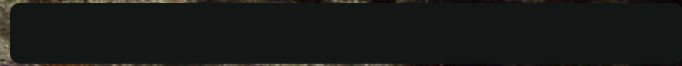




2020 Webinar Series



A large blue graphic with a white border is positioned on the right side of the image. It contains the text 'TRAILS for PEOPLE & WILDLIFE' in white and blue. Below the text is a stylized turtle icon with a patterned shell and a white body, set against a background of a white line with red segments and a dotted blue line.



Our Presenters

Rachel Stevens

*Stewardship Coordinator and Wildlife Ecologist
Great Bay National Estuarine Research Reserve*



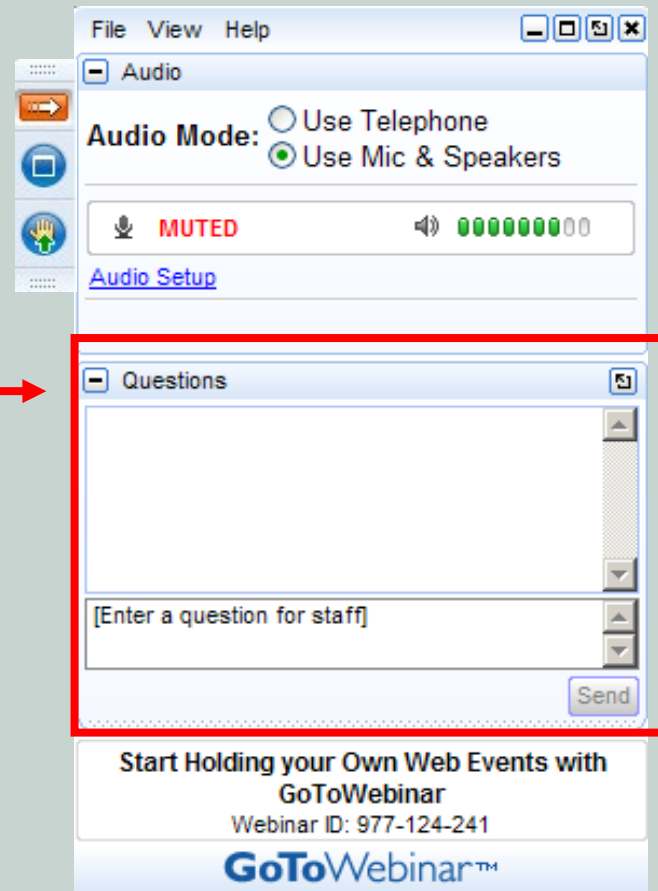
Catherine Callahan

GIS Specialist, NHFG/NHDoIT

New Hampshire Fish and Game Department
89 Depot Road, Greenland, NH 03840
Phone (603) 778-0015

How to Participate Today

- Open and close your panel →
- Submit text questions →
- Q&A addressed during the webinar session



Getting Out to Enjoy Nature!



New Hampshire

FISH AND GAME

Connecting you to life outdoors

Guardian of the state's fish, wildlife, and marine resources.

Impacts of
Trails on
Wildlife

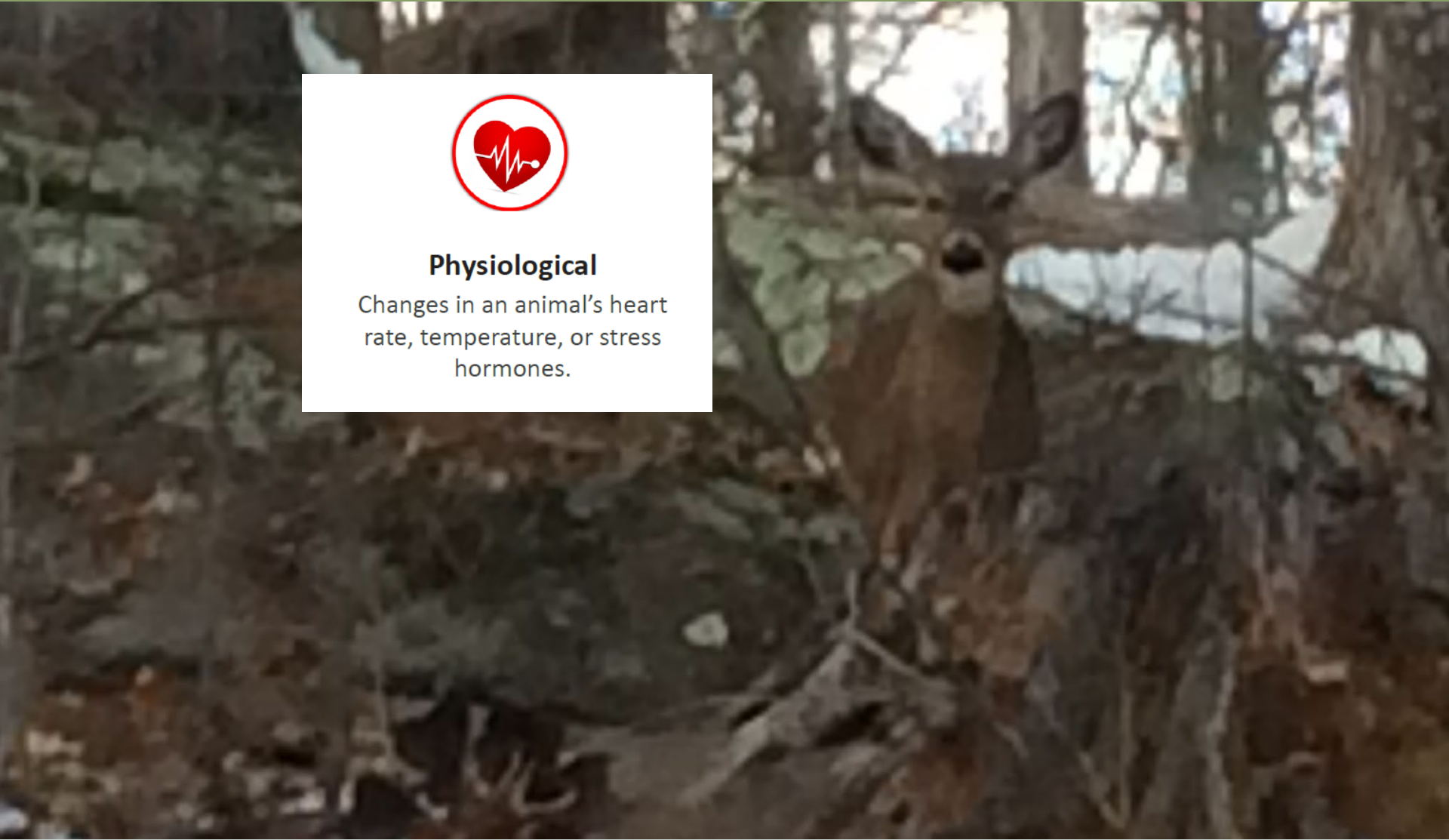


Impacts of Recreational Trails on Wildlife



Physiological

Changes in an animal's heart rate, temperature, or stress hormones.



Impacts of Recreational Trails on Wildlife



Physiological

Changes in an animal's heart rate, temperature, or stress hormones.



Behavioral

Changes in foraging, vigilance or fleeing from perceived predators.

Impacts of Recreational Trails on Wildlife



Physiological

Changes in an animal's heart rate, temperature, or stress hormones.



Behavioral

Changes in foraging, vigilance or fleeing from perceived predators.



Reproductive Success

Reduction in the number of nests built, eggs laid or young born and successively raised.

Impacts of Recreational Trails on Wildlife



Physiological

Changes in an animal's heart rate, temperature, or stress hormones.



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Changes in foraging, vigilance or fleeing from perceived predators.



Reproductive Success

Reduction in the number of nests built, eggs laid or young born and successively raised.



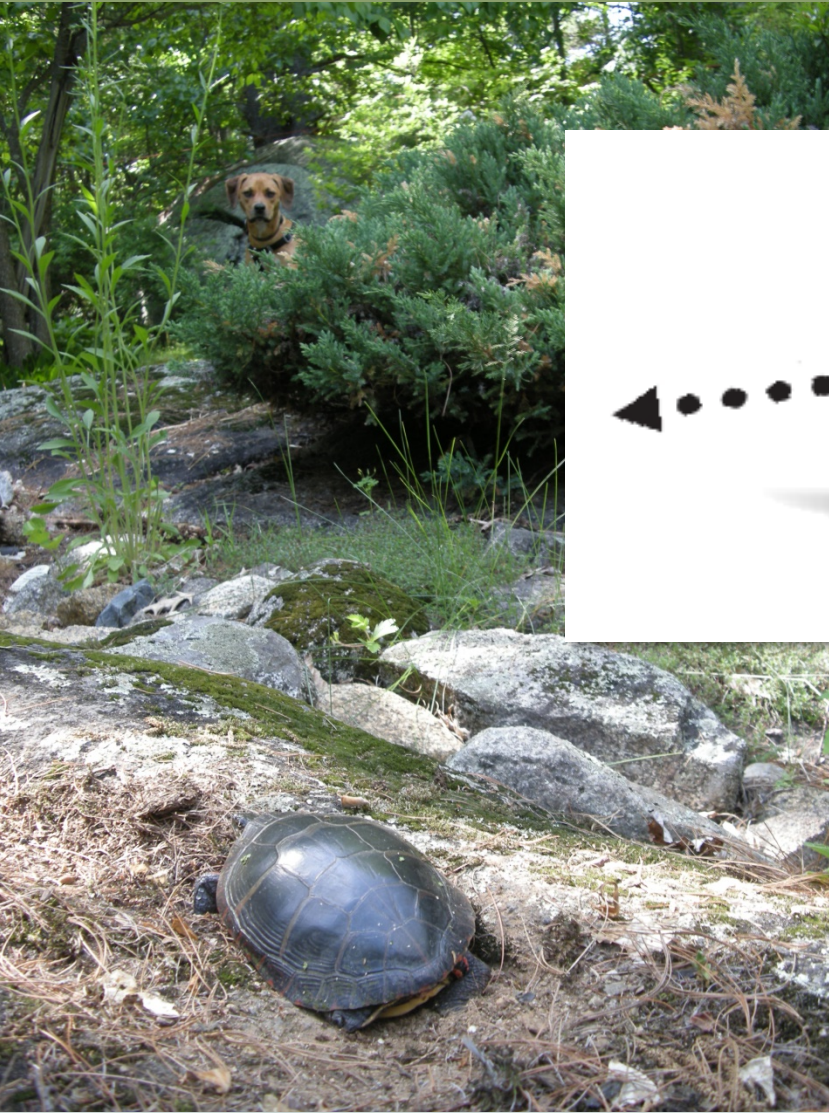
Predation

Scaring an adult away leaves young vulnerable to predation. Adults may be preyed on directly.

Trail Impacts
on Protected
Land in NH



“Corridor of Influence”



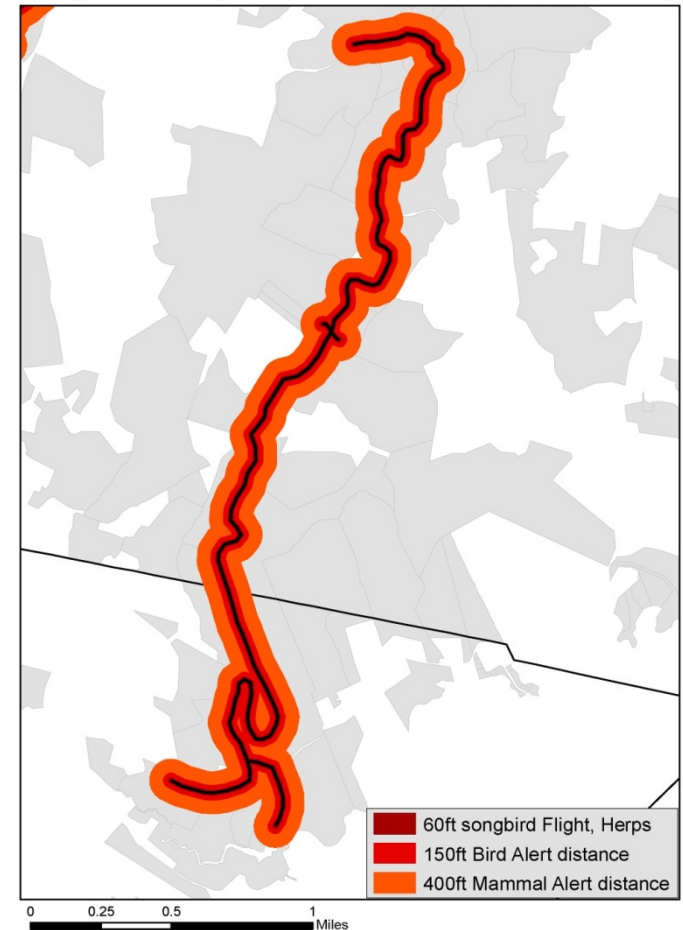
OUR PRESENCE CAN BE
DETECTED BY WILDLIFE ON
EITHER SIDE OF A TRAIL.
THIS IS ITS *“CORRIDOR OF
INFLUENCE”*

Corridor of Influence “Alert” and “Flight” Distances

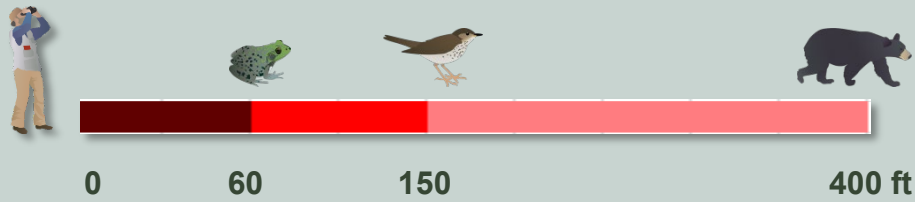
- Reviewed 67 articles.
- New England based, or as close to New England as possible.
- Distances for birds, mammals plus amphibians and reptiles.



