DRAFT

Monterey Open Space & Recreation Plan

Prepared by

Laurie Sanders & Kasey Rolih, UMass Extension

in cooperation with

Berkshire Regional Planning Commission
&
Town of Monterey

December 2003

Monterey Open Space & Recreation Plan

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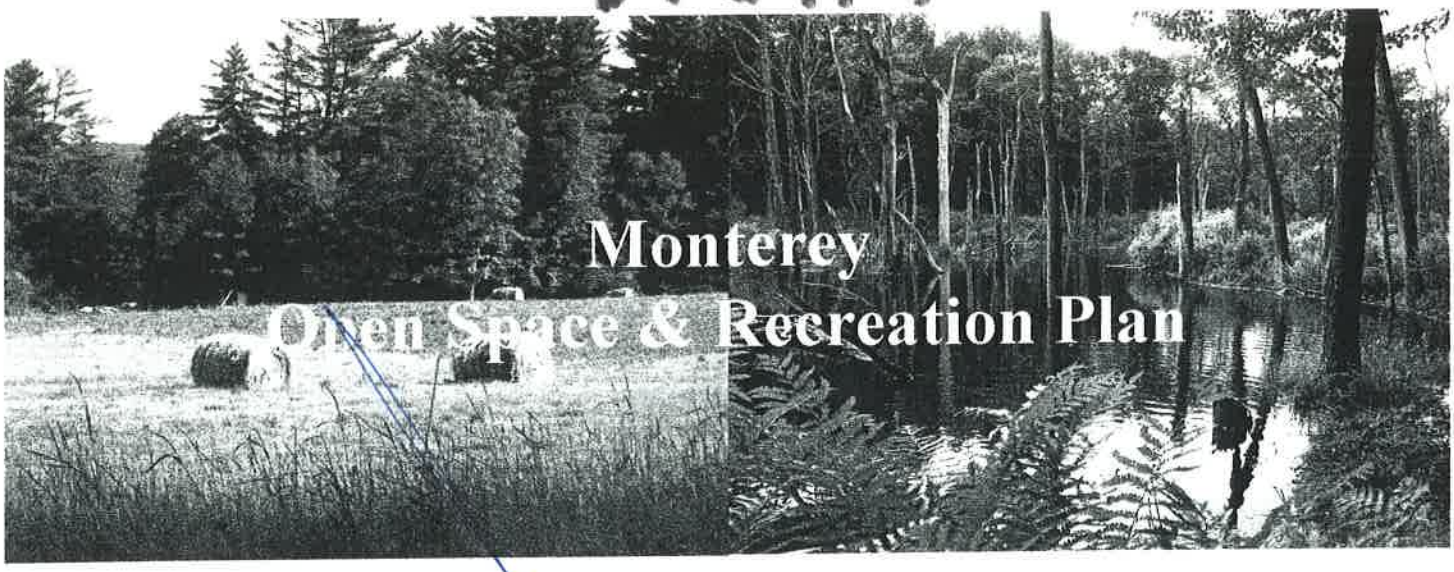

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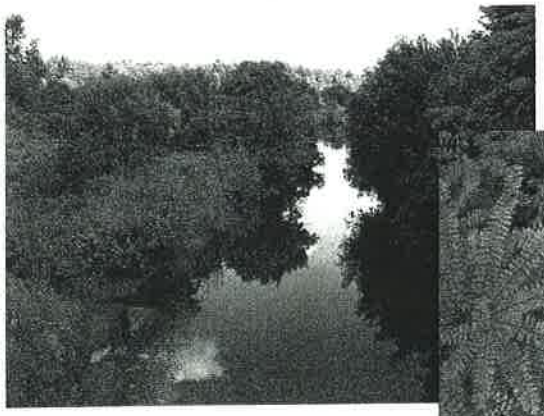

