

## Section J SIGNIFICANT NATURAL RESOURCE AREAS

*See separate Map Atlas for map references*

### J.1 Introduction

In reviewing and assessing maps of resources individually and in combination with each other, certain areas emerged as particularly outstanding or significant. These are Guilford's best examples of rivers, waterbodies, wetland complexes, large grasslands, forests, wildlife movement corridors, and locations of rare species and natural communities. These are places that have maintained their ecological integrity; that is, the mosaics of different habitats and the processes that sustain them over the long term are relatively intact (e.g., water flows, movement of plants and animals). Termed Important Ecological Systems in the NRIA, taken together they form Significant Natural Resource Areas (SNRAs).

Areas composed of habitat mosaics, including forest, fields, and various types of wetlands are critical to animals that use different habitats at different points in their life cycles. Areas that include diverse habitats also support a greater variety of plants and animals, and these species will be more likely to persist over time.

### J.2 Components of Important Ecological Systems

#### Forests – Map J-1

- Seven forest blocks are significant because they are large and relatively intact, not fragmented by paved roads or development. Many also capture Guilford's most intact wetland complexes and include the headwaters of our significant watercourses.
- Bobcat, forest-interior birds (e.g., warblers, veery, wood thrush), and other native Guilford wildlife require large, intact forests to forage and hunt, protect their young from predators and parasites (e.g., domestic cats, raccoons, cowbirds), and establish new territories.
- Although wooded backyard lots also have trees, they are not equivalent. An intact forest functions differently and can support interior-forest animals and plants that these woodlands cannot.
- Given its location, the coastal hardwood forest on Sachem's Head is important because it is uniquely influenced by the coast (e.g., salt spray, storms).

*Sources:* U.S. Natural Resource Conservation Service (NRCS) Land Use/Land Cover map for Guilford (See *Map 2*), The Nature Conservancy Northeast forest block map

#### River Systems – Map J-2

- Included are Guilford's healthiest aquatic (in-water), riparian (stream edge), and floodplain habitats. They are situated within relatively intact landscapes and support species that require particularly clean water (e.g., trout, bottom-dwelling insects) or contiguous habitat (e.g., migratory fish, river otter).
- The West River serves as a critical north-south link for wildlife movement, despite having been degraded along some of its reaches.
- Watercourses are bounded by a 300-foot riparian corridor, the width that the scientific community has found is required to support wildlife habitat functions, remove pollutants and sediment, regulate temperature, and stabilize banks. (See *Appendix J-1*.)

While the particular systems included within the SNRA are outstanding, all of Guilford's streams are important and reflect the quality of their watershed's surface and ground water.

*Sources:* NRCS Land Use/Land Cover map (*Map 2*), BioBlitz field days, interviews with local naturalists and biologists

Wetlands Complexes – Map J-2

- Include Guilford’s healthiest and most diverse wetland systems. They are comprised primarily of red maple swamps, wet meadows, vernal pools, and salt, brackish, and freshwater marshes, and typically are nested within or adjacent to intact uplands.
- Include the wetlands themselves and, recognizing the importance of intact adjacent uplands, a 300-foot buffer

Sources: NRCS Land Use/Land Cover map (Map 2), USGS topographic maps, interviews with local naturalists and biologists

Grasslands – Map J-1

- These are Guilford’s largest grasslands that are most viable for grassland-dependent animals and plants.
- Important because many species, such as bobolinks and eastern meadowlarks, require large tracts of grassland. Many butterflies and birds of prey rely on grasslands for feeding on wildflower nectar or hunting small mammals, and waterfowl feed in flooded fields during migration.
- Agricultural grasslands (i.e., hayfields, pastures) can support grassland-dependent plants and animals if cuts are timed to avoid nesting and fledgling seasons.

Sources: NRCS Land Use/Land Cover map (See Map 2), interviews with local naturalists and biologists

Endangered, Threatened, and Special Concern Species and Natural Communities – Map J-3

- Documented occurrences of State and federally-identified imperiled plants, animals, and natural communities (i.e., Natural Diversity Database sites), are mapped by the CT DEP Natural Heritage Program and updated periodically. Circled areas give approximate locations; neither the exact locations nor the identities of the species or communities is publicly disclosed.
- The State provides this information to help towns protect their share of the State’s biodiversity during land use planning and permitting.
- It is important to prevent the extirpation or extinction of any native species or natural community and to maintain Guilford’s biodiversity

Source: Connecticut DEP Natural Diversity Data Base sites

Wildlife Movement Corridors – Map J-4

Animal and plant populations cannot survive over the long term in isolated habitat patches. They must disperse and migrate and, like humans, mix among populations to maintain genetic health.

