

# Conservation Planning Tool for the Lower Connecticut River and Coastal Region: 2025 Update



# Today's Presenters



**Lower Connecticut River Valley  
Council of Governments**

**Margot Burns**, Senior Environmental Planner

RiverCOG



**NPS RTCA**

**RIVERS, TRAILS & CONSERVATION  
ASSISTANCE PROGRAM**

[www.nps.gov/rtca](http://www.nps.gov/rtca)

**Stephanie Stroud**, Community Planner

National Park Service

Rivers, Trails and Conservation Assistance Program



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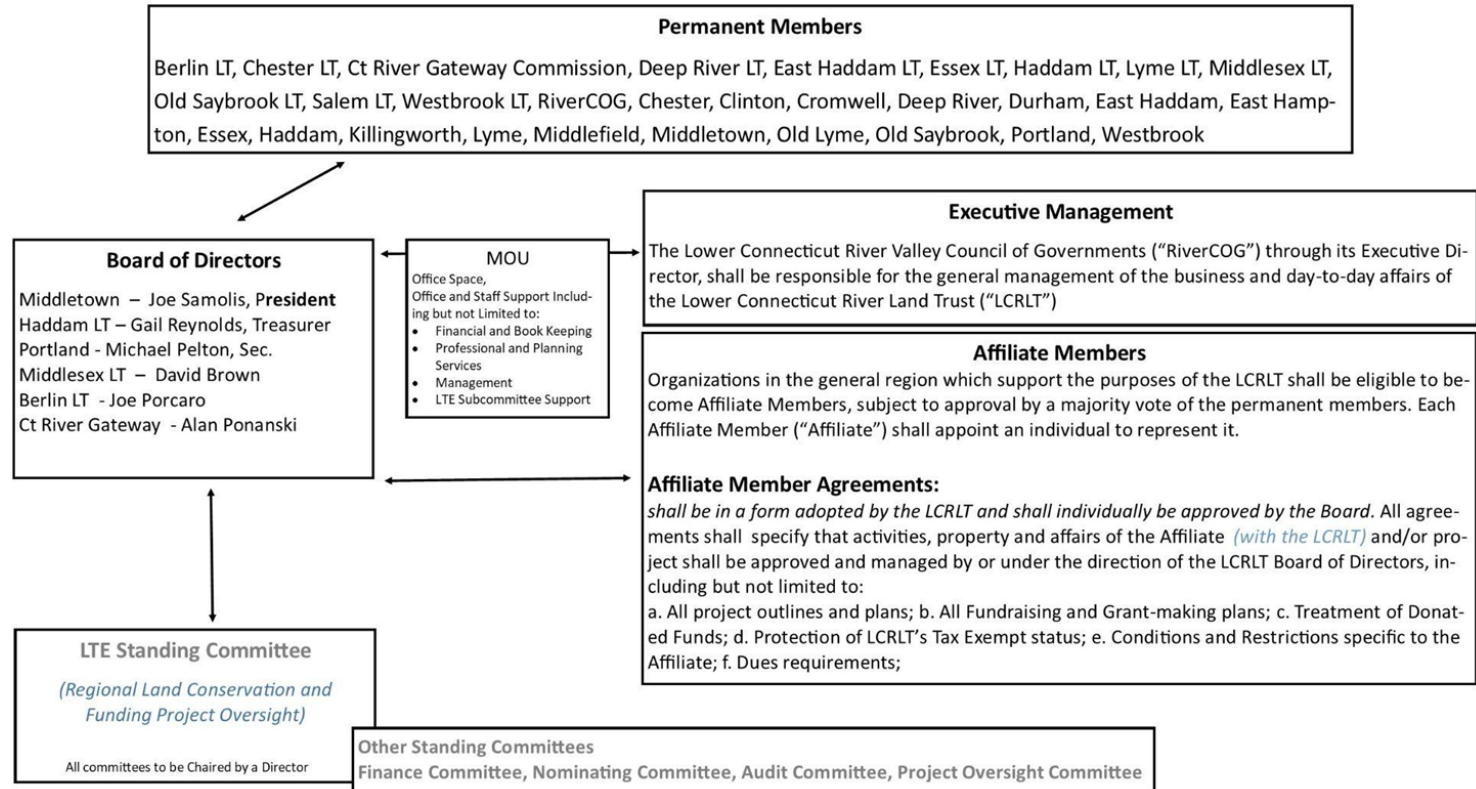
**Elizabeth Brown**, Community Planner

