

Forests for Maine Fish

Maine Lakes Conference

12 June 2026

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Director of Conservation
Maine Audubon



Maine: *An Ecological Treasure*

Maine's Extraordinary Range in Climate

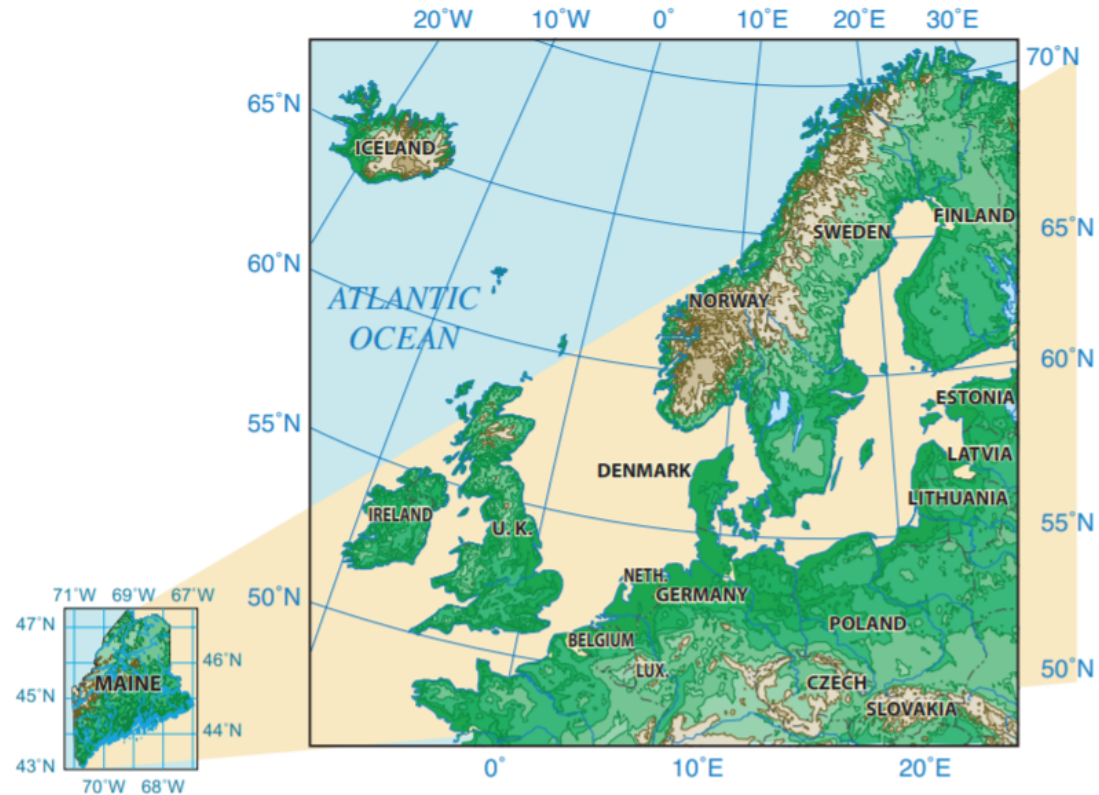
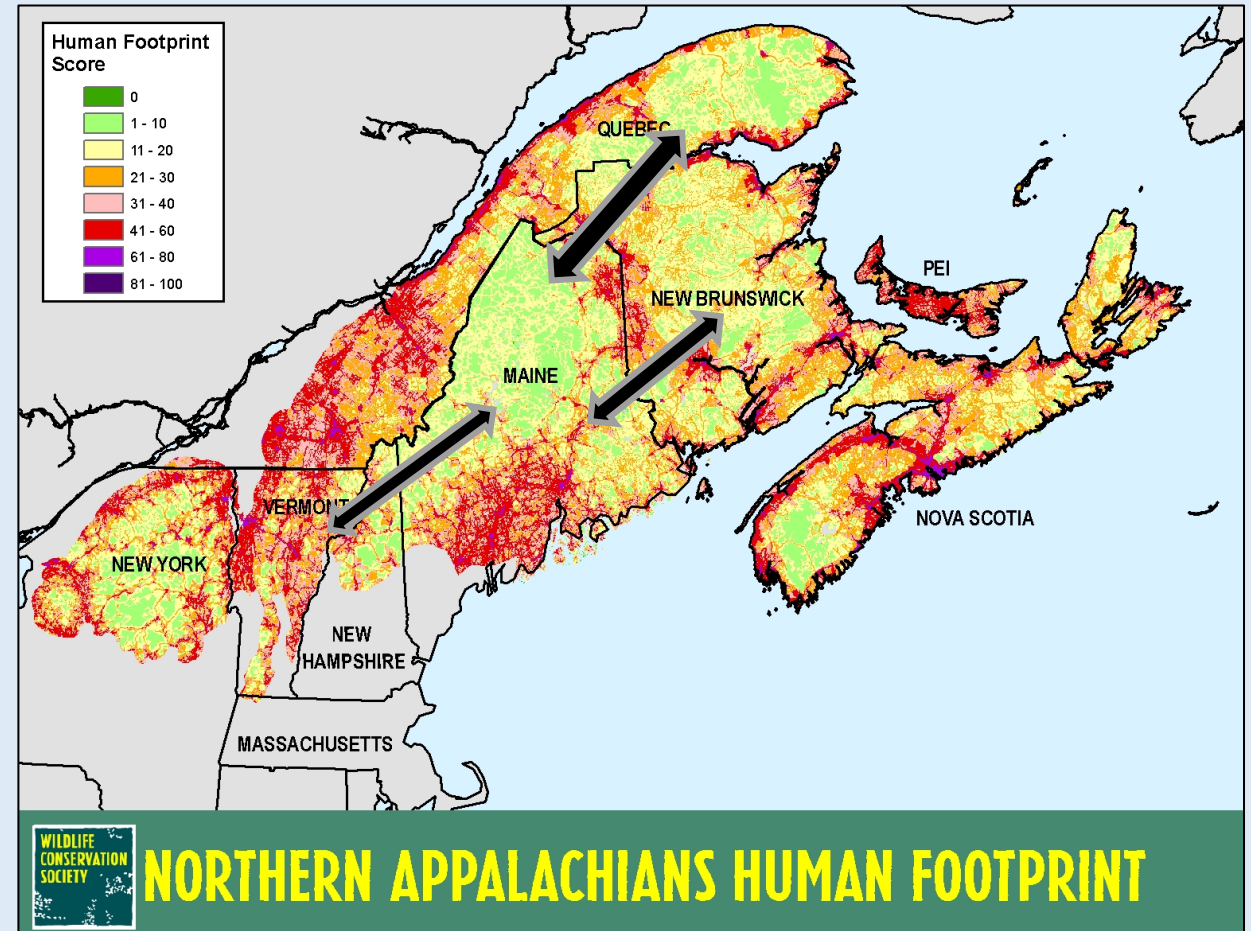


Figure 4 The climate gradient that exists in just three degrees of latitude in Maine occurs over 20 degrees of latitude in Europe, a distance approximately twice the length of California. Figure by K. Maasch.

