

NATURAL AREAS AND WILDLIFE IN YOUR COMMUNITY



Hudson River Estuary Program

A Program of the New York State Department of Environmental Conservation

A Habitat Summary Prepared for the Town of Gallatin

This Habitat Summary was completed in August 2021, providing information for land-use planning and decision-making as requested by the Town of Gallatin. It identifies significant ecosystems in the town, including streams, forests, wetlands, and other natural areas with important biological values. This summary is based only on existing information available to the New York State Department of Environmental Conservation (DEC) and its partners, and, therefore should not be considered a complete inventory. Additional information about habitats in our region can be found in the *Wildlife and Habitat Conservation Framework* developed by the Hudson River Estuary Program (Penhollow et al. 2006) and in the *Biodiversity Assessment Manual for the Hudson River Estuary Corridor* developed by Hudsonia and published by DEC (Kiviat and Stevens 2001).

Ecosystems of the estuary watershed—wetlands, forests, stream corridors, grasslands, and shrublands—are not only habitat for abundant fish and wildlife, but also support the estuary and provide many vital benefits to human communities. These ecosystems help to keep drinking water and air clean, moderate temperature, filter pollutants, and absorb floodwaters. They also provide opportunity for outdoor recreation and education, and create the scenery and sense of place that is unique to the Hudson Valley. Local land-use planning efforts are instrumental in balancing future development with protection of these resources. By conserving sufficient habitat to support the region's astonishing diversity of plants and animals, communities can ensure that healthy, resilient ecosystems—and the benefits they provide—are available to future generations. For more information on local conservation approaches, see *Conserving Natural Areas and Wildlife in Your Community: Smart Growth Strategies for Protecting the Biological Diversity of New York's Hudson River Valley* (Strong 2008).

The Estuary Program works toward achieving key benefits:

- Clean water
- Resilient communities
- Vital estuary ecosystem
- Fish, wildlife & habitats
- Natural scenery
- Education, access, recreation, and inspiration

This document was created by the New York State Department of Environmental Conservation's Hudson River Estuary Program and Cornell University's Department of Natural Resources. The Estuary Program (<http://www.dec.ny.gov/lands/4920.html>) protects and improves the natural and scenic Hudson River watershed for all its residents. The program was created in 1987 and extends from the Troy dam to upper New York Harbor.

The Estuary Program is funded by the NYS Environmental Protection Fund. The Conservation and Land Use Program was created in partnership with Cornell University to help Hudson Valley communities learn what plants, animals, and habitats are found locally; understand the value of these resources; and increase their capacity to identify, prioritize, and conserve important natural areas through informed decision-making. Additional information about Hudson Valley habitats can be found on DEC's webpages, starting with www.dec.ny.gov/lands/5094.html.

CONTACT INFORMATION

Ingrid Haeckel

Conservation and Land Use Specialist
New York State Department of
Environmental Conservation

21 South Putt Corners Rd, New Paltz, NY 12561
ingrid.haeckel@dec.ny.gov



Department of
Environmental
Conservation

Hudson River
Estuary Program



Cornell University

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Introduction

The Hudson River Estuary and its watershed is a region of remarkable beauty, historical and economic significance, and high biological diversity. The region, comprising only 13.5% of the land area in New York, contains nearly 85% of the bird, mammal, reptile, and amphibian species found in the state (Penhollow et al., 2006). Municipalities can play a key role in conserving this natural heritage and the ecological processes that sustain it. By identifying important areas for habitat and wildlife, municipalities are better equipped to pursue conservation opportunities and make informed land-use decisions. This proactive approach to planning can help municipalities avoid the costs of urban and suburban sprawl, maintain community character and quality of life, and preserve the many benefits, or ecosystem services, that healthy, natural systems provide to present and future generations.

*An **ecosystem** is a community of animals and plants interacting with one another and with their physical environment.*

***Ecosystem services** are life-sustaining benefits we receive from nature, such as food, medicine, water purification, flood control, and pollination. Many of these services are provided for “free,” yet are worth many trillions of dollars.*

- Ecological Society of America

Summary Content

This summary includes complementary text, maps, and tables and updates a prior Habitat Summary for Gallatin produced by Karen Strong in 2010. The Habitat Summary text describes what is known about the town's important natural areas and habitats based on information in databases of the New York State Department of Environmental Conservation (DEC) and the New York Natural Heritage Program (NYNHP) and a review of local studies available at the time of writing. The text details information contained in the following five maps:

- [Figure 1: Land Use and Land Cover](#)
- [Figure 2: Important Biodiversity Areas](#)
- [Figure 3: Streams and Watersheds](#)
- [Figure 4: Wetlands](#)
- [Figure 5: Large Forests](#)

Summary tables in the report include:

- [Table 1: Land Use and Land Cover Area and Percent](#)
- [Table 2: Species of Conservation Concern](#)
- [Table 3: Watershed Land Cover](#)
- [Table 4: Waterbody Assessment](#)

At the end of the summary, [references](#) identify the sources of information in this document and places to find more information. [General conservation measures](#) for protecting natural areas and wildlife are also provided.

Links in the summary will direct you to websites, publications, and fact sheets for supplemental information. Most of the GIS layers shown in the habitat summary maps are available for download from the [New York GIS Clearinghouse](#); others are available upon request from the Estuary Program. A complementary online map application, the [Hudson Valley Natural Resource Mapper](#), can be used for more interactive viewing of mapped features in the habitat summary. Attribute information for many of the individual features is available in the mapper, along with links to more information, including GIS data sources. In addition, many of the data and additional layers are available for viewing using the [Columbia County online NRI map viewer](#).

Please note that some habitats and species identified in this document may be protected by state or federal programs. The [Environmental Resource Mapper](#) on DEC's website can help identify those resources. Please work with DEC's Region 4 Office in Schenectady and other appropriate entities as necessary.

How to use this summary

This summary provides a starting point for recognizing important natural areas in the town and surrounding areas, but is limited to existing information and is not a substitute for on-site survey and assessment. Information provided should be verified for legal purposes, including environmental review. Effective conservation occurs across property and political boundaries and, therefore, necessitates a broader view of natural landscapes. By identifying areas with high-quality resources, this summary will be especially useful for setting priorities to inform municipal planning. Habitat summaries like this have been used by communities for open space plans, comprehensive plans, natural resource inventories, and other conservation and planning actions. One Hudson Valley town used the species lists in its comprehensive plan's generic environmental impact statement, another to designate critical environmental areas. Some communities have incorporated their summaries directly into plans, while others refer to the information when writing their own documents.

Though this summary does not contain adequate detail for site planning purposes, it can be useful for environmental review. First, by identifying high quality habitats on a municipal-wide scale, it helps land-use decision-makers and applicants understand how a proposed site plan might relate to important natural areas on- and off-site. Second, the summary highlights areas that may require more detailed assessment to evaluate potential impacts. Third, the tables identify species of conservation concern that may warrant special attention during reviews. If it's not already a routine step, the planning board should consider requiring

Limitations of Maps in this Summary

Maps included here were created in a geographic information system or GIS. Information on the maps comes from different sources, produced at different times, at different scales, and for different purposes. It is often collected or developed from remote sensing data (i.e., aerial photographs, satellite imagery) or derived from paper maps. For these reasons, GIS data often contain inaccuracies from the original data, plus any errors from converting it. Therefore, maps created in GIS are approximate and best used for planning purposes. They should not be substituted for site surveys. Any resource shown on a map should be verified for legal purposes, including environmental review.

applicants to produce a current letter from the [New York Natural Heritage Program](#) that identifies rare plants, rare animals, and significant ecosystems that are known to be on or near a proposed development site. The planning board and applicants should also work closely with DEC Region 4 Permits staff to ensure regulatory requirements are met.

How to find more information

Most of the GIS data presented in the Habitat Summary maps may be obtained for free from the [New York State GIS Clearinghouse](#) or from other public websites, including the [Columbia County online NRI map viewer](#). The summary can be enhanced by local knowledge. Local studies, maps, plans, and knowledgeable residents can provide details and may reveal previously unknown, high-quality ecosystems. Ecologists at the Farmscape Ecology Program at Hawthorne Valley Farm may have additional records of county-rare plants or invertebrates. Biological information in environmental impact statements may also be useful, especially when a municipality has habitat standards for environmental review. The [2018 Columbia County Natural Resources Inventory](#) contains additional mapping and detailed descriptions of habitats and other environmental resources (Stevens and Travis 2018).

Guidance and suggestions for developing a more comprehensive natural resources inventory is available in [Creating a Natural Resources Inventory: A Guide for Communities in the Hudson River Estuary Watershed](#) (Haeckel and Heady 2014). This handbook outlines how to inventory valuable natural and cultural assets and strategies for using natural resource information in local land-use and conservation planning. Limited hard copies are available upon request for municipalities.

Conservation

Once important habitats and natural areas are identified, municipalities have numerous options to strengthen their protection, such as incorporating maps and data into comprehensive plans and zoning, developing critical environmental areas or conservation overlay districts, adopting resource protection regulations, and acquiring conservation easements for sensitive habitats, such as floodplains or wetlands and their buffers.

Included with this summary are [General Conservation Measures for Protecting Natural Areas and Wildlife](#) that can help guide Gallatin's plans and land-use decisions. Additional information on the how and why of local habitat conservation is available in [Conserving Natural Areas in Your Community: Smart Growth Strategies for Protecting the Biological Diversity of New York's Hudson River Valley](#) (Strong 2008). This handbook was published by DEC and details why towns should conserve their biological resources, as well as the tools and techniques local governments can use to conserve natural areas and wildlife. Chapter 5 covers habitat conservation. The document is available in hard copy upon request.

