

GF Management Plan for Lewis's Woodpecker.docx

Management Plan for the City of Grand Forks



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Background

The City of Grand Forks is looking to manage habitat for the Lewis's Woodpecker. The Riparian Black Cottonwood forests in the City of Grand Forks hosts a large breeding population. Several municipalities across Canada have adopted policy and strategies to protect bird populations. These range from adopting a "dark sky" policy, incorporating bird-friendly design into buildings to reduce window collisions, and developing guidelines to protect habitat.

The confluence of the Kettle and Granby Rivers lies within the City of Grand Forks. The habitat adjacent to these rivers is the preferred habitat for the Lewis's Woodpecker in the region. During 2011 and 2013 nest surveys were done and it was determined Grand Forks had the highest density of nesting LEWO in the province (Gyug personal communication).

The City of Grand Forks is looking to address human safety concerns regarding danger trees along trail networks and park settings while considering the habitat needs of the Lewis's Woodpecker. Several nest trees have been identified as dangerous by a certified danger tree assessor within the City of Grand Forks and complete removal has been recommended. The City requires a plan to manage nest trees and habitat for the Lewis's Woodpecker.

This report provides a management plan to address the conservation concerns of the Lewis's Woodpecker within Grand Forks. This management plan will identify goals and objectives, identify existing threats and actions the City can do towards the conservation of LEWO and its habitat.

This plan was developed by reviewing existing federal and provincial management and recovery plans, pertinent scientific literature, Eco-cat and from my own knowledge of the area and the local LEWO population. I am a professional biologist that has worked extensively with this bird species and have been developing and working on implementing conservation plans on both small and large scales. The details include a species description, identifies population threats, conservation efforts, describes local habitat areas, and recommends management actions.

Species Description

Lewis's Woodpecker

Description

The Lewis's Woodpecker *Melanerpes lewis* is a migratory bird common to the riparian cottonwood forests of the Boundary Region during the summer breeding months (May -

September). It is similar in size to a robin or small crow. It has a greenish-black back and rosy belly, grey collar, and maroon face. They are distinct from other woodpeckers as they are the only aerial insectivore. Many individuals will migrate to Mexico for the winter; however, there are a few individuals that will remain overwinter as resident birds.



Figure 1. Picture of a Lewis's Woodpecker resting on a topped cottonwood tree in Grand Forks. Photo courtesy of Janice Redlin.

Nesting Habits

The LEWO's skull is thinner than other woodpeckers (Goodge, 1972) so they aren't very good at excavating. They tend to use natural cavities or previously used cavities. They will sometimes excavate a new cavity in a soft dead standing tree or dead branch of a living tree typical of cottonwoods (Tobalske, Vierling, & Saab, 2013). These birds form long-term or permanent pair bonds and will often return to the same nesting site year after year (Government of Canada, 2016). Nesting begins sometime in the first weeks of May and young hatch about the 3rd week of June. They feed their young for approximately the following 4 weeks. The young will fledge end of July (July 21st) and they return on their migratory journey south the first weeks of September.

Status

There are an estimated 600 breeding pairs of LEWO in the Province of British Columbia (Government of Canada, 2016). They are blue listed in BC and were federally listed as Special Concern under Schedule 1 of the *Species at Risk Act* (SARA) in 2003. They were re-assessed by COSEWIC as Threatened in 2010 and up-listed to Threatened under SARA in 2012 (Ministry of Environment, 2016). Environment and Climate Change Canada's Canadian Wildlife Service is

leading the management and recovery of LEWO. A recovery strategy (Environment and Climate Change Canada, 2017) is posted on the Species at Risk Public Registry.