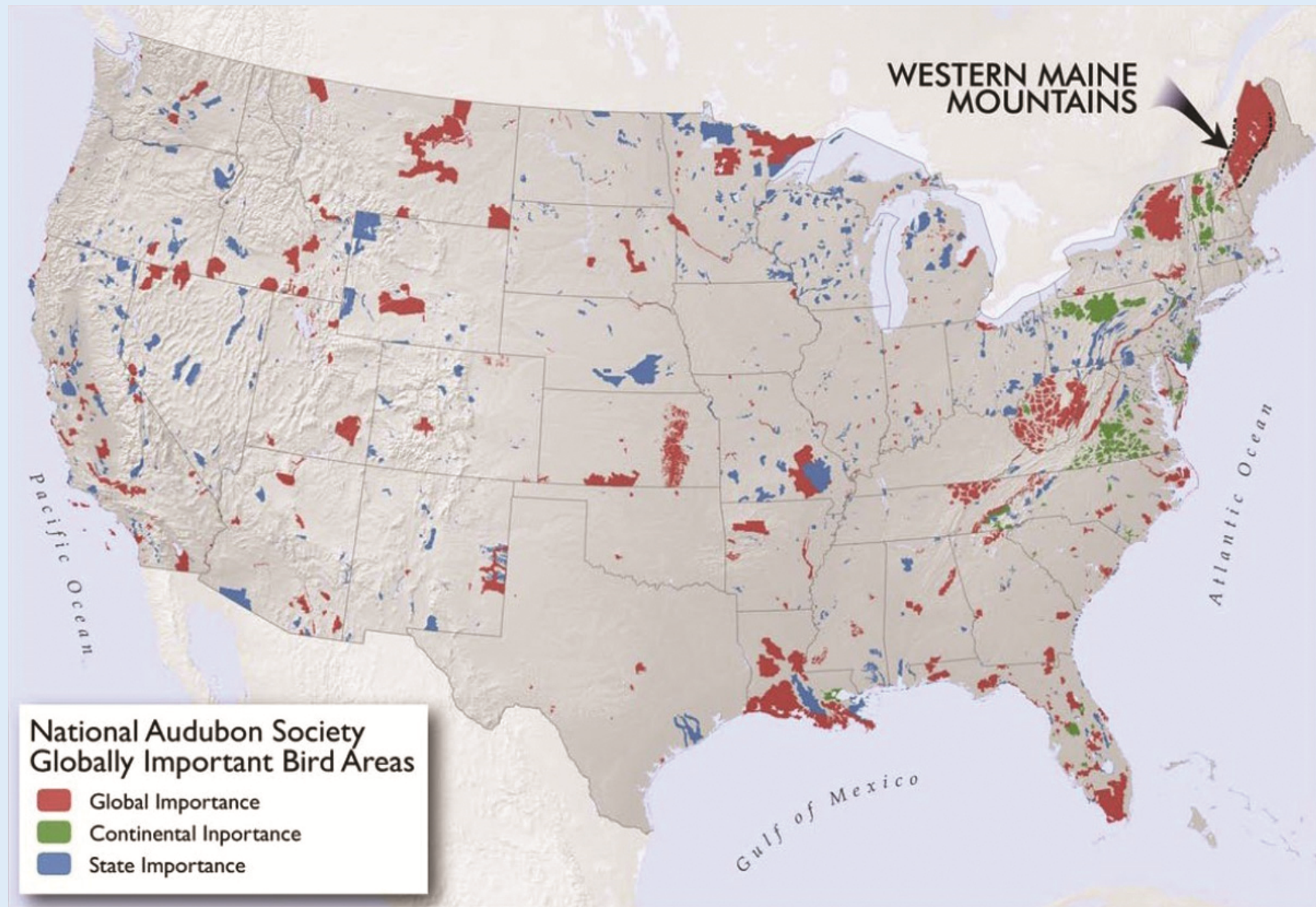


Maine Home to Dark Skies

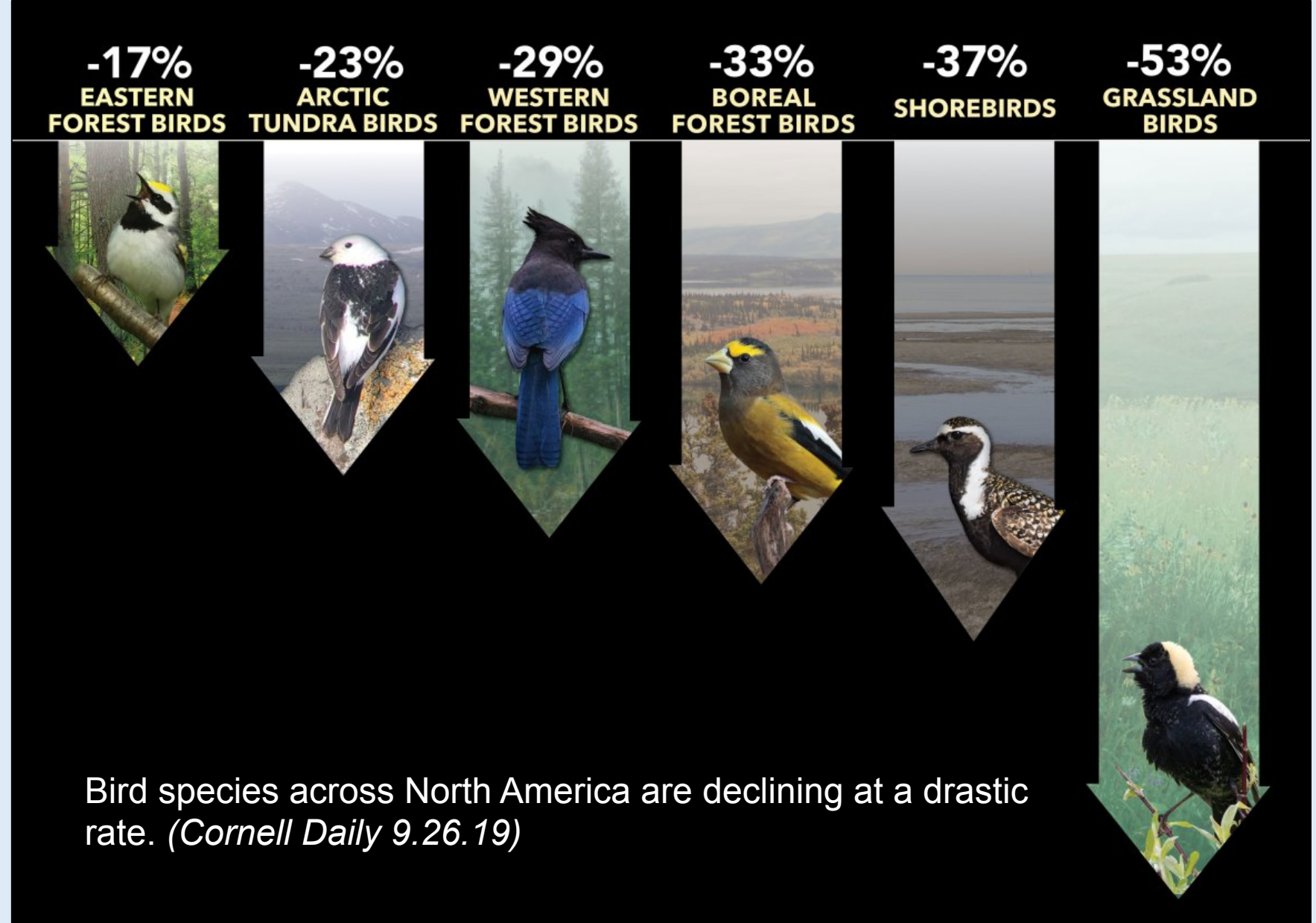
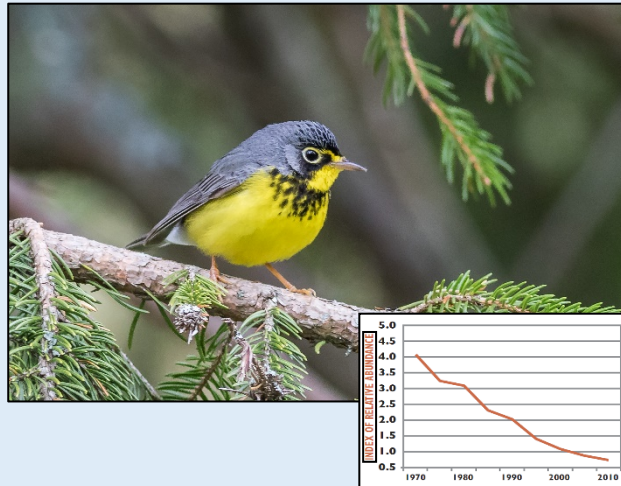
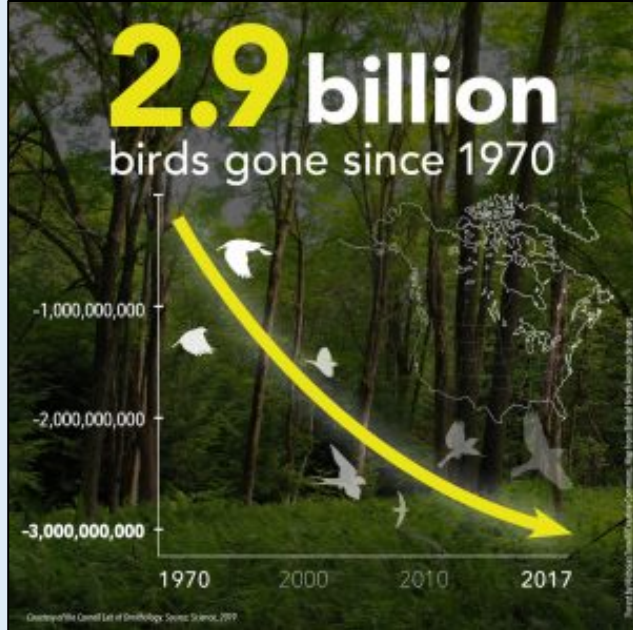


