

Town of Warner, New Hampshire

Mink Hills Conservation Plan



**Warner Conservation Commission
and Central New Hampshire Regional Planning Commission**

June 2004

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I. Introduction

Over the past several decades, development pressure in communities across the state, and particularly in southern sections, has led to the conversion of more and more open land to residential and commercial uses. It is estimated that on average 15,000 acres of natural habitat, agricultural fields, and woodland are put to developed uses each year in New Hampshire. Warner has experienced a fairly slow, but steady increase in residential and commercial growth since 1980, as have many of the surrounding towns. From 1990 to 1995, on average, five permits for new single family dwelling units were issued each year. Since then, the number has increased to between ten and twenty new houses per year. This trend is likely to continue in the future as the state and the Merrimack Valley region experience sustained growth pressures.

The Town of Warner is engaged in planning for and managing this growth in a number of ways. The exercise of land use controls such as zoning, subdivision, and site plan review regulations provides the community with one means of guiding development. In certain instances, however, more direct measures are necessary. The Warner Conservation Commission, in partnership with the Warner Historic Society and other conservation organizations, have taken on the task of maintaining strategic parcels of land in Town in their present undeveloped state by acquiring development rights from willing landowners. Recently, Warner's conservation efforts have been concentrated on the Mink Hills area in Warner because the rich history of the Minks, and for the natural resource values they harbor.

Moreover, the Mink Hills are part of a larger, undeveloped forested block that, because of its size, is rare in this part of New Hampshire. This larger, unfragmented region includes parts of Henniker, Hopkinton and Bradford. There is also a close connection with a similar expanse of undeveloped area in the towns of Hillsborough and Washington. The Nature Conservancy (TNC), in its analysis of New Hampshire, has identified this Mink Hills forest block of some 26,800 acres in Warner, Henniker, Hopkinton and Bradford as an important ecological land unit because of the large contiguous extent of natural land cover. This analysis of satellite imagery found that 97 percent of the area was natural - 31 percent deciduous forest, 24 percent evergreen forest, 33 percent mixed forest, and 3 percent open water. Three known rare species and two known rare or exemplary natural community occurrences were noted. The significance that TNC attaches to protecting such large blocks is: that it focuses on whole assemblages of species before any single species declines into imperilment; community/ecosystem targeting can protect common species not otherwise a focus of conservation efforts, as well as those species that are not yet known; and that protection of ecological and evolutionary contexts, which often occur at biological organizations above the level of individual species.

Project Description

In June 2002, the Warner Conservation Commission, in cooperation with the Warner Historical Society, received a competitive grant of \$4,500 from the State Conservation Plate Program to assist in preparing a Mink Hills Conservation Plan. The objectives of this project were: to develop a comprehensive, geographic information system (GIS)-based database of the natural and historic resources in the Mink Hills area of Warner, including a digital map of all ownership parcel boundaries; and to prepare a conservation plan based on this resource information which identifies acquisition priorities and other resource management actions.

For purposes of this plan, the Mink Hills area (**Map 1. Mink Hills Base Map**) is generally identified as the southerly portion of Warner composed of sparsely populated, rugged and forested terrain with few roads. This area of Warner comprises approximately 40 percent of the Town's total area. One of the first tasks was to obtain a digital tax map for the Mink Hills area, since knowledge of property boundaries is important in terms of identifying ownership and respecting property rights. Having property boundaries in computer map form allows other resource information to be layered and mapped with it. The Commission paid for the digitization, not only for the Mink Hills, but for about 85 percent of Warner from its Conservation Fund, at a cost of \$3,875. The Nature Conservancy had previously contracted with Computer Associates of Littleton, NH to automate parcels for 15 percent of the Town along the eastern border.

Central NH Regional Planning Commission (CNHRPC) provided GIS services to organize the digital data already available for the Mink Hills, as well as to incorporate new data being collected in the field by the WCC and the Historical Society. CNHRPC developed maps of various natural and historical features and assisted in preparing the final plan document.

This plan seeks to focus conservation easement acquisition activities more effectively and to identify other resource management and protection measures for use by land owners and land managers. The plan also addresses the goal of increasing protection for historical resources, particularly stone structures that abound in this area, and other physical evidence of the Town's early settlement patterns. The information developed through this process will be useful in improving public knowledge of these resources and landowner awareness of their importance to the history of Warner. A number of working sessions have helped to identify the resource information to be incorporated in the database and to organize the field work. Considerable effort has gone into advising property owners and requesting permission for access to the larger, undeveloped tracts of land.

II. Mink Hills Area - Existing Conditions

A. Historic Narrative of Mink Hills Settlement

The first attempt at New Almsbury's settlement occurred during the 1740s at Davisville. Settlers from Amesbury, Massachusetts built cabins and a sawmill but during the winter months the buildings were destroyed by Native Americans. The end of the French and Indian War in 1763 removed the threat of Native American raids in New England. Over the next twenty years swarms of colonists settled the land lying between the Merrimack and Connecticut Rivers. Very few of the original Proprietor's settled here, but several relatives purchased lots including the Ordway, Evans, Davis, and Ring families. Settlers also came from the towns of Nottingham West (Hudson), Stratham, Weare, Goffstown, Dunbarton, Hampstead, Rye, and Henniker, New Hampshire. Many also came from the Massachusetts towns of Reading, Amesbury, Salisbury, and Townsend. By 1770 fifty-five families were clearing land, building cabins, settling a minister, and creating a community. When New Almsbury applied for its charter in 1774, its name was changed to Warner, supposedly after a friend of the Royal Governor, John Wentworth.

The Warner River and the Minks Hills carve a diagonal from west to east across the town. Many of the families living in the Minks settled the south facing hills and valleys. Others settled along ridges on the north and east side of the Minks in the Collins, Newmarket, and Joppa districts. Life was not easy in the beginning. Dr. Moses Long states in Historical Sketches of Warner that "each grantee was to build a dwelling house eighteen feet square and seven feet stud, fence in and break up five acres within three years." Settlers had to "set aside" a lot for the minister and a school. Sixty three 40 acre lots were laid out in the first division from 1765-1770. Roads and bridges were nonexistent and people traveled on foot paths. Grain was carried on one's back to Concord for milling. Intevale lands were shared for pasturing livestock and cutting hay.

Establishing mills was very important. The first saw and grist mills were established in Davisville and Melvins. Wells Davis built a distillery and a saw and grist mill on Silver Brook in the North Village. His son, Francis, built a saw and grist mill on Harriman Brook near the Warner-Henniker line. Another sawmill was built at the outlet of Bear Pond. By 1832 Warner had six gristmills, a paper mill, two clothing mills, and twelve saw mills. Gradually, families moved from log cabins to framed and clapboarded homes, wild land was tamed for pasture and crops, and school districts were created.

Eventually ten distinct and independent school districts were established in the Minks; North Village, Kimball, Burnap, Collins, College, Liberty Union, Newmarket, Hoyt, Howe, and Joppa. **Map 2. Neighborhoods and Schools** identifies the various neighborhoods and school districts in the southern half of the Town. School was originally held in private homes and teachers boarded among the families. North Village, Collins, and Joppa were among the first districts created in the 1790s but as population grew new school districts were formed. Warner's population peaked by 1820 at 2,246. School attendance averaged between thirty and forty students in many of the districts. By the 1900s due to dwindling population Kimball, College, Newmarket, Hoyt, and Howe schools were closed. Many of these schools had only a handful of pupils in attendance. The new Warner Grade School built in 1911 solidified the movement to consolidate school districts. By the 1920s all of the schools in the Minks had closed their doors.

