# Senate Transportation Committee

# Road Ecology and the Staying Connected Initiative

VERMONT AGENCY OF TRANSPORTATION

Chris Slesar

John Austin
Jens Hilke

# Road Ecology

# Vermont is an International Leader.

The New York Times

Wyoming Game and Fish

## How Do Animals Safely Cross a Highway? Take a Look.

There are few things Americans can agree on these days. Wildlife crossings, it seems, are one of them.

By **Catrin Einhorn**
May 31, 2021

The engineers were used to building overpasses for vehicles, not wildlife.

# Working Together

VERMONT FISH & WILDLIFE

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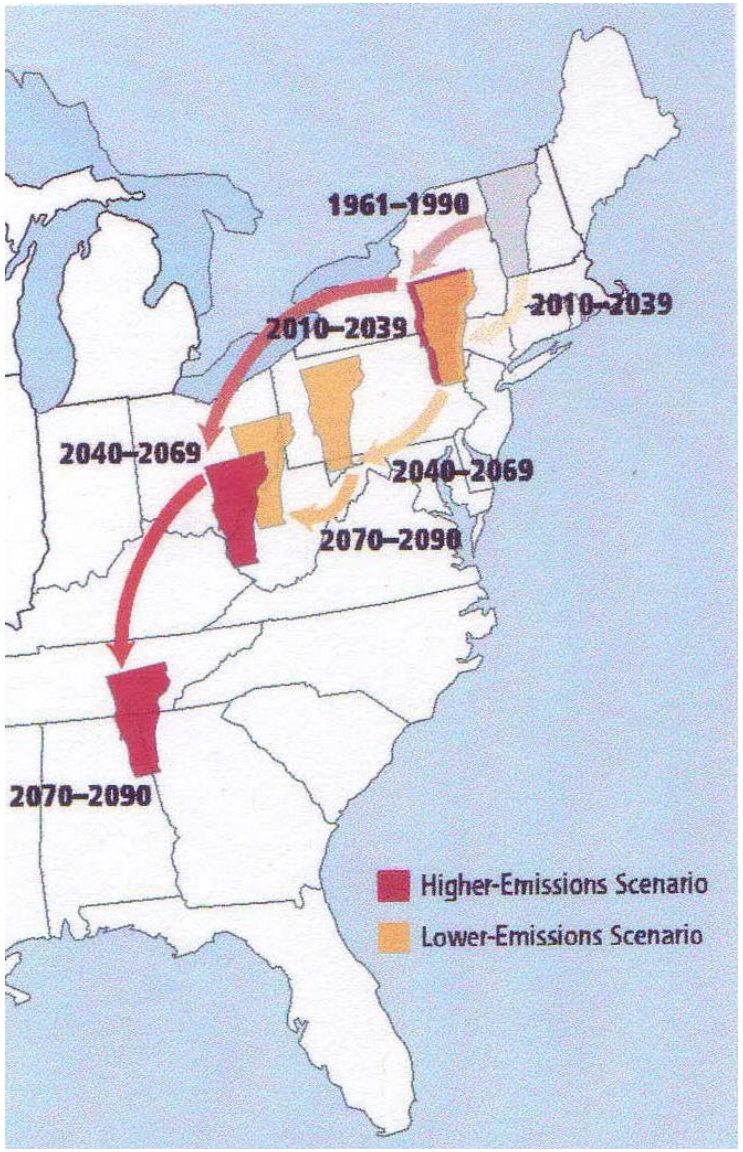
# Climate Change