Threats

Threats identified by the Recovery Action Plan (Environment and Climate Change Canada, 2017) that pertain to LEWO within the City of Grand Forks include urban development, agricultural land conversion and inappropriate livestock grazing, transportation corridors and vehicular impacts, recreational activities (human intrusion that alters behavior), and selective removal of current and future nest trees for human safety. Pesticide use that reduces food supply has also been identified but not quantified for LEWO. These are either direct threats to the individual bird i.e. vehicle impacts and recreational activities, or threats to their habitat i.e. removal of nest trees. Invasive species outcompeting plants of the riparian cottonwood forests are also a concern. This includes but is not limited to cultivar grasses (e.g. lawn, reed canary grass), Norway and Manitoba maple. The population of urban white-tailed deer may also be having a negative impact on LEWO habitat. Through informal observations along the river and when designing and implementing restoration projects, I have observed little to no cottonwood recruitment in the Grand Forks area. This may be a result of high browse pressure and which has been shown to affect bird and insect populations (Chollet, Bergman, Gaston, & Martin, 2014; J. Teichman, E. Nielsen, & Roland, 2013). Beavers may also pose a threat to the limited number of large diameter cottonwood trees.

Conservation Efforts

Support of this species in riparian habitats include protection and restoration of important riparian areas, management of tree cutting activities, maintenance or restoration of natural hydrological regimes, management of grazing pressure to avoid degradation of riparian habitats, and incorporation of provincial best management practices in urban and agricultural development. Other strategies to protect their habitat include setting aside public lands as protected areas, private land stewardship, purchase of private land for protection, and reducing or eliminating environmental degradation (Environment and Climate Change Canada, 2017). Protection and restoration efforts of riparian cottonwood in the Boundary would benefit not only the LEWO but multiple species that depend upon riparian habitat. Several organizations have tried increasing breeding opportunities with the use of nest boxes (e.g. Lake Windermere Rod & Gun Club; East Cascades Audubon Society). The use of nest boxes to substitute the loss of natural cavities has been found to be successful when there is a decline in natural cavities (Kook, D., Moodie, 2008).

Critical Habitat Areas for Lewis's Woodpecker in Grand Forks

Critical habitat for LEWO covers a large portion of Grand Forks. Environment Canada has mapped critical habitat for LEWO (Figure 2). It encompasses riparian areas of the local waterways (i.e. Kettle and Granby Rivers) and some areas beyond¹. The definition of critical habitat by Environment and Climate Change Canada is “the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified in the recovery strategy or in an action plan for the species.”

