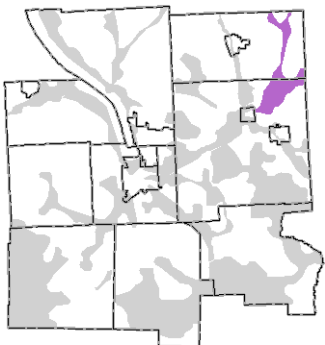


# The Fens

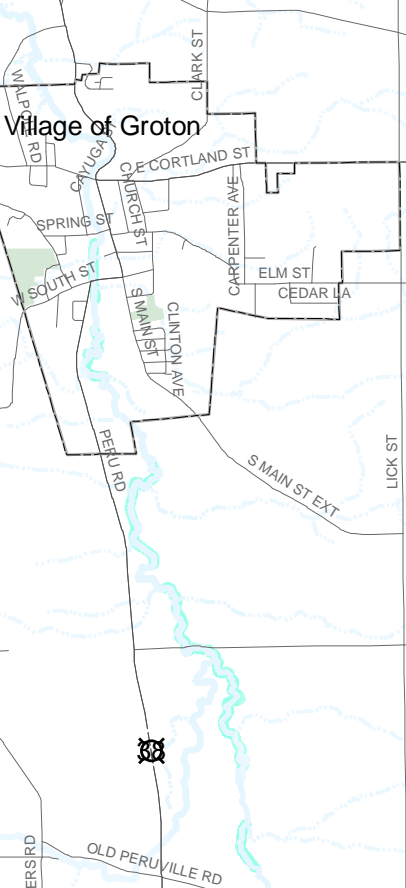


Cayuga County

STAUBER RD



Village of Groton



CLARK ST EXT

OLD STAGE RD

McLEAN - CORTLAND RD

ELM ST EXT

DAVIS RD

STEVENS RD

CEMETARY LA

PERUVILLE RD

MORRIS RD

HILE SCHOOL RD

WEST DRYDEN RD

Village of Freeville

MOTT RD

Thurber Preserve

Malloryville Fen Preserve

McLean Bog

- Protected Open Land
- Intermittent Streams
- Perennial Streams
- DEC Fishing Access
- The Fens Focus Area

Note: Features outside of the Focus Area are faded.

0 0.25 0.5 1 Miles

Cortland County

## Description of Focus Area

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The Fens Focus Area spans the Town of Dryden and Groton, lies adjacent to the Village of Freeville, and includes portions of the hamlet of McLean. This Focus Area encompasses a wide range of landscapes, including forests, active agricultural lands, and many wetlands, swamps and fens. The Fall Creek and Beaver Creek stream corridors connect and define the area. Ecologically, it is highly significant, as is apparent from the number of national and local designations within the area.

## Major Benefits

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The Fens Focus Area includes a particularly significant ecosystem and complex of wetlands, bogs, and swamps that provides high quality water and critical habitat for many rare and diverse plant and animal species. It is nationally recognized for its unique geological formations, important wetlands and fens, significant deciduous forests and numerous ponds. Key support for these habitats comes from the abundant groundwater and surface water that flow throughout the area. These waters also support a variety of fish species for fishing enthusiasts. The area also contains agriculturally productive soils and many active farming operations, as well as a series of wetlands complexes that may also play an important role in mitigating floodwater entering Fall Creek during major storm events. Secondary, but important, provided by lands within this Focus Area include ginseng, goldenseal, and maple syrup production and limited hunting.

### Critical Habitat and Biodiversity

The biological diversity and richness of this Focus Area is exceptional, and is significant locally, regionally, and nationally, as indicated by the number of preserves and special designations the area has received. An amazing diversity of wetland habitats are scattered along the wetlands and creek corridors in this Focus Area, from fens to bogs to wooded swamps, the area provides habitat for a high concentration of unique and notable rare plants and natural communities<sup>1</sup>. The area is identified by the New York Natural Heritage Program as having rare plants, animals, and significant ecosystems, and the Focus Area includes twenty-one Unique Natural Areas, as designated by the Tompkins County Environmental Management Council, that support high-

quality examples of plant communities. Species of interest to visitors include the pitcher plant, which lives in a nutrient-poor environment and traps insects to obtain nitrogen; freshwater clams and snails; and birds such as copper's hawk, scarlet tanagers, osprey, and great blue heron.