Technical assistance is available through the Estuary Program, including help with incorporating natural resource conservation principles and information into municipal land-use planning procedures, plans, and policies. The Estuary Program and its partners also provide training to local leaders to recognize and map ecologically significant habitats and communicate their importance to the community. The [Hudson River Estuary Grants](#) program supports projects that continue to raise the capacity of municipalities, land trusts, and non-profits to identify and assess watershed biodiversity, promote stewardship and conservation of vital habitats, and create local conservation programs. For more information on technical assistance opportunities or questions about the habitat summary report and maps, please contact Ingrid Haeckel, Hudson River Estuary Conservation and Land Use Specialist.

Important Habitats in the Town of Gallatin

Land Use and Land Cover (Figure 1)

The Land Use and Land Cover Map provides a bird's-eye view of general habitat types, development, and land use patterns in the Town of Gallatin based on remote sensing analysis of Landsat satellite imagery. It displays information at a 30-meter spatial resolution from the 2016 National Land Cover Dataset (<http://www.mrlc.gov/>). Each 30x30m square displays a land cover or land use class. An accuracy assessment found overall accuracy for the 2016 data was 86%, with variations by geography and by identified class (Wickham et al., 2021). **Note that NLCD data are most reliable at regional scales and have important limitations at the municipal scale. The data are not necessarily accurate for all locations and do not distinguish many important habitat types.** Read more about the applications and limitations on the NLCD factsheet (<http://pubs.usgs.gov/fs/2012/3020/>). This map can be a helpful tool to understand general patterns of land use and land cover, to identify large connected habitat areas, and to identify potential areas of concern where land uses may impact habitats or water resources. Definitions for land use and land cover classes shown on the map are as follows (<https://www.mrlc.gov/data/legends/national-land-cover-database-2016-nlcd2016-legend>):

Open Water- areas of open water, generally with less than 25% cover of vegetation or soil.

Developed, Open Space- areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

Developed, Low Intensity- areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.

Developed, Medium Intensity -areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.

Developed High Intensity-highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.

Barren Land (Rock/Sand/Clay) - areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.

Deciduous Forest- areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.

Evergreen Forest- areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.

Mixed Forest- areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.

Shrub/Scrub- areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.

Grassland/Herbaceous- areas dominated by graminoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.

Pasture/Hay-areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.

Cultivated Crops -areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.

Woody Wetlands- areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Emergent Herbaceous Wetlands- Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Table 1: Land Use and Land Cover Area and Percent in the Town of Gallatin, NY.

Land Use/Cover Class	Acres	Percent of Town
Open Water	267.1	1.1%
Developed, Open Space	872.7	3.4%
Developed, Low Intensity	374.3	1.5%
Developed, Medium Intensity	31.8	0.1%
Developed, High Intensity	12.2	0.0%
Barren Land	11.8	0.0%
Deciduous Forest	16,843.1	66.4%
Evergreen Forest	500.8	2.0%
Mixed Forest	1,022.1	4.0%
Shrub/Scrub	96.7	0.4%
Herbaceous	139.4	0.5%
Hay/Pasture	3,334.4	13.1%
Cultivated Crops	601.1	2.4%
Woody Wetlands	1,195.4	4.7%
Emergent Herbaceous Wetlands	66.5	0.3%

The Town of Gallatin spans approximately 39.6 square miles. The Town is rural and lacks a commercial center. Just 5.1% of the land area is classified as developed and much of that is developed open space (e.g., lawns). It is one of the most densely forested towns in Columbia County, with 77.5% of the land comprised of forested and woody land cover types. In addition, 15.5% of the Town remains in agricultural land uses, primarily hayfields and meadows, especially along County Rt 8 and along the Roeliff Jansen Kill upstream from the Taconic State Parkway. Lake Taghkanic is the largest open waterbody in the Town, measuring 168 acres. Wetlands, large forests, and grassland and shrubland habitats are further described in subsequent sections of this report.

[Important Biodiversity Areas \(Figure 2\)](#)

The [Important Biodiversity Areas Map](#) highlights *known* significant habitats in Gallatin based on state-level and limited county-level assessments. Some of the overlapping layers in the map may be viewed in greater detail using the [Hudson Valley Natural Resource Mapper](#) and the [Columbia County NRI map viewer](#). **Species of Conservation Concern** documented in or near Gallatin are listed in Table 2 and include species listed in New York (NY) or federally (US) as [endangered](#), [threatened](#), [special concern](#), [rare](#), a [Species of Greatest Conservation Need](#) (SGCN), or a [Hudson River Valley Priority Bird](#) species. SGCN are species identified in the State Wildlife Action Plan that are experiencing some level of population decline, have identified threats that may put them in jeopardy, and need conservation actions to maintain stable population levels or sustain recovery (NYSDEC 2015). High priority SGCN are species in need of timely management intervention or they are likely to reach critical population levels in New York within 10 years. Audubon New York identified the Hudson River Valley priority birds by assessing continental, national, and regional bird planning initiatives in addition to state and federal priority designations.

[Lake Taghkanic State Park](#)

The largest protected area in Gallatin, Lake Taghkanic State Park spans 1,569 acres in Gallatin and the Town of Taghkanic. The park has several significant natural features identified by the New York Natural Heritage Program – a rare plant, a rare freshwater mussel, and a hemlock-northern hardwood forest – described further below. The park supports a state campground and is a popular destination for boating, fishing, swimming, and hiking, among other activities.

[Known Important Areas for Rare Animals and Rare Plants](#)

The New York Natural Heritage Program (NYNHP) has identified important areas for sustaining populations of rare animals and rare plants based on existing records and the species' habitat requirements. Known important areas include the specific locations where species have been observed, as well as areas critical to maintaining the species' habitat. Proactive planning that considers how species move or disperse across the landscape, with careful attention to maintaining connected habitat complexes, will contribute to the long-term survival and persistence of rare species. A complete list of state rare species documented in Gallatin is provided in **Table 2**. NYNHP has identified known important areas in Gallatin for the following species (with links to conservation and management guidance):

American eel (High Priority SGCN) is a migratory fish that has been documented throughout the Roeliff Jansen Kill watershed (White, et al., 2011). American eel is in decline throughout much of its range, and though eels are able to bypass certain dams, culverts, and other aquatic barriers, they rely on connected, free-flowing streams to complete their life cycle and return to the Atlantic Ocean to spawn.

Eastern box turtle (NY-Special Concern) occurs in a variety of habitats. They primarily use well-drained forests and open deciduous forests, but are also found in field edges, shrublands, marshes, bogs, and stream banks. Box turtle has been documented in Gallatin and is at the northern limit of its natural range in the Lower Hudson Valley. Stewardship of species at northern range edges is particularly important as climate changes and suitable habitat shifts north. Box turtle is threatened by habitat loss and fragmentation, vehicle strikes, and the pet trade.

[Eastern pondmussel](#) is a state-rare freshwater mussel documented at Lake Taghkanic. This and other freshwater mussels have significantly declined in the past century due to habitat destruction from siltation, dredging, channelization, impoundments, and pollution, and most recently due to zebra mussel invasion. Mussels are furthermore heavily reliant on healthy fish populations and aquatic habitat connectivity to maintain viable populations.

[New England cottontail](#) (NY-Special Concern) is the only native cottontail east of the Hudson River in New York and its range has been greatly reduced in the state due to forest maturation, habitat loss, and competition with the more abundant Eastern cottontail. It prefers open woods, disturbed areas, shrubby areas, thickets, and marshes. It has been documented at several locations in Gallatin.

[Southern swamp buttercup](#) (NY-Endangered) is a plant occurring along the edges of streams, reservoirs, or other waterbodies and is known from only three locations in the state, including Gallatin.

[Wood turtle](#) (NY-Special Concern) lives primarily along low gradient perennial streams and may spend time in adjacent forests and meadows. Wood turtle occurs along stream corridors in Gallatin and is threatened by habitat loss, stream degradation, nest predation, and the pet trade.

Note: Rare animals may occur in more locations than are currently known by NYNHP or DEC. Contact the DEC Region 4 Office in Schenectady at (518) 357-2355 with any concerns or questions about the presence of protected species in the Town of Gallatin.

Significant Natural Communities

The New York Natural Heritage Program (NYNHP) has mapped two occurrences of rare and/or high quality natural communities in Gallatin, including high quality hemlock-northern hardwood forest and an inland poor fen. The significant forest occurs on ravines and rocky hillsides to the north and south of Lake Taghkanic and described as a mature forest of average size with excellent physical and biological diversity. Portions of the community display old growth characteristics including trees over 150 years old. Gallatin Bog is an example of inland poor fen described as a small, high quality wetland complex surrounded by an extensive, minimally disturbed, forested landscape. It is an example of a quaking/kettlehole type bog.

The following list includes links to online conservation and management guidance for these habitats:

- [Hemlock-Northern Hardwood Forest](#)
- [Inland Poor Fen](#)

Forest Linkage Zone

Large, connected forests in Gallatin contribute to a regional forest linkage zone identified by the Nature Conservancy and New York Natural Heritage Program. This linkage is comprised by relatively well-connected forest habitats that provide a pathway from the Appalachian range and Catskills west of the Hudson River to the Taconic Ridge and larger forests north and east in New England. Connected forests allow a wide range of wildlife to move safely to find mates and the resources they need. Forest linkages such as these are vital to the ability of many species to migrate as climate changes. See the Large Forest section of this report for greater detail on forest resources in the town.

Floodplain Forests

Floodplain forests are home to a unique suite of plants and animals that tolerate occasional flooding. They were mapped throughout Columbia County by Ecologists at the [Farmscape Ecology Program](#) based on an analysis of aerial photography and soil data (Knab-Vispo and Vispo 2010). “Ancient” floodplain forests (those present since the 1940s or earlier) are especially rare and ecologically unique, supporting a higher diversity of native plants and lower frequency of invasive shrubs than present in recently reforested floodplains. Regardless of age and species composition, forested floodplains support the in-stream food web and serve as a travel corridor for some wildlife. In addition to their biological values, floodplain forests play a vital role in minimizing soil erosion and surface runoff, control water temperatures, and help reduce downstream flood intensity. Floodplain forest data are viewable in greater detail using the Columbia County NRI map viewer.

