

# Off Limits for Development? What You Need to Know About the Regulation of Forest Connectivity Blocks



November 6, 2019

white + burke  
**VERMONT  
DEVELOPMENT  
CONFERENCE**

# Presenters



- **Brian Sullivan, Founding Partner**  
**MSK Attorneys, Burlington, Vermont**
- **Eric Sorenson, Ecologist**  
**Vermont Fish and Wildlife Department**

# Breaking Habitat



# Glossary

## Habitat Blocks

- At least 20 acres of contiguous habitat
- Unfragmented by road, human development or agriculture
- Most habitat blocks in Vermont are forest
- May also include wetlands, rivers, streams, lakes, ponds, cliffs and rock outcrops
- Class 3 roads cause fragmentation
- Class 4 roads don't



# Glossary



## Fragmentation

- What you would expect
- Dividing habitat blocks into smaller areas



## Connectivity

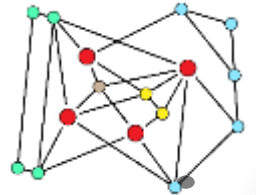
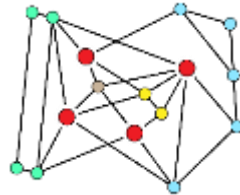
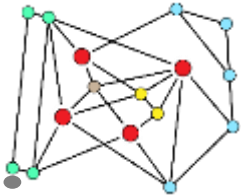
- Capacity of individual species to move between habitat blocks
- The degree to which similar landscape elements are connected to each other so as to facilitate the movements of organisms and ecological processes between them



# Glossary

## Landscape Connectivity/Connectivity Blocks

- A network that links large blocks of contiguous unfragmented habitat (interior forest blocks) with other forest blocks that are not large enough to maintain populations of wide-ranging species
- Connectivity blocks are necessary for wildlife movement, including animal migration and dispersal of plants
- Sometimes called “corridors” although they are not always linear



# Why We Care

## Benefits of protecting habitat blocks and connectivity corridors

- Forest Products
- Tourism
- Flood Protection
- Clean Water Supply
- Clean Air
- Wildlife Habitat
- Biological Diversity



# Why We Care

## Threats to habitat blocks and connectivity corridors

- Overdevelopment
- Inappropriate Subdivision or “Parcelization”
- Effects of Climate Change



# What is the Controversy?

- ANR Has Designated 208 “Highest Priority” Habitat Blocks And Connectivity Corridors
- Those Blocks Comprise 40% Of The State
- Many More Thousands Of Acres Classified As “Critical Linkage Areas”

# Is All Of That Land Off-limits To Development?

## How Will We Know?

No Direct Regulation of Habitat Blocks and Connectivity Corridors

Not Regulated by Municipal Zoning

Not an Act 250 Criterion – more on this in a moment

No ANR Permit Process

Only Regulatory Cases Come from Public Utility Commission

Undefined Criterion – Effect on the “Natural Environment”

Jurisdiction limited

Communications Facilities (Verizon/Waterbury)

Solar Arrays (Otter Creek Solar)

Wind Turbines (Lowell Mountain)

- What About Other Types of Development?



# Legislative Proposals



## S. 165 Introduced March 2019:

Make “Forest Blocks” and “Habitat Connectors” part of Act 250 review under new Criteria 8(B) and (C).

This would only apply to projects subject to Act 250 jurisdiction

How does this jibe with “undue adverse effect” finding usually required in Act 250 cases?

- Burden on proof would be on applicant

- Would require ANR to adopt rules

- Would require ANR to adopt maps

Bill not passed; referred to Act 250 rewrite Committee

What will the jurisdictional threshold be?

(B) Forest blocks. (i) A permit will not be granted for a development or subdivision within or partially within a forest block unless the applicant demonstrates that: (I) the development or subdivision will avoid fragmentation of the forest block through the design of the project or the location of project improvements, or both; (II) it is not feasible to avoid fragmentation of the forest block and the design of the development or subdivision minimizes fragmentation of the forest block; or (III) it is not feasible to avoid or minimize fragmentation of the forest block and the applicant will mitigate the fragmentation in accordance with section 6094 of this title. (ii) Methods for avoiding or minimizing the fragmentation of a forest block may include: (I) Locating buildings and other improvements and operating the project in a manner that avoids or minimizes incursion into and disturbance of the forest block, including clustering

# Legislative Proposals Cont'd



of buildings and associated improvements. (II) Designing roads, driveways, and utilities that serve the development or subdivision to avoid or minimize fragmentation of the forest block. Such design may be accomplished by following or sharing existing features on the land such as roads, tree lines, stonewalls, and fence lines.

(C) Habitat connectors. (i) A permit will not be granted for a development or subdivision unless the applicant demonstrates that: (I) the development or subdivision will avoid fragmentation of a habitat connector through the design of the project or the location of project improvements, or both; (II) it is not feasible to avoid fragmentation of the habitat connector and the design of the development or subdivision minimizes fragmentation of the connector; or (III) it is not feasible to avoid or minimize fragmentation of the habitat connector and the applicant will mitigate the fragmentation in accordance with section 6094 of this title. (ii) Methods for avoiding or minimizing the fragmentation of a habitat connector may include: (I) locating buildings and other improvements at the farthest feasible location from the center of the connector; (II) designing the location of buildings and other improvements to leave the greatest contiguous portion of the area undisturbed in order to facilitate wildlife travel through the connector; or (III) when there is no feasible site for construction of buildings and other improvements outside the connector, designing the buildings and improvements to facilitate the continued viability of the connector for use by wildlife.

