

Appendix D
Environmental Assessment

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Environmental inventory and considerations

As mentioned above, the Town of Brighton contains abundant environmental resources, providing a “green infrastructure” that delivers a range of community benefits. Some of these resources and the benefits they deliver include:

- *State-owned land.* Approximately 46% of the town is state-owned and part of the Forest Preserve. This land is primarily in the Wild Forest classification, with some in the St. Regis Canoe Area, as well as a small amount of State Administrative land. State-owned lands are accessible for public recreation, and they can serve as the core of a network of protection of important environmental features.
 - *Intact forests, large wetlands, and expansive waterways.* Brighton is part of a larger ecosystem and eco-region, but even within that larger area many of its environmental resources are exemplary. The amount of intact forest in the town, its large wetland complexes, and its expansive waterways and water resources are all significant on a regional level.
 - *Local agriculture.* Although limited as a land use, Brighton is home to some local agricultural production. This generates food and revenue, and is a valuable component of the community, especially during an era when more attention is being paid to locally-grown food products.
 - *Scenic views.* Many of the lakes, fields, and wetlands within Brighton afford beautiful, memorable, and culturally-important views of the landscape.
 - *Forest resources.* Approximately 38% of the town is private land in the resource management classification, and much of this is forestland that is suitable for logging. Some of these lands are also used for other economic activity, such as maple sugaring. These lands are also part of the large area of mostly-intact forests that are mentioned above, and which, together with forests on state lands, provide large blocks of habitat for wildlife.
 - *Wetlands.* Approximately a fifth of the town is wetland, and much of this is in large wetland complexes that are remarkable even within the Adirondacks for their size and scope. Brighton has many wetlands which are boreal in character, which is a unique habitat type for the northeastern United States. In general, wetlands enhance water quality and provide rich wildlife habitat.
 - *Water features.* The lakes, streams, and aquifers of Brighton are extensive, as is depicted on the accompanying maps. The town’s lakes and rivers are an obvious attraction for residents and visitors, cherished for their beauty and recreational value. They also provide important wildlife habitat as well as critical water resources for communities and wildlife alike, in the town as well as downstream.
 - *Wildlife habitat.* The town’s wildlife range from the common to the rare. Some species, such as the boreal birds that thrive in Brighton’s large wetland complexes, are at the southern extent of their ranges, and are the draw to attract birders from hundreds of miles away. Other species are hunted or fished, and provide both a food source and a culturally-important connection to the forests of the town. Still other species are elusive and seldom-seen, but are a testament to the wild nature of the town.
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Brighton contains the following habitat types¹

- Cropland
- Deciduous wetland
- Evergreen wetland
- Evergreen-northern hardwood
- Old field/pasture
- Open water
- Shrub swamp
- Spruce-fir
- Sugar maple mesic forest

Brighton is at the headwaters of several major watersheds, including:

- Lake Champlain (Saranac/Chazy)
- St. Lawrence (primarily St. Regis, and a tiny corner of Salmon/Trout)

Protecting environmental features and wildlife habitats holistically requires an ecosystem-scale approach. The maps attached to this Smart Growth Plan indicate buffers for wetlands and water features. The intention of these is to show that it is often not enough to protect a wetland or a stream without considering the impact of development on adjacent upland areas. Development adjacent to sensitive environmental features also needs to be considered carefully. In some cases, it may be advisable to try to avoid development in these locations entirely; in other cases, it may be possible to try to minimize the impact of development in these areas. The buffers shown in the attached maps are described in the table below:

Feature	Buffer width shown	Rationale	Sources
Water features (lakes, streams and rivers)	100 meters	Buffering lakes, streams and rivers from development and other human uses protects water quality, wildlife habitat, and important habitat connectivity routes for wildlife. These riparian buffers function best when they are vegetated with native vegetation; such vegetation also shades the stream or river and helps to regulate the aquatic environment. Although findings for the buffer widths required to ensure a variety of benefits range widely, expert research recommends a buffer of 100 meters to achieve water quality protection and conservation of wildlife habitat.	Environmental Law Institute, 2003

¹ New York Gap Analysis Program data

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Wetlands	150 meters	As with riparian buffers, buffers around wetlands protect both water quality and wildlife habitat. Because wetlands provide critical habitat to many species, and because many amphibians and reptiles use both wetlands and surrounding uplands in the course of their life cycle, buffer widths protecting 150 meters of adjacent habitat are recommended. Where it is not possible to achieve these buffer distances in all cases, they should be considered priorities where the habitat quality of the wetland and associated upland is high.	Calhoun et al., 2005 Semlitsch and Bodie, 2003 Harper et al., 2008
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Many planning initiatives that attempt to protect wildlife habitat use a suite of focal species as a mechanism for organization. Although this analysis has not attempted to develop such a list of species, or to organize an analysis around it, future efforts might do so. Some candidate species that might be considered in such an analysis include:

- Boreal birds. The suite of birds including Lincoln’s sparrow, gray jay, and spruce grouse, are an important indicator of Brighton’s boreal habitats.
- A wide-ranging mammal such as bear or moose. Species that travel large distances illustrate the need to protect the connectivity of habitats.
- A species such as scarlet tanager which requires interior forest habitat. The interior forest habitats of the Adirondacks are, regionally, threatened by incremental development and fragmentation. Species that require this habitat are pushed out by this careless land use change.
- A wetland-dependent species such as a wetland-dependent bird or an amphibian.
- Endangered and threatened species, and Species of Greatest Conservation Need. Although there is not sufficient data to be able to say exactly which of these species are known to exist in Brighton, vertebrates which are in these categories and which could exist in Brighton² include the following:

² This list includes vertebrate species from the New York list located at <http://www.dec.ny.gov/animals/7494.html> whose potential habitat exists in Brighton, according to the New York Gap Analysis Program data and analysis. However, for amphibians and reptiles, the New York Amphibian and Reptile Atlas Project (Herp Atlas) data was used instead. For these species, therefore, this list represents a confirmed existence of the species within the town.