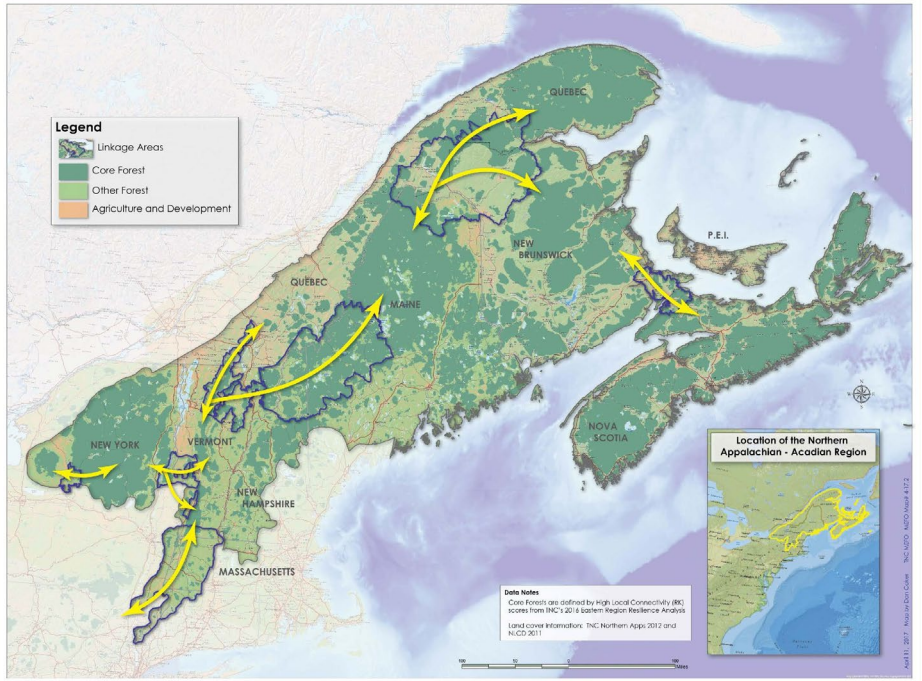


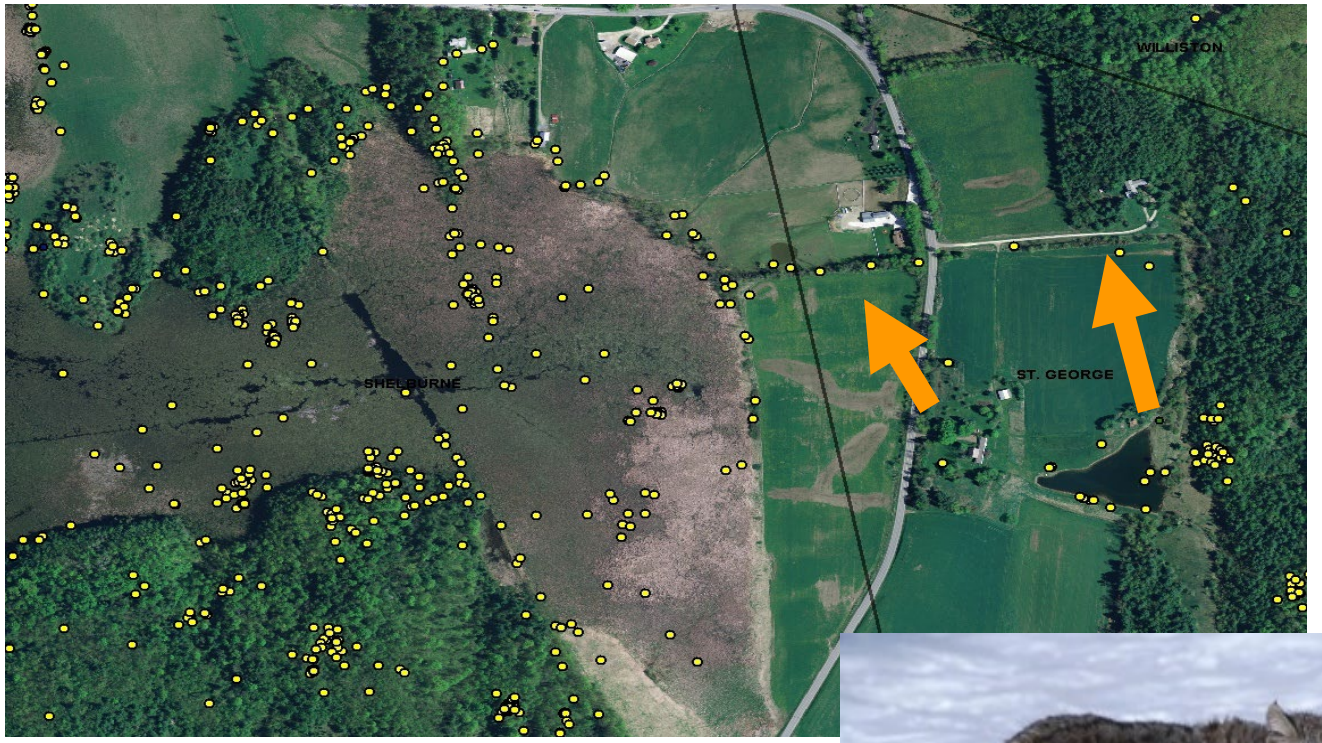

Wildlife Populations are moving north 11 miles per decade in response to climate change

From Union of Concerned Scientists – *Confronting Climate Change in the Northeast* (NECIA 2007)