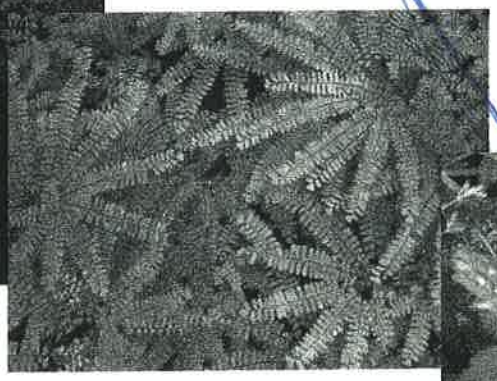

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SECTION 1. PLAN SUMMARY

Monterey's Open Space & Recreation Plan (OSRP) summarizes our ecological, historical and recreational resources, identifies our conservation priorities, and includes a five-year action plan to help us reach our goals and objectives. It also acknowledges issues such as land use, finances, and demographics, which impact our community's development. To help us complete the OSRP plan, we worked with the Berkshire Regional Planning Commission and UMass Extension; we also relied on Monterey's 1990 Open Space & Recreation Plan (OSRP) and recent input from community boards and individuals.

In the years since the last OSRP the most significant action has been the adoption of the Scenic Mountain By-law in May 2003. This new by-law will help reduce aesthetically and ecologically disruptive activities on ridges and steep slopes. Pressure for residential development is increasing in town, and since 1998 an average of 14 new homes have been built each year. Under current zoning, the town could ultimately have 46 new miles of road, another 2914 dwelling units and 7600 residents. If this happened, water demand would increase by about 500,000 gallons/day, and there would be an additional 3300 tons of solid waste produced each year.

As more homes are built, Monterey faces changes that will affect the look and make-up of our community:

- added stress on town services;
- loss of our middle-class population base, which cannot compete with the increased cost of housing;
- loss of the valued landscape features;
- degradation of water quality; and
- loss of wildlife habitat and impacts to biodiversity.

The intent of this document, and its inclusion in Monterey's Community Development Plan, is to provide a framework for efficient, wise and fair planning for the future of Monterey.

SECTION 2. INTRODUCTION

A. Statement of Purpose

Land is one of the most precious assets our community possesses. How we use it shapes our town's character and vitality. Monterey is fortunate because its rural character and scenic beauty--the qualities that appeal to so many of us—remain largely intact. This is due in part to conservation efforts by state environmental agencies and private non-profits, which have permanently protected nearly 40% of our town. Meanwhile revisions to Monterey's Zoning Bylaws have helped to safeguard water quality and scenic ridgelines by regulating building and development. Still, Monterey residents acknowledge the need to make our bylaws more relevant to current pressures and to reflect new information. We strongly support efforts to ensure the future of Monterey's rural identity. At present, the greatest threats we face are from (1) development that is incompatible with the town's character, and (2) outside economic pressures that could erode our control over the town's future. Without careful planning and zoning, the fabric of our community and the environment we cherish could suffer irreversible damage.

B. Planning Process & Public Participation

In 2001, using funds from Massachusetts Executive Office of Environmental Affairs (Executive Order 418) and The Trustees of Reservations' Highlands Initiative, the Monterey Selectboard voted to update the town's 1990 Open Space and Recreation Plan (OSRP). The plan was completed with assistance from the Berkshire Regional Planning Commission (Bryan Boeskin, Mark Maloy and Peter Falcier) and UMass Extension (Laurie Sanders, Kasey Rolih, Scott Jackson). UMass Extension worked with community members and wrote the document, while staff at the Berkshire Regional Planning Commission were responsible for updating and compiling GIS maps. The principal members of the community involved were: Michele Miller, John Sylbert, Muriel, Fred Chapman, Claudia Weldon, Storrs Olds, and Joyce Scheffey.

This Open Space and Recreation Plan is an advisory document that will help guide and inform the actions of local officials. Upon approval by the state's Division of Conservation Services, our town will be eligible to apply for state grants to help cover the costs of protecting land for conservation and recreational use. For Monterey, the reimbursement rate is 52% (up to $250,000).

In the fall of 2002 the Selectboard sent a questionnaire to each residence, asking for input on topics ranging from affordable housing and transportation to open space and recreation. 36% (268/742) of those surveyed responded. With respect to open space and recreation, the responses re-affirmed those from the town's 1990 Open Space & Recreation plan—Monterey residents care deeply about protecting the town's rural character and its natural resources (See Appendix 1).