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Endangered

Spruce grouse
Golden eagle
(considered extirpated
from NY but people see
it in Jay, etc)
Peregrine falcon
Short eared owl
Indiana bat
Gray wolf (considered
extirpated but listed)
Cougar (considered
extirpated but listed)

Threatened

Pied billed grebe
Least bittern
Bald eagle
Northern harrier
Canada lynx (considered
extirpated but listed)

Special Concern

Jefferson salamander
Wood turtle
Common loon
American bittern
Osprey
Sharp-shinned hawk
Cooper's hawk
Northern goshawk
Red-shouldered hawk
Common nighthawk
Red-headed woodpecker
Vesper sparrow
Small-footed bat

Species of Greatest Conservation Need

Bald eagle
Cape May warbler
Tennessee warbler
Rusty blackbird
Bay-breasted warbler
Olive-sided flycatcher

Three-toed woodpecker
Spruce grouse
Blue-winged teal
Common goldeneye
American black duck
Common loon
Common nighthawk
Black-throated blue
warbler
Scarlet tanager
Louisiana waterthrush
Wood thrush
Canada warbler
Ruffed grouse
Brown thrasher
Black-billed cuckoo
American woodcock
Long-eared owl
Golden eagle
Red-shouldered hawk
Northern goshawk
Cooper's hawk
Sharp-shinned hawk
Least bittern
American bittern
Pied-billed grebe
Four-toed salamander
Eastern ribbon snake
Wood turtle
Snapping turtle
Jefferson salamander
Blue-spotted salamander
Smooth green snake
American marten
River otter
Indiana bat
Small-footed bat
Silver-haired bat
Hoary bat
Eastern red bat

Map Notes

The following map notes include descriptions of the maps in this Appendix.

Land ownership and management

Much of the Town is either state-owned land or else is private land under conservation easement. As a result, significant use limitations apply on much of the land in the Town, and a relatively small amount of land in the Town can be developed for residential, commercial, or industrial purposes. Lands shown in grey on this map are in all state land classifications, including Wild Forest, Canoe Area, and State Administrative, which are the three classifications of state land which exist in the Town.

Data sources: APA Shared GIS, DEC

Water Resources

Brighton is rich in water resources. This map shows water resources in Brighton and several adjacent towns. The features shown on the map include lakes, streams, major watershed boundaries, aquifers, and wetlands. The Town of Brighton includes three major watersheds (Saranac/Chazy-Lake Champlain, St. Regis-St. Lawrence, and Salmon/Trout-St. Lawrence). As shown on the map, a large aquifer underlies much of the town. Note that wetland data shown on this map are incomplete outside of the Town of Brighton.

Data sources: APA Shared GIS, DEC, APA cover-type wetlands projects

Water Resources Showing Ecological Buffers

Brighton's lakes, streams, and wetlands provide water, as well as habitat and corridors for movement for many wildlife species. In order to plan for the protection of these qualities, it is necessary to think beyond boundaries and consider the upland adjacent to the edge of the lake, stream, or wetland. This map shows the ecological buffers that must be taken into consideration in order to fully protect these features and their benefits. The size and rationale of these buffers is described more fully in the environmental inventory section above.

Data sources: APA Shared GIS, and APA cover-type wetlands projects

Land Cover

The New York Gap Analysis Program was an effort to classify the varied habitats of New York State. One stage of the project involved interpreting aerial photography and classifying land cover according to a set of cover types established by the National Vegetation Classification Standard hierarchy. Brighton contains a limited number of land cover types, which are listed in the environmental inventory above. Much of Brighton is in a few different forest classifications, several wetland classifications, and open water.

Data source: New York Gap Analysis Program (GAP)

Brighton Area Lakes: Aquatic Invasive Status

Aquatic invasive species represent a major threat to water quality, aquatic habitats, and recreational opportunities. The Adirondack Park Invasive Plant Program (APIPP) conducts monitoring for the presence or absence of aquatic invasives such as Eurasian watermilfoil in many Adirondack waterbodies, and also maintains a database of lakes at which invasive species have been detected, through APIPP or other monitoring programs. To date, Meacham Lake is the only water body within the Town of Brighton in which invasive species have been detected. Eurasian watermilfoil was detected in this lake in 2002. The map shows lakes and water bodies which have been monitored with and without the detection of invasive species, as well as lakes at which formally monitoring has not been conducted by the APIPP.

