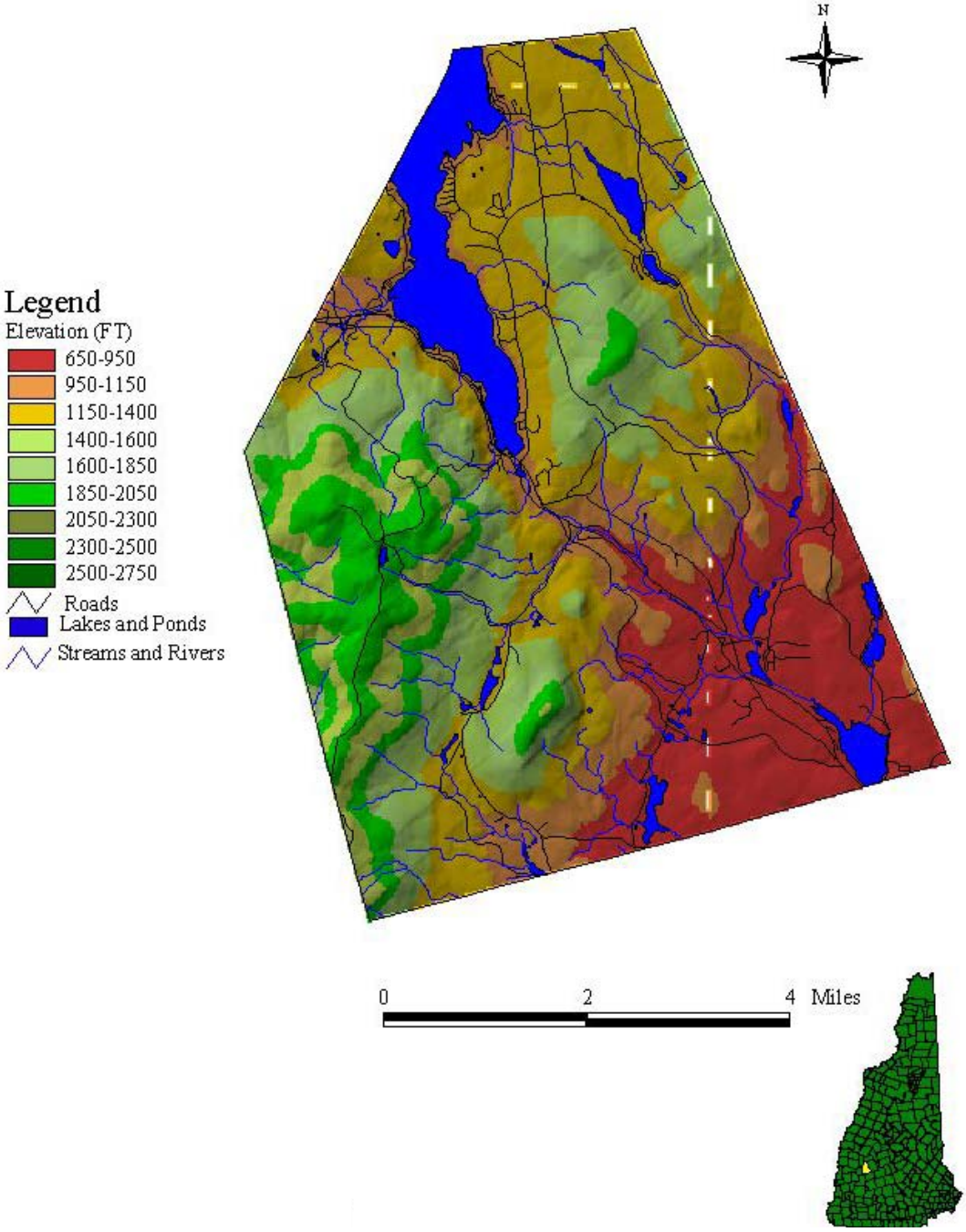
Newbury, NH



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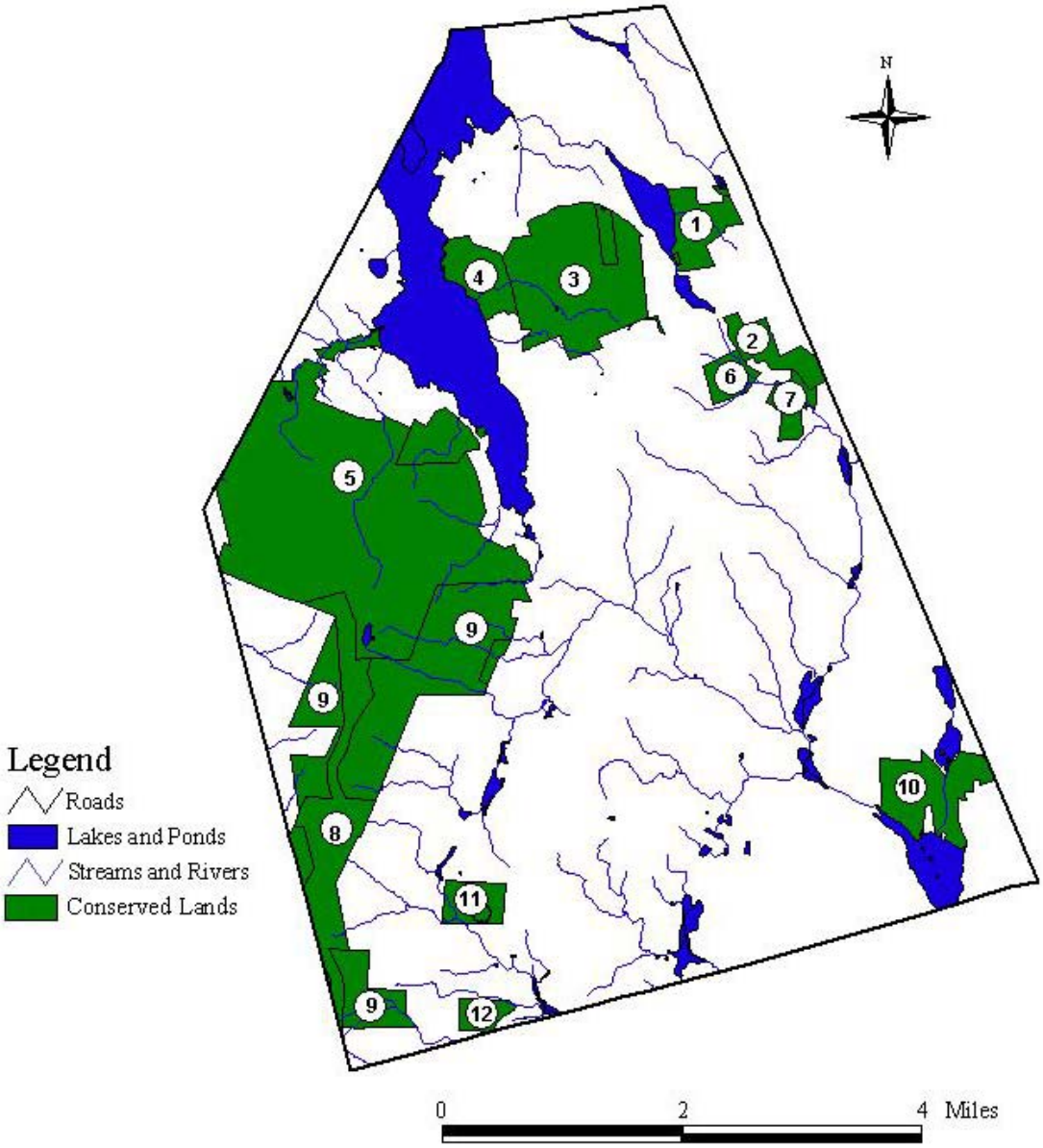
1. How many acres does the town represent, and are there any conserved lands within the town. If so what is the percentage of conserved lands?

We were able to gather this information with the aid of GIS (Geographic Information Systems). We used GRANIT, New Hampshire's primary source for GIS data to retrieve the conserved lands layer for our towns. Using GIS we gathered the total area of the town, and the total area of conserved lands to find the percent of the land in each town that is conserved.

Newbury has an ideal amount of land in conservation with 25% of its 24,382 acres already in conservation. There are conserved land parcels throughout the entire town. There are some large parcels in Newbury which contribute greatly to the percent of land conserved in the town. None come close to matching Sunapee State Park which is 2218 acres. Pillsbury State Forest is the next largest parcel consisting of 1054 acres below Sunapee State Forest. The John Hay Wildlife Management Refuge and the Hay Forestry and Wildlife Management Area take up the next largest conserved land percentage in Newbury. The John Hay Wildlife Management Refuge which is on the lake side of the road consists of 165 acres and when you cross the street you are now on the Hay Forestry and Wildlife Management Area which consists of 730 acres. There are several other parcels in Newbury which all contribute to Newbury having conserved lands throughout the town.

"GRANIT Data." GRANIT. 25 Oct. 2005. University of New Hampshire and NH Office of Energy and Planning. 07 Mar. 2005 <http://www.granit.sr.unh.edu/>.