Three public meetings were held to discuss the OSRP (12/02, 2/03, 11/03). Fifty-seven people attended a meeting that showcased a new approach to prioritizing land for protection developed by the University of Massachusetts. Attendance at other meetings ranged from 4-23 and included the members of the Open Space Committee as well as interested town residents. UMass Extension also gave a presentation to the Monterey Preservation Land Trust in September, at which 28 people attended. In November, 23 Monterey residents attended a public meeting and

discussed, debated and amended the goals, objectives and 5-Year Action plan. In addition, since September a large, colorful poster soliciting participation in the OSRP process was posted in town (Appendix 2). In November Joyce Scheffey and Laurie Sanders wrote an article about the OSRP for the Monterey News (Appendix 3). As part of the plan's development, UMass Extension staff also interviewed staff of The Trustees of Reservations, National Park Service, Berkshire Natural Resources Council, Monterey Preservation Land Trust, the Massachusetts Department of Environmental Management, Lake Buel Association and the Lake Garfield Association; their comments are also incorporated into this document.

SECTION 3. COMMUNITY SETTING

A. Regional Context

Monterey is located in southeastern Berkshire County at the westernmost edge of the Berkshire Plateau. Great Barrington lies in the Housatonic Valley to the west, Tyringham in the Hop Brook Valley to the north, Otis and Sandisfield on the Plateau to the east, and New Marlborough in the foothills to the south. The northern, western, and eastern boundaries of Monterey are defined by a ridgeline of hills and mountains. The three most pronounced summits are Mount Wilcox (2112 feet) to the northwest, Hunger Mountain (1821 feet) to the east, and Chestnut Hill (1830 feet) to the southeast. The town's rugged topography made development more difficult and has contributed to the maintenance of Monterey's rural character.

Between the hills in an east-west running valley is the village center. Passing through the center is the Konkapot River, the largest river in town and one fed by many smaller streams. The Konkapot begins near Lake Garfield, the town's recreational center piece. As it leaves town, it receives water flowing from Lake Buel, which lies in Monterey and neighboring New Marlborough. Nearly all the town drains to the Housatonic River Watershed; a tiny fraction (<1%) drains into the Farmington River Watershed.

Like much of Berkshire County, the town's interior location, dense forests and higher elevations create cooler, more hospitable summers that draw many visitors and seasonal residents to the area. Summer temperatures rarely exceed 90° and the mean temperatures for June, July, and August are 63°, 68°, and 66° respectively (as recorded in Great Barrington from 1929-96). The first frost occurs toward the end of September, just before peak fall foliage; below-freezing temperatures continue into mid-May. Snow typically covers the ground from the end of November to the middle of March, averaging 55 inches a year. Annual precipitation for Berkshire County is historically constant, ranging from 48.8 inches (as recorded in Great Barrington from 1973-95).

The town's extensive open space, excellent water quality and scenic beauty are what draw many visitors to the area. By extension, the wise stewardship of our natural resources has an important influence on our local economy.

B. History of the Community

Settled in 1739 as part of an effort to development townships, Monterey was part of Tyringham until 1847. The original town center was situated in the hills not far from the Bidwell House and Parade Grounds in Monterey. The name Monterey was chosen by patriotic residents who named the town in honor of a battle in the Mexican-American War. At first Monterey's economy was based on agricultural activities. Later when the town center moved to the valley of the Konkapot, manufacturing became a more important component. Among the town's small factories were cotton mills, two rat-trap factories, a gristmill, a comb factory, and a paper mill. During the next fifty years, regional and national events led to significant changes in town. In the mid-1800s when the railroad tracks were laid to the north in Lee, many of Monterey's small businesses moved or went bust. Around the same time, families and young people were lured away by the California gold rush, the opening of fertile land in the Mid-West, and the appeal of city life promised by the Industrial Revolution. What replaced industry and agriculture was tourism. In 1894 the first wave of summer cottages were built along the south shore of Lake Garfield. With the formation of Hepzibah Heights, New England Keswick and the Berkshire Art School in the early 1900s, people sought out Monterey as a summer retreat. Today summer visitors continue to play a large role in the town's economy and character.

