Vermont’s Staying Connected Initiative: A Partnership to Advance Landscape-Scale Conservation

Presenters

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(Learn more about Eco-Logical at the FHWA website)
Steps to Ensure Optimal Webinar Connection

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• Close all background programs
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What is Eco-Logical?

- An ecosystem methodology for planning and developing infrastructure projects
- Developed by eight Federal agency partners and four State DOTs
- Collaboration between transportation, resource, and regulatory agencies to integrate their plans and identify environmental priorities across an ecosystem
- For more information, visit the [Eco-Logical Website](#)
What is Staying Connected?

• The Staying Connected Initiative is a visionary partnership working to restore and enhance landscape connections for the benefit of people and wildlife across the Northern Appalachian/Acadian region of the eastern U.S. and Canada.
How Staying Connected fits into Eco-Logical

Eco-Logical Step 1:
Build and strengthen collaborative partnerships

Eco-Logical Step 4:
Assess effects on conservation objectives

- Staying Connected has two dozen public and private partners, with many others supporting the work.
- Staying Connected focuses on:
  - Conservation science
  - Land use planning
  - Key road sections
  - Land protection
How Staying Connected fits into Eco-Logical

Eco-Logical Step 5:
Establish and prioritize ecological actions

Staying Connected provides communities with tools and resources to determine what conservation actions are most important.
Staying Connected’s matches Eco-Logical’s purpose

Encourages Federal, State, Tribal and local partners involved in infrastructure planning, design, review and construction to make infrastructure more sensitive to wildlife and their ecosystems:

- Integrates plans across agency and political boundaries
- Promotes open public and stakeholder involvement
- Provides time and cost savings and better environmental outcomes
Making Eco-Logical Work for Your Agency

• The Integrated Eco-Logical framework is intended to be flexible – FHWA supports agencies working on integrated, advanced, landscape-scale planning, under any name.

• Staying Connected is a prime example of working with partners to set joint environmental priorities, completing Eco-Logical in a way that makes sense for the region.
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(Learn more about Eco-Logical at the FHWA website)

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THE STAYING CONNECTED INITIATIVE -
An International Collaboration
to Conserve, Restore and Enhance Landscape Connectivity
Across Vermont and the Northern Appalachian-Acadian Region

Jens Hilke
VT Fish & Wildlife Department
“The mission of the Staying Connected Initiative (SCI) is to conserve, restore, and sustain critical landscape connections across the Northern Appalachian-Acadian region for the benefit of nature and people. Sustaining these linkages will help safeguard native wildlife and plants from the impacts of habitat fragmentation and climate change, and support human activities and values that are tied to the forested landscape. We work across borders and at multiple scales to address these challenges.”
Priority Linkages in the Northern Appalachians

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community
A Big Network of Partners – at Multiple Scales

<table>
<thead>
<tr>
<th>Eco-Regional Steering Committee Members</th>
<th>Example: Vermont State-Specific Partners</th>
<th>Example: Greens to Adirondacks Linkage-Specific Affiliates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Parks and Wilderness Society</td>
<td>The Conservation Fund</td>
<td>Brandon Planning Commission</td>
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<td>Maine Audubon</td>
<td>National Wildlife Federation</td>
<td>The Conservation Fund</td>
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<td>Northeast Wilderness Trust</td>
<td>Friends of Hawk Hill</td>
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<td>The Nature Conservancy (VT)</td>
<td>Hubbardton Battlefield Association</td>
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<td>National Wildlife Federation</td>
<td>Trust for Public Land</td>
<td>Middletown Springs Conservation Commission</td>
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<td>Nature Conservancy Canada (QC, NB, NS)</td>
<td>Vermont Agency of Transportation</td>
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<td>Vermont Fish &amp; Wildlife Department</td>
<td>New York Department of Environmental Conservation</td>
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<td>New York Department of Transportation</td>
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<td>Vermont Land Trust</td>
<td>Poultney Conservation Commission</td>
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<td>North Atlantic Landscape Conservation Cooperative</td>
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<td>Rutland Regional Planning Commission</td>
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<td>Nova Scotia Department of the Environment</td>
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<td>Wildlife Conservation Society – Canada</td>
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<td>Two Countries, One Forest</td>
<td>Adirondack Program</td>
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Multi-pronged approach

- Conservation Science
- Key Road Sections
- Land Use Planning
- Land Protection
- Outreach & Education

VNRC assistance to Regional Planning Commissions & Towns

VLT, TNC, TPL, Conservation Fund, NEWT, FWD Land Protection

VTRANS, TNC, FWD photo-monitoring bridges and culverts

FWD tec. assistance to all municipalities & RPCs
Conservation Science & Planning

- Linkage-specific GIS modeling
- Wildlife tracking
- Game cameras
- Citizen science
- Sharing results
- Measures framework & baseline
Linkage areas in VT

Basis for all SCI work

- Different data available in each linkage
- Different models in each linkage
- Different landscape context
- Least cost path
- Cost-weighted distance analysis
Conservation science

Worcesters to Kingdom Modeling

Vermont cost-surface developed in 2010

Cost surface used for separate runs from anchor to anchor
Conservation science

Aggregated Network Developed
Conservation science

Structural Pathways
Making Roads More Wildlife-Friendly

- Identification of priority road segments
- Wildlife tracking & camera monitoring
- Data sharing
- VT Transportation and Connectivity Guidance Document
- Trainings for DOTs
- Northeast Transportation and Wildlife Conferences
Land Protection