Table 2: Species of Conservation Concern in the Town of Gallatin, NY

The following table lists species of conservation concern that have been recorded in Gallatin, NY. The information comes from the [New York Natural Heritage Program](#) (NYNHP) biodiversity databases, the [1990-1999 New York Amphibian and Reptile Atlas](#) (NYARA), and the [2000-2005 New York State Breeding Bird Atlas](#) (NYBBA). Species from the NYBBA are included in the table if they were documented in Atlas blocks that are more than 50% in Gallatin. The table only includes species listed in New York as [endangered](#) (at the state (NY) and/or federal (US) level), [threatened](#), [special concern](#), [rare](#), [Species of Greatest Conservation Need](#) (SGCN), or a [Hudson River Valley Priority Bird](#) species recognized by Audubon New York. Historical records are provided from the NYNHP biodiversity databases. Generalized primary habitat types are provided for each species, but for conservation and planning purposes, it's important to recognize that many species utilize more than one kind of habitat. More information on rare animals, plants, and ecological communities can be found at <http://guides.nynhp.org>. **Note:** Additional rare species and habitats may occur in Gallatin.

Common Name	Scientific Name	General Habitat	NYS Conservation Status					Data Source
			Hudson River Valley Priority Bird	Species of Greatest Conservation Need xx = high priority	Special Concern	Threatened	Endangered	
Mammals								
New England cottontail	<i>Sylvilagus transitionalis</i>	young forest, shrubland		xx	x			NYNHP

Birds								
American redstart	<i>Setophaga ruticilla</i>	forest	x					NYBBA
Baltimore oriole	<i>Icterus galbula</i>	forest	x					NYBBA
Black-and-white warbler	<i>Mniotilta varia</i>	forest	x					NYBBA
Broad-winged hawk	<i>Buteo platypterus</i>	forest	x					NYBBA
Cerulean warbler	<i>Dendroica cerulea</i>	forest	x	x	x			NYBBA
Cooper's hawk	<i>Accipiter cooperii</i>	forest	x		x			NYBBA
Downy woodpecker	<i>Picoides pubescens</i>	forest	x					NYBBA
Eastern wood-pewee	<i>Contopus virens</i>	forest	x					NYBBA
Louisiana waterthrush	<i>Seiurus motacilla</i>	forest	x	x				NYBBA
Northern flicker	<i>Colaptes auratus</i>	forest	x					NYBBA
Northern goshawk	<i>Accipiter gentilis</i>	forest	x	x	x			NYBBA
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	forest	x					NYBBA
Scarlet Tanager	<i>Piranga olivacea</i>	forest	x	x				NYBBA
Sharp-shinned hawk	<i>Accipiter striatus</i>	forest	x		x			NYBBA
Veery	<i>Catharus fuscescens</i>	forest	x					NYBBA
Wood thrush	<i>Hylocichla mustelina</i>	forest	x	x				NYBBA

Common Name	Scientific Name	General Habitat	NYS Conservation Status					Data Source
			<u>Hudson River Valley Priority Bird</u>	<u>Species of Greatest Conservation Need</u> xx = high priority	<u>Special Concern</u>	<u>Threatened</u>	<u>Endangered</u>	
Worm-eating warbler	<i>Helmitheros vermivorum</i>	forest	x	x				NYBBA
Yellow-throated Vireo	<i>Vireo flavifrons</i>	forest	x					NYBBA
American kestrel	<i>Falco sparverius</i>	grassland	x	x				NYBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	grassland	x	xx				NYBBA
Eastern meadowlark	<i>Sturnella magna</i>	grassland	x	xx				NYBBA
Savannah sparrow	<i>Passerculus sandwichensis</i>	grassland	x					NYBBA
Belted kingfisher	<i>Megaceryle alcyon</i>	lake, stream	x					NYBBA
Chimney swift	<i>Chaetura pelagica</i>	urban	x					NYBBA
Pied-billed grebe	<i>Podilymbus podiceps</i>	wetland	x	x		NY		NYBBA
American woodcock	<i>Scolopax minor</i>	young forest, shrubland	x	x				NYBBA
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	young forest, shrubland	x	x				NYBBA
Blue-winged warbler	<i>Vermivora pinus</i>	young forest, shrubland	x	x				NYBBA
Brown thrasher	<i>Toxostoma rufum</i>	young forest, shrubland	x	xx				NYBBA
Chestnut-sided warbler	<i>Setophaga pensylvanica</i>	young forest, shrubland	x					NYBBA
Eastern kingbird	<i>Tyrannus tyrannus</i>	young forest, shrubland	x					NYBBA
Eastern towhee	<i>Pipilo erythrophthalmus</i>	young forest, shrubland	x					NYBBA
Field sparrow	<i>Spizella pusilla</i>	young forest, shrubland	x					NYBBA
Prairie warbler	<i>Dendroica discolor</i>	young forest, shrubland	x	x				NYBBA
Ruffed grouse	<i>Bonasa umbellus</i>	young forest, shrubland	x	x				NYBBA
Willow flycatcher	<i>Empidonax traillii</i>	young forest, shrubland	x					NYBBA

Reptiles								
Common musk turtle	<i>Sternotherus odoratus</i>	wetland, stream		xx				NYARA
Eastern box turtle	<i>Terrapene c. carolina</i>	forest, young forest		xx	x			NYARA

Common Name	Scientific Name	General Habitat	NYS Conservation Status					Data Source
			<u>Hudson River Valley Priority Bird</u>	<u>Species of Greatest Conservation Need</u> xx = high priority	<u>Special Concern</u>	<u>Threatened</u>	<u>Endangered</u>	
Northern copperhead	<i>Agkistrodon contortrix mokasen</i>	forest, rocky summit, wetland		x				NYARA
Spotted turtle	<i>Clemmys guttata</i>	wetland		xx	x			NYARA
Wood turtle	<i>Clemmys insculpta</i>	stream		xx	x			NYARA

Fish								
American eel	<i>Anguilla rostrata</i>	stream		xx				NYSDEC
Brook trout	<i>Salvelinus fontinalis</i>	stream		x				NYSDEC

Mussels								
Eastern pondmussel	<i>Ligumia nasuta</i>	pond, stream		x				NYNHP

Insects								
Brook Snaketail	<i>Ophiogomphus aspersus</i>	stream		x				NYNHP

Plants								
Davis' sedge (historic record)	<i>Carex davisii</i>	forest, stream				NY		NYNHP
Southern swamp buttercup	<i>Ranunculus septentrionalis</i>	stream, wetland					NY	NYNHP

Streams and Watersheds (Figure 3)

Streams, their floodplains, adjacent wetlands, and other “riparian” or streamside habitats provide important ecosystem services including clean water, flood management, and recreational opportunities like fishing and kayaking. In addition, they provide some of the most productive wildlife habitat in the region.

*A **watershed** is the area of land where all of the water that is under it, or drains off of it, goes into the same stream, river, lake, or other waterbody.*

– U.S. Environmental Protection Agency

Streams and Watersheds in Gallatin

All land in Gallatin ultimately drains to the Hudson River Estuary via tributary streams. These drainages were mapped by DEC and the US Geological Survey and are shown on the [Streams and Watersheds Map](#). Except for a small portion of the town draining northward via Suydam Creek to Taghkanic Creek and then Claverack Creek, all of Gallatin drains via the Roeliff Jansen Kill (“Roe-Jan”) and its tributaries. Major tributaries to the Roe Jan in Gallatin include Shekomeko Creek, the Fall Kill, and the Doove Kill. Lake Taghkanic is located within the Doove Kill drainage.

The Roe Jan is one of the largest and cleanest tributaries to the Hudson River Estuary according to water quality assessments. It flows approximately 54 miles beginning in the Town of Hillsdale and entering the Hudson River at Linlithgo, forming the border between Germantown and Livingston. Upstream of the dam at Bringham Mills, the Roe Jan supports a popular recreational fishery for brown trout and is stocked annually along sections in Ancram and in Dutchess County. [Public fishing rights](#) (permanent fishing easements purchased by DEC) are present upstream and downstream from Gallatin.

Land cover relates closely to the health of a watershed and the quality of its surface and groundwater. Watersheds with a high percentage of forest or tree canopy cover are generally associated with higher water quality. The expansion of impervious surfaces in a watershed such as roofs, pavement, and other development is conversely associated with stream degradation (National Research Council 2008). Even low amounts of impervious cover can result in impacts. **Table 3** summarizes land cover statistics from the 2016 National Land Cover Database for Gallatin’s major watersheds.

Table 3. Watershed Land Cover in the Town of Gallatin, NY

Watershed Name	Tree canopy cover	Impervious cover	Percent of Town Area
Fall Kill-Roeliff Jansen Kill	66.3%	1.1%	38.0%
Punch Brook-Roeliff Jansen Kill	55.6%	0.7%	28.6%
Klein Kill-Roeliff Jansen Kill (including Doove Kill)	47.5%	1.3%	21.5%
Shekomeko Creek	51.4%	0.9%	6.7%
Taghkanic Creek-Claverack Creek (including Suydam Creek)	54.5%	1.5%	5.1%

Stream Flow and In-Stream Habitats

Mapped streams shown in the Habitat Summary are from the National Hydrography Dataset and are mostly perennial, flowing year-round. Perennial streams and rivers are fed by numerous smaller intermittent and ephemeral streams and by groundwater. Intermittent streams only flow during certain times of the year, fed by groundwater and runoff from rainfall and snowmelt. Some very small streams are ephemeral, only flowing after rainfall. Despite small size, intermittent and ephemeral streams make up 50-80% of stream miles in a river system (American Rivers 2007).

