

1/10/18

Amendment to 11-16-17 Draft Town Plan:

Compliance with Act 171 related to Forestry

Required to address

The Draft Town Plan as prepared already supports the goals and policies of Act 171 as it relates to municipal plans. Compliance with Act 171 may be accomplished with relatively few changes to the proposed draft.

The attached proposed changes have been prepared by Brandy Saxton of PlaceSense, who assisted the Planning Commission in the preparation the original 2011 Town Plan. She has also assisted several other towns with Act 171 compliance.

Proposed Amendments to Norwich Town Plan Draft (2017-11-16) to Comply with Act 171

[The act amends municipal and regional planning goals to encourage management of forestlands to improve forest blocks and habitat connectors and encourage the use of locally grown forest products. The act amends the land use element of regional and municipal plans to require the plan to indicate those areas that are important as forest blocks and habitat connectors and to plan for land development in those areas to minimize forest fragmentation and promote forest health and ecological function.]

Natural & Historic Resources

See attached:

**Page 11-13 to 11-15 Land Cover, Habitat and Wildlife: Forestland
Includes Figure 11-3: Impact of Forest Fragmentation on Wildlife Species**

Existing language with no changes

Page 11-25 Changes - *Added language*

Objective 1.9. Conserve significant wildlife habitats, especially the habitats of rare and endangered species, protect core blocks of forest and maintain forest connectivity between blocks.

Action 1.9.a. Define, identify, map and document Norwich’s significant wildlife and plant habitats, including forest blocks and habitat connectors.

Action 1.9.b. Map larger blocks of contiguous forest land and potential travel corridors between those blocks in Norwich and neighboring towns.

Action 1.9.c. Review subdivision and site plans to assess their effects on forest blocks, habitat connectors and significant wildlife habitats in order to encourage their protection.

Action 1.9.d. Require new development to be located and configured in a manner that minimizes adverse impacts on forest blocks and critical wildlife habitat, including travel corridors, deer wintering areas and natural areas to the greatest extent feasible.

Action 1.9.e. Require buffers between new development and significant wildlife habitats.

Action 1.9.f. Use the town's zoning and subdivision regulations to protect the habitats of rare and endangered species.

Action 1.9.g. Promote the protection of rare and endangered species, and their habitats, by the town's landowners.

Land Use

Page 12-10 - Added language

Upland. Forested uplands dominate the western side of Norwich. Beyond the narrow stream valleys that extend up into the hills from the lowlands along the Connecticut River Valley, the terrain is steep and soils are shallow. Few roads bisect these areas with the result being large, unbroken tracts of forestland as shown on Map 10. Their physical character, value as wildlife habitat, fragile ecology and inaccessibility make these lands generally ill-suited for development other than low-impact recreation and sustainable forest uses. The ecological benefits of maintaining large blocks of unfragmented forest and wildlife habitat are discussed in the Natural and Historic Resources chapter of this plan on pages 11-13 through 11-15.

~~Low-density and~~Low-impact development that has been carefully sited and designed may be appropriate within the town's upland areas, but the overall density of development should remain very low. Impacts to be minimized include tree clearing, disturbance of steep slopes, fragmentation of important wildlife habitat, and increased stormwater runoff and/or decreased water quality in upland streams. Recreational and forestry uses should be supported to the extent that they are undertaken in a sustainable manner that protects environmental quality. Scenic resources, such as views of prominent ridgelines and hillsides from public roads, may be protected by directing development to less visible sites or maintaining an appropriate level of vegetative screening.

in stream corridors in an attempt to resolve or avoid conflicts between fluvial systems and the built environment. A geomorphic assessment is currently underway on Blood Brook in Norwich and the town is considering limiting development within identified fluvial erosion hazard areas in a manner similar to current regulations within flood hazard areas.