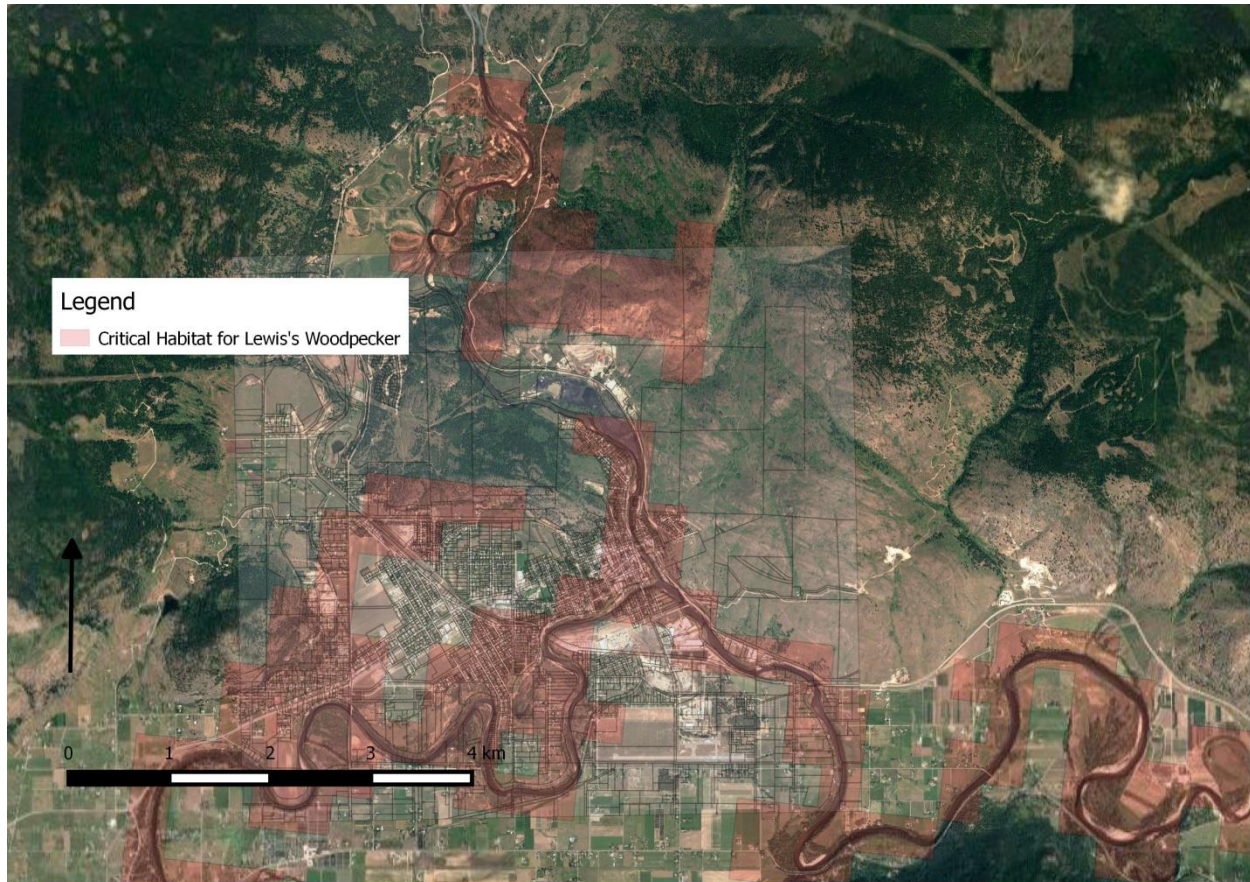


Figure 2. Mapping of Critical Habitat Areas for Lewis's Woodpecker in and around the City of Grand Forks.

The City has the highest density of nesting LEWO in the province of British Columbia (Les Gyug, Personal Communication, November 2013). The characteristics of the local rivers and associated riparian habitat with adjacent grasslands and open areas are typical of their

¹ This data can be freely downloaded from the website <http://donnees.ec.gc.ca/data/species/developplans/critical-habitat-for-species-at-risk-british-columbia/>

preferred habitat. Having done nest surveys and focusing on nest tree stewardship I have been observing the LEWO for several years. Their preferred nesting habitat within this critical habitat is the edge riparian areas adjacent to the Kettle and Granby Rivers. I have seen medium (30cm-50cm dbh (diameter at breast height)) to large (>65 cm dbh) diameter cottonwoods being used for nesting next to the rivers edge. The preferred wildlife trees have a decay class of 3, 4 and 5². One nest in an aspen grove approximately 200 metres away from the river across an open field has been observed.



Figure 3. The wildlife tree (decay class 3) pictured above has several Lewis's Woodpeckers perched on the top branches. This bird is dependent upon primary cavity excavators for nesting holes but will excavate themselves in the soft wood of cottonwoods. The characteristics of this tree above offers a clear flight path for take off and landing and provides places for perching.

Quantity of Riparian Forests and Historical Patterns

One of the most unique features of Grand Forks is the Kettle and Granby Rivers. The associated riparian areas provide critical ecosystem services and recreational opportunities while providing

² for information on decay class of wildlife trees see
<https://www.for.gov.bc.ca/hfp/training/00001/module03/figure08.htm>

habitat for several local species at risk. Riparian areas are even more important in dry areas such as Bird Conservation Region 9 that includes the Boundary; these riparian areas are typically composed of Black Cottonwood plant communities. This type of ecosystem is now reduced to fragments and the remaining stands are considered endangered due to pressures such as urban and agricultural development, grazing, alteration of hydrological regimes, timber harvesting, mining, and recreational uses (Egan, Cadrin, & Cannings, 1997). Black Cottonwood ecosystems of the southern interior are among the rarest plant communities of the province (BC Conservation Data Centre, 2019).