Conserved Lands
Newbury, NH



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	NAME	ACRES	AREA_FEET	Held by:
1	Stoney Brook Wildlife Sanctuary	5	215362	Audubon Society of New Hampshire
	Stoney Brook Wildlife Sanctuary	212	9245983	Audubon Society of New Hampshire
2	Stoney Brook Wildlife Sanctuary	128	5579230	Audubon Society of New Hampshire
3	Hay Forestry + Wildlife Management Area	692	30146411	Society For The Protection of New Hampshire's Forest (SPNHF)
	Hay Forestry + Wildlife Management Area	37	1629572	SPNHF
4	John Hay National Wildlife Refuge	165	7186079	U.S. Dept. of Interior, Fish, and Wildlife Service
	John Hay National Wildlife Refuge	2	89801	U.S. Dept. of Interior, Fish, and Wildlife Service
5	Sunapee State Park	0	11186	NH Dept. of Resources & Economic Dev. (DRED)
	Sunapee State Park	32	1407326	(DRED)
	Sunapee State Park	1	32764	(DRED)
	Sunapee State Park	2185	95182761	(DRED)
	Sunapee State Park	133	5802961	(DRED)
	Sunapee State Park	3	151835	NH Fish & Game
6	Meding Lots	82	3572784	Audubon Society of New Hampshire
7	Ring Brook Easement	82	3588229	ASLPT
8	Pillsbury-Sunapee Corridor	506	22029907	(DRED)
9	Pillsbury State Park	206	8976012	(DRED)
	Pillsbury State Park	25	1082108	(DRED)
	Pillsbury State Park	689	30013389	(DRED)
	Pillsbury State Park	37	1621639	(DRED)
	Pillsbury State Park	2	79122	(DRED)
	Pillsbury State Park	158	6900913	(DRED)
10	Weiler	281	12240058	SPNHF
	Weiler	1	24721	SPNHF
11	Flagg	52	2271237	The Nature Conservancy
	Flagg	46	2025366	The Nature Conservancy

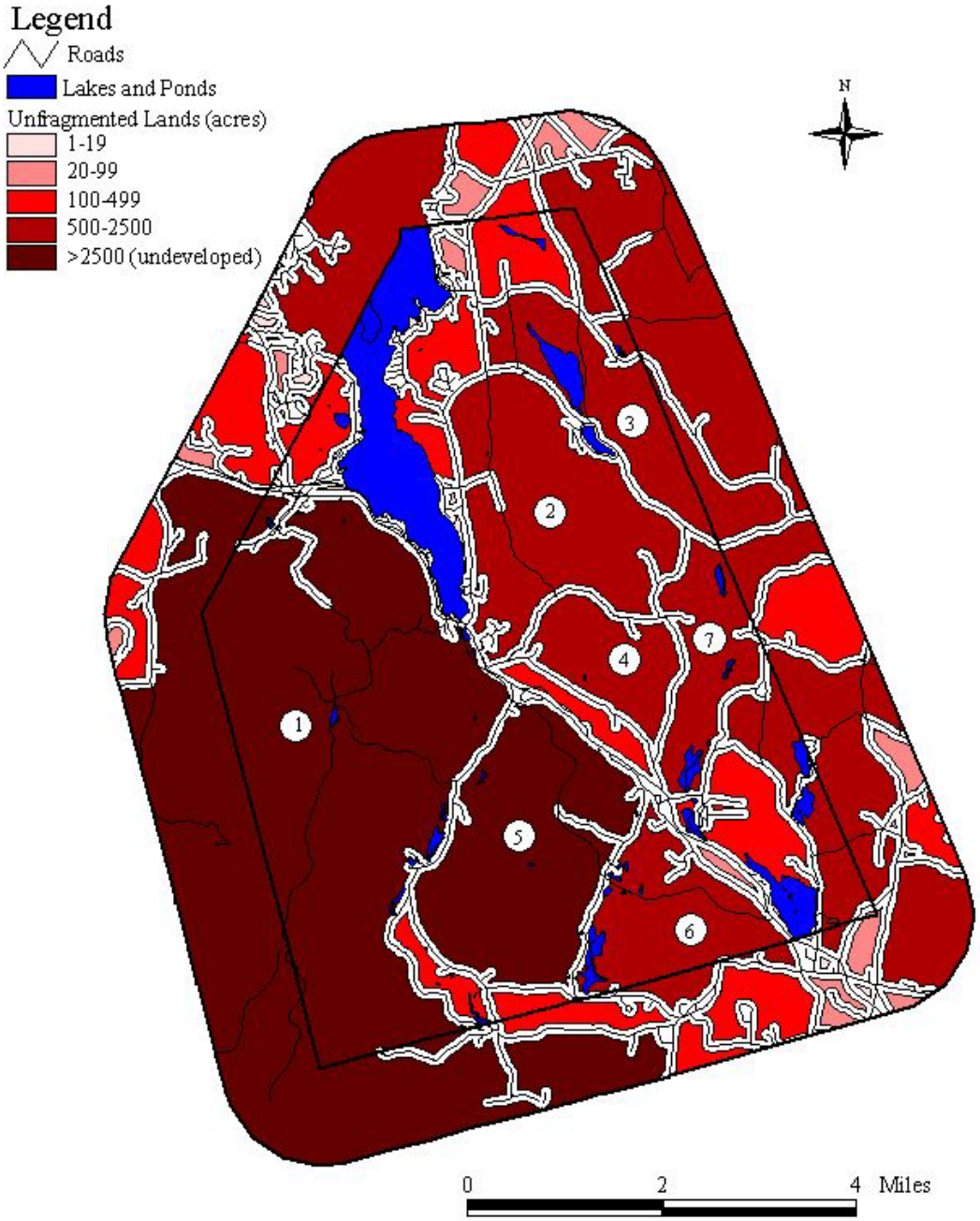
	Flagg	12	515120	The Nature Conservancy
	Flagg	0	21497	The Nature Conservancy
12	Bensley Easement	64	2804533	ASLPT

2. Are there large undeveloped parcels of land in your region?

Unfragmented parcels are areas that are not intersected by roads, housing, or any other type of human developments. These areas are prime habitat for many species of wildlife. Generally, the larger the size of the unfragmented parcel the more beneficial it is to wildlife for habitat use. Using GIS we were able to create an unfragmented lands map. Newbury has seven unfragmented lands and the total acreage includes the one mile buffer that is set outside the towns borders. Parcel # 1 spans 12165 acres. This parcel contains the highest elevations in Newbury. Both Sunapee State Park which is 2218 acres and Pillsbury State Park which is 1054 acres are conserved lands that lie within this unfragmented parcel. Parcel # 2 is 2310 acres. This parcel has the third highest elevation of any parcel in Newbury. Hay Forestry and Wildlife Management Area consist of 729 acres of conserved land and lies on this unfragmented parcel. Stoney Brook Wildlife Sanctuary which consists of 80 acres of conserved land and Ring Brook Easement which consists of 82 acres of conserved land both lay within this unfragmented land. Parcel # 3 is 1389 acres. Stoney Brook Wildlife Sanctuary consists of two separate parcels that make up 214 acres of conserved land on this unfragmented parcel. Parcel # 4 is 770 acres. Parcel # 5 is 2545 acres. This parcel contains the second highest elevation in Newbury. Parcel # 6 is 1284 acres. Parcel # 7 is 1147 acres.

"GRANIT Data." GRANIT. 25 Oct. 2005. University of New Hampshire and NH Office of Energy and Planning. 07 Mar. 2005 <http://www.granit.sr.unh.edu/>.