Among the town's significant historic resources are the old town center and parade grounds (*photo right*), the present town center (including the Congregational Church, Old Parsonage, General Store, Library), our five cemeteries and several homes (Tryon teahouse, Bidwell House and the Edith Wilson house). New England Keswick, a private faith-based camp and retreat, includes several older buildings; the facility has been used as a religious retreat center since the 1920s.

C. Population Characteristics

Monterey's population has fluctuated over the years. By 1885, nearly 40 years after separating from Tyringham, 571 "living souls" made their home here. Over the next 40 years, that number steadily declined to a low in 1920 of 305. Since then the population has risen gradually and steadily with only a slight dip in the mid-1990's. According to the 2000 Federal Census, Monterey's population included 934 permanent residents. The average age is 42.7 years (higher than 1980 when the average age was 33.3 years). During the last 20 years the number of residents over 65 has increased from 120 (14.7%) to 154 (16.5%) in 2000. The town's year round population is likely to increase as many seasonal residents intend to live in Monterey full-time after retirement.

According to the US Census (2000), the average family income in Monterey is $49,750. Many residents work in Great Barrington, Pittsfield or many people are willing to commute even further for the opportunity of living in the rural hilltowns. Of town residents, approximately 15% are self-employed and 5% are involved in agriculture, a figure well-above the state and county

averages. An important component of Monterey's population are our seasonal residents. They are drawn to Monterey not only for its peace and quiet, but also for the swimming and recreational opportunities at Lake Garfield and Lake Buel. Permanent residents also take advantage of these areas, so maintaining water quality in the lakes and their watersheds is a priority for all residents. With the summer influx in seasonal visitors, there are also more children. At present, the town's existing ballfields and playgrounds appear to be adequate to meet the increased demands during the summer. Above all, those of us who make our home in Monterey, whether year-round or just for part of the year, we appreciate Monterey's rural beauty and small town charm. To maintain these features, protecting open space—farms, fields, scenic vistas, wildlife habitat, high quality streams—is key to maintaining these important attributes.

D. Growth and Development Patterns

Patterns & Trends

Since 1900 Monterey's local economy has shifted away from agriculture. The town, once 75% open, is now 80% forested **(See Map 1: Land Use)**. The last dairy farm, Lowland Farm, ceased operations in 1980 and the X-acre Gould Farm is now the town's largest active farm. Several smaller farms continue to operate, selling vegetables, fruits, cheese and hay. Logging also continues to play an important role in shaping land use patterns in Monterey. In addition to managed woodlands, three farms maintain maple syrup operations and one is a nursery. Beyond this, the Beartown State Forest, 4800 acres of which lie in Monterey, is also managed for timber.

What has replaced agriculture as our town's economic base is an influx of second homeowners and seasonal visitors. Since at least 1916, seasonal property owners have exceeded the year-round population. And they have a considerable effect on the town--through the number of homes owned, cars driven, taxes paid, and other factors. At present, seasonal residents account for **55%** of Monterey's total property tax base and approximately **25%** of the annual budget.

Between 1975-2000, 298 new dwelling units were added in Monterey, for a total in 2000 of 832. The rate of new house construction has been steadily increasing in town since 1960. In fact, in the 1980's and 1990's, 227 new homes were built, representing the largest increase in new homes for any twenty-year span in Monterey's history. As housing units increased, so did the population, from 805 to 934 year-round residents. This 16% increase in Monterey's population affects town services (schools, roads, police, fire protection, government and social services) as well as the landscape. Based on topography and current trends, certain areas of town are much more vulnerable to development.

Infrastructure

Transportation: Transportation patterns have shaped Monterey's history. Settlement began in the mid-1700s only after a road was built between Westfield and Sheffield. By the 1860's Monterey's population decline reflected the development of new roads and rail lines, which offered opportunities in the West. The lack of a rail line through town made it difficult for local businesses to compete (the rail line was built further north in Lee). Cars made it possible to shop and commute to neighboring towns and allowed second home owners to visit more often.