National Park Service

Rivers, Trails and Conservation Assistance Program

# Lower Connecticut River Land Trust

## Organizational Chart 2026



# Our Steering Committee

**Richard Potvin**, USFWS, Manager Stuart B. McKinney National Wildlife Refuge

**Garret Timmons**, USDA-NRCS, District Conservationist, Connecticut Norwich Service Center

**Thomas Worthley**, UCONN, Extension Professor, Forestry

**Alex Amendola**, CT DEEP, Forester (Cockaponsett State Forester)

**Matthew Goclowski**, CT DEEP, Supervising Fisheries Biologist

**Joseph Samolis**, LCRLT, President, (Middletown Representative)

**Gail Reynolds**, LCRLT, Treasurer - Haddam Land Trust, Treasurer - Haddam Conservation Commission, Chair - Connecticut River Gateway Commission, Member

**Lisa Wahle**, Chair, Chester Conservation Commission

**Joseph Porcaro**, LCRLT, Board of Directors - Berlin Land Trust, Director and Treasurer

**David Brown**, LCRLT, Board of Directors - Middlesex Land Trust, Former Executive Director and Current Board Member

**Dr. Melvin Woody**, LCRLT, Secretary - Ct River Gateway Commission, Former Chair and Ex Officio Member

**Laurie Giannotti**, Deep River Land Trust, President



# Agenda for Today

Project Background

The Data

The Maps

Using the Maps

What Are Your  
Recommendations?

Q & A





# Project Background





Photo: CT DEEP



Photo: MBurns



Photo: Explore CT.org



Photo: Salem Land Trust



Photo: Judy Preston



Photo: Kim Curry



Photo: Haddam Land Trust

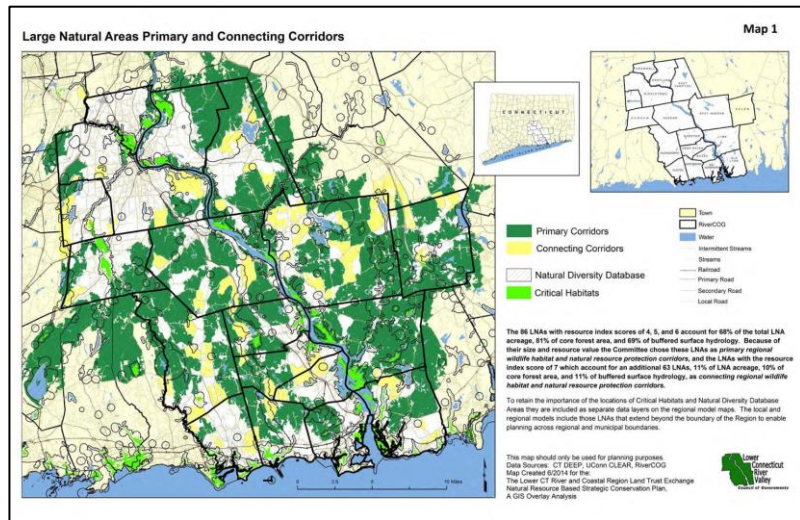
# Forming a Committee: Bringing together a community of conservationists....

- CT Deep Fisheries Division; aquatic resources management and conservation, fisheries management, and restoration of migratory fish species
- manager of Cockaponset State Forest, Nehantic State Forest, and The Preserve in Old Saybrook; forester for 10 years; forest ecology and resource management
- Long term conservation volunteer working in town
- Botanist and ecologist, 30 years
- Planner; past Director of Planning, Conservation and Development for City of Middletown
- Forestry; Professor, UConn Extension, 40 years
- Berlin Land Trust, 30 years
- Manager, Stewart B McKinney National Wildlife Refuge; 30 years working with partner organizations for wildlife conservation
- District Conservationist USDA-NRCS; conservation planning, wildlife management, ecology, and agriculture
- Chester Conservation Commission; natural resource management, CT DEEP, 28 years; water quality monitoring and education, wetland identification and wildlife habitat management; Ledyard Conservation Commission.