The Blood Brook Watershed Corridor Plan of March 2008 is the result of a three-phase study by the Norwich Conservation Commission, the Two-Rivers Ottauquechee Regional Commission, and the Vermont Agency of Natural Resources, Department of Environmental Conservation, River Management Program. The purpose of that plan is to assess the underlying causes of channel instability and encourage the stream's return to equilibrium conditions. The plan outlines management efforts directed toward long-term solutions that help curb escalating costs and minimize the danger posed or damage caused by storm-swollen streams. Such efforts can help reduce flood and erosion hazards along the river corridor, improve water quality and aquatic habitat, and enhance aesthetic and recreational values of the stream.

Land Cover, Habitat and Wildlife

Forestland

Forest is the most common land cover type in Norwich accounting for nearly 22,000 acres or approximately 76 percent of Norwich's land. Forest resources provide a number of benefits, including an economic return for local landowners, water quality, wildlife habitat, recreation opportunities for town residents and visitors, and an important visual backdrop to the town's scenic views and vistas. Most of Norwich's forestlands are in private ownership, but remain in tracts 50 acres or larger. The largest single forest parcel is the 450 acres along the Appalachian Trail owned by the National Park Service. The Norwich Fire District owns a 330-acre parcel off Beaver Meadow Road.

Forests are a permanently renewable resource if managed properly. Sound forest management results in a stable economic return for landowners, local resources to support local industry, and perhaps most importantly, an incentive for keeping large tracts of land free of development and available to the public for recreation, wildlife and scenic enjoyment. However, poor forest management can result in the degradation of biological diversity and can damage scenic landscapes. Forest management can be accomplished in a manner that does not create erosion or adversely impact scenic areas and wildlife. Generally, a sound forest management plan should be based on a number of objectives, including sustainable timber production, the protection of water quality, maintaining a diversity of wildlife habitat, and aesthetic enhancement. Whatever the objectives of a forest property owner, developing and implementing a forest management plan is the best means of managing a forest parcel for long-term, sustainable forest production.

The majority of the town's forest land is privately owned. While much of the private forest is made up of large parcels associated with single-family residences, many undeveloped parcels under forest management also exist. Of the privately owned forestland in town, more than 11,000 acres are currently enrolled in the state's current use program, and are therefore managed in accordance with a forest management plan approved by the county forester (see Figure 11-4).

Wildlife

In addition to its 3,400 human residents, Norwich is home to a variety of animal species. To survive, these animals require substantial acreage, preferably in large, solid blocks interconnected by undisturbed corridors for seasonal movement. The preservation of a diverse array of species requires more than protection of identified deer wintering areas or bird nesting sites. Certain species such as black bear that require large contiguous habitat areas, which also support a variety of other species, serve as

indicators of the health and diversity of local wildlife populations.

In Norwich, forested upland areas are home to bear, deer, bobcat, moose and coyote. The Connecticut River and its tributaries support natural and stocked populations of brook, brown and rainbow trout. The Connecticut River is also a major route for bird migration. The marshes and other wetlands along the Connecticut River provide migrating songbirds and raptors with food, water and shelter. Numerous species of waterfowl, including ducks, egrets and blue herons, occur along the river. Non-game small mammals such as beavers and otters that need continuous access to water abound along the river. Wetlands also provide critical habitat for a variety of species such as mink, otter, beaver, black bear, grey fox, moose, ducks, herons, other wading birds and shore birds and other species.

Special natural areas contribute to the quality of life in Norwich, promoting species diversity, aesthetic enjoyment, recreation and education. Natural areas

in Norwich include orchid swamps, peat bogs, vernal pools, , fall-line gorges, estuaries and deer yards. Natural areas can be identified and graded in order of their uniqueness or significance. Such an assessment would provide direction for conservation efforts. Important natural areas can be protected through purchase, through encouraging landowners to seek permanent conservation protection, and through careful review of proposed development.

The main threat to wildlife habitat is fragmentation. Figure 11-3 illustrates the impacts of land subdivision and fragmentation of large tracts of forestland on wildlife populations in northern New England. The left-hand column identifies expected species in large tracts of undeveloped forest, while each subsequent column depicts the species likely to be lost as the land is subdivided into smaller parcels for scattered development.

