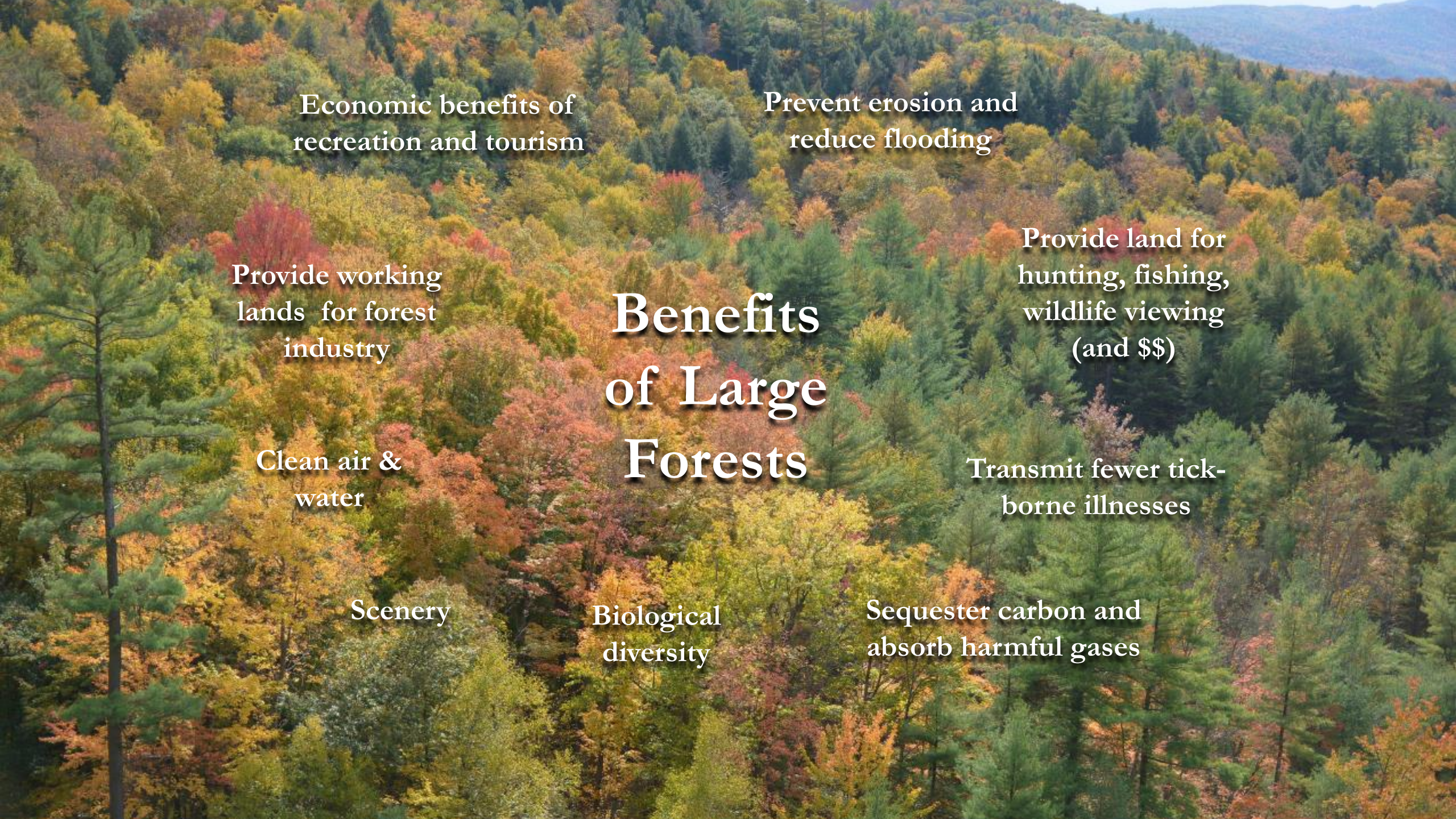
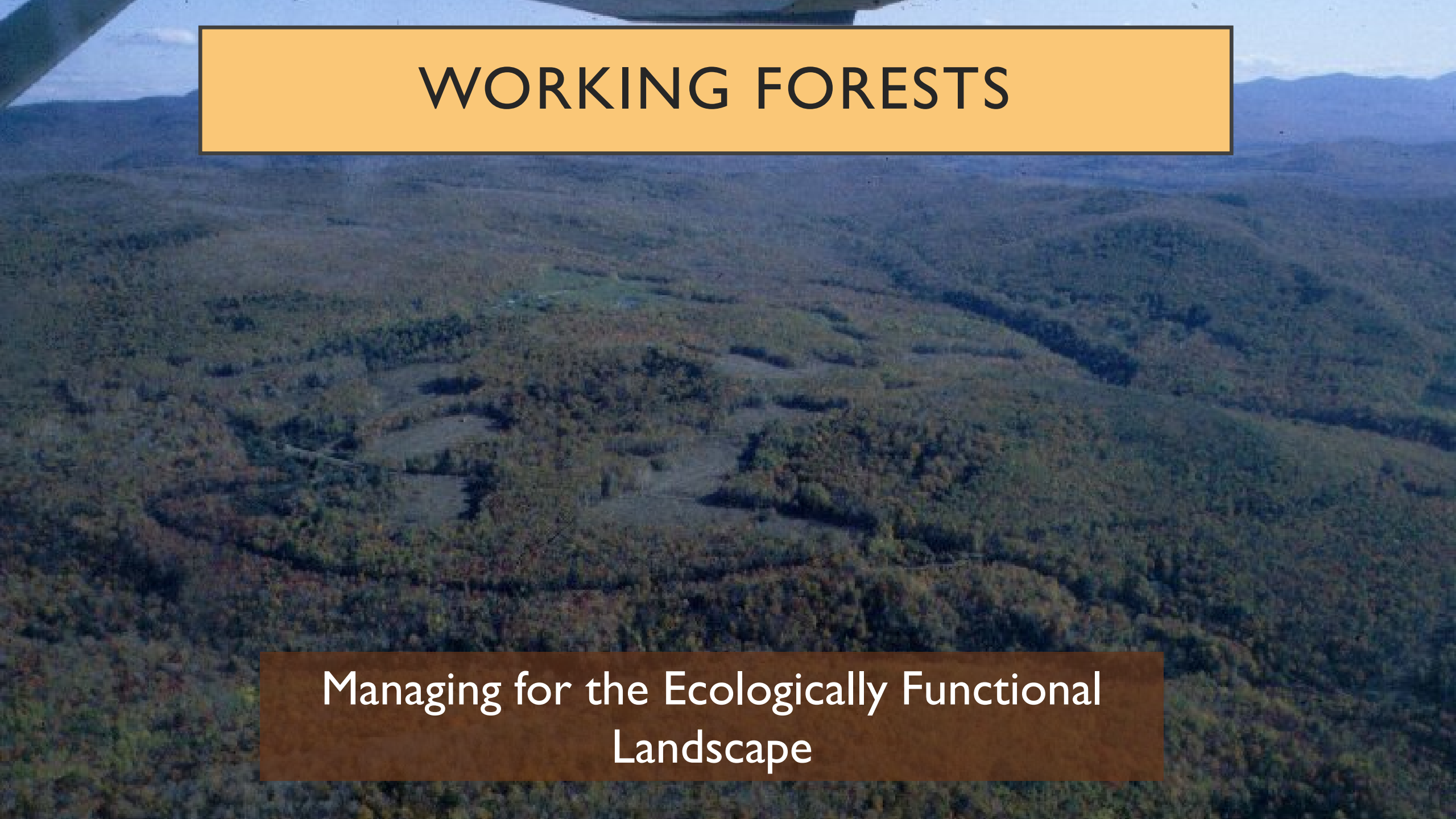
USING BIOFINDER FOR LAND USE PLANNING

Jens Hilke

Forest!


Benefits of Large Forests
Economic benefits of recreation and tourism
Prevent erosion and reduce flooding
Provide working lands for forest industry
Provide land for hunting, fishing, wildlife viewing (and $$)
Clean air & water
Transmit fewer tick-borne illnesses
Scenery
Biological diversity
Sequester carbon and absorb harmful gases

12% of Vermont's GDP
20,000 jobs.
Fall foliage tourism is
25% of the tourist
income to Vermont
Forests power
Vermont's
Economy
Forest products
add $1.5 billion
Hunting, fishing,
and wildlife
viewing = $685
million
Forest recreation
and tourism provide
$1.9 billion to
Vermont annually
Intact wetlands and
riparian areas reduce
damage from floods



WORKING FORESTS

Managing for the Ecologically Functional Landscape

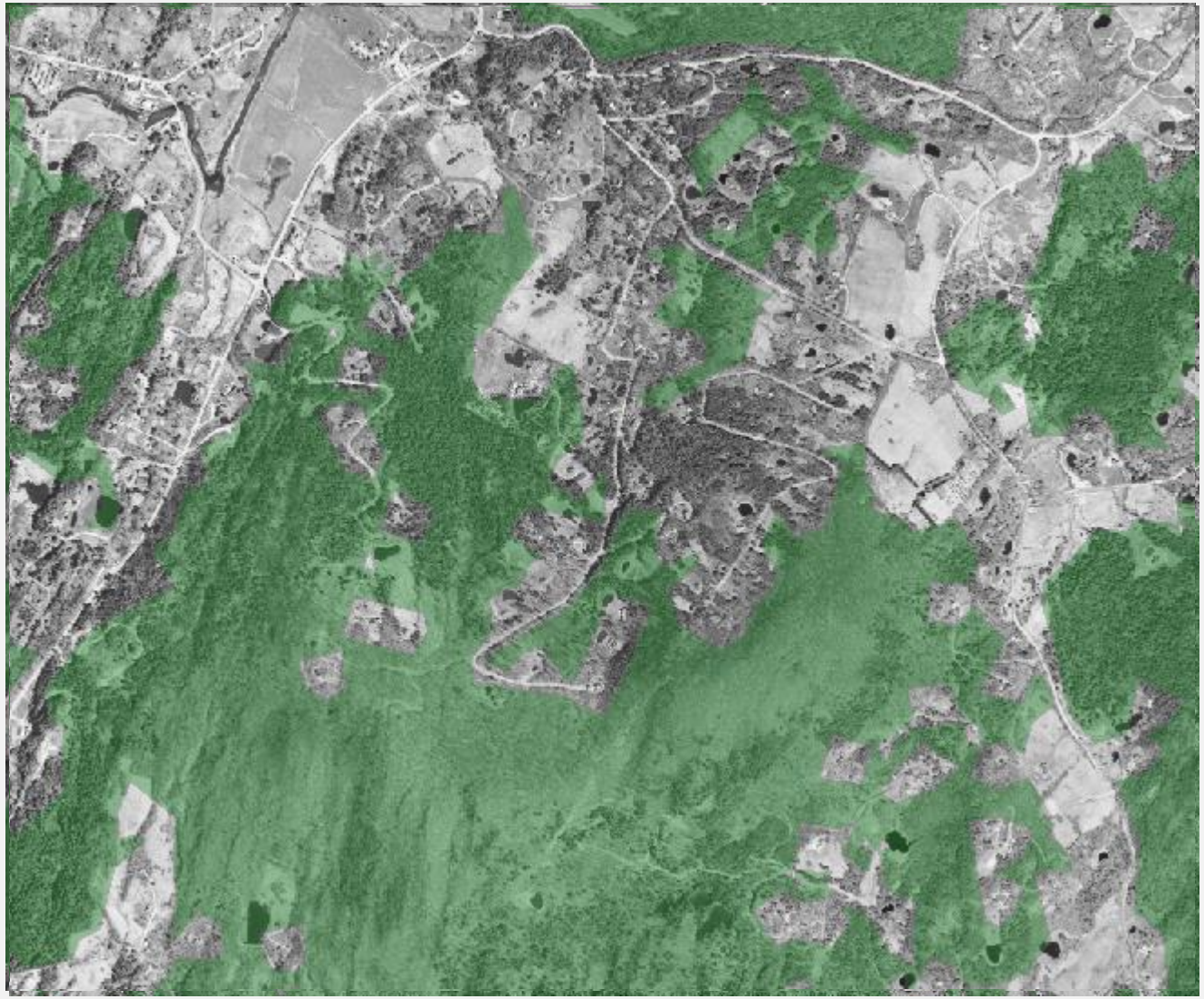
WILDLIFE PRESENT IN FOREST PATCHES

Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Undeveloped	*500-2500 acre blocks*	*100-500 acre blocks*	*20-100 acre blocks*	*1-20 acre blocks*
Raccoon	Raccoon	Raccoon	Raccoon	Raccoon
Hare	Hare	Hare	Hare	
Coyote				
Small rodent	Small rodent	Small rodent	Small rodent	Small rodent
Porcupine	Porcupine	Porcupine	Porcupine	
Bobcat				
Cottontail	Cottontail	Cottontail	Cottontail	Cottontail
Beaver	Beaver	Beaver	Beaver	
Black bear				
Squirrel	Squirrel	Squirrel	Squirrel	Squirrel
Weasel	Weasel	Weasel	Weasel	
Mink	Mink	Mink		
Fisher				
Woodchuck	Woodchuck	Woodchuck	Woodchuck	
Deer	Deer	Deer		
Muskrat	Muskrat	Muskrat	Muskrat	Muskrat
Moose	Moose			
Red fox	Red fox	Red fox	Red fox	Red fox
Songbirds	Songbirds	Songbirds	Songbirds	Songbirds
Sharp-shinned hawk	Sharp-shinned hawk	Sharp-shinned hawk		
Bald eagle	Bald eagle			
Skunk	Skunk	Skunk	Skunk	Skunk
Cooper's hawk	Cooper's hawk	Cooper's hawk		
Harrier	Harrier	Harrier		
Broad-winged hawk	Broad-winged hawk	Broad-winged hawk		
Goshawk	Goshawk			
Kestrel	Kestrel	Kestrel		
Red-tailed hawk	Red-tailed hawk			
Horned owl	Horned owl	Horned owl		
Raven	Raven			
Barred owl	Barred owl	Barred owl		
Osprey	Osprey	Osprey		
Turkey vulture	Turkey vulture	Turkey vulture		
Turkey	Turkey	Turkey		
Reptiles	Reptiles	Reptiles	Most Reptiles	Most Reptiles
Garter snake	Garter snake	Garter snake	Garter snake	
Ring-neck snake	Ring-neck snake	Ring-neck snake	Ring-neck snake	
Amphibians	Amphibians	Most Amphibians	Most Amphibians	Most Amphibians
Wood frog	Wood frog	Wood frog		

From Above and Beyond." Campoli, J., Humstone, E., & MacLean, A. 2002.