Of particular note is McLean Bogs, which has been identified by the U.S. Secretary of the Interior as a National Natural Landmark due to its important glacial landform and significant deciduous forest, lakes and ponds. The Nature Conservancy's 310-acre O.D. Von Engeln Preserve at Malloryville also was established to protect the abundance and variety of wetlands habitats within the Preserve, unique geological formations called eskers, and an unusual variety of plant and animal diversity found within the Preserve. The Finger Lakes Land Trust also has its 10 acre Thurber Preserve in this area, which is known for its exceptionally lush and diverse understory of spring wildflowers, ferns, and native yew, and just across the County line from this Focus Area lies the 380 acre Lime Hollow Center for Environment and Culture, which shares many of the same landscape characteristics as the Fens Focus Area. The New York State Draft Open Space Plan calls for expanding these protection efforts.



*The O.D Von Engeln Preserve at Malloryville was established to protect the abundance and variety of wetlands.*

Patches of agricultural grassland habitat scattered throughout the Focus Area provide habitat for several grassland bird species and the Least Shrew, a species with limited protected habitat in Tompkins County. In the eastern reaches of the Focus Area forested areas provide important bird habitat including habitat for the Louisiana Waterthrush.

## Fishing

This Focus Area includes many popular fishing spots, and public access to the stream and parking facilities are readily available particularly along the secondary roads in this Focus Area. The patchwork of fens, wetlands, bogs, and swamps located in this Focus Area help maintain the level of water quality necessary to support robust native and non-native fish populations that include brown trout, brook trout, and rainbow trout. These fish, and other aquatic species, are fed and enriched by the fens, wetlands, and swamps, which provide critical organic inputs to the stream's ecosystem. The abundance of fish is complimented by numerous points of public access, offering exceptional fishing opportunities for anglers in Tompkins County. While regular stocking of sport fish in this Focus Area enhances these fishing opportunities, non-native fish also compete with native fish populations, suggesting a need to balance the benefits against the potential impacts on biodiversity.

## Water Quality

Maintaining high quality surface and groundwater supplies in this Focus Area is essential because lands in this area directly impact the drinking water supply for Cornell University and the habitat of many unique and rare water-loving plant species. Groundwater is the source of nutrients for many of the fens and swamps in this Focus Area, providing a stellar example of the many locations of groundwater and surface water interaction in Tompkins County.

Wetlands in this Focus Area constitute one of the highest functioning, largest, and most notable wetlands complexes in the County. These wetlands provide essential habitat, water filtration, and flood storage,

though development encroaching on riparian areas and designated floodplains, particularly between Freeville and McLean, interferes with these capabilities.

## Sustainable Agriculture

Farming is an important part of the landscape and economy in this Focus Area. The Focus Area is wholly located within an Agricultural Resources Focus Area, as identified in the Tompkins County Comprehensive Plan; substantially located within Agricultural District #1; and includes many active farms and some of Tompkins County's highest quality agricultural soils. Although planning efforts for sustainable agriculture will be explored as part of the Agricultural Resources Focus Areas Project, when that project is undertaken by County Planning in the future, it is identified here because it is certainly a key benefit provided by the natural resources and soils in this Area.

<sup>1</sup> New York Natural Heritage Program, New York State Department of Environmental Conservation, May 2005. Biodiversity Databases, Element Occurrence Record Digital Data Set. Albany, New York.