.... with, collectively, centuries of experience....

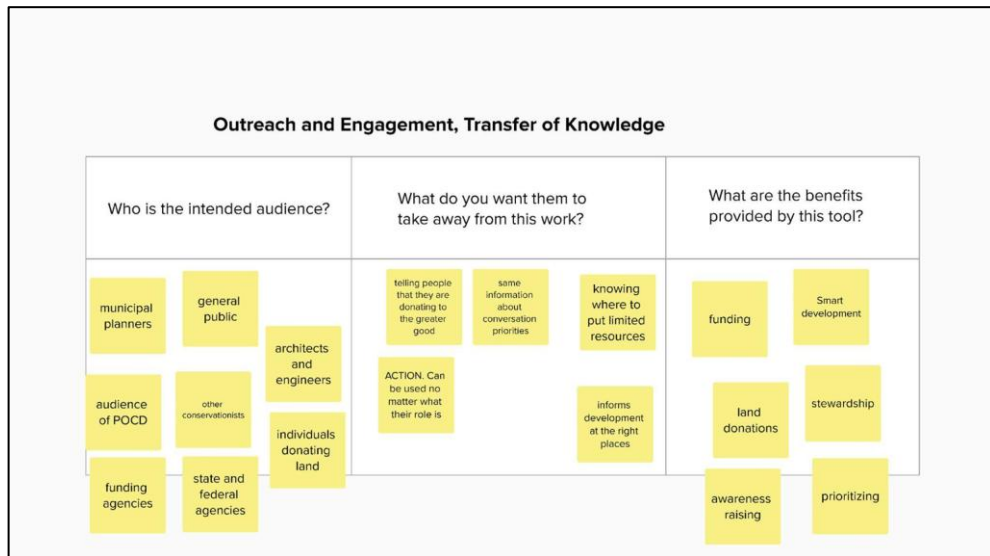


# Project Background



2014 Plan & GIS Map

*“A **climate-adaptive** lower Connecticut River valley watershed that has **large, connected natural areas** that provide **habitat for diverse wildlife**, **protect water quality and quantity**, and **protect working and scenic lands**. “*



Virtual workshop with committee to update the plan for 2025

# Challenges with Conservation

- **Changing climate**
- **Balancing other community needs and priorities**, such as housing and economic development
- **Transportation**
- **Data availability and education** (you can't protect what you don't understand)
- Finding **shared value** in conservation
- **Public Access**
- What else?



Can conservation and infrastructure go hand in hand? (Route 9 in Middletown)



# The Data



Photo: Long Island Sound Resource Center



# Selecting the Data

| DATA SET             | WHY IT IS IMPORTANT                                                                                                 | PRIORITY RANKING     |                 |
|----------------------|---------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|
|                      |                                                                                                                     | Group Final Decision | LOCAL MODEL     |
| Natural Land Cover   |                                                                                                                     |                      |                 |
| Core Forest          | Core Forest is a critical habitat for many species and is a key component of the landscape's biodiversity.          | HIGH                 | HIGH MEDIUM     |
| Young Forest         | Young Forest is a critical habitat for many species and is a key component of the landscape's biodiversity.         | HIGH                 | HIGH            |
| Sea Level Rise       | Sea Level Rise is a critical habitat for many species and is a key component of the landscape's biodiversity.       | LOW                  | LOW             |
| Wetland Wetland Bank | Wetland Wetland Bank is a critical habitat for many species and is a key component of the landscape's biodiversity. | HIGH                 | HIGH            |
| Coastal Wetlands     | Coastal Wetlands is a critical habitat for many species and is a key component of the landscape's biodiversity.     | HIGH                 | HIGH MEDIUM     |
| NDR                  |                                                                                                                     | MEDIUM               | HIGH            |
| Gold Mine Habitat    | Gold Mine Habitat is a critical habitat for many species and is a key component of the landscape's biodiversity.    | HIGH                 | MEDIUM HIGH LOW |
| Surface Wetlands     | Surface Wetlands is a critical habitat for many species and is a key component of the landscape's biodiversity.     | MEDIUM               | MEDIUM LOW      |
| Wetlands             | Wetlands is a critical habitat for many species and is a key component of the landscape's biodiversity.             | LOW                  | MEDIUM LOW      |
| Sea Level Rise       | Sea Level Rise is a critical habitat for many species and is a key component of the landscape's biodiversity.       | HIGH                 | HIGH            |