Drinking Water Supplies: Most homes in Monterey rely on private wells, but three small private water supply companies provide drinking water for more densely developed areas:

- The *Monterey Water Company* serves approximately 50 households and businesses in the village center. All users served by the Company are required to own one share of stock and each user has a single vote in matters of business. The water for the Village comes from several springs in the hills off Sandisfield Road and is piped to users. State law requires the water be chlorinated for public health and safety, its quality be tested monthly and a chemical analysis conducted twice a year.
- The *Aquarius Water Company* and *Schwab Well Head* are two smaller private water companies that serve a number of houses and cottages at the western end of Lake Garfield. These companies are also required to meet state standards for water testing and safety.

Waste Water: All residential and commercial buildings in town have their own septic systems, with the exception of the Gould Farm. This residential non-profit operates small, DEP-approved wastewater ponds to treat their waste.

Long-Term Development Patterns

Monterey is divided into three primary zoning districts: Agricultural/Residential, Lakeshore, and Business (**See Map 2: Zoning Map**). Beyond these, the Town has a Floodplain and Stream and Pond Protection by-law that require special permits for development near these areas and a Wireless Telecommunications Overlay District that includes all land that is within a ¼ mile radius of Mt. Wilcox.

Most of the land area in Monterey is zoned agricultural/ residential, which allows for single family residential as well as multi-family residential by special permit. The Lakeshore District around Lake Garfield requires lower density residential development when the slope exceeds 15% (*see Table 1*); this by-law provision was adopted to help maintain the lake's water quality (erosion, fertilizer runoff, etc). The business district permits by-right for all uses allowed by-right or by special permit in the agricultural/residential district, except for multi-family housing. It requires only ¼ acre and 100-feet of road frontage.

Table 1: Density Regulations

District	**Minimum Lot Size (sq. Ft)**	**Minimum Frontage**	**Maximum Lot Coverage**	**Maximum Building Height**
Agricultural /Residential				
Single Family	2 acres	200'		
Two family	5 acres	300'		
Lakeshore: Single Family Only				
Average slope >12%				
12%- 15%	2 acres	200'		
<15%	4 acres	300'		
	6 acres	400'		
Business	10,890	100'	30%	35'

In the agricultural/residential and lakeshore districts, each new house is required to have a minimum of 2 acres and 200 ft. frontage. Most of the housing is along existing roadways, and the highest density of homes occurs along the shores of Lake Buel and Lake Garfield. The town center is also fairly densely settled. According to the 2000 Buildout Analysis approximately 1,064 acres (6%) of the town's total area is considered developed (roads, homes); 6,516 acres (38%) is permanently protected open space; and 22% was considered constrained for development due to physical or topographical reasons (Berkshire Regional Planning Commission, 2001). The 34% remaining (5,869 acres) is potentially developable land. If it were fully developed, BRPC's build-out analysis predicts that there would be 2914 new dwelling units and an additional 6,672 residents, of which 500 would be children.

Table 2: Summary of Buildout Analysis	
Developable Land Area (acres)	5,869
Total Additional Residential Lots	2,891
Total Additional Dwelling Units	2,914
Total Additional Residents	6,672
Total Additional School Children	583
Additional C/I Buildable Floor Area (sq. ft.)	56,578
Total Additional Water Demand (GPD)	504,641
Residential Water Demand (GPD)	500,398
C/I Water Demand (GPD)	4,243
Additional Municipal Solid Waste (tons)	3,270
Additional Non-Recyclable Solid Waste (tons)	1,801
Additional Roads (miles)	46.1

At present, the town has hired a consultant to review its existing by-laws. The consultant will provide recommendations to the town to update the by-laws, including specific language to help the town safeguard its rural qualities. Any changes to the by-laws will require a vote at Town Meeting.

