

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



Today's Presenters

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**Lower Connecticut River Valley
Council of Governments**

Margot Burns, Senior Environmental Planner

RiverCOG



NPS RTCA

**RIVERS, TRAILS & CONSERVATION
ASSISTANCE PROGRAM**

www.nps.gov/rtca

Stephanie Stroud, Community Planner

National Park Service

Rivers, Trails and Conservation Assistance Program



NPS RTCA

**RIVERS, TRAILS & CONSERVATION
ASSISTANCE PROGRAM**

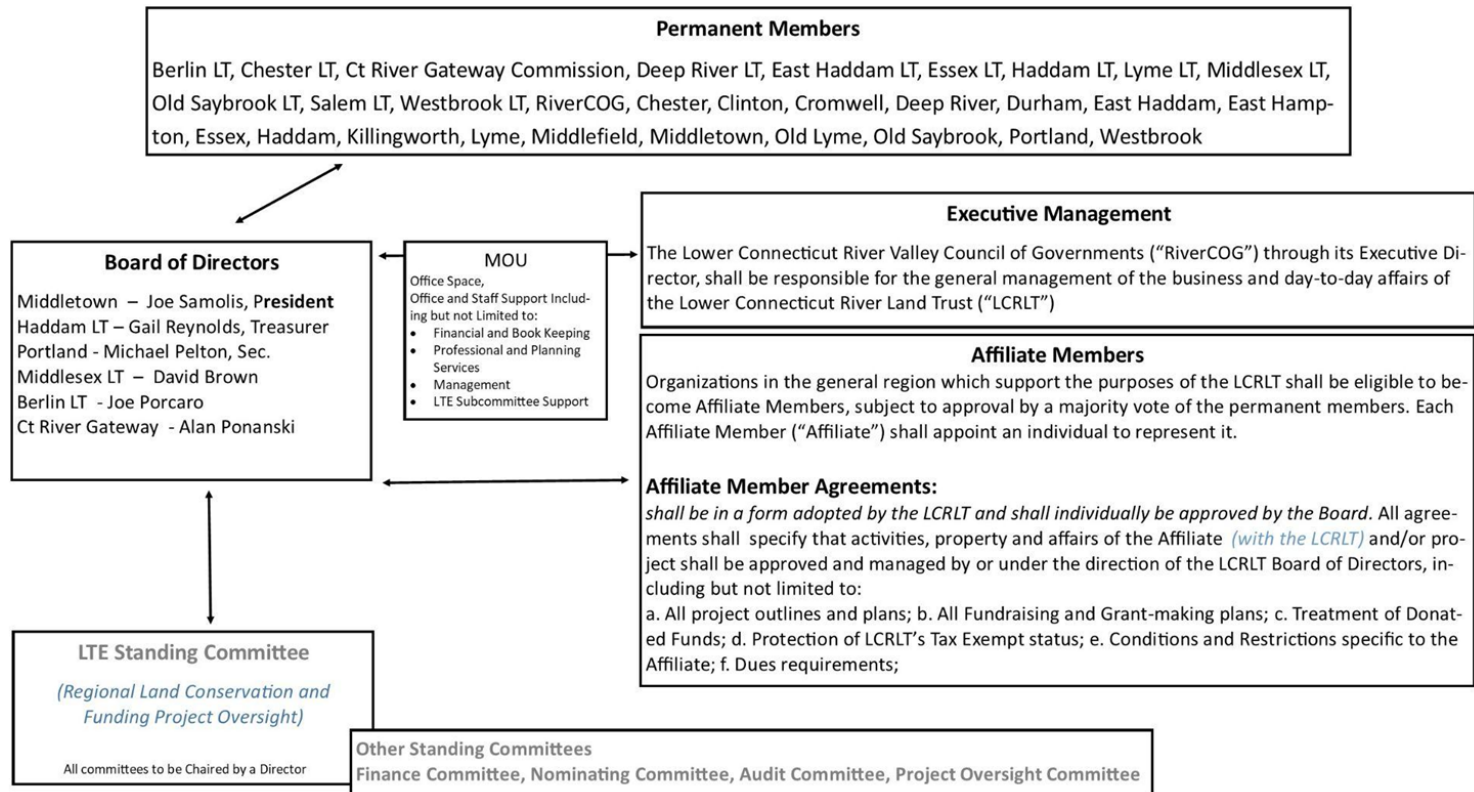
www.nps.gov/rtca

Elizabeth Brown, Community Planner

National Park Service

Rivers, Trails and Conservation Assistance Program

Lower Connecticut River Land Trust Organizational Chart 2026



Our Steering Committee

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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 Credit: Margot Burns