- The more diverse a landscape is, the more life can thrive there, and the more likely it will be **resilient** to change.
- These data sets help us understand **where important habitats are located**, so decision makers can make decisions about where to conserve lands in the future.
- These unique data layers were **selected by the committee** based on years of knowledge, relationship with the land, and technical expertise in the Lower CT River Valley.
- The data highlights species and habitat types that are **decreasing in the landscape**.

# Large Natural Areas



- **Contiguous areas of natural land cover** (undeveloped lands / very limited development) greater than 5 acres
- **These large tracts of land allow wildlife to move freely** from one point to another for searching for food, migration, breeding, finding shelter, etc. undisturbed so they can complete their life cycle.
- **Does not include “fragmenting features,”** usually a road, which are dangerous for wildlife
- This **does not include:** cultivated land, such as farms; developed land like pavement or lawns
- 5 acres was considered a reasonable size of land by the committee who worked on the plan based on their experience with conservation at the regional scale. (conservation professionals, land trust members and community members)



# Core Forest



- Core forests are **habitats that support the diversity of species that live primarily in the forest**. The dataset represents forests that are at least 300' from the edge of the forest block.
- This habitat type **helps store our water and keep it clean**, recharging our aquifers and streams.
- Duffs that sit on the forest floor **prevent soils from drying out**, retaining moisture
- These habitats are **decreasing in our landscape due to development**



# Early Successional



- **“Scrubby, shrubby landscapes”**: marsh species, recently disturbed forest, reverting field, shrubland. Sometimes referred to as “thickets.”
- **These landscapes require disturbance** or otherwise would turn into forests. This could be from storms, beavers, fire, or a maintained utility corridor.
- This habitat type is **dwindling in the region** and species who rely on it, like the New England Cottontail and American Woodcock, have less places to live.

# Water and Wetland Areas (Surficial Hydrology)



Photo: USFWS



Photo: Kim Curry

- Includes **wetland soils, water, streams and intermittent streams**
- Chosen to maintain and support the **diversity of freshwater inland wetland and marine species**
- **With their 300' buffer, these landscapes help to:**
  - **Prevent erosion**
  - Maintain **cool stream temperature and woody habitat for fish and other species** like turtles, otters, minks and others.
  - **Clean the water** to maintain water quality
  - **Slow down water flow**, allowing the water to soak into the ground and be stored.
  - **Absorb sudden flash floods** to maintain calmer waters for the life cycles of species.
  - Make water bodies **more resilient**.



# Critical Habitats

- Critical habitats are those designated as key habitats for **species of Greatest Conservation Need** in the Connecticut Comprehensive Wildlife Conservation Strategy and CT Wildlife Action Plan by CT DEEP.
- Critical habitats can highlight areas of ecological significance and species diversity within the state, and each of the **12 key habitats identified are associated with unique suites of wildlife found in the state.**
- In the Connecticut River Valley, these **key habitats are primarily comprised of wetland features and ridges**



# Natural Diversity Database Areas



- Natural Diversity Database Areas represent known locations of **state and federal listed species, or those which are endangered, threatened, or of special concern** by the CT Endangered Species Act.
- The Natural Diversity Database Areas are intended to be used as a tool to show potential impacts of state-listed species and by groups wishing to identify areas of potential conservation concern to **maintain species diversity statewide**.



# Cold Water Watersheds

- Cold water habitats have been identified by CT DEEP using **fish species** as an environmental indicator and direct water temperature measurements across the state.
- Cold water streams are indicative of small, lesser disturbed streams in the state of Connecticut, which are **important for the health of native fish species**, as cold water watersheds are likely more forested and less developed than others and better maintain native species diversity.