SECTION 4. ENVIRONMENTAL INVENTORY AND ANALYSIS

A. Geology, Soils & Topography

Geology

Berkshire County's physiography is defined by the three features: the Taconic Mountain Range, the Berkshire Hills, and the lowlands of the Housatonic River Valley. The Taconic Mountains and Berkshire Hills are ancient features that formed as the result of continental collisions, the first of which occurred during the Pre-Cambrian period (~470 million years ago). As one continental plate collided with another, deep ocean sediments were compressed under the tremendous pressure and heat. The sand beaches, coral reefs and ocean sediments were crushed, compressed, uplifted and transformed. The sand beaches became the narrow strand of quartzite ridge found in Great Barrington and near Steven's Pond, the coral reefs metamorphosed into the limestone, marble and dolomite that characterize the Konkapot River Valley, and the deep ocean sediments were re-formed into

the rocks of the Berkshire Plateau and Hills. Gneiss is the major underlying bedrock type in Monterey, although small amounts of dolomite and marble outcroppings and intrusions occur as well. Other major rock types in our region are named the Dalton and Cheshire Formation quartzites, the Stockbridge formation limestone and marble, and the Walloomsac Formation schist. The hills we see today are the eroded cores of what were once massive mountains. These are capped by the more erosion-resistant gneisses and schists, while the lower slopes and valley floors may contain the softer, more easily eroded carbonaceous marble and limestones.

A series of continental glaciations during the last two million years represent the last major events to shape the landscape. Glacial action modified, but did not change the basic topography of New England. Instead the mountains became more rounded and the valleys more U-shaped. In Monterey most of the surficial deposits we see are the result of the last continental glacier. More recent deposits were laid down by streams and rivers. When the glaciers retreated from our region some 12,000 years ago, they left behind vast quantities of sands, silts, rocks, and boulders that had long been frozen within the ice. Some of this material was simply laid down by the melting glacier (unstratified), while others were sorted by water (stratified).

Unstratified Deposits

This unsorted mix is a compact, but random assortment of silt, sand, clay, gravel, rocks, and boulders. It is commonly called till and covers most of Monterey. Because it lacks large pore spaces, till is incapable of storing large quantities of groundwater (wells in till usually have low production rates) and it is often unable to adequately treat septic system effluent. This is especially true if the effluent intercepts a lens of highly compressed till known as a hardpan layer, causing the effluent to "sheet off" down gradient into the nearest wetland, stream or shallow drinking water well.

Stratified Deposits

Stratified deposits represent less than 10% of Monterey's land surface. Two types occur in Monterey: glacio-fluvial deposits and recent alluvium. *Glacio-fluvial deposits* consist of silt, sand, and/or gravels that were sorted by glacial meltwater. Most of it occurs in the southwest section of town, where thicknesses extend up to 250 feet. *Recent alluvium* occurs along existing rivers and streams and consists of sediments that were deposited after the glacier's departure.

In spite of the small area covered by stratified drift, it plays an important role in groundwater recharge. Water can infiltrate the sands and gravels and form aquifers. By storing water, these deposits also help to maintain base flows in streams during periods of drought. They are valued for their sand and gravel, and because they are typically flat and have good percolation rates for septic systems, they are often favored for housing development. However problems can occur when the density of septic systems is high and groundwater is close to the surface. In these situations effluent can pass through the sands too quickly, causing the contamination of nearby water resources—both above and below ground. This may be happening at some properties on Lake Buel. Years ago investigators for the Route 23 Bypass study recommended that private well water be treated to ensure its

safety. In addition to effluent, contaminants can pass through stratified deposits and pollute water supplies. In Monterey, one area of concern is the leachate from the old landfill, which is sited in sands and gravels. Pollutants from the old landfill may be moving through the underlying sediments and could degrade the nearby Konkapot River.

Soils & Slopes

Fourteen soil types have been identified in Monterey **(See Map 3-Soils & Geologic Features)** (NRCS, 1988). They range from steep, stony soils to nearly level, deep, fertile silt loams, but can be categorized into two major groups: *Amenia-Pittsfield-Farmington* and less common, *Tunbridge-Lyman-Peru.* The *Amenia-Pittsfield-Farmington* soils were derived from till, but a small area in the town's southwestern corner developed on outwash plains. Within town most of the soils have either a hardpan layer or bedrock within five feet of the surface, or a high water table (within 1 to 1/2 feet of the surface) for four or more months of the year. This means that septic systems on lots less than 1.5 acres (60,000 square feet) have "severe limitations".