Unfragmented Lands
Newbury, NH



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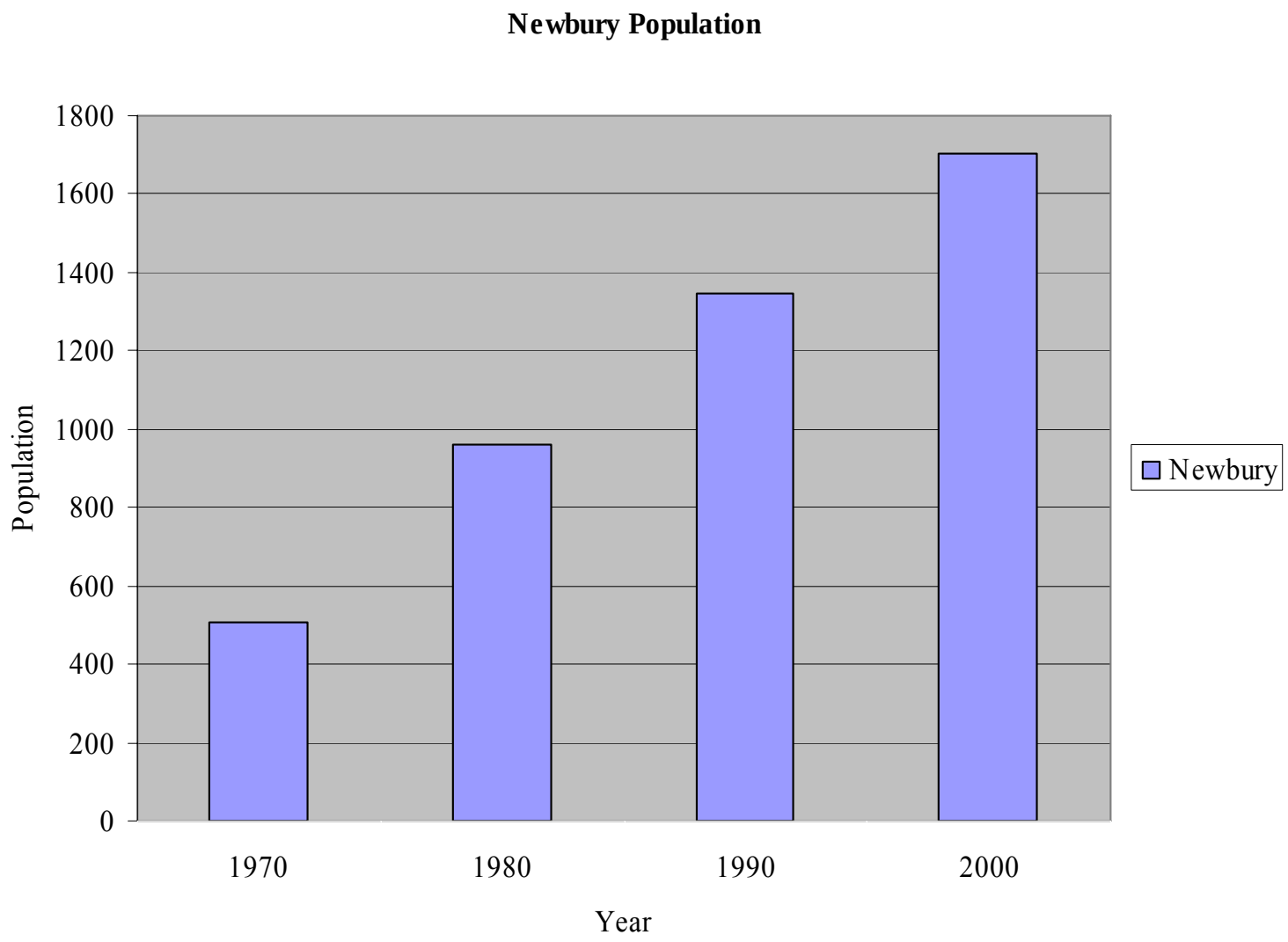
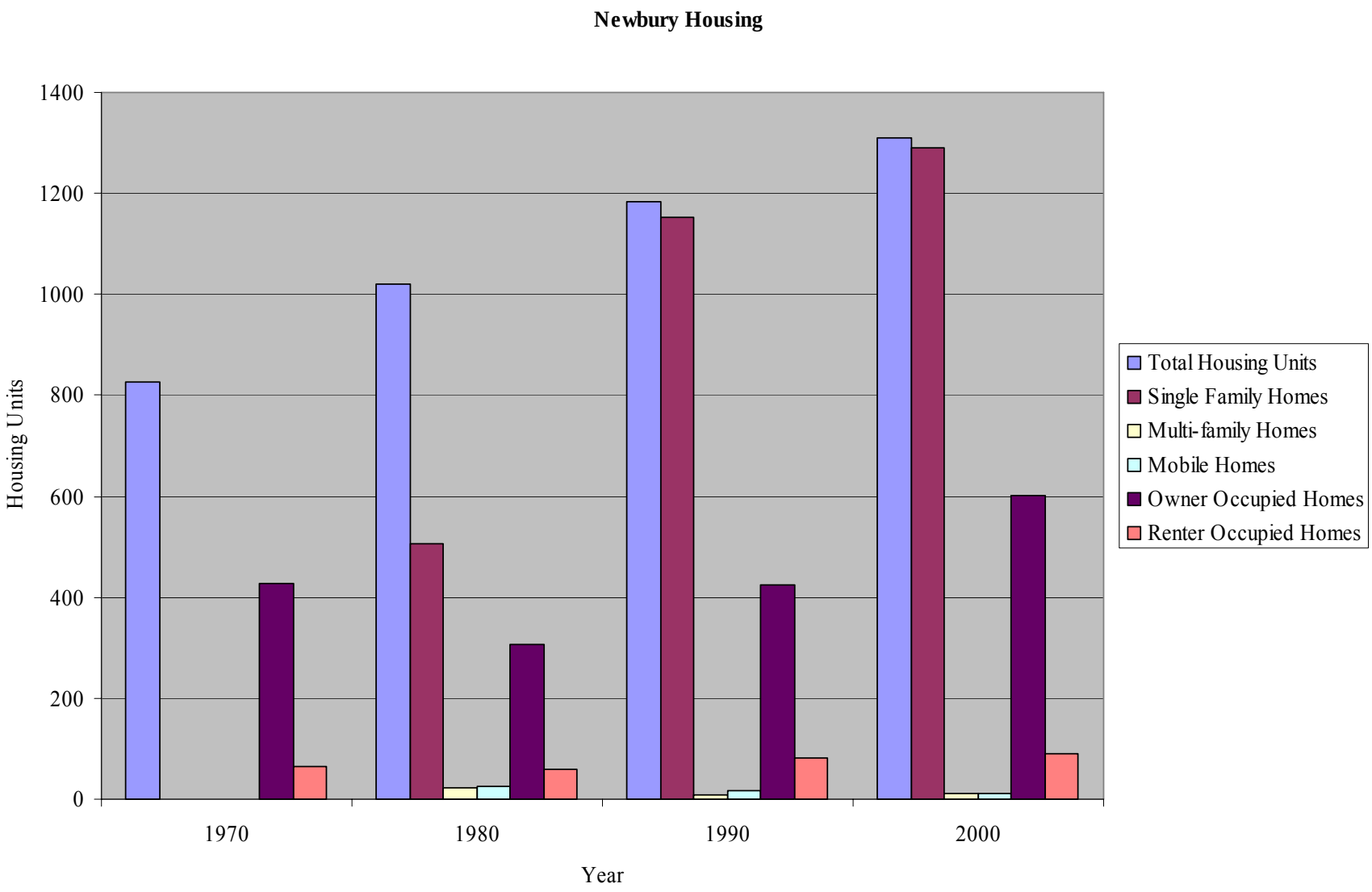
2. What is the rate of development in the past ten years, where has new development occurred, what is the potential for development, and has a build-out analysis been done?

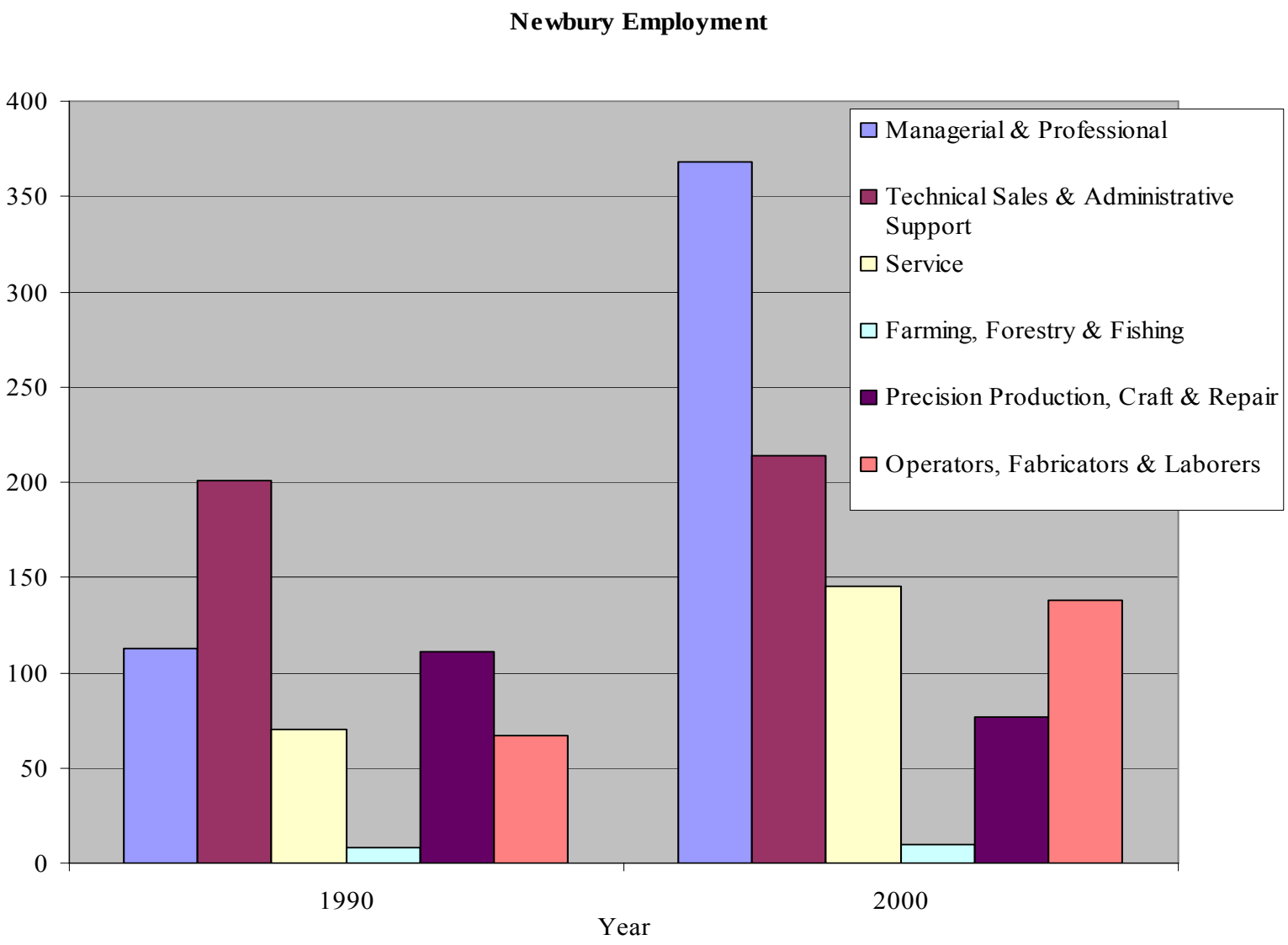
In 1990 Newbury had a population of 1,347 people by 2003 the population raised 481 people to a total of 1,828, which is a 36% increase. Development is relatively around most of the lakes and ponds. There is high density of development in Blodgett's landing. Two small villages (Newbury center and South Newbury) also contain smaller lots and a higher density of development. Strip commercial development along 103 in the vicinity of the Mt. Sunapee State Park. Low density, strip residential development along the road network in town. There is also a possibility of Mt. Sunapee expanding. This would create more ski trails on the mountain and most likely additional associated development in Newbury. Newbury has had a build-out analysis completed and under current conditions just under half of the land area in Newbury is considered developable (12,433 acres). The soil based lot size table in the Natural Resource Inventory calculated a total of 9,048 net realistic lots as the total in Newbury's three different watersheds. At full build-out the population of the town could increase to 17,882 which is a thirteen fold increase from the 1990 population of 1,347 (Newbury Conservation Commission 65-68).