# Sand and Gravel Deposits



- Glacial meltwater deposits are particularly emphasized because these sediments are the **major groundwater aquifers** in the state as well as the **major source of construction aggregate**.
- These deposits are particularly important for the **health and diversity of many of Connecticut's species, including amphibian and reptile populations**.
- Represent a dry, well-drained low land habitat that is **threatened by development** because of its very nature of following stream courses.
- It's also a **habitat that many of CT's threatened and endangered species inhabit**, such as the puritan tiger beetle.

# TNC Landscape Diversity

- Landscape diversity is an **estimate of the number of microclimates and climatic gradients available within the local area, elevation range, and the density and configuration of moist and wet landforms.**
- Diverse landscapes provide habitat for species' **climate change adaptation.**
- The diversity and persistence of species within a local area increases with **high landscape diversity** relative to other examples of the same geophysical settings.
- **The more varied the landscape, the more micro climates that exist, allowing species to be more resilient in the face of climate change.**





# Sea Level Rise



Photo: Judy Preston



Photo: USFWS

- This dataset was created as part of the NOAA Office for Coastal Management's efforts to depict potential sea level rise and its associated impact on the nation's coastal areas, providing coastal managers with a preliminary look at sea level rise and coastal flooding impacts.
- The Steering Committee chose to assess these conditions using a planning horizon of **2050**, which indicates **1.5 feet of projected sea level rise**. This plan is to be updated every 10 years, and this data shall be revisited at this time.
- This dataset was intersected with undeveloped land cover classifications of the NLCD 2023 in order to determine where land conservation could occur and provide room for wetland migration. This is important because **as sea level rises, freshwater and marine wetlands may need to migrate to preserve their habitats**.





# The Maps



**White areas =** developed areas with many features that **might be dangerous for wildlife**, such as roads. It is difficult for some wildlife to thrive in these areas.

This map should only be used for planning purposes.  
Data Sources: CT DEEP, UConn CLEAR, RiverCOG, TNC, NOAA, USGS  
Map Created 12/2025 for A GIS Conservation Planning Tool for the  
Lower Connecticut River and Coastal Region – 2025, Lower Ct River Land Trust.  
An update to The Lower Ct River and Coastal Region Land Trust Exchange Natural  
Resource Based Strategic Conservation Plan, A GIS Overlay Analysis, 2014.  
Technical Assistance Provided by the Lower Connecticut River Valley Council of Government  
and the National Park Service (NPS)  
Rivers, Trails and Conservation Assistance Program (RTCA)  
September 2025

**Sea Level Rise = Undeveloped**  
Areas that will be inundated with salt water based on 2050 estimate of 1.5' rise

**Considerations:**

- Salt marsh migration – marshes will begin to move to accommodate changing tides
- Freshwater marsh inundation – these marshes may become infiltrated with salt water and may migrate

