

A FIELD GUIDE TO
Forest Biodiversity
Stewardship



REPORT FOR 2017-1

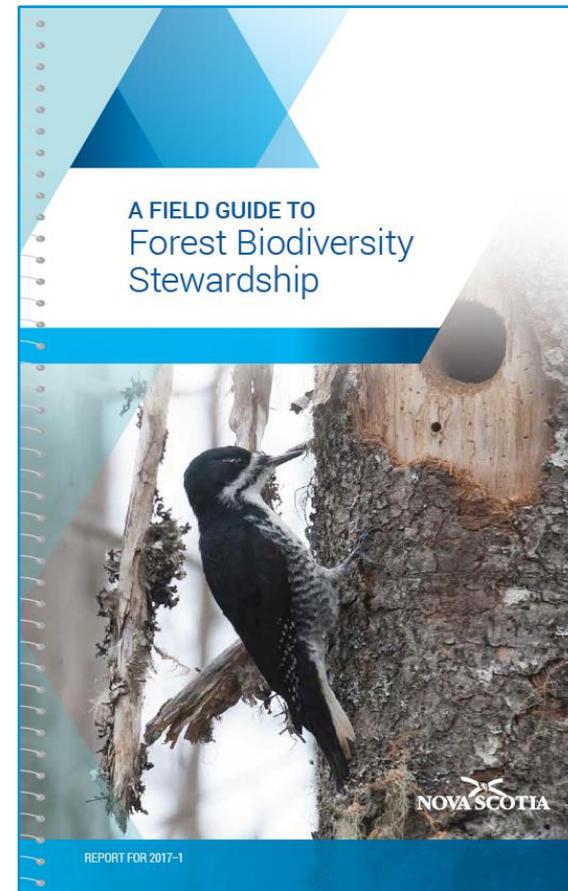
A Field Guide to Forest Biodiversity Stewardship

General Overview

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Coordinator
Biodiversity Stewardship Workshops
Feb.- Apr., 2018*

A Field Guide to Forest Biodiversity Stewardship

- WHAT is it?
- WHY is it important?
- WHO is it for?
- WHEN can you get it?
- WHERE is it available?



WHAT?

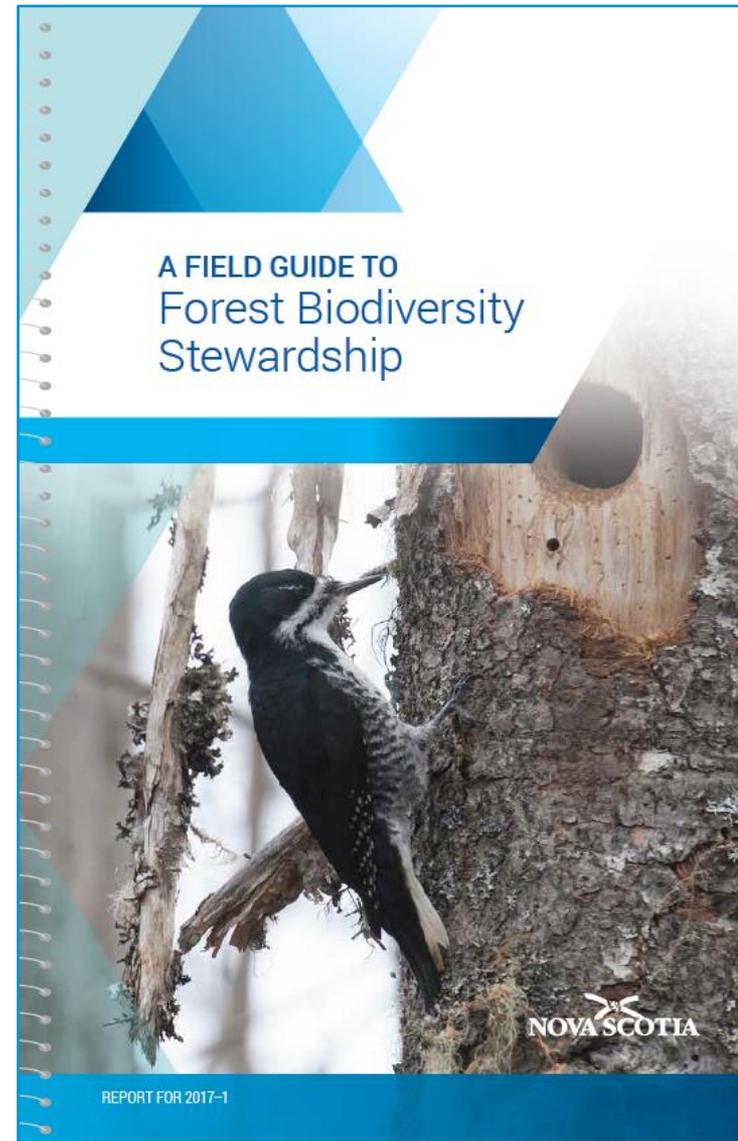
Biodiversity - The variety and interconnectedness of all life, including all plants, animals, and other organisms, the genes they contain, and the systems and processes that link them.