Data source: Adirondack Plant Invasive Plant Program

Core Wildlife Habitat

Because much of the Town of Brighton is forested with limited roads and development, it provides excellent wildlife habitat. Large blocks of intact forest offer critical core habitat for many wide-ranging species and interior forest species that are sensitive to development and human disturbance. This map shows large forest blocks in light green. This is forest habitat (as defined in the NY GAP data) that is greater than 200 meters from major roads and 100 meters from smaller roads and “altered” land covers, and which forms forest stands larger than 55 hectares. The 55 hectare threshold has been found to be important in providing core habitat for many species. (Environmental Land Institute, 2003.)

Also shown on this map are lakes, wetlands, and large wetland complexes categorized by the Adirondack Park Agency as “megawetlands.” These all offer high quality habitat for many species of wildlife. Brighton is the location of many of the megawetlands categorized in this effort, including: Osgood River Muskeg, Spitfire Bog, Barnum Pond Bog, Hays Brook Swamp, Heron Marsh, Jones Pond Outlet, Meacham Lake Swamp, and Quebec Bog.

Data source: APA Shared GIS, New York Gap Analysis Program, APA cover-type wetlands projects.

Modeled and Observed Wildlife Data

Comprehensive data on the local presence of wildlife species is lacking in the Town of Brighton. This map shows some of the available data, including sites at which particular species have been observed, the vicinities of rare and endangered species, and habitat modeling efforts where suitable habitat is predicted for particular species. It is important to note that these modeling efforts do not show confirmed habitat, and may overestimate the extent of wildlife habitat. The two modeled habitat data layers shown are: potential spruce grouse habitat (in grey), as modeled by the Adirondack Park Agency and SUNY Plattsburgh, and potential deer wintering yards (in light green), as modeled by SUNY ESF Adirondack Ecological Center as part of the Unit Management Planning-GIS project. The cross-hatched areas show the vicinities of rare and endangered plant and animal species that are recorded in the database of the New York Natural Heritage Program. Because of the sensitivity of this data, the Heritage Program requires that only the general vicinity, and not the specific location, of these species observations, be depicted. The

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red dots are moose sighting locations, as reported to and collected by the Department of Environmental Conservation. Lastly, the green dots show the locations where the Wildlife Conservation Society has conducted surveys for a suite of 13 boreal birds between 2004 - 2008, including such species as three-toed woodpecker, spruce grouse, Lincoln's sparrow, yellow palm warbler, and rusty blackbird. The size of these dots gives an indication of the abundance of boreal birds at these sites; as the legend indicates, the dots are sized according to the average number of targeted birds that have been detected during each survey.

Data sources: Wildlife Conservation Society, New York Natural Heritage Program, SUNY ESF Adirondack Ecological Center, Adirondack Park Agency, Department of Environmental Conservation.

Acknowledgements

The Wildlife Conservation Society's Adirondack Program served as the non-profit partner guiding the environmental analysis for this Smart Growth Plan. WCS is a local resource, based in Saranac Lake, and is interested in helping communities identify wildlife-friendly development strategies. WCS' Adirondack Program promotes wildlife conservation and healthy human communities in the Adirondacks through applied research, community partnerships, and public outreach.