# CONNECTIVITY BLOCKS

*PART OF A VISION FOR AN ECOLOGICALLY FUNCTIONAL LANDSCAPE  
IN VERMONT*



**Vermont Development  
Conference**

November 6, 2019

Eric Sorenson, Ecologist



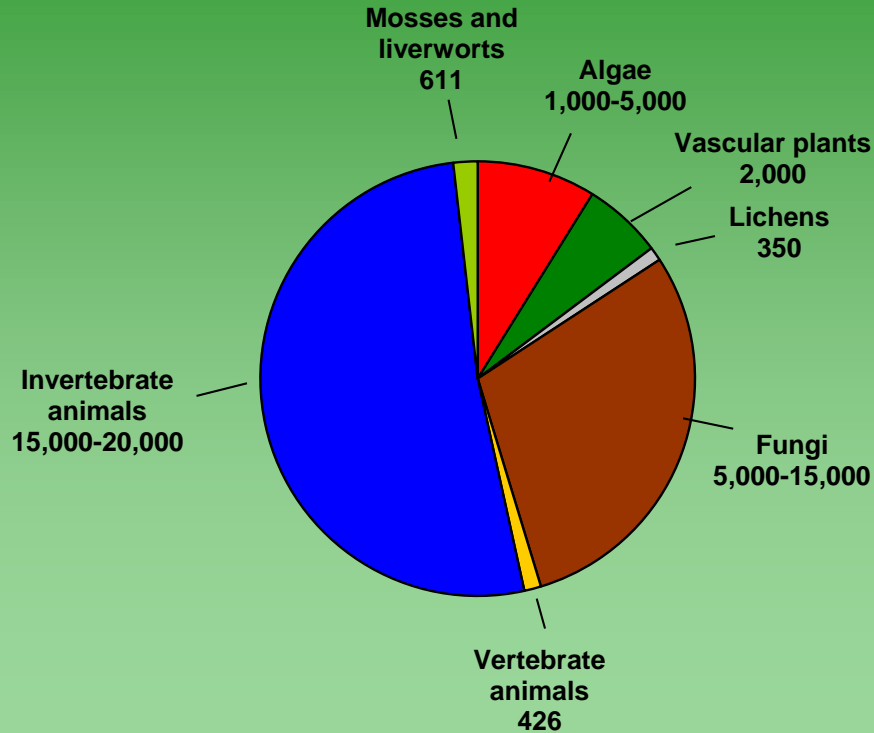
# The Vermont Fish & Wildlife Department

*The mission of the Vermont Fish & Wildlife Department is the conservation of our fish, wildlife, plants and their habitats for the people of Vermont*



# An estimated 24,000 to 43,500 species in Vermont!

## How do we protect them all?

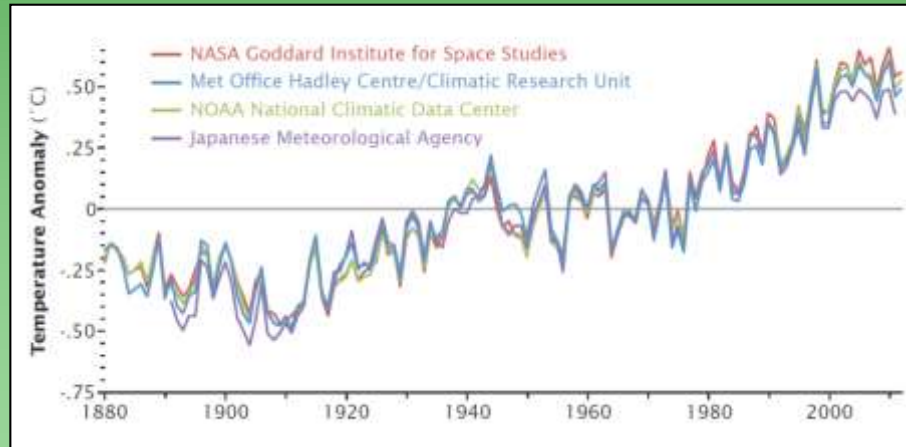


Elfin  
Skimmer



# Threats to Biological Diversity

- Population growth
- Habitat loss
- Habitat fragmentation
- Non-native, invasive species
- Climate change – direct and compounding effects



NASA





# Climate Change

- rapid and uncertain change
- species will shift independently
- need connectivity – species and processes
- need to “conserve nature’s stage” – physical landscape

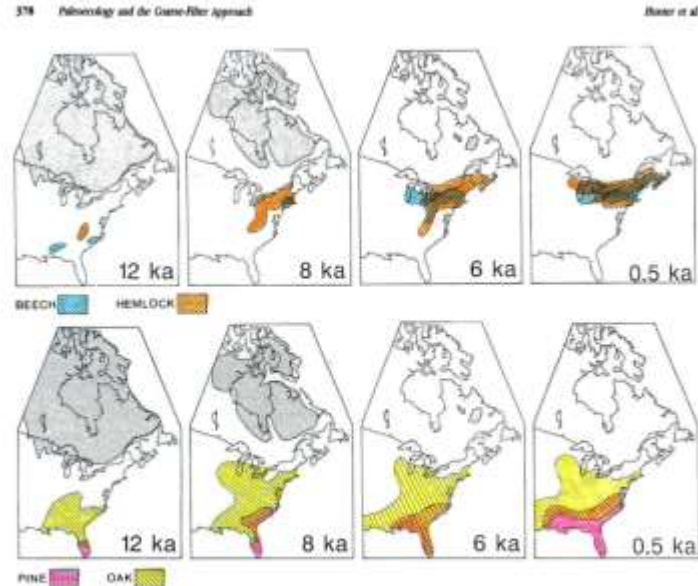


Figure 1. Location of regions with 5% beech (*Fagus*) pollen and 5% hemlock (*Tsuga*) pollen (in the upper row maps) and 20% southern pine (*Pinus*) pollen and 20% oak (*Quercus*) pollen (in the lower row of maps) at 12,000, 8,000, 6,000, and 500 yr B.P. with the stippled area in the north showing the shrinking Laurentide ice sheet from 12,000 to 6,000 yr B.P. Source: Modified from Plates 1 and 2 in Jacobson, Webb, & Grimm 1987.