The thirteen burial grounds scattered throughout the study area contain the graves of over 500 individuals. Seven of these lots contain fewer than ten burials. Nathaniel and Hannah Bean were victims of smallpox and are buried by themselves in a remote section of pasture. Many of these smaller plots were private family burial grounds. The larger cemeteries; Old Waterloo, Page, Peaceful Retreat, and Sisco contain the remains of many families once living in the area. Several of the outlying burial grounds are small enclosures surrounded by rounded fieldstone. Page Cemetery has beautiful cut stone retaining walls and steps. The stone was transported from a nearby stone quarry. The elderly and children were the most susceptible to dying of dysentery and contagious diseases. Women ran the risk of dying in childbirth due to infection or hemorrhaging. Men were susceptible to farming or lumbering accidents. Often burials were marked with fieldstones until the family could afford a carved tombstone.

Farms originally grew enough produce to feed themselves and to trade at stores in Warner, Bradford, and Henniker. As more land was cleared a larger variety of crops were grown and marketed. The sheep craze of the early 1800s meant clearing the forests to create fields. What was once forest became enclosed by stonewalls topped with wooden fences or tree limbs to separate grazing and crop producing land. In 1849 Warner had 4,879 sheep compared to a human population of 2,038. There were twice as many sheep as people and this was after the peak of the sheep craze. An agricultural census conducted every decade from 1850-80 indicated the amount of improved and unimproved land, cash value of the farm, the number of horses, oxen, "milch" cows, sheep and swine, the number of bushels of wheat, rye, Indian corn, peas, Irish potatoes, value of orchard produce, pounds of butter, cheese, milk, honey, maple sugar and wool, tons of hay, and the value of any homemade manufacturing. In 1860, William Merrick, a farmer in the Minks, had one hundred acres of improved land, forty acres of unimproved and his farm was valued at \$2,500 with \$50 of farm implements. He owned two horses, six cows, four oxen, five other cattle, and four pigs with a livestock value of \$575. He grew the following bushels: 20 of wheat, 75 of Indian corn, 7 of oats, 2 of peas, and 50 Irish potatoes. The value of orchard products was a hundred and twenty three dollars. He produced four hundred pounds of butter and fifty of cheese. Twenty five tons of hay was cut and one ton of grass. The value of animals slaughtered was fifty-nine dollars. William did not have any sheep at the time of this inventory, but three neighbors had a total of seventy sheep, producing over two hundred and twenty three pounds of wool for market.

There were several small mills located in the Minks. The Davis family saw and grist mill, established in 1809, changed hands several times. It produced milled lumber and ground grain. Further up Harriman Brook, Beman French and his sons operated a cooper shop for making staves and barrels. The Gilmore family on Page Road were also coopers. There was a brick yard on Silver Brook. The Ebenezer Badger family in the Liberty Union district and Cyrus Colby of the Collins District, operated cider mills for the local orchards. G. L. Flint in the Sisco district operated a blacksmith shop. The Dowlin family, on the Warner-Bradford town line, operated a quarry and built foundations and bridge abutments. Rial Merrick, Nathaniel and Paul Page were shoemakers. There was a small lime kiln operation, a pottery and rake shop in Joppa. Warren Sanborn operated a sawmill at the outlet of Bear Pond. Women worked at home plaiting hats for market, weaving cloth or teaching school. Later many young men and women went to Lowell and Manchester to work in the textile and shoe mills.

Introduction of the railroad in 1849 greatly expanded markets for all types of farm produce and articles made at home. In 1881, Robert and Arthur Thompson built an apple evaporator in Warner Village, It was a huge success with thousands of bushels of apples being purchased and

processed. Butter, milk, cream and cheese were shipped to Concord, Manchester, and Boston. All types of livestock, previously driven from Warner to markets in Brighton, Massachusetts, could now be shipped by train. Maple sugar orchards on south-facing slopes of the Minks shipped tons of maple sugar. The James Glover farm had over 3,000 maples tapped for sugar production in the 1880s. Lumber was supplied to local mills manufacturing excelsior, shingles, boxes, crutches, chairs, clothespins, hubs, building materials, and paper. Unfortunately, the massive expansion of farm production in the mid-west using cheap rail transportation affected the eastern agricultural markets. Prices fell. Small farms in the east were unable to compete in the production of grain and meat. Eastern farms then turned to dairy production. The increasing population of industrial cities and the expanding tourism market of boarding houses and small hotels kept small family farms in production.

Warner's population peaked at 2,245 in 1820. **Map 3. 1858 Settlements** depicts one hundred and forty farm sites, ten schools, twelve burial grounds and a population of 1,970. About thirty years later, in 1892 (**Map 4. 1892 Settlements**), the population had dropped by almost 600 to 1,383. Fifty farm sites had been absorbed into surrounding farms or reverted to timber lots. College, Liberty Union, Hoyt, and Joppa schools had closed. Attendance at the six other schools averaged eight pupils per term. By the 1920s all the one room schools had closed in the Minks. **Map 5. 1987 Settlements** graphically illustrates a change in the interior of the Minks. All the farms have disappeared. Roads had been discontinued or had reverted to Class 5 seasonal or Class 6 status. Approximately forty houses are located around the perimeter of the Minks. A Latvian Community had been established near Lake Massasecum containing about thirty seasonal homes. A burial site for Dr. and Madame Gardner Bartlett had been established on Horne Street. Madame Bartlett had operated a "singing school" during the summer months of the early 1900s and they both wished to be buried on the site of their homestead.

Where had everyone gone? People had actually started moving to New York and Ohio during the 1820s. Prior to the Civil War with the advent of industrialization and increased railroad transportation families had the ability to seek employment in other places. Those interested in agricultural pursuits moved to better farming locations west of New England. Many men and women moved to New England cities for employment in the burgeoning textile and shoe mills. Some sons pursued advanced degrees in the fields of education, law or medicine. Many Warner men served in the Civil War. Those who didn't lose their lives or health took the opportunity to move to fertile land. Those left behind to operate the family farm depended on hired labor.

The life of a hardscrabble farmer was physically demanding. As parents grew older and were no longer able to depend on their children to choose farming as a career, they rented or auctioned their farms to buy a house in the village of Warner, Bradford, or Henniker. Others would move to the cities to live with their children. The lack of children closed schools. Roads were discontinued and others were no longer plowed or maintained by the town. Farm houses and barns were either torn down, burnt or abandoned to awkwardly fall in. Gradually fields grew in and reverted to woods. Families or lumber companies managed the land for lumber production instead of crops. The miles of stonewalls, cellar holes, school sites, quarries, lime kilns, sugar arches, stone culverts, piles of fieldstone and burial grounds are testaments to be remembered and appreciated of the rise and decline of hardscrabble farms and families in the Mink Hills of Warner.