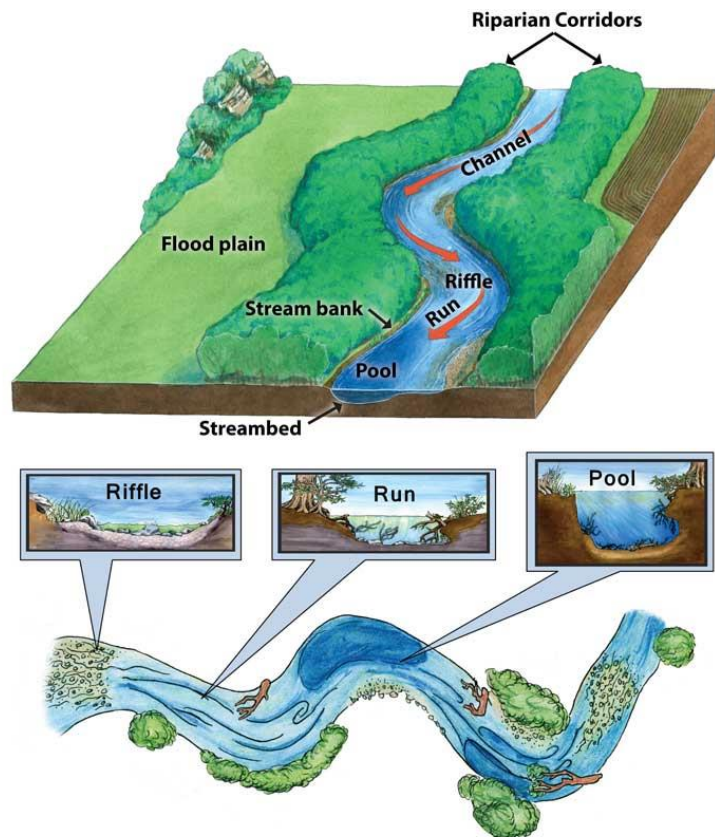
The vast network of small streams in the landscape provide many of the same functions and values as larger perennial streams. Intermittent streams provide seasonal refuge and spawning habitat for small fish, habitat for macroinvertebrates that drift downstream to feed larger fish and organisms, and support nutrient cycling and flood control processes, among other benefits. Ephemeral streams provide floodwater and sediment storage and are often hydrologically linked to headwater wetlands and vernal pools. However, both intermittent and ephemeral streams are often unmapped, underappreciated, and overlooked.

Streams share some common habitat features. Many streams have alternating deep and shallow areas called pools and riffles. The deep, slow water in pools provides shelter and resting areas for fish. Shallow, swift water in the riffles adds oxygen to the water and provides fish with spawning and feeding areas. The fast moving water between riffle areas and pools is called a run. Some streams also form natural meanders or curves that slow down the water and absorb energy. These curves produce erosion such as cut banks and depositional areas like gravel bars where sediments are deposited. Large woody material such as logs, trees, and branches is an important component of in-stream habitat that supports the capture of sediment, gravel, and organic matter, prevents streambank erosion, and decreases water temperature – all factors that enhance habitat for fish and other organisms.

Riparian Areas

Riparian areas are located adjacent to streams as well as ponds, wetlands, and other waterbodies. They are sensitive transition zones between land and water and are vital to stream physical processes, habitat, and water quality. Riparian areas help clean water by intercepting runoff and filtering sediment and nutrients. They can attenuate flooding by slowing down and absorbing floodwaters. Riparian trees are especially important for providing shade, bank stabilization, woody material, and nutrients that benefit fish and other aquatic life. Many terrestrial wildlife species also depend on riparian habitats and use them as travel corridors.

Riparian areas on the map are from the NYNHP's Riparian Opportunity Assessment (Conley et al., 2018). The project mapped riparian areas based on digital elevation data, wetlands, and modeling for the 50-year flood zone. Note that the data were developed through modeling and have not been field verified.



Parts of Stream. Source: <https://texasaquaticscience.org/streams-and-rivers-aquatic-science-texas/>

Nevertheless, the mapped riparian areas can provide a starting point to inform land use strategies and stream protection efforts. The Hudson River Estuary Program’s “[Trees for Tribes](#)” initiative offers free consultation and native trees and shrubs for qualifying streamside buffer planting projects in the estuary watershed.

Trout or Trout-Spawning Streams

Trout are valuable indicators of healthy aquatic ecosystems because of their habitat requirements of cold and high-quality water. Trout become thermally stressed when the water temperature rises above 70°F. They typically inhabit clear, cool, well-oxygenated streams and lakes and depend on clean gravel areas for spawning. Mapping from [DEC’s Water Quality Standards](#) indicate that trout or trout-spawning stream habitat is present in many of the streams in Gallatin.

Important Coldwater Stream Habitats

Among trout species, native brook trout (SGCN) are the most highly sensitive to habitat degradation from increases in water temperature and sedimentation of stream habitats. The map identifies important coldwater stream habitat areas mapped by the New York Natural Heritage Program based on wild brook trout records from DEC fish surveys. Brook trout and other coldwater fish species are in decline regionwide due to habitat loss, fragmentation, and degradation. Mapped areas include lands most likely to contribute to the continued presence and quality of coldwater stream habitat. The map does NOT indicate areas with public fishing rights, and many areas are unsuitable for recreational trout fishing due to small fish populations and small fish size.

Other Stream Wildlife Records

In addition to trout habitat, wildlife records for wood turtle (NY-Special Concern), common musk turtle (SGCN), and the state-rare brook snaketail dragonfly reflect the presence of high quality stream habitats in Gallatin. Wood turtle usually occurs along low gradient perennial streams and adjacent riparian areas and is threatened by habitat loss, stream degradation, nest predation, and the pet trade. Musk turtle (or stinkpot) occurs along slow-moving streams and rivers and less commonly in ponds and lakes. The brook snaketail inhabits clear, rapid-flowing streams and is threatened by polluted runoff and alterations to stream hydrology.

Water Quality Classifications and Assessment (not mapped)

DEC designates the “best uses” that a waterbody should be supporting. Waterbodies are classified by the letters A, B, C, or D for freshwater. The letter classifications and their best uses are described in NYS regulation 6 NYCRR Part 701. For each class, the designated best uses are defined as follows:

- Class A, AA-water supply, primary and secondary contact recreation and fishing
- Class B-primary and secondary contact recreation and fishing
- Class C-fishing, suitable for fish propagation and survival
- Class D-fishing

Waterbodies classified as A, B, or C may also have a standard of (T), indicating they are trout waters, or (TS), indicating they are trout-spawning waters. Water quality classifications of surface waters in Gallatin may be viewed using the [DEC Environmental Resource Mapper](#) or [Hudson Valley Natural Resource Mapper](#). Official descriptions for the classifications and standards of waterbody segments in Columbia County are found in [6 CRR-NY 863.6 Table 1](#). Note that the waterbody classification does not necessarily indicate good or bad water quality – it relates simply to the designated “best uses” that should be supported. DEC recognizes that some waterbodies have an existing quality that is better than their assigned classification and uses an anti-degradation policy to protect and maintain high-quality streams.

Most streams and waterbodies in Gallatin are Class C with the exception of Lake Taghkanic, which is Class B. Most streams in the town are mapped as trout or trout-spawning waters, however, including the Roe Jan, Fall Kill, Doove Kill, and Suydam Creek, and their tributaries.

Stream Protection

Protected streams in New York State are subject to the provisions of the Protection of Waters regulations in Article 15 of the Environmental Conservation Law. These regulations are based on the classification and standard of a waterbody. C(T), C(TS) and all types of B and A streams (as well as waterbodies under 10 acres located in the course of these streams) are collectively referred to as “protected streams.” Class C streams without the (T) or (TS) standard are not protected. In situations where streams are unmapped in NYSDEC databases, perennial streams share the classification of the receiving stream, while intermittent streams become Class D.

DEC regulates activities in the bed and banks of protected streams, defined as the areas immediately adjacent to and sloping toward the stream. Activities that excavate, fill or disturb these beds or banks require a DEC permit. DEC water quality certification permits and U.S. Army Corps of Engineers (ACOE) permits may also be required for work involving streams; contact the DEC Region 4 for information regarding specific projects.

While the regulations stemming from stream classifications provide a level of protection from damage to the bed and banks of protected streams, lack of jurisdiction on “non-protected streams” (including Class C streams, which are widespread) and on stream buffers more broadly may be an opportunity for local-level protection efforts. Local level stream protection efforts can play an important role in comprehensive watershed protection.

State Water Quality Monitoring and Assessments

DEC monitors water quality through several [routine statewide monitoring programs](#) and publishes assessments that describe the quality of water resources. A waterbody’s assessment results, compared with its classification, provides an understanding of its health and can lead to the designation of a stream or waterbody as impaired. A waterbody’s level of impairment influences which programs, opportunities, and responsibilities the community has for addressing problems.

The [Waterbody Inventory/Priority Waterbodies List](#) (WI/PWL) documents support (or impairment) of water uses, overall assessment of water quality, causes and sources of water quality impact/ impairment, and the status of restoration, protection and other water quality activities and efforts. WI/PWL information is used to identify those water quality issues and specific waterbodies where efforts will have the greatest impact and benefit, objectively evaluate needs for project funding, monitor water quality improvement, and record and report changes over time.

The most recent DEC assessments for Roe Jan indicate no known impacts to its classified best uses. The Doove Kill is listed as having minor impacts due to nutrient loadings from agricultural and other nonpoint sources. The lower Taghkanic Creek and tribs (including Suydam Creek in Gallatin) are listed as threatened due to drinking water withdrawals by the City of Hudson, which reduce flow in the creek and result in thermal stresses on the fishery during the summer. Lake Taghkanic and Lily Pond are unassessed in the WI/PWL.