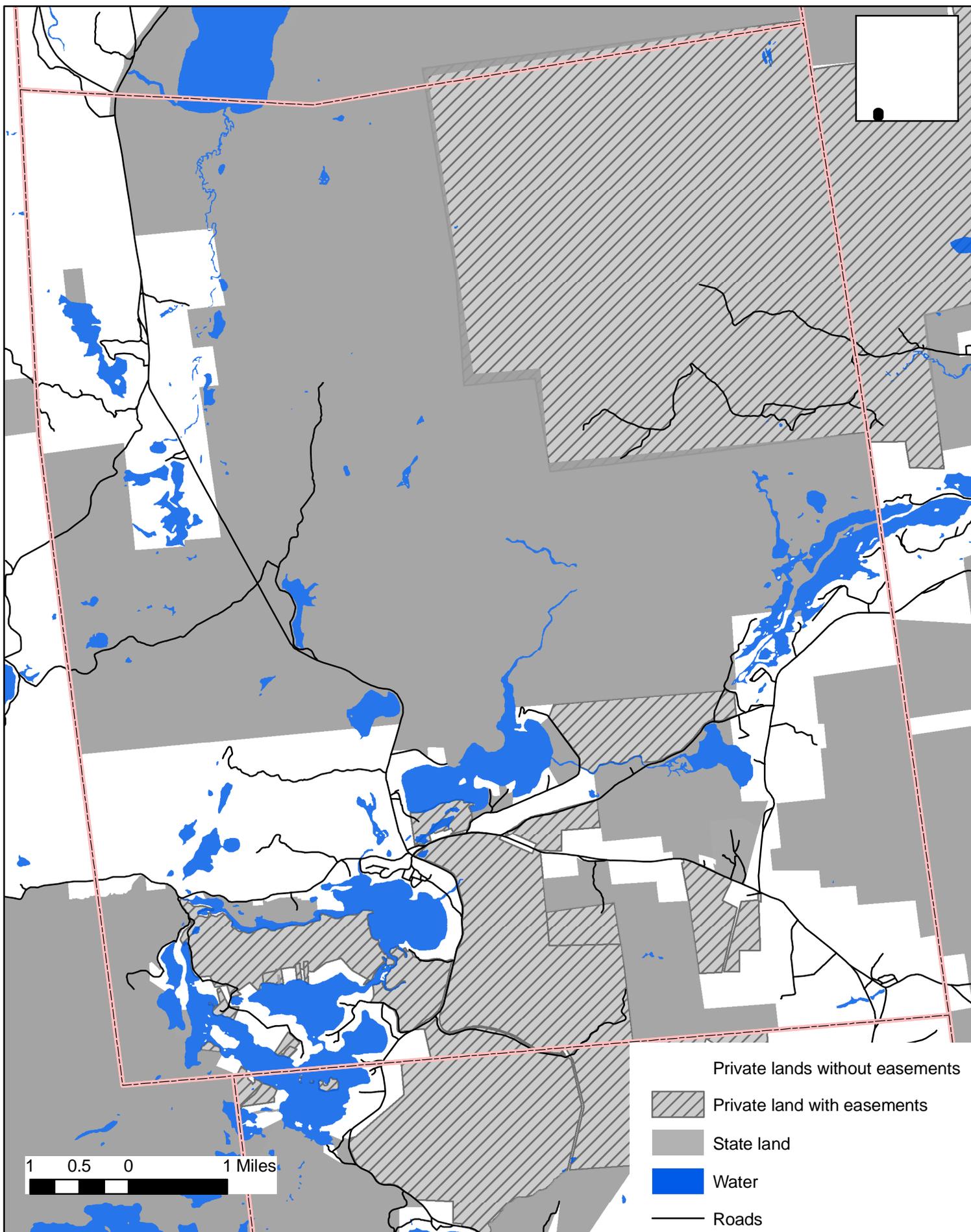
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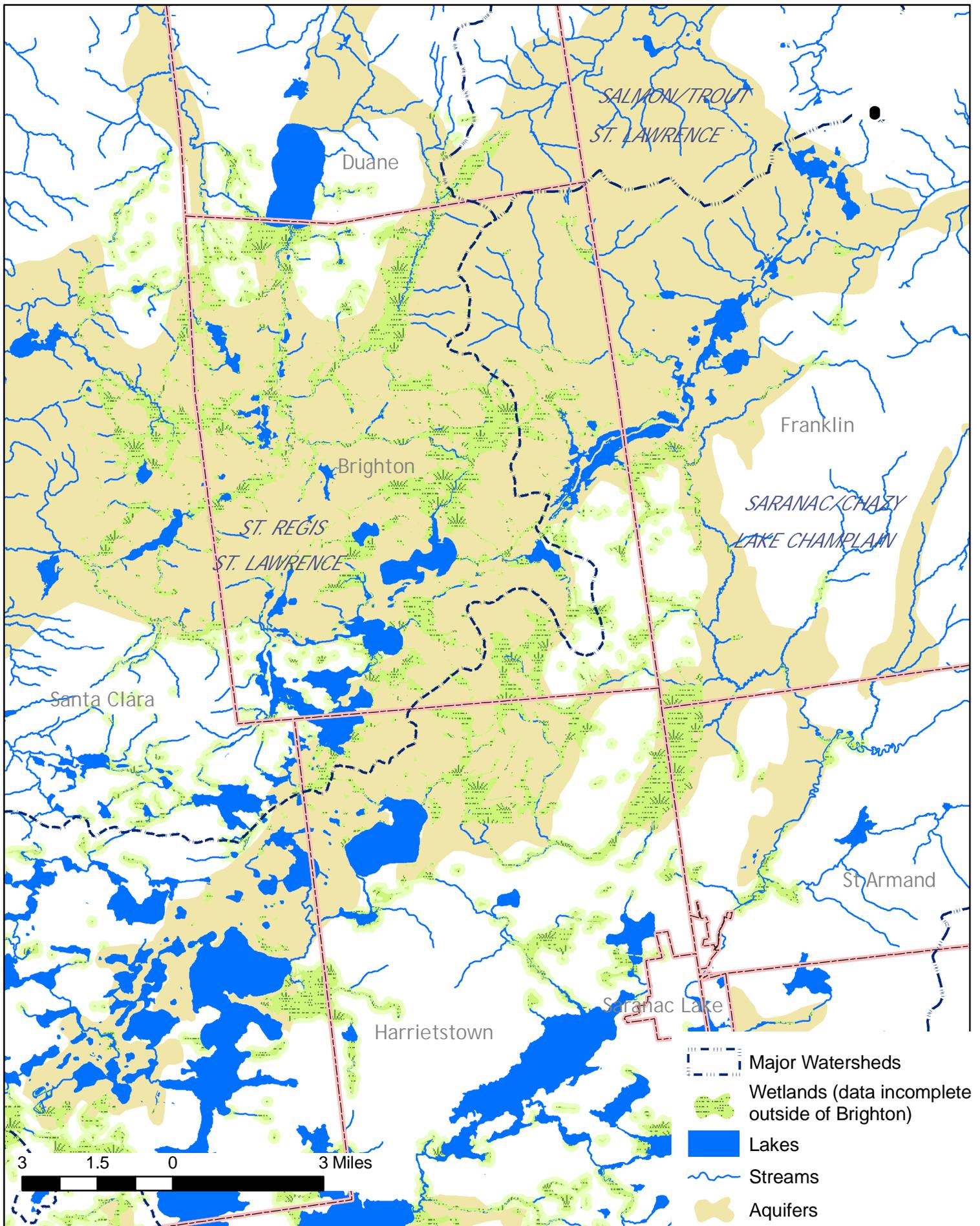
