



Northern Willowherb

Epilobium ciliatum

Northern Willowherb is a flowering plant with small pink flowers, pointed oval leaves and net-like seed pods. It is found throughout Alberta, particularly in wet places in all of Alberta's natural regions.

Conservation Status: AEP - Secure | SRANK - S5

Wetland Indicator Status: Grassland Natural Region - Facultative wetland species | Other Natural Regions - Facultative wetland species

Taxon data collected: 2003 - 2019

Data Summary: Forest

Introduction

Over its decade-plus of operations, the ABMI has generated a comprehensive dataset on Alberta's species, their habitats, and the extent and type of human footprint across the province. With this information, the ABMI has developed analyses to predict species' relative abundances and examine species' responses to vegetation and soil types, as well as human footprint in Alberta. These methods have been applied to hundreds of species; this profile provides summary results for one.

There are three main results sections in this species profile. The first section summarizes what vegetation, soil, and human footprint types the species uses in Alberta. Next, the data are used to identify which land use activities have the biggest impact (positive or negative) on the species' relative abundance. Finally, a series of relative abundance maps illustrate the species' predicted distribution under current and reference conditions, and where it's expected to have increased or decreased as a result of human-caused changes to its habitat.

The target audiences for species profiles are resource managers in Alberta. Summary data can be used to support land-use planning and mitigate the risks of development on a species of interest. While developed to support resource management, these species profiles are also of wider interest to anyone wanting information on species that live in Alberta, what habitats they are found in, and how our land use affects their populations.

Please note that the results are predictions based on the best available data at the current time. All results must be considered with caution; interpretation caveats are presented with each result. As with any statistical model, our confidence in the modelled outputs will increase as we gather more data and refine our models; to that end we update the summary results annually based on new data. As an internal check, for species with additional information in the literature, we examine whether our models produce ecologically meaningful results. For data-poor species, our predictions are the first contribution towards developing an understanding of the species' ecology.

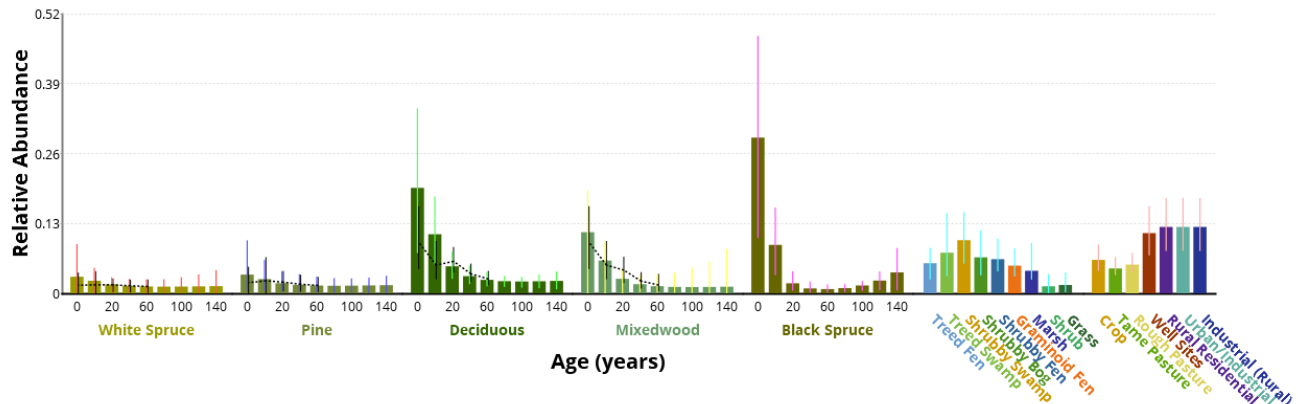
Please refer to the [ABMI Species Website Manual](#) for a complete description of methods and limitations associated with the analyses included in this species profile.

Habitat & Human Footprint Associations

Northern Willowherb is a common plant found in wet, typically open places growing in forest openings, wet meadows, pastures, wetlands and roadsides. This plant does not spread from rhizomes, but disperses locally and regionally through wind-dispersed seeds.