Stewardship - The responsible use and conservation of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species.

WHAT?

Introductory guide book to be brought in the field to help readers identify and conserve important forest biodiversity features.

- Small (14cm x 23 cm x 1cm)
- 131 pages
- Packed with information from a variety of sources
- Loaded with GREAT PHOTOS!
- Divided in 5 Main Sections:
 - Stand Features
 - Special Habitats
 - Watercourses & Wet Forests
 - Soils and Soil Communities
 - Species at Risk



Stand Features

Stand Components

- Cavity Trees
- Coarse Woody Debris
- Legacy Trees
- Mast
- Snags
- Super Canopy Trees

Stand Structure

- Vertical Stand Structure
- Tree Composition
- Old Growth



Alain Belliveau, AC CDC



Cavity Trees

Main Photo: CNS (Len Wagg); Inset: DNR (Eugene Quigley)



Photo: CNS (Len Wagg)

Tree Composition



Photo: DNR (Peter Neily)

Special Habitats

- Caves
- Deer Wintering Areas
- Dens
- Great Blue Heron Colonies
- Hibernacula
- Karst
- Open Woodlands
- Persistent Stand Openings
- Raptor Nests
- Talus, Cliffs, Banks and Rocky Outcrops

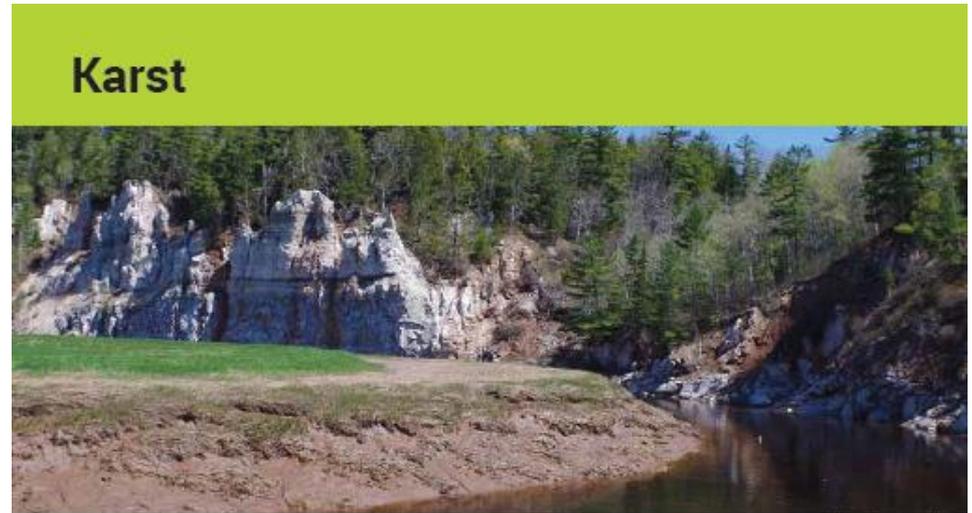


Photo: Reg Newell



Yellow lady's slipper (*Cypripedium parviflorum*)

Photo: DNH (Peter Nally)

Watercourses and Wet Forests

- Watercourse Management Zones
- Beaver Ponds
- Floodplains
- Seeps and Springs
- Treed Wetlands
- Vernal Pools

Vernal Pools



Photo: CNS (Len Wagg)



Photo: DNR (Peter Nally)



Photo courtesy of the Nova Scotia Museum

Soils and Soil Communities

- Soils are the fundamental drivers of biodiversity and productivity in forest ecosystems
- Support a mix of flora, fauna and related ecosystem processes that greatly influence plant species composition, growth, decomposition and nutrient cycling



Photo: DNR



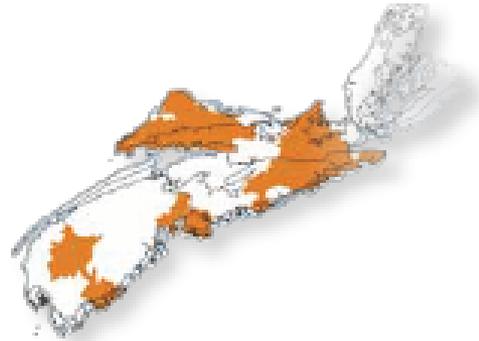
Photo: DNR

Species at Risk

Dozens of species at risk live in NS forests. This guide provides general information about these species, and identifies ways to minimize risk and enhance their recovery.