 1.5' Sea Level Rise Undeveloped





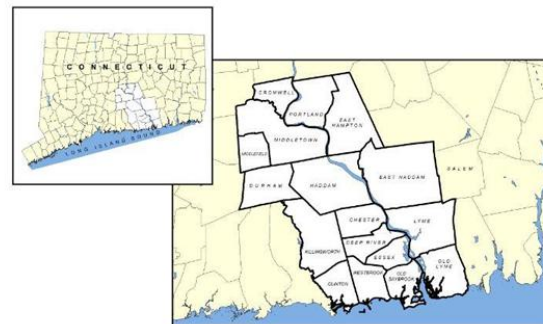
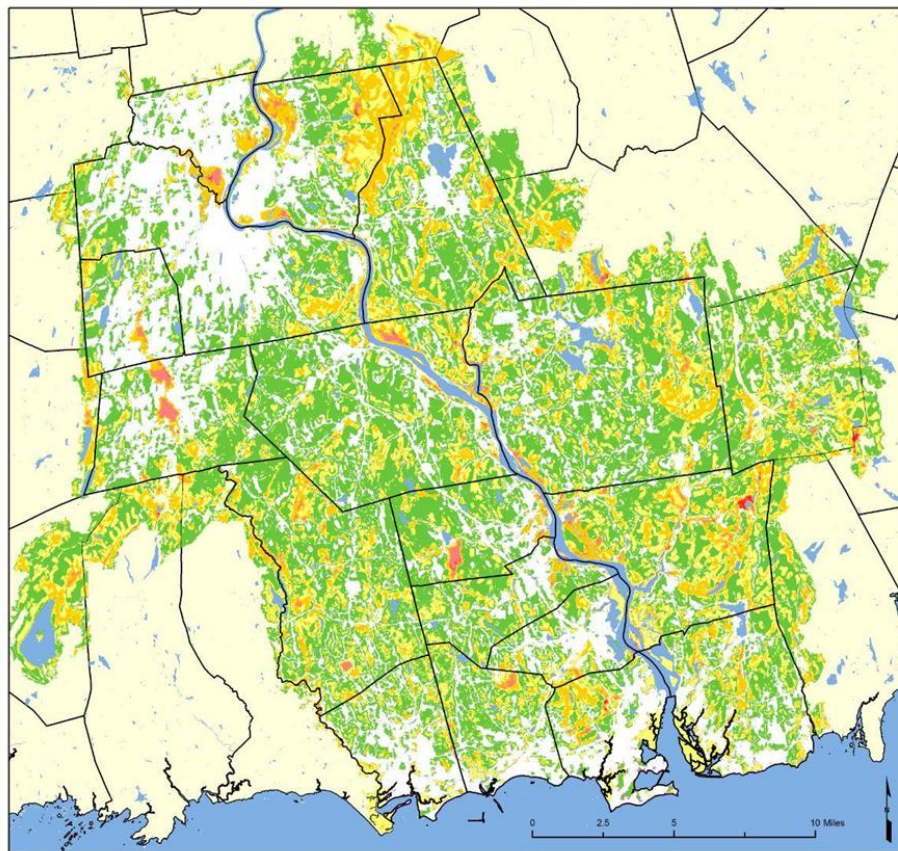
# Local Model

## Local Model 30m x 30m Grid Within Large Natural Areas

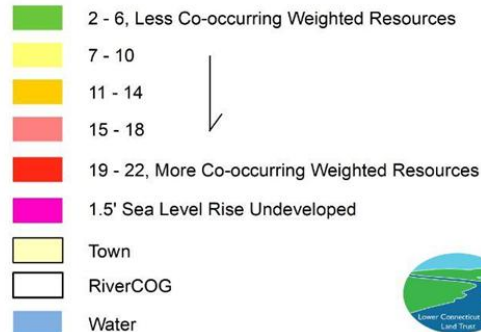
### The “Hot Spot” Map:

The “hotter” the color, the more of the habitat types and weighted resources deemed important to the committee coexist.

Individually all resources considered in the model are important and it is recommended, because of limited financial resources, to **take special considerations for conservation and management of protecting areas in LNAs that are high in value** as they may be important for maintaining biodiversity and climate adaptation for species.



### Weighted Co-occurring Resources Score



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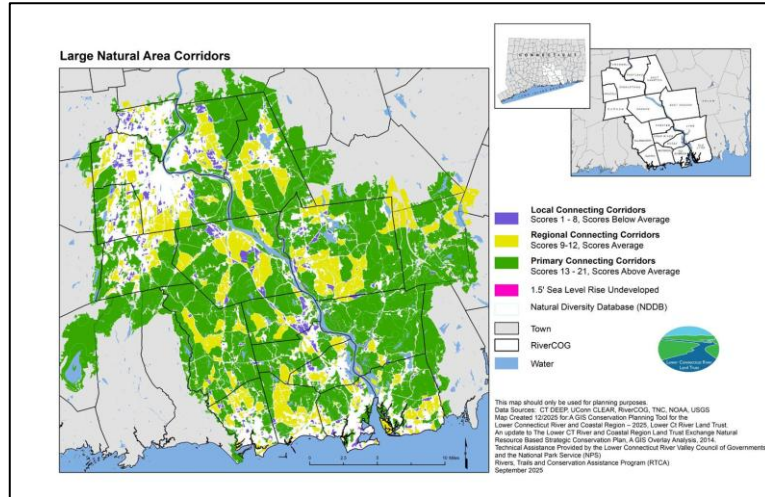
# Using the Maps