Photo Credit: Margot Burns



Photo Credit: Explorist.org



Photo Credit: Salem Land Trust



Photo Credit: Judy Preston



Photo Credit: Kim Curry



Photo Credit: Haddam Land Trust

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

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- 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....

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Map 1



Virtual workshop with committee to update the plan for 2025

Who is the intended audience?	What do you want them to take away from this work?	What are the benefits provided by this tool?
municipal planners general public audience of POCD other conservationists funding agencies state and federal agencies architects and engineers individuals donating land	telling people that they are donating to the greater good same information about conversation priorities knowing where to put limited resources informs development at the right places ACTION: Can be used no matter what their role is	funding Smart development land donations stewardship awareness raising prioritizing

Challenges with Conservation

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- **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?

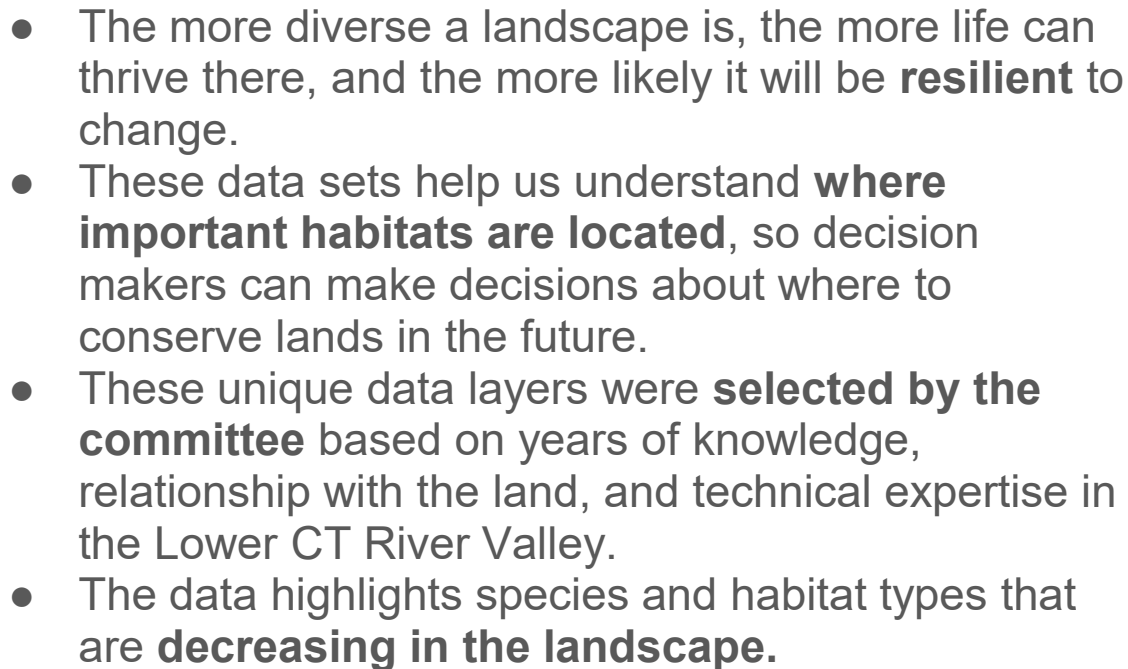


Can conservation and infrastructure go hand in hand? (Route 9 in Middletown)

The Data



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Large Natural Areas

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Photo Credit: Kim Curry



Photo Credit: Haddam Land Trust

- **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

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Photo Credit: USFWS



Photo Credit: USFWS

- 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

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Photo Credit: Lisa Wahle



Photo Credit: Lisa Wahle



Photo Credit: USFWS

- “**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)

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Photo Credit: USFWS



Photo Credit: 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

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Photo Credit: Margot Burns



Photo Credit: Kim Curry

- 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.