# Coarse filter/fine filter approach to conservation

- *Well-recognized, efficient approach to conservation*
- *Originally a combination of natural communities & species conservation efforts*



**We need coarser filters**





# VERMONT CONSERVATION DESIGN

*A practical, scientific vision for sustaining Vermont's ecologically functional landscape for the future.*

- Applies the coarse filter-fine filter approach
- Uses simple, recognizable features – forest blocks and riparian areas
- Depends on thoughtful stewardship and management



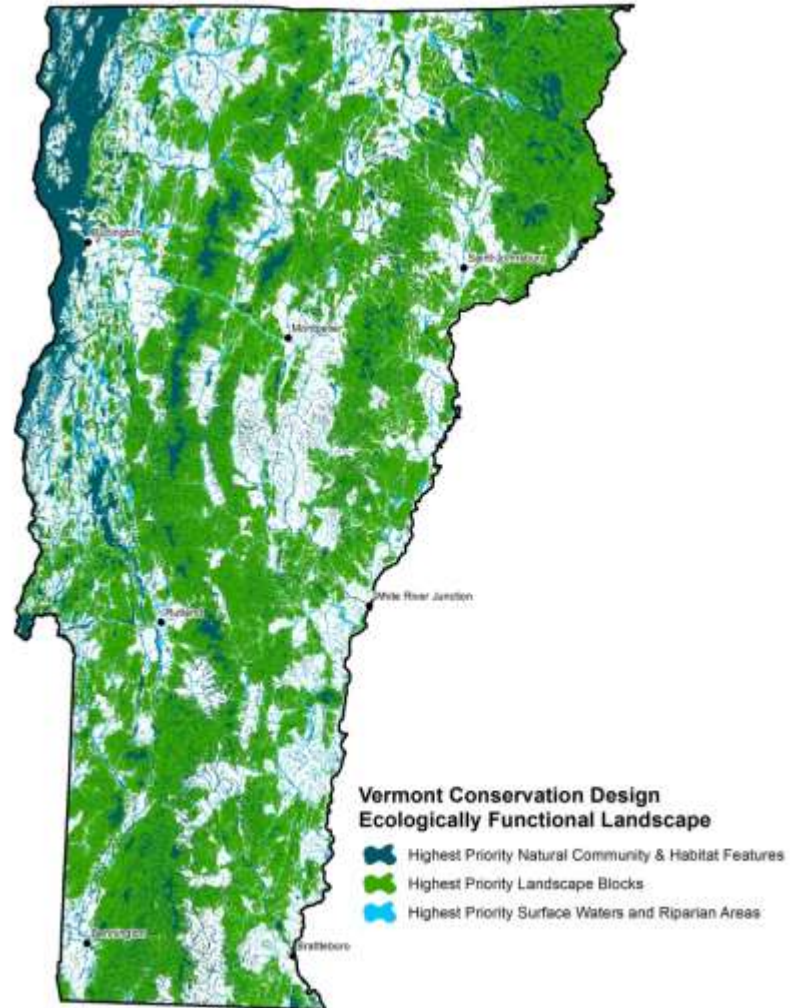
**Collaborators:** VT Fish and Wildlife Department  
Vermont Land Trust  
The Nature Conservancy  
VT Department of Forests, Parks & Recreation  
VT Department of Environmental Conservation  
Northwoods Stewardship Center  
USDA Natural Resources Conservation Service



# Ecologically Functional Landscape

- Intact
- Connected
- Diverse

*A set of coarse-filter features which, if appropriately conserved and managed for their ecological functions, offer high confidence in maintaining biological diversity and ecological processes into the future.*



# Conservation Design at Three Scales

## Landscapes



**Interior Forest Blocks**  
**Connectivity Blocks**  
**Surface Waters and Riparian Areas**  
**Riparian Areas for Connectivity**  
**Physical Landscapes**  
**Wildlife Road Crossings**

## Natural Communities



**Natural Communities**  
**Young and Old Forest**  
**Aquatic Habitats**  
**Wetlands**  
**Grasslands/Shrublands**  
**Underground Habitats**

## Species

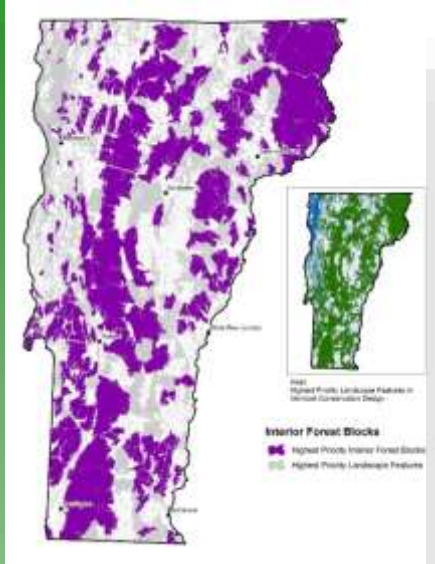


*Species with very specific biological needs that will likely always require individual attention*