Amenia-Pittsfield-Farmington soils are loamy soils in glacial till that was derived from limestone. They range from being very deep to shallow, and can be well-drained, moderately well-drained or somewhat excessively drained. They occur on slopes that are nearly level or very steep.

Tunbridge-Luman-Peru are loamy soils that formed in glacial till and were derived from schist, gneiss and granite. They are quite variable; they may be very deep, moderately deep, or shallow; well drained, moderately well-drained or somewhat excessively drained. They occur on gentle to very steep slopes.

Slope is another important factor shaping Monterey's development patterns **(See Map 4-Slopes)**. Slopes with grades between 15-25% may have severe limitations if the soils are susceptible to erosion, excess surface runoff, or have bedrock near the surface. Slopes over 25% have "severe" limitations for most activities because of the economic costs and environmental issues.

Table 3: Slopes		
Monterey % Slope	**Acres**	**% of Town**
≤ 15 %	12497	72
15 – 25 %	3448	20
25 – 50 %	1326	7.7
≥ 50 %	32	<1

B. Landscape Character

Monterey is defined by its historic homes and village center, fields and farms, scenic vistas and trails, and extensive forests, wetlands, streams and ponds. Lake Garfield is the town's recreational center piece, while Lake Buel is used by thousands of visitors each year. Thanks to the town's varied topography and geology, a diversity of plant communities occur in town. In addition, most of the streams and water bodies have excellent water quality, in large part due to the protection of open space and the land's careful stewardship. The largest and one of the most beautiful is the Konkapot, which along River Road cascade through naturally sculptured rocks and into a broad swimming hole. The town is also fortunate to have so much land already under protection. Two farms have sold or donated their development rights, and Gould Farm is awaiting approval through the state's APR program. Land owned by the Monterey Land Trust, town, Bidwell House (The Old Manse) and Beartown State Forest, are open to the public for walking and exploration. The Appalachian Trail cuts through a portion of Beartown State Forest, and Gould Farm and several town properties have trails/walking paths that are open to the public.

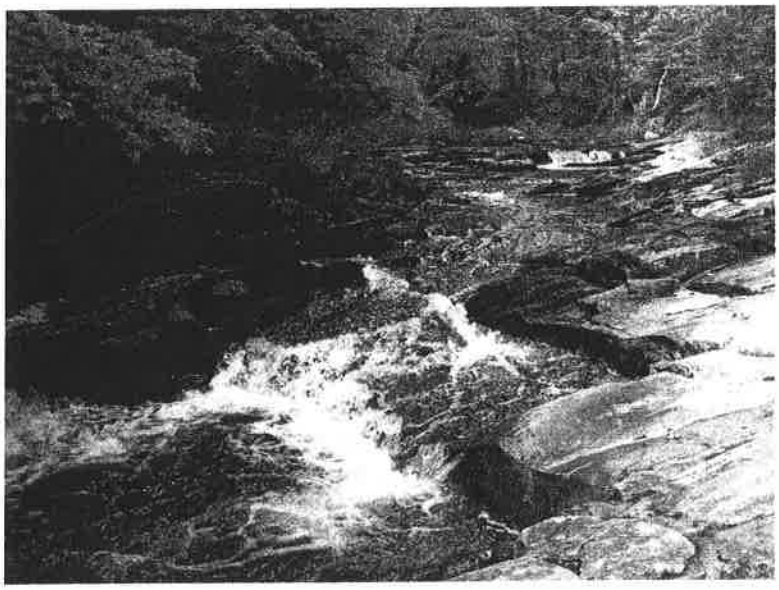
C. Water Resources

Precipitation falling in Monterey flows primarily into Housatonic River watershed (17,137 acres; 99%). Only 1% flows into the Farmington River/Connecticut River (215 acres) watershed (**Map 5: Water Resources**). The Farmington River Watershed, based in Simsbury, Connecticut, is interested in protecting the entire watershed, but most of its efforts on biodiversity assessments, water quality and quantity, trails and land protection, have been based in Connecticut. The Housatonic Watershed Association has broad interests in water quality, but has focused much of its energy on issues related to PCB contamination and clean-up along the mainstem in Pittsfield, Lenox and Lee.