"Town of Newbury." 14 Sep 2004. Upper Valley Lake Sunapee Regional Planning Commission. 2 2005 <http://www.uvlsrpc.org/towns/newbury.html>.

Newbury Conservation Commission. Natural Resource Inventory for the Town of Newbury. 2001.


Newbury Population
1800
1600
1400
1200
1000
800
600
400
200
0
Population
1970
1980
1990
2000
Year
Newbury


Newbury Housing
1400
1200
1000
800
600
400
200
0
Housing Units
1970
1980
1990
2000
Year
Total Housing Units
Single Family Homes
Multi-family Homes
Mobile Homes
Owner Occupied Homes
Renter Occupied Homes


Newbury Employment
400
350
300
250
200
150
100
50
0
1990
2000
Year
Managerial & Professional
Technical Sales & Administrative Support
Service
Farming, Forestry & Fishing
Precision Production, Craft & Repair
Operators, Fabricators & Laborers

4.+ 5. Does the master plan in your town address conservation? Is there a conservation commission? Are they actively pursuing any parcels?

The master plan addresses conservation and the natural resource inventory has much more information dealing with the town and the natural features that occur in Newbury. There is a conservation commission in the town of Newbury. After talking with a member of the conservation commission it was learned that the commission is not actively pursuing any parcels of land for conservation purposes at this time.

1997 Newbury Master Plan.

Weiler, Bill. Head of Newbury Conservation Commission. Conversation, November 2004.

6. Are there actively managed agricultural lands in town, do they provide a public or private benefit, and do they have an easement on them?

After talking with members from the Newbury Town Office and the Newbury Public Library it was brought to our attention that Newbury currently does not have any records of actively managed agricultural lands in the town. Orthophotos were downloaded from GRANIT, this layer allowed us to digitize open fields within the town to select agricultural lands. The large open parcels of land were identified and digitized using GIS. The digitized land was then queried to 10 acres allowing the map to show only the parcels of land greater then ten acres, in accordance to the ASLPT standards. The digitized open space was later confirmed by the local knowledge of Dan Wolfe.

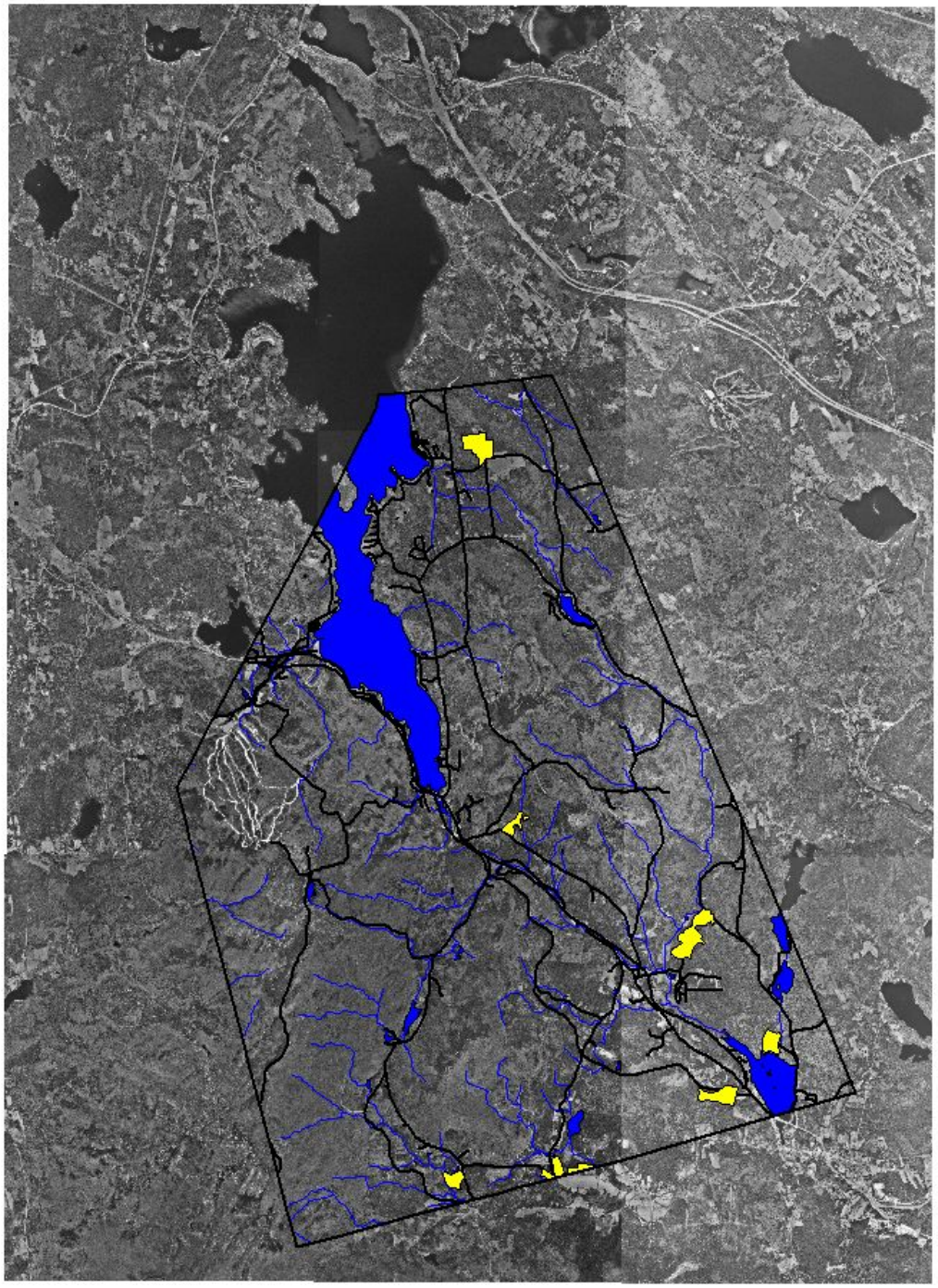
Agricultural lands can be viewed on the following map and include:

- Open field north of the golf course.
- Folsom: Mowed field
- Burley: Highmowing Farm
- Schroeder Farm
- Webb Property
- Rick Messer: Hay field
- Weiler Property on Lake Todd: Gillingham Farm
- Lyons Family Nursery on Morse Hill Rd.

GRANIT Data." GRANIT. 25 Oct. 2005. University of New Hampshire and NH Office of Energy and Planning. 07 Mar. 2005 <http://www.granit.sr.unh.edu/>.

Wolfe, Dan. Conversation on March 31, 2005.

Agriculture
Newbury, NH



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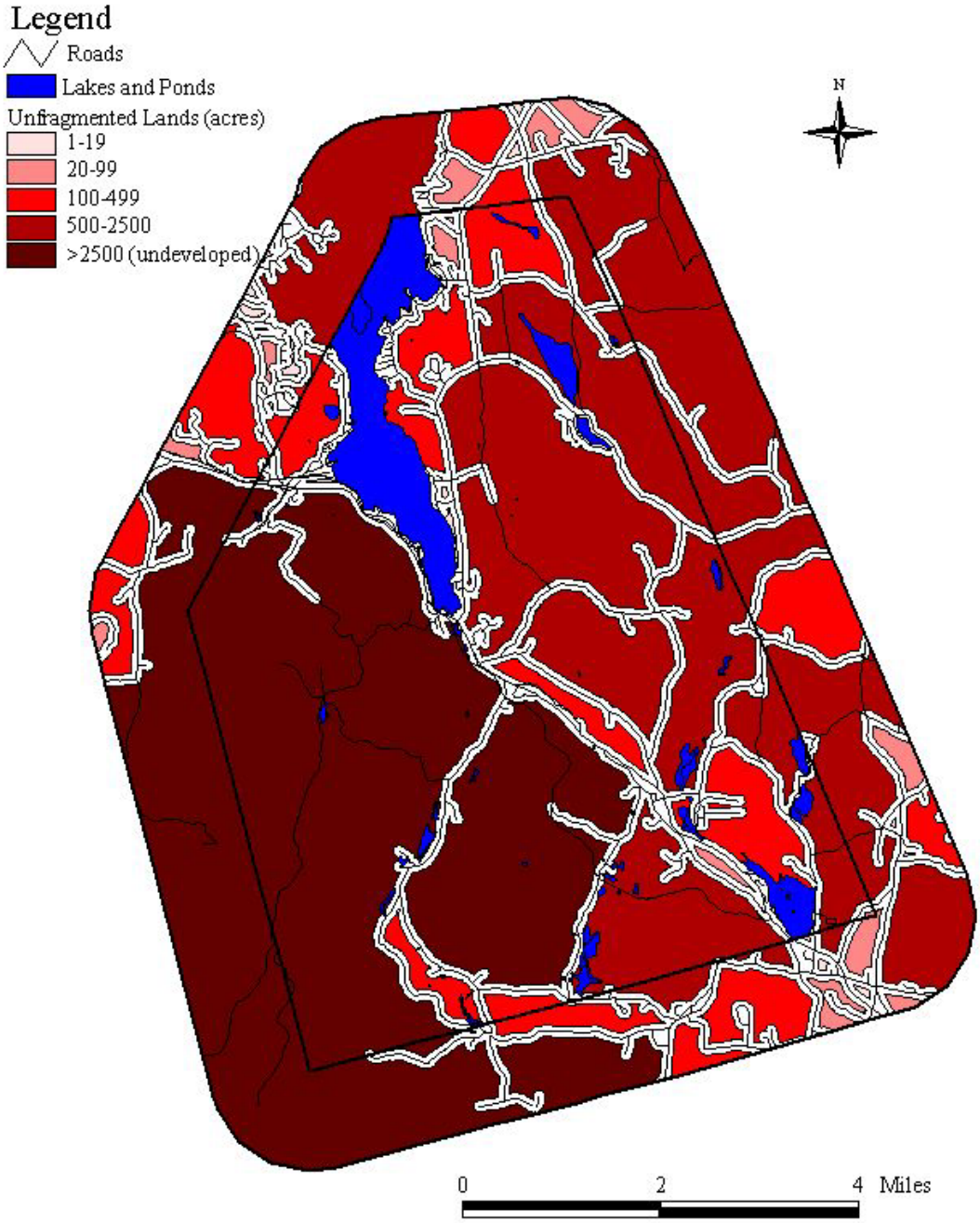
7. Are there any actively managed forested lands in town, and do they have an easement on them.