*Farming is an important part of the landscape and economy in this Focus Area.*

## Protection and Management Issues

### Critical Habitat and Biodiversity

n Although specific habitat size requirements vary by habitat type and from species to species, contiguous open space of at least 135 acres is generally needed to support diversity and abundance in plant and animal communities, and to enhance species survival by providing habitat for larger populations of animals and allowing for species movement and migration. Many species; however, are more

sensitive to habitat size and generally require a much larger contiguous area of at least 6,000 acres for suitable habitat. Though relatively small and isolated, enhancing connections between already protected lands, such as the Finger Lakes Land Trust preserve and Natural National Landmark, would establish a larger and more contiguous area of habitat that is also better suited to species propagation and migration.

- ▢ Wildlife corridors promote genetic diversity among species and help counter the negative effects of habitat fragmentation by connecting otherwise isolated patches of suitable habitat.
- ▢ The introduction of non-native species, pesticides, herbicides, and fertilizer can inhibit growth of native plants critical to biodiversity.
- ▢ Beavers physically alter habitats by cutting down trees, building dams, digging canals and building lodges. This activity affects the distribution of many other plant and animal species. In some situations beavers are desirable, whereas in other circumstances their presence may be detrimental to habitat management goals. As a result, areas inhabited by beaver may require active beaver management. The nature of the management depends on the particular conditions and resource priorities of the site.
- ▢ There is not enough protected or actively managed grassland habitat in the County. Patches of at least 150 acres in size (or smaller patches located in close proximity) are necessary to support viable populations of grassland communities. In the southern portion of this Focus Area, habitat patches of 150 acres or more are needed to provide ample bird habitat. Modified land management practices can also enhance the availability of high-quality habitat.
- ▢ Wetlands and ponds are sometimes filled or degraded, which has a negative impact on the ability of those systems to support wetland and pond species. Large wetlands (>5 acres) provide critical habitat, and smaller wetlands serve as “stepping stones” to provide habitat connections. Wetlands and pond areas that are isolated and small in size cannot support certain wetland and pond species of greatest conservation need. Many wetland bird communities depend on their local habitat, as well as the wetlands within a two-mile radius.
- ▢ Fens are particularly vulnerable to the impacts from invasive species and use of herbicides, pesticides, and fertilizers within the fens and on adjacent lands.
- ▢ Some pond species, such as snapping turtles, are vulnerable to high mortality on roads during the nesting season.
- ▢ Species that live in and around stream corridors and floodplains require clean water to thrive. Poorly managed riparian areas, and riparian areas that are cleared for development, negatively impact water quality and reduce the viability of these habitat areas.
- ▢ Stream relocation and management can limit natural flooding and channel meandering, which provide vital aquatic habitats.
- ▢ Illegal collection of seeds, plants, and animals can have a negative impact on plant and animal populations that are critical to biodiversity in this region.
- ▢ Species found near frequently used trails are sensitive to disturbance by people going off-trail. Maintaining trails not only provides for a better educational or recreational experience, but also encourages people to stay on trails, thereby limiting the impact of recreational use on sensitive areas. Because of the sensitivity of the species in this Focus Area, this is particularly important for the trails in the designated preserves of this Focus Area.
- ▢ Overgrazing by whitetail deer can inhibit native plant growth, forest diversity, and regeneration.
- ▢ When streambank and upland areas erode and become bare, water quality and the health of aquatic species are compromised (by increases in sediment and other pollutants that don't get filtered out by vegetation, and higher water temperatures resulting from lack of shade from trees and other tall vegetation). Although specific buffer needs vary from site to site based on topography, vegetation, soils, and land uses, in general a 100-foot vegetated buffer is the minimum needed to provide the filtration necessary for nutrient and pollutant removal and to prevent excessive temperature fluctuations. A wider buffer width may be required for bank stabilization, improved habitat conditions, or additional water filtration, depending on local site characteristics.



*When streambanks erode and become bare, water quality and the health of aquatic species are compromised.*

- ▭ When the amount of surface water runoff increases as a result of development, streams may become wider and shallower causing increases in water temperature and reductions in the suitability of streams for fish propagation and survival.
- ▭ Use of pesticides and herbicides in areas adjacent to key aquatic habitat can introduce these pollutants into the water and negatively affect habitat for native aquatic species.
- ▭ Introduced sport fish species can compete against native fish populations and limit the survival rate of immature native fish.
- ▭ The quality of fens varies from site to site and a more detailed assessment of the area would help establish protection and management priorities for this area.