Photo Credit: Judy Preston



Photo Credit: East Haddam Land Trust



Photo Credit: Margot Burns

Sand and Gravel Deposits

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Photo Credit: Margot Burns



Photo Credit: USFWS



Photo Credit: Adrian Stroud



Photo Credit: Adrian Stroud

- 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.



Photo Credit: Judy Preston



Photo Credit: USFWS



Photo Credit: Margot Burns

Sea Level Rise

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Photo Credit: Judy Preston



Photo Credit: USFWS

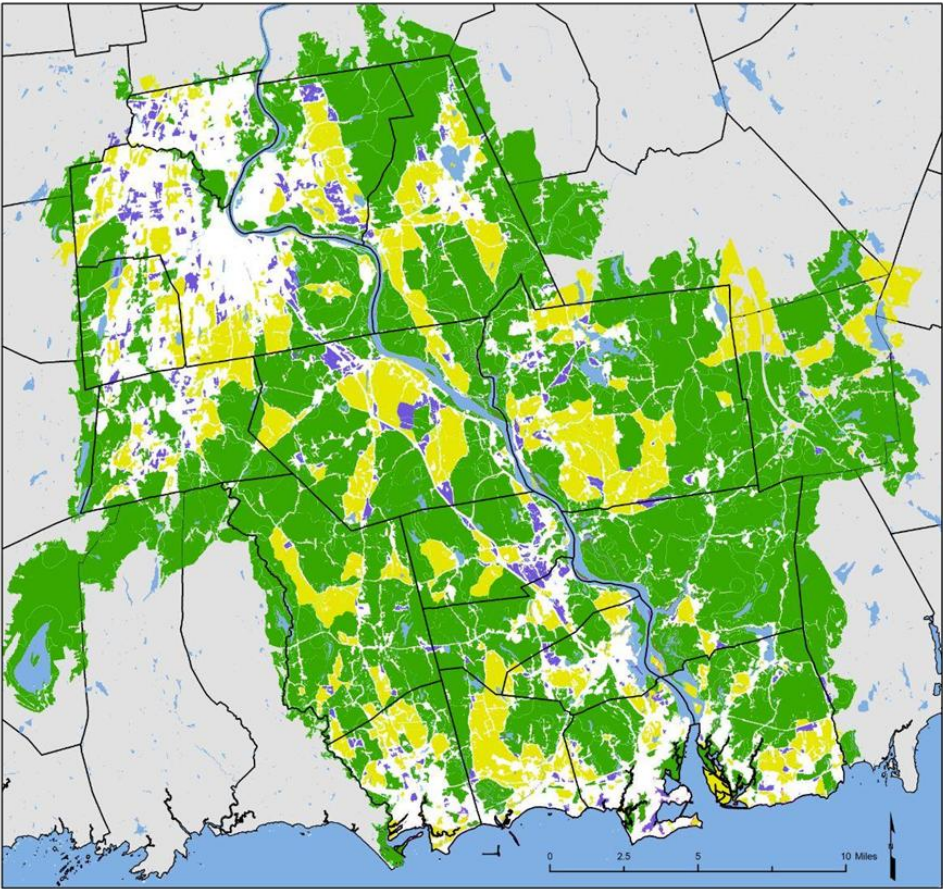
- This dataset was created as part of the NOAA Office for Coastal Management's efforts to depict potential sea level rise and its associated impact on the nation's coastal areas, providing coastal managers with a preliminary look at sea level rise and coastal flooding impacts.
- The Steering Committee 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

Regional Model

Large Natural Area Corridors

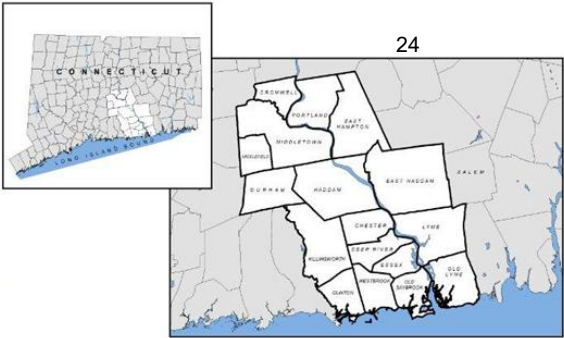


Primary Corridors = the most room for wildlife to move without having to navigate across dangerous roads.