Table 4. State Waterbody Assessment in the Town of Gallatin, NY

Waterbody Name	Description	Assessment
Roeliff Jan Kill, lower and minor tribs	From mouth to Shekomeko Cr./Silvernails	No Known Impact
Roeliff Jan Kill, mid and minor tribs	From Silvernails to Taconic Shores	No Known Impact
Doove Kill and tribs		Minor Impacts
Taghkanic Creek, lower and tribs (including Suydam Creek)	Stream and tribs from mouth to New Forge	Threatened

Local Water Quality Monitoring

In 2016, residents in the Roe Jan watershed began a grassroots water quality monitoring effort to better understand local stream conditions. The [Roe Jan Watershed Community](#) (RJWC) has since collected samples at 12 sites along the main stem of the Roe Jan from Hillsdale to Linlithgo, with technical assistance from Riverkeeper and the Bard Water lab and with strong support from the Columbia Greene chapter of Trout Unlimited. Initial testing focused on turbidity levels and *Enterococcus*, a fecal indicating bacteria that lives in the intestines of humans and other warm-blooded animals. “Entero” counts are useful as a water quality indicator due to their abundance in human sewage, correlation with many human pathogens, and low abundance in sewage-free environments. The EPA uses Entero counts to define if water is safe for swimming or other primary contact in its Federal Recreational Water Quality Criteria. RJWC added a sampling site at the Gallatin Conservation Area in 2017 and began testing that year for additional parameters including temperature and conductance. In 2021, RJWC began sampling for trace metals and organics at selected sites (including the Academy Hill location just downstream from Gallatin). RJWC also does macroinvertebrate monitoring in coordination with the DEC citizen-science [WAVE initiative](#).

For the 2016-2019 data collection period, over 80% of sampling sites on the main stem of the Roe Jan met federal guidelines for safe swimming. This is among the best water quality observed in Hudson River tributaries by community monitoring programs. For the Gallatin Conservation Area, 76% of samples collected from the Roe Jan 2017-2019 met the safe swimming thresholds. See the [Riverkeeper Roe Jan page](#) to explore a watershed map, data from each sampling site, and year-to-year patterns. Additional Roe Jan water quality data are available through the [Bard Water Lab](#) or contact the [Roe Jan Watershed Community](#) for more information.

Wetlands (Figure 4)

There are many types of wetlands in Gallatin, including wet meadows, emergent marsh, forested and shrub swamps, and vernal pools. In addition to providing critical habitat for many plants and animals, wetlands help to control flooding and reduce damage from storm surge, recharge groundwater, filter and purify surface water, and provide recreation opportunities. The upland area surrounding a wetland is essential to its survival and function; both may diminish when a wetland is surrounded by pavement, buildings, and pollution-generating or other incompatible land uses ([Environmental Law Institute 2008](#)).

Wetlands are areas saturated by surface or groundwater sufficient to support distinctive vegetation adapted for life in saturated soil conditions.

Knowing about local wetlands can enable the town to proactively plan to conserve this critical part of our life support system. The Wetlands Map shows information from several existing sources that provide approximate locations and extent of wetlands. They are inherently inaccurate and not a substitute for site visits and on-the-ground delineation. Nonetheless, the town can use these maps as a starting point for inventorying local wetlands and supplement them with more refined data as they become available.

National Wetlands Inventory and NYS Freshwater Wetlands

Mapped wetlands are shown from the U.S. Fish and Wildlife Service’s (USFWS) [National Wetlands Inventory \(NWI\)](#), as well as DEC’s [Regulatory Freshwater Wetlands](#) (which only include wetlands larger than 12.4 acres, unless designated “of unusual local importance”). Open water habitats including the Hudson River are symbolized in blue as “waterbodies.” NWI maps offer general information on wetland habitat, distinguishing forested wetlands (e.g., shrub or forest swamp) from emergent wetlands (e.g. marsh or wet meadow). Communities can learn more about wetland habitat values by conducting local surveys and studies. Note that NWI maps often underestimate wetland area and omit smaller and drier wetlands (Zucker and Lau, unpublished report). In particular, vernal pools, wet meadows, and swamps are often under-represented on maps. Many of DEC’s wetland maps are outdated and have similar inaccuracies (Huffman and Associates 2000). NWI and NYS freshwater wetlands can be viewed using the [Hudson Valley Natural Resource Mapper](#).

Forested wetlands or swamps are common along streams in Gallatin and large examples are present along the Suydam Creek, Doove Kill, Shekomeko Creek, and other tributaries of the Roe Jan. Protecting such riparian wetlands and their buffer areas contributes to flood control and water quality protection, in addition to habitat benefits.

Wetland Soils

County soil maps are also a good source for predicting the location of potential wetlands. Soils classified as very poorly drained or poorly drained are good indicators of probable wetland areas, and soils classified as somewhat poorly drained may indicate possible wetland areas (Kiviat and Stevens 2001). Note that the probable and possible wetland areas cover a greater area than NWI and DEC wetland layers. Likewise, note that soil units are only mapped to an approximate area of about two acres, and that soils within the unit may not be homogeneous. Areas shown as supporting probable or possible wetlands should always be verified in the field for the purposes of environmental review. Wetlands soils can be viewed using the [Hudson Valley Natural Resource Mapper](#).

Vernal Pools

Although no [vernal pools](#) have been mapped in Gallatin, local wood frog and spotted salamander records in the *NY Amphibian and Reptile Atlas* indicate that vernal pools likely occur in the town. Vernal pools are small, isolated wetlands that are often dry in summer. They provide habitat for many animals, including a group of forest amphibians that use the pools for breeding. Vernal pools often go undetected in the forest due to their small size and seasonal drying. Vernal pools and other small, isolated wetlands are also vulnerable due to limited regulatory protection (see [Woodland Pool Conservation](#) for more information). Specific management recommendations can be found in [Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Development in the Northeastern United States](#) (Calhoun and Klemens 2002) and [Maine Municipal Guide to Mapping and Conserving Vernal Pool Resources](#) (Morgan and Calhoun 2012).

Other Wetland Wildlife Records

Records for other at-risk wetland wildlife species also suggest the presence of high quality wetland habitat in Gallatin. NY-Threatened pied-billed grebe was observed during the 2000-2005 NYS Breeding Bird Atlas and is a marsh-dwelling species that specializes in larger wetlands. Spotted turtle (NY-Special Concern) occurs in Gallatin and moves between a variety of wetland and upland habitats during the course of a year. They are threatened due to habitat loss, declining water quality, vehicle strikes while crossing roads, and the pet trade.

Large Forests (Figure 5)

Forests provide numerous benefits including wildlife habitat, clean water, climate moderation, and forest products. Though each forest's value is relative to the surrounding landscape, in general, larger forests provide higher quality habitat and greater benefits than smaller ones. Historically, most forest across the Hudson Valley region was cleared for agriculture in the 19th century. Forests have made a remarkable recovery over the past century or more, but vary widely in ecological value based on size, proximity to development, deer browse pressure, presence of invasive species or tree diseases, and past land use history, among other factors

Forest Condition Index

Large forest patches greater than 100 acres are shown based on a Hudson Valley forest assessment (Conley et al., 2019). The analysis shows patches of forested and other woody land cover classes from the 2016 National Land Cover Database that are unfragmented by roads, railroads, and non-forest habitat, with a minimum patch size of 100 acres. Further analysis created a forest condition index score for each forest patch based on metrics related to forest condition, connectivity, stressors, habitat, and other ecosystem values.

Detailed scoring information from the forest condition index is available for viewing using the [Hudson Valley Natural Resource Mapper](#) under Forest layers.

Core Forests

Core forests are interior forest areas surrounded by at least a 100-meter wide buffer of edge forest habitat and were mapped based on the large forest patches described above. These interior forest areas support a unique array of plants and animals that are easily disturbed by the human activity generally associated with more open habitats (e.g. agricultural fields, meadow, roads and developed areas). Core forest is especially important for area-sensitive wildlife including many forest songbirds, which require extensive tracts of habitat and avoid nesting near areas with human disturbance. Although the value of individual forest patches for wildlife depends on landscape context and other factors, core forests that are at least 200 hectares (~500 acres) in size are likely to provide enough suitable habitat to support about 80% of area-sensitive forest interior species (Environment Canada 2013). Core forests that are at least 100 hectares (~250 acres) in size are estimated to support about 60% of area-sensitive forest species. Core forests that are at least 50 acres (~125 acres) will still support some area-sensitive species, but several will be absent and species tolerant of forest edges will dominate. Avoiding or minimizing further fragmentation of core forests will help conserve the integrity and habitat value of ecologically significant forest patches in the town.

Forest fragmentation occurs when large forests are divided into smaller forest areas, often by clearing for new roads or development. Fragmentation decreases forest habitat quality and health, disrupts wildlife movement, and facilitates the spread of invasive species. These impacts are greatest at forest edges but can extend for hundreds of feet into forest patches, often displacing sensitive wildlife that depend on interior or core forest.

Gallatin Forests

Gallatin supports some of the highest quality forests in the Hudson River Estuary Watershed according to the Forest Condition Index. Many factors contribute to high forest condition including the large extent of forest cover in the town (77.5% of the land area), low density of roads and development, and limited degree of forest fragmentation. Large forests on either side of the Taconic State Parkway are especially notable, ranked among the top 5% regionally in terms of size and connectivity values. Forest patches in the northeast corner of town extending into Ancram and Taghkanic rank in the top 5% based on low fragmentation and other factors. These large, connected forest patches also comprise part of an important regional forest linkage zone that provides room for species to move safely and meet their needs. Connected forest corridors are also vital for species' ability to migrate in response to climate change.

Some forests in the town are smaller and more fragmented, but still have significant habitat and ecosystem values. Forest edge disturbances often dominate in small forests, including increased prevalence of invasive species, nest predators, and altered micro-climatic conditions. These forests nevertheless serve a critical ecological function as buffers to the town's streams and help to protect steep slopes, promote groundwater infiltration, and reduce flood damage. Regardless of size or habitat values, all forests and trees in the town help to manage stormwater, moderate temperature, and improve air quality, among other ecosystem benefits. The [Land Use and Land Cover Map](#) shows forests of all sizes in Gallatin.