# Entire populations are on the move!

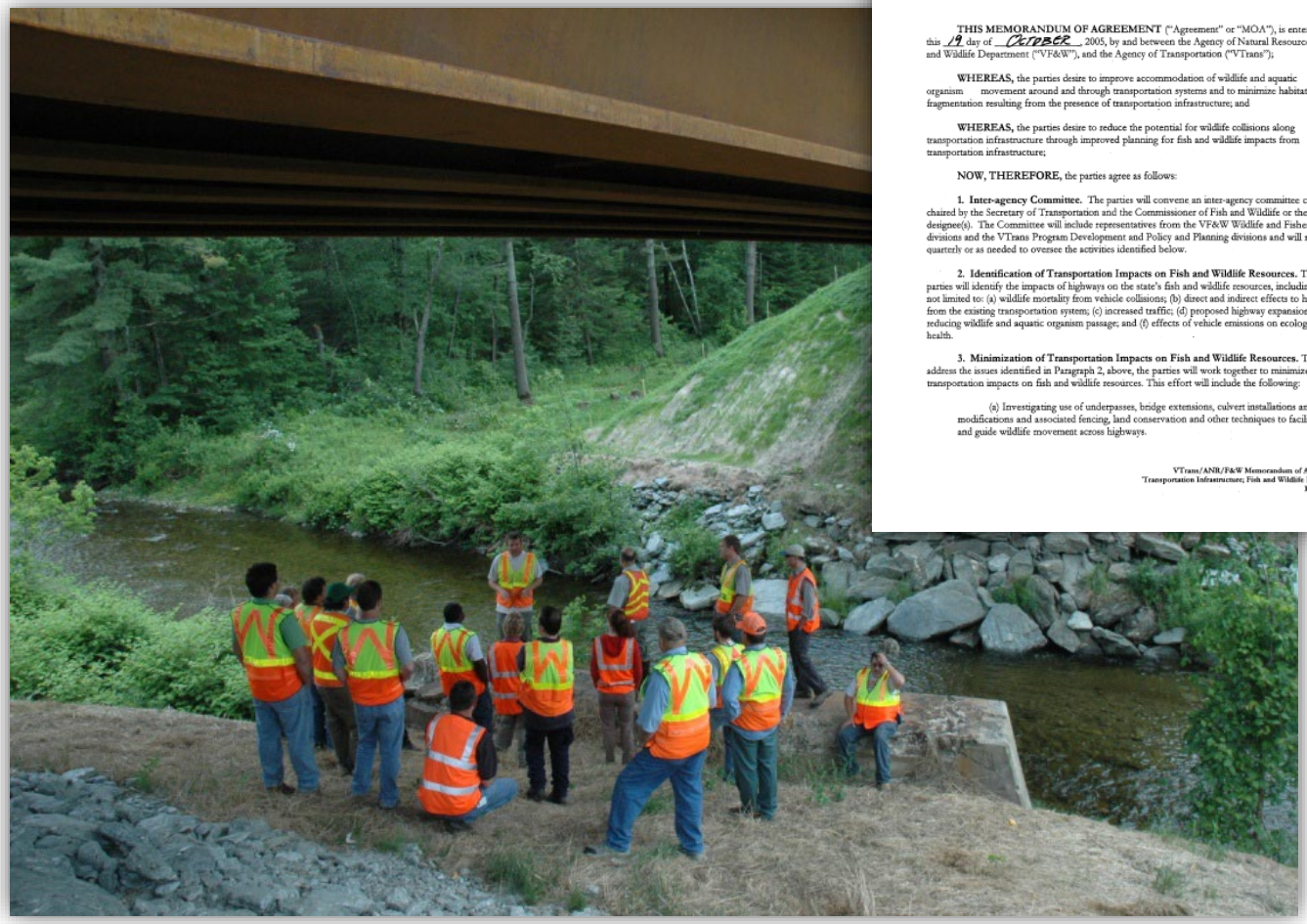
## But interaction is at a local scale




# Wildlife Steering Committee

- Vermont Agency of Transportation
- Vermont Fish & Wildlife Department
  - Proactive
  - Research
  - Implementation
  - Interagency MOA





MEMORANDUM OF AGREEMENT
BETWEEN
AGENCY OF TRANSPORTATION
AND
AGENCY OF NATURAL RESOURCES,
FISH AND WILDLIFE DEPARTMENT
REGARDING
TRANSPORTATION INFRASTRUCTURE
AND
FISH AND WILDLIFE RESOURCES