Tree farms are a form of forest management. To become a tree farmer, a landowner must have 10 acres set aside for current use and it may become a tree farm or another form of actively managed forests. A tree farm owner does not need to state his name or information about his parcel; he simply has a green and white triangle sign on the edge of the road that signifies that parcel as a tree farm. SPNHF Tree Farm Data 2004 list that there are 12 tree farms within Newbury. These tree farms total 2127 acres. Using the unfragmented lands map that we created we can view where tree farms may be located because unfragmented lands are generally large forested areas. Not every town has parcel data so using the percent of unfragmented lands compared to the percent of managed forest we can see how much forest there is that still remains unmanaged. There is no way for us to pinpoint locations of specific farms.

The Hay Forestry & Wildlife Management Area is the only tree farm which holds a conservation easement in Newbury.

SPNHF Tree farm data.

Unfragmented Lands
Newbury, NH



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8. What plant communities are in town, and are any of them rare or threatened?

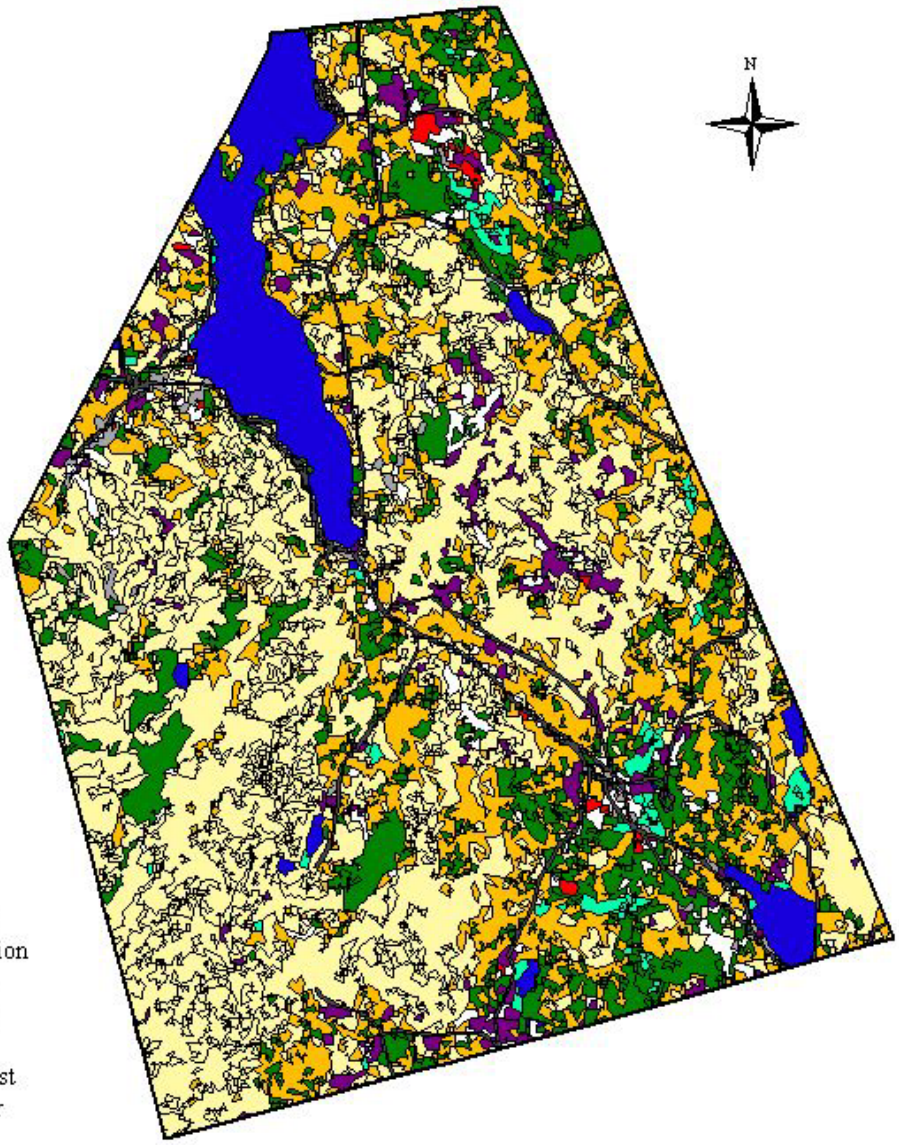
We used GIS Landcover Data to examine the plant communities in Newbury. We calculated the acres that each type of landcover accounted for in Newbury and it is listed in the following chart.

We used a GIS data layer which listed locations of endangered species. The locations and specifics on type are skewed to keep them protected. Ciliated Willow Herb, Fen Orchids, NNE Circumneutral Cliff Community, and SNE Circumneutral Talus Forest/Wood Land are all rare plant species that occur in Newbury. Endangered birds and vegetation are the icons which represent the altered information from the GRANIT data. (Newbury Conservation Commission, p. 54)

Landcover	**Acres**
Developed	213
Transportation	676
Agriculture	723
Hardwoods	11509
Conifers	3501
Mixed Forest	5030
Open Water	1641
Wetland	330
Disturbed	89
Other	669
Total	**24383**

Newbury Conservation Commission. Natural Resource Inventory for the Town of Newbury. 2001.

Landcover Types
Newbury, NH



Legend

- Developed
- Transportation
- Agriculture
- Hardwoods
- Conifers
- Mixed Forest
- Open Water
- Wetland
- Disturbed
- Other Cleared

0 2 4 Miles

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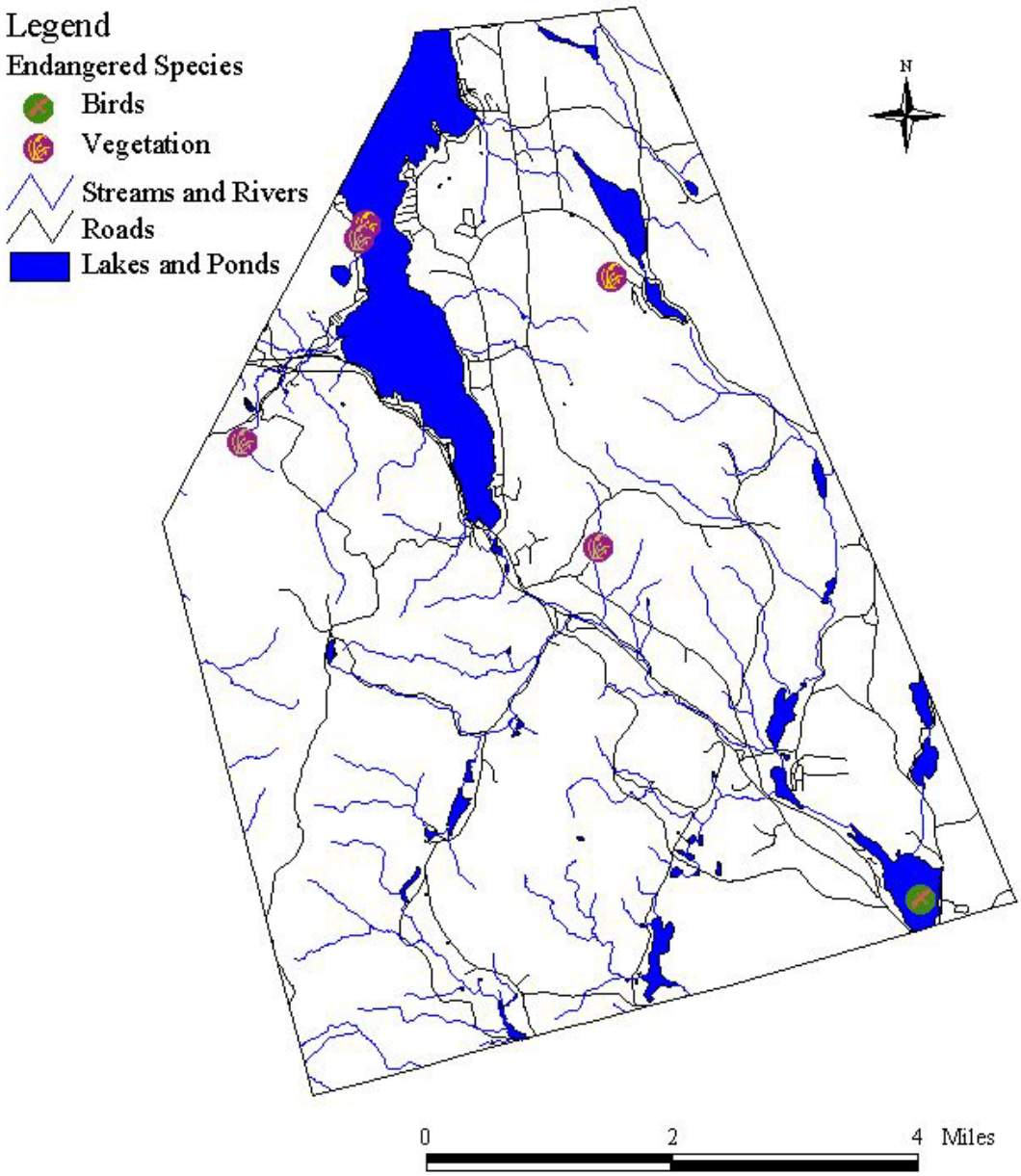
Endangered Species
Newbury, NH



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9. Are there ecologically important lands in your town to wildlife?