Species-habitat Associations in the Forested Region



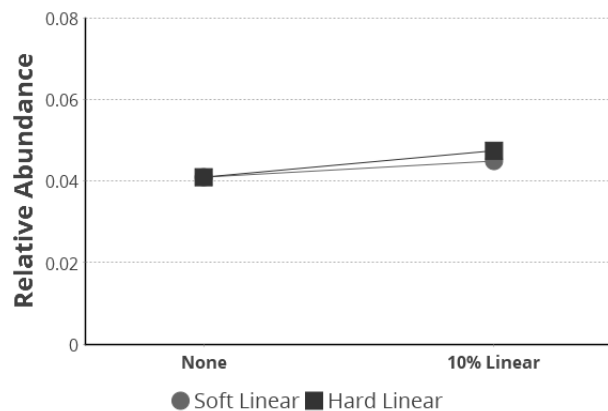
Forested Region - Species Habitat Association Graph: Predicted species relative abundance (bars) as a function of vegetation and human footprint type in the forested region. Dots are added to forest types where harvesting occurs and show the predicted species abundance in harvested stands of various ages. Vertical lines represent 90% confidence intervals.

- Northern Willowherb relative abundance is low across all forest types, human footprint categories, and vegetation types, but is highest in urban/industry human footprint types and young deciduous stands in the forested region.
- Predicted relative abundance of Northern Willowherb is also high in young black spruce stands, swamp and open wetland vegetation types and the cultivated human footprint type in the forested region.

Relationship to Linear Footprint



Relationship to Linear Footprint in the Forest Region

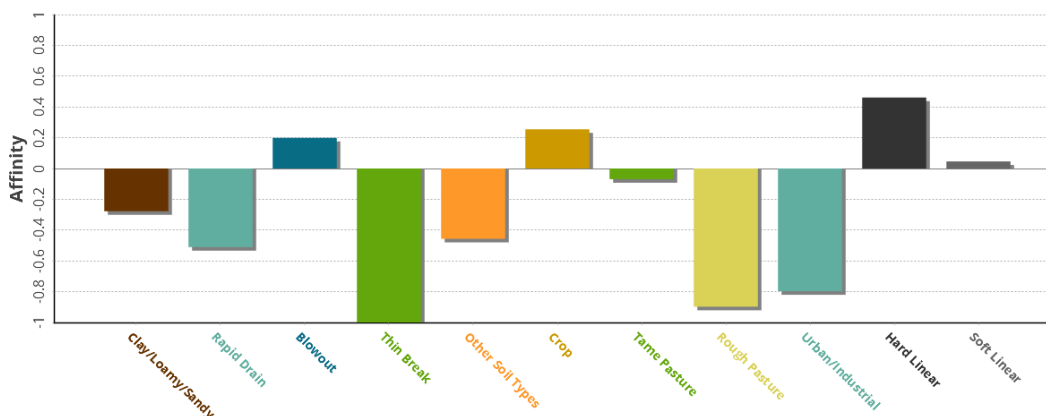


Linear Footprint Graph: Species relative abundance predicted for habitat with no human footprint compared to habitat in which 10% of the area is converted to either soft or hard linear footprint.

- Northern Willowherb relative abundance is predicted to have no relationship with soft linear footprint and a positive relationship with hard linear footprint in the forested region.



Habitat Associations for Species with Few Detection in the Prairie Region



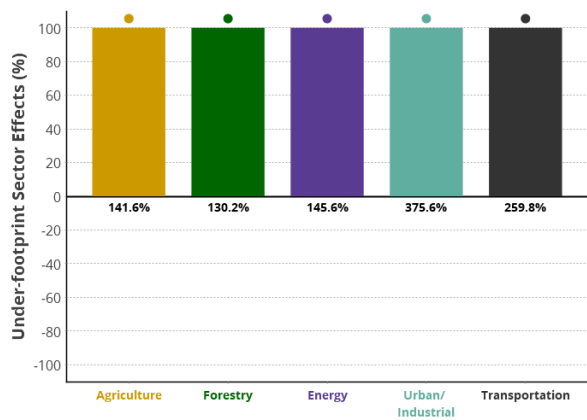
Use-availability index graph: Index of species habitat use based on the proportion of species detections in each native vegetation and human footprint type in comparison to the habitat availability. The index (bars) range from -1 (avoidance) to +1 (preference), given availability of a particular vegetation or human footprint type.