MAMMALS

- American Marten
- Bats
- Canada Lynx
- Moose (Mainland)



BIRDS

- Bicknell's Thrush
- Canada Warbler
- Chimney Swift
- Common Nighthawk
- Eastern Whip-poor-will
- Olive-sided Flycatcher
- Rusty Blackbird

REPTILES

- Blanding's Turtle
- Eastern Ribbonsnake
- Wood Turtle

LICHENS

- Boreal Felt (and Vole Ears)

PLANTS & TREES

- Atlantic Coastal Plain Flora
- Black Ash
- Eastern White Cedar
- Ram's Head Lady's Slipper
- Rockrose

Beaver Ponds



Photo: Rob Fraser, Ducks Unlimited Canada

Description

A flooded ecosystem created by the construction of a dam(s) by beaver. The dams regulate water flow, keeping constant water levels during times of little precipitation and providing winter water depths which will not freeze to the bottom. During the winter beaver sustain themselves on the bark of cached branches and logs, usually submerged in holding areas close to lodges and dens. As a result of slow water movement from the damming, sediments accumulate on the bottom of flowages, enriching the soil beneath. Because they feed on tree bark, beaver tend to construct dams in areas of aspen, birch and alder.

Importance to Biodiversity

By increasing aquatic productivity, beaver ponds significantly contribute to ecosystem richness and biodiversity. The resulting flooded forest greatly changes the ecosystem dynamics of the site providing:

- Dead standing trees that are used as snags and cavity trees. These may be excavated by woodpeckers and used later by cavity nesters such as wood ducks.
- Increased habitat diversity including new habitat for wetland wildlife including muskrat, mink, otter and fish.
- Good foraging habitat for insect eaters such as bats and fly-catchers, which feed in the open spaces above beaver ponds.
- Osprey nesting sites near ponds where fish are present.
- Feeding areas for wading birds such as great blue heron, which prey on reptiles, fish and amphibians.

- Shelter and food sources for amphibians and reptiles, including Nova Scotia's four freshwater turtle species (Blanding's, Eastern painted, snapping, and wood turtles).

Stewardship Actions

For some woodland owners, the presence of beaver and their activities are a nuisance. Beaver can plug culverts with branches and mud, flood access roads, damage timber, and use roads as bases for new dams. For nuisance beaver problems, refer to Nuisance Fact Sheets (See "LINKS").

Best Management Practices –

- Maintain biodiversity features created by beaver ponds and adjacent meadows.
- Design and locate new roads and crossings to minimize potential for attracting beavers. Reduce crossings and avoid small or multiple culverts in favour of a single, large culvert.
- Install appropriate water-control systems where flooding is anticipated to limit damage to access roads and standing timber.

Legal Requirements –

- Except under permit, it is a violation of the NS Wildlife Act to disturb or damage the den or dam of a beaver. Consult the Wildlife Habitat and Watercourses Protection Regulations to ensure that appropriate Special Management Zones have been assigned to watercourses (See "LINKS").

LINKS

For detailed and up-to-date information

Nuisance Fact Sheets novascotia.ca/natr/wildlife/living-with-wildlife/
www.novascotia.ca/just/regulations/ and search for "Wildlife Habitat and Watercourses Protection Regulations" (downloadable PDF)

Eco Notes

Beaver are herbivores and can eat a variety of plants, but prefer the soft inner bark of deciduous trees like aspen, birch, maple and willow. A beaver's front teeth are chisel sharp. They grow continuously so don't get worn down from chewing the trees they use for dams and lodges, and for food.



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Stewardship Actions

Best Management Practices (BMPs) - Voluntary practices that support forest biodiversity conservation.

Crown Forest Policy - Mandatory direction for forest management operations on Crown forests. On private woodlands these practices are voluntary and encouraged.

Legal Requirements - Laws and regulations that govern the management and conservation of all Nova Scotia's forests and biodiversity.