**THIS MEMORANDUM OF AGREEMENT** ("Agreement" or "MOA"), is entered into this 19 day of OCTOBER, 2005, by and between the Agency of Natural Resources, Fish and Wildlife Department ("VF&W"), and the Agency of Transportation ("VTrans");

**WHEREAS,** the parties desire to improve accommodation of wildlife and aquatic organism movement around and through transportation systems and to minimize habitat fragmentation resulting from the presence of transportation infrastructure; and

**WHEREAS,** the parties desire to reduce the potential for wildlife collisions along transportation infrastructure through improved planning for fish and wildlife impacts from transportation infrastructure;

**NOW, THEREFORE,** the parties agree as follows:

1. **Inter-agency Committee.** The parties will convene an inter-agency committee co-chaired by the Secretary of Transportation and the Commissioner of Fish and Wildlife or their designee(s). The Committee will include representatives from the VF&W Wildlife and Fisheries divisions and the VTrans Program Development and Policy and Planning divisions and will meet quarterly or as needed to oversee the activities identified below.

2. **Identification of Transportation Impacts on Fish and Wildlife Resources.** The parties will identify the impacts of highways on the state's fish and wildlife resources, including but not limited to: (a) wildlife mortality from vehicle collisions; (b) direct and indirect effects to habitat from the existing transportation system; (c) increased traffic; (d) proposed highway expansions; (e) reducing wildlife and aquatic organism passage; and (f) effects of vehicle emissions on ecological health.

3. **Minimization of Transportation Impacts on Fish and Wildlife Resources.** To address the issues identified in Paragraph 2, above, the parties will work together to minimize transportation impacts on fish and wildlife resources. This effort will include the following:

(a) Investigating use of underpasses, bridge extensions, culvert installations and modifications and associated fencing, land conservation and other techniques to facilitate and guide wildlife movement across highways.

# Resource ID at the Scoping Stage

# Highways & Habitats Trainings – Since 2002

U.S. Department of Transportation
**Federal Highway Administration**

VTrans Working to Get You There
Vermont Agency of Transportation

VERMONT
FISH & WILDLIFE

# Highways & Habitats - Tiers 1, 2, and 3

# Monkton A


Google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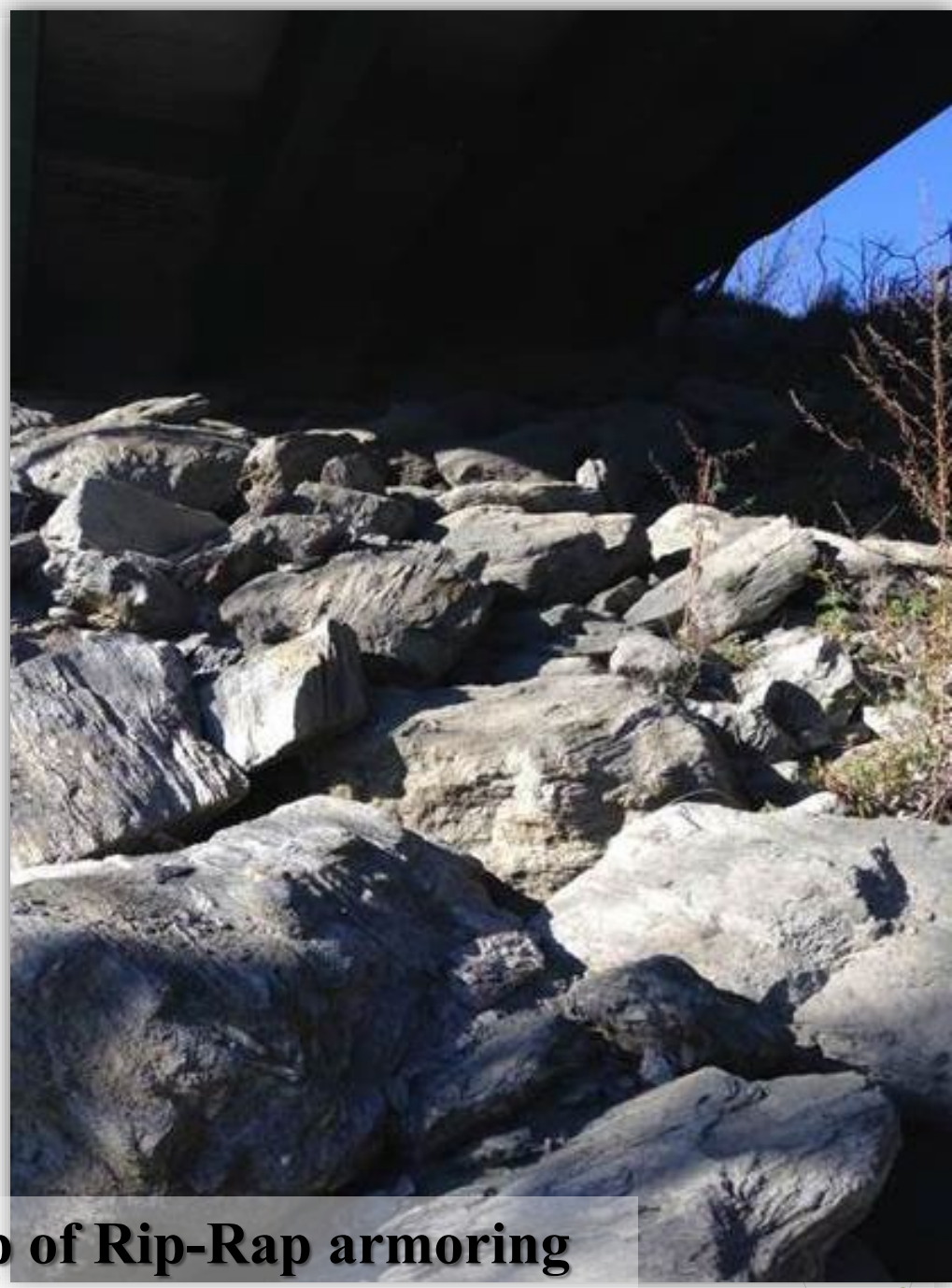
RECONYX