Note the large black hole, with very few lights

Western
Maine
Designated
Globally
Significant
IBA



North American Bird Declines – 1970-2017



Maine Forest Landowners, Managers, and Loggers are Key to Helping Forest Birds

FORESTRY FOR MAINE BIRDS

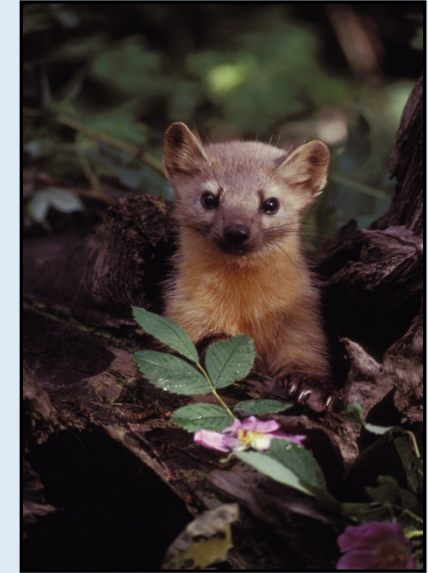


A collaboration
between Maine
Audubon, Maine Forest
Service, Maine Inland
Fisheries and Wildlife,
and Forest Stewards
Guild

maineaudubon.org/ffmb

WHAT IS Forestry for Maine Birds?

Why Birds?



➤ Forest birds use different types of forest *and* different forest features.

➤ Many depend on mature forest structure.





Forestry for Maine Birds 20 Priority Bird Species

Representative of Other Species:

- 4 Forest Types
- 8 Habitat Features

Forestry for Maine Birds Guides

- Woodland Owners Guide
- Logger's Guide
- Forester's Guide
- Bird & Habitat Trading Cards



Goal: More Mature Uneven-Aged Forest Stands



Structurally
Complex

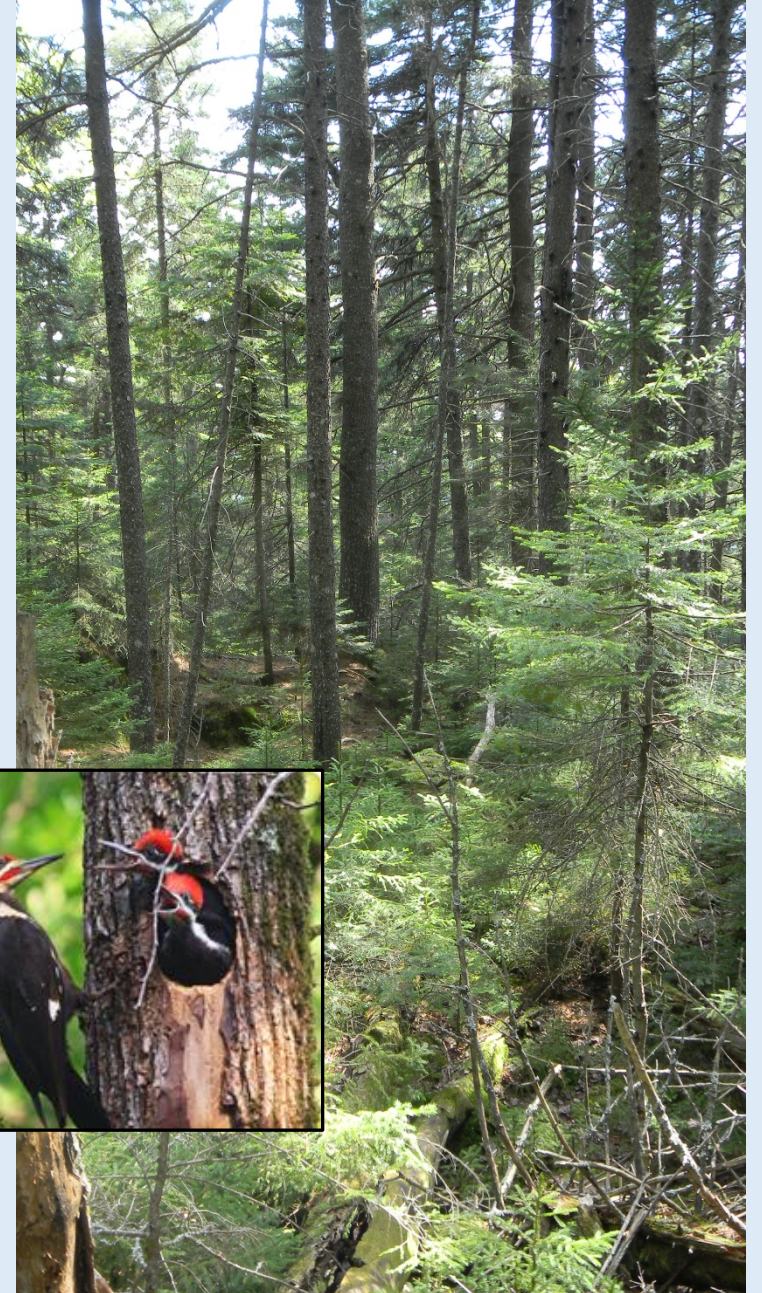
Species Diversity

Age Diversity

Wildlife Diversity

Carbon Storage

Climate Resilient



Quick Forest Bird Habitat Assessment

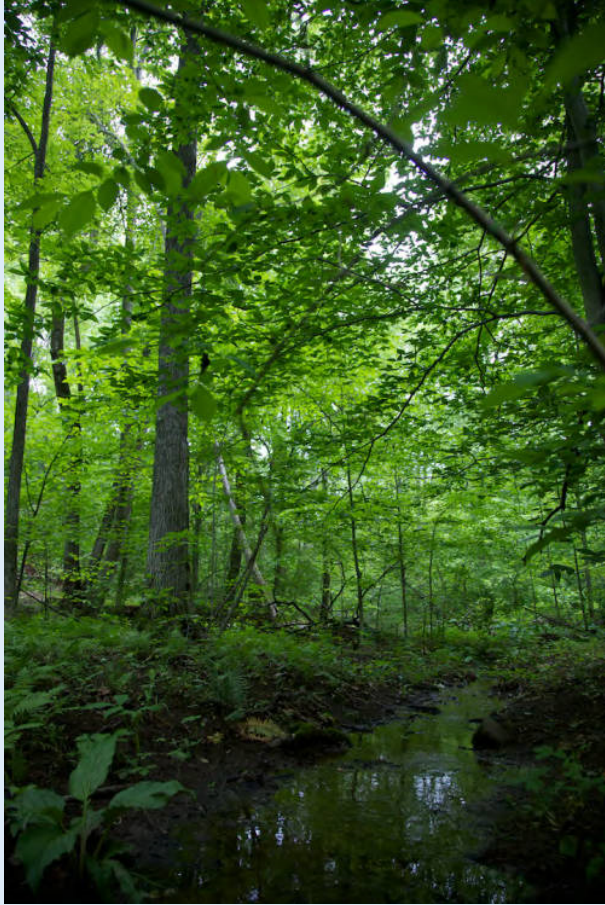


Riparian Areas and Wetland Forests



Forests for Maine Fish

Benefits more than just fish!