Average Alert and Flight Response Distances (birds, herps, mammals)



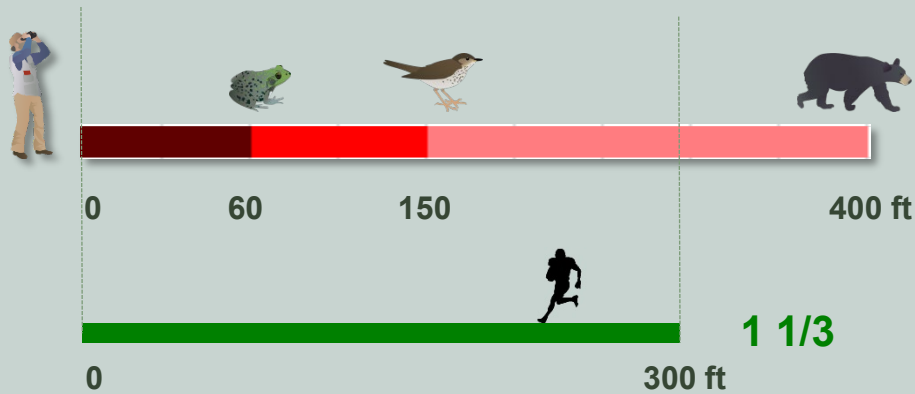
Corridor of Influence “Alert” and “Flight” Distances



Average Alert and Flight Response Distances (birds, herps, mammals)



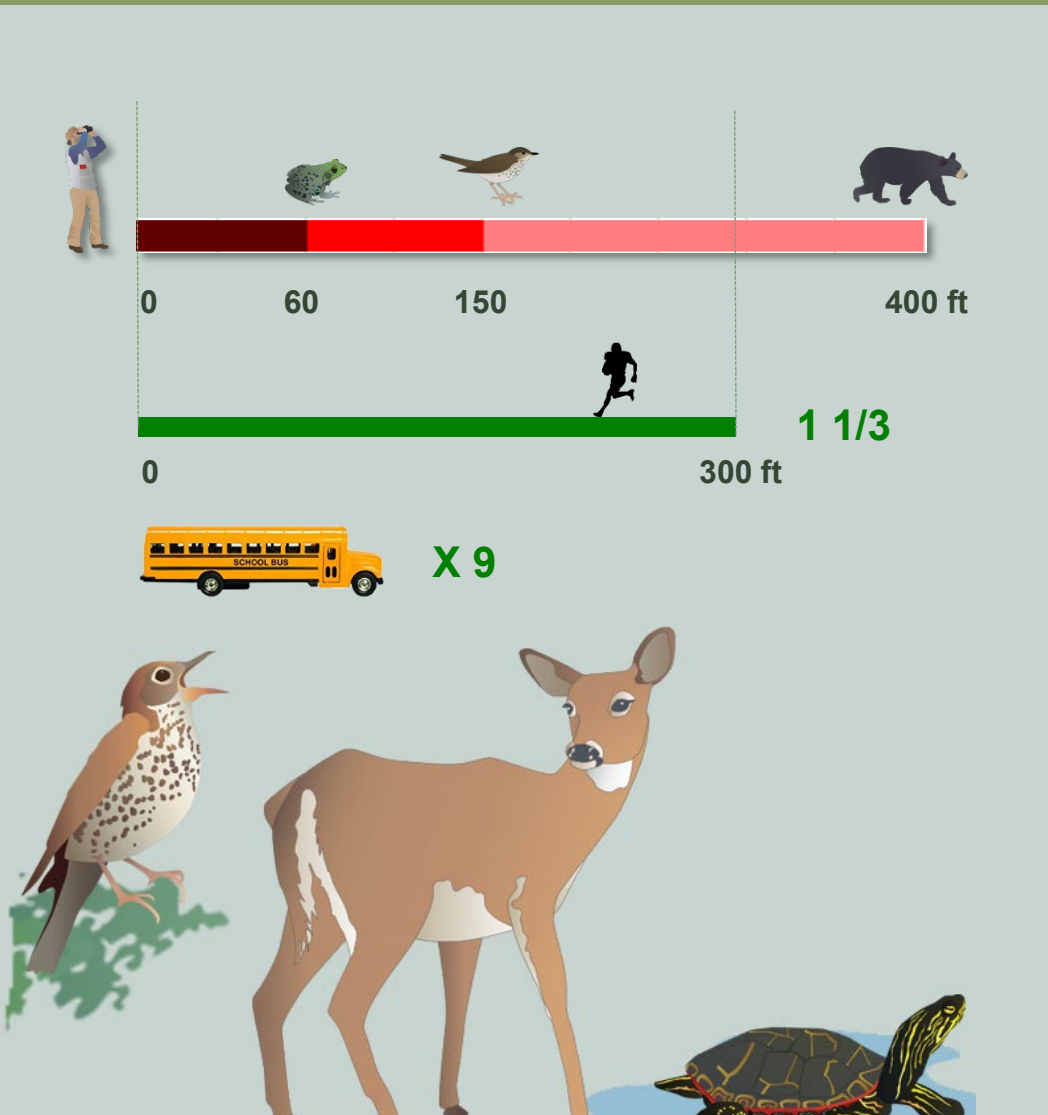
Corridor of Influence “Alert” and “Flight” Distances



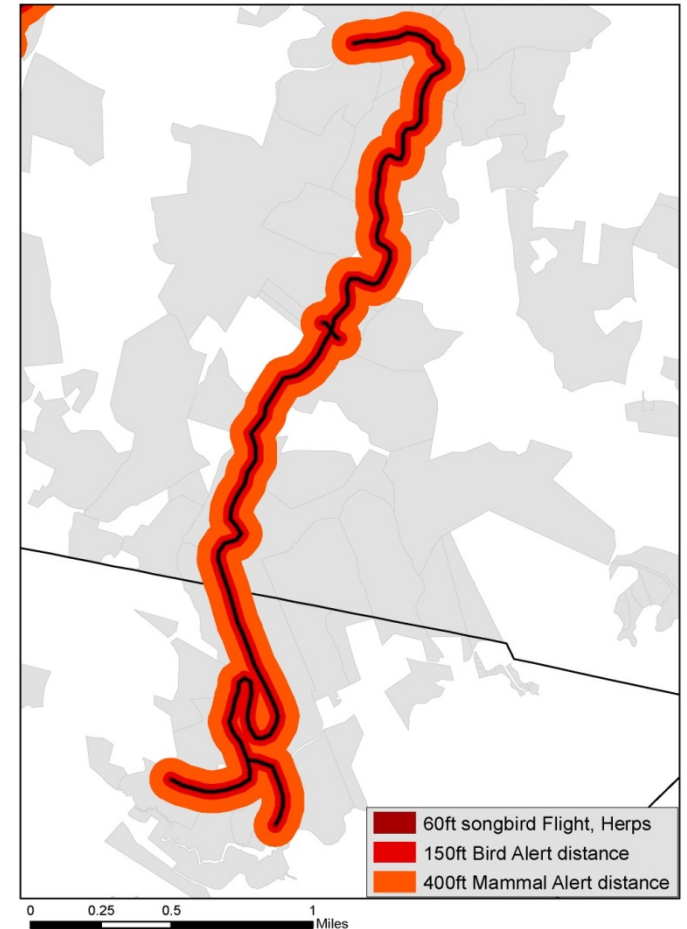
Average Alert and Flight Response Distances (birds, herps, mammals)



Corridor of Influence “Alert” and “Flight” Distances



Average Alert and Flight Response Distances (birds, herps, mammals)

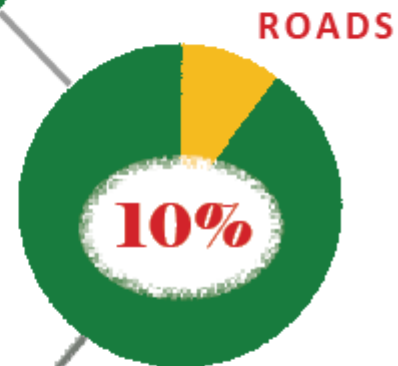


Current Trails on Protected Land

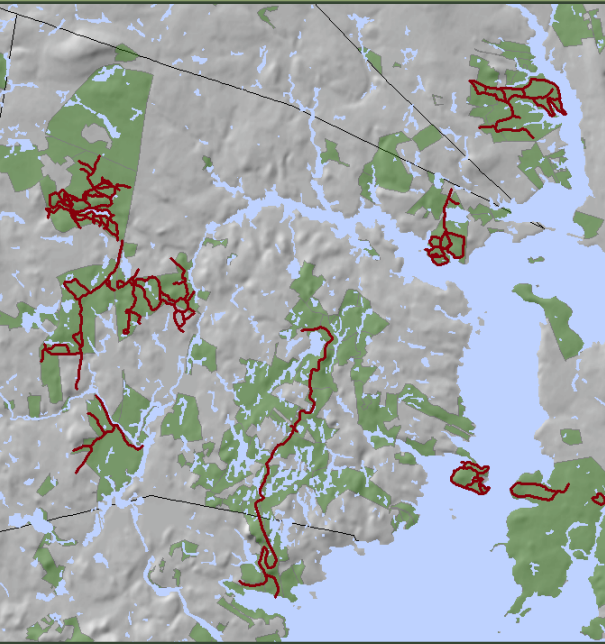


25%

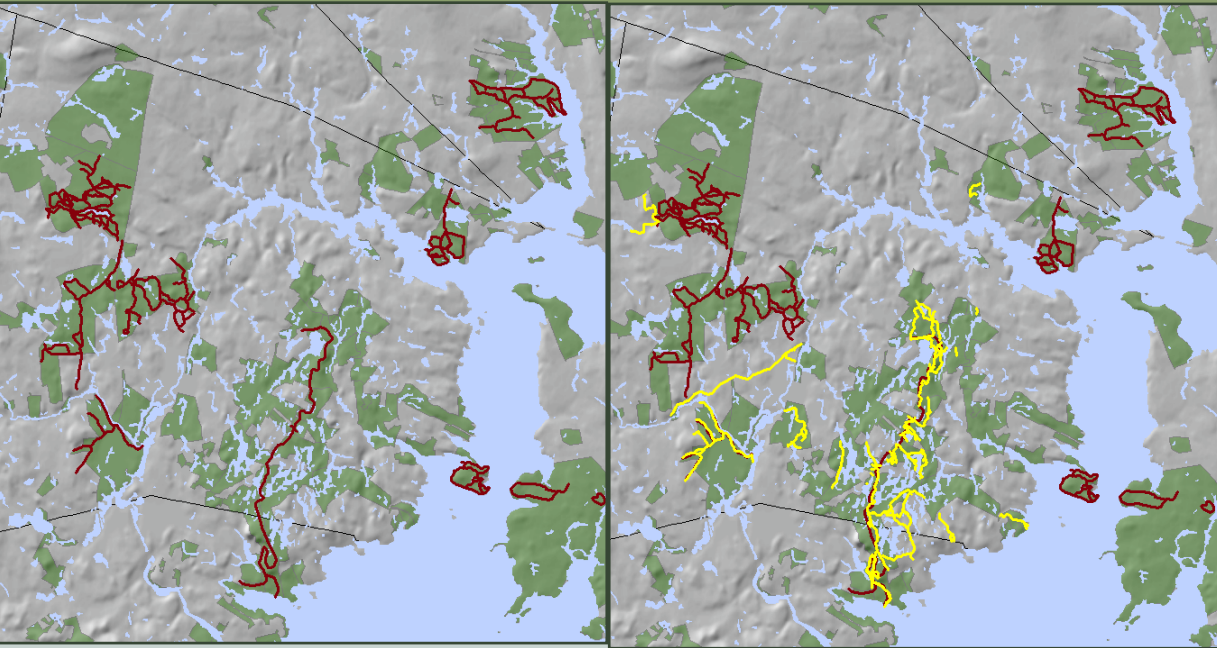
ONE QUARTER OF LAND IN NEW HAMPSHIRE IS PROTECTED. OF THIS, ABOUT 30% IS INFLUENCED BY EXISTING TRAILS AND ROADS.



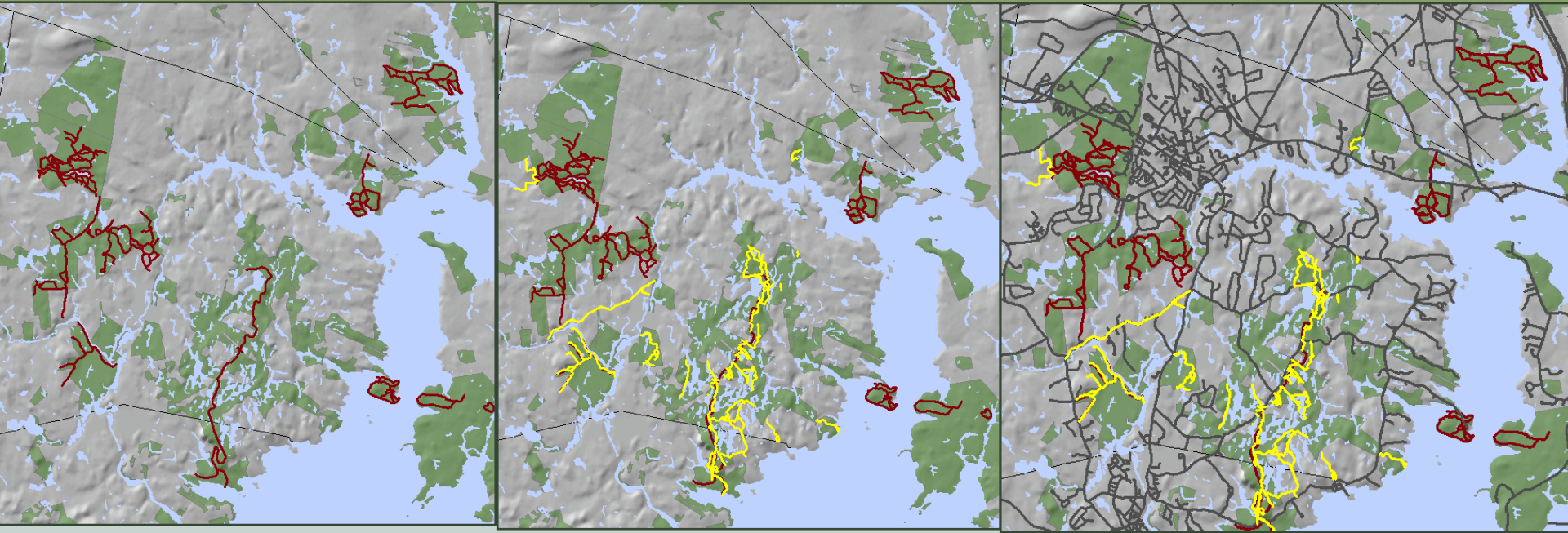
Trail and Road Impacts – Present Day Reality