# Meeting multiple values

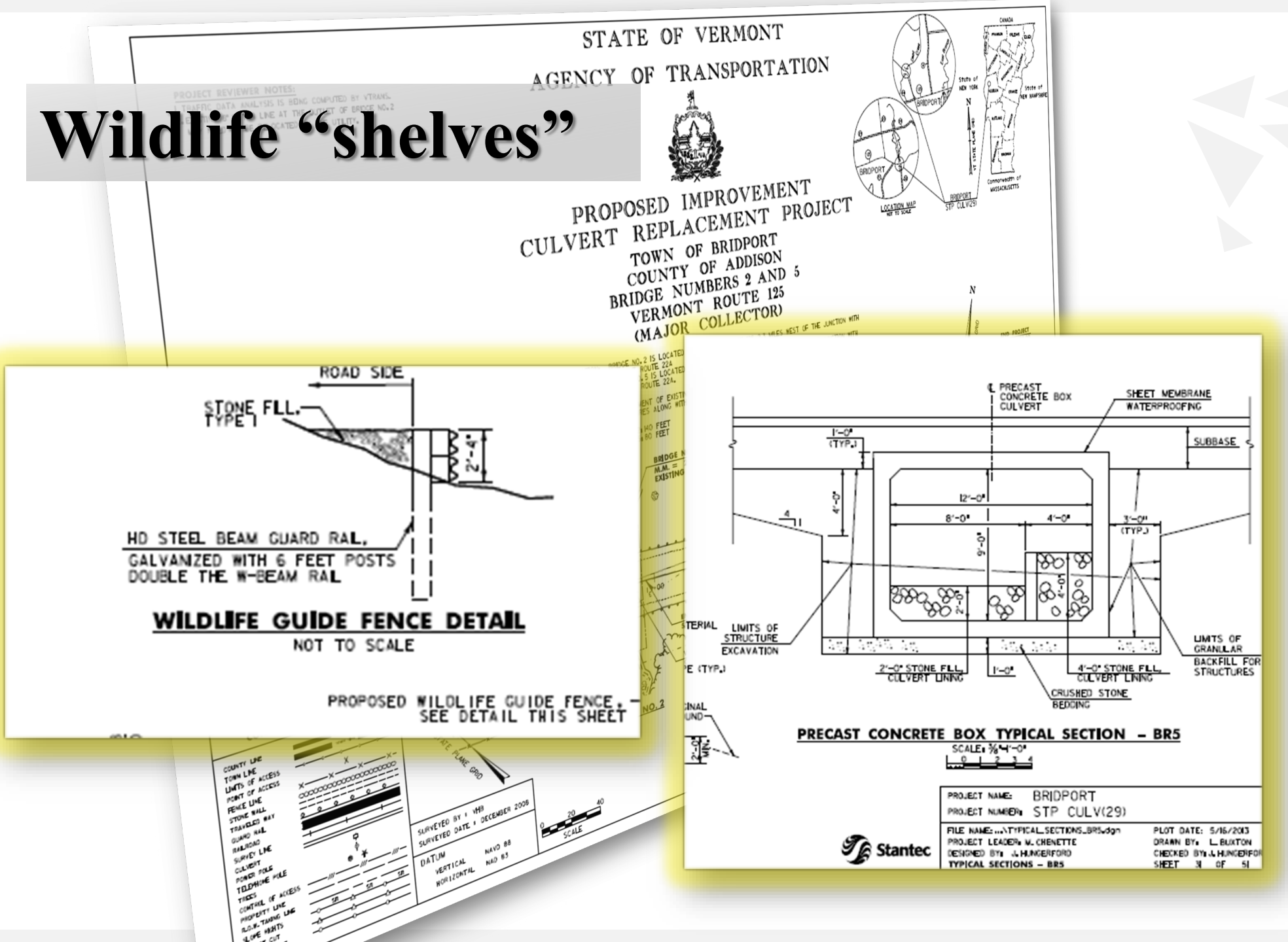

Hyde Park 2008

# Little River Wildlife Shelf 2014

**Modifying Existing Bridges with soil on top of Rip-Rap armoring the abutments.**

# Wildlife “shelves”



# Vermont Terrestrial Passage Screening Tool

## Rank 1: Wildlife Movement Priority

- Landscape-scale and fine-scale species movements
- % human development around structures