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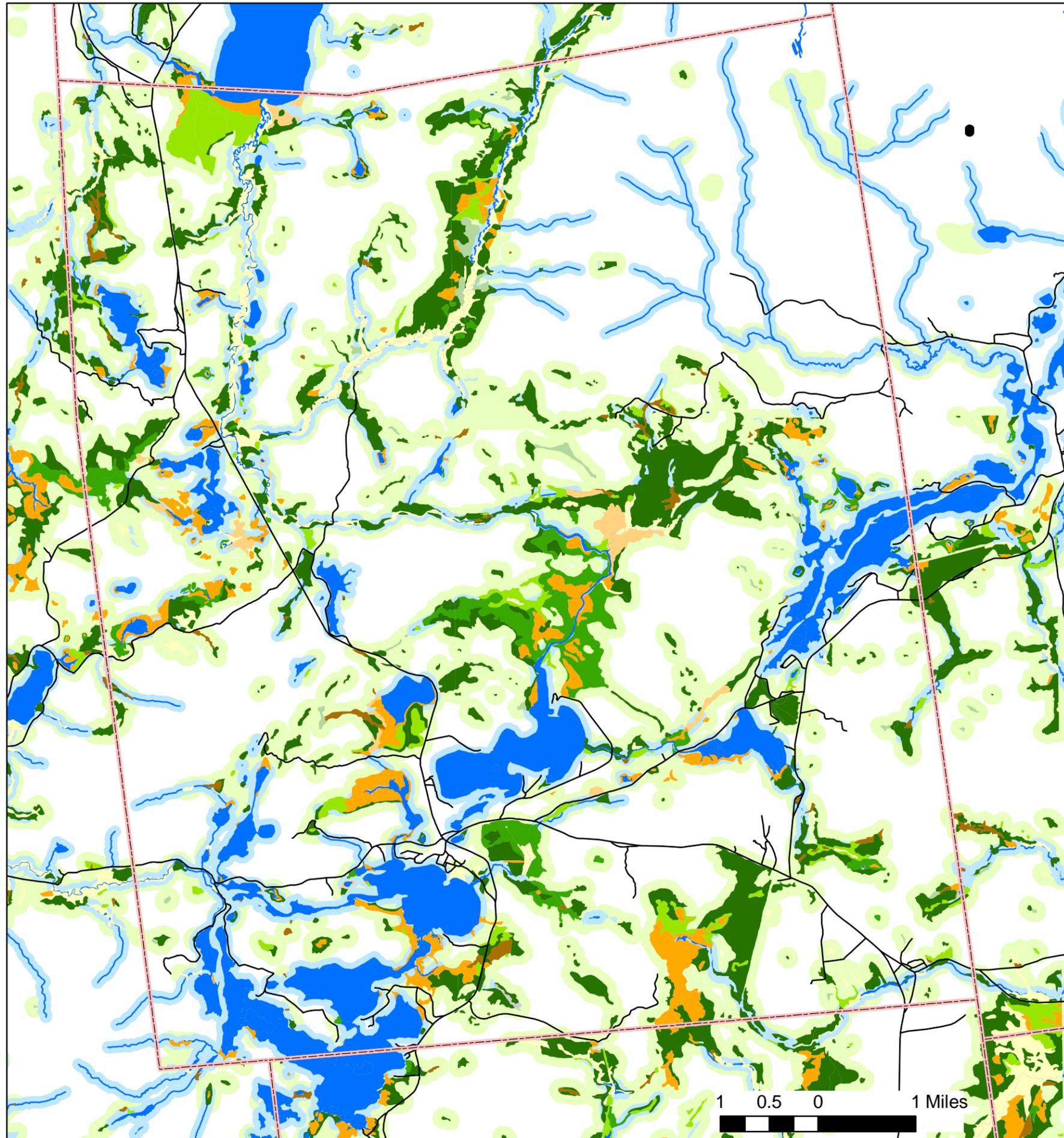
Town of Brighton Smart Growth Plan Land Ownership and Management