LOSING WILDLIFE HABITAT & WORKING FOREST

1962

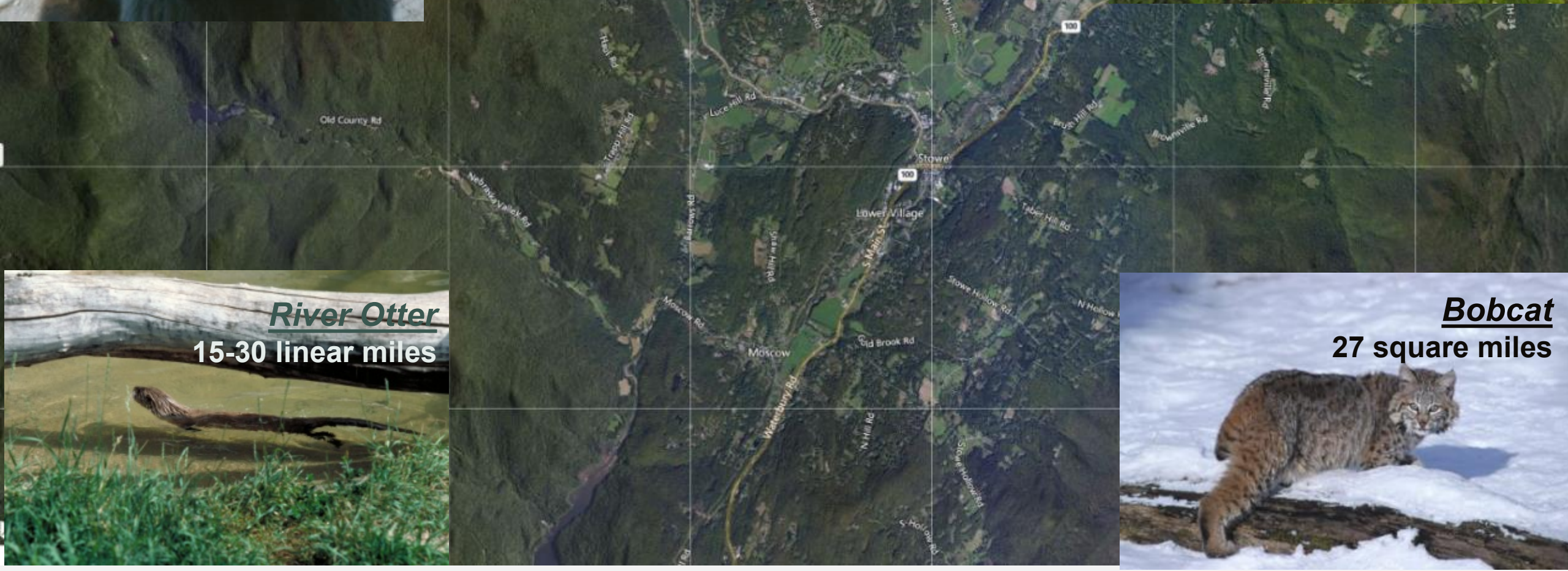


Black Bear

30+ square miles

Moose

2-20 square miles



River Otter

15-30 linear miles

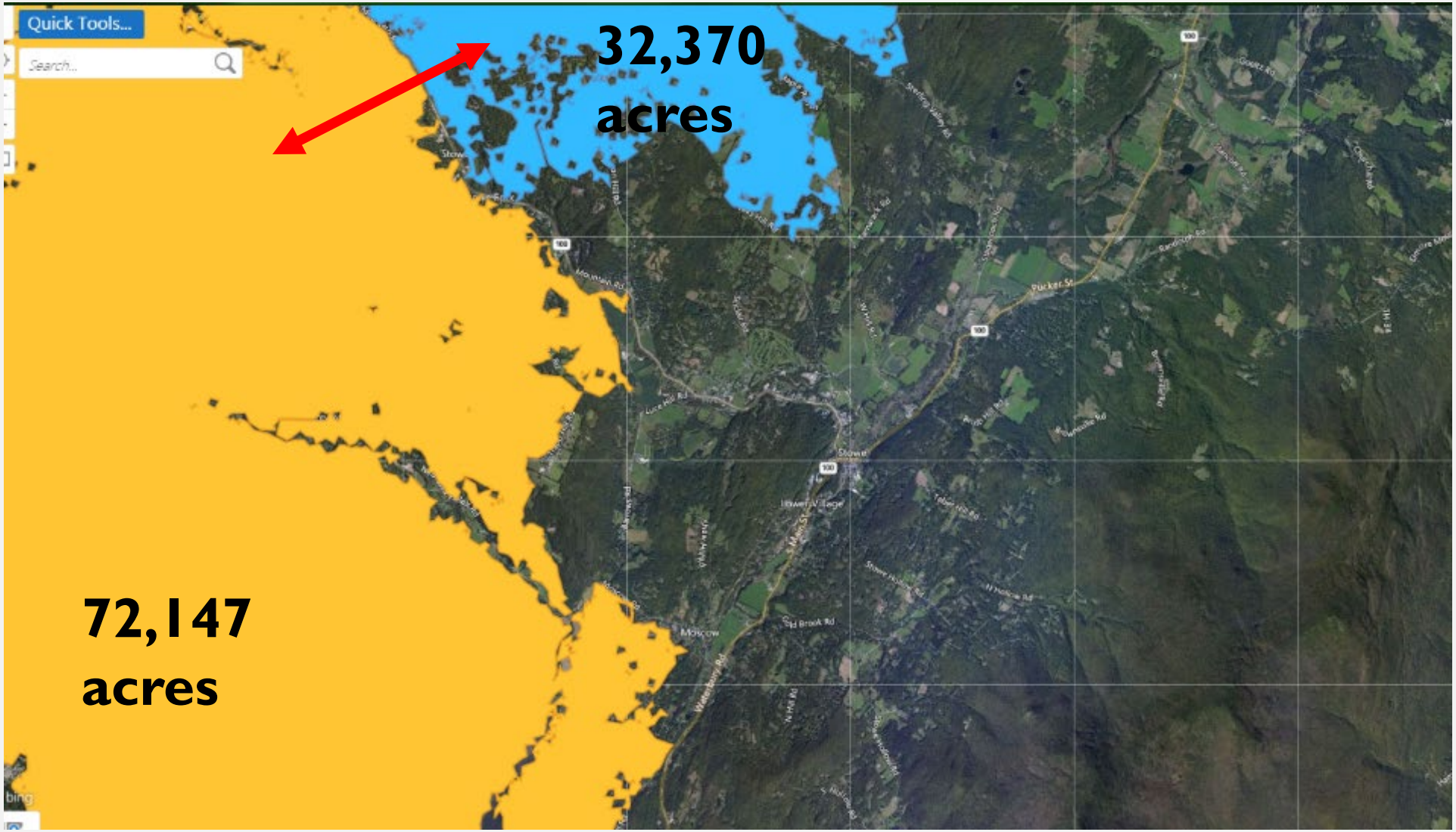
Bobcat

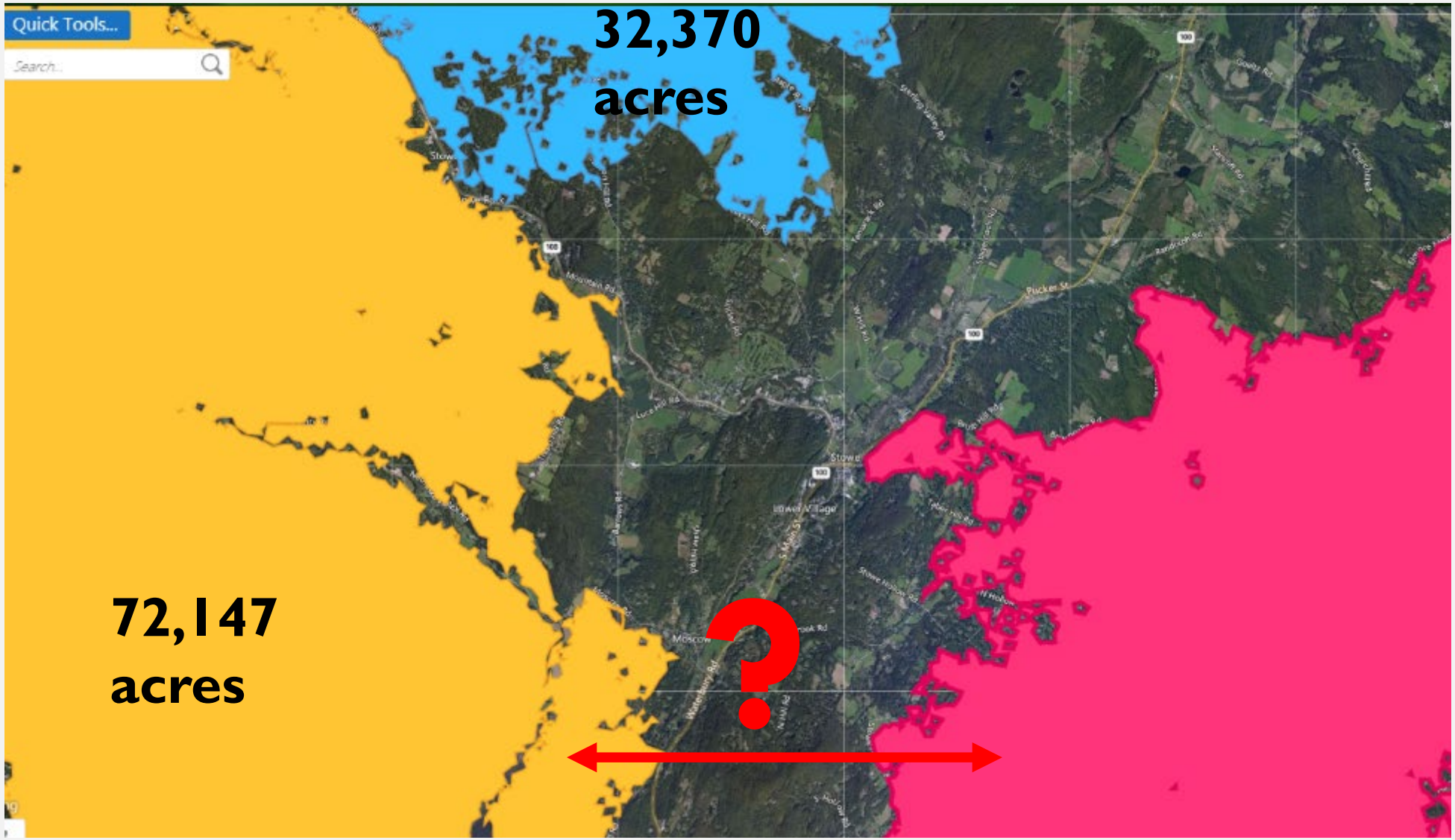
27 square miles

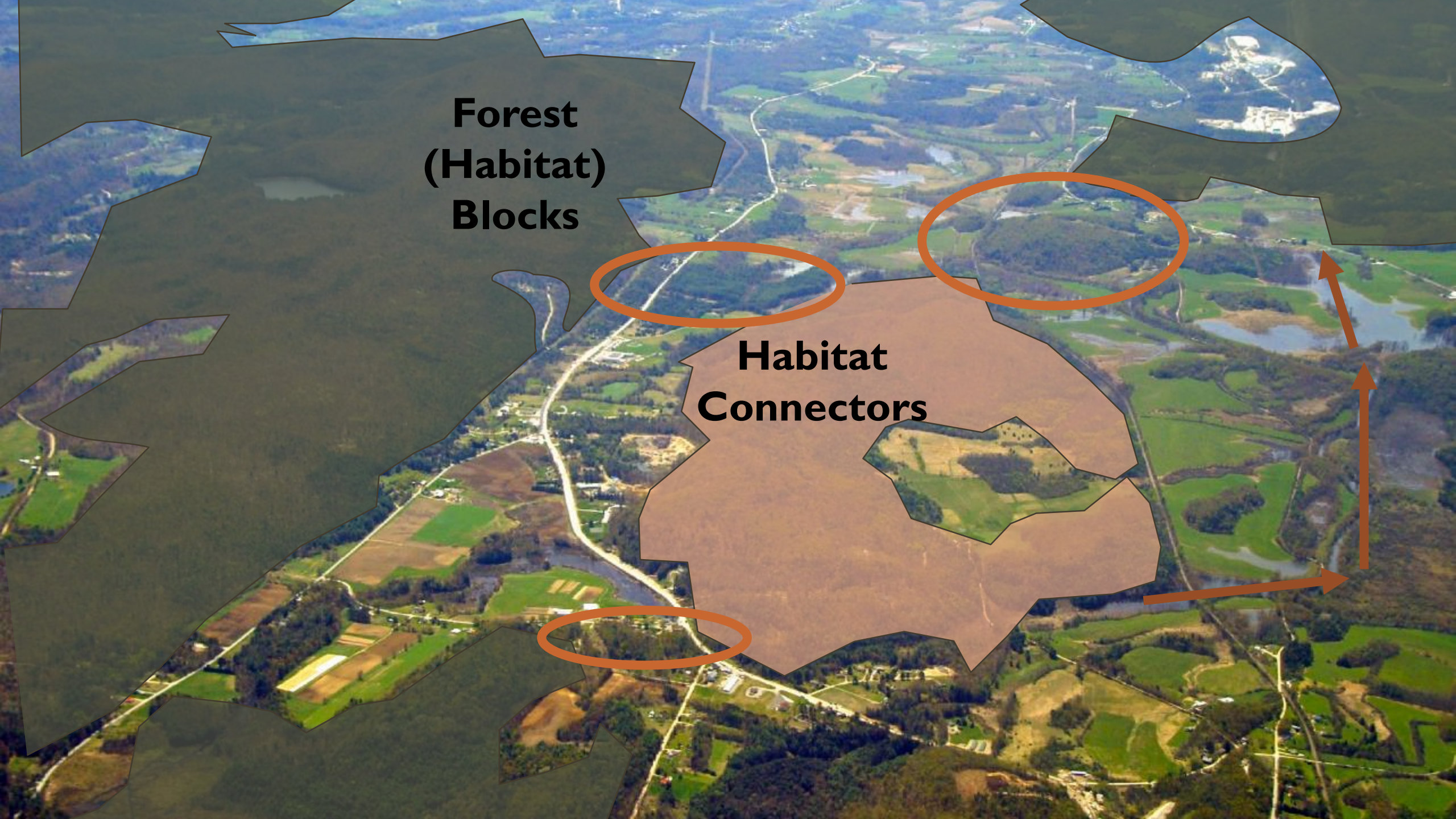
Quick Tools...
Search...
Stowe
Moscow
Pucker St
Mountain Rd
Luce Hill Rd
Weeks Hill Rd
Stowe Hollow Rd
Old Brook Rd
Waterbury Rd
Randolph Rd
Gulick Rd
Cleveland Rd
Kenyon Rd
Stevens Valley Rd
Maple Ridge Rd
Wade Pasture Rd
Union Hill Rd
Brown Rd
Valley Rd
Pleasant St
Rowntree Rd
Tabor Hill Rd
N Hollow Rd
S Hollow Rd
N Hill Rd
Cleveland Ridge
Hill St
100