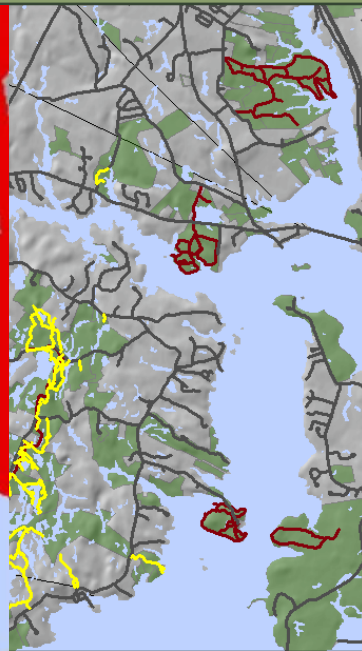
Trail and Road Impacts – Present Day Reality



Trail and Road Impacts – Present Day Reality



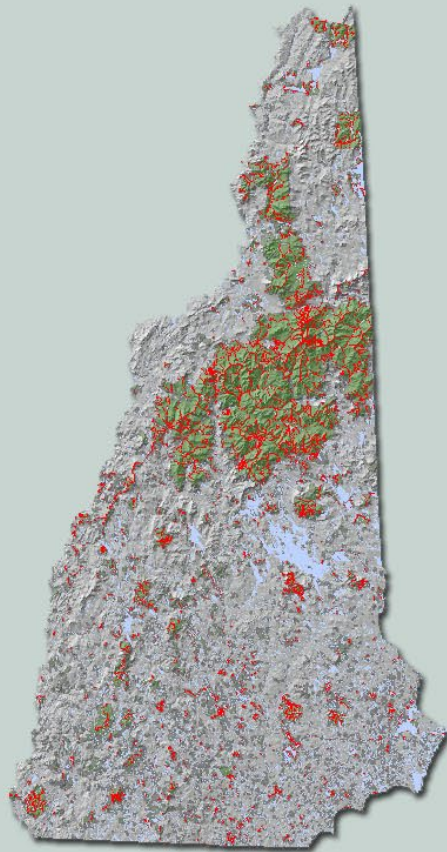
Trail and Road Impacts – Present Day Reality



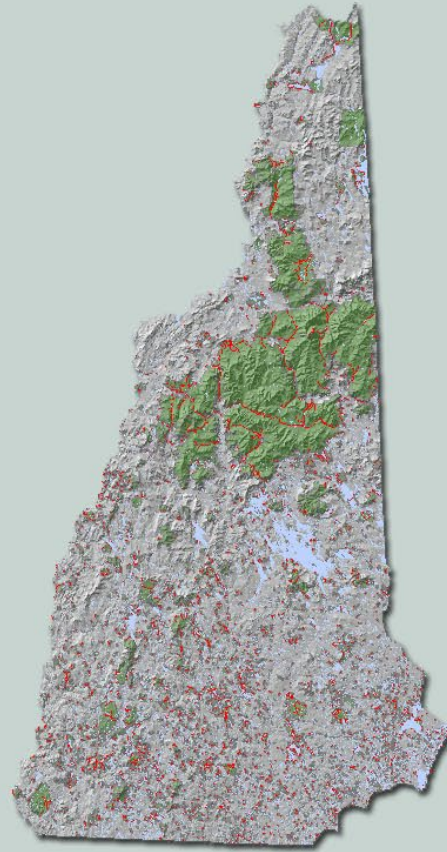
Statewide Distribution (Protected Land Only)



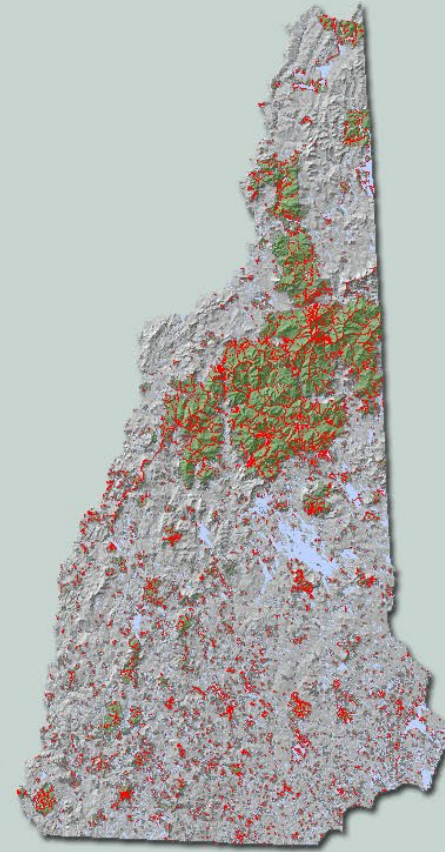
CONSERVATION LAND



TRAILS



ROADS



TRAILS & ROADS

Planning Trails with Wildlife in Mind



Where Best to Locate Trails



GREAT BAY
NATIONAL
ESTUARINE
RESEARCH
RESERVE

The Nature
Conservancy 

 NRCS




SELT



 EPA

Where Best to Locate Trails

1. Determine where best to locate **NEW** trails.



GREAT BAY
NATIONAL
ESTUARINE
RESEARCH
RESERVE

The Nature
Conservancy 

 NRCS

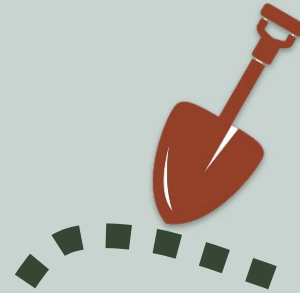


 EPA



Where Best to Locate Trails

1. Determine where best to locate **NEW trails**.



2. Help evaluate **EXISTING trail systems**.



GREAT BAY
NATIONAL
ESTUARINE
RESEARCH
RESERVE

The Nature
Conservancy 

 NRCS



 EPA



Evaluate Existing Trails

Existing versus New

In some cases there may be an existing road or trail you can use. However, just because it already exists doesn't mean it's in a good location. Some trails and old roads were never designed for the use they are receiving. Many trail problems and landowner conflicts are the result of use of trails that weren't designed for uses they are receiving today and have very wet soils.



BEST MANAGEMENT PRACTICES

For Erosion Control During Trail Maintenance and Construction

NH Trail Construction and Maintenance Manual

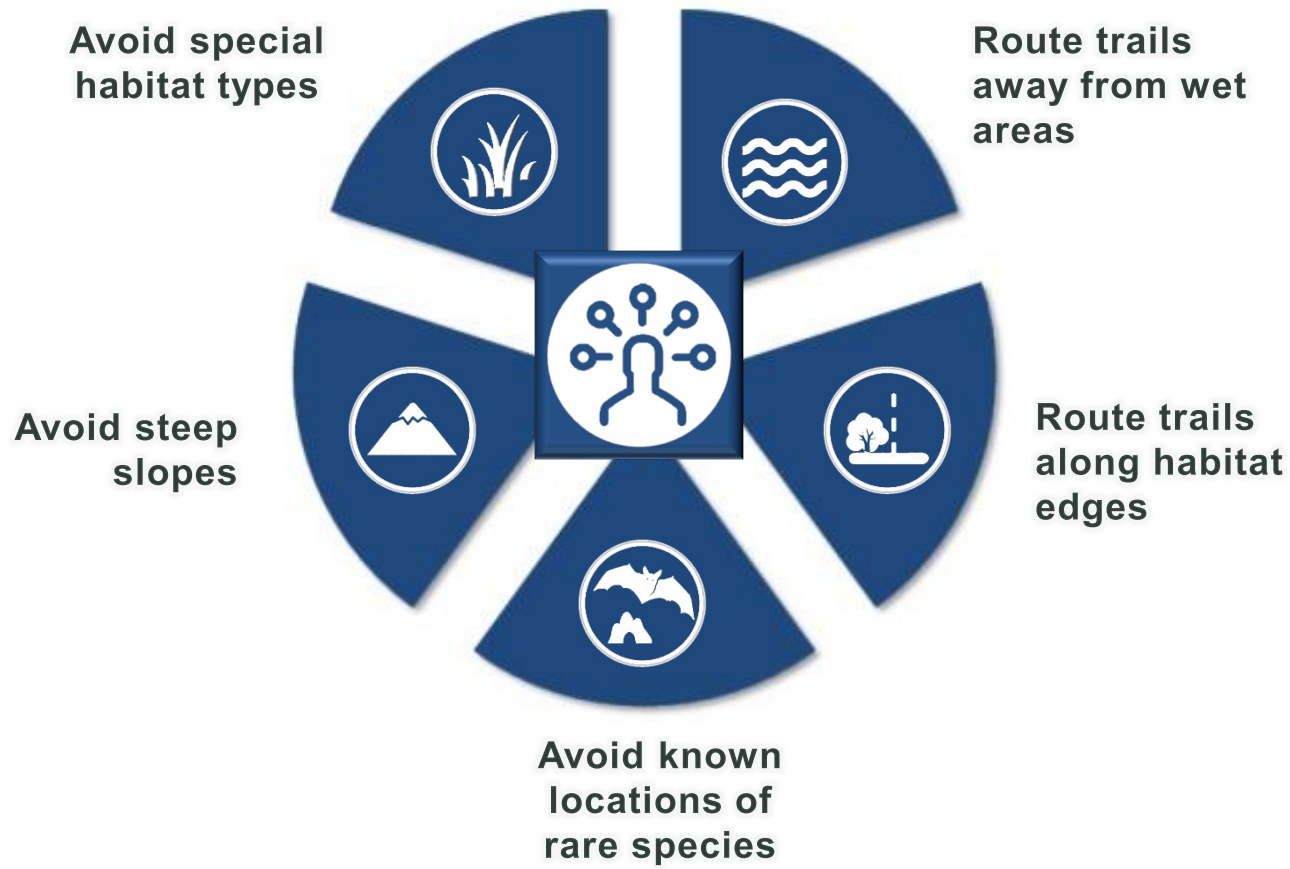


*Keep trails out of the water;
and water out of the Trails*

STATE OF NEW HAMPSHIRE
Department of Resources and
Economic Development
Division of Parks & Recreation
Bureau of Trails



Key Principals for Minimizing Trail Impacts to Wildlife





Locate Trails Along Habitat Edges



Minimizes habitat fragmentation

Impacts of Recreational Trails on Wildlife



ROUTING TRAILS ALONG HABITAT EDGES PREVENTS FRAGMENTATION OF LARGE BLOCKS IMPORTANT TO SPECIALIST, AND SO LESS COMMON, SPECIES.

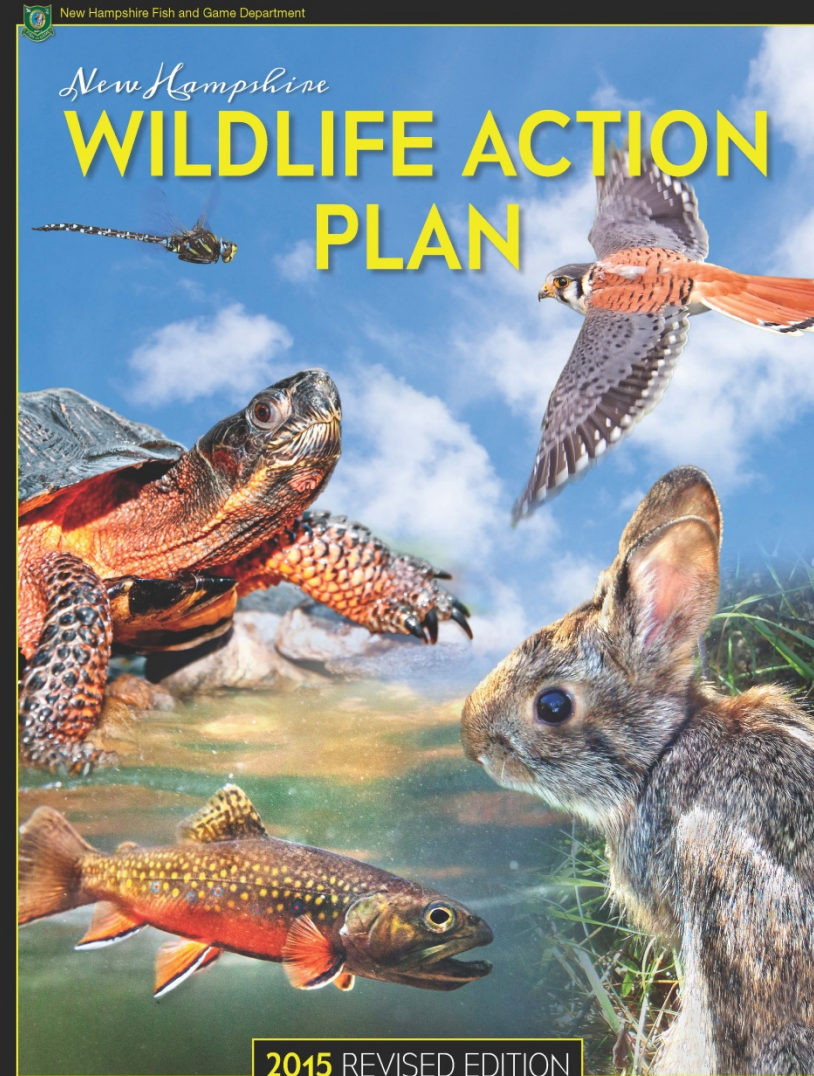
AREN'T HABITAT EDGES HOT SPOTS FOR BIODIVERSITY?

Traditionally it has been recognized that habitat edges are where we are likely to find the greatest diversity of species. This is correct as there is a chance we will run across wildlife associated with either of the abutting habitats. However, it is important to recognise that these are likely to be more generalist species that can make use of a diversity of habitats and are so are less sensitive to disturbance. Routing trails along edges will protect the less common habitat specialists such as bobolinks and eastern meadow larks in grassland and New England cottontails or whip-poor-will in shrubland.