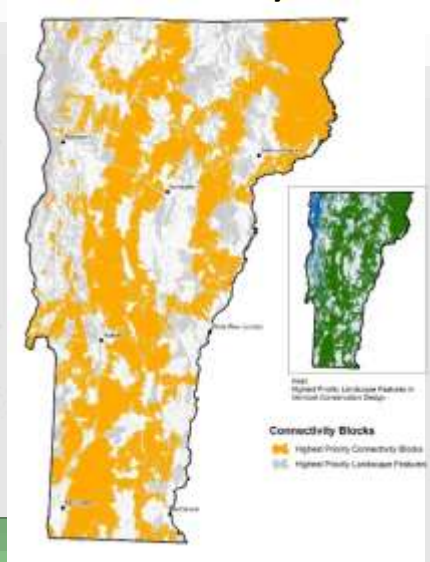


# Intact and Connected Forest Blocks Surface Waters and Riparian Areas

## Interior Forest Blocks



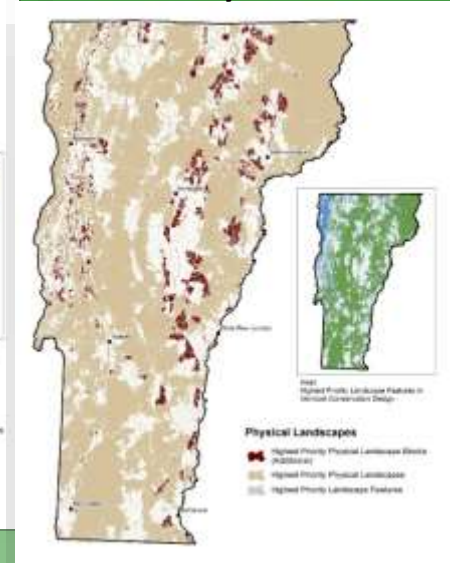
## Connectivity Blocks



## Surface Waters and Riparian Areas



## Physical Landscape Diversity



*Maintain the specific functions of each element*



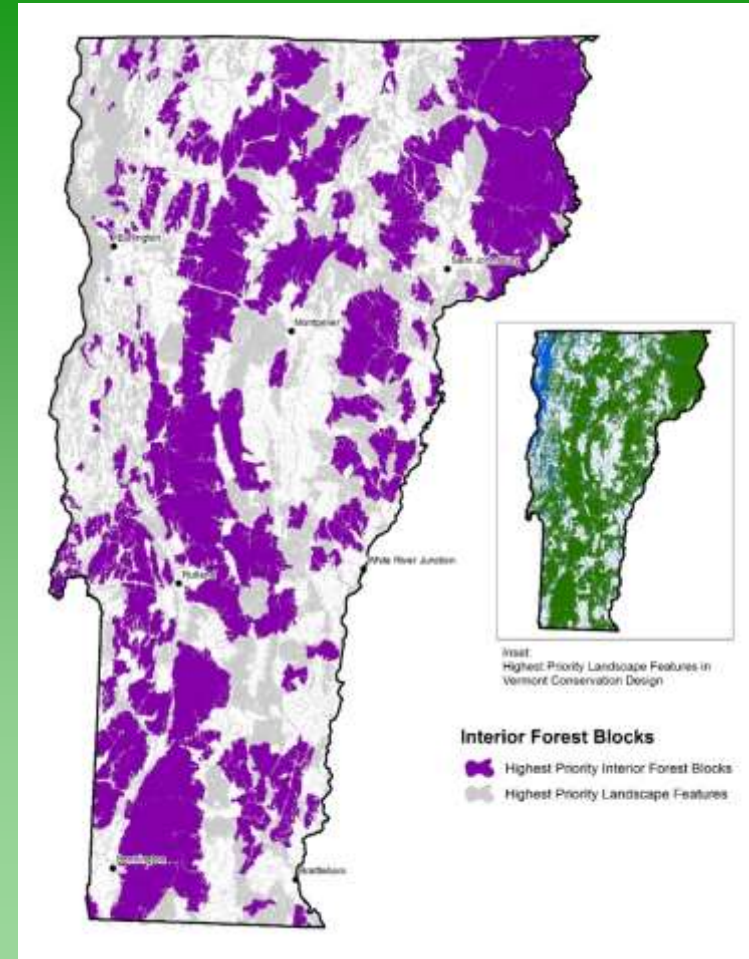
# Interior Forest Blocks

*The best examples of interior forest in each region of Vermont*

*Places where species and ecological process exist with minimal disturbance*

**Ecological functions:**

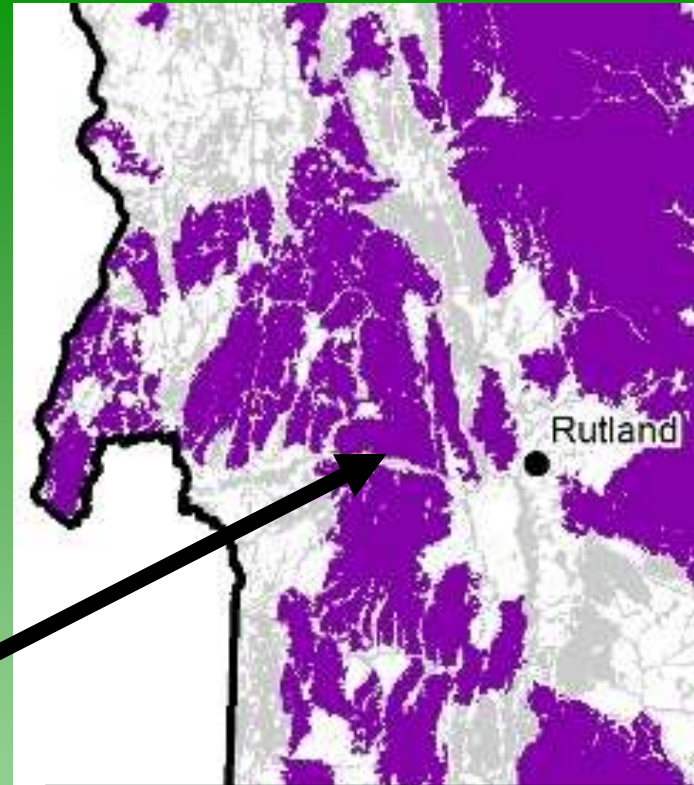
- Interior forest species
- Wide-ranging mammals
- Air and water quality
- Flood resilience
- Ecological processes
- Species can shift and adapt within blocks



## Interior Forest Blocks

### *Guidelines for Maintaining Ecological Function:*

- Avoid permanent interior fragmentation
- Limit development to the margins
- Maintain forest structure & distribution of age classes
- Minimize invasive species.