Wood Turtle

Northern Woodlands Magazine



Wood Frog



Northern Spring Salamander

Jonathon Mays



Spotted and Blue-spotted Salamanders



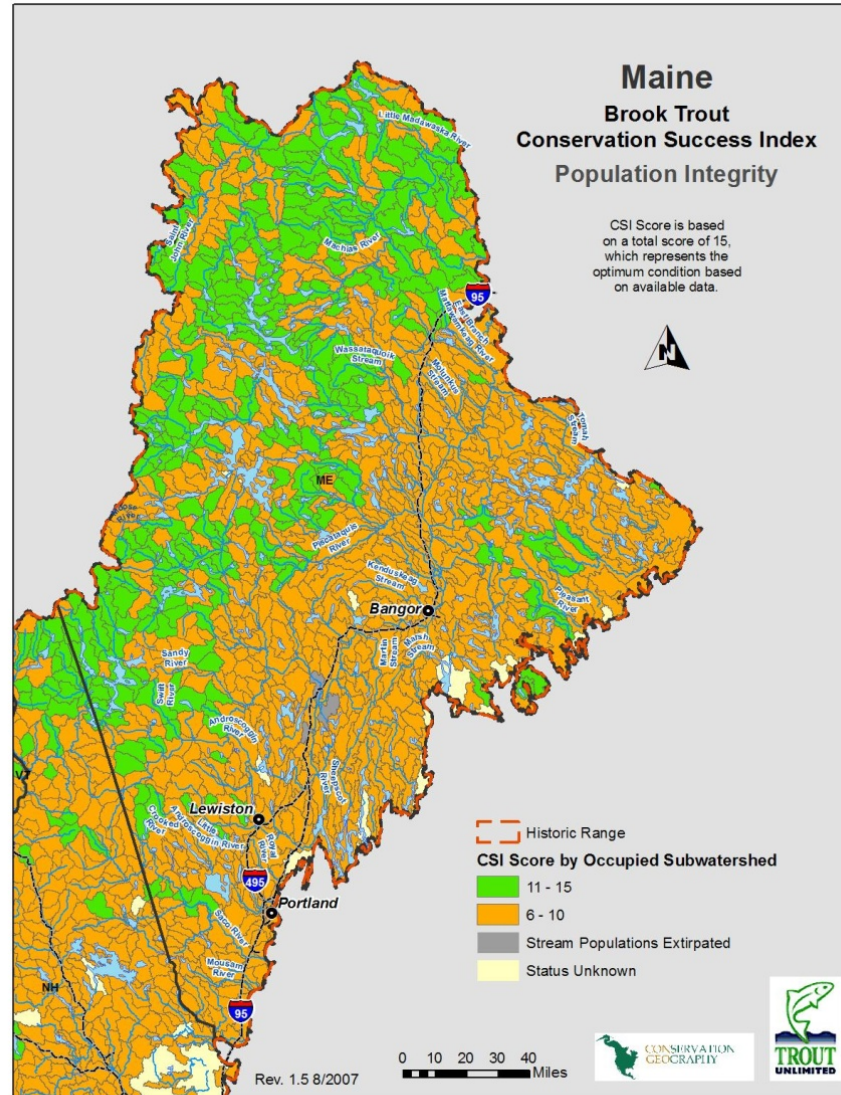
Brook Trout



Cobblestone Tiger Beetle



Maine is the last stronghold in the U.S. for wild eastern Brook Trout



➤ 50% of the nation's remaining wild population

➤ 97% of all lake and pond populations

➤ 51% of intact brook trout streams in eastern range

This map illustrates the distribution of Atlantic Salmon Critical Habitat and Distinct Population Segments (DPS) in Maine. The map shows the state's coastline and major river networks. Critical habitat is indicated by a red cross-hatched pattern, while DPS are shown in solid red. Key locations labeled include Bangor, Presque Isle, Carleton Place, Bangor, Calais, Berlin, Portland, and Portsmouth. The map also shows the border with Canada to the north and east. A legend in the bottom right corner defines the symbols for Atlantic Salmon Critical Habitat and Atlantic Salmon DPS. A scale bar and a north arrow are also present.

- ❖ Androscoggin
- ❖ Kennebec
- ❖ Penobscot
- ❖ Kenduskeag
- ❖ St. George
- ❖ Machias
- ❖ Narraguagus

- ❖ Sandy River
- ❖ Upper Penobscot
- ❖ Sheepscot

Coldwater Fish

Need clean, cold, oxygen-rich water

Benefit from 100' buffer of large, full canopy trees

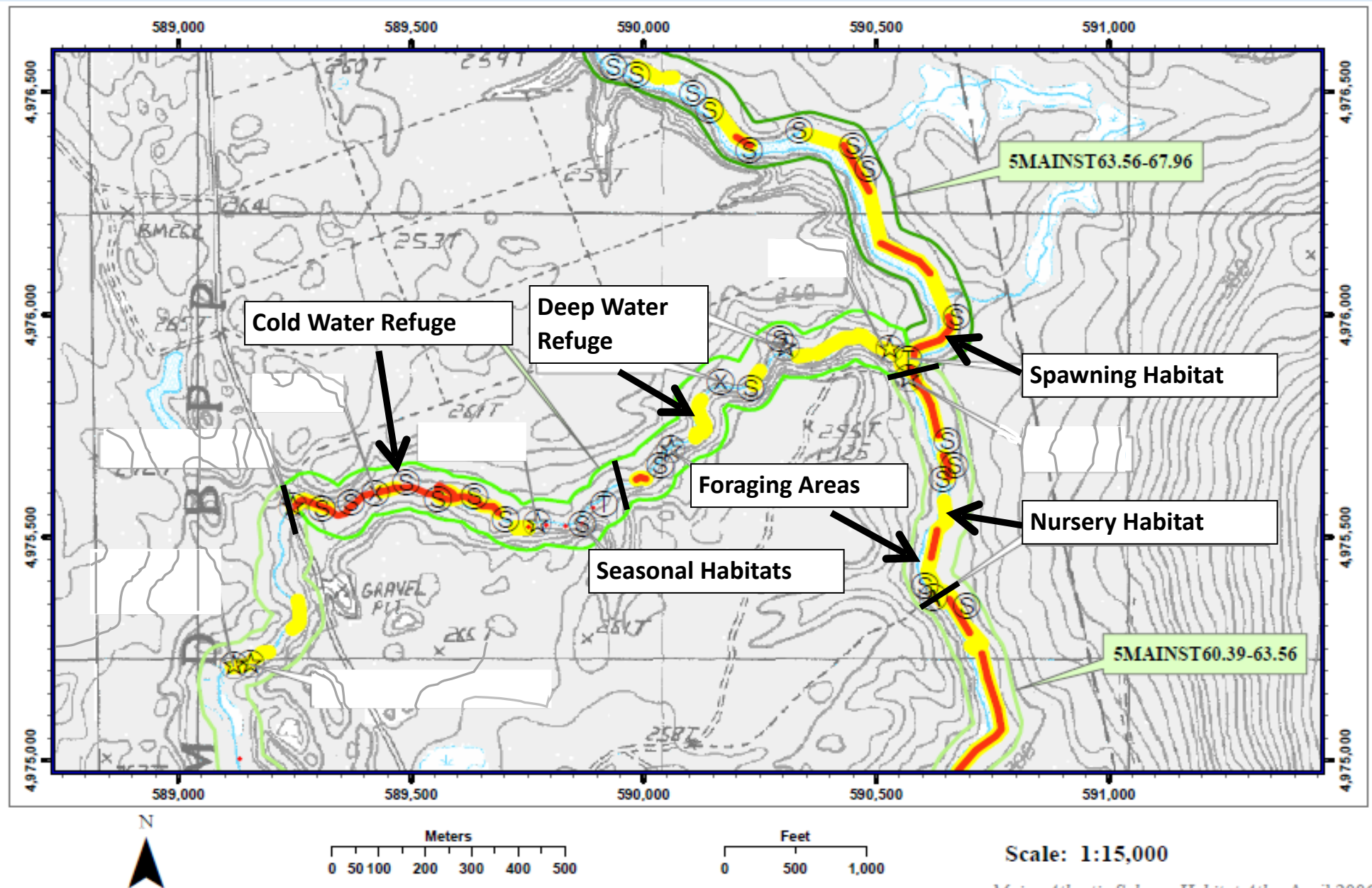
- Provides shade, keeps water cool
- Reduces erosion, protects spawning grounds
- Recruits woody material into streams



Trout Food



Fish need to move



Importance of Riparian Habitat

85% of Maine vertebrates use riparian habitat sometime during their annual life cycle

FIGURE 1. WILDLIFE USE OF RIPARIAN AREAS

RIPARIAN HABITAT and WILDLIFE TRAVEL CORRIDOR

COLDWATER FISH:
Habitat Protection
& Enhancement

0 to 100 Feet

Brook Trout



Dusky Salamander



Canada Warbler



Moose



Bobcat



River Otter



American Marten



Wood Duck



Wood Turtle



Silver-haired Bat



0

DISTANCE FROM WATER

100'

Feet

250'

600'

1,100'

Inner Riparian Habitat Management



0-50' for warmwater fish
0-100' for coldwater fish

Establish a no-cut area or use light selection cutting to manage for mature forest conditions that will maximize shade, recruitment of large downed wood, and sediment filtering.