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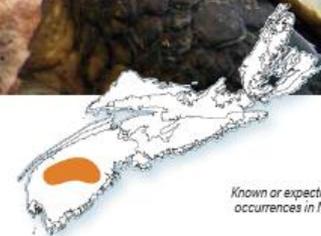
Species	Provincial Status	Special Management Practices	Protection under the following provincial laws:		Protection under federal laws, including:	
			NS Endangered Species Act	NS Wildlife Act	Species at Risk Act	Migratory Bird Convention Act
MAMMALS						
American Marten	Endangered	X	X	X	-	-
Little Brown Myotis, Northern Myotis, Tri-Colored Bat	Endangered	-	X	X	X	-
Canada Lynx	Endangered	X	X	X	-	-
Moose (Mainland)	Endangered	X	X	X	-	-
BIRDS						
Bicknell's Thrush	Endangered	-	X	X	X	X
Canada Warbler	Endangered	-	X	X	X	X
Chimney Swift	Endangered	-	X	X	X	X
Common Nighthawk	Threatened	-	X	X	X	X
Eastern Whip-poor-will	Threatened	-	X	X	X	X
Olive-sided Flycatcher	Threatened	-	X	X	X	X
Rusty Blackbird	Endangered	-	X	X	X	-
REPTILES						
Blanding's Turtle	Endangered	-	X	X	X	-
Eastern Ribbonsnake	Threatened	-	X	X	X	-
Wood Turtle	Threatened	X	X	X	X	-
LICHENS						
Boreal Felt (and Vole Ears)	Endangered	X	X	-	X	-
PLANTS & TREES						
Atlantic Coastal Plain Flora *	Endangered/Threatened	-	X	-	X	-
Black Ash	Threatened	-	X	-	-	-
Eastern White Cedar	Vulnerable	-	X	-	-	-
Ram's Head Lady's Slipper	Endangered	-	X	-	-	-
Rockrose	Endangered	-	X	-	-	-

Blanding's Turtle

REPTILES



Endangered



Known or expected occurrences in NS

Description

Blanding's turtles (*Emydoidea blandingii*) are less than 30 cm long and have a distinguishing yellow chin, and helmet-shaped shell that is variably spotted or streaked with greyish-yellow.

In Nova Scotia, these turtles are only known to occur in several small separate populations in the interior southwestern end of the province. They spend most of their lives in wetlands and waterways and build their nest in early summer in a variety of habitats including lakeshores, rocky outcrops, roadsides and gravel roadbeds, and other clearings. Forests, sometimes considerable distances from water, are used for travel and feeding during the spring, summer and fall.

of seasonal sensitivities, are some of the best ways to help protect Blanding's turtles (See *Watercourse Management Zones*, pgs 70–73).

Adjust the timing and location of motorized vehicle use during forest operations in Blanding's turtle habitat.

Legal Requirements – Blanding's turtle and their nests are legally protected in Nova Scotia (See pgs 82–85).

LINKS For detailed and up-to-date information

www.speciesatrisk.ca/blandings/

novascotia.ca/natr/wildlife/biodiversity/species-list.asp

www.novascotia.ca/just/regulations/ and search for "Wildlife Habitat and Watercourses Protection Regulations" (downloadable PDF)

Photo: Alain Belliveau, AC CDC

Stewardship Actions

Any activity that degrades riparian areas, overwintering ponds or impacts the flow of water along waterways has the potential to degrade habitat for turtles. Maintaining natural vegetated buffers along waterways, and consideration

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BIRDS						
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Canada Warbler	Endangered	-	X	X	X	X
Chimney Swift	Endangered	-	X	X	X	X
Common Nighthawk	Threatened	-	X	X	X	X
Eastern Whip-poor-will	Threatened	-	X	X	X	X
Olive-sided Flycatcher	Threatened	-	X	X	X	X
Rusty Blackbird	Endangered	-	X	X	X	-
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Boreal Felt (and Vole Ears)	Endangered	X	X	-	X	-
PLANTS & TREES						
Atlantic Coastal Plain Flora *	Endangered/Threatened	-	X	-	X	-
Black Ash	Threatened	-	X	-	-	-
Eastern White Cedar	Vulnerable	-	X	-	-	-
Ram's Head Lady's Slipper	Endangered	-	X	-	-	-
Rockrose	Endangered	-	X	-	-	-

Blanding's Turtle

REPTILES



Endangered



Known or expected occurrences in NS

Description

Blanding's turtles (*Emydoidea blandingii*) are less than 30 cm long and have a distinguishing yellow chin, and helmet-shaped shell that is variably spotted or streaked with greyish-yellow.

In Nova Scotia, these turtles are only known to occur in several small separate populations in the interior southwestern end of the province. They spend most of their lives in wetlands and waterways and build their nest in early summer in a variety of habitats including lakeshores, rocky outcrops, roadsides and gravel roadbeds, and other clearings. Forests, sometimes considerable distances from water, are used for travel and feeding during the spring, summer and fall.

of seasonal sensitivities, are some of the best ways to help protect Blanding's turtles (See *Watercourse Management Zones*, pgs 70–73).