• 80+ permanent protection projects completed - > 300,000 acres

• Model easement provisions

• Connectivity in criteria for federal cost-share programs (VT)
Land Use Planning

Technical assistance to:

• 41 communities
• Seven regional planning commissions (RPCs)

Outcomes:

• 13 town plans (5 in works)
• Six zoning and subdivision codes
• One regional plan (3 in works)
• Two new Conservation Commissions
• One new Conservation Fund
Local Engagement –
Northern Green Mountains

Cold Hollow to Canada
(CHC)

A Local Wildlife Corridor
If you live in the Northern Green Mountains, your home is a wildlife corridor. This corridor connects the forests of Quebec to the United States. It is a critical link in the conservation of the natural habitats of these two countries. The corridor provides habitat for many species of plants and animals, including the bobcat, coyote, marten, and snowshoe hare. The corridor is also an important link for migratory birds.

As a Landowner, What can you do?

1. Encourage the growth of native plants. This will provide food and shelter for wildlife.
2. Create wildlife corridors by leaving a buffer of trees between your property and your neighbor's property.
3. Avoid using pesticides and herbicides that can harm wildlife.
4. Provide water and food for wildlife by planting native plants and trees.

The Northern Connector

A landowner's guide to maintaining a connected landscape for wildlife between the Northern Green Mountains and the Sutton Mountains of Quebec and beyond.
Benefits to State Agencies

- Expands capacity of technical assistance & land protection
- Expands spectrum of activity (through multi-pronged approach)
- Provides eco-regional context
- Encourages local empowerment
For the well-being of wildlife and human communities, connections matter.

The Staying Connected Initiative is a visionary partnership working to restore and enhance landscape connections for the benefit of people and wildlife across the Northern Appalachian/Acadian region of the eastern U.S. and Canada. Each step of the way, from the Tug Hill Plateau and Adirondack Mountains in New York across the forests of New England to the Canadian Maritimes, the actions we take in our own backyards and communities make a difference.
VTrans and Staying Connected

Gina Campoli, Environmental Policy Manager
VTrans Strategic Mission: Provide for the safe and efficient movement of people and goods

Vision: A safe, reliable and multimodal transportation system that promotes Vermont’s quality of life and economic wellbeing

Strategic Goals and Agency-wide Objectives:

Goal #2: Preserve, maintain and operate the transportation system in a cost effective and environmentally responsible manner
VTrans and Staying Connected
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Priority Linkages in the Northern Appalachians

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., OBEGO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community
Identifying the Most Important Transportation Structures for Maintaining/Restoring Wildlife Connectivity

Paul Marangelo, Vermont Chapter
Vermont is the “Crossroads”
Conservation Science

- Structural Connectivity
  - GIS modeling
  - Interpreting results (identifying spatial priorities)

Priorities derived from modeling exercises are hypothetical
Linkage areas in VT

- Derived from different models in each linkage
- Habitat blocks and links between habitat blocks
  - Cross major road corridors
Linking large forest blocks

Legend
Greens - Adks linkage priorities category
- highest priority
- linkage boundary

Forest blocks
acres
- 20 - 2000
- 2000 - 5000
- 5000 - 15500

Lake George
Rutland
Where to restore/enhance road permeability?

Identifying critical road segments:

- GIS connectivity modeling (multiple scales)
- Connecting forest blocks
- Local habitat characteristics along road corridors that bisect forest blocks

Assessing functional connectivity:

- Focus on best available habitat along road segments
- Game Camera research
- Winter tracking (along roads and in adjacent habitat)
Site study design to assess functional connectivity

- 2 Cameras @ culvert openings
- 2 Cameras 50 ft away from road
- 2 cameras 1600 feet away from road
- 3200 ft Tracking transect perpendicular to road
- 1600 ft Tracking transect along road
Game Cameras at structures

- Characterize wildlife use of transportation structures in key road segments.
- What structural characteristics makes wildlife use more likely? (dry surfaces, low ratio bankful width to structure width, openness ratio, species specific preferences, etc)
Results So far:

- Between May and December 2014: 197 camera days of data collection at each of 11 sites (2,167 camera days total).
- 10 of 11 structures used at least once by wildlife.
- 41 passage events of focal species (bear, bobcat, coyote,isher, mink, otter, fox, skunk, weasel, deer)
Anticipated outcomes:

- Most important locations on major roads for wildlife-friendly transportation structures.
- Recommendations on characteristics to incorporate into structure design.
- Wildlife use of structures vs. over-road crossing vs. adjacent habitat use.
Ongoing projects:

- 124 cameras/ 3 distinct projects
  - US 2/I-89 (VTRANS/VTF&W)
  - VTRANS/UVM Transportation Research Institute/VTF&W/TNC
  - TNC/VTRANS/VTF&W/National Wildlife Federation

Approximately 26 sites total across Vermont
PROJECT REVIEW CONSIDERATIONS
VT AGENCY OF TRANSPORTATION

Staying Connected
Northern Appalachians

James Brady
Environmental Specialist
From Structural to Functional: VTrans and SCI

- The Staying Connected Initiative has helped institutionalize the relationship between VTrans, VT F&V, and other SCI partners
- Wildlife connectivity has become integrated into VTrans transportation project reviews
- Models and studies have helped VTrans Environmental staff pinpoint important areas for wildlife connectivity
- VTrans now has a vehicle to share wildlife connectivity project experiences with neighboring states, provinces and NGOs
From Structural to Functional: VTrans and SCI
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From Structural to Functional: VTrans and SCI
Q&A / Discussion