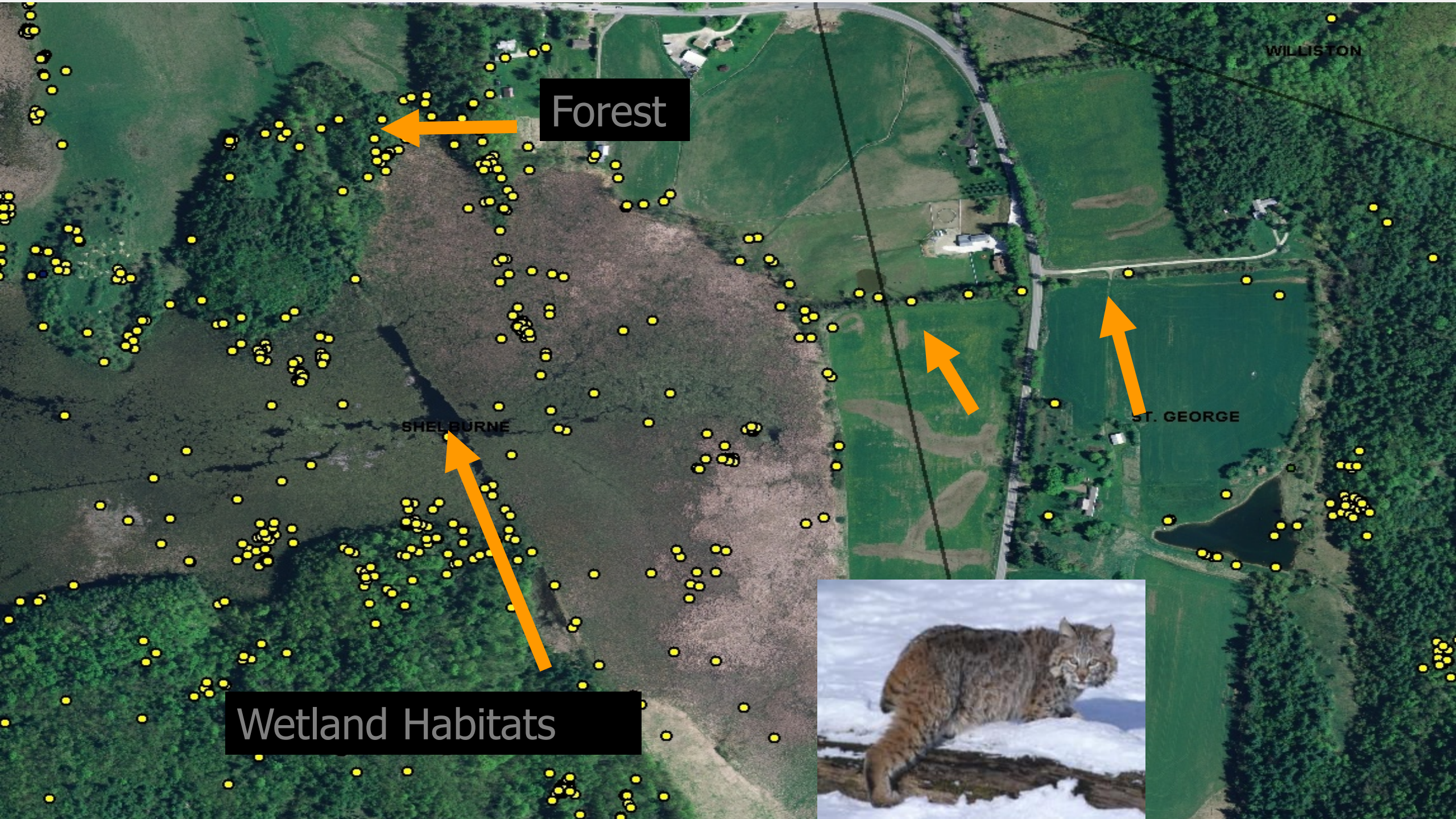
72,147 acres

= 104,517 acres

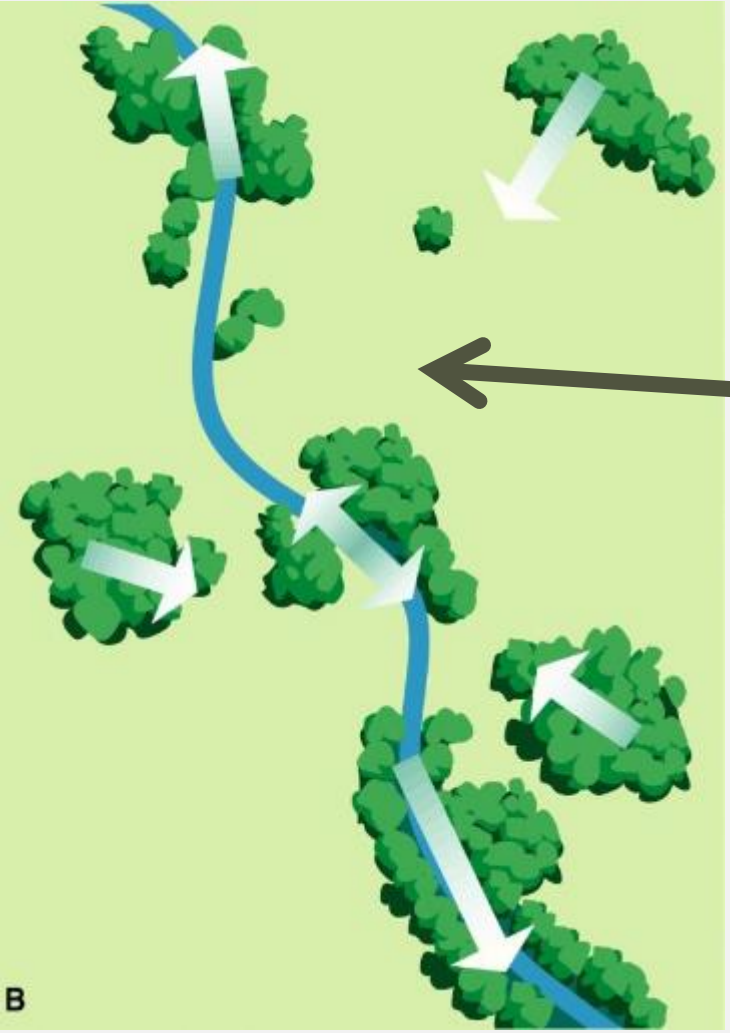



Quick Tools...
Search...
32,370
acres
72,147
acres
?
Stowe
Moscow
Pucker St

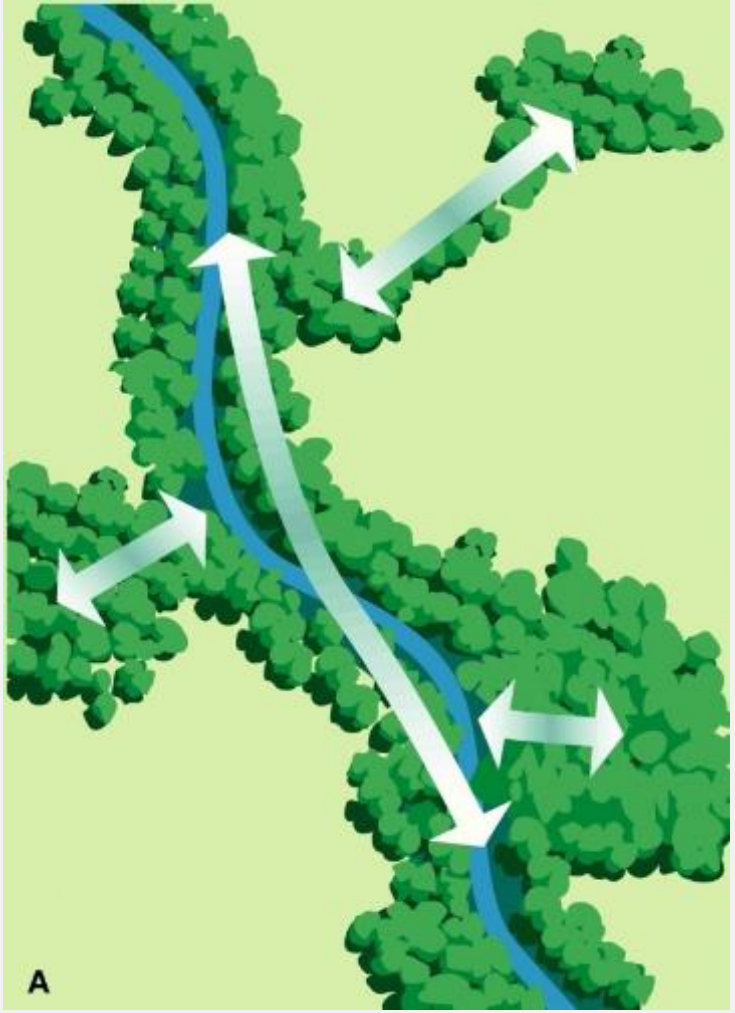

Forest
(Habitat)
Blocks
Habitat
Connectors


Forest
WILLISTON
SHELBURNE
ST. GEORGE
Wetland Habitats

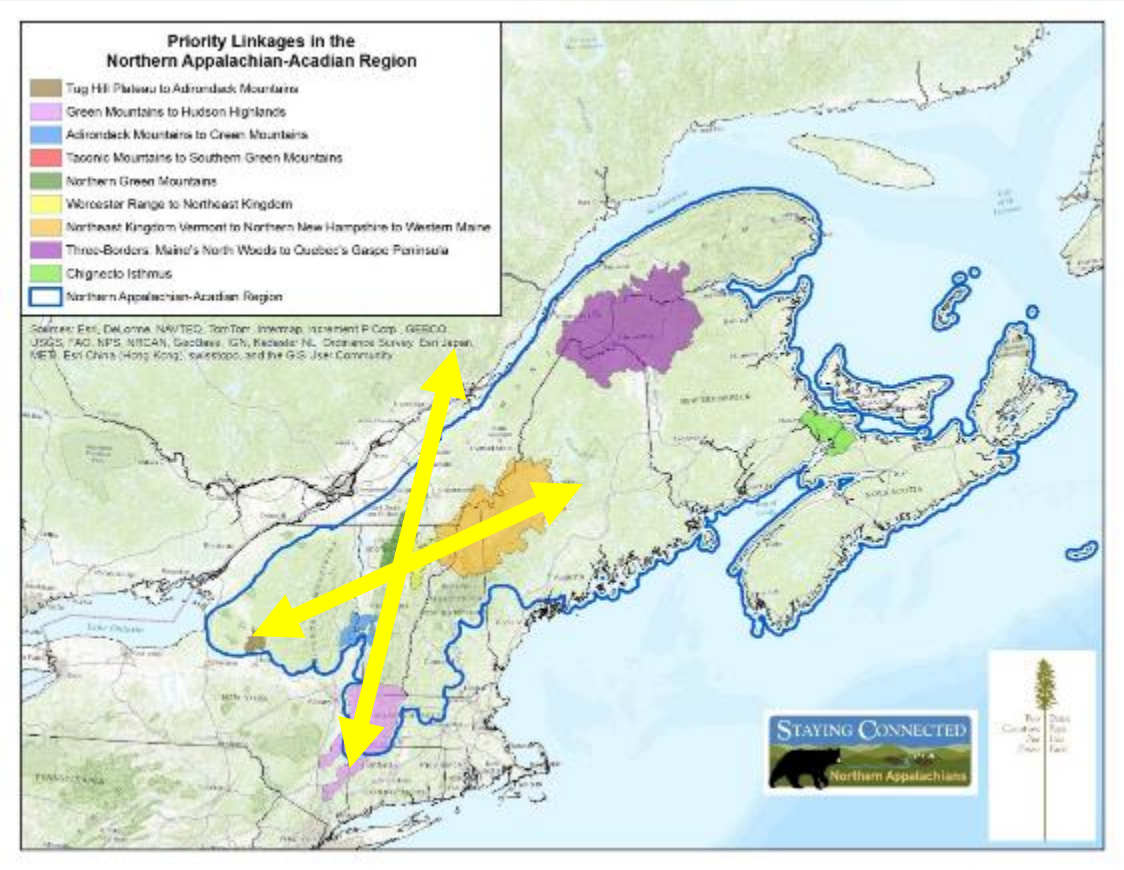
Connectivity



Barriers to animal movement

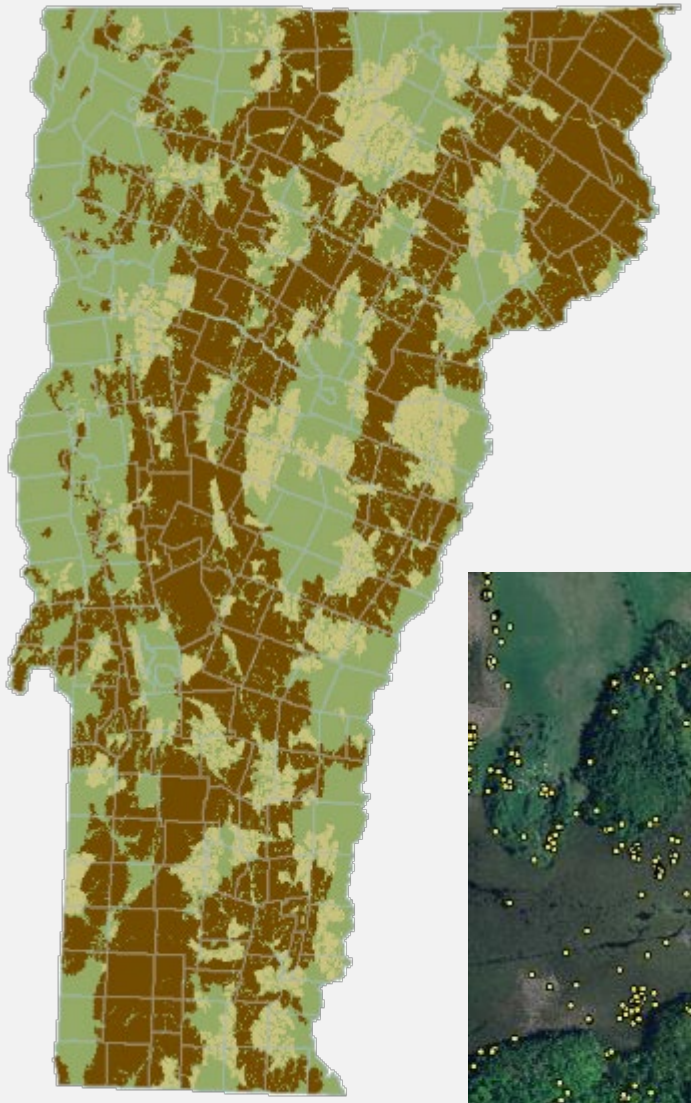


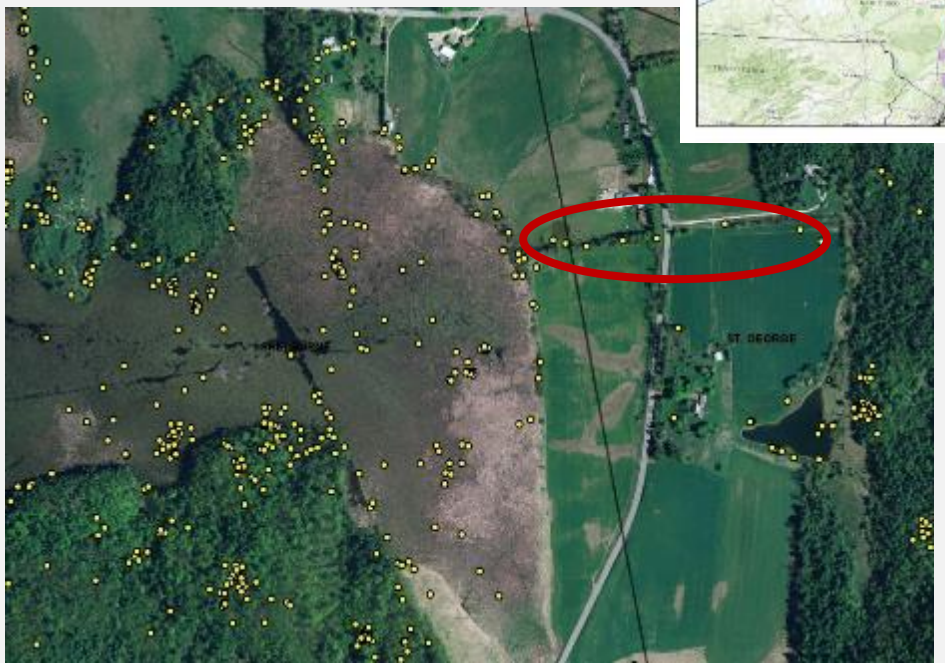
REGIONAL CONNECTIVITY

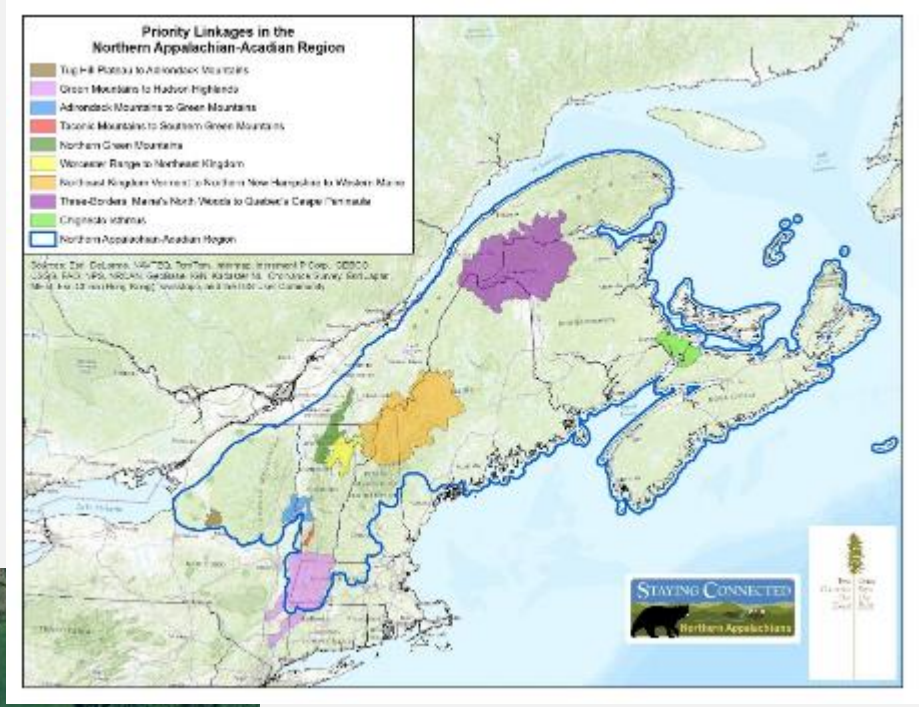


Vermont is the crossroads

ALL SCALES MATTER!