Photo: Mburns – Woodland Fair, Killingworth, Ct



# Key Takeaways



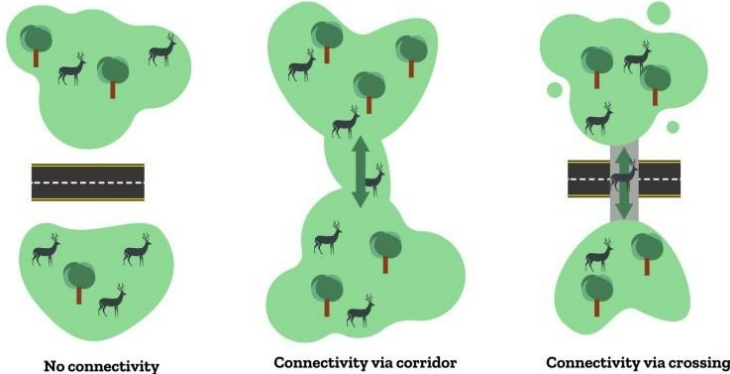
The Regional and Local Maps represent areas where endangered and connected habitat types are now in the region.

Our Large Natural Area Corridors are important to conserve and enhance because:

- **Wildlife need room** to make a home, eat, and mate. The more room we can provide for them, the more different types of species will be able to coexist and create stronger ecosystems.
- Large, connected landscape corridors with lots of different types of habitats will be **more resilient to natural disasters and other changes**.
- **Connecting corridors is critical to preserving biodiversity:** Maintaining biodiversity is the number one goal to creating a **healthy ecosystem for humans and wildlife**.
- **Dangerous fragmenting features, like roads, are the biggest threat to keeping landscapes connected.** Consider limiting these barriers or providing crossings.

Examples: pollinator pathways, neighborhood forest concept, wildlife corridor, natural bottom culverts

Image from: [largelandscapes.org](http://largelandscapes.org)



# Recommendations

**LNA Conservation Recommendations:** Consider proactive landowner and land use commission education towards maintaining the habitat blocks as well as land conservation, when possible, along with exploring conservation planning and zoning opportunities. Some tools to consider are:

- Include LNAs in **plans of conservation and development as open space** under PA-490
- Proactive landowner education within LNA habitat blocks as **habitat neighborhoods**, much like the recent regional forest stewardship initiative around forest neighborhoods
- Proactive land conservation in the form of **conservation easements or in fee purchase** on the part of conservation organizations and municipalities
- Explore applicable types of **open space zoning and stream protection regulations**
- Consider and encourage landscape **restoration projects** in and along LNA areas to remove invasive species, plant native species, and restore eroded stream banks by both municipalities and private landowners
- Inventory and assess bridge and culverts for **wildlife crossing** possibilities
- Assess **dams for fish passage possibilities and/or removal**
- **Natural Hazard Mitigation Plans, Municipal Resiliency Plans**
- **Nature-based solutions**

Others from the Group?



## Map Demonstration: Using the Planning Tool

What would you like to look at?

+ Web Link

<https://rivercog.maps.arcgis.com/home/item.html?id=7095e9fa7e4a4e99be438c84adff5edf>

## In Review....

- This GIS tool supports **informed conservation planning decisions** for wildlife habitat, water quality, and scenic landscapes amid climate uncertainty.
- Keep **Large Natural Area corridors as intact** as possible.
- **Protect and conserve around the “hot spots.”**
- **Limit fragmenting features** as much as possible.



# Additional Recommendations

- **Key areas for wildlife crossings** could be identified in the future to improve habitat connectivity in fragmented CT River Valley Landscapes.
- Consider GIS analyses to highlight the link between **viewsheds and ecosystem health**, aligning conservation with cultural and community values.
- **More data is needed** to better assess our ecosystems and ongoing challenges and opportunities
- **Connecting with Tribal communities**

# Q & A

- What are your initial takeaways and impressions?
- Is there any information that you would like further clarification about?
- How do you anticipate using this tool for future landscape conservation?
- What questions do you still have following this presentation?



Photo: USFWS

# Thank You & Contact Information

**Thank you for your time today!** If you have any additional considerations that you would like to share with us, please contact us!

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