## Rank 2: Structure Characteristics

- Structure length, bankfull width ratio

## Rank 3: Protected Lands

- Amount of protected lands on 0, 1, 2 sides of roadway

The University of Vermont

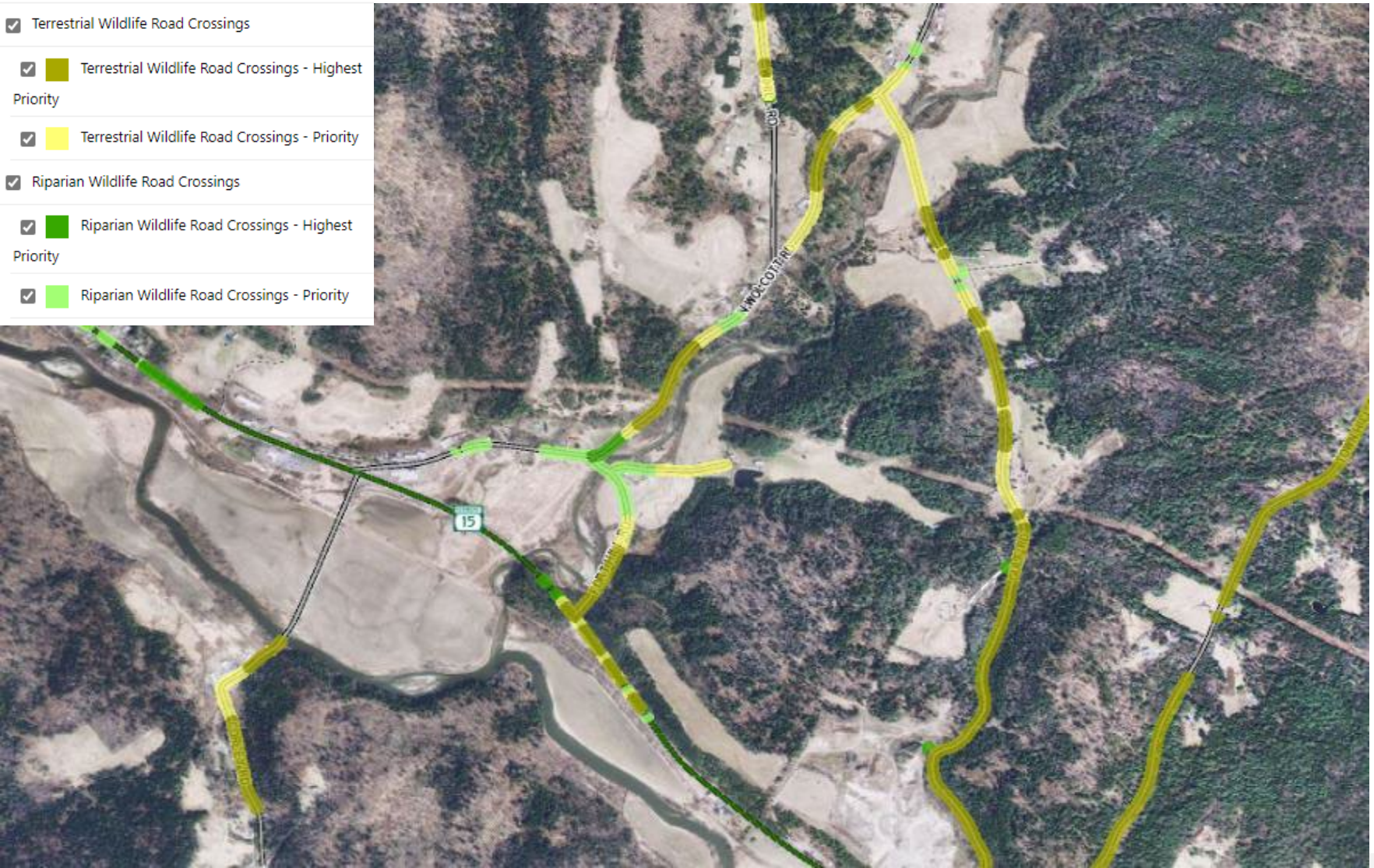
VERMONT FISH & WILDLIFE

VERMONT AGENCY OF TRANSPORTATION

The Nature Conservancy

Protecting nature. Preserving life.™

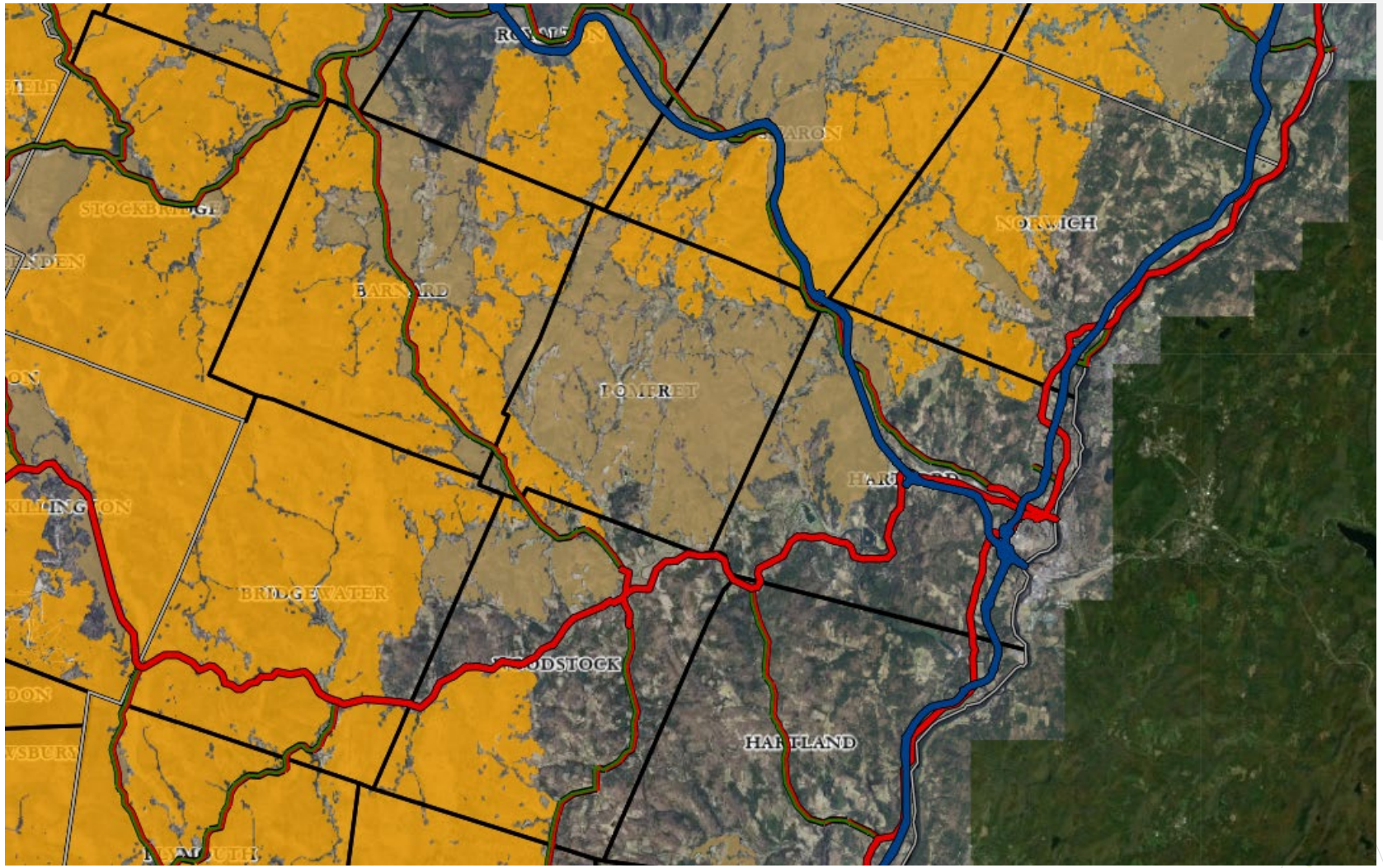
# Wildlife Crossings




BioFinder™

Vermont Conservation Design

# CONNECTIVITY BLOCKS




Highest Priority Connectivity Blocks

Priority Connectivity Blocks


Removal of
berm allowing
stream to flow
Summer 2019
Removal of
Fort Hill Bridge
Fall 2020
Will Replant with
floodplain species
Summer 2021
Wildlife Shelf- rocks
will be filled in with
dirt
Fall 2020
Wolcott Floodplain Restoration & Wildlife Shelf Project
DJI_0001
00:32
The Nature Conservancy
Protecting nature. Preserving life.
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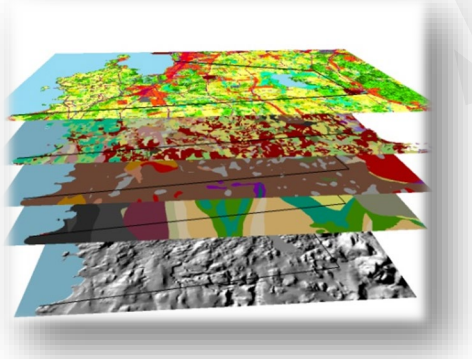
STAYING CONNECTED
Northern Appalachians

# Coordination at multiple scales

STAYING CONNECTED
Northern Appalachians

# A Multi-Pronged Approach

- Conservation science
- Land protection
- Land use planning
- Outreach & engagement
- Transportation systems



www.stayingconnectedinitiative.org

*Mix of elements tailored to each linkage*

*Different partners take lead for different parts*

# New England Governors & Eastern Canadian Premieres

- Resolution on Ecological Connectivity, Adaptation to Climate Change, and Biodiversity Conservation