ACT 171 PLANNING PROVISIONS

New land use planning goal:

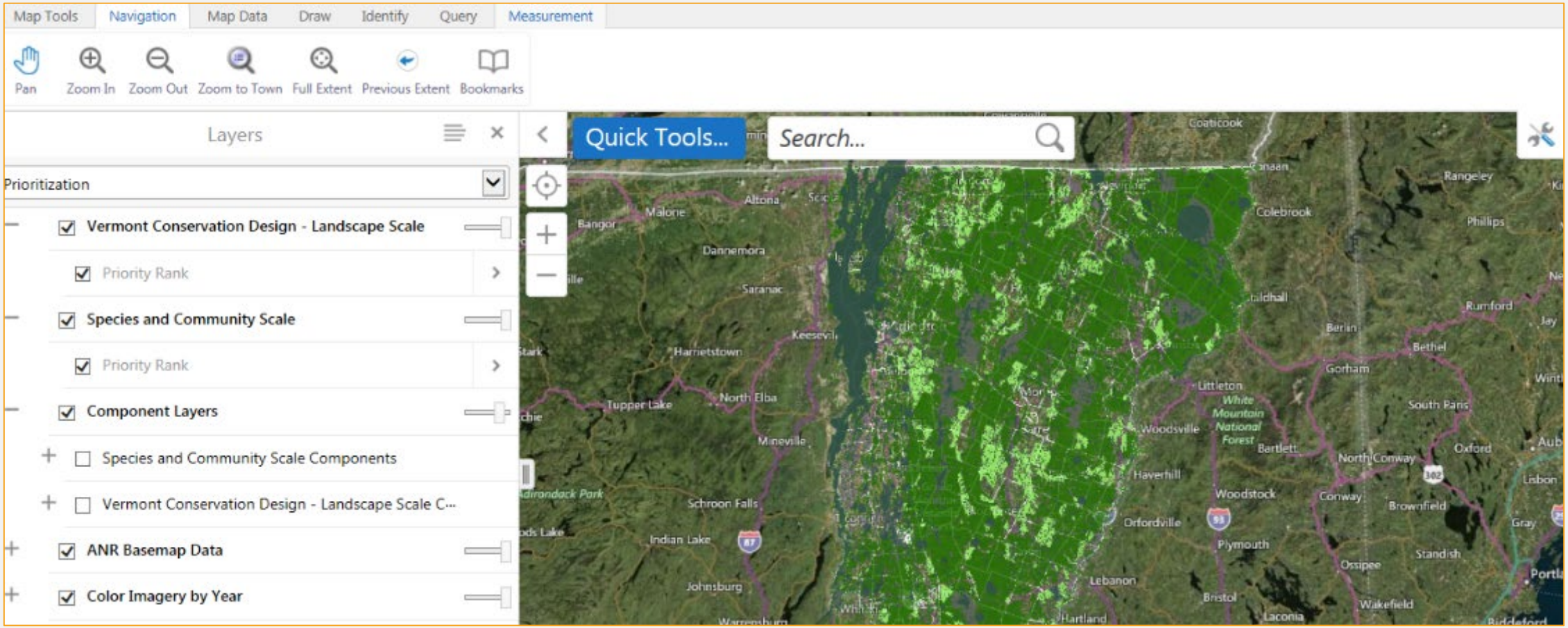
to manage Vermont's forestlands so as to **maintain and improve forest blocks and habitat connectors**.

ACT 171 PLANNING PROVISIONS

Requires town and regional plans to:

- **indicate those areas that are important as forest blocks and habitat connectors**
- **plan for land development in those areas to minimize forest fragmentation and promote the health, viability, and ecological function of forests.**

BioFinder



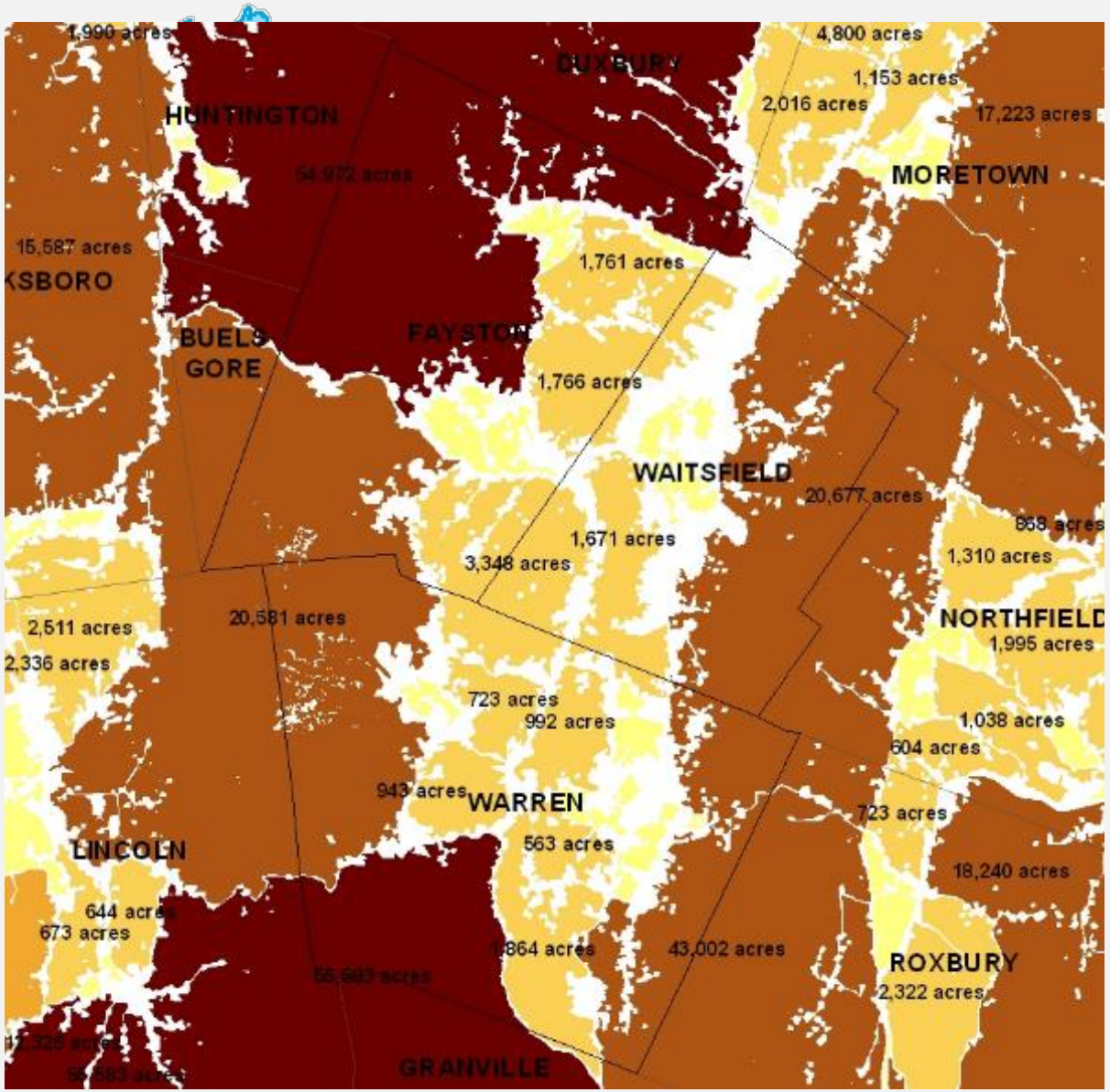
Accessible to everyone!

biofinder.vt.gov/

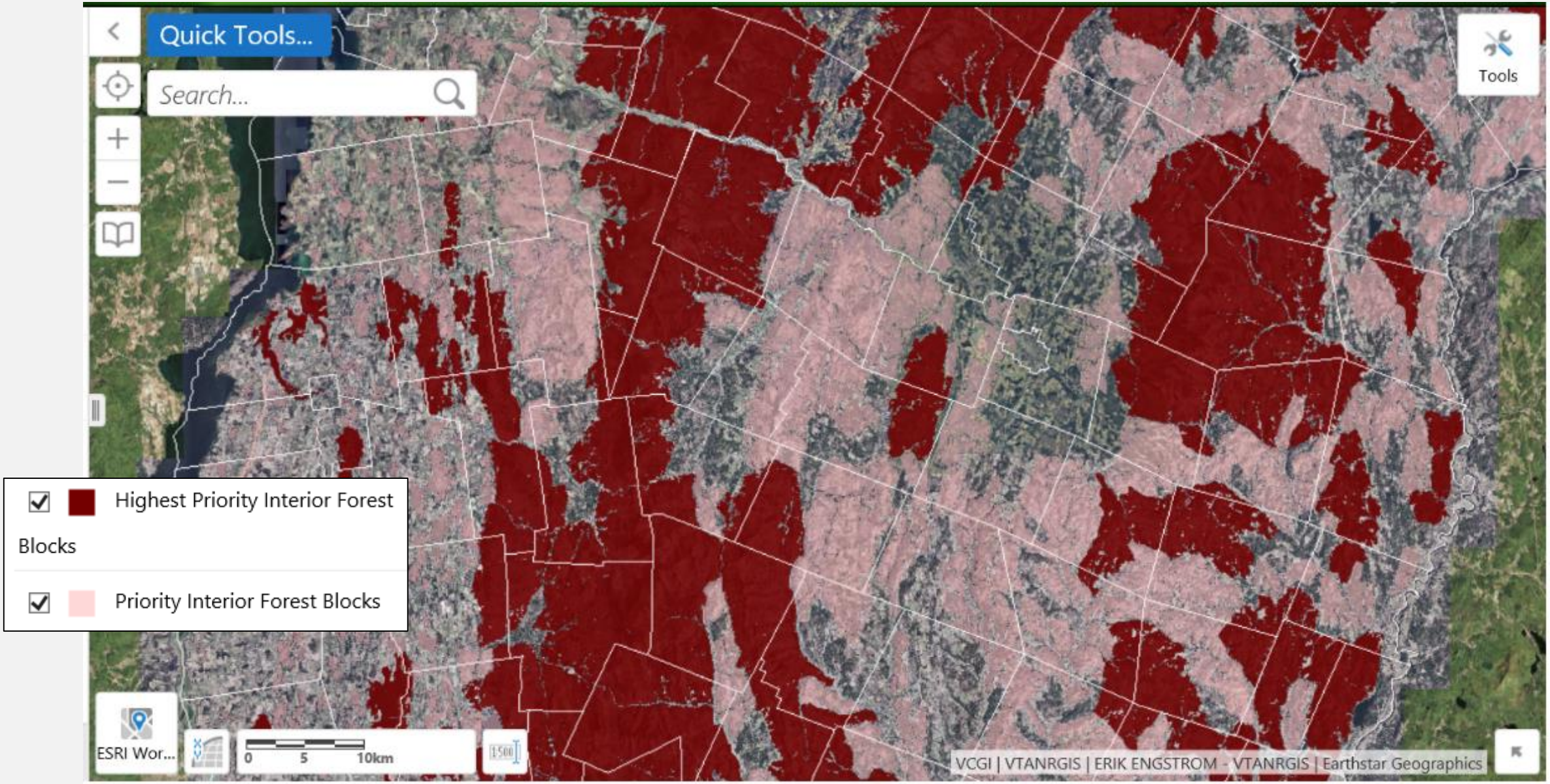
FOREST/HABITAT BLOCKS

Areas of natural cover

(no roads or development)



