges, and in open old-seral forest, especially spruce, mixedwood, and deciduous forest types.

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

### **Landbase Designation**

Olive-sided flycatcher habitat management does not require adjustments to the FMP landbase designation.

### **Management Strategy**

The FMP Management Strategy includes the following considerations for olive-sided flycatcher 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.

#### **Structure Retention**

- Apply Natural Forest Management procedures and practices to ensure retention of trees and patches at the planning and operations stages.

### Habitat Risk Assessment

Olive-sided flycatchers 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 retention to attract breeding olive-sided flycatchers.
2. Harvest-origin and other anthropogenic-origin habitat may attract larger numbers of sciurid (squirrel family) and corvid (crow family) predators that may impact breeding success, creating an ecological trap situation.
3. Reducing occurrence of the dominant natural disturbance (wildfire) that creates olive-sided flycatcher habitat may reduce overall quantity of suitable breeding habitat.
4. Post-fire timber salvage may have detrimental impacts on potential use by breeding olive-sided flycatchers.
5. Olive-sided flycatcher response to pine mortality caused by mountain pine beetles is unknown and may be detrimental.

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

Olive-sided flycatcher habitat management does not require adjustments to the Spatial Harvest Sequence harvest design and schedule.

### **Access Management**

Olive-sided flycatcher habitat management does not require adjustments to access management.

### **Final Harvest Plans**

Olive-sided flycatcher habitat management does not require adjustments to Final Harvest Plans.

### **Harvest Planning and Operating Ground Rules**

Olive-sided flycatcher habitat conservation does not require changes to the Harvest Planning and Operating Ground Rules, which will be applied with site-specific judgment. OSFL breed in harvested areas for a number of years post-harvest if tall perches, especially snags, are present. Structure retention in suitable areas close to wetlands or water bodies is the most important habitat practices for the species.

## **MONITORING**

FMA sightings will be reported to the eBird online database.

## **RESEARCH AND CONTINUAL IMPROVEMENT**

Little is known about the harvest-origin habitats selected by OSFL for breeding. Knowledge needs include:

- Do sites selected by OSFL differ from sites not selected, and can they be characterized to describe potential habitat?
- What level and configuration of structure retention is needed to encourage OSFL selection of harvested sites for breeding?
- Is nesting success in harvested areas with structure retention sufficient to avoid creation of ecological traps?

New information related to these and other questions will be regularly reviewed and incorporated into revisions of the olive-sided flycatcher conservation strategy.

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**Appendix 1 – Olive-sided flycatcher risk assessment matrix**

Activity	Aspect	Impact	Probability	Severity	Risk	Strategy
Harvesting and site preparation	Insufficient retention to attract breeding OSFL	Fewer breeding sites	Occasional – currently low snag and single tree retention	Low – OSFL are uncommon	D	Implement structure retention in suitable habitats
Harvesting and site preparation	More squirrel and corvid nest predators than burned forests	Reduced nesting success	Unknown – no information for variable retention clearcuts	Low – OSFL are uncommon	D	Implement structure retention in suitable habitats
Fire suppression	Less burned forest over time	Fewer breeding sites	Occasional – Fire occurrence is reduced compared to natural range of variation	Low – OSFL are uncommon	D	Replace burned forest with variable retention harvest
Unsalvaged post-fire stands	Reduced unsalvaged stands	Fewer breeding sites	Improbable – some burned stands will not be salvaged	Low – OSFL are uncommon	D	>25% unsalvaged stands over time
Postfire timber salvage	Insufficient retention to attract breeding OSFL	Fewer breeding sites	Improbable – postfire salvage retention will occur	Low – OSFL are uncommon	D	Apply postfire retention practices
Mountain pine beetle mortality	OSFL response to MPB mortality unknown	OSFL response to MPB mortality unknown	Nil – MPB mortality is low and scattered	Low – OSFL are uncommon	D	Monitor for research on OSFL in post-MPB habitat

**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 – Olive-sided flycatcher sightings on the HWP and EFP FMAs**

<b>Date</b>	<b>Observer</b>	<b>Location</b>	<b>Description</b>
2011-07-31	Rick Bonar	Pinto Creek Canyon Natural Area	1 bird calling from tree near open muskeg
2010-08-03	Chris Dale	William A Switzer Provincial Park	1 bird
2000-06-17	Beth MacCallum	William A Switzer Provincial Park	3 birds
2011-06-18	Rick Bonar	Embarras 14	1 bird calling from residual tree in 5-year old clearcut near open muskeg
	Rick Bonar	Marlboro 14	1 bird calling from residual tree in 10-year old clearcut
1992-06-15	Rick Bonar	Gregg River	1 bird calling from residual tree in Gregg River riparian harvest trial block – partially cut riparian spruce stand