One of the main goals of the *New Hampshire Everlasting* initiative is to conserve ecologically important lands. Protecting these lands involves protecting prime habitat for native species, and in order to identify these lands, a number of techniques were used. The only important wildlife habitat identified by the New London master plan is deer wintering areas and deer yards. There are two locations in the center of the town where uncommon species are found (to protect the species they will not be identified and the locations, which can be found on the regional map of endangered or threatened species, are estimations of their actual locations). One of these is a plant community system and the other is an insect. In the state of New Hampshire both are imperiled and globally the insects are uncommon/ rare.

Unfragmented areas represent lands that are uninterrupted by roads or development. These pieces of land are important because many species that cannot adapt well to suburban-type conditions depend on them for habitat. Species that require a habitat with little to no human interaction or impacts require larger parcels than those that can cope with human interactions and impacts. Generally, larger mammals and certain birds require larger parcels. By protecting large pieces of unfragmented land, the greatest number of species can be protected.

Forest Continuity Indexes (FCIs) are a way of measuring the relative shape of each area of unfragmented land. If the FCI is low, a parcel of land is more round than a parcel with a higher FCI. If the parcel of land is round then it has less of an edge effect, making the parcel of land more beneficial for wildlife habitat.

Connectivity displays corridors that allow wildlife to move from one area to another safely. They are important for many reasons such as to genetic variation and, for many species, breeding.

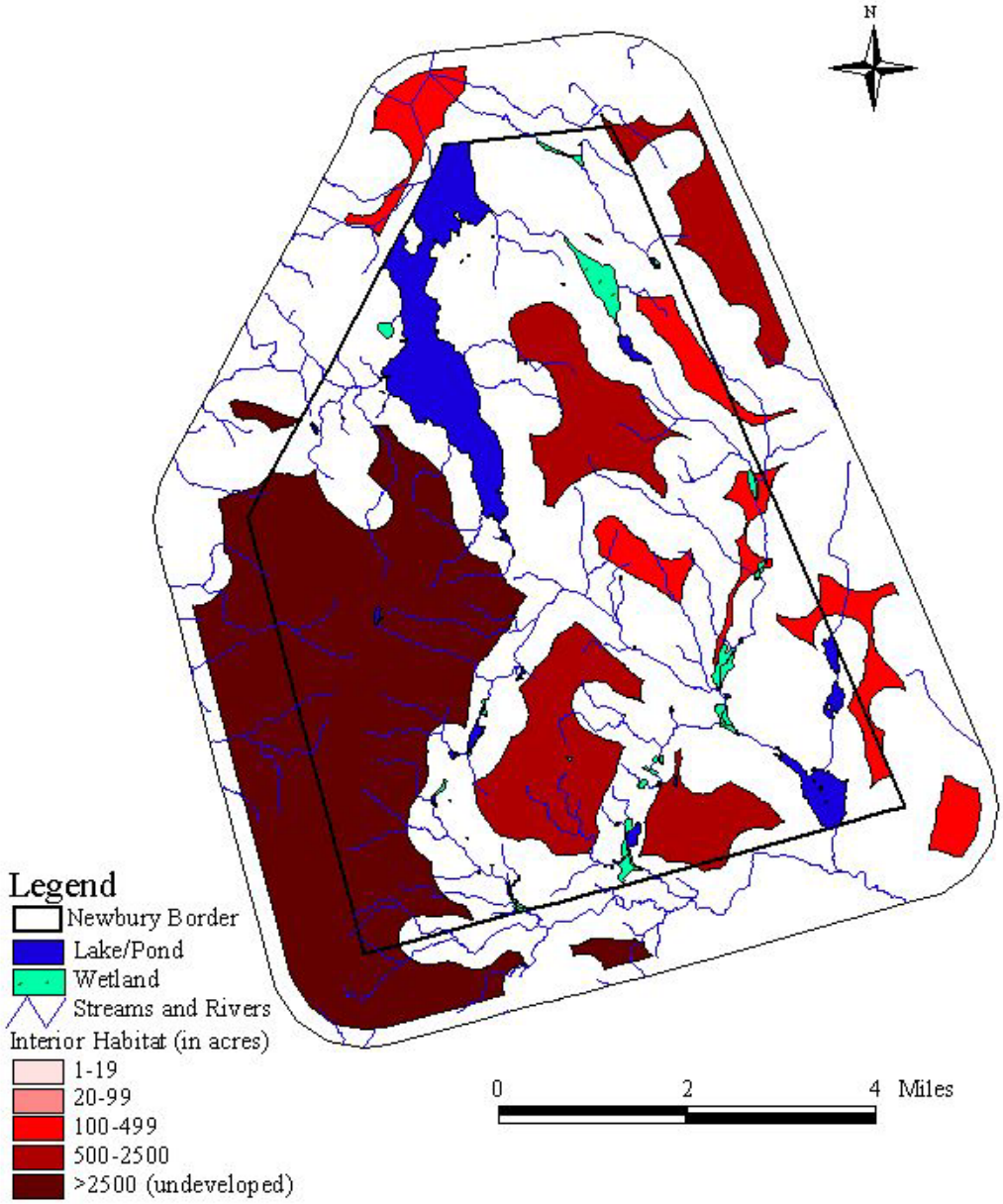
In order to identify unfragmented lands, a 500 foot buffer was placed along all roads in the town. This was done because most development is likely to occur on or near a road. The land that was outside the 500 buffer along the roads was considered to be unfragmented. The unfragmented parcels were then color-coded according to acreage. To map interior habitat, the unfragmented lands layer was manipulated. A 1000 foot buffer was placed on the inside of each unfragmented parcel. The 1000 foot buffer was then clipped away, and the land remaining was said to represent the interior habitat of a parcel. In order to determine the placement of corridors, all rivers and streams (excluding intermittent streams) were located within the region. A 300 foot buffer was then placed around the rivers and streams to represent the land surrounding them. This land was interpreted as undeveloped because there is likely to be little or no development directly adjacent to rivers and streams. The undeveloped land represented by the 300 foot buffer was then clipped to the unfragmented lands layer. The parts of the 300 foot buffer that connected unfragmented parcels were seen as corridors. To calculate the FCI's for each parcel in the ASLPT region, the unfragmented lands layer was manipulated. The FCI of a parcel is equal to:

$$\frac{\text{Perimeter (feet)}}{2\sqrt{(\pi \text{area (sq feet)})}}$$

This formula was entered into the GIS program. An FCI value for each parcel was calculated in the attribute table of the data. These values were then used to color-code the parcels according to their calculated FCI.

"GRANIT Data." GRANIT. 25 Oct. 2005. University of New Hampshire and NH Office of Energy and Planning. 07 Mar. 2005 <http://www.granit.sr.unh.edu>.

Interior Habitat
Newbury, NH



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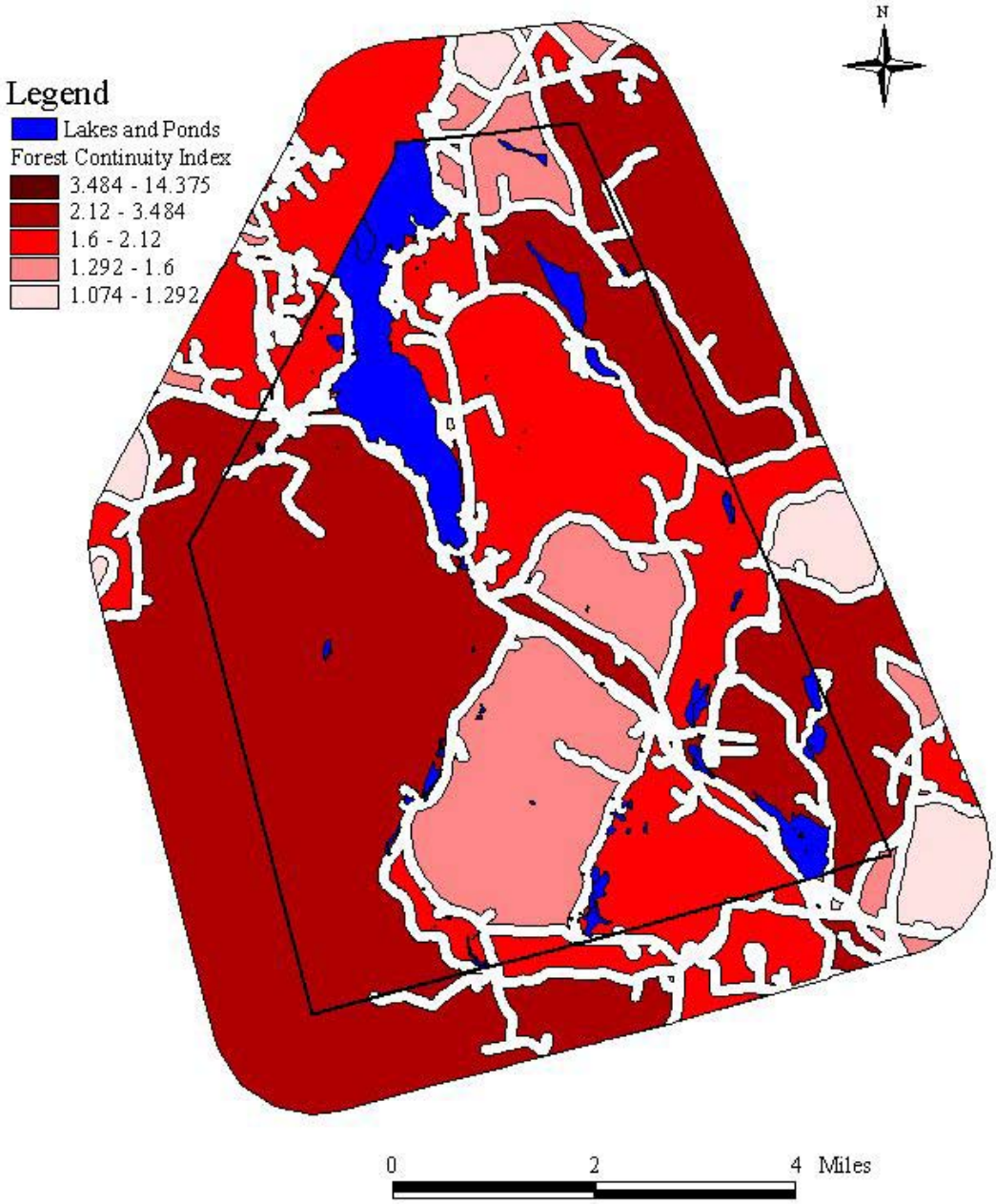
Forest Continuity
Newbury, NH