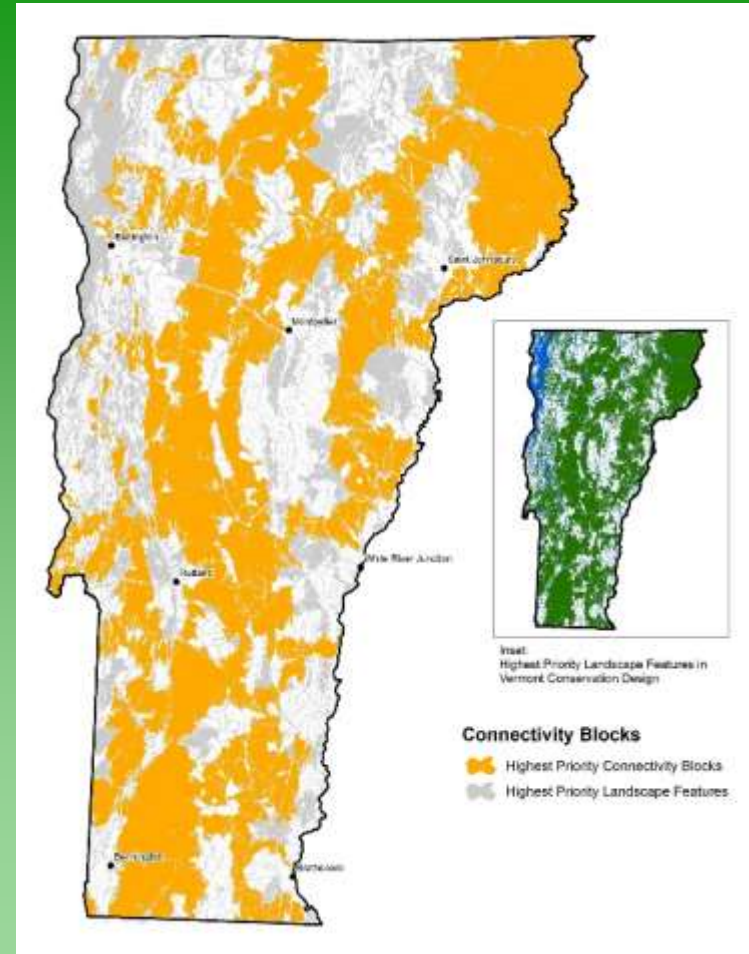
# Connectivity Blocks

*The network of forest blocks that are critical for wildlife movement and species ranges shifts*

*Connects within Vermont and to adjacent states and Québec*

## **Ecological Functions:**

- Wildlife movement and dispersal
- Habitat for wide-ranging mammals
- Genetic exchange
- Plant and animal range shifts in response to climate change
- Reduces extinction risks





## Connectivity Blocks

### *Guidelines for Maintaining Ecological Function:*

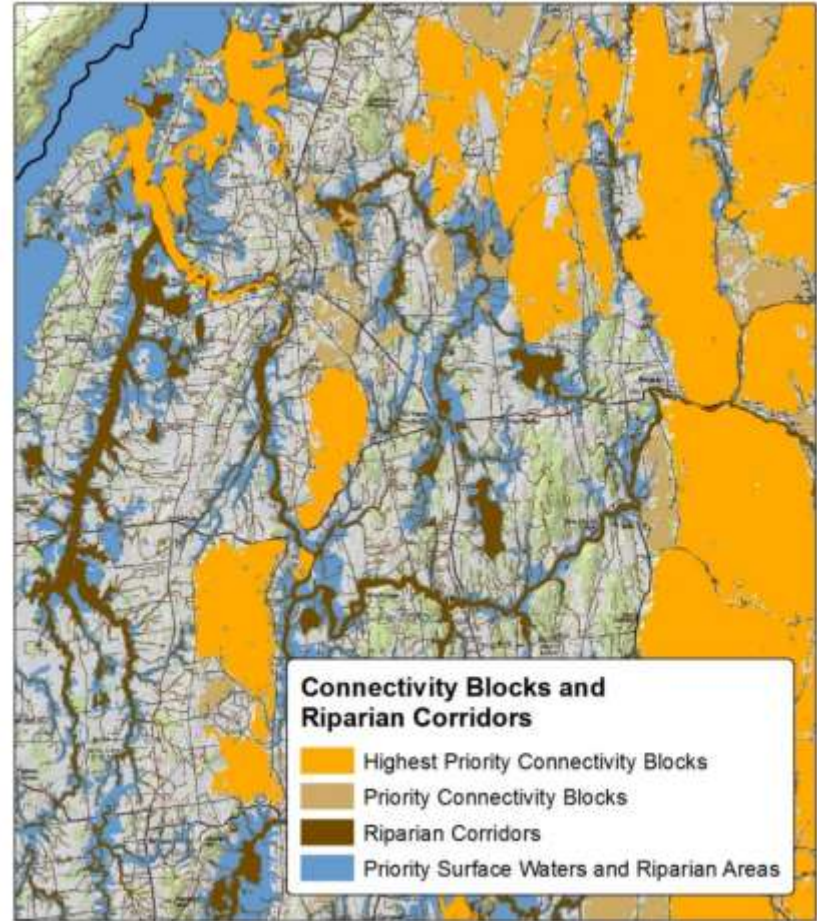
- Maintain interior forest conditions;
- Avoid development that creates interior forest fragmentation;
- Maintain or enhance structural and functional connectivity at block margins where they border other connectivity blocks;
- Limit development in these areas of block-to-block connectivity and maintain forest cover.