In 2013, a GIS exercise estimated a total of 59 hectares of riparian cottonwood within the boundaries of City of Grand Forks and of this, 27 hectares was on private lands (Table 1) (Coleshill, 2013).

Table 1. The Number of Hectares of Riparian Cottonwood within the City of Grand Forks on Public versus Private Lands.

Riparian Cottonwood (Ha)			% Pub vs Priv	
Total	Private	Public	Private	Public
59	27	33	46	54

Note: Reprinted from report to Canadian Wildlife Service “Prioritizing Riparian Cottonwoods for Conservation in the Boundary Region 2013.”

There has been significant loss of riparian areas within the City of Grand Forks within the past 50 years. In a historical comparison between 1951 and the present there have been a significant increase in roads, buildings, and parking (impermeable surfaces) and a significant loss in riparian vegetation within 50 metres of the rivers (Coleshill & Watt, 2017).

Legislation

For removal of any trees that are known LEWO nesting trees the City of Grand Forks must apply for a permit with Environment Canada and Climate Change. Otherwise this is a violation under the Species at Risk Act and the Migratory Bird Convention Act. Environment and Climate Change Canada states “the law of the migratory bird act and its regulations is to protect migratory birds and prohibit the disturbance or destruction of migratory bird nests and eggs in Canada. The legislation and regulations apply to all lands and waters in Canada, regardless of ownership” (Environment and Climate Change Canada 2016). In the province of British Columbia Section 34 of the Wildlife Act also protects the migratory birds and their occupied nest.

Management Plan for the Lewis's Woodpecker

A management plan is a combination of actions set out to achieve a goal. The goal of a management plan for the City of Grand Forks and the Lewis's Woodpecker is to comply with legislation of critical habitat for the LEWO; make land use decisions that will not negatively impact the population; and maintain a breeding population of LEWO within the City of Grand Forks. The approaches identified include Habitat Protection, Habitat Management and Stewardship. The plan will maintain riparian cottonwood forests to benefit the LEWO, several other species, and contribute to green infrastructure.

It is important for the City of Grand Forks to manage LEWO on their municipal lands. People have a moral obligation to protect species, particularly threatened ones as humans are the sole reason for this status. There are legal obligations where both federal and provincial laws must be complied with. In addition, there are multiple benefits to managing this habitat for the LEWO: several other fish and wildlife species will also benefit from healthy riparian areas, and healthy functioning riparian areas have many ecosystem services including flood and drought control.

Habitat Protection

Mechanisms to delineate areas and what areas will be included

- ❖ Categorize Critical Habitat and Habitat Suitability using available modelling and expert input.
- ❖ Include a LEWO Development Permit Area in the Official Community Plan. Prior to any permits issued a qualified professional would evaluate sites to identify habitat features and recommend measures to protect habitat during any development.
- ❖ Designate High Use and Critical Habitat areas as Protected Natural Areas if owned by the City. These areas may also be considered green infrastructure that provide ecosystem services such as flood control.
 - Prioritize this action so current danger trees identified might be deemed suitable to leave.
- ❖ Leave danger / wildlife trees within natural areas that are outside of designated trails and post public warnings to stay out.

Habitat Management

How designated areas will be managed

- ❖ Identify reference sites in order to have a target to manage habitat areas to.
 - Sites will have structural diversity and plant composition typical of the Riparian Black Cottonwood Plant Community (Ministry of Environment 1997)

Restore riparian areas within Critical Habitat and High Use areas by:

- ❖ Protecting mature cottonwood trees
 - Replace old beaver protection as many mature trees are being girdled URGENT.
 - Install new wrapping on mature trees to protect from beavers.