Forest Wildlife Records

Large, connected forests in Gallatin support significant forest breeding bird diversity, including cerulean warbler (NY-Special Concern) and several SGCN species including Louisiana waterthrush, scarlet tanager, and worm-eating Warbler (see Table 2 for full list). Other species of conservation concern that use the large forests in Gallatin are northern copperhead (SGCN) and eastern box turtle (NY-Special Concern). Forest areas with shallow soils and rock outcrops are especially important for copperhead and other snakes.

Forest Health

One of the greatest threats to forests in Gallatin today is the introduction of tree diseases, forest pests, and other invasive species inadvertently brought in by people through landscaping and international commerce. Hemlock woolly adelgid and emerald ash borer have already done much damage in nearby towns, and are expected to eventually kill most large trees of these common species in the region. Also, oak wilt, a fungal disease which can quickly kill oak trees, has been found in Schenectady County. The DEC Division of Lands and Forests has further information about [Forest Health Issues](#) and preventative measures to reduce the spread of pests, such as using locally-sourced firewood. The [Capital/Mohawk Partnership for Regional Invasive Species Management](#) (PRISM) works to promote education, prevention, early detection and control of invasive species and is helping communities to prepare for and respond to this threat. Guiding future development to minimize forest fragmentation and loss will help minimize the spread of invasive species into interior forests and conserve important habitats in the town.

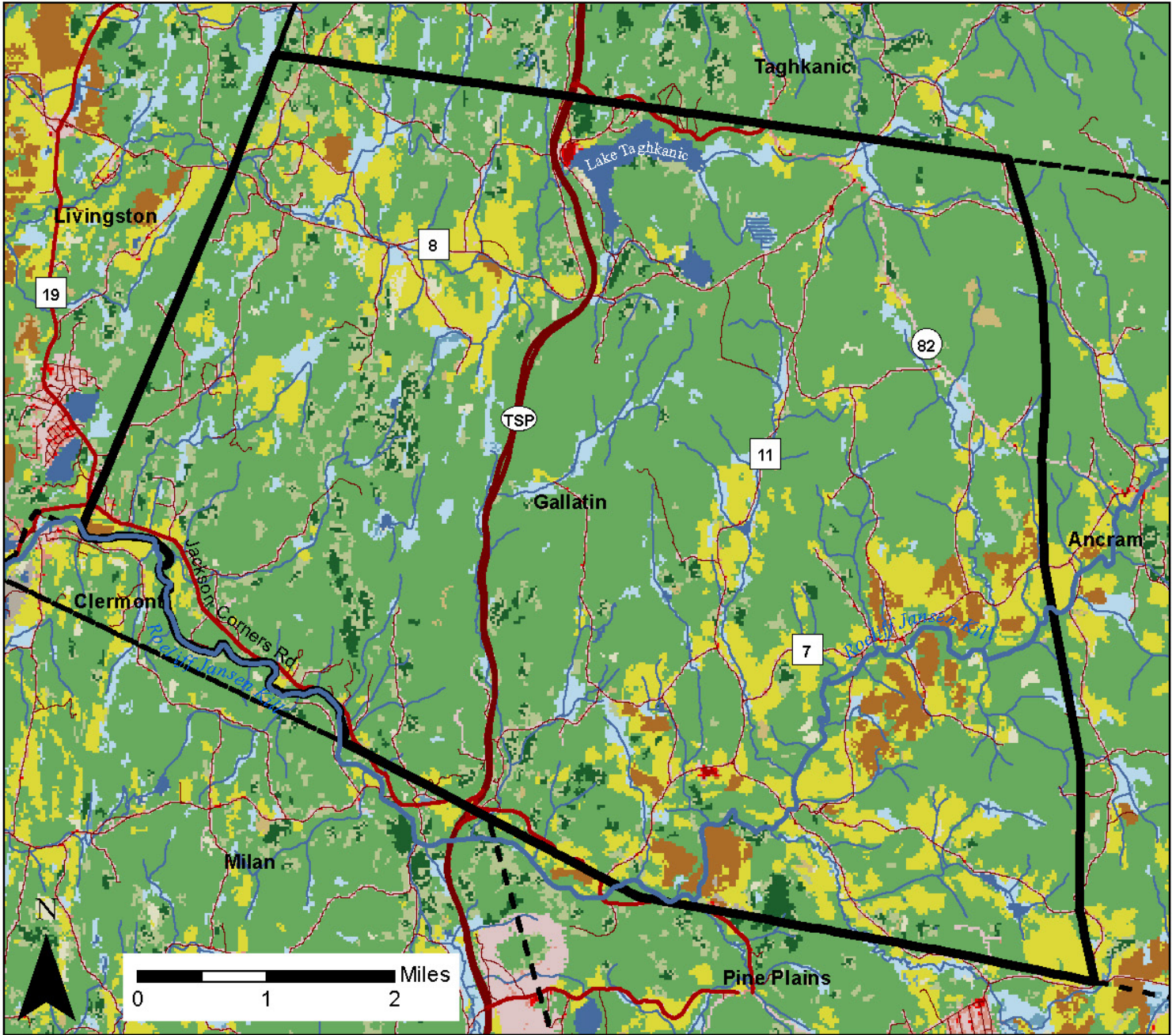
Grasslands, Shrublands, and Young Forests (see [Land Use Land Cover Map](#))

Recently disturbed sites, such as hayfields, abandoned farm fields, or forest clearings, can provide important habitat for species that require grasslands, shrublands, and young forests. These successional habitat types are transitional and relatively short-lived, and typically require periodic maintenance to avoid becoming more densely vegetated, eventually developing a canopy and becoming forest. We can infer from the [Land Use and Land Cover Map](#), aerial photography, and wildlife records that valuable grasslands, shrublands, and young forests occur in Gallatin.

Grassland or [meadow](#) habitat can support a variety of life, including rare plants, butterflies, reptiles, and birds, in addition to providing agricultural uses and scenic values. The quantity and quality of grasslands for wildlife have rapidly decreased in the Northeast during the last century due to increased human population, changes in agricultural technology, and abandonment of family farms. This continuing trend threatens populations of grassland birds that have adapted to the agricultural landscape. Gallatin is largely forested today, but the Land Use and Land Cover map indicates that approximately 16% of the town is in herbaceous land cover (including hay, pasture, or cropland). The [2000-2005 NYS Breeding Bird Atlas](#) documented breeding by four grassland bird Species of Greatest Conservation Need in the Gallatin area, including American kestrel, eastern meadowlark, bobolink, and savannah sparrow (see [Table 2](#)). Audubon New York offers guidance on [managing habitat for grassland birds](#).

Shrublands and young forests are transitional habitats characterized by few or no mature trees, with a diverse mix of shrubs and/or tree saplings, along with openings where grasses and wildflowers grow. They can occur in recently cleared areas and abandoned farmland and are sometimes maintained along utility corridors by cutting or herbicides. These habitats are important for many wildlife species declining throughout the region because former agricultural areas have grown into forests, and natural forest disturbances that trigger young forest growth, such as fires, have been suppressed. Records from the *NYS Breeding Bird Atlas* support the presence of 11 species of conservation concern in Gallatin that prefer young forest and shrubland habitat, including American woodcock, ruffed grouse, and blue-winged warbler (see [Table 2](#)). For more information, see Audubon's guidance on [managing habitat for shrubland birds](#). In addition, NY-Special Concern New England cottontail is known from several locations in Gallatin. It is the only native cottontail east of the Hudson River and it prefers older shrubland habitat with dense understory or thickets, as well as wetlands with some tree cover.

Figure 1: Land Use and Land Cover in Gallatin, NY



Legend

- Road
- Major Road/Highway
- Stream

Land Use and Land Cover

- | | |
|--|---|
| <ul style="list-style-type: none"> Developed - High Intensity Developed - Medium Intensity Developed - Low Intensity Developed - Open Space Barren Land Emergent Herbaceous Wetlands Woody Wetlands Open Water | <ul style="list-style-type: none"> Cultivated Crops Hay/Pasture Herbaceous Shrub/Scrub Deciduous Forest Mixed Forest Evergreen Forest |
|--|---|

This map was produced as part of a habitat summary for the Town of Gallatin, NY. For more information, contact DEC Hudson River Estuary Program Conservation and Land Use Specialist Ingrid Haeckel at ingrid.haeckel@dec.ny.gov.