B. Historic Resources

Map 6. Historic Features is based on research from several historic sources including maps, letters, journals, recollections, newspaper accounts, interviews, as well as exploring the roads of the Mink Hills. The site names indicated in the key are based on H.F. Wallings 1858 Map of Warner with a few exceptions. Unknown cellar holes will be identified through further research. The location of farm complexes, unique stone walls, stone culverts in various stages of disrepair, wells, sap houses, school sites, and cemeteries were recorded with a Garmin Geographic Positioning System (GPS) unit and converted to the State Plane Coordinate system. We attempted to document as many sites as possible but it is inevitable that a few places be missed. A sub-committee of the Warner Historical Society called “Stone Structures” has been documenting and measuring stone foundations for several years. The committee has contacted land owners and loggers during logging operations to leave buffers around abandoned farm complexes. So far all have been agreeable and appreciative of protecting these important landmarks.

Map 6. Historic Features shows the stone structures that were inventoried, including: cellar holes, stone culverts, stone walls, quarries, sand pits, cemeteries, archaeological sites; and existing houses of historic value and other sites of historical interest.

The mission of the Warner Historical Society is to bring together people interested in the history of Warner, to identify and preserve landmarks, documents, artifacts, and other items of historical significance to the town. The heritage of our community should be kept alive by recording the history and incidents of the past and present and to educate the public about the history of Warner.

A series of slide programs about life in the Minks Hills, North Village, Warner-Bradford town line, Cunningham Pond, and Warner’s twenty-four school houses have been attended by over 300 people. Exhibits with photos, maps, and text have included North Village photographer and artist Ralph Pratt, *Ballad of the Hills: The Minks*. Walking tours of various areas of the Minks have been held in conjunction with the Warner Conservation Commission. Articles about the Minks have been written for the Warner New Paper and the Warner Historical Society newsletter. An article about the Stone Structures committee research was published in New Hampshire Division of Historical Resources, “Old Stone Wall” newsletter which led to a slide presentation about this research at the annual meeting of the New Hampshire Archeological Society.

The archives of the Society are rich in recorded history of Warner with vital records, scrapbooks, journals, personal recollections, agricultural census 1850-1880, maps, letters, the Warner Women’s Oral History Project and the Warner Historical Inventory Research Survey (WHIRS). The WHIRS survey documented all the houses in Warner in the 1980s with photographs and historical information. Edith Mimnaugh donated her research on recreating the Missing Map of Warner identifying the original grantees and lot numbers as surveyed between the years 1765-1774. This collection contains hundreds of deeds tracing existing lots back to the original grantee.

By documenting, inventorying, and sharing information about the history of the Mink Hills and its past we hope to preserve the physical structures and share the lives and stories of the families that once lived on the rugged hill side farms of the Minks. There were 188 historic features inventoried and located during this project. Appendix 1 lists these sites.

C. Natural Resources

Topography

Map 7. Topography of Mink Hills shows the topographic relief of the Mink Hills study area. The area is characterized by steep slopes and closely packed hills with very small valleys. According to the Master Plan, there are 22 hill tops over 1,000 feet in elevation, three of which are over 1,500 feet - Stewart's Peak and its two neighboring heights that make up the Mink Hills proper.

Because of their steepness and prominent location in town, the Mink Hills and many of the high elevations and prominent ridge lines in the study area provide important scenic background for much of the community. **Map 8. Promontories and Scenic Vistas** illustrates some of the prime vista points and the viewable areas, as indicated by the "V", showing direction of view. Also shown as a green boundary is the set of promontories and ridgelines in the Minks that are viewable from various locations along I-89, Route 103 and the village. With few exceptions, these ridgelines and hill tops are forested and have not been interrupted by housing developments. Protecting these ridgelines and hill tops from alteration, such as by having houses built in clear cuts along them, is one of the aims of this conservation plan.

Water Features

Map 9. Water Features illustrates the drainage patterns and sub-watersheds in the Mink Hills study area. This map shows the streams, ponds, riparian areas (100 feet either side of surface water bodies), floodplains, wetlands, vernal pools, aquifers, and wellhead protection areas

The southern portion, 38 percent of the 15,000 acres in the Mink Hills area, drains directly into the Contoocook River, while the northerly portion contains streams that flow into the Warner River. There are five smaller drainage areas or subwatersheds in the Contoocook River drainage that have their headwaters in the Minks: Amey Brook, Warner Brook, Long Pond, Bear Pond, and Hardy Springs Brook.

The drainage area of the Warner River in the Mink Hills (62 percent of total) contains seven subwatersheds: Lake Massasecum, Bible Hill Creek, Slaughter Brook, Davis Brook, Silver Brook, Bartlett Brook, and Ballard Brook. In addition to these stream drainages, is the area of land immediately adjacent to the Warner River where storm runoff enters the River as sheet flow and in seasonal runs.

Following is a brief description of these sub-watershed and water related resources in each wetlands, aquifers, brooks and ponds.

Amey Brook (946.2 acres in Warner) The portion of the Amey Brook watershed in Warner contains Day Pond and two beaver ponds upstream. The level area surrounding Day Pond has extensive wetlands as well as being underlain by a stratified drift aquifer, composed of sand and gravel materials deposited by glacial action. Five large parcels comprise the bulk in Warner's portion of the Amey Brook watershed. A few smaller parcels along Route 114 have residential dwellings, while the remainder is forested, undeveloped land.

Warner Brook (2,695.9 acres in Warner) This large watershed has its headwaters in Cunningham Pond and flows through a number of smaller ponds and wetlands before crossing into Henniker and into the Contoocook River. The lower portion of the brook is protected by Ashendon State Forest and a conservation easement held by the Ausbon Sargent Conservation Trust. A tributary to the Warner Brook flows out of a beaver pond on the Badger Farm property, which is also protected by a conservation easement with the Forest Society. There are four houses on Cunningham Pond Road and a few at the very end of the Henniker Road, close to the Henniker Town line. Otherwise, this watershed is classified as forested, open land. A substantial portion of the Warner Brook subwatershed is protected by fee or conservation easement.

Long Pond (894.6 acres in Warner) This narrow watershed contains a minor brook and wetlands along Hoyt Road. The upper portion is protected and the lower extent of the brook flows through a Town owned parcel. The portion of this subwatershed in Warner is essentially undeveloped.

Bear Pond (442.6 acres in Warner) Bear Pond is the surface water supply for the Contoocook Village. The Contoocook Water Precinct owns the pond and a sizable portion of land draining directly into it. Warner has conservation easements on one of these Precinct-owned parcels and on an adjacent parcel. There is no development in this area.

Hardy Springs Brook (419.3 acres in Warner) This is a small watershed in Warner, and the most easterly of the study area drainages that flow directly into the Contoocook River. Dummer Road traverses the upper portion of the drainage area, and there is no development here.

Lake Massasecum (2,073.8 acres in Warner) On the western edge of the study area, this sizable watershed contains minor brooks that flow into Lake Massasecum, one of the major headwater sources for the Warner River. The southern ends of Collins Road and Horne Street lie in this watershed, as well as Page Trace and Davis Road. There are a scattering of residences along Collins Road and Davis Road. The largest development consists of the Latvian Camp, a seasonal community of some thirty camps. The remainder of the subwatershed is forested.

Bible Hill Brook (448.2 acres) The Bible Hill Brook subwatershed contains the northern portion of Collins Road and a small section of Newmarket Road, which have a number of residences scattered along them. A small sheep farm is located on Collins Road. The creek is a minor tributary to the Warner River and carries runoff from Bible Hill.

Slaughter Brook (1,092.7 acres) This subwatershed contains Horne Street with a small number of residences located along it and along Newmarket Road. The upper part of the Slaughter Brook subwatershed lies in the Harriman Chandler State Forest. Most of the area is steep, forested terrain.