Interior Forest



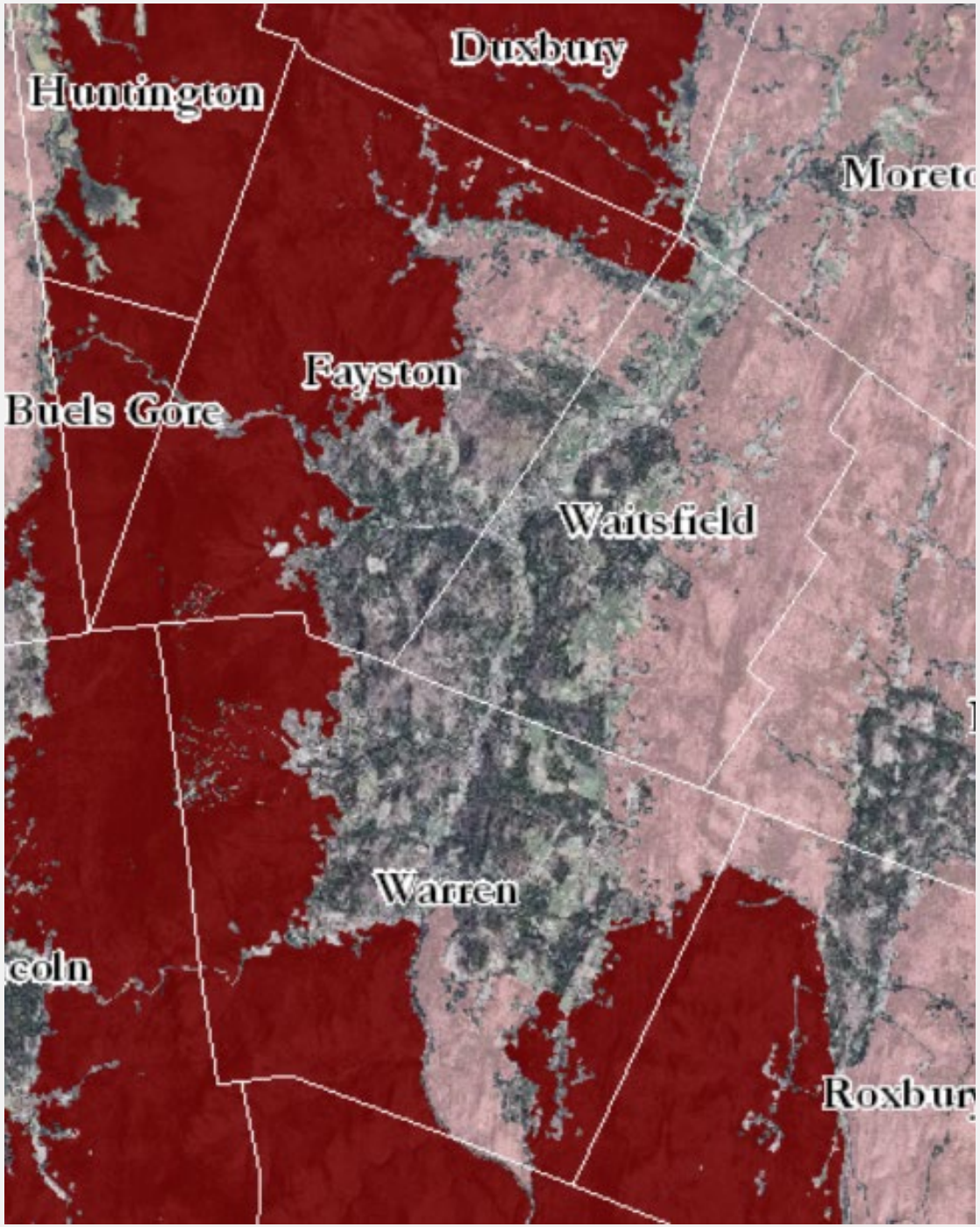
INTERIOR FOREST BLOCKS

Habitat Blocks

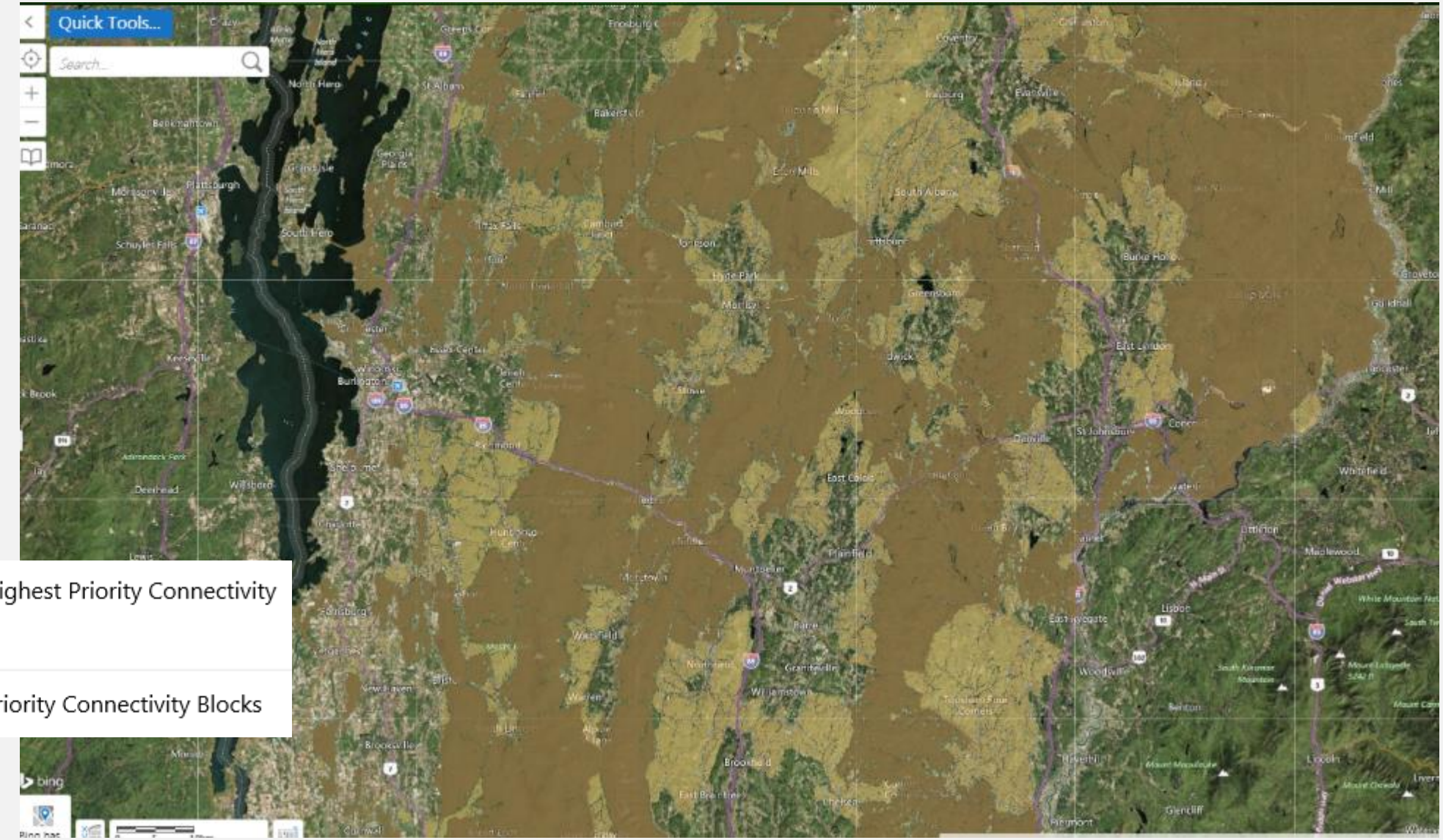
Most Important

as FOREST HABITAT

- [x] Highest Priority Interior Forest Blocks
- [x] Priority Interior Forest Blocks



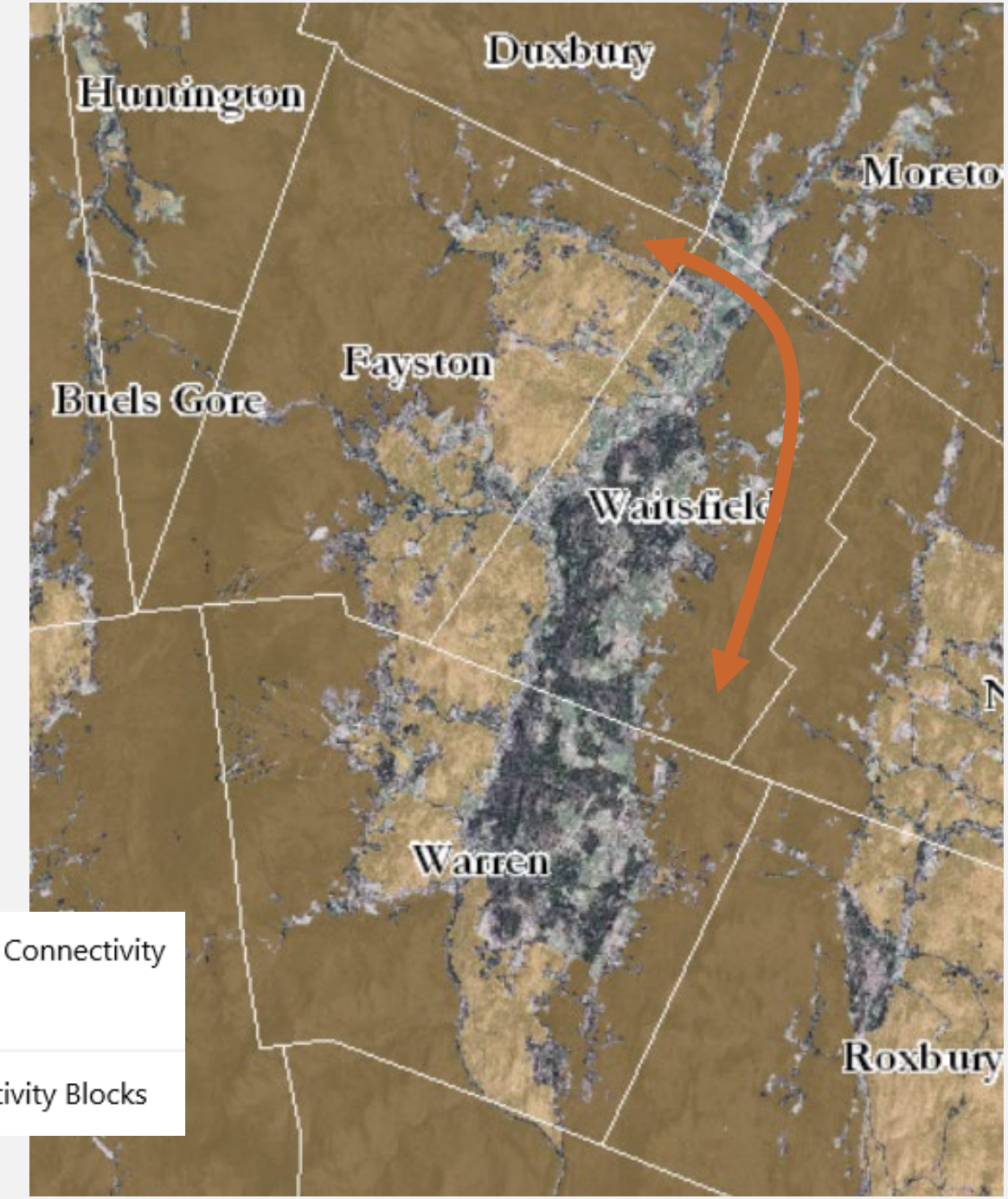
Connectivity Blocks



CONNECTIVITY BLOCKS

Habitat Blocks

Most Important
for
CONNECTIVITY

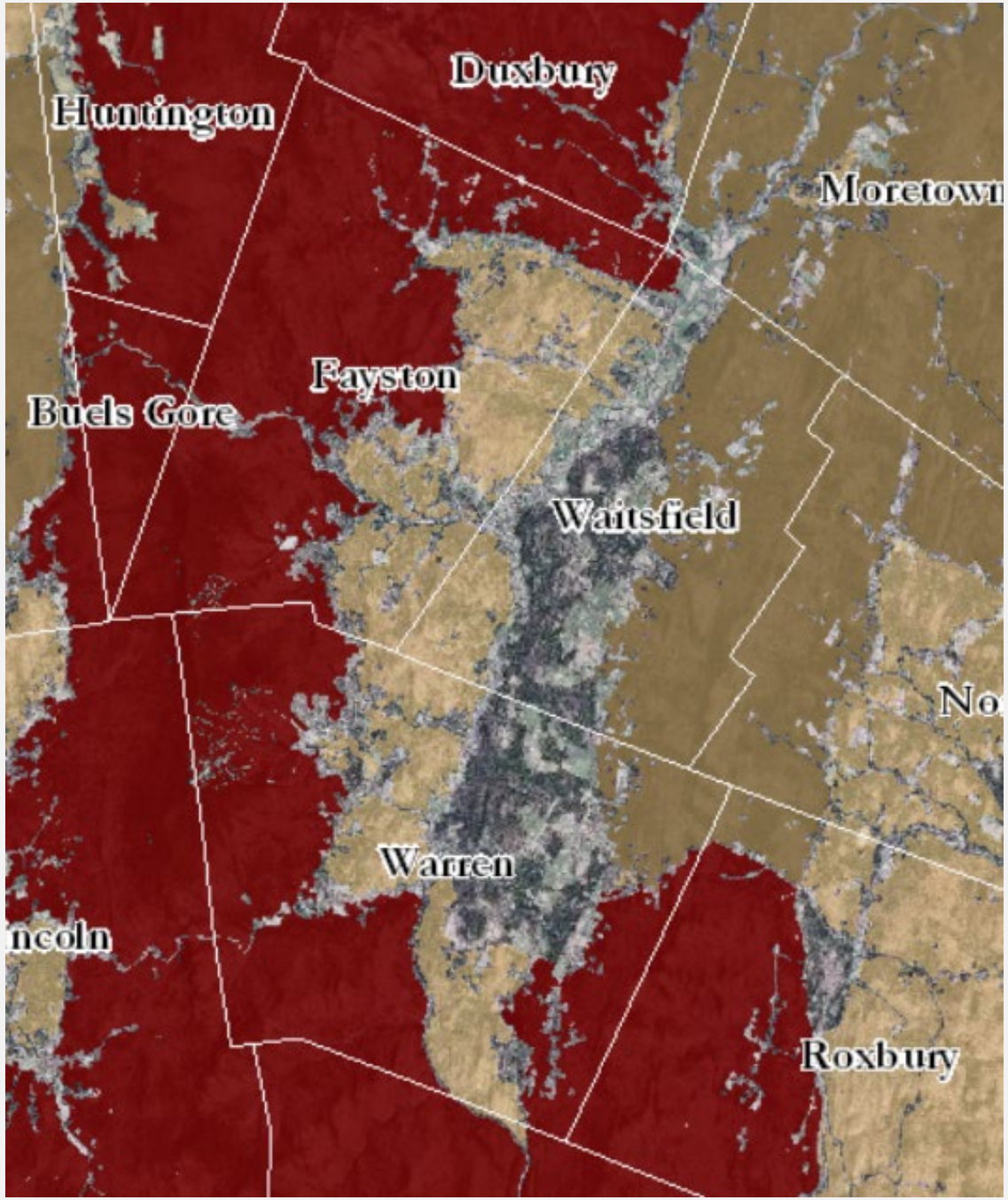


☑ Highest Priority Connectivity Blocks

☑ Priority Connectivity Blocks

INTERIOR FOREST + CONNECTIVITY BLOCKS

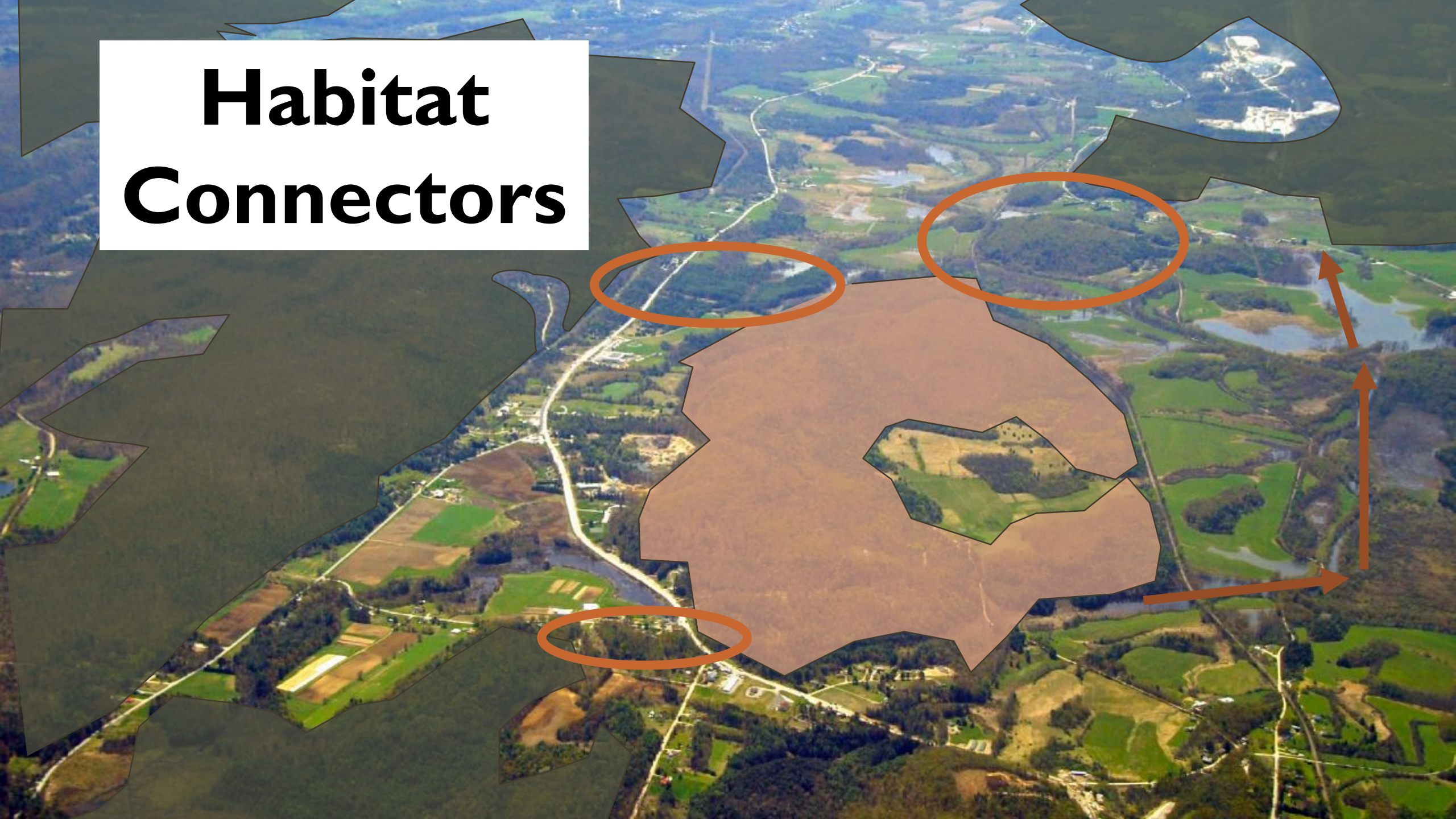
- ☑ Highest Priority Interior Forest Blocks
- ☑ Highest Priority Connectivity Blocks
- ☑ Priority Connectivity Blocks