### Fishing

- ▭ Although roads and bridge crossings provide points of entry to the stream, parking facilities associated with these sites could be expanded and enhanced with additional signage.
- ▭ Pollutants in the waters, such as sediment, pesticides and herbicides, and inputs from atmospheric deposition, can negatively impact fish populations and raise health concerns for fish consumption. Given the abundant opportunities for fishing in this Focus Area, addressing water quality concerns is critical.
- ▭ When streambanks become eroded, vegetation can no longer filter out sediment and other pollutants, and water temperatures rise because there are no longer trees and tall grasses along the shore to provide shade. These effects negatively impact water quality and compromise the health of aquatic species. Although specific buffer needs vary from site to site based on topography, vegetation, soils, and land uses, in general a 100-foot vegetated buffer is the minimum needed to provide the filtration necessary for nutrient and pollutant removal and to prevent excessive temperature fluctuations. A wider buffer width may be required for bank stabilization or additional water filtration, depending on local site characteristics.
- ▭ Fallen trees in creeks can also provide important habitat for fish, and should not be removed unless there is the potential for causing significant flooding or damage to infrastructure.

- ▭ When land is developed and stormwater is not managed on-site to allow for controlled release, the stormwater runs quickly off the land at increased speeds, in greater volumes, and with more sediment and pollution than before development. Increased stormwater runoff can also cause streams to widen to accommodate the additional runoff during storm events. During low flow events, water flowing through these widened stream channels slows and deposits sediment making the stream shallower. These wider, shallower streams may, in turn, increase the frequency of flooding.
- ▭ When the amount of surface water runoff increases as a result of development, streams may become wider and shallower causing increases in water temperature and reductions in the suitability of streams for fish propagation and survival.
- ▭ Wetlands absorb, store, and gradually release water over time. When it rains, wetlands absorb this water, and then gradually release it into nearby streams. In this way, wetlands play an important role in maintaining stream flow during dry periods.

### Water Quality

- ▭ Pollutants in the waters (such as sediment, pesticides and herbicides, fecal contamination and other inputs) can negatively impact human health and increase the costs of treating drinking water. Vegetated buffers along permanent and intermittently flowing watercourses, wetlands, and associated floodplains help filter pollutants from water, and are critical for sustaining water quality. Although specific buffer needs vary from site to site based on topography, vegetation, soils, and land uses, in general a 100-foot vegetated buffer is the minimum needed to provide nutrient and pollutant removal. A wider buffer width may be required for bank stabilization or additional water filtration, depending on local site characteristics.
- ▭ Excavation of gravel from streams, and other in-stream management activities, can cause erosion and change the natural course of the stream.
- ▭ When areas are developed, precipitation and runoff flowing across developed areas accumulate pollutants, such as sediment and oil and gas products.
- ▭ As water runs off the landscape and into streams below, it accumulates pollutants (such as sediment,

bacteria, pesticides, and herbicides) that can negatively impact water quality. Steep slopes and shallow soils in some portions of this Focus Area reduce the ability of the landscape to absorb rainwater, and therefore increase the potential for runoff. Land management practices designed to minimize the amount of pollutants entering runoff are particularly critical in these areas.

- n Water flowing through roadside ditches eventually enters a stream and or a lake. Proper management of roads and roadside ditches is important in limiting the amount of pollution and sediment that enters streams and lakes and the spread of invasive species.

- n Many of the key water resources in this Focus Area are affected by activities that occur in the upper portions of the watershed. As a result, water resource management efforts must address issues that extend beyond the boundaries of the Focus Area.

### Sustainable Agriculture

- n Planning for sustainable agriculture will largely be done as part of the Agricultural Resources Focus Areas Project, and protection and management issues will be identified at that time.