Avoid Special Habitats Sensitive to Disturbance

- Pine barrens
- Shrublands
- Gravel pits
- Wetland/aquatic
- Rocky ridges/talus slopes and alpine
- Exemplary natural communities
- Very poorly drained soils





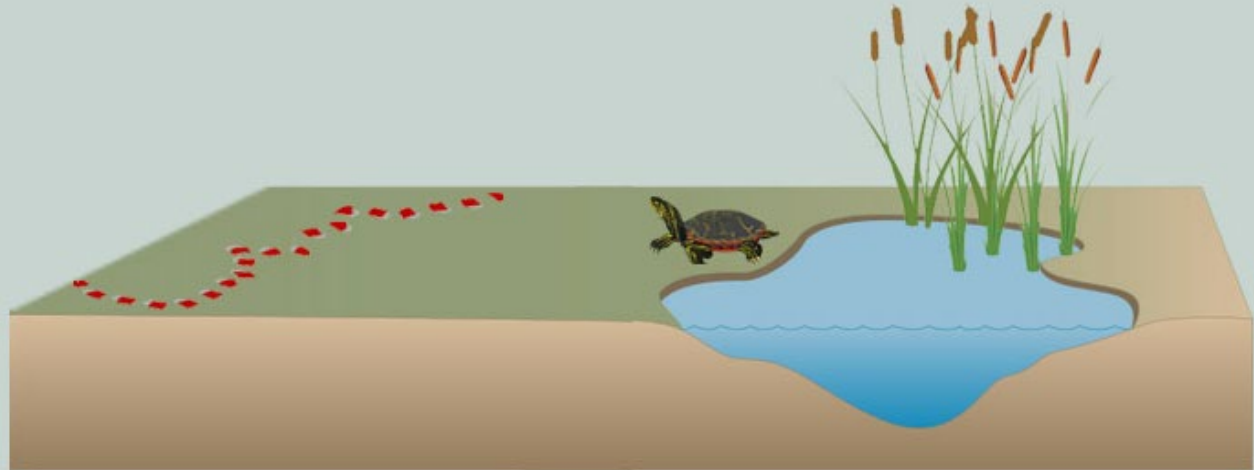
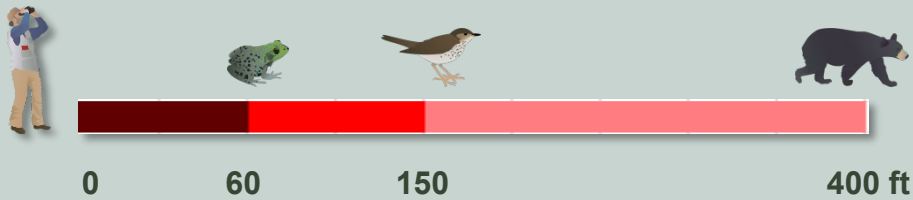
Avoid Known Locations of Rare Species



Animal species in Natural Heritage database. Plus great blue heron rookeries and cliffs with current or historic peregrine nest.



Route Trails Away From Riparian Areas



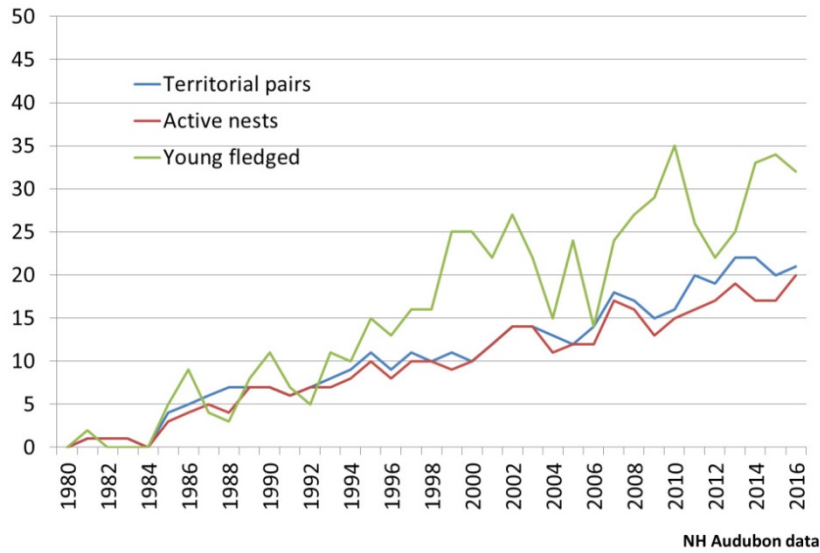
NH amphibians and reptiles average 60 ft flight distance (not just alert)



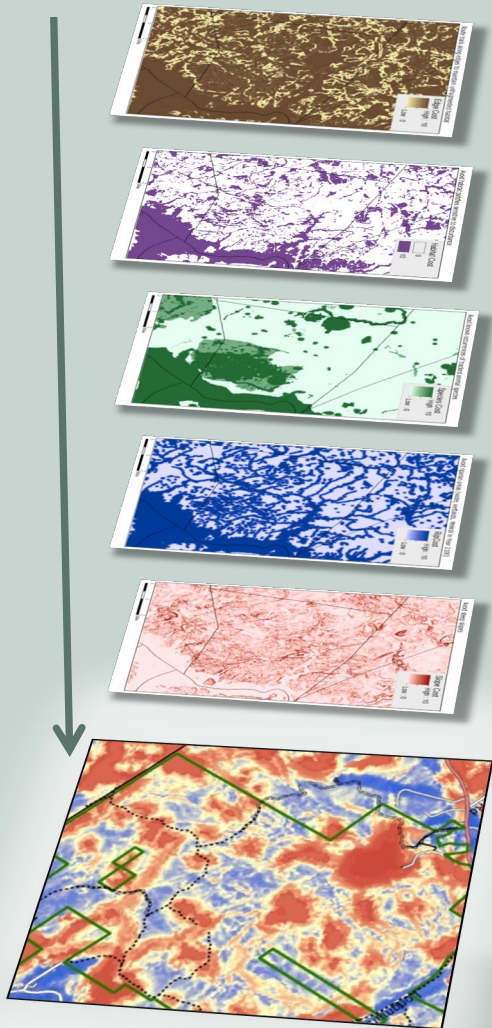
Avoid Steep Slopes



NH Peregrine Falcon Productivity, 1980-2016



Locate Trails with Wildlife in Mind



HABITAT EDGES

SENSITIVE HABITATS

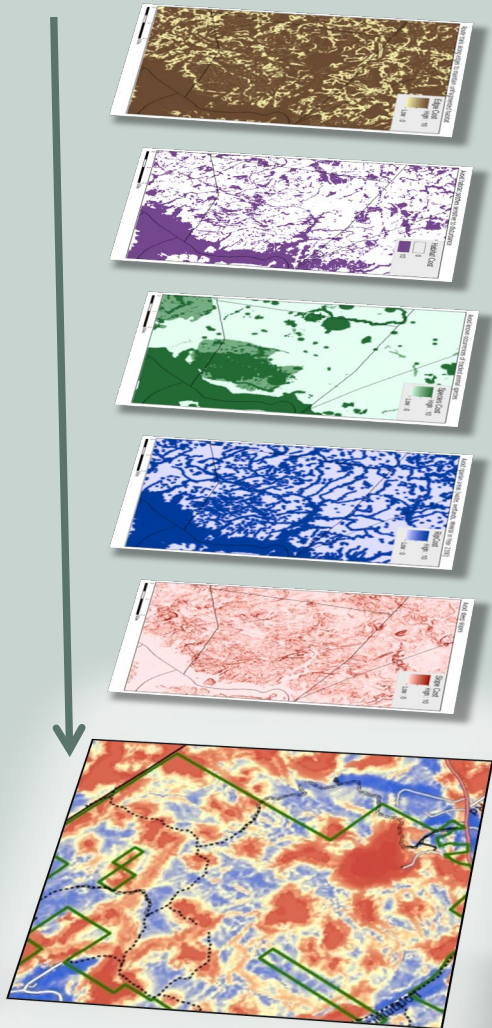
RARE SPECIES

RIPARIAN AREAS

SLOPES



Workshop to Review Draft Model



HABITAT EDGES

SENSITIVE HABITATS

RARE SPECIES

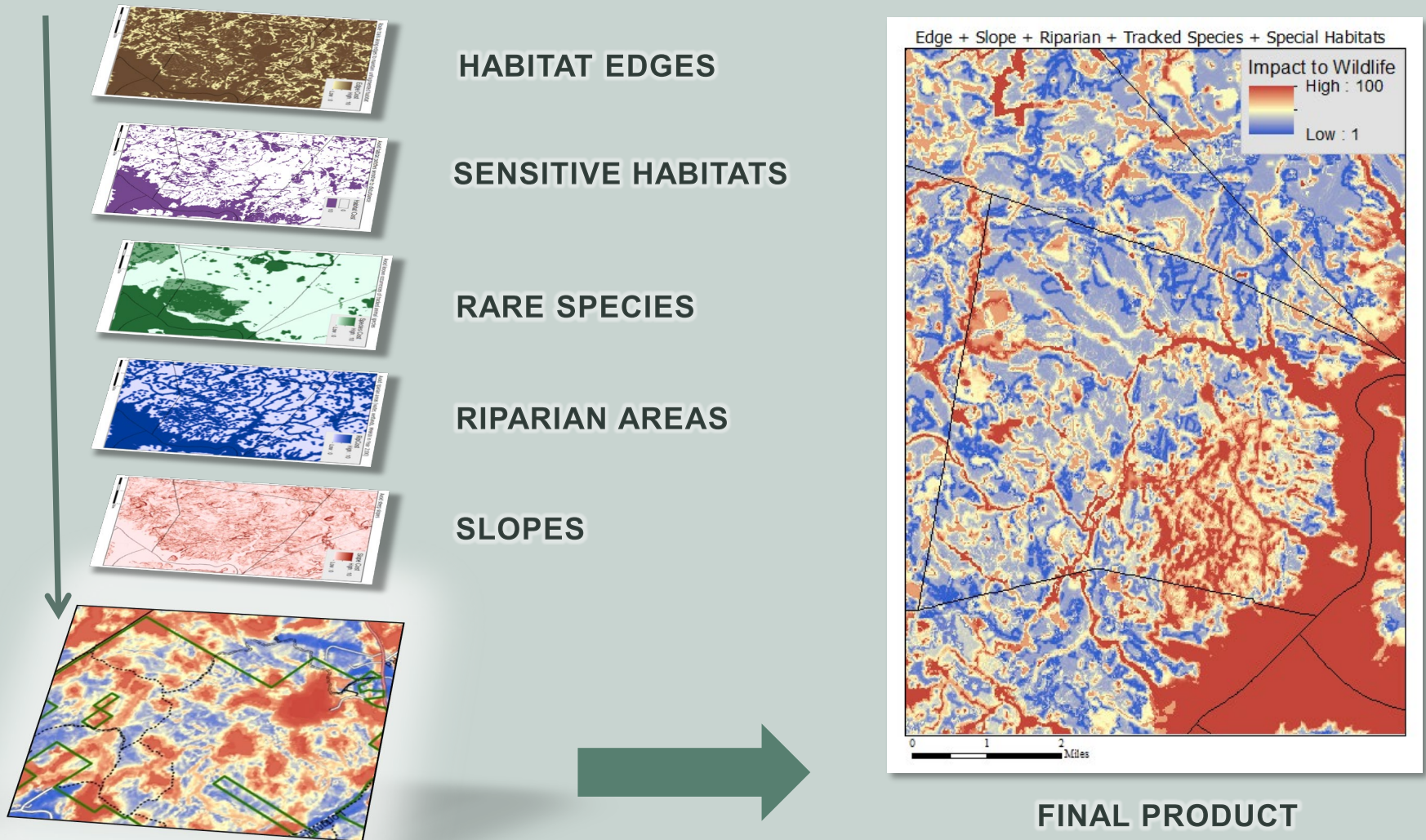
RIPARIAN AREAS

SLOPES

Trail & Wildlife Experts

Ibis Wildlife Consulting
Lakes Region Conservation Trust
Monadnock Conservancy
National Park Service
NH Audubon
NH DOT
NH Fish and Game Department
NH Trails Bureau
Society for the Protection of NH Forests
Southeast Land Trust of NH
UNH Cooperative Extension
US Forest Service
Upper Valley Trails Alliance
Washington Conservation Commission
White Mountain National Forest

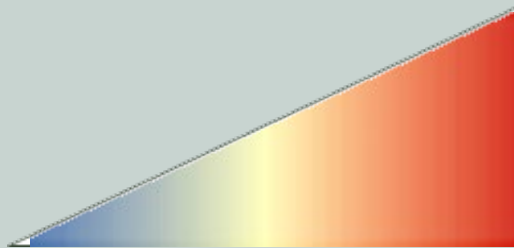
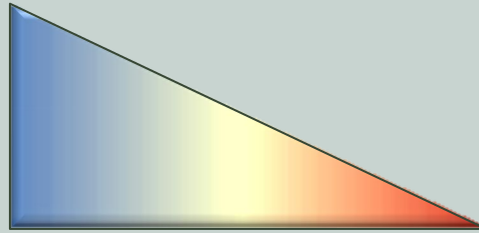
Workshop to Review Draft Model



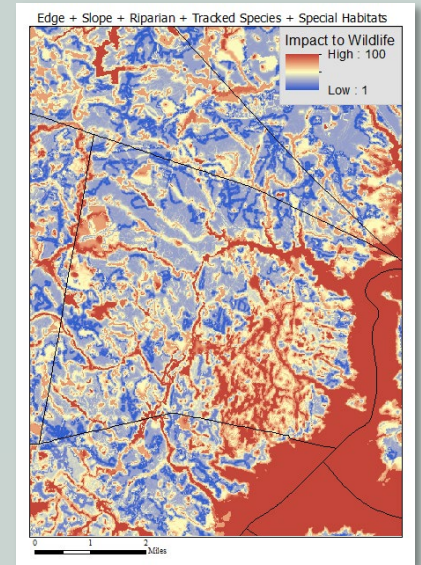
Sensitivity to Presence of Trails is displayed as a “Heat Map”



TRAIL



WILDLIFE



HEAT MAP


Where Can
We Find
The Tool?