- These movement corridors help to connect existing upland habitat patches.
- Watercourses also serve as natural movement corridors.

Sources: NRCS Land Use/Land Cover map (See Map 2 and Map H-3.)

**J.3 Map Analysis**

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The components listed above first were mapped separately on transparent Mylar material, and then overlaid on each other. A composite map was drawn to outline all the components (See Map J-5.) In many locations ecological systems coincide - in others, one such system is represented. The combined areas are outlined and titled as Significant Natural Resource Areas (SNRA) as Map J-6

The ways in which Significant Natural Resource Areas and wildlife movement corridors relate to committed open space are displayed on Map J-7.

## J.4 Location and Ecological Content of Guilford's Significant Natural Resource Areas

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The SNRAs fall into eight geographic areas:

**Totoket Mountain:** Guilford's largest forest block, which extends into Durham and North Branford; outstanding wetland complex nested in forest; Bluff Head and associated rare natural communities; Myer Huber Pond (migratory bird concentration area, etc.); Coginchaug River (healthy tributary to Connecticut River)

**Beaver Head/Menunkatuck:** unusually large red maple swamp in excellent condition and nested in large forest; significant area for amphibians; nesting goshawk; Branch Brook, an exemplary quality stream; Menunkatuck Reservoir (a public surface water supply); large grassland (hayfield); Quonnipaug Mountain (staging area for wintering ducks); rare plants

**Northeast Forest/Broomstick Ledges:** diverse wetlands nested in large forest that extends into Madison; sunny sandstone slopes; Sucker Brook (high-quality stream); Braemore wet meadow (butterflies, orchids); large grassland; Little Meadow Brook headwaters

**West River Corridor (freshwater portion):** wet meadow complex, Town's largest grassland; river system and riparian zone; trout; migratory fish; serves as north-south link

**Hoadley Creek/Westwoods:** Hoadley Creek river/forest/marsh complex, which links with protected land in Branford; large forest with embedded wetlands (e.g., Great Swamp, Towner Swamp); unusual elm swamp; shellfish bed at mouth

**Sachem's Head/Central Coast:** coastal hardwood forest; Long Cove Marsh; tidal portion of West River and associated marshes

**East River marsh/forest system:** diverse, high-quality tidal river and wetlands with adjacent large forest (one of last large forests in coastal Connecticut and an important migratory bird stopover site); migratory fish and Old Scroggie Pond (significant for reptiles). National Audubon recently announced the formal designation of the East and West River Complex as an Important Bird Area in Connecticut because it meets criteria as a globally significant bird area.

**Long Island Sound:** An Estuary of National Significance; habitat for a wide diversity of species; major recreational asset; provides Town's coastal identity (including significant habitats described in *Section B.7*); supports fishing and shellfishing industries; Guilford's bays provide significant over-wintering habitat for waterfowl; globally Important Bird Area for tern colonies on Faulkner Island.

## J.5 Threats

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As already described in previous sections that address nine specific resource categories, there are many threats to their health. A single threat could have multiple impacts within an SNRA if the resources in that area share that threat. In turn, abating that threat could benefit multiple resources within the SNRA.

## J.6 Summary

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Significant Natural Resource Areas are the places in Guilford that are particularly important for wildlife populations and movement corridors (including rare and endangered species), the mitigation of flooding, air and water quality, natural resource-based recreational opportunities, scenic views, and the Town's rural character. As special places, their ecological integrity and the benefits they provide should receive particular focus for protection. It is hoped that property owners, developers, and land acquisition agencies will find ways to respect these resources.

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**References**

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Environmental Law Institute. 2003. *Conservation thresholds for land use planners*. Washington, D.C.

**Appendix:**

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J-1 The Benefits of Buffers by Width – a diagram

**Maps:**

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J-1 Significant Forests and Grasslands

J-2 Significant Wetlands, Rivers and Waterbodies

J-3 State and Federally Listed Species and Significant Natural Communities

J-4 Wildlife Movement Corridors and Open Space

J-5 Important Ecological Systems and Natural Diversity Data Base Sites

J-6 Significant Natural Resource Areas (SNRAs) by Location

J-7 SNRAs, Open Space and Wildlife Movement Corridors