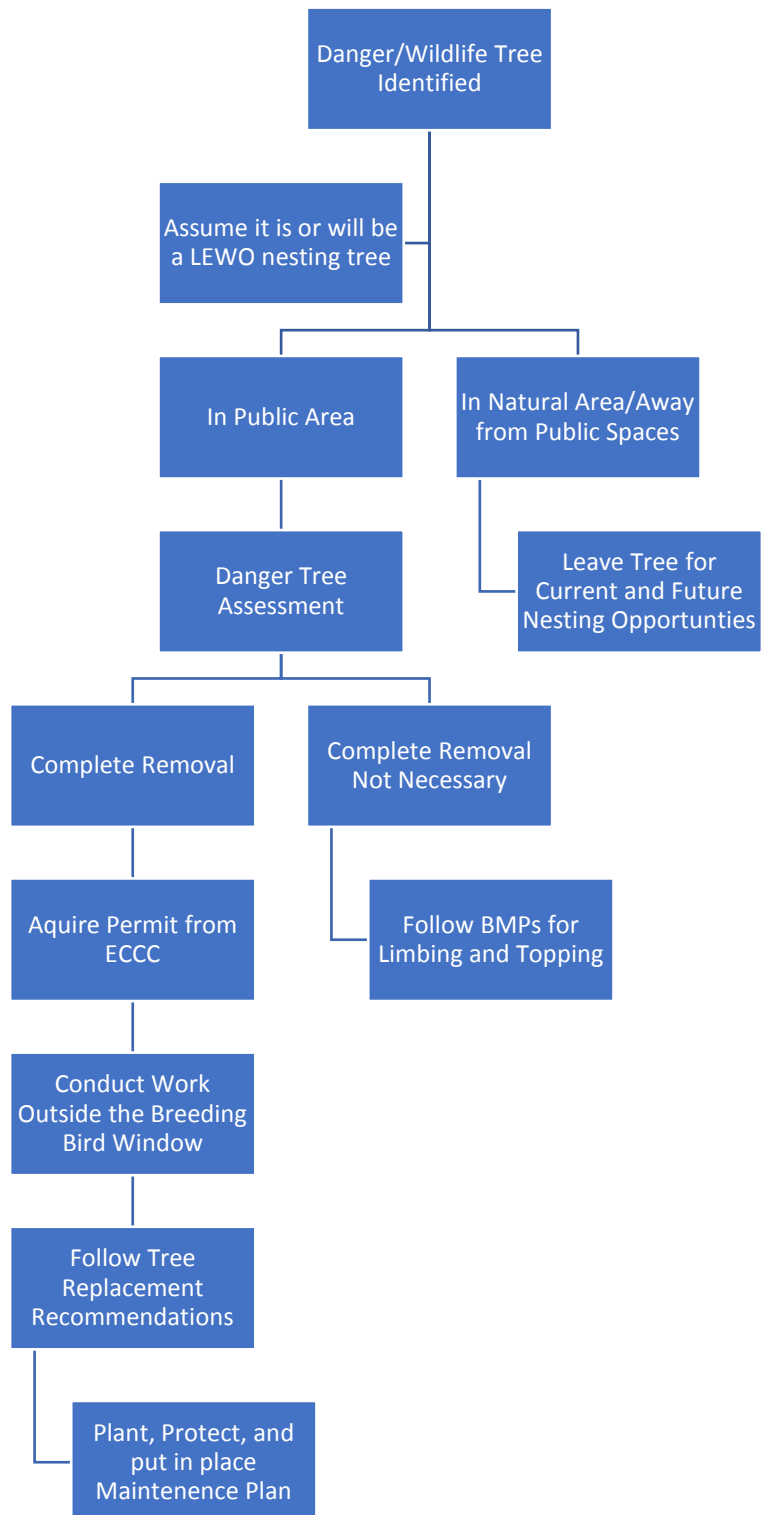
The natural progression is beavers will fall mature cottonwood trees for browsing and the roots will regenerate several trees in its place. Heavy ungulate browse pressure prevents this.

