Connecticut River Watershed
Representative Habitat Types

1. Tidal Marshes

The Connecticut River supports a world-class complex of high-quality tidal fresh, brackish and salt marshes.

a) Salt Marsh (example southern part of Great Island Marsh)
Salt marshes produce tons of plants that are broken down, distributed by the tides, and support an abundance of snails, crabs, fish, and the birds that eat them!

Characteristic vegetation includes cordgrass (*Spartina alterniflora and S. patens),* black grass, and glasswort. Common species include: osprey, greater yellowlegs, striped bass, and striped killifish.

b) Tidal Brackish Marsh (from Great Island to Great Meadows -example Lord's Cove Marsh)

Due to the Connecticut River's high volume of freshwater, most of the marshes from the Great Meadows in Essex south to the river's mouth (8 miles) are brackish.

These areas contain submerged aquatic vegetation including pondweeds, tape-grass, and widgeon grass. Common species include the diamondback terrapin, fiddler crab and black duck (wintering).

c) Tidal Freshwater Marsh (example Hamburg Cove, Pratt and Post Coves, Selden Creek, Joshua Creek, Deep River Complex, Chester Creek, Whalebone Creek and Cove, Chapman Pond, Salmon Cove, Haddam Meadows, Pecausett Meadows, Cromwell, Meadows)

Tidally-influenced freshwater marshes along the river support many unusual plants and plant communities, and are valuable to a variety of waterfowl, rails and wading birds.

They are often fringed by plants in the sweet-flag community, arrow-arum community, or sensitive fern community and may contain wild rice. Largemouth bass, blue- or green-winged teal and sora rails may be found here.

2) Aquatic Habitats

The many tributaries that make up the Connecticut River system provide plentiful habitats for aquatic species of all kinds.

a) Headwater Streams (cold, oxygenated riffles and pools)

Tree-shaded headwaters streams provide leaf detritus as the base of the food chain and clear cold, oxygenated water that is important habitat for many insects and fish. Good water quality here gets passed along as the foundation of all the aquatic systems downstream.

A variety of trees and shrubs grow along the banks. Common species include caddisfly larvae, juvenile salmon, and brook trout. Wood turtles and yellow warblers frequent the streamside.

b) Impoundments

A legacy of the mills of the past, the almost 1,000 dams in the watershed create lake-like habitats where warm-water fish and pond creatures thrive, but migrating fish and native freshwater mussels struggle to survive.

Plants and animals are those typical of ponds, like dragonflies, pumpkinseed fishes and red-eared slider turtles.

c) Rivers

Larger rivers contain algae and create their own food chain. The rivers provide critical pathways for migratory fishes including American shad and endangered shortnose sturgeons. American bald eagles feed their young the plentiful migrating fish. Freshwater mussels, including the endangered dwarf wedgemussels, inhabit the bottom of many rivers.

3) Riparian Habitats

Right next to the river, there is usually plentiful food, and of course, water to drink.

a) Floodplains (example Rainbow Beach area in Northampton, MA)

The Connecticut River floods in the spring, when the snow melts, and at other times due to heavy rain or hurricanes. Certain plants and animals are adapted to the fluctuating water and the resulting habitat is important to many songbirds as they migrate north in the spring.

Common trees are silver maples and cottonwoods, with an understory of ostrich ferns or stinging nettles. Invasive plants like garlic mustard often find it easy to become established in these frequently disturbed areas.

Mink and river otter frequent these areas while the wood thrush and many other songbirds use them during spring migration, when the trees leaf out and the insects hatch out sooner in the warmer microclimate next to the water.

b) Sand/silt Beaches (Rainbow Beach in Northampton, MA and Cobble Islands (Burnaps Island in VT)

On the inside bends of large curves in the river, the current is slower and soil particles settle out, creating beaches where plant and animal habitat specialists can thrive. In higher energy environments, like the upstream edge of islands, cobbles are deposited, and different specialists thrive there.

Sandbar willows and Puritan tiger beetles are rare species found on the few sand beaches along the river, while little bluestem grass and cobblestone tiger beetles are found on island shores.

c) Rocky Shore (Hartland Ledges, VT)

Most of the Connecticut's banks are soft deposits of silty loam, but the river has rocky shelves in a few places. Historically, ice-scour scraped away most plants, but we control the ice and flooding now, so plants and animals that evolved relying on scouring to clear out the competition are rare and declining now.

Jesup's milkvetch (Federally listed as endangered), grows where ice used to scour away the competition, every few years, but we control flooding and have reduced such scouring. The plant is also directly threatened by competition from a new exotic invasive species, swallowwort, which has spread along nearby railroad tracks.

4) Inland Wetlands

These features can occur anywhere where topography allows water to collect on the landscape. Beavers often create their own wetlands!

a) Marshes and Sedge Meadows (example Pondicherry Division, Jefferson, NH)

Often found along the edges of rivers, lakes and ponds, these marshes support a wide variety of wildlife.

There are many different plants that grow under slightly different conditions: shallow emergent marsh, sedge meadow, cattail marsh, deep broadleaf marsh, wild rice marsh, and bulrush marsh. Wildlife species common in marshes include: great blue heron, beaver, leopard frog, mallard, and tree swallow.

b) Shrub Swamps (example Pondicherry Division, Jefferson, NH)

Saturated soils support shrubs that provide food and cover for many species.