Adjust the timing and location of motorized vehicle use during forest operations in Blanding's turtle habitat.

Legal Requirements – Blanding's turtle and their nests are legally protected in Nova Scotia (See pgs 82–85).

LINKS For detailed and up-to-date information

www.speciesatrisk.ca/blandings/

novascotia.ca/natr/wildlife/biodiversity/species-list.asp

www.novascotia.ca/just/regulations/ and search for "Wildlife Habitat and Watercourses Protection Regulations" (downloadable PDF)

Stewardship Actions

Any activity that degrades riparian areas, overwintering ponds or impacts the flow of water along waterways has the potential to degrade habitat for turtles. Maintaining natural vegetated buffers along waterways, and consideration

Photo: Alain Belliveau, AC CDC

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SHARED STEWARDSHIP

“The Path We Share – A Natural Resources Strategy for Nova Scotia”

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Goal: Involve many in the shared stewardship of NS’s forests

Action: Focus education and outreach programs on shared stewardship

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“Whether you are preparing for a commercial timber harvest, cutting firewood for your own use, or planning a trail or road through woodland, the information in this guide will help you to recognize and take actions to protect the important forest biodiversity features you may encounter along the way.”

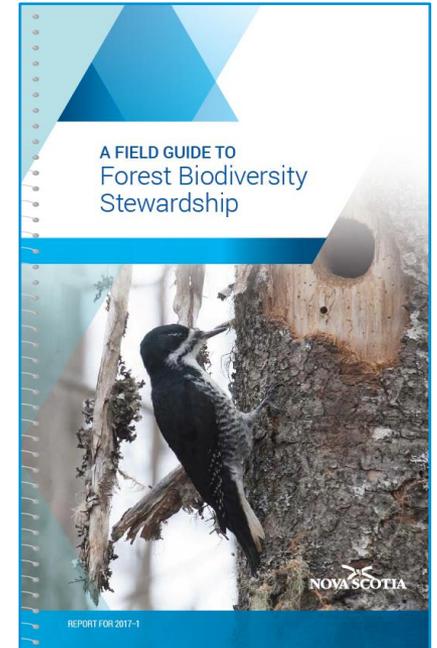
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WHEN?

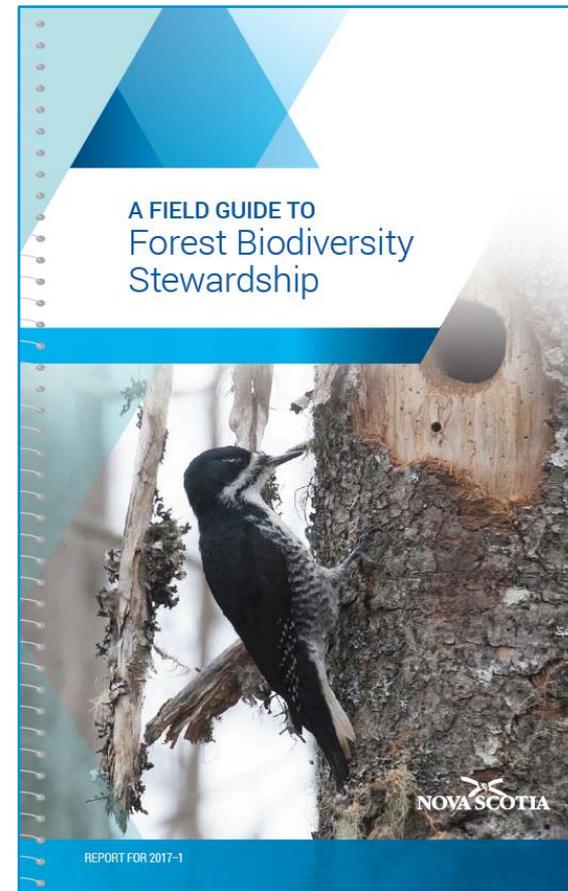
- NOW!
- Guide became available in April 2017

WHERE?

- Free HARD COPIES available from the DNR library in Halifax by email at dnr.library@novascotia.ca or by calling 902-424-8633.
- Download PDF copy online at:
novascotia.ca/natr/library/publications/forestry.asp

A Field Guide to Forest Biodiversity Stewardship

- WHAT is it?
- WHY is it important?
- WHO is it for?
- WHEN can you get it?
- WHERE is it available?



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NOVA SCOTIA

REPORT FOR 2017-1

Thank You