GIS Layers Available

ArcGIS® for Desktop

Tips and Shortcuts



NH GRANIT
NEW HAMPSHIRE'S STATEWIDE GIS CLEARINGHOUSE

News Projects Resource Library
Download Free Data Order Data Online Maps & Services Map Library

GRANIT Data Discovery Tool

Data Download Compression & Storage Type
 Zip Tar Compressed Tar (gzip)







1 records match your search criteria

Dataset	Metadata	Sample Image	Download	
			Format	Mark / Download
TrailsImpact - Planning Trails for People and Wildlife	"Lite" Record Full Record		<input checked="" type="radio"/> grid	<input type="button" value="Download Now"/> <input type="checkbox"/> Mark as part of set

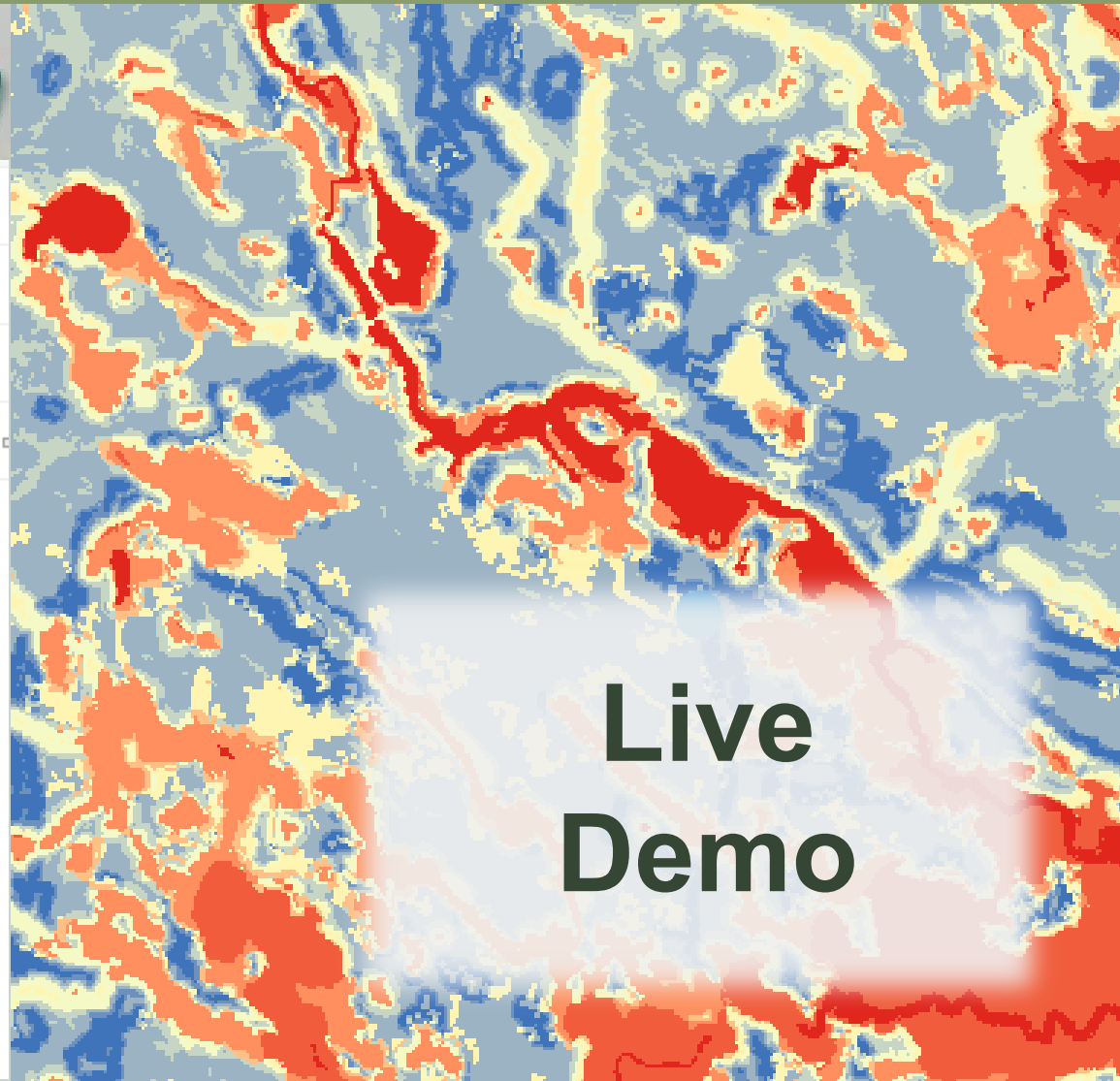
www.granit.unh.edu

Online Mapping Tool



-  Environment and Conservation
 - Conservation and Public Lands
- Wildlife
 - Wildlife Action Plan
-  Planning Trails for People and Wildlife
 -  Low Impact
 -  Moderate Impact
 -  High Impact
 -  Very High Impact

granitview.unh.edu



**Live
Demo**

Trails for People and Wildlife: Outreach

In This Section

- » Habitats
- » Creating a Backyard Wildlife Habitat
- » Habitat Management
- » Habitat Management Guide
- » Habitat Stewardship Series Brochures
- » Habitat Types and Species
- » Managing State Lands for Wildlife
- » Wildlife Management Areas

Trails for People and Wildlife

Hiking, mountain biking, bird watching, horseback riding, snowmobiling -- these are just some of the ways we get outside to enjoy nature and

unwind from our day-to-day activities. However, even these seeming innocuous activities can have impacts on wildlife including reduced abundance, reproduction, and survival. Thoughtful trail location allows us to get outside to enjoy nature and also minimize disturbance to wildlife.

Funded by the US Fish and Wildlife Service, the New Hampshire Fish and Game Department developed a statewide tool that can be used to assess existing trails and site new trails in the most wildlife-friendly way. This mapping tool highlights areas particularly important for wildlife and areas that would be more suitable for trail development. Accompanying documents will explain how to use the



This project was significantly improved by input from:

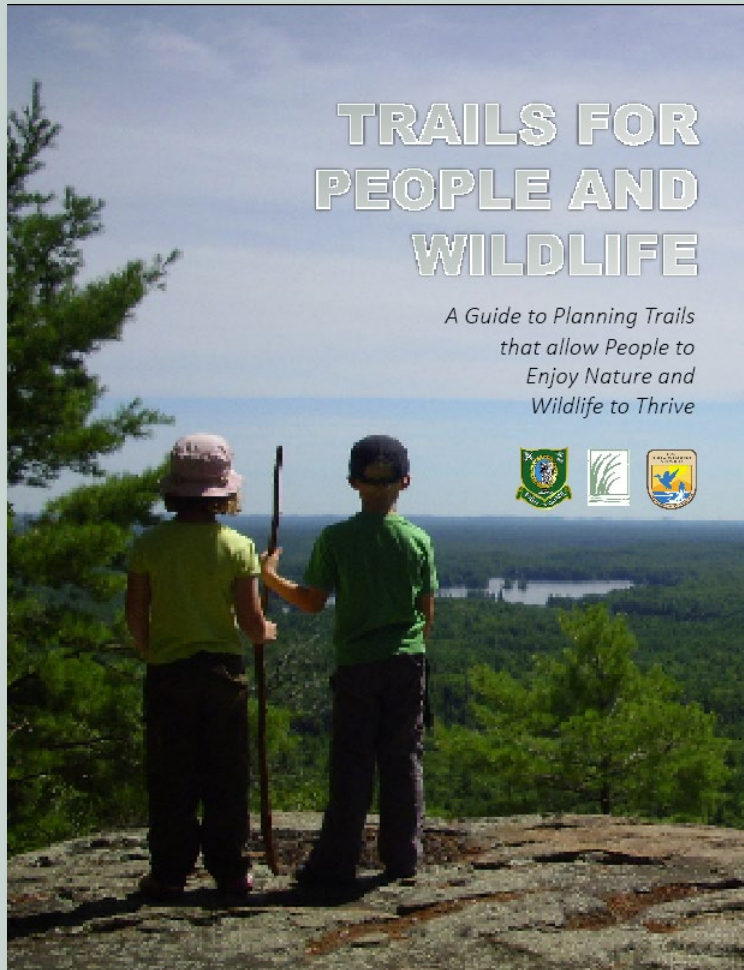
- » The Great Bay Resource Protection Partnership
- » EPA
- » Ibis Wildlife Consulting
- » Lakes Region Conservation Trust
- » Monadnock Conservancy
- » National Park Service
- » Natural Resource Conservation Service
- » NH Audubon
- » NH Dept. of Transportation
- » NH Trails Bureau
- » Society for the Protection of NH Forests
- » Southeast Land Trust of NH
- » The Nature Conservancy
- » UNH Cooperative Extension
- » US Fish and Wildlife Service
- » US Forest Service

Trails Alliance
Conservation

ain National

wildnh.com/trails

“How To” Guide for this Tool



wildnh.com/trails

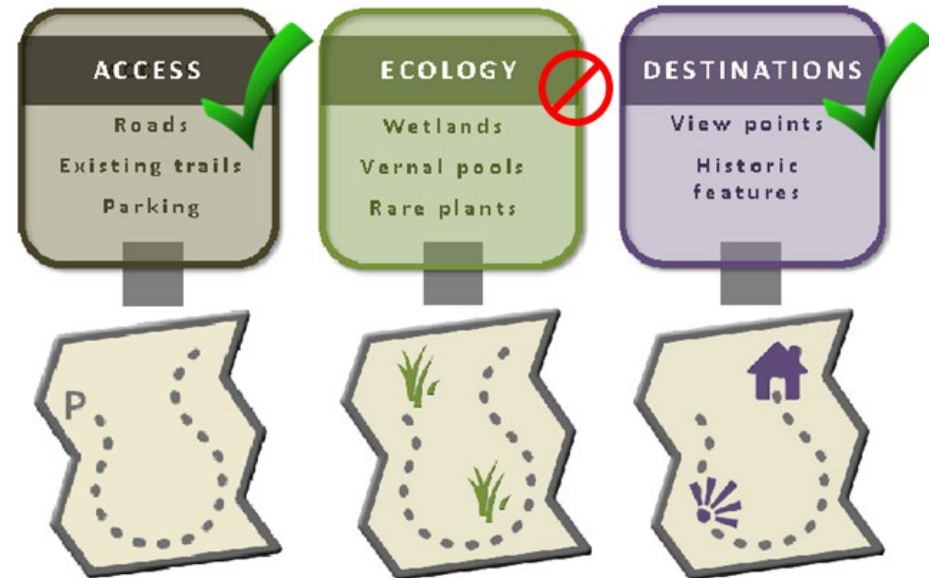
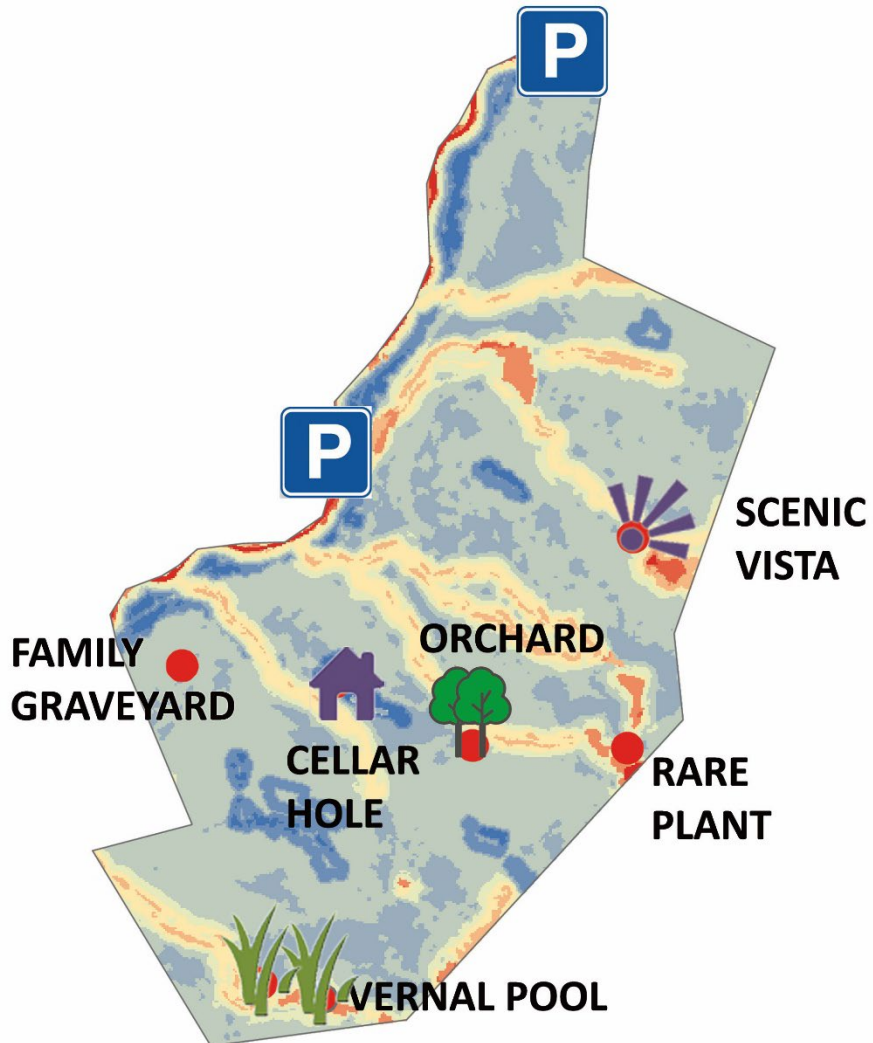
How to Use the Tool



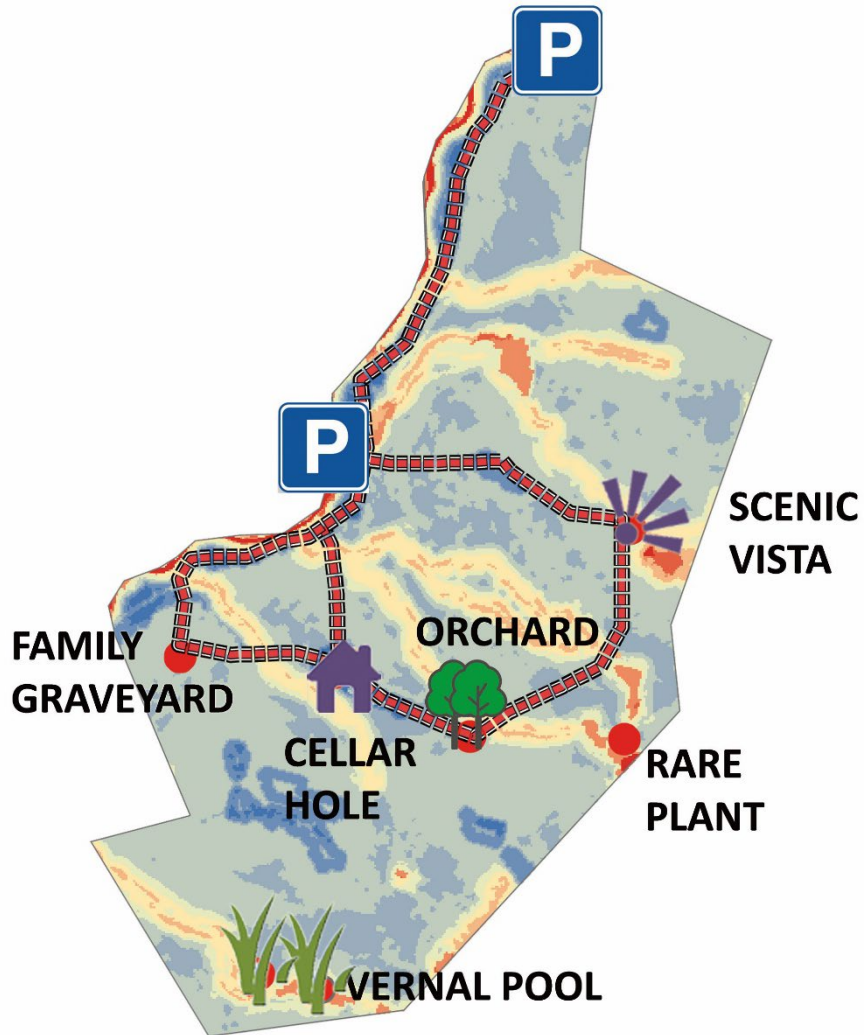
1. Map Existing Features of the Property