There are many different types of shrubs that become dominant under slightly different conditions, including alluvial shrub swamp, alder swamp, sweet gale shoreline swamp, and buttonbush swamp. Species commonly using such areas include American woodcock, alder flycatcher, and raccoon.

c) Vernal Pools (examples on Mt. Tom in Holyoke, MA)

Vernal pools, which hold water only seasonally (and where fish cannot survive), provide relatively predator-free breeding areas for "mole" salamanders and wood frogs. These species are seldom seen during the rest of the year, but are an important part of the surrounding forest's ecosystem.

5. Oak Hickory Forest

This forest is common in the southern part of the watershed and is also found on dry sites further north.

a) Oak Hickory Forest (in CT and south-facing slopes of Holyoke Range in Granby, MA)

Oak and hickory trees provide plentiful food in the form of nuts, and their slow-to-decay leaves provide ground cover to protect reptiles, amphibians and small rodents. The trunks of oaks frequently rot, providing homes for cavity-nesters.

Common species include blue jay, gray fox and black and white warbler.

b) Dry Oak Forest (example Montague Sandplain in Montague, MA)

Found on dry, sandy soils, like glacially-formed sandplains, these forests have an oak canopy and a huckleberry and blueberry understory. The acorns support wild turkeys and gray squirrels.

c) Pitch Pine-Oak-Heath Rocky Summits (example Mt. Tekoa in Westfield, MA)

On dry, open ridge-tops on acidic bedrock, fire-adapted pitch pine and scrub oaks are scattered over mountain laurel and blueberries. Eastern timber rattlesnakes have their last strongholds in these relatively remote areas, often feeding on chipmunks.

6. Northern Mixed Forest

Located between the oak-hickory forests to the south and the boreal forests to the north, this forest contains a mix of the trees and shrubs found in those forests. Although the mix of trees varies depending on site conditions and age of the forest, this is the most common forest in the northeast.

a) Northern Hardwood Forest

Dominated by yellow birch, sugar maple and American beech, with white pine and hemlock prominently mixed in, this forest has a well-developed understory of shrubs, flowers and ferns.

Species found here include black bear, whitetail deer, scarlet tanager, and redback salamander.

b) Hemlock Forest

This shade tolerant and long-lived tree becomes dominant at certain sites where hardwoods cannot persist or compete, including shady ravines and areas where the soil is very shallow. Hemlock wooly adelgid, a non-native insect pest, has destroyed many of these forests in the southern part of the watershed.

Typical species include the northern saw-whet owl, red-breasted nuthatch, and solitary vireo.

c) Northern Swamp Forest

On very wet sites, a forested swamp often develops, with various mixtures of red maple, northern white-cedar, black ash, tamarack, and black gum in the overstory and skunk cabbabge, jewelweed and other water-tolerant plants in the understory.

Some species found here include wood duck, blue-spotted salamander, star-nosed mole, veery, and red-eyed vireo.

7. Northern Coniferous Forest

The northern part of the watershed has coniferous forests that are an important area for nesting warblers and thrushes.

a) Red Spruce - Northern Hardwood Forest

This forest offers tiny seeds in conifer cones that support small mammals like the red squirrel, and an abundance of caterpillars feeding on the conifer leaves that support foraging birds. Species found here include black-backed woodpecker and bay-breasted warbler.

b) Lowland Spruce-Fir Forest and Black Spruce Swamps (Nulhegan Basin Division)

On colder sites, hardwoods do not compete as well and shade-tolerant red spruce and balsam fir dominate, with black spruce dominating on very wet sites. Species include porcupine, moose, fisher, snowshoe hare, spruce grouse, and ruby crowned kinglet.

c) Boreal Bog (example Molly Beattie Bog in the Nulhegan Basin Division)

In old glacial kettle holes and other areas where rainfall collects and sits, deep beds of sphagnum moss peat develop, permanently saturated with acidic water.

Shrubs in the heath family, (leatherleaf, bog and sheep laurel, and Labrador tea) and sedges dominate this low-nutrient community. Other species found in bogs may include pitcher plant, spotted turtle, northern parula warbler and olive-sided flycatcher.

8) Open Habitats

Openings occur where "ax. plow, cow" or fire clear forests.

a) Sandplain Grassland (example Turners Falls Airport, Turners Falls, MA)

Where great piles of sand were deposited by glaciers, droughty conditions favor native bunch grasses that some species depend on. Historically, these natural communities were maintained by frequent fires.

Typical species include little bluestem, wild lupine, grasshopper sparrow, prairie warbler and whip-poor-will. A number of rare invertebrates, like sandplain buckmoth, are associated with this scarce habitat type.

b) Grasslands

Areas that have served as hayfields or pastures offer habitat to grassland-dependent species as well as many others.

Typical species include bobolink, red fox, grasshoppers, and meadow voles.

c) "Early Successional Habitats"

Early-successional habitats can be old fields, clearcuts, blow-downs, or powerlines. What they have in common is that these areas are starting to change into a forest, so they host a wide variety of food-rich shrubs and young trees that support birds and other creatures!

Species include chestnut-sided warbler, the rare New England cottontail and the garter snake.