In order to maintain habitat for animals that have large home ranges, such as bear, bobcat, fisher, and moose, and other animals that are sensitive to human

FIGURE 11-3: Impact of Forest Fragmentation on Wildlife Species

UNDEVELOPED FOREST	BLOCKS 500+ ACRES	BLOCKS 100-499 ACRES	BLOCKS 20 - 99 ACRES	BLOCKS <20 ACRES
Small Rodent, Squirrel, Cottontail, Raccoon, Skunk, Muskrat, Red Fox	Small Rodent, Squirrel, Cottontail, Raccoon, Skunk, Muskrat, Red Fox	Small Rodent, Squirrel, Cottontail, Raccoon, Skunk, Muskrat, Red Fox	Small Rodent, Squirrel, Cottontail, Raccoon, Skunk, Muskrat, Red Fox	Small Rodent, Squirrel, Cottontail, Raccoon, Skunk, Muskrat, Red Fox
Woodchuck, Beaver, Hare, Porcupine, Weasel	Woodchuck, Beaver, Hare, Porcupine, Weasel	Woodchuck, Beaver, Hare, Porcupine, Weasel	Woodchuck, Beaver, Hare, Porcupine, Weasel	
Mink, Deer	Mink, Deer	Mink, Deer		
Moose	Moose			
Fisher, Bobcat, Coyote, Black Bear				
Song Birds	Song Birds	Song Birds	Song Birds	Song Birds
Sharp-Shinned Hawk, Broad Winged Hawk, Cooper's Hawk, Osprey, Turkey Vulture, Horned Owl, Barred Owl	Sharp-Shinned Hawk, Broad Winged Hawk, Cooper's Hawk, Osprey, Turkey Vulture, Horned Owl, Barred Owl	Sharp-Shinned Hawk, Broad Winged Hawk, Cooper's Hawk, Osprey, Turkey Vulture, Horned Owl, Barred Owl		
Red-Tail Hawk, Goshawk, Raven, Bald Eagle	Red-Tail Hawk, Goshawk, Raven, Bald Eagle			
Reptiles, Amphibians	Reptiles, Amphibians	Reptiles, Amphibians	Most Reptiles, Most Amphibians	Most Reptiles, Most Amphibians
Garter Snake, Ring-Neck Snake	Garter Snake, Ring-Neck Snake	Garter Snake, Ring-Neck Snake	Garter Snake, Ring-Neck Snake	
Wood Frog	Wood Frog	Wood Frog		

SOURCE: A Response to Sprawl: Designing Communities to Protect Wildlife Habitat and Accommodate Development and Conserving Wildlife in Maine's Developing Landscape; July 1997.

disturbance, such as wood thrushes, larger blocks of forest or meadowland, or wetland habitat need to be conserved. Blocks up to 20 acres are home to species typical of urban and suburban landscapes (e.g., raccoons, skunks, and squirrels). Moose, bald eagles, goshawks and similar species usually require 500 to 2,500 acres, while blocks of more than 2,500 acres may hold the full complement of species expected to occur in this region of Vermont.

Within Norwich, a number of large, unfragmented blocks of forest remain, including:

- ❑ 2,600 acres between Beaver Meadow and Turnpike Roads, which continues into the Town of Sharon
- ❑ 2,000 acres south of Bragg Hill Road
- ❑ 1,500 acres between Upper Turnpike Road and New Boston Road
- ❑ 1,400 acres between Turnpike Road and Upper Turnpike Road, which continues into the adjoining towns of Sharon, Strafford and Thetford
- ❑ 1,000 acres between New Boston Road & Bradley Hill Road

Maintaining contiguous forested lands within Norwich, as well as between Norwich and neighboring towns, protects wildlife habitats found in core forests and provides corridors that connect larger blocks of forest.

While many residents enjoy hunting, fishing, wildlife viewing and have extensive knowledge of local wildlife and fisheries, the information has not been documented. Most of the town's important wildlife habitats have not been inventoried or mapped. The extent of documented knowledge about wildlife habitat in Norwich is surprisingly limited, in part because of the amount of fieldwork and mapping needed to document local populations. For this reason, site-

specific evaluations may be required to determine the potential impacts to wildlife and important habitat associated with a particular subdivision or development proposal.