Riparian Wildlife

Inner Riparian Area



Found along streams, springs, seeps



Feed in shallows
Sensitive to disturbance



Need clean, clear water to find fish
Nest along shoreline



Den in water, feed on land



Feed on rich aquatic plants in summer
Seek refuge in cool forests on hot days

Outer Riparian Habitat Management



- Up to 150' intermittent streams
- Up to 250' small streams, ponds and wetlands < 10 ac
- Up to 600+ ft on larger streams, ponds, lakes, wetlands >10 ac

Use single-tree, group, or irregular shelterwood to maintain relatively mature forest habitat with only small canopy openings.

Riparian Wildlife

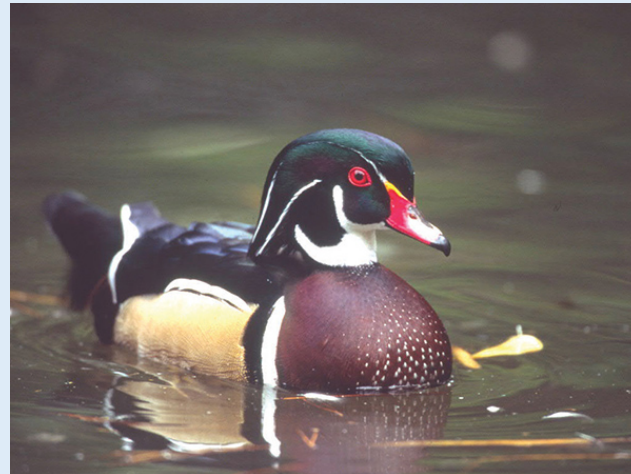
Outer Riparian Area



Forage over water
Found on large trees with loose bark
1100' from water



Winters in streams
Lays eggs 900' from water



Nest in cavities 600' from water



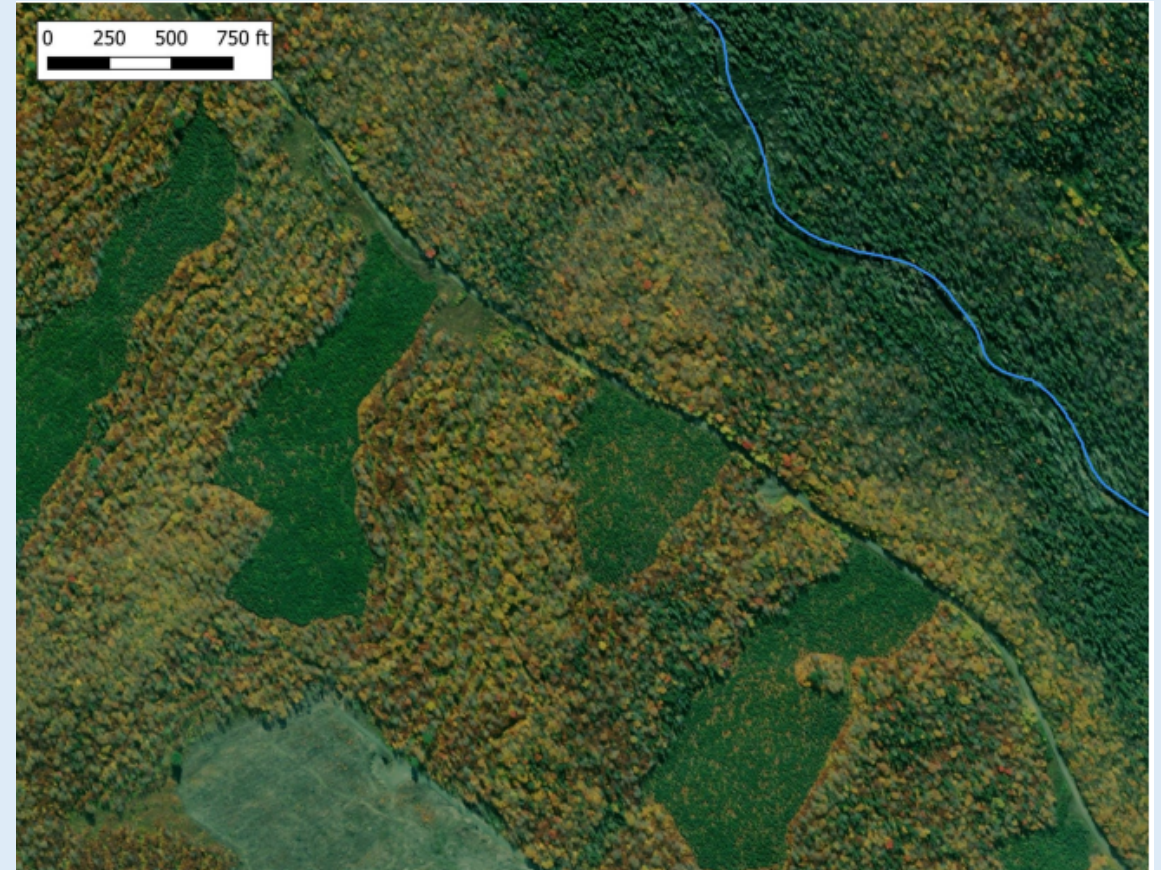
Nest in dense understory near water,
along with Veery and Northern
Waterthrush