2. Apply Tool: New Trails



2. Apply Tool: New Trails



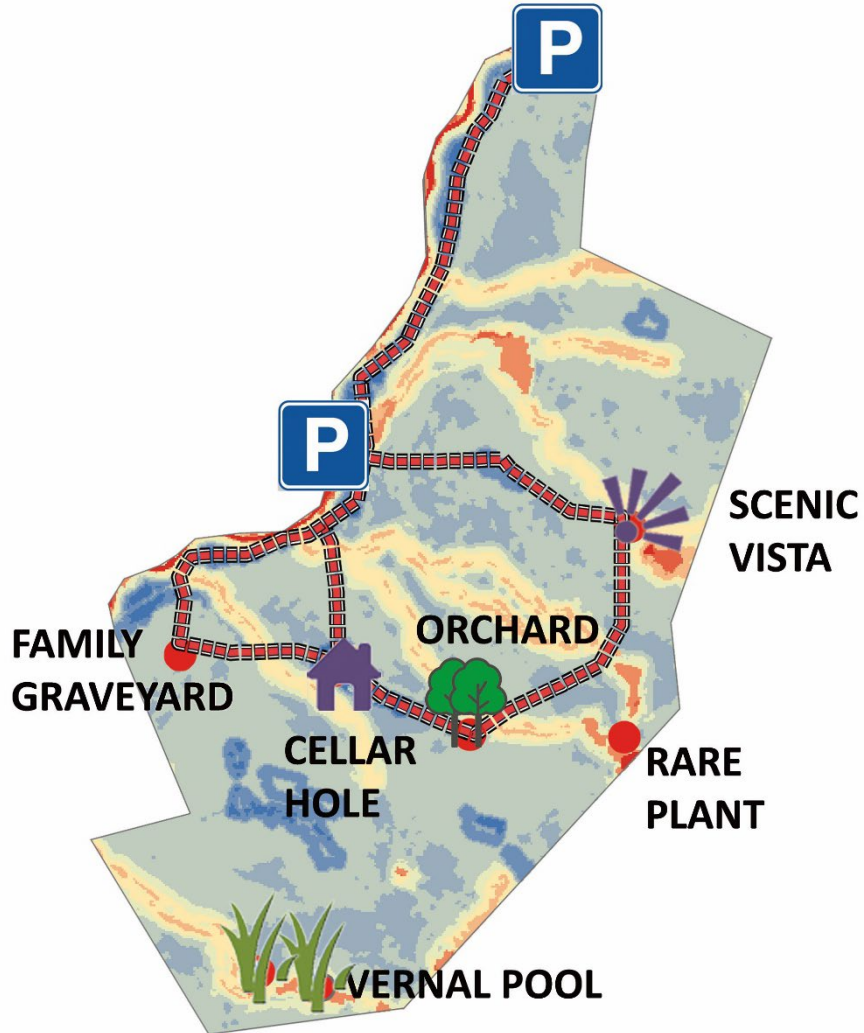
Whenever possible "follow the blue"



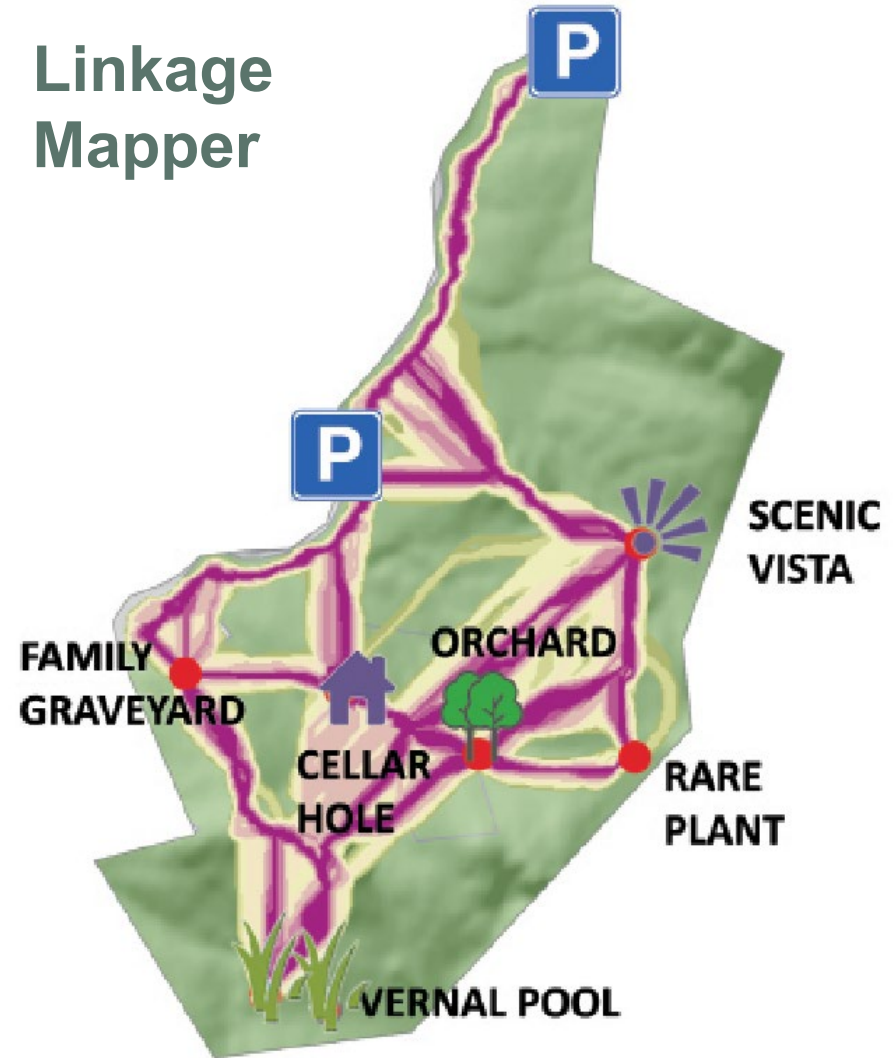
Best route to minimize impacts to wildlife while getting people outside to enjoy and interact with nature



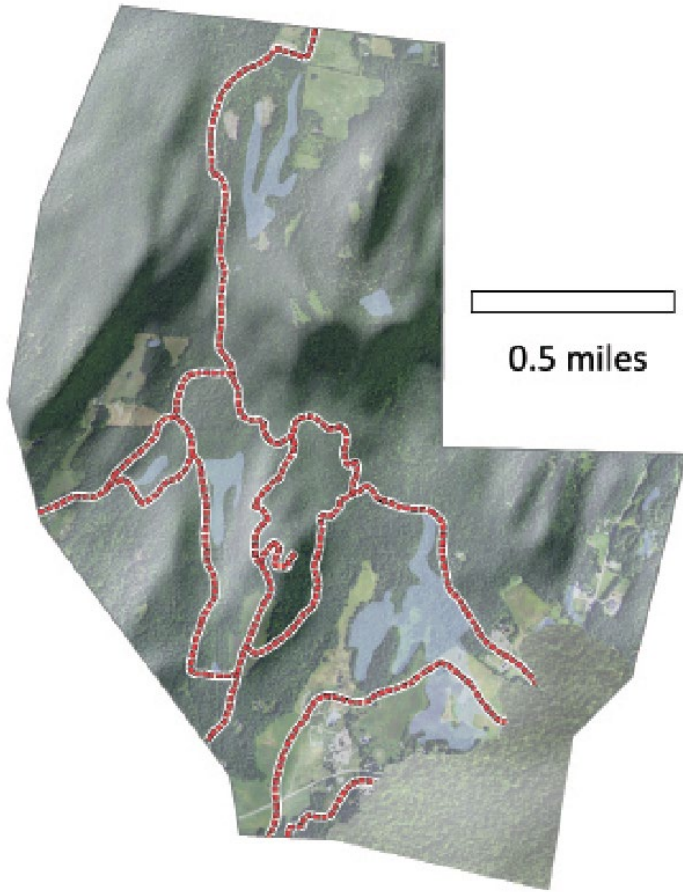
2. Apply Tool: New Trails



Linkage Mapper



2. Apply Tool: Existing Trails

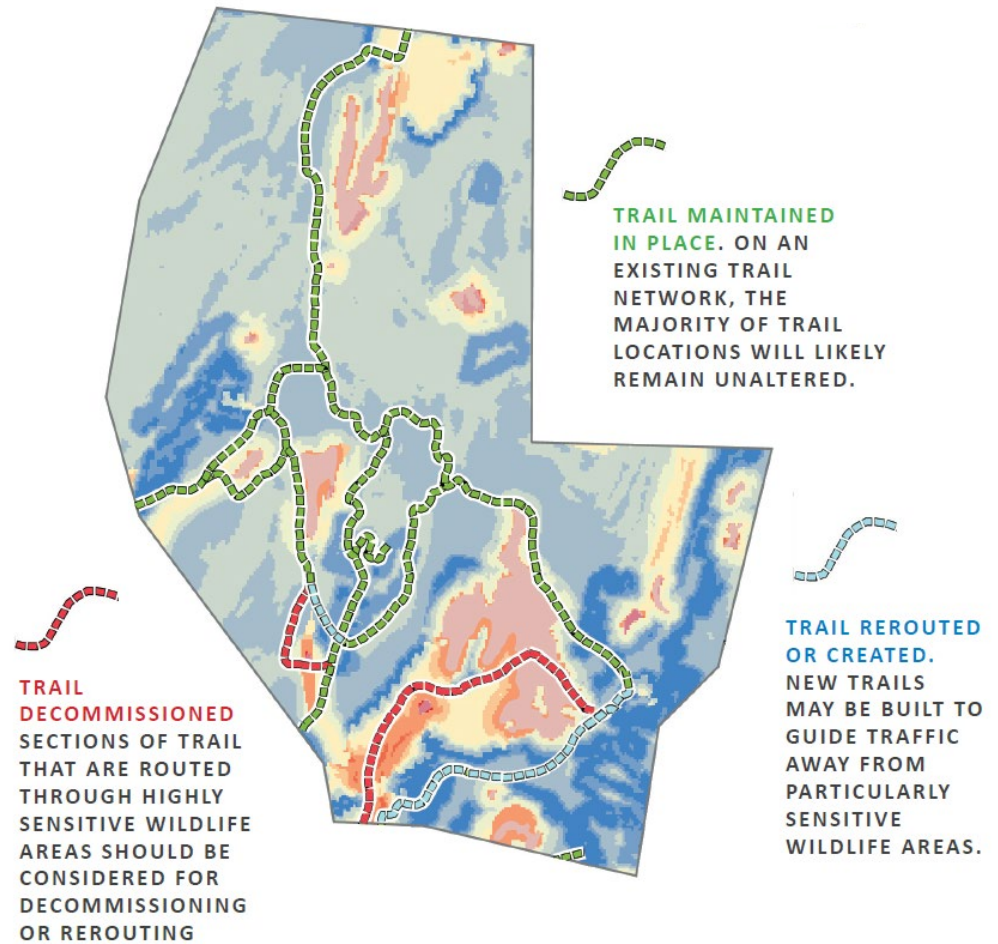
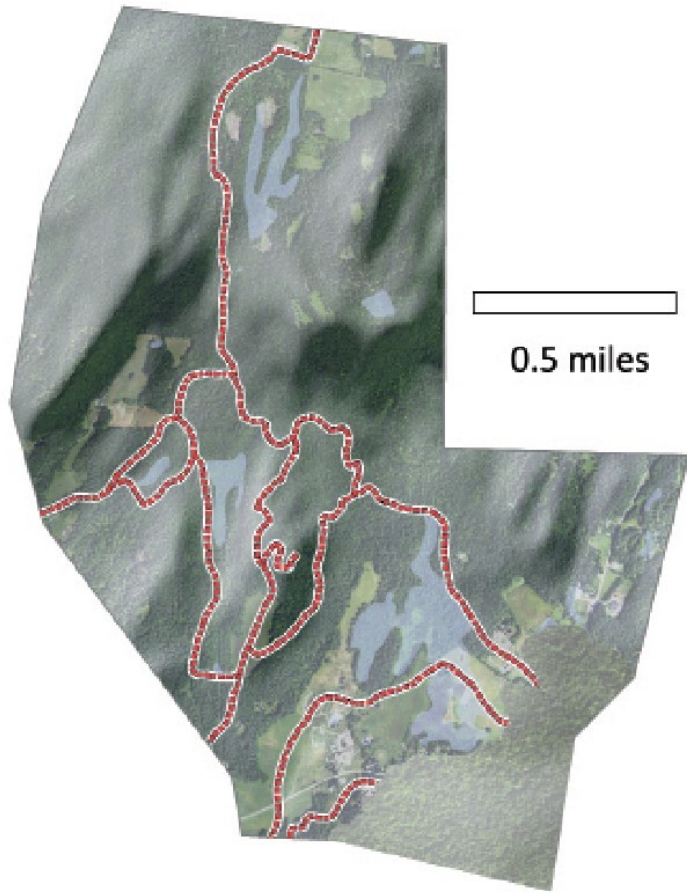


Whenever possible “follow the blue”