Davis Brook (1,138.6 acres) Davis Brook also drains the Harriman Chandler State Forest and is largely forested, open land. Some residences are located along Howe Land and Ladd Lane, off Newmarket Road.

Silver Brook (1,549.5 acres) The Silver Brook watershed is centrally located in the study area and contains a number of roads with scattered residences, including North Village Road, Flanders Road, Waldron Hill Road, Bean Road, and Mink Hill Road. Silver Lake served as the Warner Village District's water supply for 100 years, having been deeded to the Town in 1992 and now serving as a swimming and recreational area for the Town. The Warner ski tow on Mink Hill Road served as a downhill ski area in the 1970s and 80s. A large portion of the watershed on its westerly side lies in the Chandler Reservation, a Town forest.

Bartlett Brook (1,392.8 acres) The Bartlett Brook subwatershed has its beginning in a large beaver flowage, south of East Joppa Road, which serves as a significant wildlife area, and is home to a heron rookery. Most of the scattered residential development is located along West Joppa Road and the top portion of Waldron Hill Road, where a blueberry farm continues to operate. The balance of the subwatershed is forested.

Ballard Brook (1,033.6 acres) Ballard Brook contains several wetland and beaver ponds and its course parallels Red Chimney Road. Residential development is scattered along this road, as well as some on West Joppa Road and Iron Kettle Road.

Land Cover/Land Use

The Mink Hills study area is predominantly undeveloped, with the principal land use being large tracts of forests, with scattered home sites along the class 5 roads. **Table 1** and **Map 10. Land Cover** provide a generalized view of this area, as depicted by Landsat satellite imagery, acquired in 2001, and interpreted by researchers at the University of New Hampshire. The New Hampshire GRANIT Landcover dataset categorizes land cover and land use into 23 classes, based largely on the classification of Landsat Thematic Mapper (TM) images. A variety of other data sources were utilized in addition to TM imagery. Over 1,400 new training site data points statewide were collected to supplement 1,200 archived sites from previous projects. Data for a large number of non-forested sites were available from pre-existing sources, such as Digital Orthophotoquads (DOQs), Digital Raster Graphics (DRGs), US Fish and Wildlife Service National Wetlands Inventory (NWI) maps, and local knowledge. Forested sites, as well as some wetland and agricultural sites, required extensive field sampling. The minimum map unit shown is one acre.

Table I. Mink Hills Study Area Land Cover Acreages

Land Cover Type	Acres*	Percent
Developed	38.1	0.25%
Transportation	115.8	0.77%
Hay/Pasture	163.9	1.09%
Beech/Oak	3,753.4	24.98%
Paper Birch/Aspen	240.2	1.60%
Other Hardwoods	448.5	2.98%
White/Red Pine	1,360.3	9.05%
Spruce/Fir	285.5	1.90%
Hemlock	1,572.4	10.46%
Mixed Forest	6,466.0	43.03%
Open Water	179.8	1.20%
Forested Wetland	45.8	0.30%
Non-forested Wetland	122.0	0.81%
Disturbed	5.8	0.04%
Other Cleared	229.3	1.53%
Total Acres	15,026.8	100.00

Source: LandSat TM 2001 Land Cover Data from GRANIT

*Some comments on Table I acreages are necessary.

- First, while 23 classes of land cover were produced in developing a statewide land use/land cover mapping, only 15 had any relevance to the Mink Hills study area.
- Also, the developed class is listed at 38.1 acres (.25%). This number is certainly on the low side as many house sites do not show on the satellite imagery, because the structures are too small and/or are obscured by tree canopy. The actual amount in developed use is probably closer to 1 percent of the total.
- In some parts of the Mink Hills, tracts of land that were recently timbered have been classified into one of three types: Other Cleared, Hay/Pasture, or Disturbed. The latter two classes do not accurately reflect the reality, but represent an unusual situation in the classification of satellite imagery, where the spectral signatures of this land match a different type of vegetative cover. This is evident in the area around Bear Pond. This land had been heavily logged prior to the date of the TM imagery and, while a substantial portion is labeled Other Cleared, a large area is called Hay/Pasture. This same applies to a patch, west of Bear Pond, labeled Disturbed, but which again is cleared due to logging.
- Overall, this map provides a reasonable summary picture of the Mink Hills area.
- About 94 percent of the area was classified as forested, with 30 percent in hardwoods, 21 percent in softwoods, and 43 percent as mixed hardwood/softwood.
- About 2.3 percent of the area was classified as open water and wetlands, both forested and non-forested.

Important Natural Features

Unique Natural Areas (NH Natural Heritage Inventory)

The New Hampshire Natural Heritage Inventory (NHI) is maintained by the NH Natural Heritage Bureau within the DRED's Division of Forests and Lands. The Bureau locates, tracks, and provides information about rare plant species and ecosystems in the state. Authorized under the Native Plant Protection Act (RSA 217-A) the program is not regulatory; but rather works with landowners, land managers, and natural resource professionals to help them understand and protect the State's natural heritage and meet their land use needs. The program maintains a database of more than 4,000 rare plant, animal, and ecosystem occurrences, and responds to over 1,300 information requests each year. **Map 11. Important Natural Areas** shows the generalized locations of three occurrences within the Mink Hills area reported in the Inventory. The exact location of these reported occurrences within the circles shown is not available to the public. It should be noted that there are other important natural features that are not contained in the NHI. For example, there is a substantial black gum swamp located within the study area, with some trees documented to be more than 500 years old.

Unfragmented Lands

Map 11. Important Natural Areas illustrates by areas of different colors, the lands that constitute unfragmented tracts within the Mink Hills. Large, undeveloped areas that do not have roads (class 5 or better) and other development are important to meet the habitat requirements of many wildlife species. In fact, the breadth of the unfragmented land in the Minks is even more significant than shown on the map, since the Henniker Road, from its intersection with North Village Road to the Henniker line, is a class 5 seasonal road and for a good part of the year experiences little or no vehicular traffic.

Wildlife Habitat

Four transects of various lengths and locations in the study area (**Map 11. Important Natural Areas**) were laid out during the winter of 2002-2003 and visited by members of the Warner Conservation Commission on a regular basis and observations of wildlife recorded. Prior to embarking on this field work, The WCC sent letters to all landowners in the Minks, alerting them to the fact that the Commission planned on conducting this survey and requesting permission to access their property, if a transect happened to cross their boundary. Based on post cards returned, indicating both positive and negative responses, a map was prepared showing parcels where access was granted, where it was not granted, and where the landowner asked to be contacted. These transects respected landowner wishes and are described below.

Chandler Transect

The Chandler Transect runs in an east-west direction up and over a summit. All observations were made while walking this transect from the east to the west. The transect begins at the base of an old ski slope and proceeds gently up passing first through mixed deciduous-coniferous forest then through somewhat open deciduous forest as it goes up a higher steep slope to the summit. At the top of the slope and summit, the forest changes to a predominantly spruce and pine habitat. As the transect descends the western slope, the forest changes back to open deciduous and pine. Wildlife tracks were observed all along the transect. Tracks of fisher, moose, deer, and red and gray squirrel were seen on the eastern slopes. Grouse, deer mice, shrew, and woodpecker sign were noted at on the higher slopes and at the summit. Snowshoe hare tracks were numerous on

the summit and higher areas of the western slope. Moose, deer, and red squirrel sign were observed again on the western slopes. Overall, this area appears to be heavily used by moose, deer, and snowshoe hare, most likely as a source of cover as large mast trees and other sources of food are not common in the area along.