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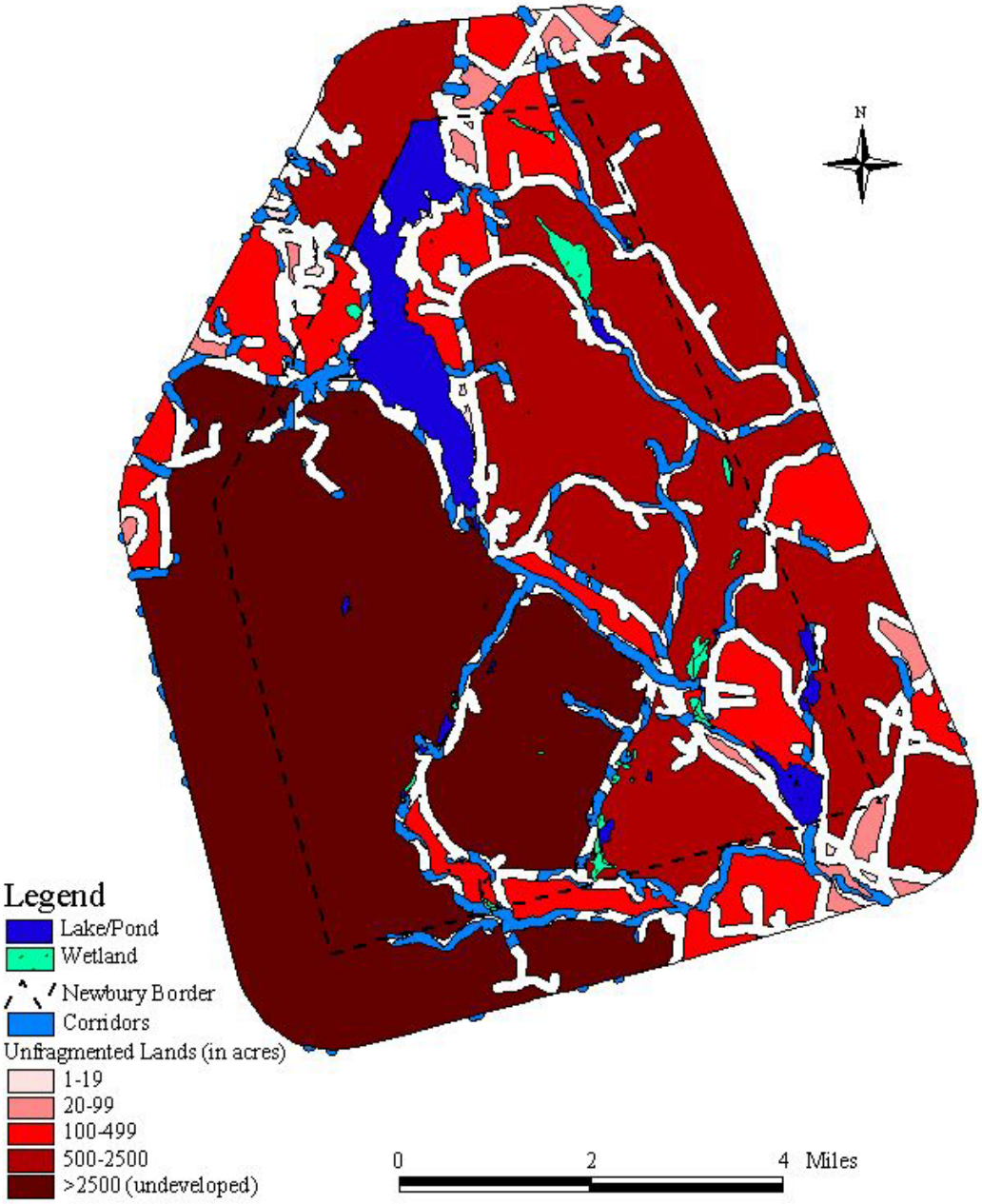
Corridors
Newbury, NH



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10. Are there areas in town adjacent to surface waters that are undeveloped, are there any aquifers in town? Identify where impervious surface threatens water quality

The water resources map is made up of aquifers, lakes and ponds, rivers, and streams. Aquifers are areas underground which contain water. Aquifers serve as a crucial supply of drinking water and importance to wildlife. Newbury has the majority of development around Lake Sunapee which does not have an aquifer below the surface. The main aquifer in Newbury lies between Lake Sunapee and Todd Lake and all the development above this aquifer is on Route 103. There is also a small aquifer below Lake Todd which is developed above the entire aquifer. There are no conserved lands which lie above aquifers in Newbury. Development is above parts of Newbury's water resources, threatening their quality and existence.

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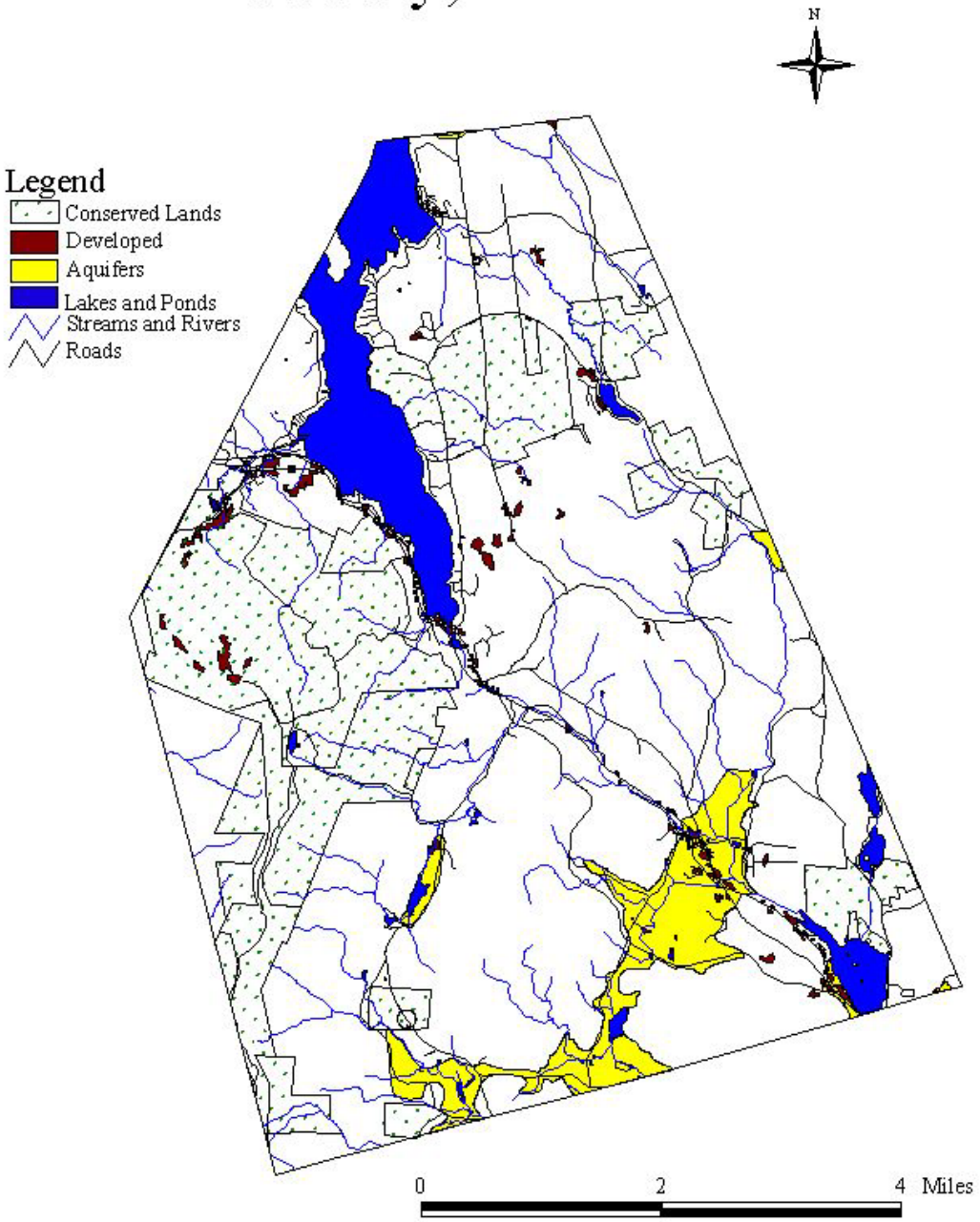
"GRANIT Data." GRANIT. 25 Oct. 2005. University of New Hampshire and NH Office of Energy and Planning. 07 Mar. 2005 <http://www.granit.sr.unh.edu/>

Water Resources
Newbury, NH



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11. What are the recreational uses of land in town?