Data Sources:

MRLC: 2016 National Land Cover Database (2019); DEC: streams (2017); NYSITS: railroads and municipal boundaries (2018); ESRI: roads (2018). Map created 2021



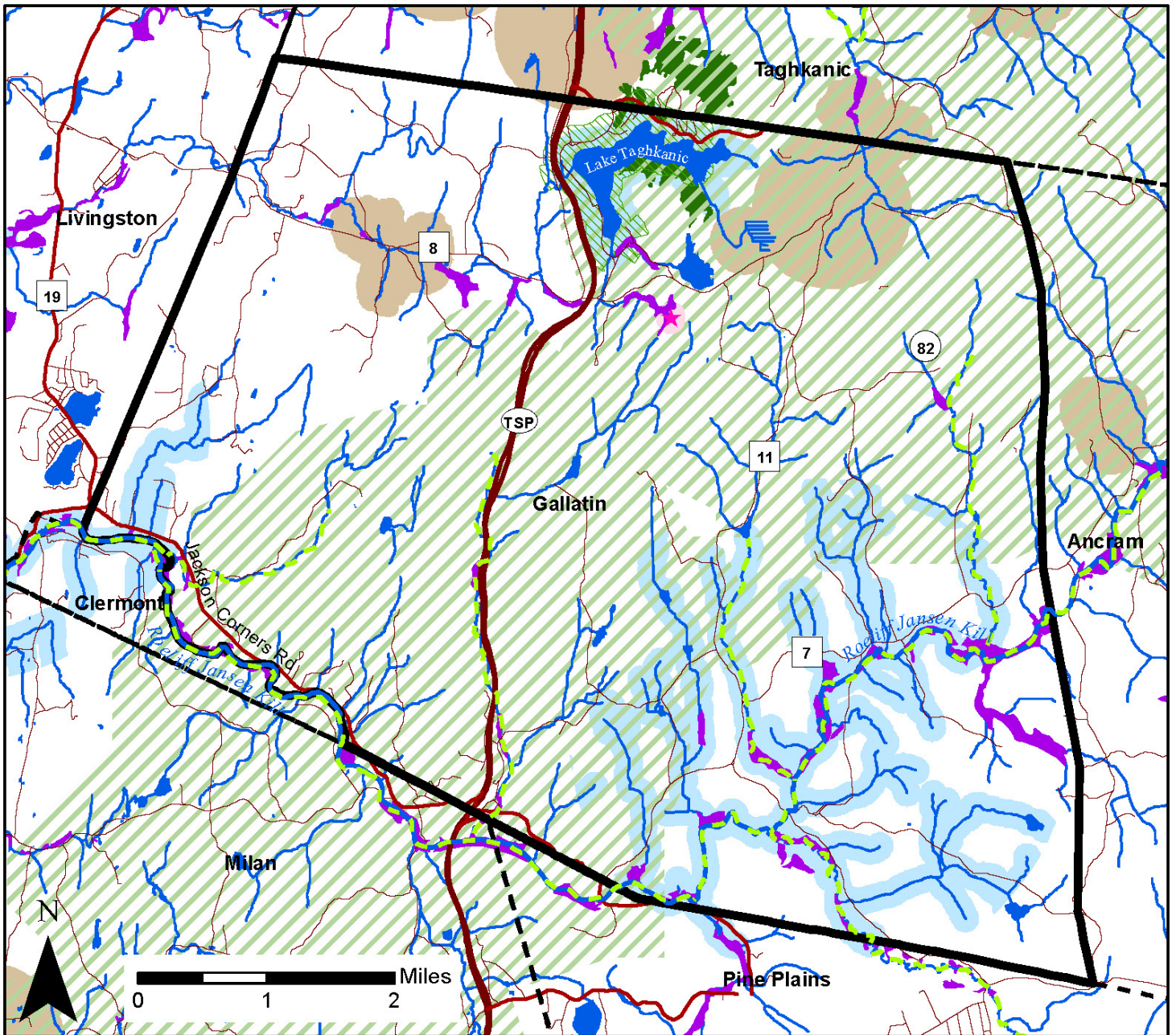
Hudson River Estuary Program



Cornell University

A Program of the New York State Department of Environmental Conservation

Figure 2: Important Biodiversity Areas in Gallatin, NY



Legend

- Road
- Major Road/Highway
- Stream
- Waterbody
- Floodplain Forest
- Forest Linkage Zone

Significant Natural Community

- ★ Gallatin Bog
- Hemlock-Northern Hardwood Forest

Known Important Area for:

- Rare Terrestrial Animals
- Rare Aquatic Animals
- Rare Plants
- Gallatin Bog
- American Eel

This map was produced as part of a habitat summary for the Town of Gallatin, NY. For more information, contact DEC Hudson River Estuary Program Conservation and Land Use Specialist Ingrid Haeckel at ingrid.haeckel@dec.ny.gov.

Data Sources:

NY Natural Heritage Program: important areas (2018); natural communities (2019); The Nature Conservancy: forest linkage (2005); Farmscape Ecology Program: floodplain forest (2010); DEC: streams (2017); NYSITS: railroads and municipal boundaries (2018); ESRI: roads (2018). Map created 2021



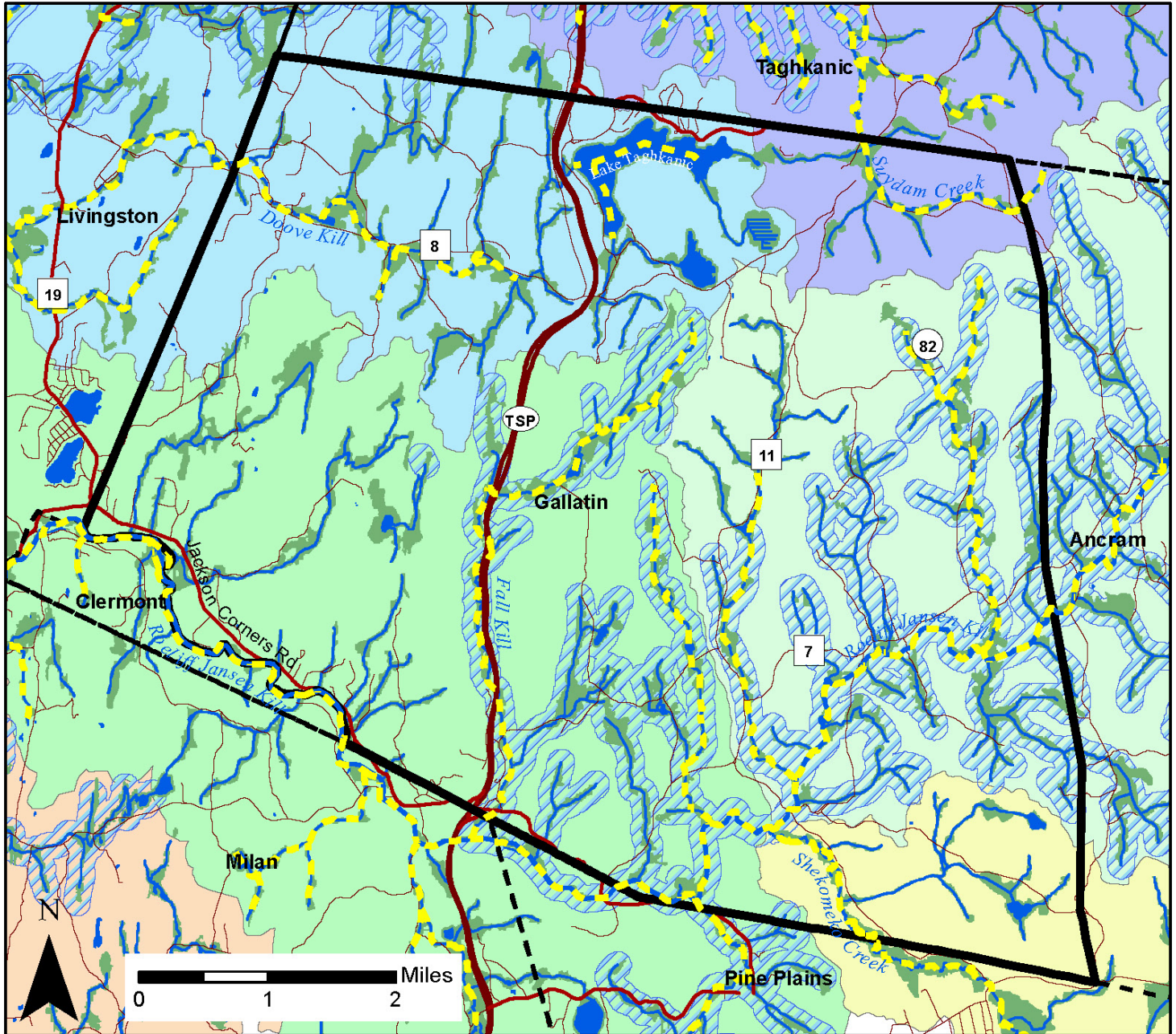
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Figure 3: Streams and Watersheds in Gallatin, NY



Legend

- - - Trout or Trout-Spawning Stream
- Important Coldwater Stream Habitat
- Riparian Area
- Road
- Major Road/Highway
- Stream
- Waterbody

Watersheds

- Punch Brook-Roeliff Jansen Kill
- Fall Kill-Roeliff Jansen Kill
- Shekomeko Creek (Roeliff Jansen Kill tributary)
- Doove Kill-Klein Kill-Roeliff Jansen Kill
- Suydam Creek-Taghkanic Creek-Claverack Creek

This map was produced as part of a habitat summary for the Town of Gallatin, NY. For more information, contact DEC Hudson River Estuary Program Conservation and Land Use Specialist Ingrid Haeckel at ingrid.haeckel@dec.ny.gov.

Data Sources:

NY Natural Heritage Program: riparian areas and coldwater habitats (2018); DEC: trout streams (2019); USGS: HUC12 watersheds (2009); NYSITS: railroads and municipal boundaries (2018); ESRI: roads (2018). Map created 2021