Beyond Outer Riparian Habitat Management Area



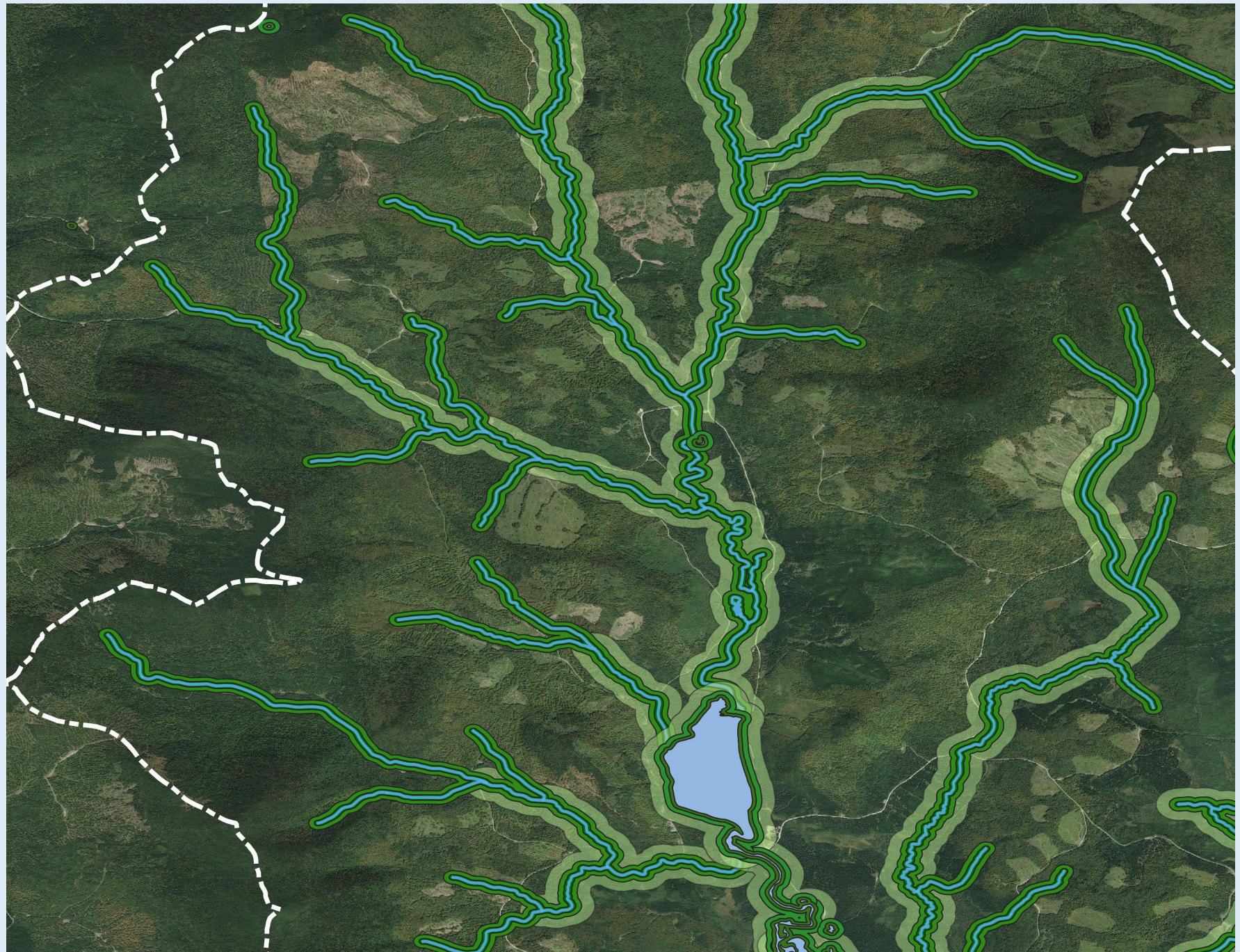
Intense harvesting near stream

Extend the Outer RMA when adjacent to large clearcuts or overstory removal harvests by retaining an average of 50% or higher crown closure of trees at least 40' tall, and limit openings to <20% of the RMA.



Wide Outer Riparian Habitat Management Area

**Sample Inner
and Outer
Riparian
Habitat
Management
Areas
Applied**



Riparian Wildlife

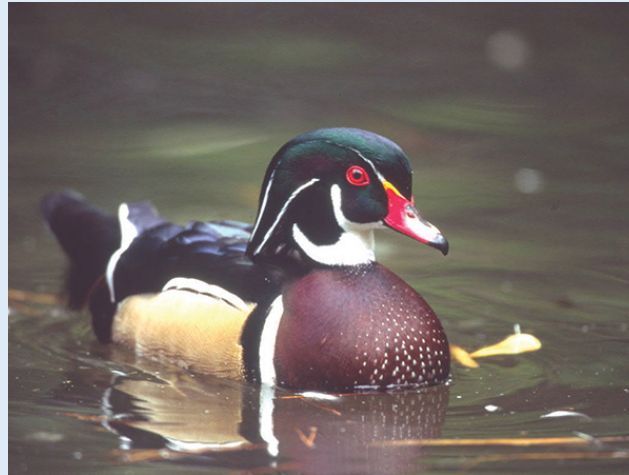
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Protect and Buffer Vernal Pools



Pool and perimeter:

No disturbance.

Protection Zone:

1-100 ft. Maintain at least 75% canopy cover, minimize soil disturbance.

Life Zone:

100-400 ft. from pool. Maintain at least 50% canopy cover with canopy openings <1 acre.



Enhance In-Stream Habitat



Trout Unlimited team putting rocks back into stream

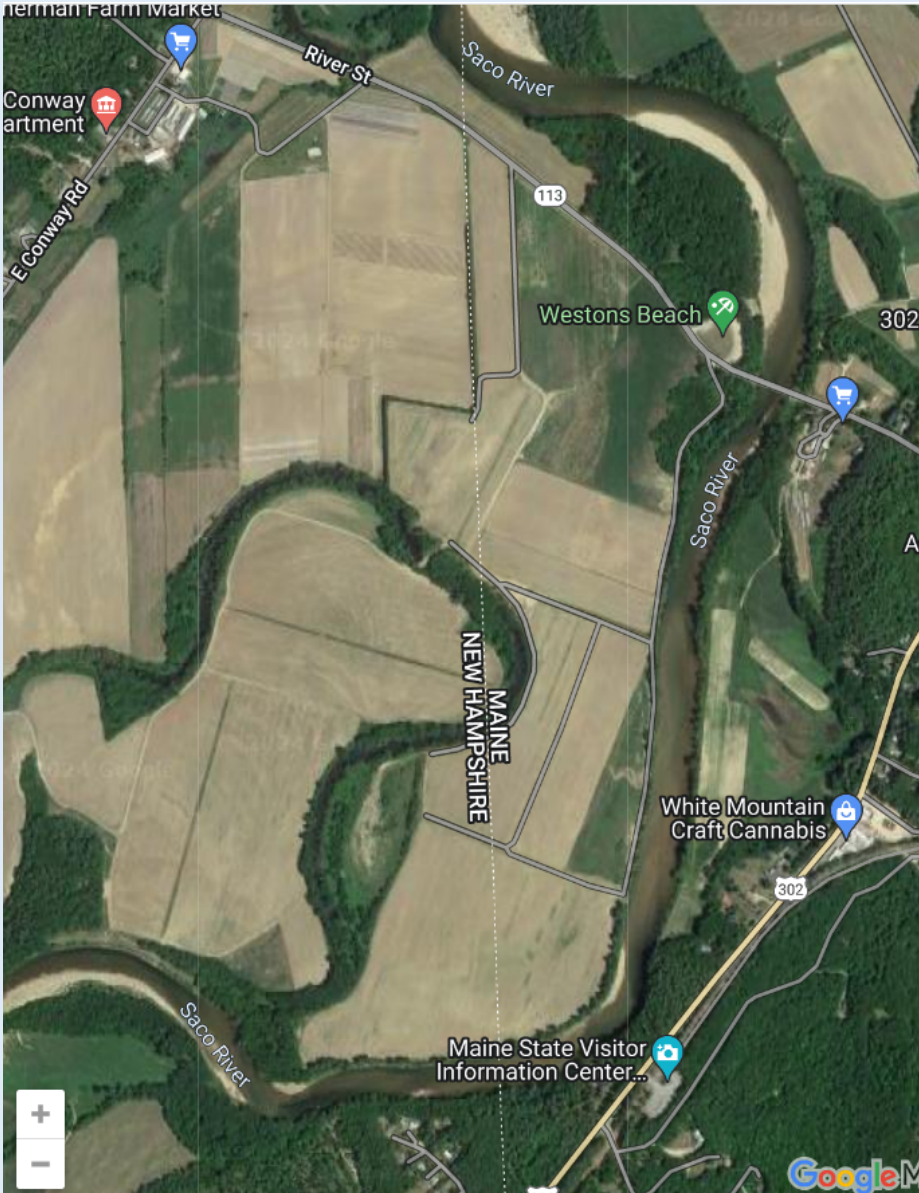
Photo from Vermont Department of Fish and Wildlife



Chop and Drop – putting wood back into stream

Photo from Vermont Department of Fish and Wildlife

Restore Missing or Degraded Riparian Habitat



- Revegetate eroding stream banks
- Plant forested buffers
- Control invasive plants

Maintain and Restore Stream Connectivity

Let the Stream Act Like A Stream!

- Span Stream
- Set Elevation
- Match Slope
- Natural Substrate

Make room for
passage of both
aquatic and
terrestrial critters.



example of Stream Smart crossing

Locate Recreational Trails for Wildlife and People



- Maintain a minimum 75-foot setback to minimize disturbance to wildlife, except for stream crossings and side trails to viewpoints.
- Build and maintain trails to recognized standards to protect water quality and minimize damage to tree roots from trail compaction and erosion.

Remember fish and wildlife while managing the surrounding landscape



Retain patches of older forest to connect riparian areas to other mature upland forest areas.