Recreational resources are an important part of the New Hampshire Everlasting initiative. The recreational resources of the land in Newbury are skiing, biking, snowmobiling, horseback riding, cross country skiing, hunting, fishing, boating, swimming, and alpine skiing. The town of Newbury has many parks and recreational facilities including Mount Sunapee State Park, the Sunapee State Beech, Mount Sunapee Ski Resort, town beech and dock, town recreational area with an ice skating pond, Fishers Field, and the John Hay National Wildlife. There are also many hiking, biking, and snowmobile trails that are in town including the Mount Sunapee Andre Brook Trail, John Hay National Wildlife Refugee, and the Monadnock-Sunapee Greenway. The icons on the following map represent the general recreational resources in Newbury.

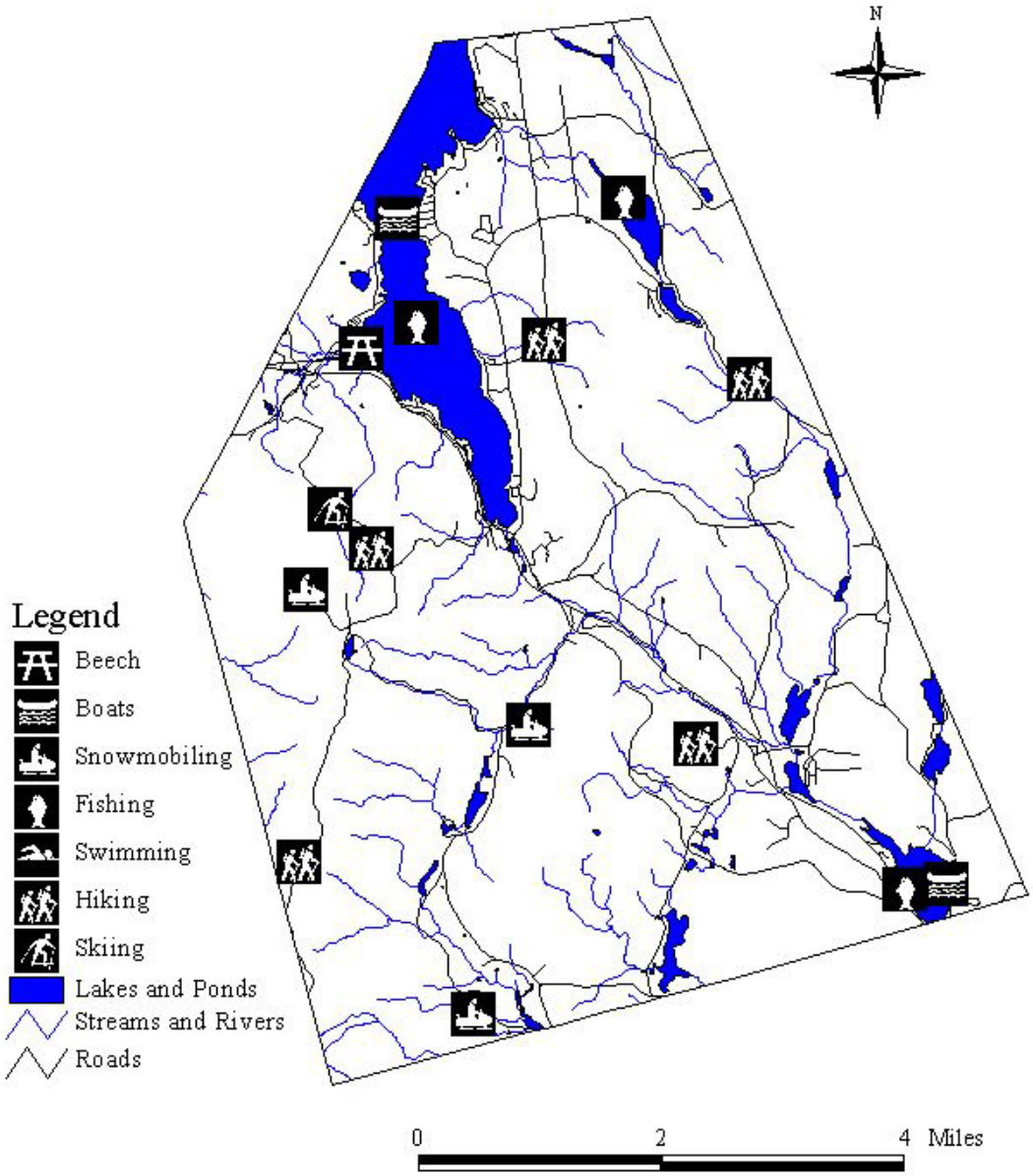
The Sunapee-Ragged-Kearsarge Greenway Coalition Trail Guide. 1st ed.
New London: The Country Press, 2003.

Trail Map available at John Hay National Wildlife Refugee.

Trail Map available at Fishersfield.

The Sunapee-Ragged-Kearsarge Greenway Coalition Trail Guide. 1st ed.
New London: The Country Press, 2003. (p.3)

Recreational Resources
Newbury, NH



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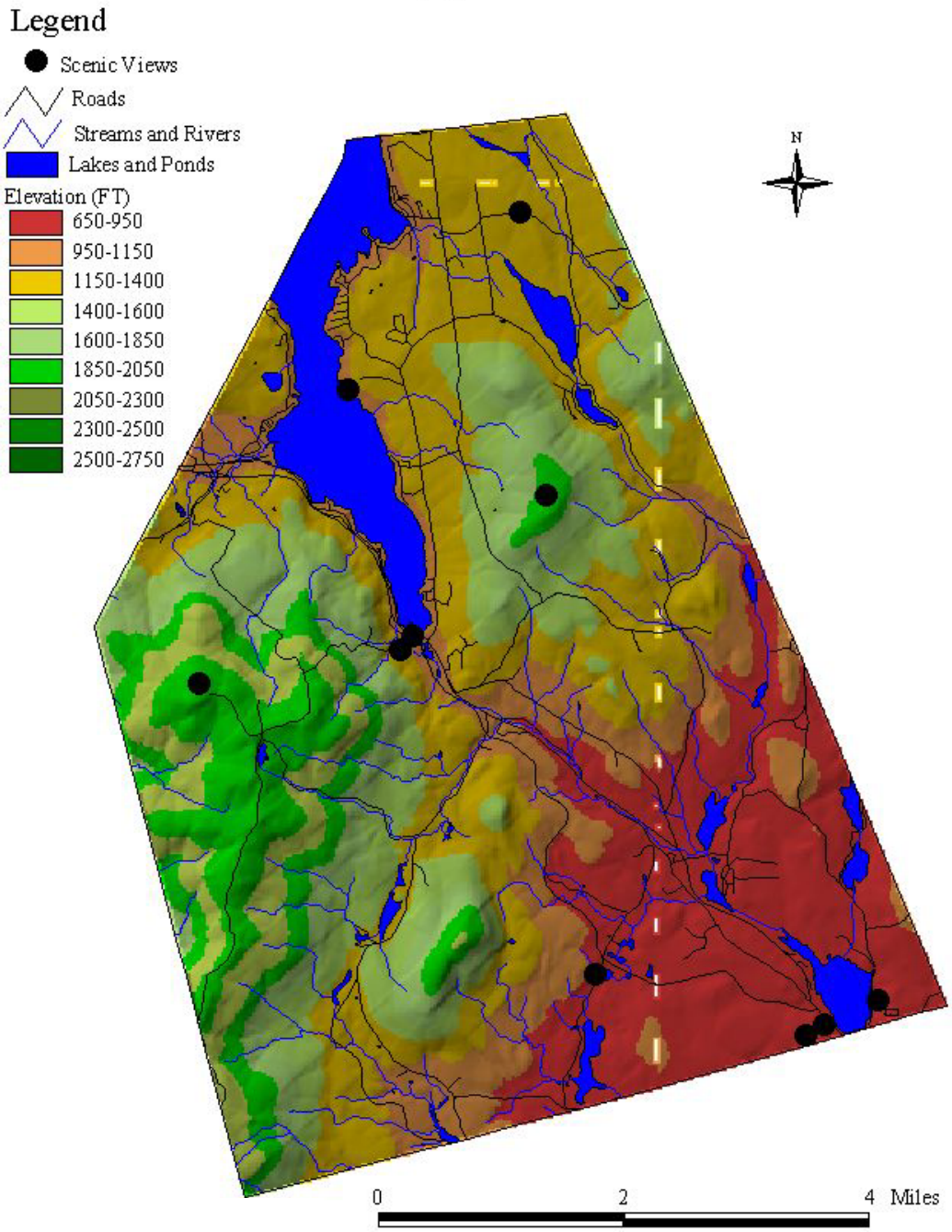
12. Where are the scenic viewing opportunities in your area?

- Mt. Sunapee and Lake Solitude ledges from Route 103 at the Bradford town line.
- Northward across lake Todd from 103
- Northward, Lake Sunapee and surrounding hills from Newbury town docks
- Gillingham drive across Lake Todd to Mt. Sunapee
- Baker Hill Road, south and west to Mt. Sunapee, Mt. Okemo, Mt. Ascutney, and Lake Sunapee
- Post Road and Red House road to Mink Hills
- Post Road to Bald Sunapee
- South Road, north
- Hay Estate, to Lake Sunapee and Mt. Sunapee
- Route 103 A-Grace Hill to Lake Sunapee
- High Meadow development in all directions
- Mt. Sunapee looking at Lake Sunapee and White Mountains

(Newbury Conservation Commission p.44)

Newbury Conservation Commission. Natural Resource Inventory for the Town of Newbury. 2001.

Scenic Views
Newbury, NH



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