NEG ECP
GN-A PMEC

40th Annual Conference of New England Governors and Eastern Canadian Premiers - Boston Massachusetts 2018
40e Conférence annuelle des gouverneurs de la Nouvelle-Angleterre et des premiers ministres de l'Est du Canada

**RESOLUTION 40-3**

**RESOLUTION ON ECOLOGICAL CONNECTIVITY, ADAPTATION TO CLIMATE CHANGE, AND BIODIVERSITY CONSERVATION**

**WHEREAS,** the New England Governors and Eastern Canadian Premiers have shown international leadership through their collective action to address environmental protection and climate change, especially through work to expand use and production of renewable energy and other efforts to reduce greenhouse gas emissions; and

**WHEREAS,** the region's economy, culture, and identity are closely tied to and dependent upon its forests and water resources; and

**WHEREAS,** the region's cities and towns, infrastructure, and natural ecosystems are vulnerable to adverse impacts from climate change. Jurisdictions region-wide are taking steps to adapt to a changing climate, by making communities, infrastructure, and public investments more resilient; and

**WHEREAS,** the New England Governors and Eastern Canadian Premiers recognize the inherent connection between the region's forested landscape and its forest products economy, and the important role that private forest landowners play in the health and condition of its forests; and

**WHEREAS,** the Northern Appalachian-Acadian forest is globally significant as the most intact, contiguous temperate broadleaf forest in the world. The Northeastern coastal forest, including the coastal plain, and the Gulf of Saint Lawrence lowland forest provide a vital link for neotropical migrants of global significance. Boreal forests are globally important for millions of resident and migratory birds, including songbirds which depend on Boreal forests during different stages of their lifecycles. Together, these forests span portions of all six New England states and five eastern Canadian provinces. Global climate change is a prominent threat to the long-term health of these vital ecosystems. The spread of invasive species and wildlife disease, often exacerbated by global climate change, is another key threat; and

**WHEREAS,** Indigenous people historically have a strong connection to the land, and in the present day continue to recognize the traditional importance of a healthy environment to the social well-being and economic prosperity for future generations; and

**WHEREAS,** maintaining and restoring ecological connectivity is an important strategy for boosting the resilience of the region's native ecosystems and biodiversity, as well as its economy and human communities. Connected habitats provide the natural pathways necessary for fish, wildlife, and plants to move to meet their life needs and to find suitable habitat as climate conditions change. Intact

# Working Together

# Thank you!
# Questions?