- ❖ Facilitating natural regeneration/recruitment
 - Manage ungulate deer population i.e. enforce feeding by-law, continue educational programming, population reduction.
 - Exclosure fencing to keep out deer in areas targeting natural regeneration.
 - Do not dump grass clippings, snow, or any other matter along embankments.
 - Pull back grass cutting activities further from the river.
 - Consider planting native trees and shrubs in habitat areas to increase tree and shrub cover.
- ❖ Pesticide and herbicide use within identified critical habitat areas
 - Stop use or reduce pesticides in critical habitat areas (Boulton et al. 1999).
 - Consider developing the City of Grand Forks into a pesticide free zone for cosmetic uses.
- ❖ Managing Invasive Species
 - Use mechanical removal of non-native species and replant with native species.

Cottonwoods are a shade-intolerant, canopy cover from non-native species such as the Norway and Manitoba Maple and dense reed canary grass will prevent recruitment.

- ❖ Managing Human Activities
 - During breeding season if birds are detected and a danger tree is identified consider temporarily moving the trail, picnic area, or campgrounds until the non breeding season and works to address the danger can continue.
 - Avoid the use of heavy equipment during sensitive times of the year to avoid disturbing nesting birds immediately adjacent to work areas.
 - Cap the development of public green spaces and trails within Critical Habitat.
 - Restore little used existing green spaces and trails to forested riparian areas in High Use or Critical Habitat areas.
- ❖ Managing Individual Trees
 - Below Figure 3 outlines the steps to take when a tree becomes a safety concern.
 - Have potential danger trees assessed by a certified danger tree assessor. Follow the protocol set out by the *Wildlife/Danger Tree Assessor's Course Workbook* (Wildlife Tree Committee of B.C. 2005) so that all effort can be made to retain wildlife trees and/or be modified in order to retain the wildlife value of the trees.
 - Follow the Province of BC's Best Management Practices for removing danger trees (Ministry of Environment 2006).

Figure 4. Decisions and Steps to Follow when a Tree becomes a Danger Concern.



- Implement a tree replacement program

Federal and Provincial agencies recommend the following criteria for tree replacement

<http://www.env.gov.bc.ca/wld/documents/bmp/treereplcrit.pdf>

(Ministry of Environment Lands and Parks, 1996):

- 0 mm - 151 mm (6") dbh 2 replacement trees (min height 1.5 m), or, 4 shrubs (for up to 50% of trees being replaced in this range);
- 152 mm - 304 mm (12") dbh 3 replacement trees (min height 1.5 m)
- 305 mm - 456 mm (18") dbh 4 replacement trees (min height 2.0 m)
- 457 mm - 609 mm (24") dbh 6 replacement trees (min height > 2.0 m)
- 610 mm - 914 mm (36") dbh 8 replacement trees (min height > 2.0 m)
- Trees > 914 mm dbh (36") will require individual approval and replacement criteria prior to removal.
- Every effort must be made to retain 20% of trees > 304 mm dbh (12") as wildlife snags at minimum height of 3 m.

dbh = diameter breast height

> = greater than

Stewardship Strategies

- ❖ Model a stewardship role for private landowners within the City of Grand Forks
- ❖ Maintain a database on nest trees
 - Obtain data on previously used nest trees and update data with newly confirmed nest trees. This could be done either by a professional or passive collection of data by staff.
 - Knowing what trees are being used as nest trees will inform land use decisions and ensure compliance with legislation.
 - Provides an understanding of preferred habitat and areas within the City.
 - Monitor known nest trees and identify new nest trees.
 - Train staff on the identification of the LEWO and how to identify nest trees.
 - Contract a professional biologist to conduct nest searches periodically.
- ❖ Consider a nesting box program to compensate for the loss of nesting trees that require removal for human safety reasons.
 - Nest boxes will have to be monitored and cleaned out yearly.