## Riparian Connectivity

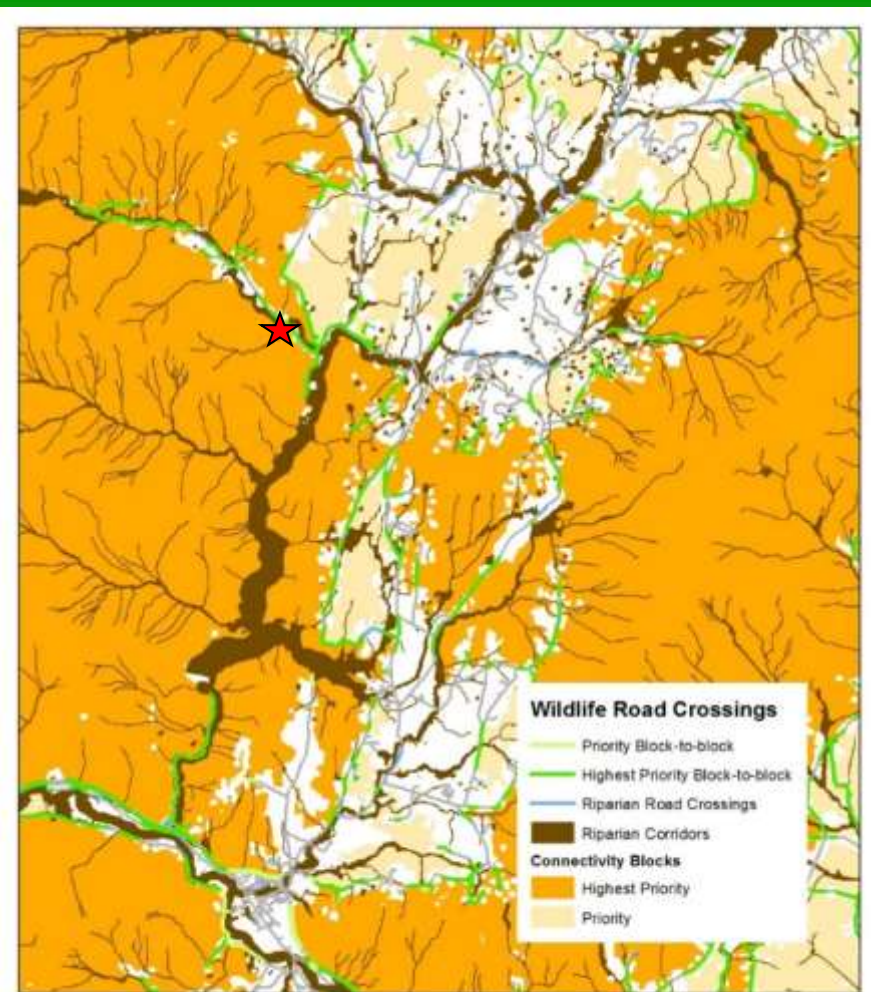


*In parts of the state,  
riparian areas are the only  
connections between forest  
blocks.*





# Wildlife Road Crossings



# Conservation Design at Three Scales

## Landscapes



**Interior Forest Blocks**  
**Connectivity Blocks**  
**Surface Waters and Riparian Areas**  
**Riparian Areas for Connectivity**  
**Physical Landscapes**  
**Wildlife Road Crossings**

## Natural Communities



**Natural Communities**  
**Young and Old Forest**  
**Aquatic Habitats**  
**Wetlands**  
**Grasslands/Shrublands**  
**Underground Habitats**

## Species



*Species with very specific biological needs that will likely always require individual attention*