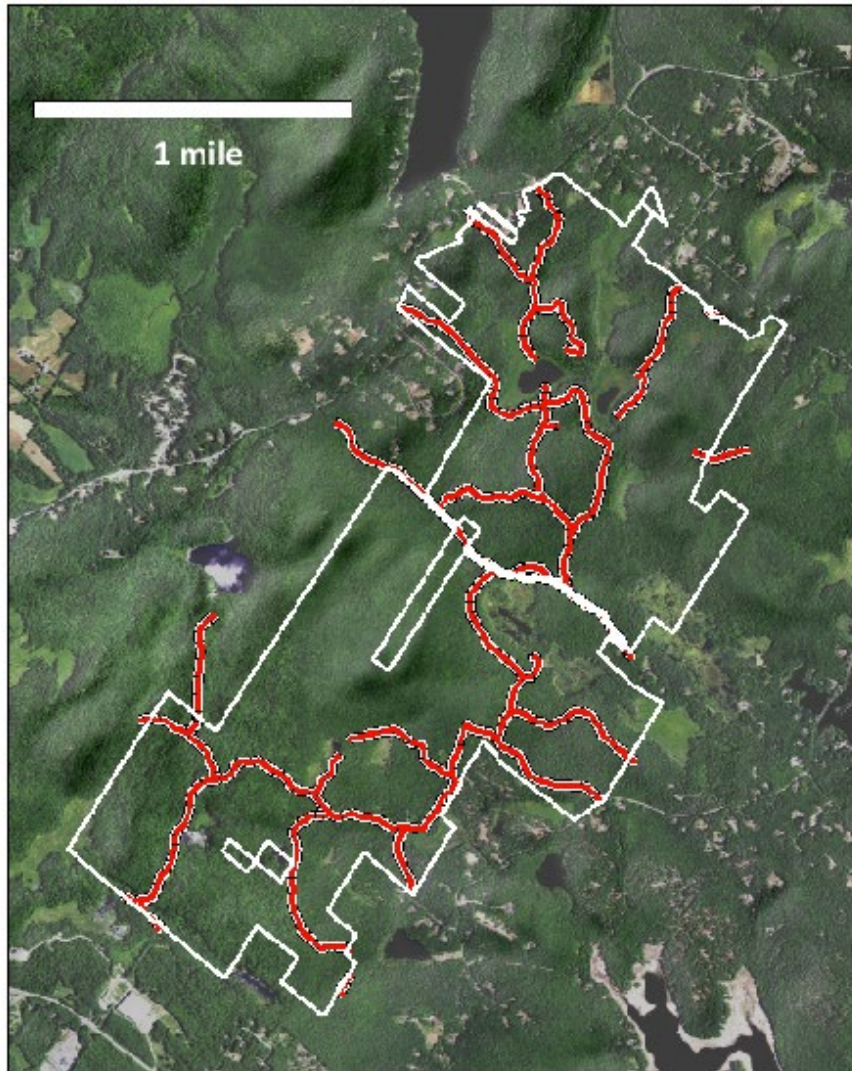


Best route to minimize impacts to wildlife while getting people outside to enjoy and interact with nature

2. Apply Tool: Existing Trails

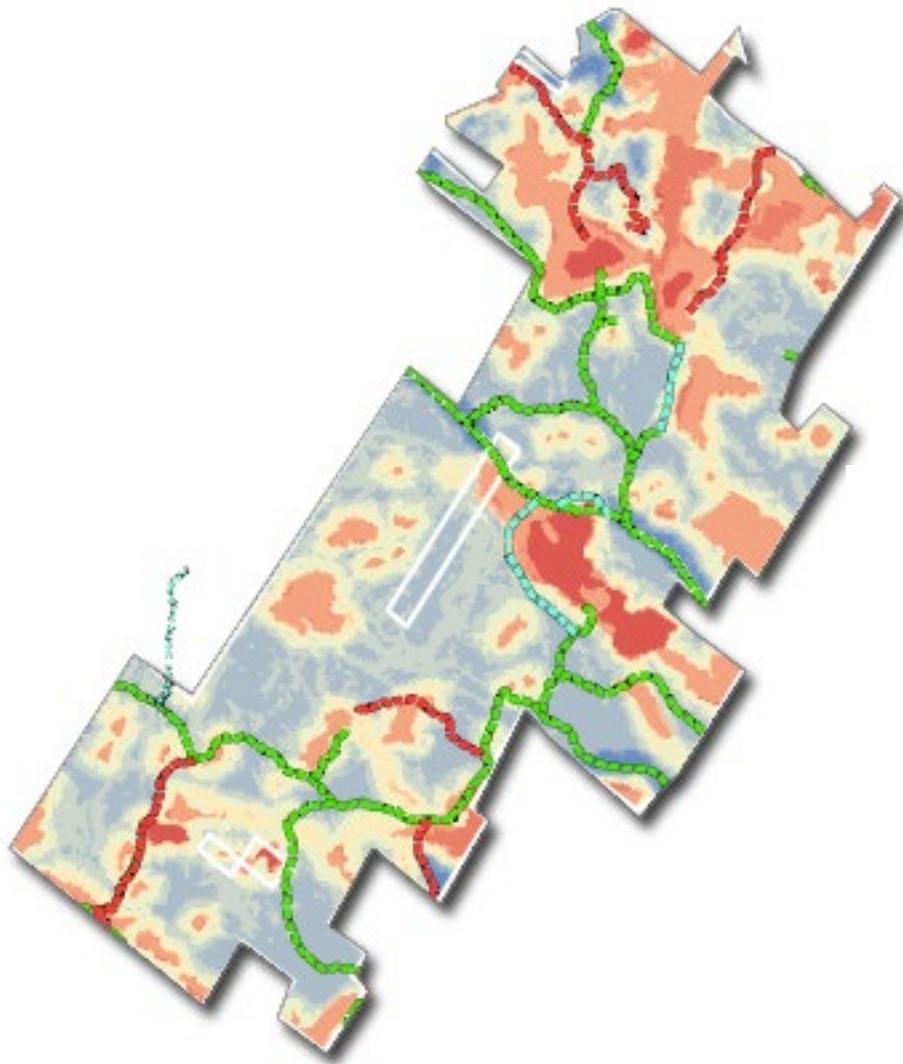





Case Study: Stonehouse Forest



**STONEHOUSE FOREST
IS THE LARGEST
UNDEVELOPED TRACT
IN BARRINGTON.
WHEN PLACED INTO
CONSERVATION 10.4
MILES OF EXISTING
WOODS ROADS AND
TRAILS WERE PRESENT.**

Case Study: Stonehouse Forest



-  TRAIL MAINTAINED IN PLACE
-  TRAIL CREATED
-  TRAIL DECOMMISSIONED

Case Study: Stonehouse Forest



Southeast Land Trust of New Hampshire

Stonehouse Forest
Barrington & Nottingham, NH
1,700+ acres

- Stonehouse Forest Boundary ■
 - Other Conservation Lands ■
 - Shrub-scrub Wetlands ■
 - Forested Wetlands ■
 - Clearing ■
 - Scenic View ■
 - Parking Area P
 - Kiosk K
 - Gate G
 - Trails ---
 - Unmaintained Roads ---
 - Public Roads ---
 - Town Boundaries ---
 - Contour Lines --- 100 feet
 - Water ---
 - River/Stream ---
 - Wetlands ---
- 0 1000 2000 Feet
October 2019
Source: Southeast Land Trust of New Hampshire



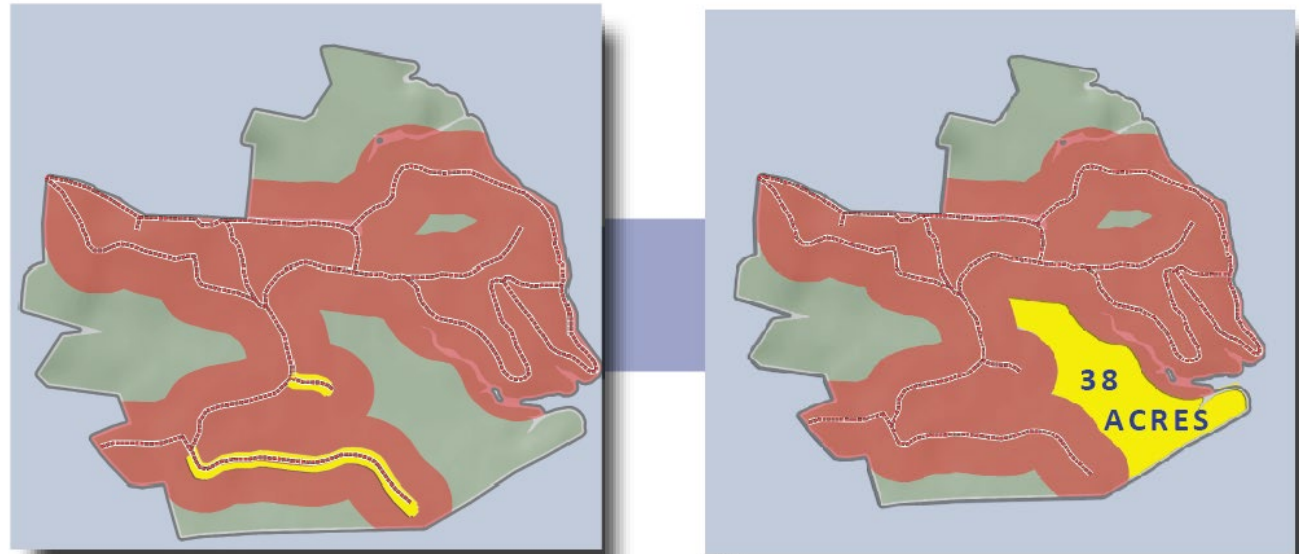
Stonehouse Forest Trail Uses

Trail	Walking	Bicycling	Mountain Biking	Horseback Riding	ATV/UTV
Marison	✓	✓	✓	✓	✗
Locke	✓	✓	✓	✓	✗
Brook	✓	✓	✓	✓	✗
Bog	✓	✓	✓	✓	✗
South	✓	✓	✓	✓	✗
Overlook	✓	✓	✓	✓	✗
Ledges Loop	✓	✓	✓	✗	✗

- Please stay on marked trails; these routes were carefully designed to avoid damage to soils and habitats.
- Wheeled motorized vehicles are prohibited.
- Leave no trace -- please carry out what you carry in.
- Dogs must remain under the control of owners. Please carry a leash, leash aggressive dogs, and pick up after your pet.
- Hunting is allowed. Be aware of hunting seasons.
- Please respect our neighbors' privacy.

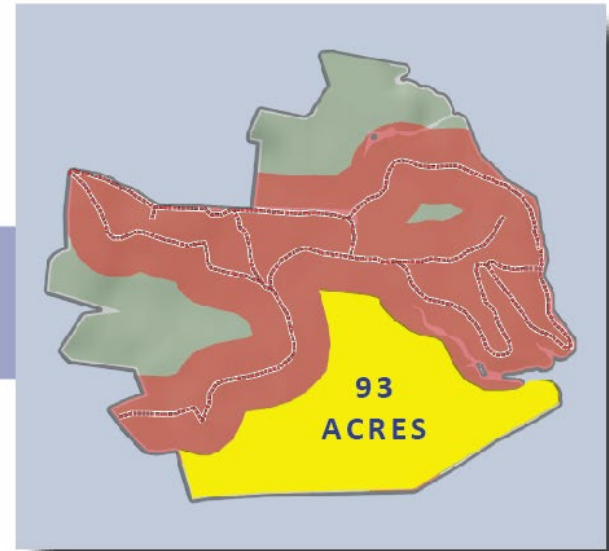


3. Overlay “Corridor of Influence”



There are 4.6 miles of existing trails on this example property. These influence 267 acres, or 68 %, of the entire property. The largest uninfluenced area, shown in yellow, is 38 acres.

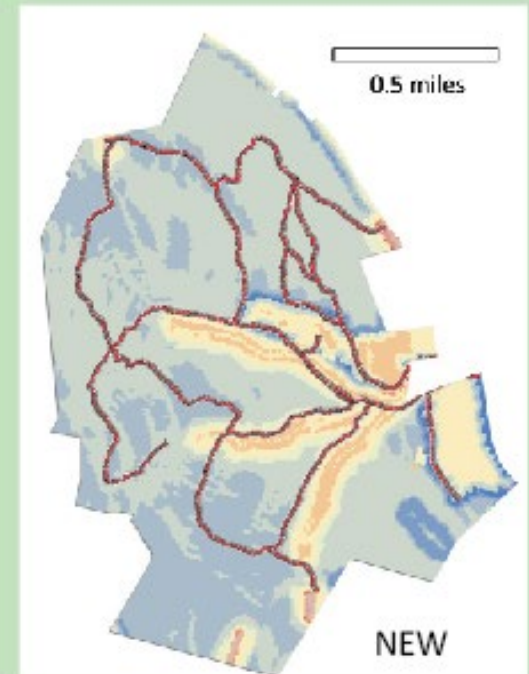
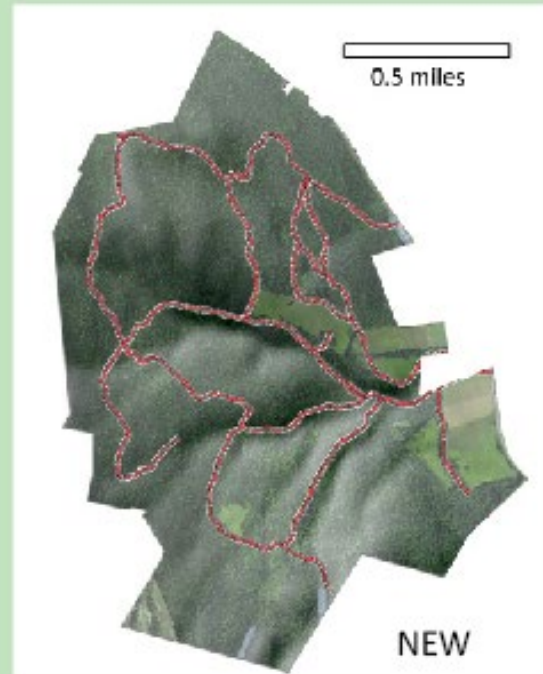
3. Overlay “Corridor of Influence”



The two spur trails highlighted are together 0.5 miles long, just 10 % of the entire trail network. If these are closed, it would expand the area largely uninfluenced by trail traffic to 93 acres, almost 2 1/2 times the original.