FOREST/HABITAT BLOCKS

Final Map

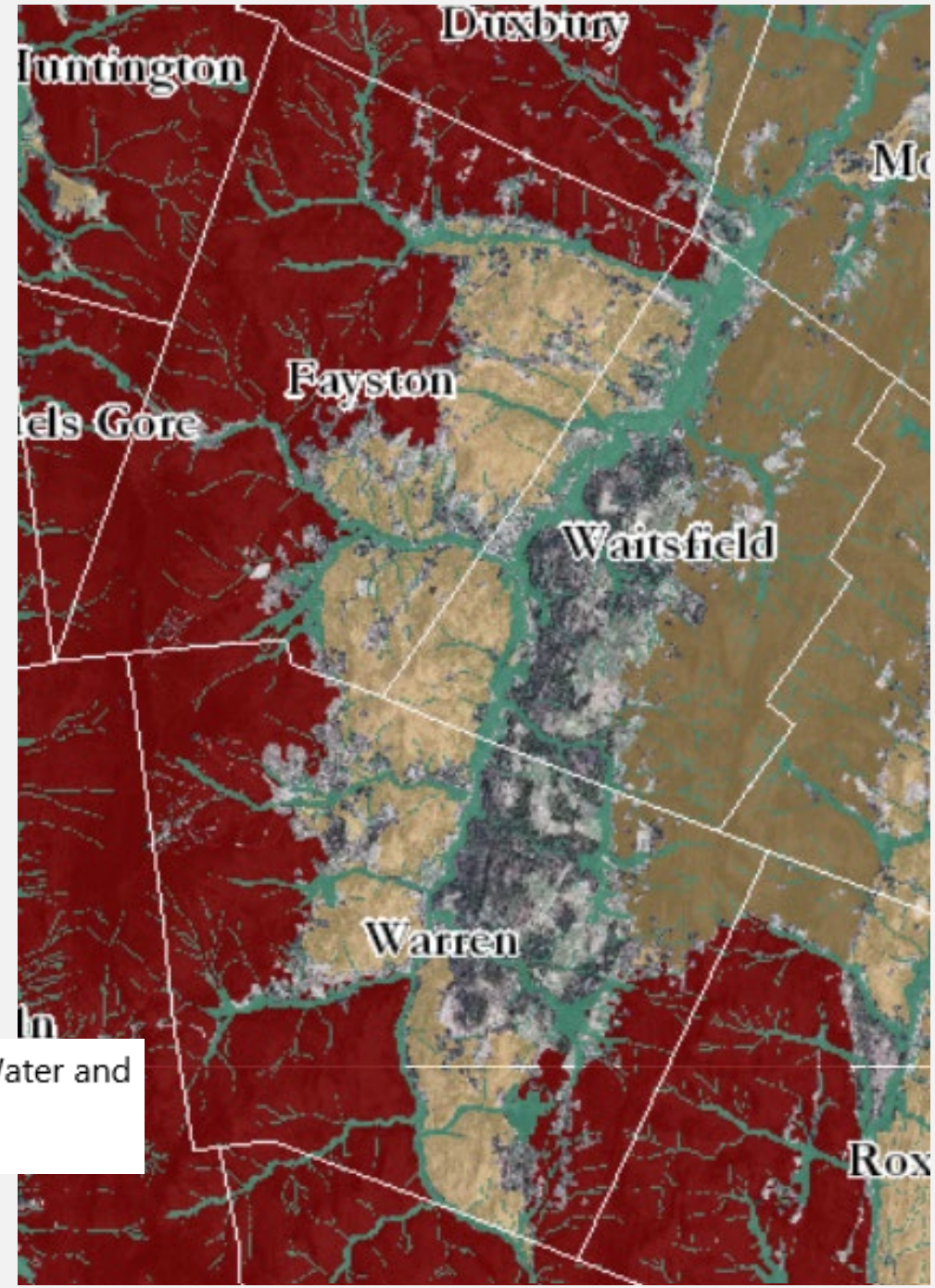
Habitat Connectors



SURFACE WATERS & RIPARIAN AREAS

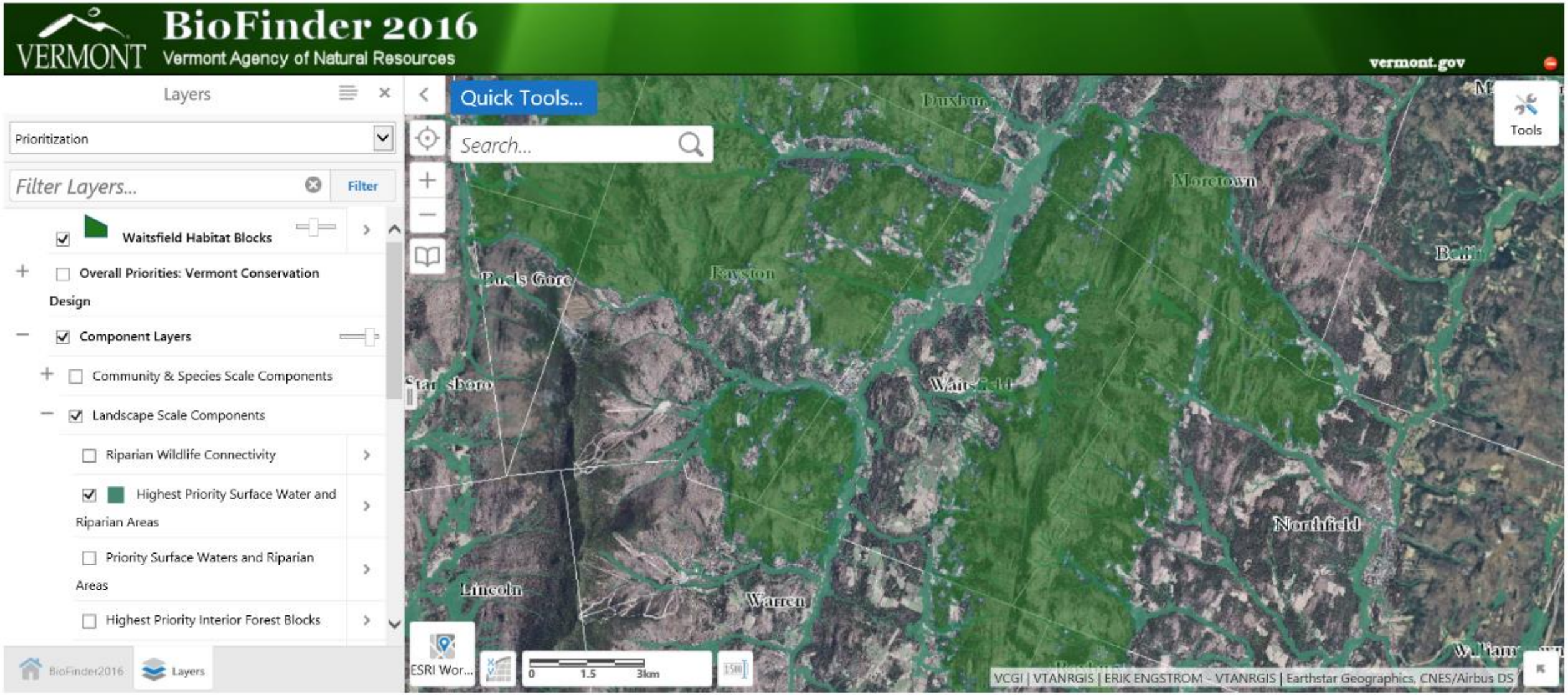
Streams, Rivers, Lakes, Ponds

and their surrounding vegetation



☑ Highest Priority Surface Water and Riparian Areas

Surface Waters & Riparian Areas



WILDLIFE ROAD CROSSINGS

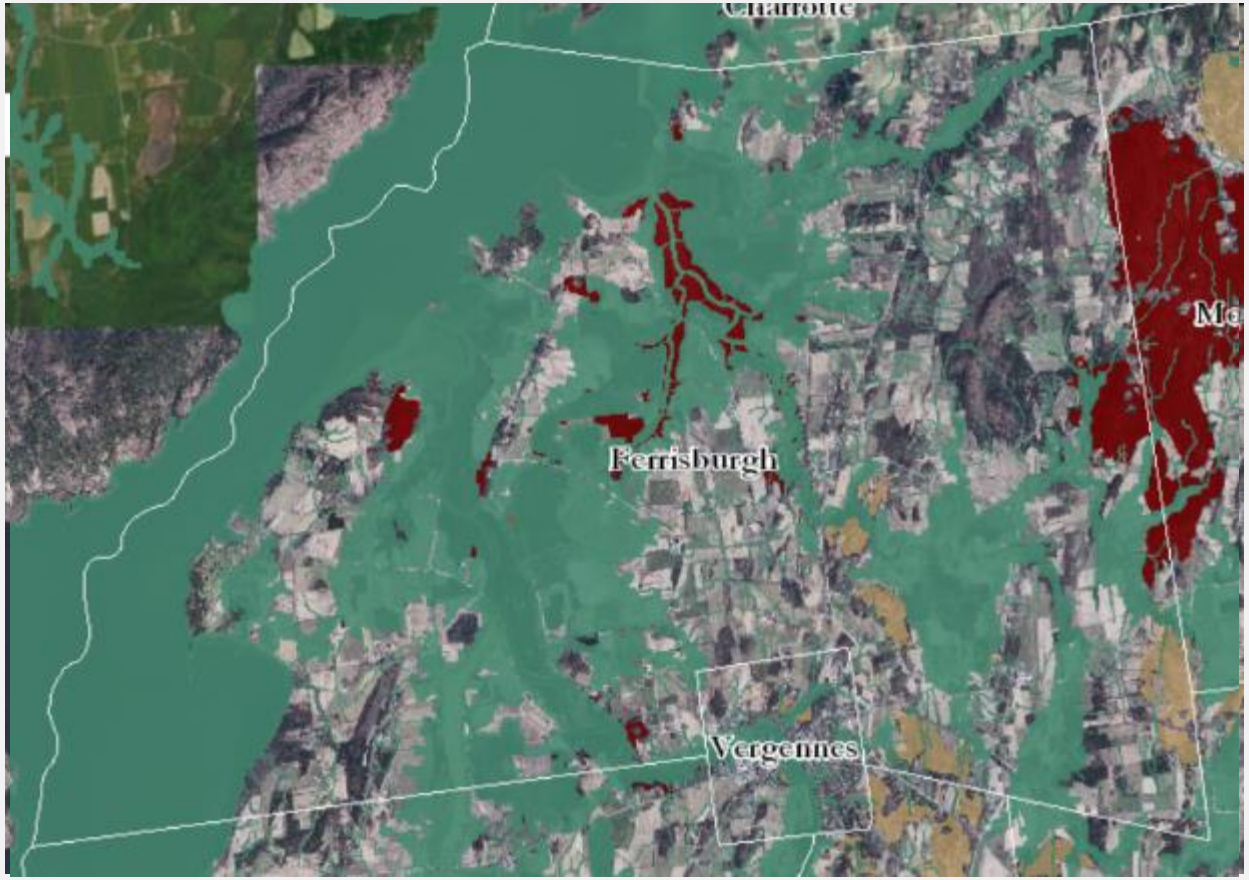
Where wildlife are MOST LIKELY to cross roads

SMALLER FOREST BLOCKS

Habitat Connectors

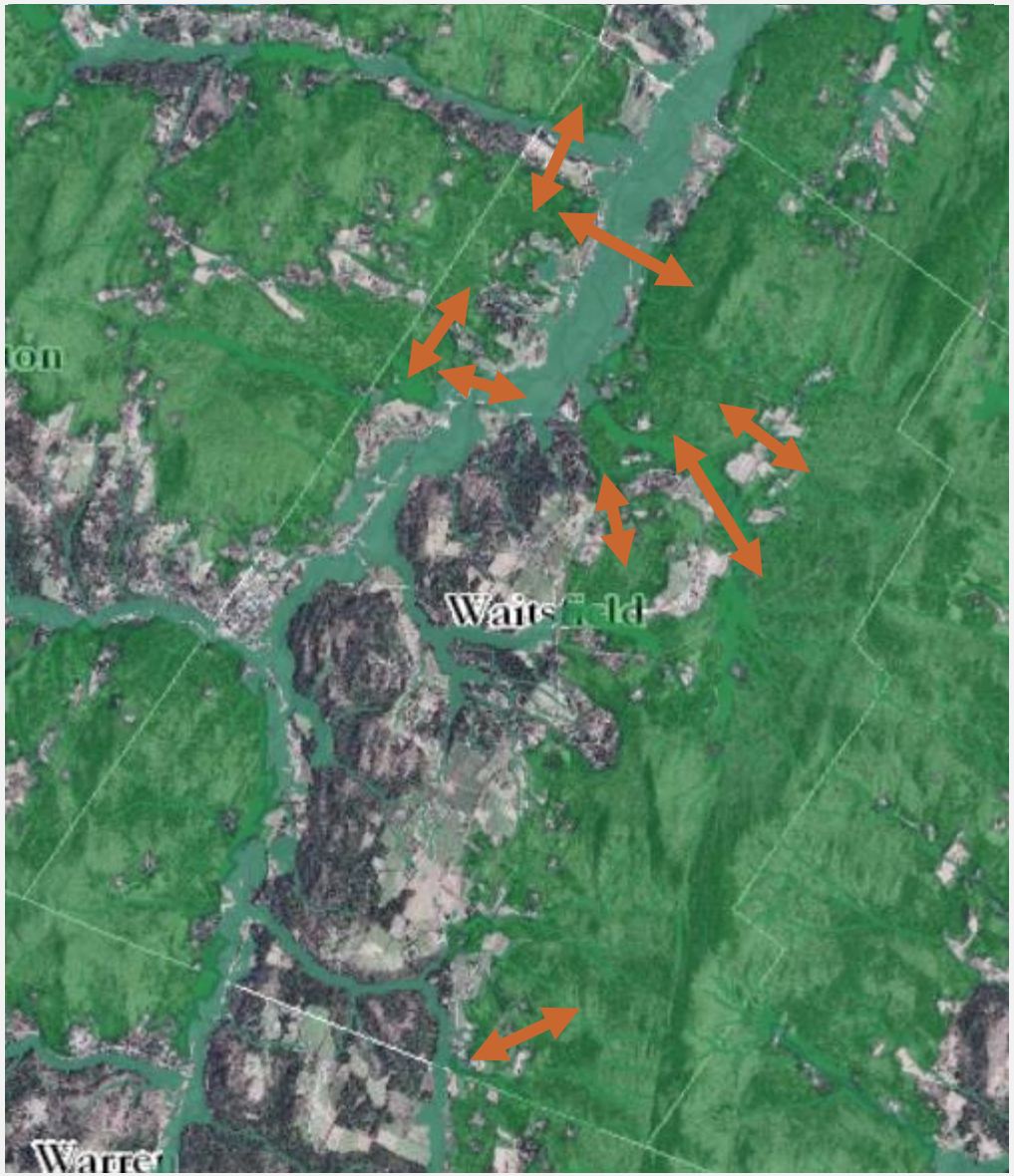
can be just as important as

Forest Blocks

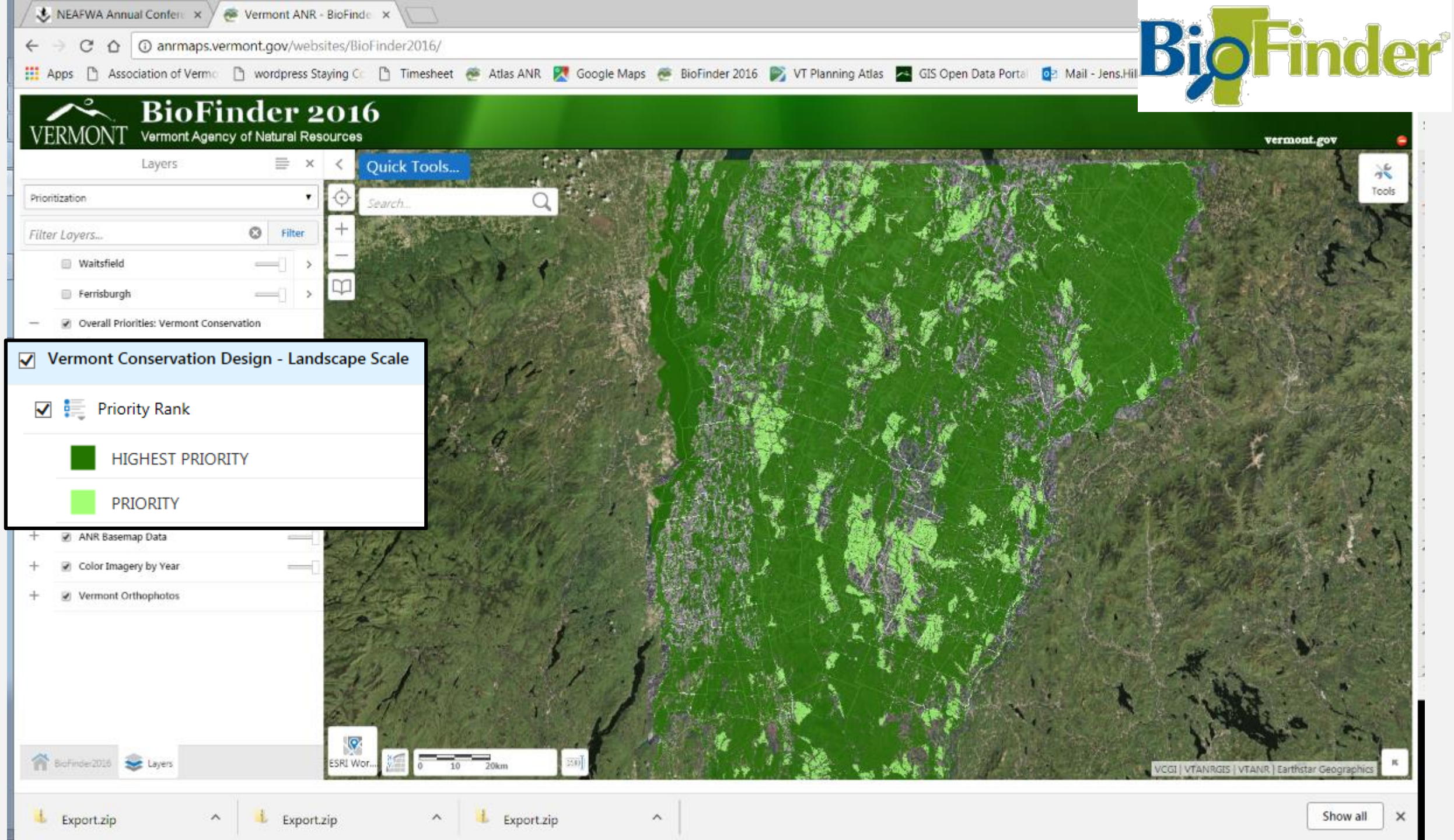


It's okay to

SIMPLIFY



GOOD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Timesheet
Atlas ANR
Google Maps
BioFinder 2016
VT Planning Atlas
GIS Open Data Porta
Mail - Jens.Hil
BioFinder
VERMONT
BioFinder 2016
Vermont Agency of Natural Resources
vermont.gov
Layers
Prioritization
Filter Layers...
Filter
Waitsfield
Ferrisburgh
Overall Priorities: Vermont Conservation
Vermont Conservation Design - Landscape Scale
Priority Rank
HIGHEST PRIORITY
PRIORITY
ANR Basemap Data
Color Imagery by Year
Vermont Orthophotos
Quick Tools...
Search...
Tools
ESRI Wor...
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20km
VCGI | VTANRGIS | VTANR | Earthstar Geographics
BioFinder2016
Layers
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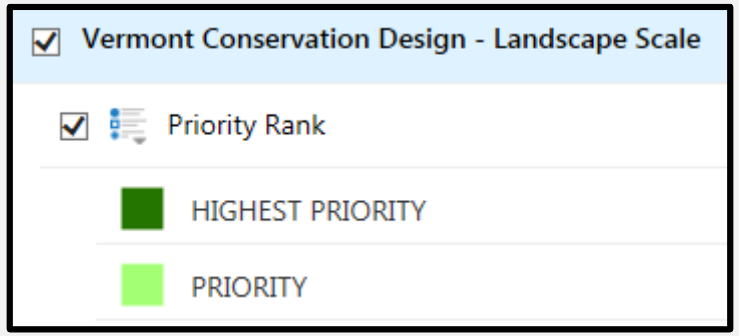
Export.zip
Export.zip
Show all