FFMB Landscape Goals:

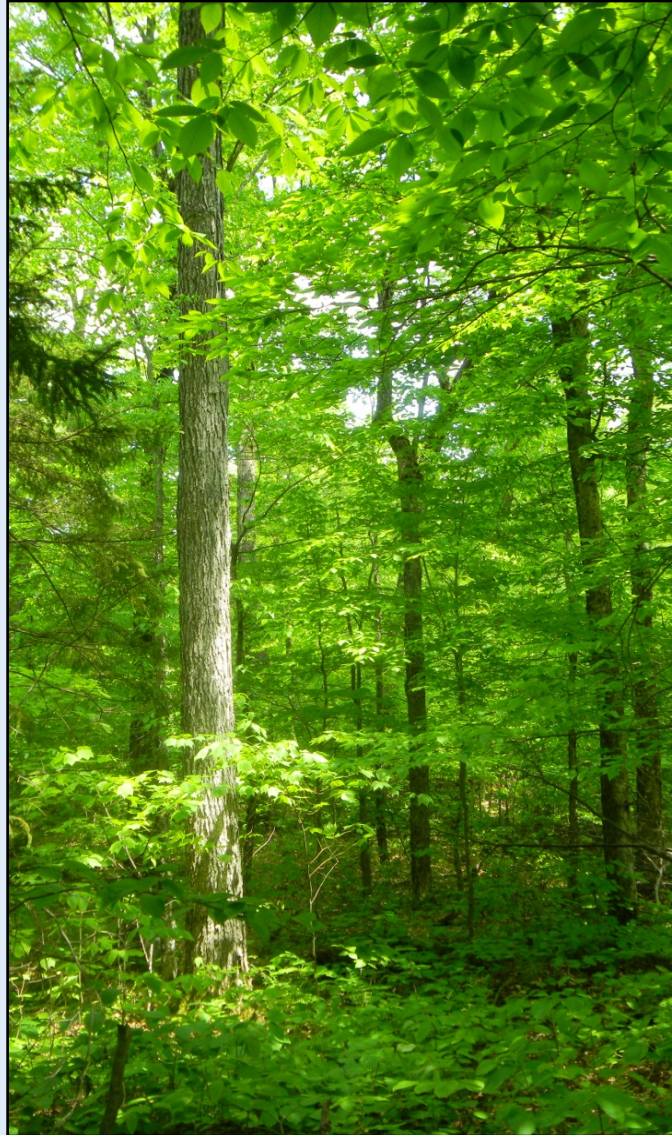
- 10-20% seedling/sapling
- 20-40% intermediate age
- 40-50% small sawtimber
- >10% old/complex/large sawtimber

Riparian Habitat & Climate Resilience

Maintain a diversity of tree species and ages to improve resilience.



Increase culvert sizes to match extreme storms.



Maintaining relatively mature forest conditions in riparian areas can help store more carbon than in more intensively managed forest areas.

Enhance Riparian Habitat Management on Conservation Ownerships



Incorporate recommendations into Easement, Ecological Management Plan, or Forest Management Plan

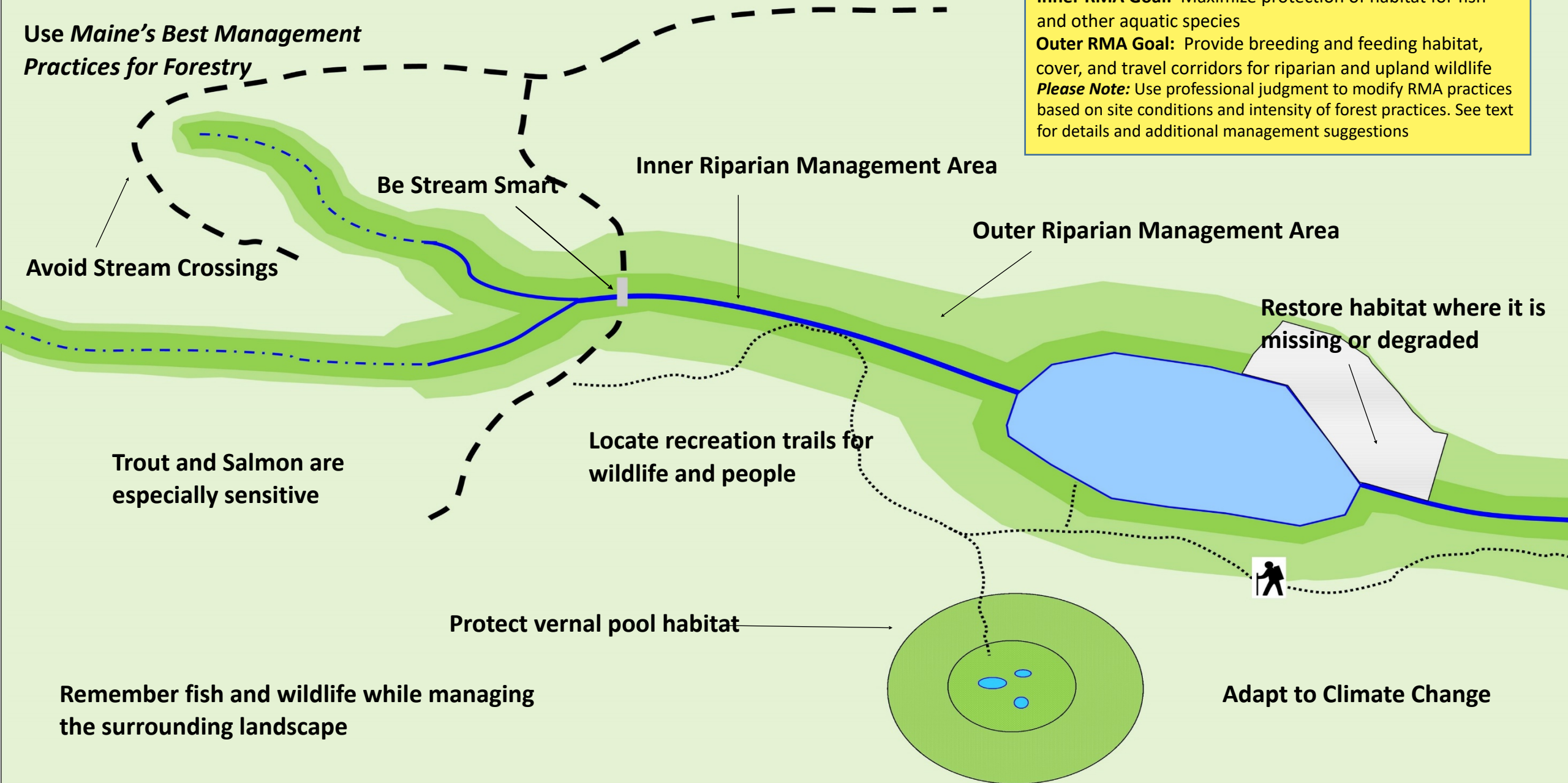
Forests for Maine Fish: Forester's Guide

Riparian Management Area (RMA) Habitat Goals

Inner RMA Goal: Maximize protection of habitat for fish and other aquatic species

Outer RMA Goal: Provide breeding and feeding habitat, cover, and travel corridors for riparian and upland wildlife

Please Note: Use professional judgment to modify RMA practices based on site conditions and intensity of forest practices. See text for details and additional management suggestions



Homeowner's Guide to Forests for Maine Fish

Follow these six practices:

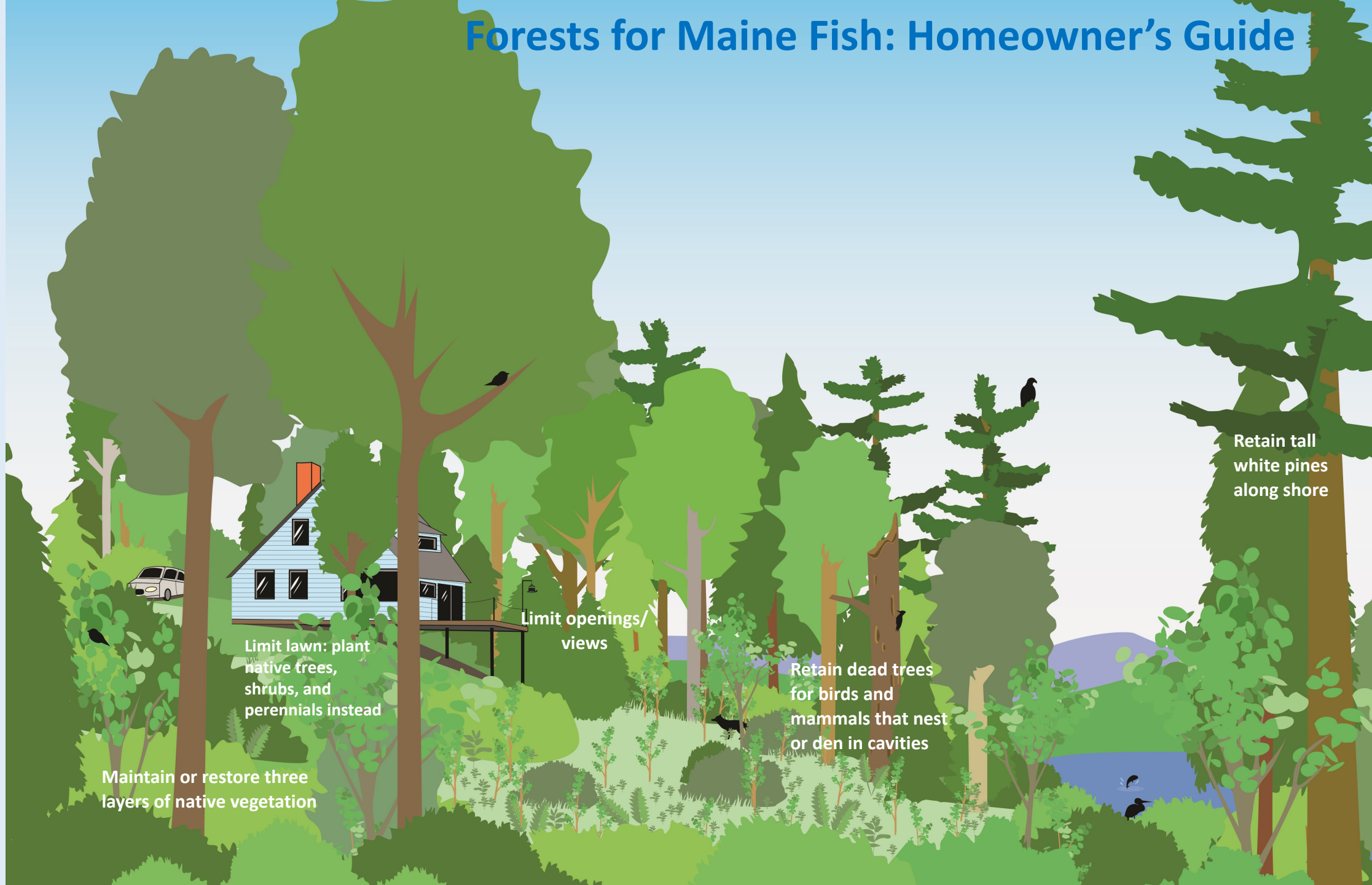
- 1 - Manage the area around your home for wildlife and water quality.
- 2 – Maintain valuable wildlife trees where possible.
- 3 – Look out for Brook Trout.
- 4 – Be StreamSmart!
- 5 – Be LakeSmart and Loon Smart!
- 6 – Go beyond the minimum regulatory requirements.



Forests for Maine Fish: Homeowner's Guide



Forests for Maine Fish: Homeowner's Guide



Limit lawn: plant
native trees,
shrubs, and
perennials instead

Maintain or restore three
layers of native vegetation

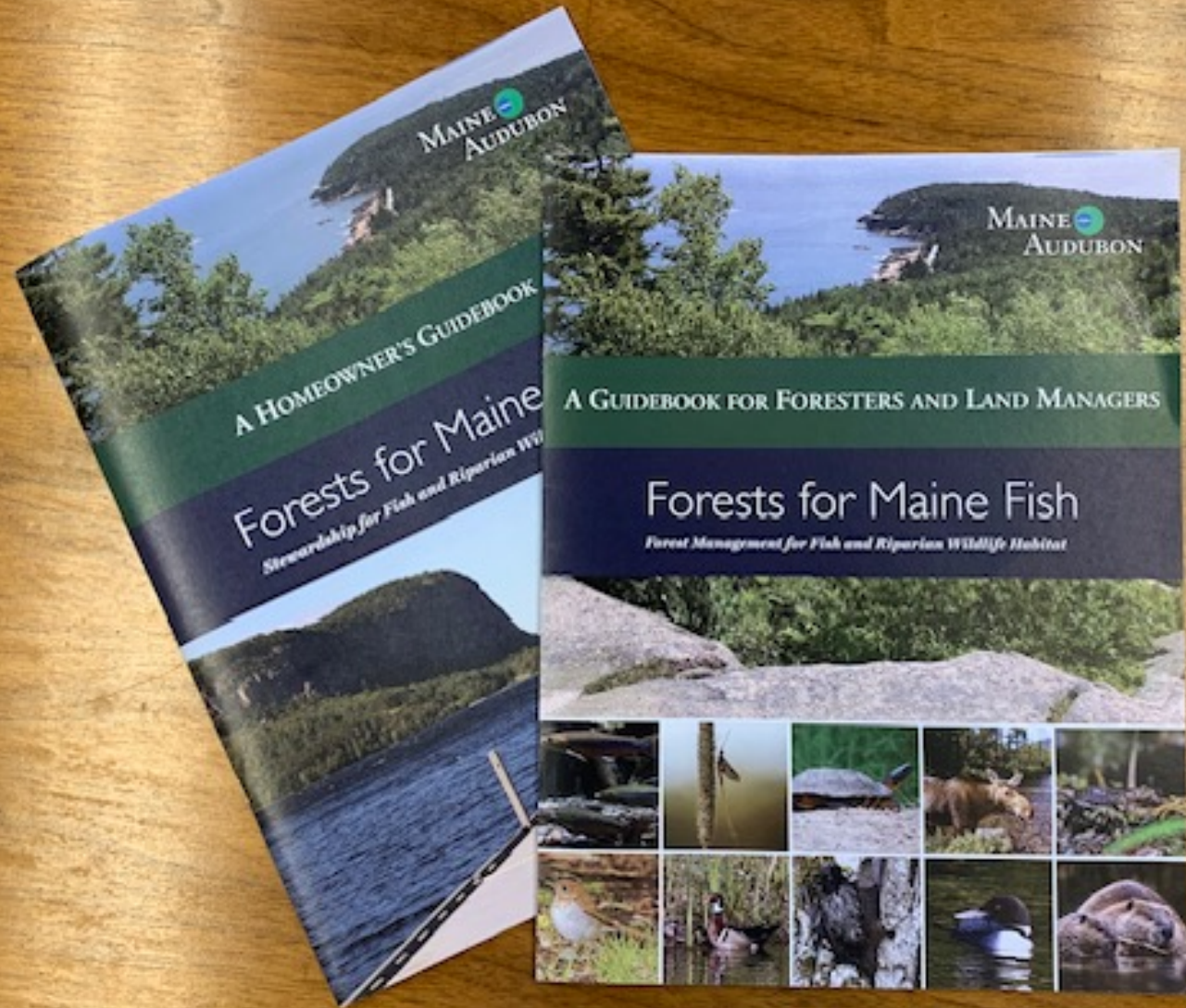
Limit openings/
views

Retain dead trees
for birds and
mammals that nest
or den in cavities

Retain tall
white pines
along shore

Forests for Maine Fish Guides:

- Foresters and Land Managers
- Homeowners





Forests for Maine Fish

A collaborative effort!

These guides have benefitted greatly by reviews from:

- Appalachian Mountain Club
- Atlantic Salmon Federation
- Lakes Environmental Association
- Forest Stewards Guild
- Maine Inland Fisheries and Wildlife
- Maine Forest Service
- Maine Lakes
- Maine TREE
- Maine Woodland Owners
- Professional Logging Contractors of the Northeast
- Trust to Conserve Northeast Forestlands
- Trout Unlimited

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Thanks for Listening!

Any Questions?

Please join us!

Maine Audubon: Your Wildlife Community

www.maineaudubon.org

maineaudubon.org/ffmb

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