Spiny softshell turtle



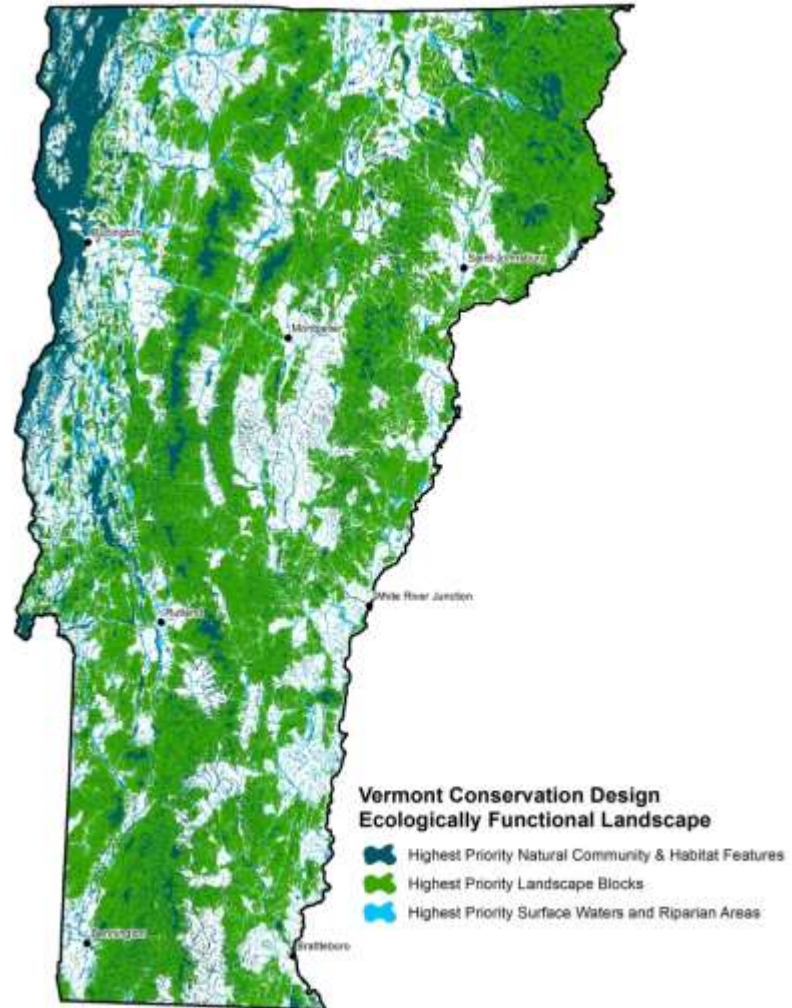


# Vermont Conservation Design

Maintains an intact, connected and diverse natural landscape

Conserves species and natural communities

Allows nature to adapt to a changing climate



# Sustains more than biodiversity

- Outdoor recreation
- Clean water
- Sense of place and rural character
- Working farms and forests
- Nature's benefits



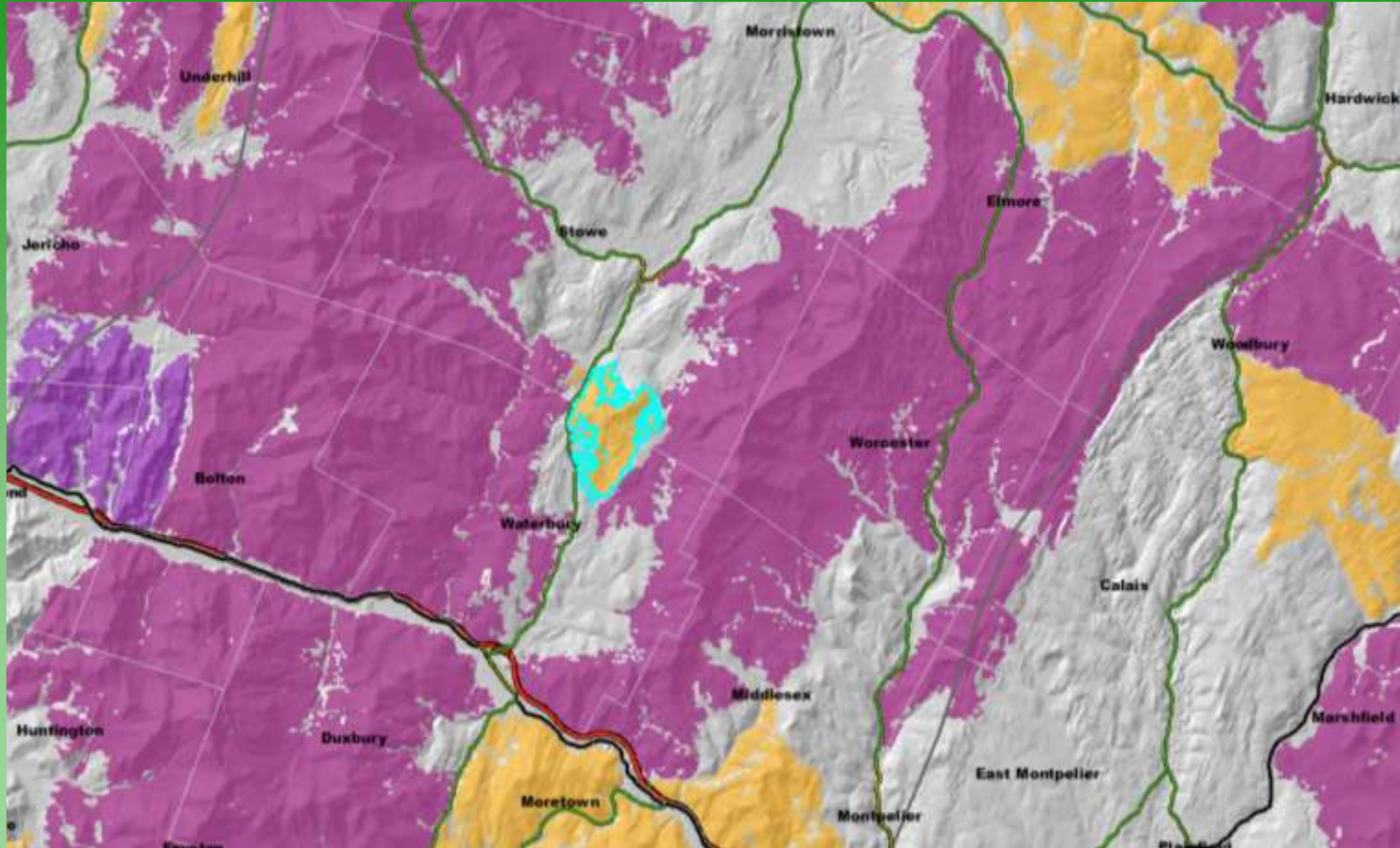
# Some Thoughts and Perspectives

- Vision for the future of Vermont.
- Landowners and their decisions are key to success.
- All the features are needed for ecological function.
- Unifies many aspects of conservation, without being prescriptive.
- Supports Vermont's social and economic values.