Chase Transect

This transect is located on the Class VI portion of Joppa Road East and is approximately 2 miles long. It is marked along its entire length by blue surveyors flagging. It leaves Joppa Rd. East about six tenths of a mile south of the junction with Kelly Hill Rd and travels in a southerly direction through an even-aged stand of mixed deciduous/coniferous forest. The transect approaches Bartlett Brook and turns more easterly, rising to reach the shore of an extensive beaver pond, containing several great blue heron nests. The route then follows the southern shore of the pond dominated by hemlock, across a stone culvert at the outlet of Ballard Brook, then follows an old woods road back unto Joppa Road East. Turning left on this road, the transect proceeds approximately one third of a mile to its beginning. This transect was always traversed in a counterclockwise direction.

Along with the great-blue-herons, the beaver pond supported a pair of otters. Other wildlife detected on the transect included moose, deer, coyote, snowshoe hare and numerous small mammals. Presently, no beaver are living at the pond. However, several duck boxes built and erected by the local 4-H club have been occupied by wood ducks during the last few breeding seasons.

Badger Transect

The Badger Transect samples the middle of the Mink Hills in the newly protected Badger parcel. This 745-acre parcel was recently purchased by a private individual after being briefly owned by a timber management company. The new landowner, Mr. Andrew Duncan, agreed to a conservation easement to support his purchase. The land was heavily logged in the past 2-3 years prior to sale, therefore the vegetation cover on the parcel is a mixture of heavily cutover forest on the ridges and other upland areas, and mature second-growth forest in the wetlands and on steep slopes. The ridges are dominated by oak, sugar maple, and beech, white pines are found on the driest tops of the ridges, and red maple, hemlock and yellow birch are most abundant in the wetlands and low areas. Steep ledges are common on the ridges. A historic farm field and a large beaver pond are notable features of the landscape. A small, possibly intermittent stream flows to the north parallel to the ridge line on the east side. A second larger stream, which supports the beaver pond, occurs on the west side, and flows parallel to the ridge line in a southerly direction.

The wildlife transect begins on Loud Lane in the northeast corner of the Badger parcel and runs in a southwesterly direction up and over a ridge before dropping down to the head of the large beaver pond. From there, the transect turns approximately 90 degrees to run along the east side of the pond. Much of this section of the transect was walked on the frozen pond, or in the shrub cover bordering the pond. The transect terminates at the Badger Road near the site of the old Badger Homestead. The transect length is approximately 1 mile long. It was sampled on three occasions - in February, March, and April 2003. In March there was approximately 1.5-2 feet of snow on the ground.

Moose sign, both browse and tracks, were very abundant on this transect, particularly on the top of the ridge and on its west side. They fed heavily on the new stump sprouts in the logged sections. The logged ridge supported many rodents, based on the extensive tracks in the snow. Signs of other species included red squirrel, white-tailed deer, fox/coyote, fisher, otter, and snowshoe hare. Beaver activity was difficult to discern in the deep snow, although one of the lodges appeared to be active. Bird species were limited to typical winter birds, downy and pileated woodpecker, chickadee, and American crow, although observations were few, presumably due to the extreme cold of the day.

Brown Transect

This transect was established off of Schoolhouse Lane on the Warner-Henniker line. The property was owned at the time by Katherine Brown. It has since changed hands. The Ausbon-Sargent Land Trust holds an easement on the 90 acre parcel. The transect leaves the Class 5 seasonal road near its termination and passes through the yard of the Brown home. The transect is not flagged, instead following the shore of the numerous beaver ponds and wetlands on the Warner Brook as it flows through this property. It is approximately 2 miles long and has been consistently traveled in a counterclockwise direction crossing the Warner Brook at the northern terminus of the property. It then returns to its point of origin by following the eastern edge of the wetlands back to the Brown home. The land surrounding the wetlands is ledgy, rocky and dominated by hemlock.

Two brooks must be crossed to complete this transect. The first is a small intermittent stream that was easy to cross in all seasons. The second is the Warner Brook which presents more of a challenge to cross and at spring melt is impossible without waders or other appropriate gear. Moose sign was very evident along the wetland edge and winter beds were observed along the transect. Otter were sighted along the Warner Brook. The wetlands are home to a variety of bird species. Further observation during the warm months could provide a better record of resident breeding species.

Table 2 summarizes the observations of wildlife during the course of field investigations on the four transects during the winter and spring of 2003.

Table 2. Mink Hills Wildlife Surveys, Winter-Spring 2003

Mammals	Transects			
	#1 Chandler	#2 Chase	#3 Badger	#4 Brown
Meadow vole	X	X	X	
Deer mouse	X	X	X	
Red squirrel	X	X		
Grey squirrel	X	X	X	
Snowshoe hare	X	X	X	X
Deer	X	X	X	X
Moose	X	X	X	X
Red fox	X		X	
Eastern coyote	X		X	X
Fisher	X	X	X	X
Porcupine	X			
Chipmunk				X
River otter		X	X	X
Birds	#1 Chandler	#2 Chase	#3 Badger	#4 Brown
Turkey			X	
Grouse	X	X	X	
Blue jay	X		X	
Downy woodpecker			X	X
Raven	X	X	X	
Mourning dove			X	
White-breasted nuthatch	X	X		X
Chickadee	X	X	X	X
Goldfinch				X
Pileated woodpecker			X	X
Junco			X	X
Robin				X

Wildlife Summary

The large, unfragmented forest of the Minks provides a variety of habitats, both in terms of plant communities and forest structure due to the diverse topography and moisture of the area. The many streams, forested wetlands and beaver ponds, the rich slope habitats, and the dry exposed tops of ridges are further varied by timber management, resulting in a mosaic of recently logged, sapling, young and mature forests. This habitat diversity supports a diverse and abundant wildlife community. Collectively, the four transects in the Minks identified most of the wildlife species typical of New Hampshire forests in the winter. Of the larger mammals, moose, deer and snowshoe hare were observed on all four transects. The larger land predators such as coyote, fox and fisher were also frequently observed. Small rodent signs were widespread, although difficult to identify to species by their tracks in snow. While meadow vole and deer mouse were recorded, a number of other species likely occur: red-backed vole, shrew, mole, and jumping mouse. The three transects that crossed perennial streams all had signs of beaver and river otter. Species that were not recorded on the winter transects but have been observed in the Minks include black bear, bobcat, mink, short- and long-tailed weasels, raccoon and skunk.

Of the birds observed, all are typical winter residents of mixed deciduous and coniferous forests of the region. Turkeys, which were recorded on the Badger transect, are widespread and abundant in the Minks in larger mobile flocks. Ruffed grouse are common in early-successional second growth. The woodpeckers, including the downy and pileated which were recorded on the transects, and the hairy woodpecker, another common species, are widespread, preferring hardwood and mixed forests of varying maturity. The pileated requires large diameter trees for nesting, whereas the smaller woodpeckers can utilize small diameter trees and branches. Ravens and crows were observed on most transects, as were the smaller, common winter species: blue jay, chickadee, white-breasted nuthatch, goldfinch, and junco. Although not observed on the daytime transects, several owl species are known to be year-round residents in the Minks, including barred, great horned and saw whet.