Scenic Resources & Rural Character

Norwich is appreciated by most of its residents as a quiet community for rural living. Commercial development is limited to retail and service establishments on Main Street and Route 5. The many small businesses and offices that residents operate from their homes remain inconspicuous. The green in the center of Norwich village and the historic homes along or near Main Street are a visual reminder of the community's heritage. Abandoned cellar-holes and granite posts mark former homesteads of the town's founding families and their descendants.

Norwich is no longer primarily an agricultural town, but retains a few moderately-sized farms and much rural character. Open country and meandering roads that follow lively brooks between forested slopes lead to small hamlets with names like Beaver Meadow, Union Village, Pompanoosuc and Podunk. The Connecticut River with its tributary, the Ompompanoosuc, open fields and remaining patches of pasture add to the variety and beauty.

Yet, as the town's landscape continues to change, residents recognize that Norwich's rural character is threatened. The views from the roads, fanning like fingers of a hand from Norwich village, are changing as more homes are built, so that passersby are required to look between houses to glimpse the view beyond. This section of the plan describes the main elements of Norwich's rural character – its

FIGURE 11-4: Current Use

YEAR	PARCELS	TOTAL ACRES	TAXES SAVED
1993	83	8,138	
2003	125	11,587	\$679,322
2005	127	11,934	\$306,852
2006	130	12,193	\$300,763
2007	129	12,165	\$378,045
2008	128	12,198	\$394,843
2009	131	12,322	\$415,761
2010	136	12,846	\$469,835
2009	131	12,322	\$415,761
2010	136	12,846	\$469,835
2011	136	12,808	\$476,636
2012	139	12,812	\$488,490
2013	141	12,999	\$695,516
2014	146	13,401	\$765,408
2015	145	13,530	\$775,742
2016	148	13,701	\$759,681

SOURCE: VT Department of Taxes

Objective I.8 Preserve the functions and prevent the loss of the town's wetlands.



- Action I.8.a Identify and assess the town's wetlands.
- Action I.8.b Complete the identification and mapping of Norwich's wetlands.
- Action I.8.c Petition the state to reclassify wetlands that the town considers of national importance to Class I status to ensure a higher level of protection.
- Action I.8.d Maintain provisions in Norwich's zoning and subdivision regulations to minimize the loss of wetlands to development.
- Action I.8.e Educate landowners about the function and value of wetlands, including their role in storing water during storm events and reducing the severity of downstream flooding.
- Action I.8.f Require construction of compensatory flood storage if wetlands that provide flood storage will be lost or adversely affected by proposed development so as to achieve no net loss of the affected wetland's flood storage function.

Objective I.9 Conserve significant wildlife habitats, especially the habitats of rare and endangered species, protect core blocks of forest and maintain forest connectivity between blocks.



- Action I.9.a Define, identify, map and document Norwich's significant wildlife and plant habitats.
- Action I.9.b Map larger blocks of contiguous forest land and potential travel corridors between those blocks in Norwich and neighboring towns.
- Action I.9.c Review subdivision and site plans to assess their effects on significant wildlife habitats in order to encourage their protection.
- Action I.9.d Require new development to be located and configured in a manner that minimizes adverse impacts on critical wildlife habitat, including travel corridors, deer wintering areas and natural areas to the greatest extent feasible.
- Action I.9.e Require buffers between new development and significant wildlife habitats.
- Action I.9.f Use the town's zoning and subdivision regulations to protect the habitats of rare and endangered species.
- Action I.9.g Promote the protection of rare and endangered species, and their habitats, by the town's landowners.

Objective I.10 Encourage the conservation of working forestlands and the use of management practices that enhance forest health and long-term productivity.



- Action I.10.a Promote landowner participation in the state's current use program for forestlands.
- Action I.10.b Manage town forests and other forested public land in accordance with best practices in order to conserve and maintain them as a long-term resource.
- Action I.10.c Require forestry practices that minimize erosion and damage to watercourses.