Regional Corridors = less room for wildlife to move without having to navigate across dangerous roads but are still important to consider for regional wildlife movement.

Local Corridors = the least amount of room for wildlife to move without having to navigate across dangerous roads and developed areas.

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.



- Local Connecting Corridors**
Scores 1 - 8, Scores Below Average
- Regional Connecting Corridors**
Scores 9-12, Scores Average
- Primary Connecting Corridors**
Scores 13 - 21, Scores Above Average
- 1.5' Sea Level Rise Undeveloped
- Natural Diversity Database (NDDb)
- Town
- RiverCOG
- Water



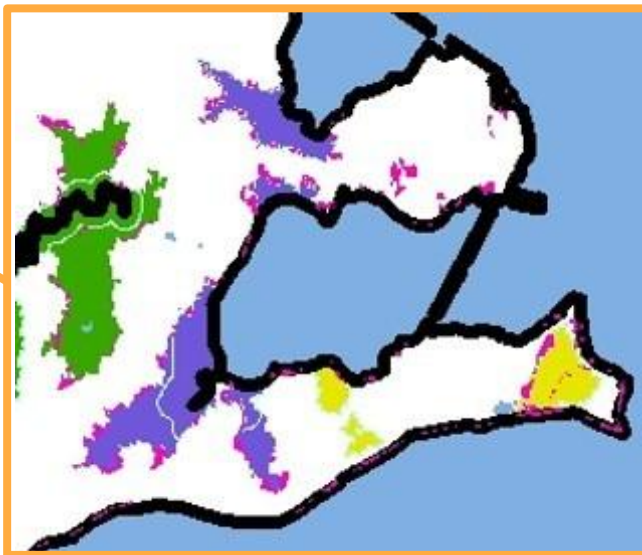
This map should only be used for planning purposes.
Data Sources: CT DEEP, UConn CLEAR, RiverCOG, TNC, NOAA, USGS
Map Created 12/2025 for: A GIS Conservation Planning Tool for the Lower Connecticut River and Coastal Region – 2025, Lower Ct River Land Trust.
An update to The Lower CT River and Coastal 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 Governments 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



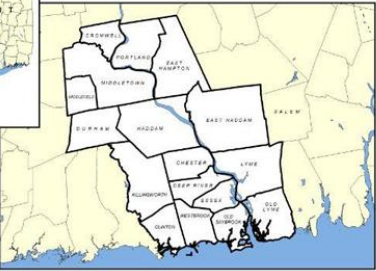
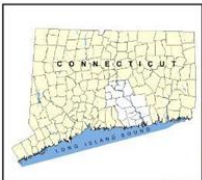
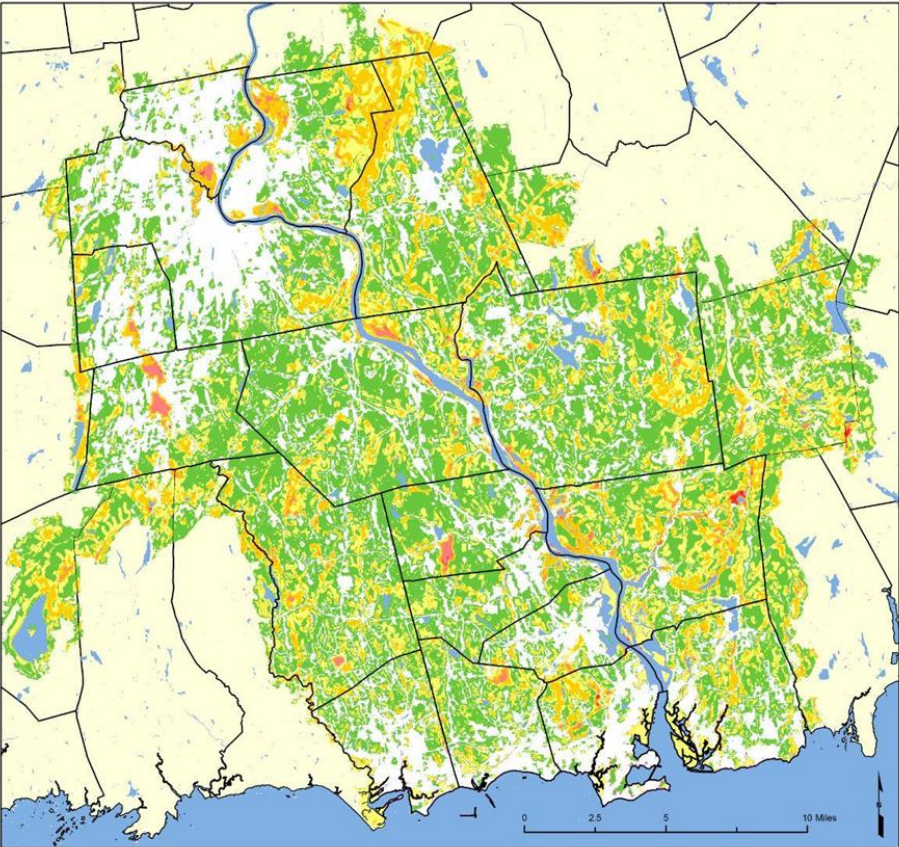
Local Model 30m x 30m Grid Within Large Natural Areas