In addition to their inherent value as habitat for a variety of wildlife and plant communities, the Mink Hills have a regional ecological significance by providing landscape-level connectivity for wildlife and plants. Several other large tracts occur within relatively close proximity: Mt. Kearsarge to the north, Washington-Bradford to the south and Mt. Sunapee to the west, among others. The Minks form a central important connector and corridor allowing movement and genetic exchange among the tracts. It is these two characteristics that have led to recognition of the Mink Hills by The Nature Conservancy as an exceptional resource: their innate value as plant and wildlife habitat, and their regional setting which enhances connectivity among the remaining large unfragmented forest lands in an increasingly developed area. (The Nature Conservancy, 2001. Lower New England/Northern piedmont Ecoregional Conservation Plan, TNC. Conservation Science Support, Northeast Caribbean Division. Boston, MA).

III. Goals and Objectives of Plan

Goals:

The goals of this plan are: to conserve and protect the natural and historic resources of the Mink Hills area in Warner; to maintain the area in its largely undeveloped state, thus preserving wildlife habitat; to continue the traditional working landscape of agriculture and forestry; and to enable the citizens of Warner to enjoy the Mink Hills' recreational opportunities and open space for this and coming generations.

The vision for the Mink Hills that this plan seeks to achieve is one where the character of the Mink Hills is maintained as undeveloped, forested tracts of land that provide wildlife habitat, and where sustainable forest management and sound agriculture are practiced; where the historical sites and structures are preserved by land owners and the public; where recreational users of the area act responsibly and respect the rights of property owners; where, because of limited development, the costs for Town services in the Minks, continue to be low; where the quality of water resources in the Mink Hills, particularly brooks that have their headwaters in this area, is protected; and where the scenic views of the Mink Hills as forested ridge lines and hill tops continue to be enjoyed by residents of Warner for generations to come.

Objectives:

The objectives of the plan, as described in the grant application include the following:

1. Develop a comprehensive, GIS-based database of the natural and historic resources in the Mink Hills area of Warner, including digital map of all ownership parcel boundaries;
2. Develop a conservation plan based on this resource information which identifies acquisition priorities and other resource management actions; and
3. Gain public acceptance through involvement of various partners and residents as the plan is developed.

IV. Mink Hills Conservation Plan

A. Overview of Land Protection Tools and Techniques

Municipalities have a number of tools that can be used in guiding land development and protecting important natural resources. These tools include a master plan, zoning, current use taxation, State environmental protection laws, acquisition of open land, conservation easements, and public education and information.

Master Plan

The Warner Master Plan is an advisory document prepared and periodically updated by the Planning Board to assist the community as it plans the Town's future. The most recent master plan update was completed in 1999 and adopted by the Planning Board in January 2000. This document reports on trends in the Town's population, housing, and related growth topics. It contains recommendations for the future and identifies a vision for the Town over the next twenty years, based on a survey of local opinions and public input. The highest priority identified in the 1997 Survey was the protection of the environment. Across the board, respondents favored continuing the 75 foot vegetative setback from streams requirement, using the zoning ordinance to protect and preserve the natural landscape, encouraging the Conservation Commission to work toward preserving habitat areas, increasing the Town conservation fund to purchase easements, limiting the negative impacts of recreation, and increasing the amount of land under conservation protection. The Master Plan serves as the legal basis for zoning and other land use regulations for the Town. With regard to the future of the Mink Hills area, the 1999 Plan makes a number of specific recommendations, as follows:

The Warner Master Plan's first goal is to conserve and protect the natural resources of the Town. Among the objectives listed under this goal are:

- Increase the amount of sensitive/priority areas in the Town that are protected through easements, covenants, or Town ownership.
- Encourage the use of sound land management practices for forest and land to promote diverse wildlife habitat.
- Protect scenic ridge lines and hilltops.
- Investigate alternative zoning practices to protect forestry and agricultural activities.

In the discussion of future land use, the Master Plan finds that the Mink Hills are primarily forest land, with large tracts that are used for various forestry purposes. Within the Mink Hills, the Plan suggests that zoning should be made more restrictive, premature development should be restricted, and only very low density residential development permitted.

Zoning

The Warner Zoning Ordinance divides the Town's land area into zoning districts which specify the types of uses permitted, by right or by special exception, and the density at which that development may occur. The zoning districts covering the majority of area in the Mink Hills are OR-1, Outdoor Recreation and OC-1, Outdoor Conservation. Both of these districts require a minimum lot size of 5 acres and are intended to preserve large open land areas in their natural state. One district that has been the subject of discussion in the preparation of the 1999 Master Plan is an R-3, Rural Residential District which encompasses a portion of the Mink Hills, extending from North Village Road across Waldron Hill to the intersection of Iron Kettle Road and Route 103, and generally between Joppa Road on the south and Interstate 89 and Route 103 on the north. Much of this area consists of large ownership parcels in current use as well as several parcels that are either under conservation easement or are good candidates for such easements in the near future. The Conservation Commission and Planning Board proposed to the 2004 Town Meeting that this R-3 District be reduced from its present extent to an area surrounding Iron Kettle Road and Red Chimney Road. The remainder of the R-3 District was to be changed to OR-1, Open Recreation, categories that more closely match the character of the Mink Hills as an area that provides the community with open space and recreation benefits; is suited to long term timber production; and would preserve water quality, wildlife habitat and scenic views. On March 9, the voters at Town Meeting did not approve this article, by a vote of 328 to 271.

Current use

Current use assessment (RSA 79-A) provides for reduced property assessments on parcels of field, farm, forest and wetland of 10 acres or more. This program has been effective in keeping land open since it allows a parcel of land to be taxed on the basis of its value as undeveloped land, rather than according to its "highest and best use". **Map 12. Parcels in Current Use** shows the parcels of land in the study area at present that are taxed according to their current use. Less than a dozen parcels in the study area that are eligible for current use are not enrolled. However, current use, while beneficial because it allows landowners to keep their property open due to the comparatively low tax rate, is not so effective for long term conservation. Landowners can remove a parcel from current use by paying a penalty equal to 10 percent of its market value at the time of a change in its use. In fact, the Town of Warner has dedicated 100 percent of the current use tax penalty paid over to the Town each year to the Conservation Acquisition Fund, under the direction of the Conservation Commission. In 2003, the total paid into this fund was \$42,474.

Acquisition of Fee Interest

Communities can protect open land by outright acquisition of fee interest in a property. However, for a municipality, this approach carries certain responsibilities in terms of managing the property consistent with its natural qualities and provide public recreation and enjoyment. This approach removes parcels from the municipal tax rolls. One example of such a town-owned property in Warner is the Chandler Reservation, a Town forest in the Mink Hills, consisting of 1,467 acres that is managed by a board of elected commissioners for timber management, wildlife conservation and public recreation.

Conservation Easement

A conservation easement is an agreement between a land owner and a municipality or eligible conservation organization which involves the transfer by purchase or donation of certain property rights, generally the right to develop or subdivide the property. The Warner Conservation Commission has determined that this is the most effective approach to protecting open land in the town and the Mink Hills area. **Map 12. Parcels in Current Use** shows the parcels that are protected through conservation easements, as well as those protected as Town or State Forests, as of the time of publication. The following narrative describes the Commission's easement activities in the Mink Hills.

In June of 2001, the Warner Conservation Commission (WCC) helped the Town of Warner purchase grantee or primary interest in two conservation easements totaling 347 acres on land owned by Fortin & Redmond Associates. The WCC also assisted in finding buyers for the easement restricted land. The easements are now more widely known as the 211 acre Ries Easement and the 136 acre Contoocook Village Precinct Easement.