Photo  
by  
Susan  
Morse

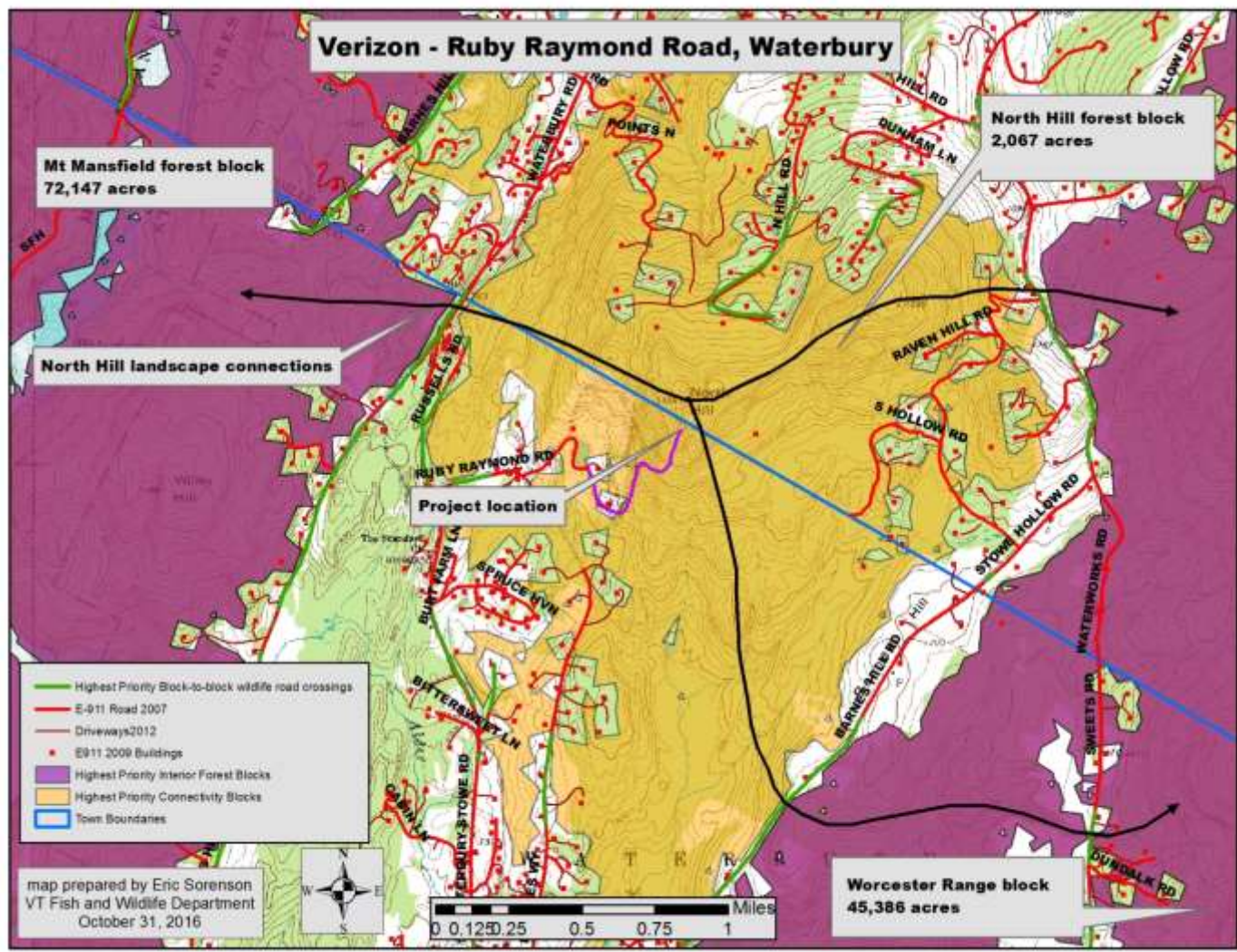
# North Hill in Waterbury – An Ecological and Regulatory Case Study



Also known as Shutesville Hill Wildlife Corridor








# Verizon - Ruby Raymond Road, Waterbury

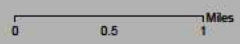




## Shutesville Hill Wildlife Corridor

Stowe and Waterbury, Vermont

-  SHWC Area of Interest
-  State Land
-  Conserved Land
-  Priority Areas
-  Recent and Active Projects



MOUNT MANSFIELD  
STATE FOREST

Waterbury  
Reservoir

100

CC PUTNAM  
STATE FOREST

## Section 248

- “will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the **natural environment**, ...” Section 248(b)(5)

## Act 250

- “Will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or **rare and irreplaceable natural areas**.” Criterion 8
- Revisions to Act 250 to address forest fragmentation and landscape connectivity are being considered.



## Act 171

- encourage and allow municipalities to address protection of forest blocks and habitat connectors, while also supporting the local forest products industry

# Section 248 Projects Reviewed 2016 through 2018



Project Type	Number of Projects
<b>Energy</b>	<b>602</b>
Solar	541
Wind	16
Transmission	13
Energy, Other	32
<b>Telecommunications</b>	<b>155</b>
Co-location	24
Modify existing	48
New tower	58
Replace tower	25
<b>Total</b>	<b>757</b>





# Section 248 Projects Reviewed 2016 through 2018



Project Type	Number of Projects
<b>Energy</b>	<b>602</b>
Solar	541
Wind	16
Transmission	13
Energy, Other	32
<b>Telecommunications</b>	<b>155</b>
Co-location	24
Modify existing	48
New tower	58
Replace tower	25
<b>Total</b>	<b>757</b>



**Of these 757 projects reviewed, VFWD has opposed only one cell tower project.**



**What do we want Vermont to look like in 50 years?**





**Thank you!**





# QUESTIONS?

## SPEAKERS

**Brian Sullivan**

MSK Attorneys

[bsullivan@mskvt.com](mailto:bsullivan@mskvt.com)

**Eric Sorenson**

Vermont Fish and Wildlife Department

[eric.sorenson@vermont.gov](mailto:eric.sorenson@vermont.gov)