## Priority Actions for The Fens

The Natural Features Focus Area Project has identified 35 priority action items to be initiated over the next five years. The action items have been established to bolster and coordinate the region's many existing conservation efforts. They are not intended to replace or replicate those efforts. The action items reflect the broad range of unique uses in the identified Focus Areas. Below is a list of actions that are particularly relevant to The Fens Focus Area. For a complete list of actions and designation of principal agencies that will lead implementation efforts please see the *Implementation of Priority Actions* section of the complete county-wide plan.

### Fishing

- è Acquire and build additional parking areas for fishing access, as opportunities arise. Construct parking at least 100 feet from stream and use pervious paving materials where possible to limit the impact of new parking areas on water quality. Public access should be limited to less sensitive areas, particularly in this Focus Area.
- è Establish accessible fishing locations at publicly owned parks and creeks where fishing opportunities are already located, as opportunities arise.

### Water Quality

- è Encourage semi-pervious paving, bioretention, and infiltration practices.

- è Provide education about and access to hydrologically sensitive area data through the Natural Resources Inventory (NRI) on-line interactive mapping tool.
- è Educate highway departments about the impacts of roadside ditching on water quality and water quantity, and provide highway departments with information about appropriate best management practices to address this issue.

### Critical Habitat and Biodiversity

- è Work with municipalities to protect wetlands and vernal pools smaller than 12.4 acres in size and not regulated by the NYS Department of Environmental Conservation.
- è Map small wetlands and vernal pools using data on hydrologically sensitive areas.

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## Water Quality

- è Encourage semi-pervious paving, bioretention, and infiltration practices.
- è Provide education about and access to hydrologically sensitive area data through the Natural Resources Inventory (NRI) on-line interactive mapping tool.
- è Educate highway departments about the impacts of roadside ditching on water quality and water quantity as well as on the spread of invasive species, and provide highway departments with information about appropriate best management practices to address this issue.

## Critical Habitat and Biodiversity

- è Work with municipalities to protect wetlands and vernal pools smaller than 12.4 acres in size and not regulated by the NYS Department of Environmental Conservation.
- è Map small wetlands and vernal pools using data on hydrologically sensitive areas.

## Invasive Species and Native Plants

- è Inventory and identify high priority areas for the control of invasive species.
- è Establish a coordinated approach for distributing invasive species information to landowners throughout identified high priority areas.
- è Develop and distribute a list of popular landscaping plants and appropriate native species substitutions.
- è Conduct a comprehensive “natural lawns and gardens” campaign to limit the use of pesticides, herbicides, and fertilizer, and increase the use of native plants in landscaping.

## Rural Landowner Outreach and Education

- è Enhance existing rural landowner education efforts with an emphasis on invasive species, wetlands management, grassland habitat, and targeted outreach to new rural landowners.
- è Identify and coordinate the dissemination of information about grants available to private landowners for habitat management and enhancement.

## Technical Assistance for Municipalities

- è Provide technical assistance to municipalities working on projects that implement the recommendations of the plan.
- è Provide training and information to municipalities on the full-range of conservation tools available, the Plan and the Natural Resources Inventory, flood plain management strategies, and vernal pool and small wetland habitat conservation.

## Coordination

- è Convene a group of partners (Tompkins County Conservation Partners) involved in local conservation efforts twice a year. Meetings will facilitate regular information sharing as well as coordinated educational efforts such as periodic field trips for municipal officials to key sites in the Focus Areas.

## Land Protection in Priority Areas

- è Protect priority protection areas through partnerships with area agencies and municipalities by purchasing land and acquiring conservation easements.
- è Educate landowners about tax incentives available for conservation efforts through various formats including town/village newsletters with special emphasis on landowners within the open space system.
- è Develop or identify a model conservation zoning ordinance for use in key portions of the Focus Areas.
- è Engage key land protection stakeholders to assess the financial resources available for land conservation and work to establish additional funding as needed.