Impacts of Human Footprint

Northern Willowherb is adapted to soils that have been disturbed by natural activity such as flooding or human activity such as forestry or oil and gas development.

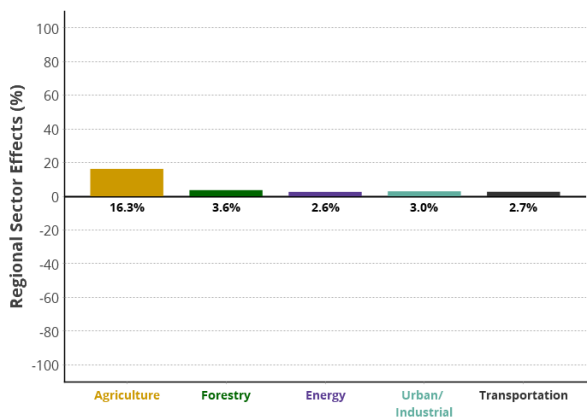
Human Footprint Effects in the Forested Region

Under-footprint Sector Effect



- Northern Willowherb relative abundance is predicted to be greater than expected in all human footprint categories, except agriculture, compared to the habitat each footprint replaces in the forested region.

Regional Sector Effect



- Northern Willowherb total population effects for all industrial sectors are small in the forested region.

Predicted Relative Abundance

Northern Willowherb is common across Alberta.

Reference Conditions

- The reference condition shows the predicted relative abundance of the Northern Willowherb after all human footprint had been backfilled based on native vegetation in the surrounding area.

Current Conditions

- The current condition is the predicted relative abundance of the Northern Willowherb taking current human footprint (circa 2012) into account.

Difference Conditions

- Northern Willowherb relative abundance is predicted to be higher under current conditions than reference conditions throughout most of its range, especially in the Grassland and Parkland Natural Regions and localized areas of the Boreal Forest Natural Region.
- Northern Willowherb relative abundance is predicted to be slightly lower under current conditions than reference conditions in localized parts of the prairie region.

References & Credits

References

- Budd, A.C. 1987. Budd's Flora of the Canadian Prairie Provinces. Second Edition. Agriculture Canada, Hull, QC.
- Spatial Data Lab. 2017. *Epilobium ciliatum* Raf. purple-leaved willowherb (fringed willowherb). In: E-Flora BC: Electronic Atlas of the Plants of British Columbia, ed. B. Klinkenberg. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver, BC. <http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Epilobium%20ciliatum>. Accessed January 8, 2018.
- Stark, K.E., A. Arsenault, and G.E. Bradfield. 2006. Soil seed banks and plant community assembly following disturbance by fire and logging in interior Douglas-fir forests of south-central British Columbia. Canadian Journal of Botany 84(10):1548–1560.

Wetland Indicator Status References

- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Government of Alberta (GOA). 2015. Alberta Wetland Identification and Delineation Directive. Water Policy Branch, Alberta Environment and Parks. Edmonton, Alberta.

Data Sources

Data collected by ABMI.

Recommended Citation

Alberta Biodiversity Monitoring Institute. 2020. Northern Willowherb (*Epilobium ciliatum*). ABMI Website: abmi.ca/home/data-analytics/biobrowser-home/species-profile?tsn=99003559.

Additional ABMI Resources

Alberta Biodiversity Monitoring Institute. 2016. ABMI Species Website Manual, Version: 2016-12-02. Alberta Biodiversity Monitoring Institute, Alberta, Canada. Report available at: abmi.ca.

Alberta Biodiversity Monitoring Institute. 2014. Manual for Species Modeling and Intactness, Version 2014-09-25. Alberta Biodiversity Monitoring Institute, Alberta, Canada. Report available at: abmi.ca.

Alberta Biodiversity Monitoring Institute. 2014. Terrestrial field data collection protocols (abridged version) 2016-05-18. Alberta Biodiversity Monitoring Institute, Alberta, Canada. Report available at: abmi.ca.

Download [ABMI Species and Habitat Data](#).

View [ABMI Collaborations](#).