Additionally, in October of 2001 the WCC also assisted Ausbon Sargent Land Preservation Trust (ASPLT) in securing a conservation easement on 78 acres owned by Katharine Brown. The WCC paid for a survey that was required to determine the easement boundaries and contributed to ASPLT's Easement Stewardship Endowment Fund. Additionally, the Town of Warner was named executory interest or back-up holder in the easement.

In October 2003, the WCC, the NH Land and Community Heritage Investment Program (LCHIP) and the Society for the Protection of New Hampshire Forests (SPNHF) formed an effective partnership and successfully acquired a conservation easement on the 745 acre Badger property. While the appraised value of the easement was \$201,500, the landowner's, Andrew Duncan and Laurel Horne agreed to a bargain sale of the conservation easement at \$147,000. The Town of Warner contributed approximately \$50,000 toward the easement purchase. The State of New Hampshire through the LCHIP program contributed a \$98,000 grant to the project. SPNHF assisted with the negotiations and development of the easement terms and in the end acquired the grantee interest in the easement and will take on the primary responsibility for monitoring and enforcing the easement. The Town of Warner and the State of New Hampshire were named as executory interests or back-up holders in the easement.

Also in December 2003, the WCC once again cooperated with SPNHF to purchase a 142 acre conservation easement on land owned by Daniel and Virginia Eubank. The Town of Warner provided the \$60,000 needed to purchase the conservation easement. SPNHF accepted the grantee or primary interest in the easement and again will be responsible for monitoring and enforcement of the easement. The Town of Warner also holds executory or back up interest in the easement.

Lastly, the WCC and SPNHF have completed a second conservation easement on the Eubank lands. In March 2004, Daniel Eubank made a donation of a conservation easement on 220 acres of his remaining land. The easement includes all of the land surrounding the 21 acre Cunningham Pond. As with the first Eubank easement, SPNHF holds the grantee interest and the Town of Warner holds the executory interest in the conservation easement.

The following summarizes the conservation easement actions in the Mink Hills in which the Warner Conservation Commission has played a key role.

<u>Project</u>	<u>Acres</u>	<u>Project Value</u>	<u>Cost to Warner</u>	<u>Date</u>
Fortin & Redmond Easements	347	\$30,000	\$27,400	June 2001
Contoocook Easement	(136)			
Ries Easement	(211)			
Brown Easement	78	\$29,150	\$6,650	Oct. 2001
Badger Easement	745	\$205,062	\$51,776	Oct. 2003
Eubank Easement #1	142	\$68,709	\$63,709	Dec. 2003
Eubank Easement #2	220	\$444,000	\$4,000	March 2004

Summary

Since 2001 when the WCC started focusing its land protection efforts on securing conservation easements in the Mink Hills, the WCC and its partners have successfully completed 6 conservation easements protecting 1,532 acres. These newly conserved lands bring the total protected lands in the Mink Hills to over 3,800 acres in Warner alone. The total project value of these easements was approximately \$777,000, but the cost to the Town of Warner has only been about \$154,500. The WCC and its partners have been able to stretch their limited land protection funds through a combination of outside grants, bargain sales, and outright easement donations by conservation minded landowners.

Regional Cooperation

Another opportunity for achieving land protection goals for the greater Mink Hills area is through cooperative ventures with neighboring towns focused on protecting land that is part of the greater Mink Hills area. Henniker, Bradford, Hopkinton, and Hillsborough contain areas that are part of this largely unfragmented land mass which is fairly rare this far south in New Hampshire. Discussions are underway of creating a Mink Hills Land Trust whose objective would be to raise funds for land protection and promote the conservation of land across the five towns. The WCC will devote attention to promoting protection of areas that extend into adjoining towns.

Public information

Informed land owners represent a strong ally in land conservation. This is especially important for protecting historic resources, where there are no laws that impact their destruction, except when federal funding of a project is involved. The maps and inventory work carried out under this project will provide landowners with information about the natural character and historical features of the Mink Hills.

B. Easement Monitoring

The importance of monitoring conservation easements must be clearly understood by the community before this approach is pursued. Conservation easements are perpetual and the holder of an easement must undertake periodic monitoring of the property and its boundaries to ensure that the terms of the easement are being honored. Annual monitoring visits are recommended as the most effective way to check on uses of the property. It quickly became clear that if the WCC were to acquire conservation easements on large tracts of land in the Mink Hills, the responsibility of continuing to monitor these easements with volunteers over a long period of time would be impractical. In view of this, the WCC has sought to work with other conservation partners in the Mink Hills whenever possible to increase its capacity to complete more land conservation projects and most importantly to assist in the long-term monitor and enforcement responsibilities associated with conservation easements. The WCC often covers the bulk of the easement purchase price and many of the transaction costs associated with the project. The conservation partners such as the Society for the Protection of New Hampshire Forests (SPNHF) and Ausbon Sargent Land Preservation Trust (ASLPT) offer through their professional staff important technical expertise in negotiating and drafting the conservation easements. Whenever possible, the Town has preferred to have the conservation partner hold the grantee or primary interest in the easement and the Town to hold the executory or back up interest. These staffed organizations are better equipped to carry out the labor intensive yearly monitoring and landowner relations' responsibilities. Furthermore, if an easement violation occurs these organizations and their pooled conservation easement endowment funds will have the financial ability to defend the easement in court, if necessary.

C. Conservation Priorities Map of the Mink Hills Study Area

Using the maps of natural and historical resources presented in Chapter II a conservation priority map for the study area was developed that reflects a set of criteria for selecting candidate parcels for conservation. The Warner Conservation Commission had developed a set of criteria for use in judging whether or not a candidate parcel is of sufficient ecological value for the Commission to pursue a conservation easement. These criteria are listed below.

Conservation Priority Criteria	
1	Contains or borders a surface water body - river, stream, pond
2	Contains or borders a wetland
3	Contains or borders a vernal pool
4	Contains a State or federal listed rare or endangered plant or animal species or natural community
5	Borders other conservation land
6	Serves to connect open land as wildlife corridors
7	Contains diverse wildlife habitat (field/forest edges)
8	Protects existing agricultural fields
9	Is part of a large forest block
10	Contains flood plains
11	Contains/is part of high elevation areas and/or prominent ridge lines
12	Has historic importance - cellar hole, stone structure, etc.
13	Is a large, undeveloped parcel
14	Possesses scenic value

In order to apply these general criteria to the Mink Hills, considering the data available, a set of working definitions of the criteria was developed, and numeric scores were agreed upon for each of the criteria that reflect their relative values. The following working definitions and associated scores were applied to each parcel of at least 10 acres in size, to create **Map 13. Conservation Priorities**.