Town of Brighton Smart Growth Plan

Water Resources - Including Lakes, Streams, Aquifers and Wetlands





Town of Brighton Smart Growth Plan
 Water Resources
 Showing ecological buffers around
 lakes, streams and wetlands

Legend

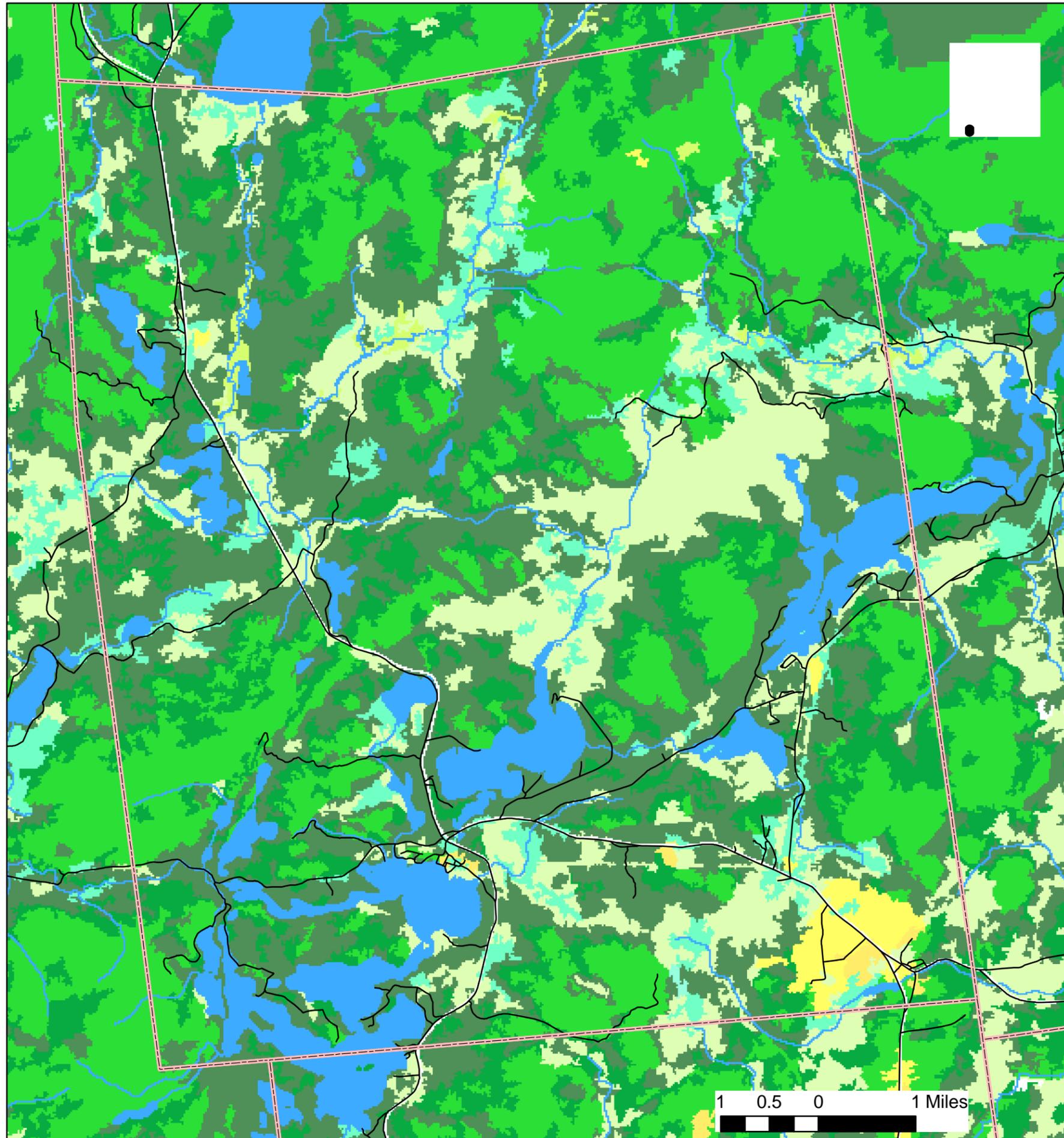
-  Municipalities
-  Roads
-  Lakes
-  Streams
-  Ecological buffer around lakes and streams

Wetlands

Class1 Wetland Descriptions

-  EM1
-  FO1
-  FO2
-  FO4
-  FO5
-  OW
-  SS1
-  SS2
-  SS3
-  SS4
-  SS5
-  Ecological buffer around wetlands

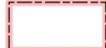




Town of Brighton Smart Growth Plan
Land Cover

Data from New York Gap Analysis Program (GAP)