The “Hot Spot” Map:

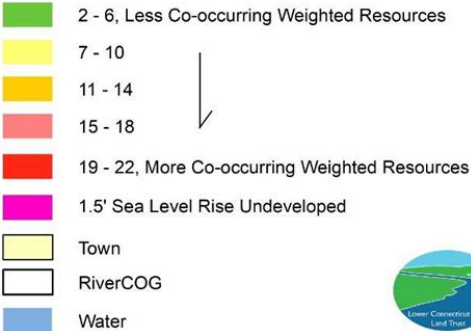
This map shows areas where **many of the State’s endangered and species of concern could be located.**

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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Assistance Program (RTCA) September 2025

Using the Maps



Key Takeaways

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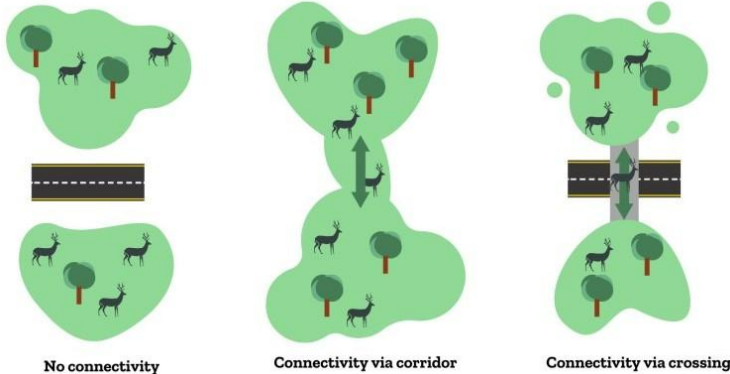
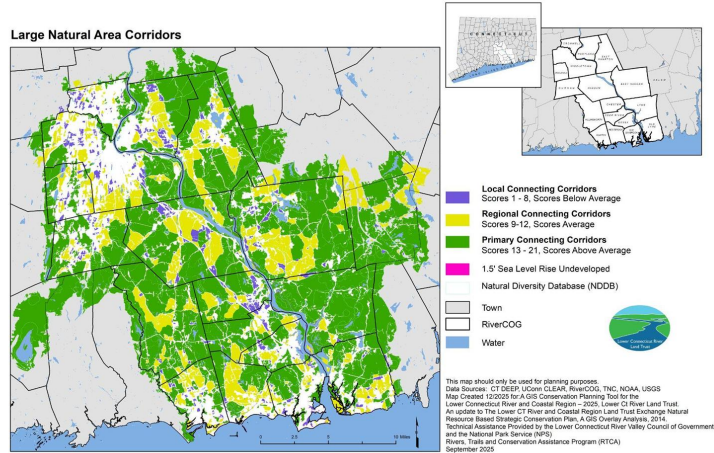
The Regional and Local Maps represent areas where endangered and connected habitat types are now in the region.

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



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....

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- 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

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- **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 Credit: 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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