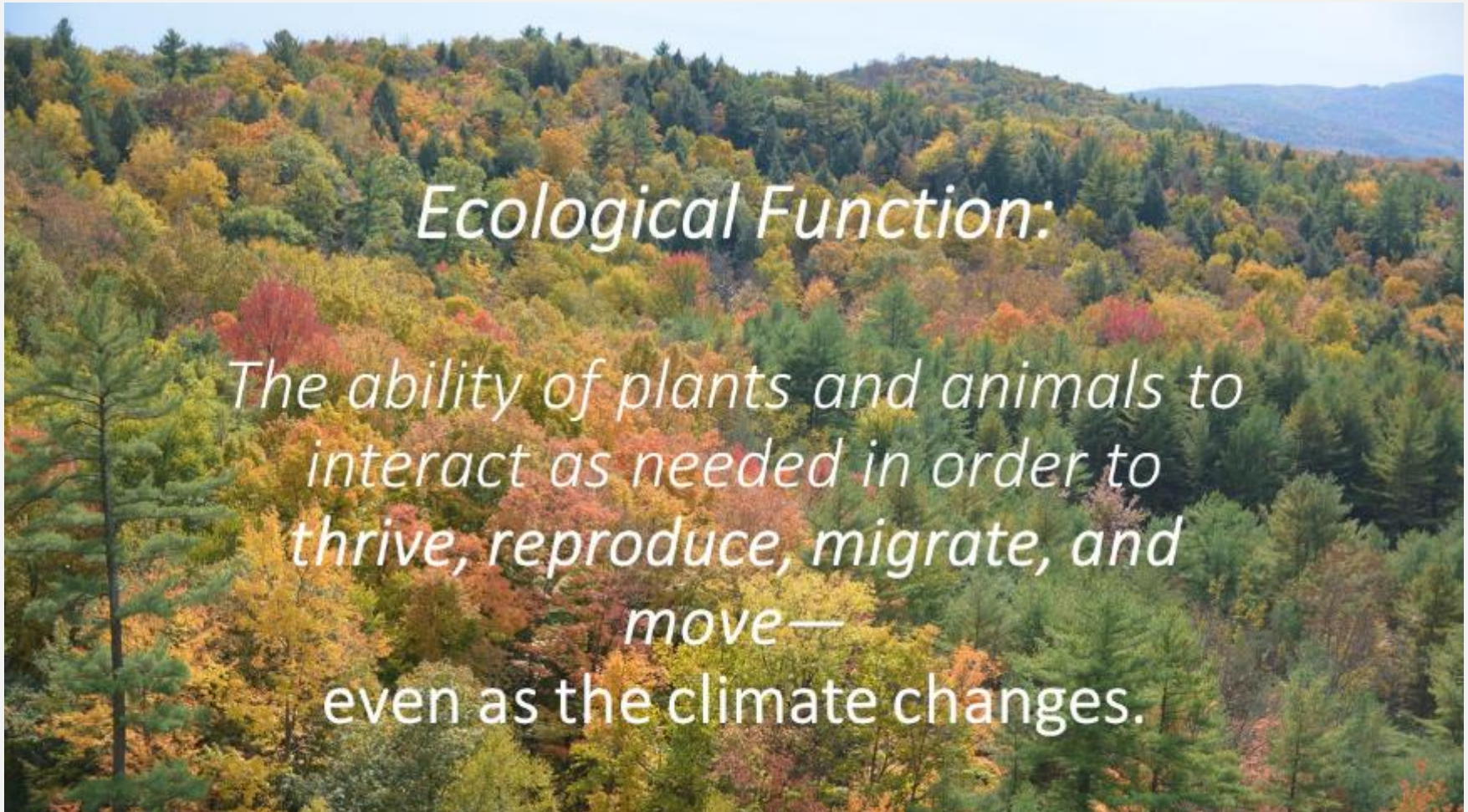
PRIORITIES

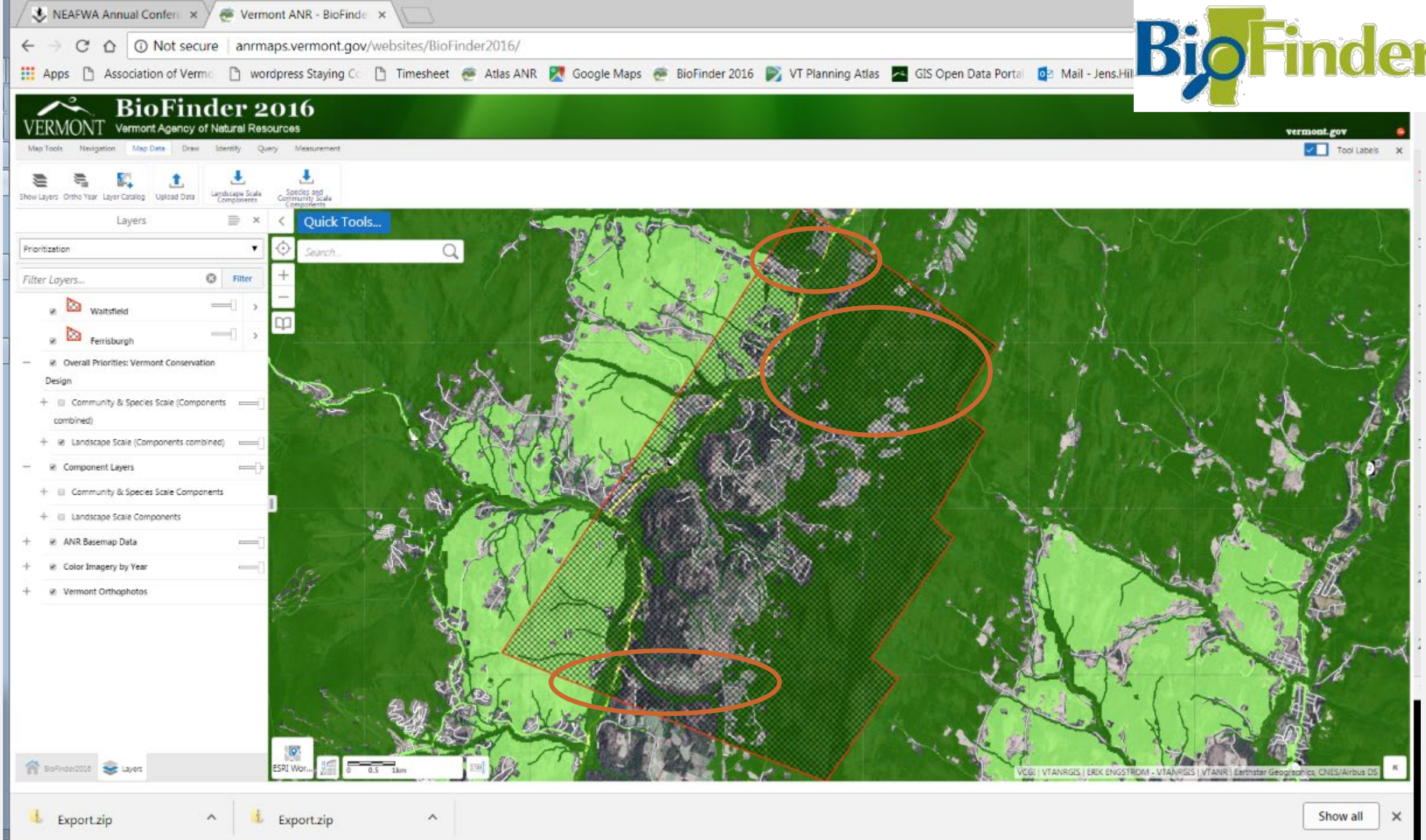
BioFinder assigns an overall **priority rank**.



WHAT WERE PRIORITIES BASED ON?

Vermont Conservation Design

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GIS Open Data Portal
Mail - Jens.Hil
BioFinder
VERMONT
BioFinder 2016
Vermont Agency of Natural Resources
vermont.gov
Map Tools
Navigation
Map Data
Draw
Identify
Query
Measurement
Tool Labels
Show Layers
Ortho Year
Layer Catalog
Upload Data
Landscape Scale Components
Species and Community Scale Components
Layers
Quick Tools...
Search...
Prioritization
Filter Layers...
Filter
Waitsfield
Ferrisburgh
Overall Priorities: Vermont Conservation Design
Community & Species Scale (Components combined)
Landscape Scale (Components combined)
Component Layers
Community & Species Scale Components
Landscape Scale Components
ANR Basemap Data
Color Imagery by Year
Vermont Orthophotos
BioFinder2016
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VCGI | VTANRGIS | ERIK ENGSTROM - VTANRGIS | VTANR | Earthstar Geographics, CNES/Airbus DS
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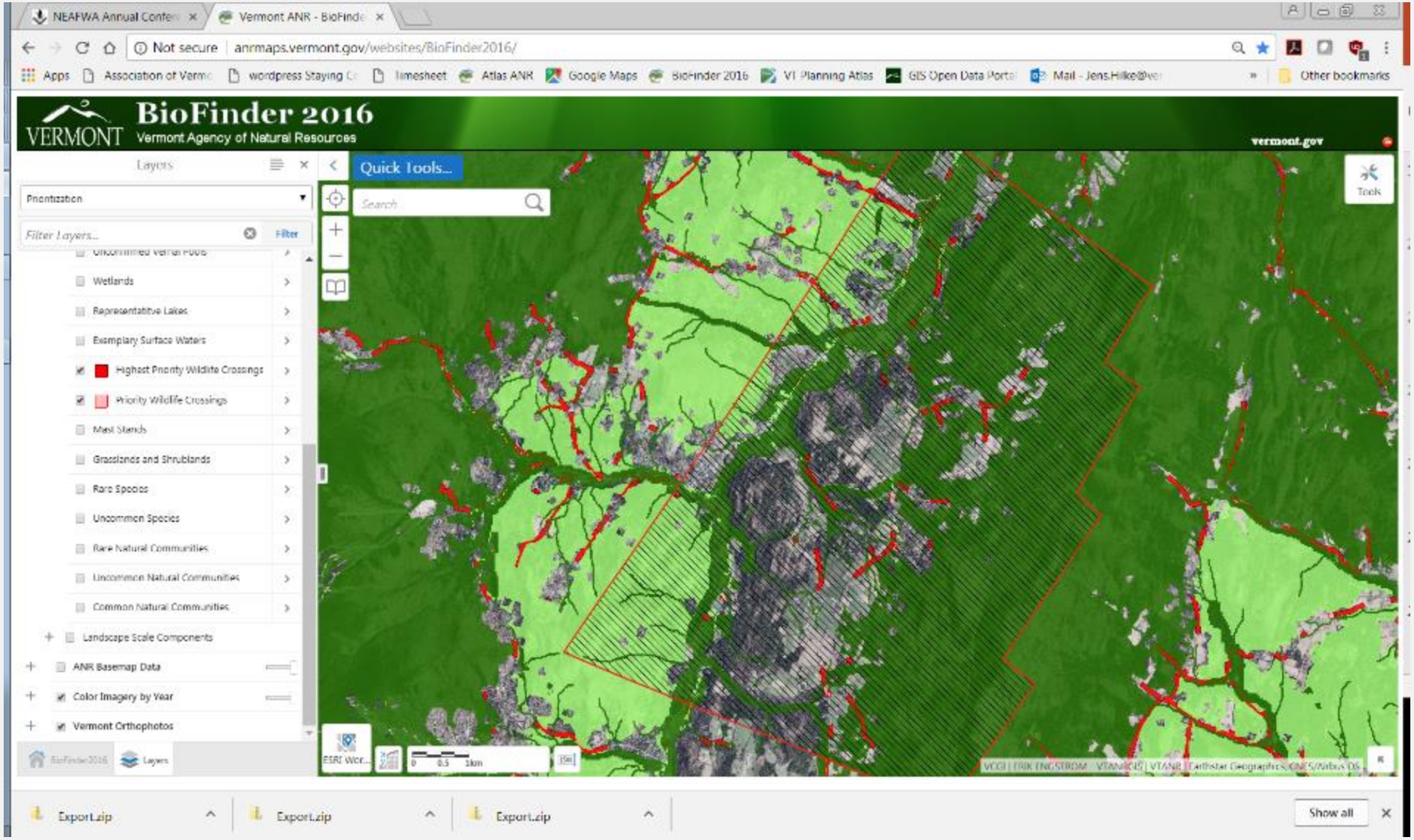
Show all

WILDLIFE ROAD CROSSINGS



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Apps | Association of Vermo | wordpress Staying C | Timesheet | Atlas ANR | Google Maps | BioFinder 2016 | VT Planning Atlas | GIS Open Data Portal | Mail - Jens.Hil

BioFinder 2016

VERMONT Vermont Agency of Natural Resources

vermont.gov

Map Tools | Navigation | Map Data | Draw | Identify | Query | Measurement

Tool Labels

Show Layers | Ortho Year | Layer Catalog | Upload Data | Landscape Scale Components | Species and Community Scale Components

Layers

Quick Tools...