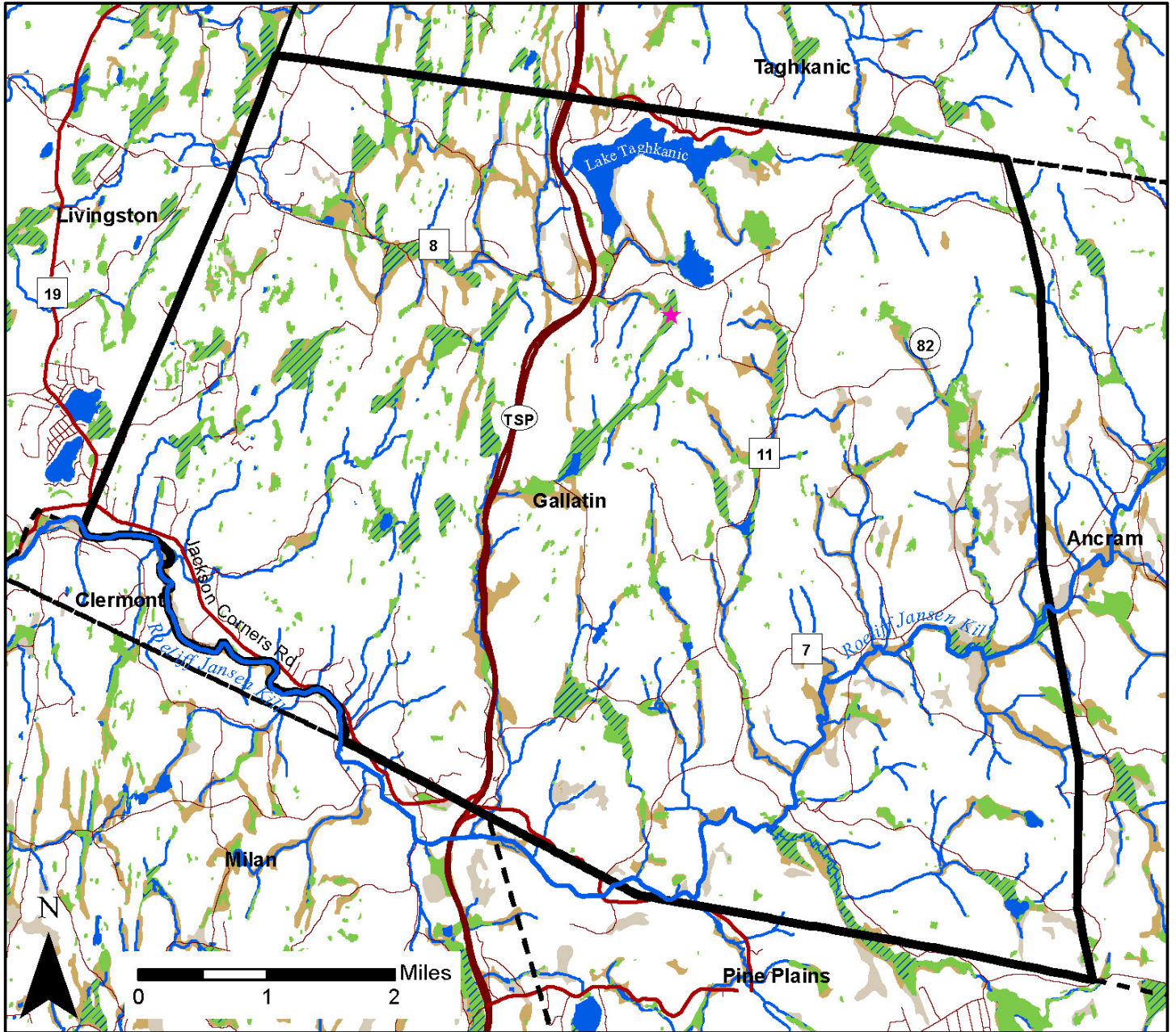
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Figure 4: Wetlands in Gallatin, NY



Legend

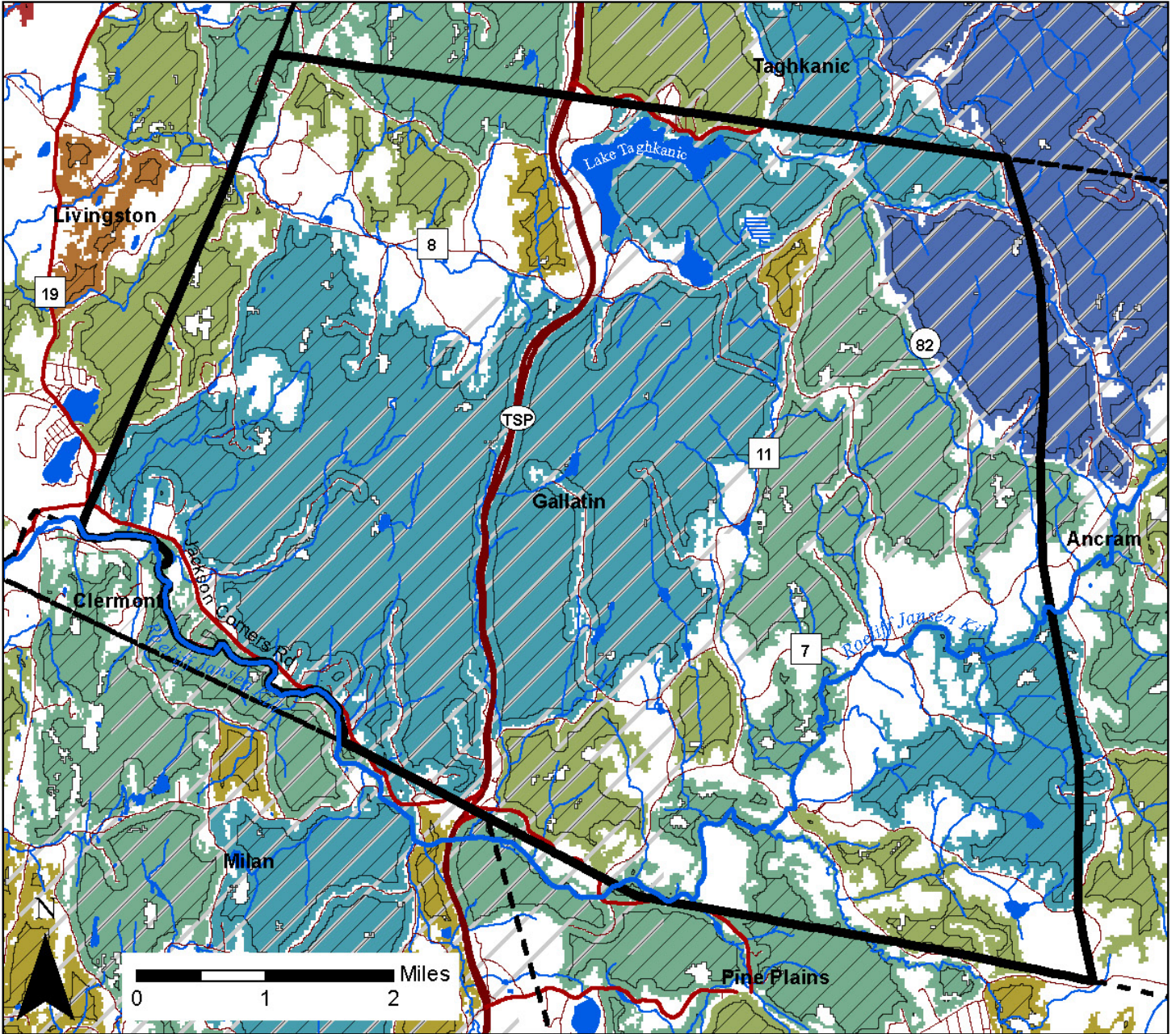
- Road
 - Major Road/Highway
 - Stream
 - Waterbody
 - ★ Gallatin Bog
 - DEC Freshwater Wetlands
 - National Wetlands Inventory (NWI)
- Wetland Soils - Drainage Classification**
- Poorly and very poorly drained (probable wetland)
 - Somewhat poorly drained (possible wetland)

This map was produced as part of a habitat summary for the Town of Gallatin, NY. For more information, contact DEC Hudson River Estuary Program Conservation and Land Use Specialist Ingrid Haeckel at ingrid.haeckel@dec.ny.gov.

Data Sources:
 DEC: freshwater wetlands (1999); USFWS: NWI wetlands (2016); NRCS: wetlands soils (2018); NYSITS: railroads and municipal boundaries (2018); ESRI: roads (2018). Map created 2021



Figure 5: Large Forests in Gallatin, NY



Legend

- Road
- Major Road/Highway
- Stream
- Waterbody
- Core Forest
- Regional Forest Linkage

Forest Condition Index (Hudson Valley Percentile)

- 95-99 - Top 5%
- 90-95 - Top 10%
- 80-90 - Top 20%
- 60-80
- 40-60
- 20-40
- 0-20

This map was produced as part of a habitat summary for the Town of Gallatin, NY. For more information, contact DEC Hudson River Estuary Program Conservation and Land Use Specialist Ingrid Haeckel at ingrid.haeckel@dec.ny.gov.

Data Sources:

NYNHP: forest condition index and core forests (2019); NYNHP and TNC: forest linkage (2005); NYSITS: railroads and municipal boundaries (2018); ESRI: roads (2018). Map created 2021



Cornell University

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General Conservation Measures for Protecting Natural Areas and Wildlife



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- **Protect large, contiguous, unaltered tracts** wherever possible.
- **Preserve links** between natural habitats on adjacent properties.
- **Preserve natural disturbance processes**, such as fires, floods, tidal flushing, seasonal drawdowns, landslides, and wind exposures wherever possible. Discourage development that would interfere with these processes.
- **Restore and maintain broad buffer zones** of natural vegetation along streams, along shores of other water bodies and wetlands, and at the perimeter of other sensitive habitats.
- In general, **encourage development of altered land** instead of unaltered land wherever possible.
- **Promote redevelopment of brownfields**, other post-industrial sites, and other previously-altered sites (such as mined lands), “infill” development, and “adaptive re-use” of existing structures wherever possible, instead of breaking new ground in unaltered areas.
- **Encourage pedestrian-centered developments** that enhance existing neighborhoods, instead of isolated developments requiring new roads or expanded vehicle use.
- **Concentrate development along existing roads**; discourage construction of new roads in undeveloped areas. Promote clustered development wherever appropriate, to maximize extent of unaltered land.
- **Direct human uses toward the least sensitive areas**, and minimize alteration of natural features, including vegetation, soils, bedrock, and waterways.
- **Preserve farmland potential** wherever possible.
- **Minimize area of impervious surfaces** (roads, parking lots, sidewalks, driveways, roof surfaces) and maximize onsite runoff retention and infiltration to help protect groundwater recharge, and surface water quality and flows.
- **Restore degraded habitats wherever possible**, but do not use restoration projects as a “license” to destroy existing habitats.

Source: Kiviat, E. & G. Stevens. 2001. Biodiversity Assessment Manual for the Hudson River Estuary Corridor. NYS Department of Environmental Conservation, Albany, NY.