Working Definitions and Parcel Scores

- 1 Parcel contains a Natural Heritage Inventory site - 7 points.
- 2 Parcel contains or borders a surface water body - 4 points for a stream, 4 for a pond, 8 for both.
- 3 Parcel contains or borders wetlands - 4 points if 5 acres or more, 0 if none or less than 5 acres.
- 4 Parcel abuts conservation land - 5 points if common bound \geq 250 feet, 2 if $<$ 250 feet.
- 5 Parcel connects existing protected/conservation lands - 2 points (for each one) if there are two parcels between; or 5 points if there is only one parcel between protected parcels.
- 6 Parcel size:
 - 10-30 acres 1 point
 - 31-50 acres 2 points
 - 51-150 acres 3 points
 - over 150 acres 5 points
- 7 Parcel possesses strategic importance - 4 points (contains Class 6 road frontage or is in close proximity to encroaching development)
- 8 Parcel contains ridgeline/promontory - highly visible - 3 points if within highly visible area.
- 9 Parcel contains historically important resources: cemetery - 3 points; schoolhouse site - 1 point; foundation, 1-5 points, depending on number and judgment of the Historical Society, as to importance. (5 points maximum)
- 10 Parcel contains scenic overlook/view point - 2 points.
- 11 Parcel contains existing agricultural fields - 1 points
- 12 Parcel contains recreational trails - 1 point

D. Priority Areas for Conservation

Map 13. Conservation Priorities, shows the results of this value assignment process, based on the cumulative scores for the twelve criteria and stratified into priority groups. A total of 189 parcels of 10 acres or more were evaluated according to the criteria. While the theoretical maximum score that a parcel could receive is 51, the highest actual value assigned was 37. The median value for the entire set of parcels was 10. Only 20 parcels had scores of 20 or more and 78 scored 10 or more, but less than 20. In general, the priority scores make sense in terms of the Warner Conservation Commission's conservation objectives. Parcels with scores of 10 and more are of greater interest from a protection standpoint than those with single digit scores, although these latter are not ruled out for possible conservation action in the future, as other information comes to light or conditions change. The map provides the Town of Warner with an objective assessment of the relative values of these parcels for protection purposes and will serve as the basis for future conservation initiatives.

With the completion of the Mink Hills Conservation Plan, the Warner Conservation Commission intends to continue to engage the public in a dialog concerning implementation of the Plan. A meeting is planned for early September 2004 to formally present the Plan. The Conservation Commission will also promote incorporation of the Mink Hills Conservation Plan as an element in the next update of the Warner Master Plan.

Appendix I. List of Historic Features

Historic Features		Historic Features	
Map ID	Historic Site/Feature	Map ID	Historic Site/Feature
1	Beginning stone wall lane	38	Newmarket schoolhouse #2
2	Stone walled fire pond	39	B. Hoyt's
3	End stone wall lane	40	P.Hoyt's
4	J. H. Brown's well	41	E. Hoyt's
5	Bible Hill Rock	42	Newmarket schoolhouse #1
6	Beech tree initials	43	M. Colby's dam site
7	Gate into Colby Cemetery	44	W. Cheney's
8	Colby cemetery	45	Stone culvert
9	C. Marshall's	46	H. Bean's barn
10	J. Collin's	47	H. Bean's
11	S.B. Johnson's	48	H. Bean's well
12	Johnson Cemetery	49	Gap in the wall
13	Collins Dist schoolhouse	50	Cellarhole
14	C. Colby's barn	51	Cellarhole
15	C.Colby's cider mill	52	Granite post
16	C.Colby's	53	Spring house by road
17	College schoolhouse	54	J.P. Glover's
18	Stone culvert	55	N. Foster's
19	Colby's sap house	56	J. Burnap's
20	Kittredge Cemetery	57	J. Brown's
21	J.S. Kittredge's	58	Page Cemetery
22	Stone wall lane	59	N. Page's
23	Cut stone	60	Large pile of stone
24	P. Page's	61	Stone culvert
25	Stone enclosure	62	N. Page's
26	Stone culvert	63	N. Page's
27	I. Ewing's	64	J. Gilmore's cooper shop
28	Withington's house	65	Burnap schoolhouse
29	Bartlett gravesite	66	A.P. Wiggin's
30	Cellerhole	67	Stone enclosure in wall
31	Cellerhole	68	Davis & Martin
32	Peaceful Retreat Cemetery	69	L. P. Jameson's
33	T. Dowlin's	70	E.R. Gilmore's
34	M. Hemphill's	71	G. Flint's
35	B. Collin's	72	G. Flint's
36	J. Colby's	73	Culvert
37	Stone cistern	74	Small cellerhole

Historic Features		Historic Features	
Map ID	Historic Site/Feature	Map ID	Historic Site/Feature
75	J. & L. Wiggin's	114	S. Badger's
78	Sisco Cemetery	115	B. Badger's root cellar
79	T. Wiggin's	116	B. Badger's first house
80	Town Line Warner & Henniker	117	G. Foster's
81	Old Waterloo Cemetery	118	S. Foster's
82	J.& N. Osgood's	119	Pile of stone Gregor Road
83	Olive Wheeler's burial site	120	Hoyt schoolhouse
84	Hannah Bean's burial site	121	Stone culvert
85	Nathaniel Bean's burial site	122	Cellerhole
86	J. Bean's	123	Cellerhole
87	Trail Head to Chandler Mink Tower	124	Stone culvert
	Fish Rock	125	Stone culvert
88	Flander's Bros sap house #1	126	S.K. & E.S. Hoyt's
89	Flander's Bros sap house #2	127	S.K. & E.S. Hoyt's
91	North Village schoolhouse	128	Hoyt Cemetery
92	D. Locke	129	Stone culvert
93	L.F. Flander's	130	J. Peabody's
94	W.& F.Davis	131	Retaining wall
95	F. Davis barn	132	Town line Warner & Henniker
96	M. Johnson's	133	J. Whitcomb's barn
97	M. Johnson's barn	134	F. Davis's barn
98	S. Sanborn's barn	136	Rev. Wm. Kelley's
99	S. Sanborn's	137	Stone culvert
100	R. Merrick's	138	L.W. Johnson's
101	J.&L. French	139	C.F. Kimball, Jr.'s
102	J.&L. French cooper shop	140	Kimball's schoolhouse
103	Stone Culvert	141	Stone culvert
104	Liberty Union schoolhouse	142	Kimball corner
105	F. Eaton's	143	D. Foster's
106	W. Merrick's	144	Culvert
107	J. Sargent's	145	B. & R. Lowd
108	Stone culvert	146	Stone culvert
109	Cemetery - abandoned	147	E. Carter's
110	E.S. Badger's	148	W. P. Elliot's
111	E.S. Badger's shop	149	Mrs. J. Farmer's
112	Built up stonework	150	Mrs. J. Farmer's well
113	Scenic overlook	151	Cellerhole

Historic Features	
Map ID	Historic Site/Feature
152	Cellerhole
153	Cellerhole
154	W. Sanborn mill site #1
155	W. Sanborn mill site #2
156	Stonework by dam
157	W. Sanborn's
158	W. Sanborn's well
159	W. Sanborn's second cellerhole
160	Sanborn cemetery
163	J. Gove's
164	H.W. Edmund's
165	Edmund's barn
166	Joppa schoolhouse
167	E.C.Clark's
168	E.C.Clark's
169	Stone culvert
170	Stone culvert
171	Waterfall
172	C.O.Clark's
173	Cowslip
174	G.H.Clark's
175	Joppa schoolhouse
176	W. Danforth's
177	Ferrin's
178	Ferrin Cemetery
179	D. Currier's barn
180	J. H. Bartlett's
181	Lampkin's
182	Lampkin's barn
183	Z.A. Bartlett's
184	Boundtree Marker Town Line Warner, Hopkinton & Henniker
185	Birthplace Daniel Kimball
186	S. Rand's
187	Stone culvert
188	J. Hardy's