Legend

 Municipalities

 Roads

Cover type classifications

 Cropland

 Old field/pasture

 Deciduous wetland

 Evergreen wetland

 Shrub swamp

 Emergent marsh/open fen/wet meadow

 Open water

FORESTS

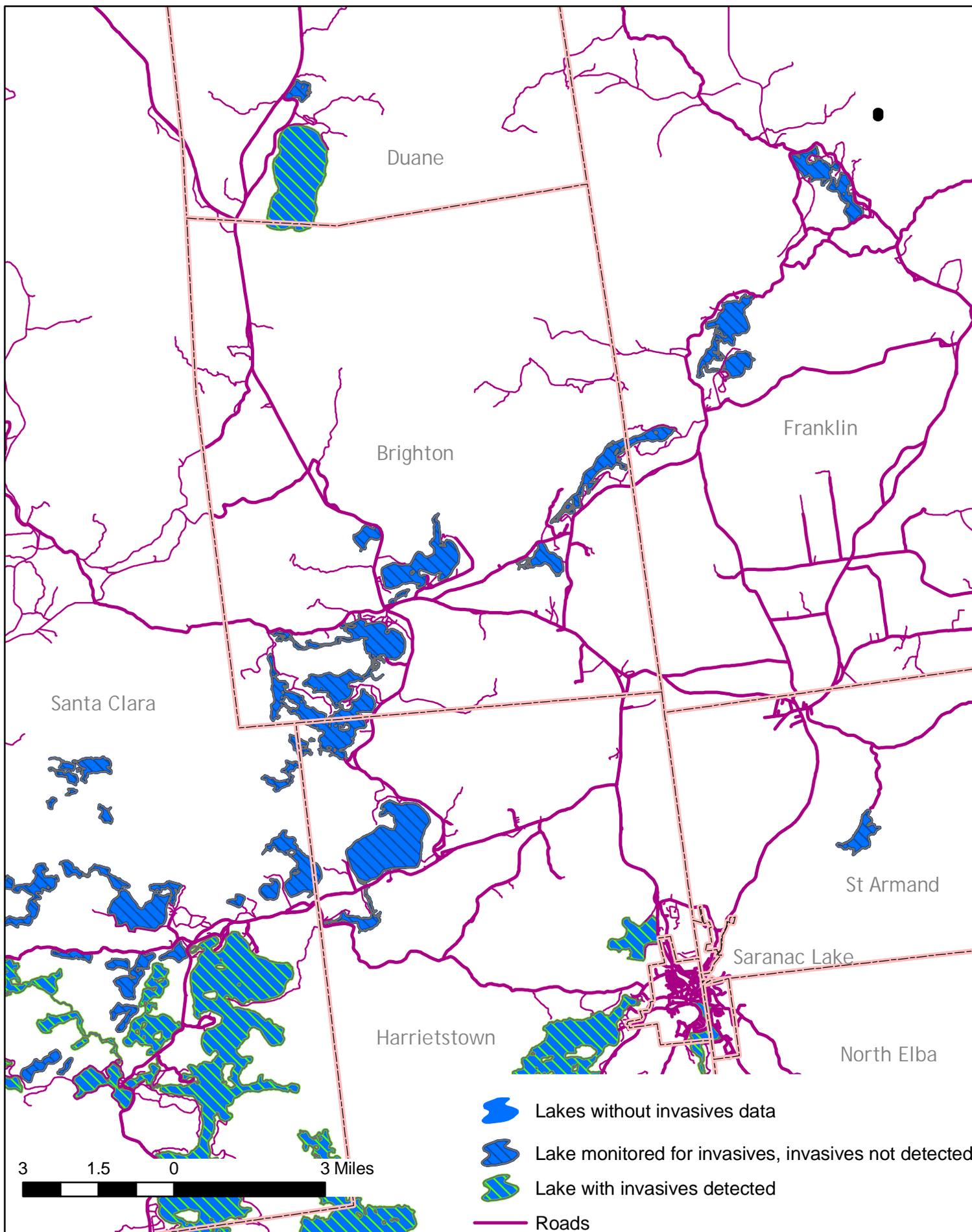
 Spruce-fir

 Sugar maple mesic

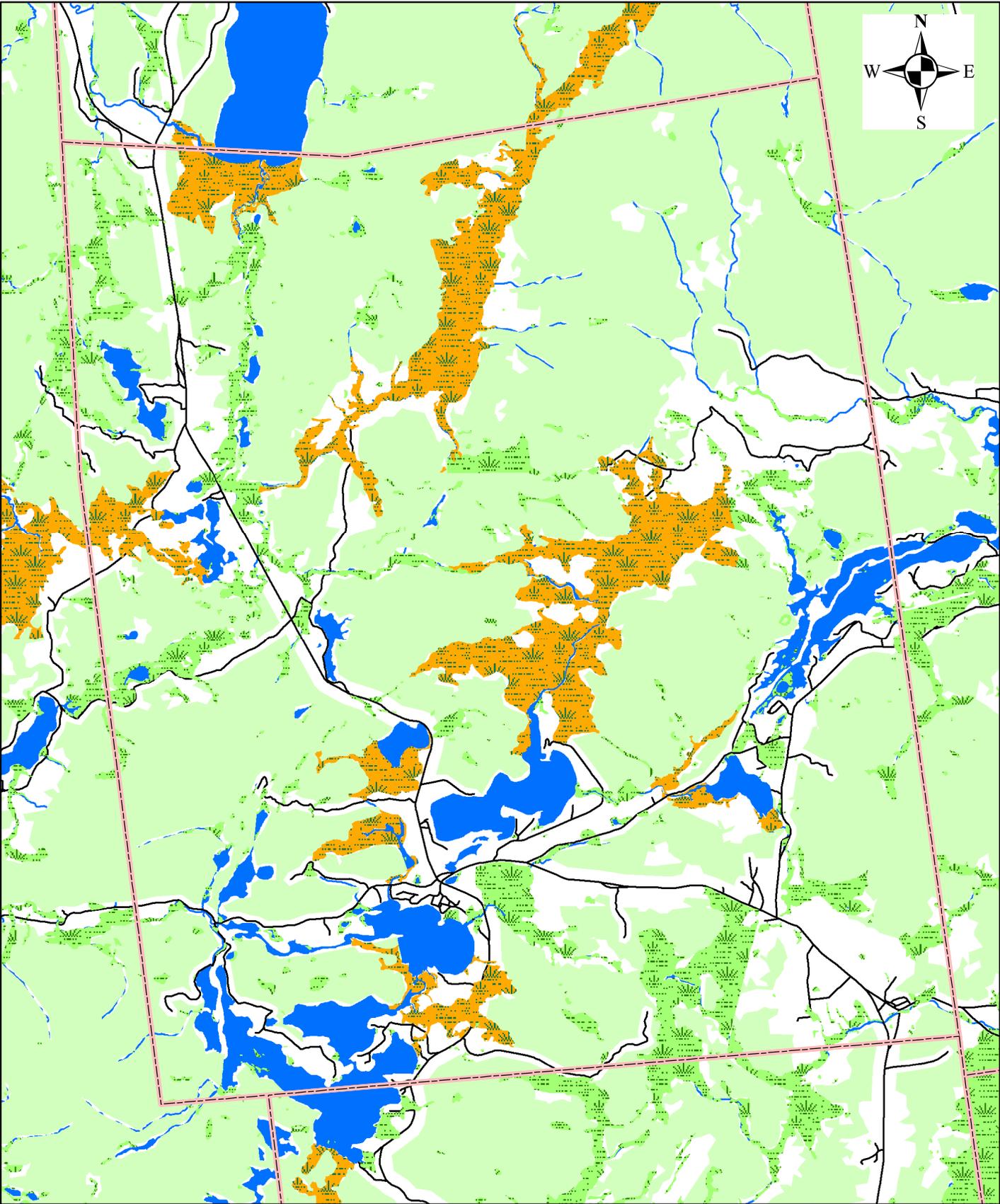
 Evergreen-northern hardwood

1 0.5 0 1 Miles

Town of Brighton Smart Growth Plan Brighton Area Lakes: Aquatic Invasive Status



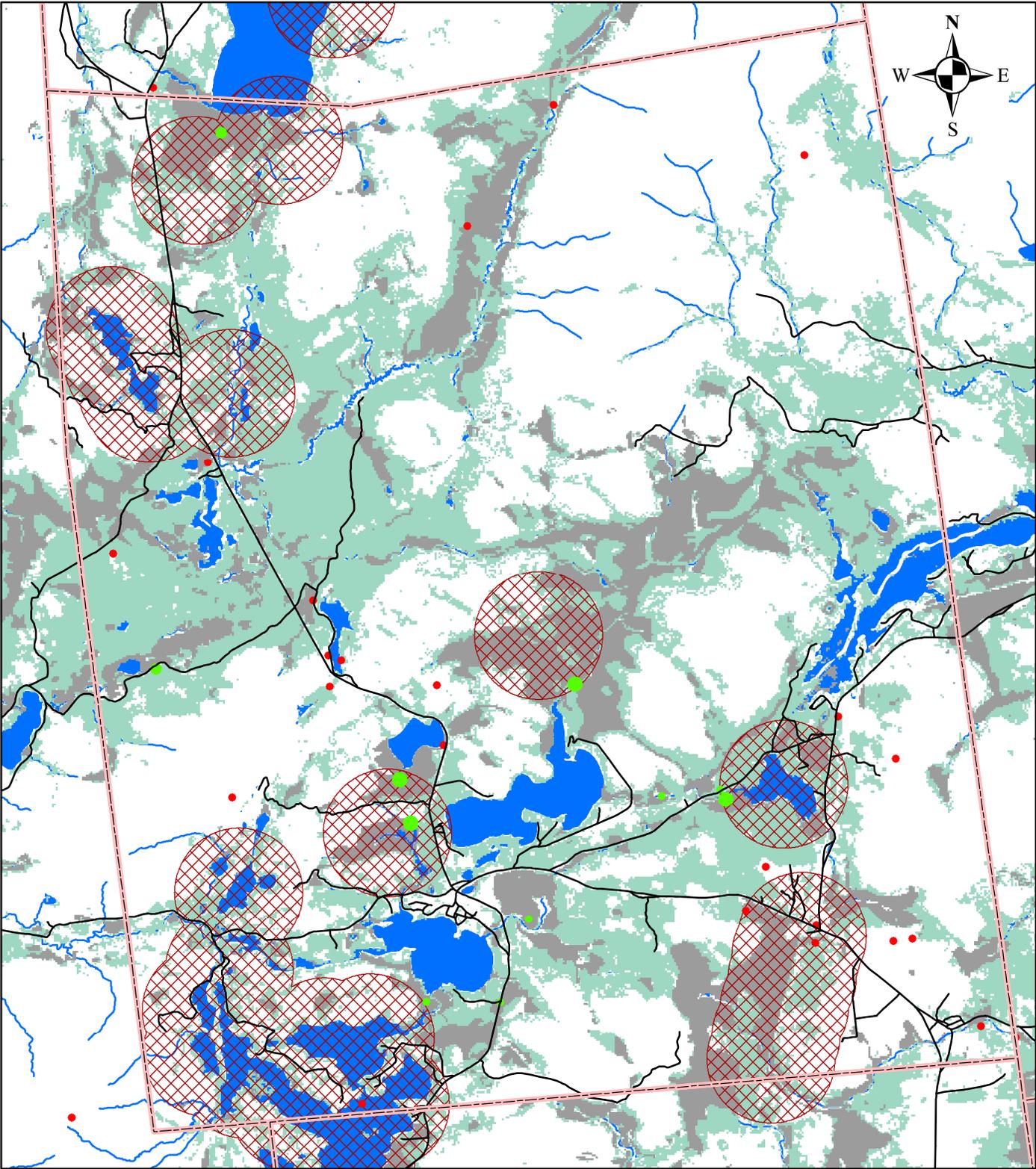
Town of Brighton Smart Growth Plan Core Wildlife Habitat



1 0.5 0 1 Miles

- Core forest habitat
- Wetlands classified as "megawetlands"
- Other wetlands
- Lakes

Town of Brighton Smart Growth Plan Modeled and Observed Wildlife Data



- Recorded moose sightings
- ⊗ Vicinities of New York Natural Heritage Rare Plant and Animal Record Locations
- ⊖ Modeled potential spruce grouse habitat
- ⊖ Modeled potential deer wintering yards

WCS Boreal bird survey locations
Average number of boreal birds detected at this site per survey

- 1 - 3
- 3.1 - 6
- 6.1 - 10



- Roads
- Water