Prioritization

Filter Layers... | Filter

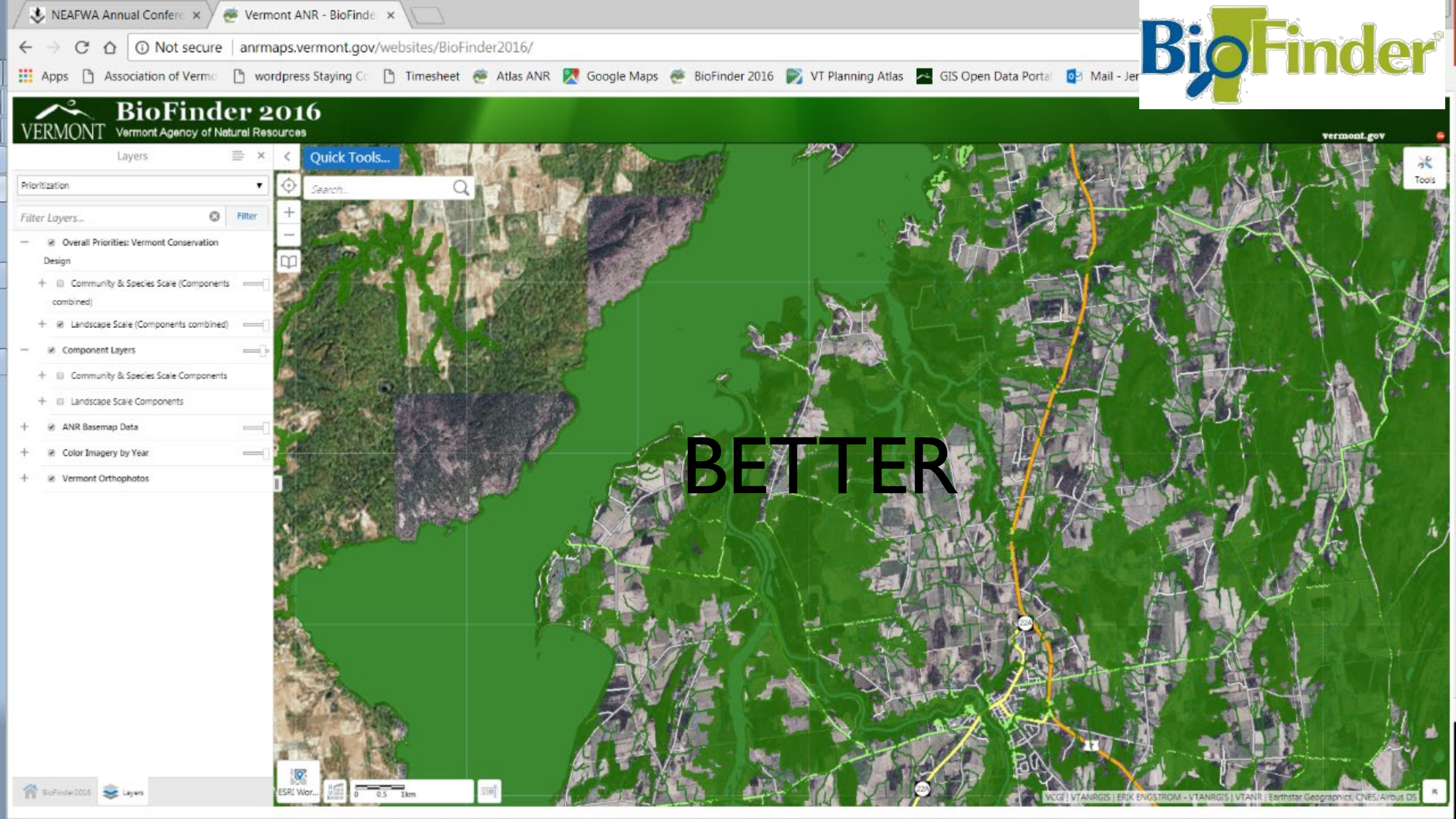
- Ferrisburgh
- Overall Priorities: Vermont Conservation Design
  - Community & Species Scale (Components combined)
  - Landscape Scale (Components combined)
- Component Layers
  - Community & Species Scale Components
  - Landscape Scale Components
    - Riparian Wildlife Connectivity
    - Highest Priority Surface Water and Riparian Areas
    - Priority Surface Waters and Riparian Areas
    - Highest Priority Interior Forest Blocks
    - Priority Interior Forest Blocks
    - Highest Priority Connectivity Blocks
    - Priority Connectivity Blocks
    - Physical Landscapes

Search...

ESRI Wor... | 0 0.5 1km

VCGI | VTANRGIS | ERIK ENGSTROM - VTANRGIS | Earthstar Geographics, CNES/Airbus DS

Export.zip | Export.zip | Show all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VERMONT
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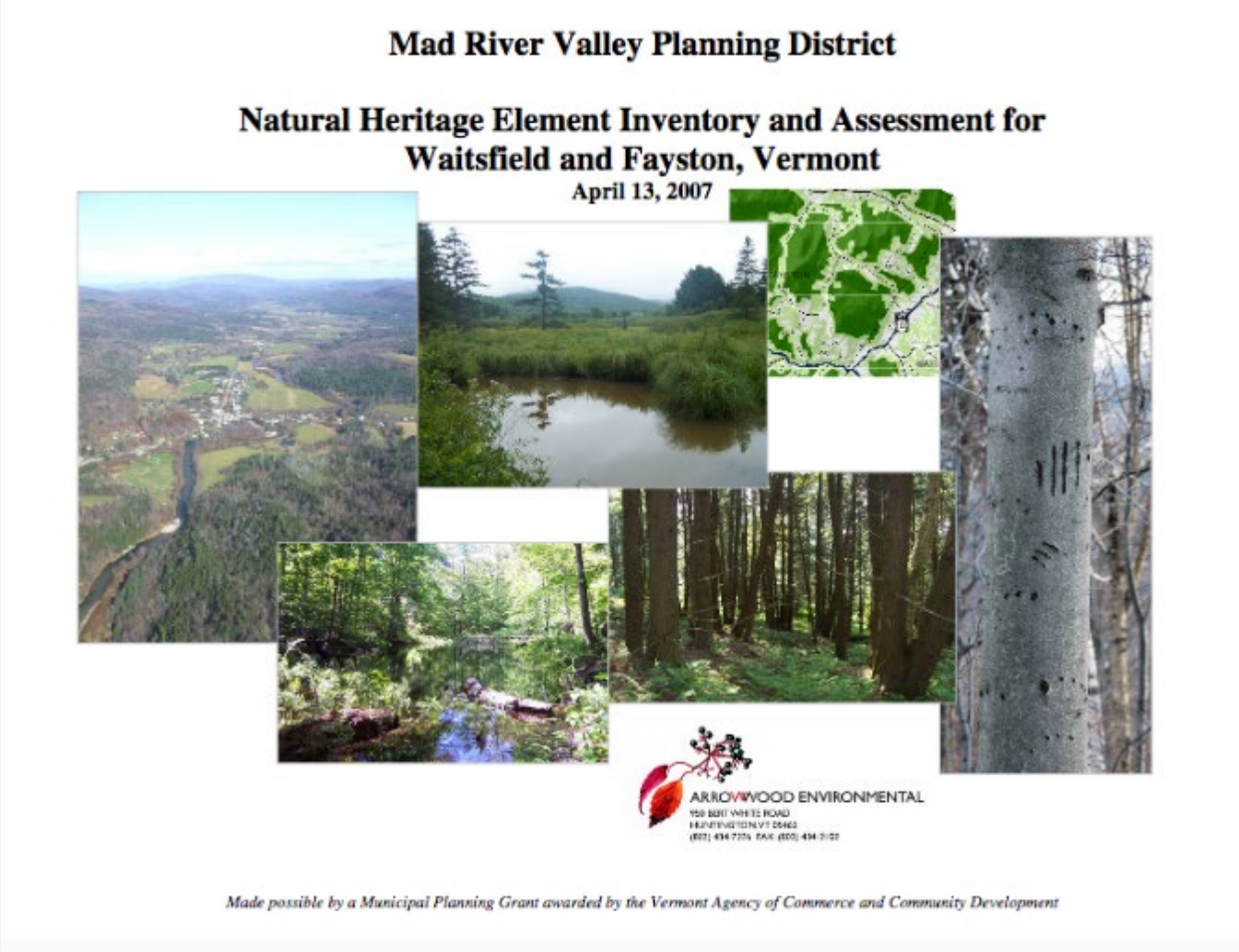
ESRI Wor...
0 0.5 1km
VCGI | VTANRGIS | ERIK ENGSTROM - VTANRGIS | VTANR | Earthstar Geographics, CNES/Airbus DS

USING LOCAL DATA



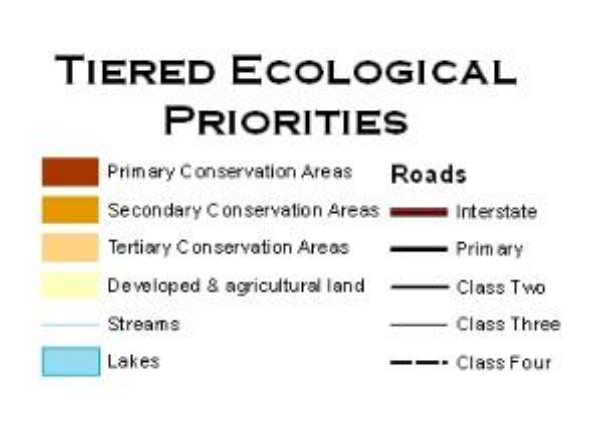
Mad River Valley Planning District

Natural Heritage Element Inventory and Assessment for Waitsfield and Fayston, Vermont

April 13, 2007

ARROWWOOD ENVIRONMENTAL

Made possible by a Municipal Planning Grant awarded by the Vermont Agency of Commerce and Community Development



BEST

Community Values Mapping

Step 2
Develop a Shared Community Vision

How did the project help?

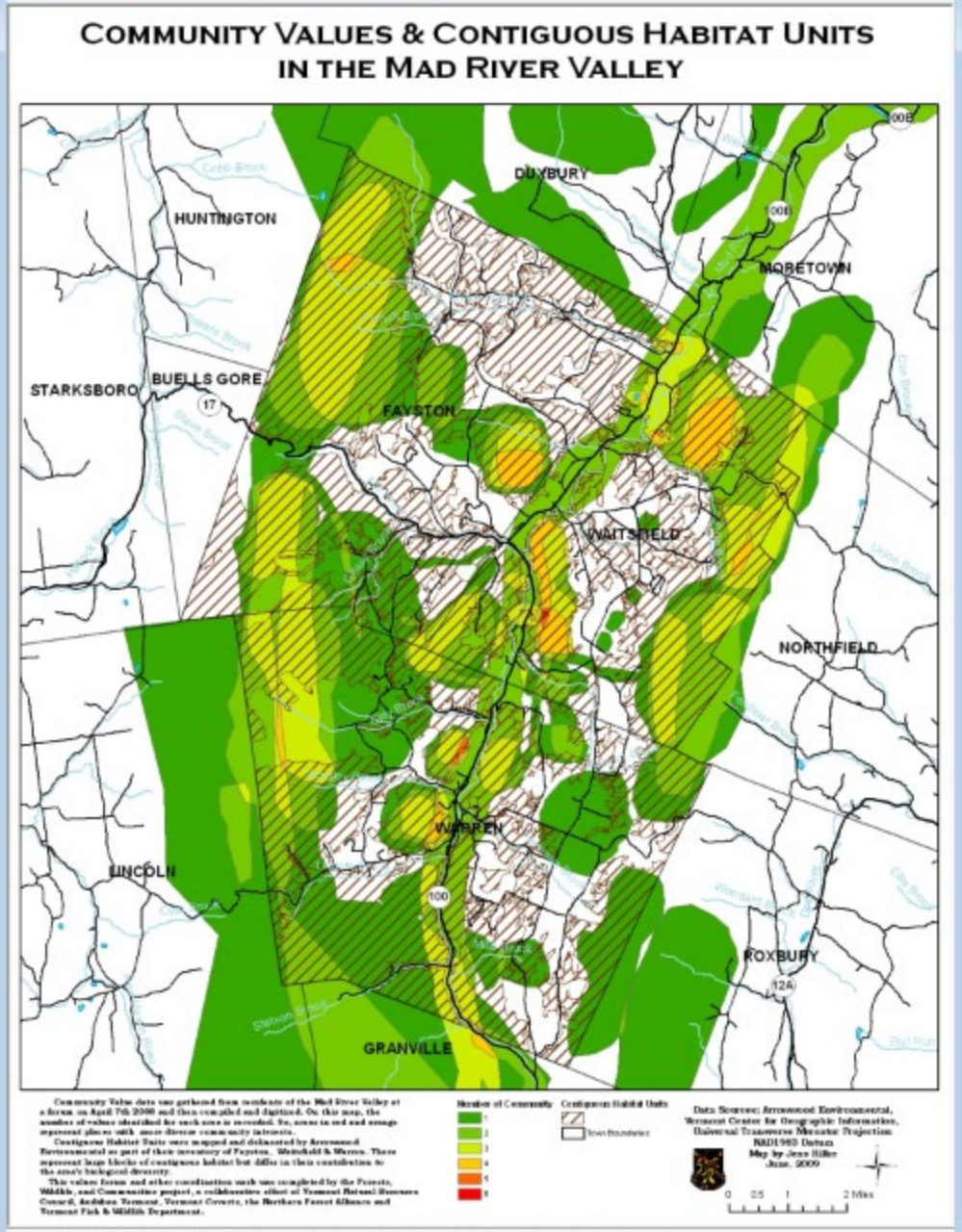
- Showed *locations* of community values
- Used in town planning

Lessons learned

- Showed relationship between values in space

chu_and_community_values_MAP.jpg - IrfanView (Zoom: 734 x 950)

File Edit Image Options View Help



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Step 2

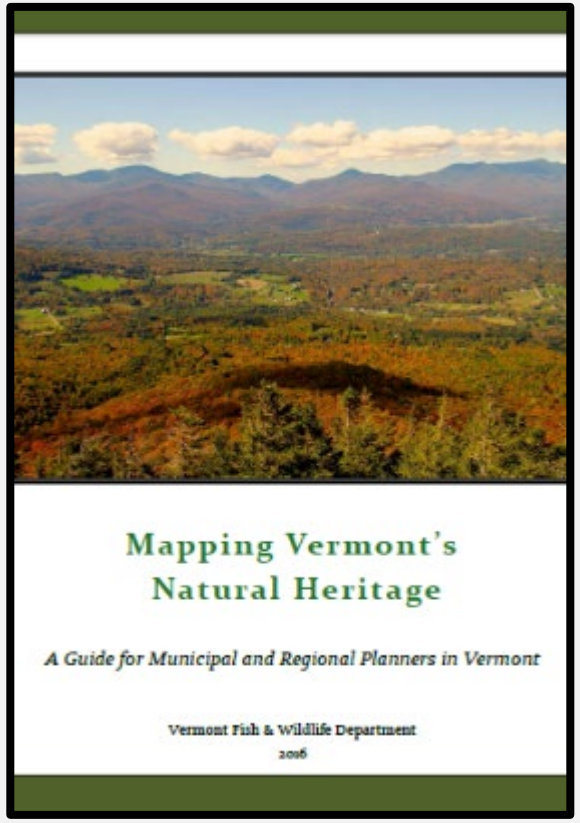
Develop a Shared Community Vision

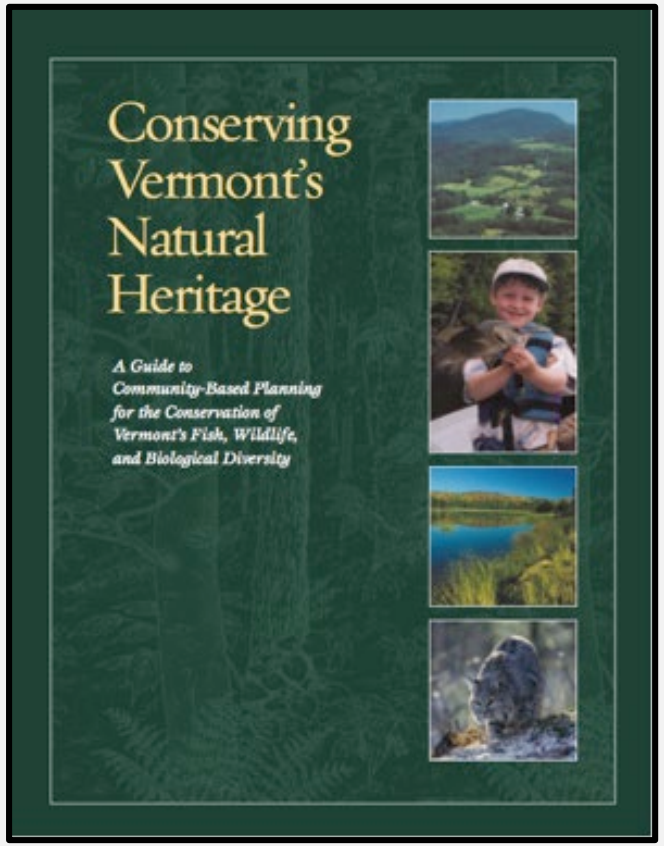
Healthy Forests,

Healthy Economy

Healthy Community

FOR MORE INFORMATION





Contact Me!

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