- ❖ Get community buy-in through education about the charismatic through community outreach and signage.
- ❖ Partner with local stewardship initiatives that focus on outreach for wildlife and restoration of riparian areas in order to access knowledge in the field and increase capacity for carrying out the work.
- ❖ Ensure internal compliance by educating staff about importance of riparian areas and local species at risk and appropriate measures to reduce human-wildlife conflict.

Literature

- BC Conservation Data Centre. (2019). BC Species and Ecosystems Explorer Black Cottonwood. Retrieved January 9, 2019, from <http://a100.gov.bc.ca/pub/eswp/>
- Boulton, T.J., D.A. Rohlfs, and K.L. Halwas. 1999. Non-target Lepidoptera on Southern Vancouver Island: field assessments during a gypsy moth eradication program involving three aerial applications of Btk. Unpublished report prepared for the Ministry of Forest, Victoria, BC. 117 pp.
- Chollet, S., Bergman, C., Gaston, A. J., & Martin, J. L. (2014). Long-term consequences of invasive deer on songbird communities: Going from bad to worse? *Biological Invasions*.
<https://doi.org/10.1007/s10530-014-0768-0>
- Coleshill, J. (2013). *Prioritizing Riparian Cottonwoods for Conservation in the Boundary Region 2013*. Penticton, BC.
- Coleshill, J., & Watt, G. (2015). *Threat Assessment of Riparian Areas in the Kettle River Watershed DRAFT*. Grand Forks, B.C.
- Egan, B., Cadrin, C., & Cannings, S. (1997). *Cottonwood Riparian Ecosystems of the Southern Interior*. Retrieved from http://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/species-ecosystems-at-risk/brochures/cottonwood_riparian_ecosystems_southern_interior.pdf
- Environment and Climate Change Canada. (2017). *Recovery Strategy for the Lewis ' s Woodpecker (Melanerpes lewis) in Canada Lewis ' s Woodpecker*.
- Goodge, W. R. (1972). Anatomical evidence for phylogenetic relationships among woodpeckers. *Auk*, 89, 65–85.
- Government of Canada. (2016). Species at Risk Public Registry. Retrieved May 6, 2016, from http://www.registrelep-sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=589
- J. Teichman, K., E. Nielsen, S., & Roland, J. (2013). Trophic cascades: Linking ungulates to shrub-dependent birds and butterflies. *Journal of Animal Ecology*, 82(6), 1288–1299.
<https://doi.org/10.1111/1365-2656.12094>
- Kook, D., Moodie, J. (2008). Using Nest Boxes for Lewis ' S Woodpecker Conservation in Central Oregon, 565–568.
- Ministry of Environment. (2016). BC Species and Ecosystems Explorer. Retrieved from <http://a100.gov.bc.ca/pub/eswp/>
- Ministry of Environment. (2006). Best Management Practices for Hazard Tree and Non-Hazard Tree Limbing, Topping or Removal.
http://www.env.gov.bc.ca/wld/documents/bmp/BMPTreeRemoval_WorkingDraft.pdf
- Ministry of Environment. (1997). Cottonwood Riparian Ecosystems of the Southern Interior.
<http://www.env.gov.bc.ca/wld/documents/cottonwood.pdf>
- Ministry of Environment Lands and Parks. (1996). Tree Replacement Criteria. Retrieved January 3, 2019, from <http://www.env.gov.bc.ca/wld/documents/bmp/treereplcrit.pdf>

Tobalske, B. W., Vierling, K. T., & Saab, V. A. (2013). The Birds of North America Online.
<https://doi.org/10.2173/bna.284>