Reality Check

REALITY CHECK: SOME TRAILS, EVEN IN HIGH IMPACT AREAS, DON'T MAKE SENSE TO MOVE



Trails covered 73% property Reduced network's influence by 21%

4. Verify Your Plan with Field Visit



**ALL THE PLANNING IN THE WORLD
DOESN'T BEAT "BOOTS ON THE
GROUND". REMEMBER TO VERIFY
YOUR PLAN WITH A FIELD VISIT.**



How to Use the Tool: Overview

1 MAP EXISTING FEATURES

2 APPLY THE TRAIL LOCATION TOOL
(FOLLOW THE BLUE!)

NEW TRAIL

EXISTING TRAILS

PLAN BEST ROUTE

MAINTAIN,
REROUTE OR
DECOMMISSION?

3 OVERLAY CORRIDOR OF INFLUENCE

4 FIELD VERIFY

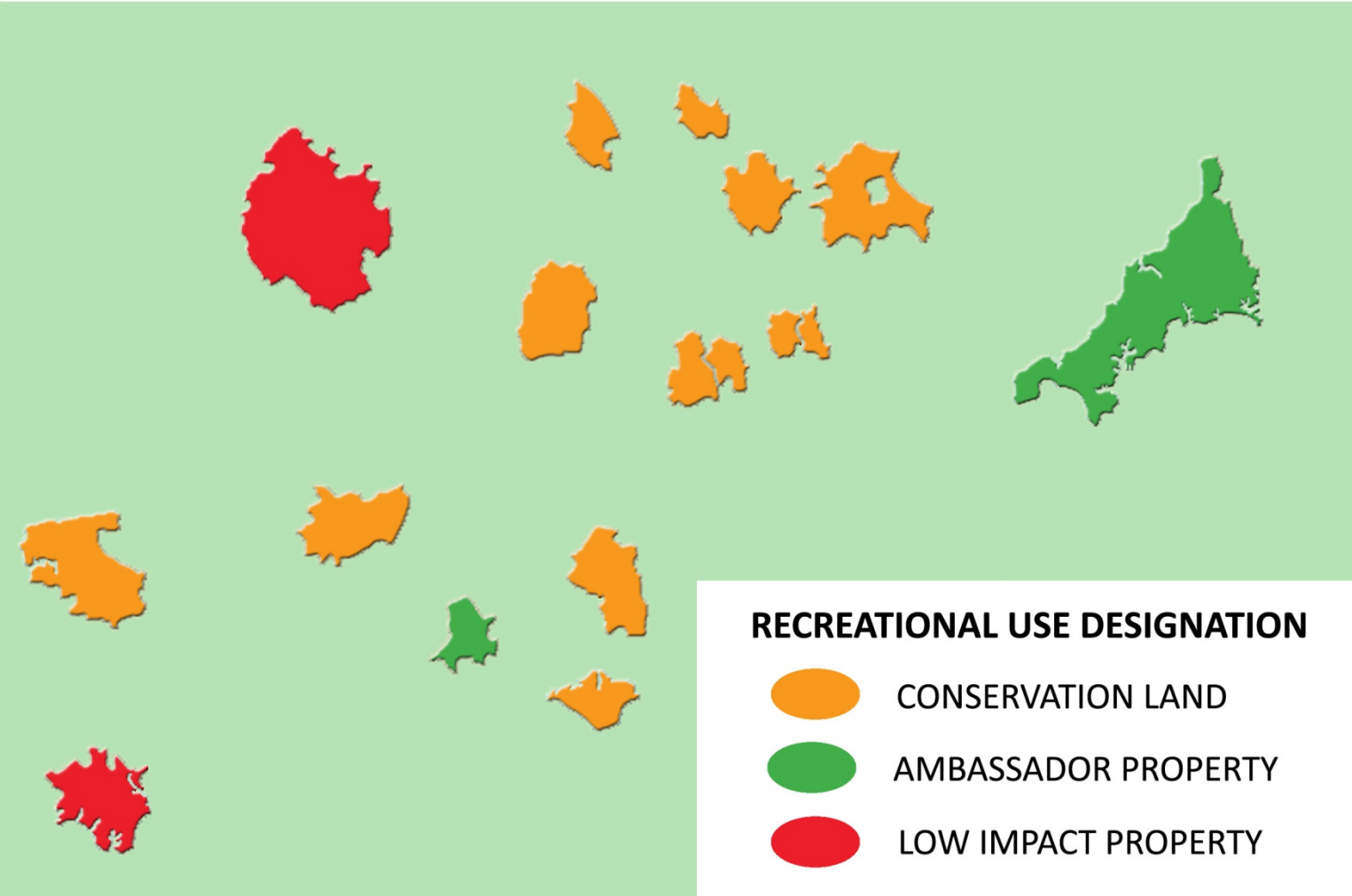


Trails from
A Community
Perspective



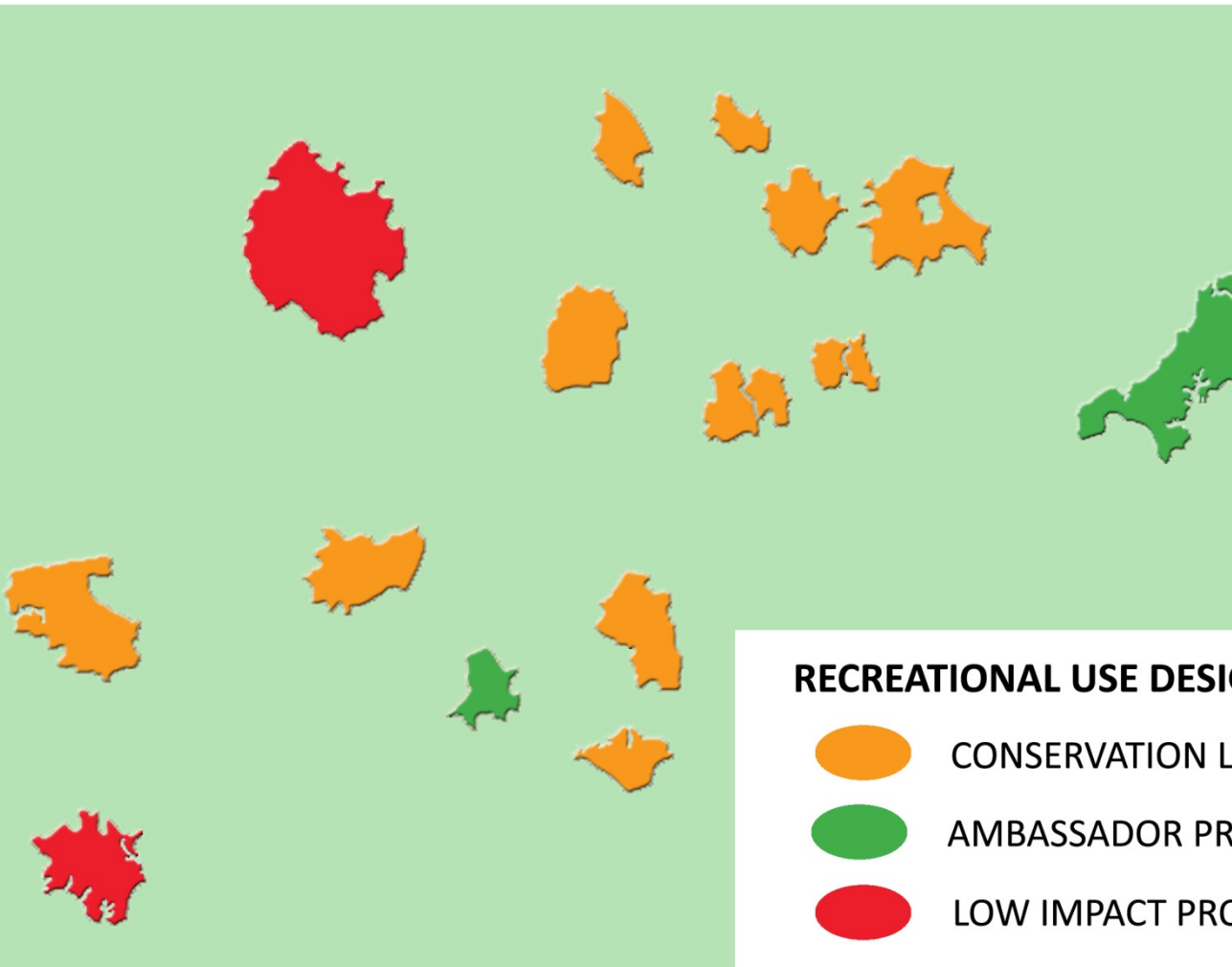
Plan Your Trail Network Over All Properties Under Single Ownership

ALL THE PROPERTIES WE OWN & MANAGE






Plan Your Trail Network Over All Properties Under Single Ownership

ALL THE PROPERTIES WE OWN & MANAGE

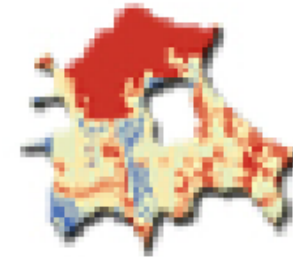


RECREATIONAL USE DESIGNATION

-  CONSERVATION LAND
-  AMBASSADOR PROPERTY
-  LOW IMPACT PROPERTY



PROPERTIES THAT ARE MAINLY BLUE ARE GOOD CANDIDATES TO BECOME HIGHLY PUBLICIZED "AMBASSADOR" PROPERTIES.



THOSE THAT ARE MAINLY RED WILL IDEALLY BE LEFT AS UNDISTURBED AS POSSIBLE.

Identify “Ambassador Properties”



**NH FISH AND GAME
“AMBASSADOR” PROPERTIES
AROUND GREAT BAY.**



Match Trail Network with Resources Available



A targeted network of frequently used trails allows land managers to focus available resources efficiently.

This can be the volunteer time, funding, equipment or infrastructure needed to create trails and maintain them in the long-term

Publicize Existing Trails



Deerfield: Standard CE Language

July 14, 2018 V.3 Deerfield Cons Comm. P
recreational trails:

LOCATING TRAILS:

Trails: Trails may be located, cleared, co
consistent with the Purposes of this Easem
and managing "Trails for People and Wild
science based methodology, including:

- a) Keep unfragmented trail-free areas
- b) Avoid small patches of high quality
- c) Avoid riparian areas and permanent
wildlife corridors
- d) Avoid locations of rare wildlife

Recreation Trail Management Plan Requ
maintenance and relocation shall follow a
with this Easement, items (a)-(d) above.

Construction and maintenance shall conform to best practices recommended by:

- a) Appalachian Mountain Club or similar trail-maintaining organization (for reference, see *The Complete Guide to Trail Building and Maintenance*, C. Demrow, D. Salisbury, Appalachian Mountain Club, or similar successor publication)
- b) NH State Parks Best Management Practices manual <https://www.nhstateparks.org/uploads/pdf/BMP-Manual.pdf> or similar successor publication

and shall be constructed and maintained consistent with requirements of the Management Plan. Trail making and management activities shall be carried out in accordance with all applicable local, state and federal laws and regulations, and in accordance with current, generally accepted best management practices for the sites, soils and terrain of the Property. Trail design and construction shall be supervised by a licensed professional forester, a certified wildlife biologist, or other qualified person approved in advance and in writing by the Grantee.

LOCATING TRAILS:

Trails: Trails may be located, cleared, constructed, and maintained, provided these trails are consistent with the Purposes of this Easement and NH Fish and Game methodology for planning and managing "Trails for People and Wildlife" (www.wildnh.com/trails) or other equivalent science based methodology, including:

- a) Keep unfragmented trail-free areas as large as possible
- b) Avoid small patches of high quality or special habitats
- c) Avoid riparian areas and permanent features in the landscape that serve as important wildlife corridors
- d) Avoid locations of rare wildlife



Consideration of Wildlife: One of Several Possibilities



**Enjoying
wildlife is
just one
piece of the
puzzle**

Consideration of Wildlife: One of Several Possibilities



**Enjoying
wildlife is
just one
piece of the
puzzle**

**Using the
planning
principals
can enhance
wildlife
viewing on
trails built
for other
purposes**



Covid-19. Some Getting “loved to death”



Hikers Flock To Popular Trails In First Days Of N.H.'s Stay-At-Home Order

By DANIELA ALLEE • MAR 29, 2020

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Groups like the Society for the Protection of New Hampshire Forests are urging people to pick less popular, local hikes to protect against COVID-19. Pictured here is the High Five conservation tract in Deering.

The first weekend of Gov. Chris Sununu's stay-at-home order saw a surge of hikers heading to popular trails in New Hampshire.

Some officials and conservation groups say that could become a problem.

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NH Conservation Groups Urge Hikers to “Walk Local”

Forest Society, NH Audubon, NH TNC and AMC all caution would-be hikers to seek out local conservation lands rather than the most popular spots in order to maintain distancing protocols.

[Jack Savage](#) | March 27, 2020



Covid-19: Getting Out Safely



NH Fish and Game

April 10 at 11:49 AM · 🌐

#ResponsibleRecreation



BE PREPARED

If crowded, choose a different location or time to visit

Cover your face



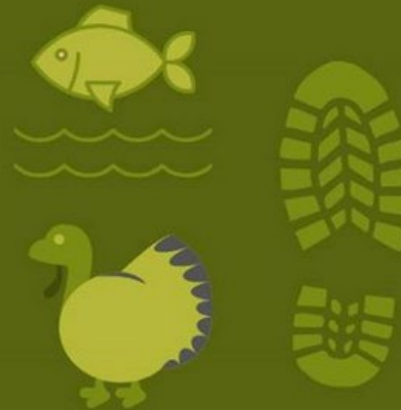
It's always a good day for Responsible Recreation!

BE RESPECTFUL

Enjoy the outdoors responsibly

Check with your state/local laws and regulations

#ResponsibleRecreation



RECREATE LOCALLY

Stay close to home and enjoy the outdoors

Explore activities like hiking, hunting, fishing, birding and more.



BE SAFE

Avoid large crowds
Wash your hands often
Practice social distancing
If you're not feeling well, stay home

Get Outside, Appreciate Nature, and *Have Fun!*



wildnh.com/trails

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*THANK
YOU for
attending
our webinar
TODAY!*

The New Hampshire Municipal Association is a nonprofit, non-partisan association working to strengthen New Hampshire cities and towns and their ability to serve the public as a member-funded, member-governed and member-driven association since 1941. We serve as a resource for information, education and legal services. NHMA is a strong, clear voice advocating for New Hampshire municipal interests.

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