Surface Water

Rivers & Streams: The **Konkapot River** watershed, a sub-watershed of the Housatonic, drains most of Monterey. Named after a Mahican chief, the Konkapot is known throughout western Massachusetts as an outstanding trout stream with cold, clear waters. During the mid-1800s its waters were used to power more than a dozen small factories that produced a range of goods—from paper and cloth to powder, wooden ware, and carriages.

The Konkapot begins at the confluence of Lake Garfield, Brewer Pond, and Loom Brook, which drains Beartown State Forest. From here, it flows south, crossing Route 23 at Green and Bidwell Parks, then turns west and parallels the state road. Along its path the Konkapot is fed by an unnamed stream from Palmer (Fargo) Pond, Swann Brook, and Rawson Brook. After its waters are joined by Rawson Brook, the Konkapot turns south and parallels Hatchery River Road, where it cascades through a rocky ravine (*photo right*). Below the falls is a broad pool, used informally for swimming and picnicking. From here the river flows south, joining the waters leaving Lake Buel, and then winds further south through New Marlborough and into Connecticut. Ultimately, it loops back to the north and enters the Housatonic River in Ashley Falls, Massachusetts. Four properties are protected along its length: an APR, 2 small, town-owned parcels and a property owned by the Monterey Preservation Land Trust.



Rawson Brook, the Konkapot's largest tributary, begins in the forested hills of New Marlborough. From the New Marlborough line, it leaves a beaver pond and rushes down a rocky channel until near New Marlborough Road, the land flattens out and the Brook meanders through a shrub-swamp/beaver pond. At this point it is joined by a clear, sandy bottomed stream known as Harmon Brook. **Harmon Brook** begins in New Marlborough and after a

small privately-owned dam, passes under New Marlborough Road and courses through Hyde's Falls to New Marlborough Road, where it flows into a different beaver pond and joins an unnamed tributary. The **unnamed stream** begins at Stedman (New England Keswick) Pond, then flows through a forested ravine, weaves its way through a series of beaver ponds, and then at Sandisfield Road flows down a rocky channel and flows through the forest. In the 19th century this unnamed brook was used to power at least one small mill; the stonework can be seen today just downstream from where the brook passes under Wallace Hall Road. With few roads or residences, the water quality in this unnamed stream and Harmon Brook appear to be excellent. This, in combination, with abundant adjacent habitat make it ideal for a diversity of animals, including deer, bobcat and wood turtle (*photo right*), a Species of Special Concern in Massachusetts which was observed in 2003.

Near the bridge at New Marlborough Road and Harmon Road, Harmon Brook merges with Rawson Brook in the south hayfield of the Tryon's Lowland Farm. From here, Rawson Brook flows northwest through the hayfields and reenters the forest. Its channel varies between cobbles and sands, and is ideal habitat for a number of dragonfly species, including the Skillet Clubtail (*Stylurus scudderi*), a state Endangered species observed here in 2003. At the foot of Wellman Road is access to Diana's Trail, a 1.5 mile community walking trail owned and maintained by the Gould Farm. The trail follows and crosses Rawson Brook and its associated wetlands, and ends at Curtis Road, not far from where Rawson Brook meets the Konkapot. All of Rawson Brook and a large stretch of the Konkapot were identified by the Massachusetts Natural Heritage Program as BioMap core habitat, meaning that these streams and surrounding uplands provide critical habitat for species protected by the Massachusetts Endangered Species Act.

"Monterey boasts one of the most beautiful of Berkshire's Lakes, Lake Garfield, a mile from the village, which from its absolute seclusion and wildness of the surroundings is the favorite "camping out" place of South Berkshire. ...At the northern end is a natural curiosity that has attracted much attention; a floating island, two hundred or more feet long, that rises and falls regularly with the water. Formerly it 'hung around' the south end, now and then floating from one side to the other; but a few years ago, when the banks were very full and a smart gale blowing, it drifted up the lake to its present moorings on a sand bank where it seems likely to stay for some time"

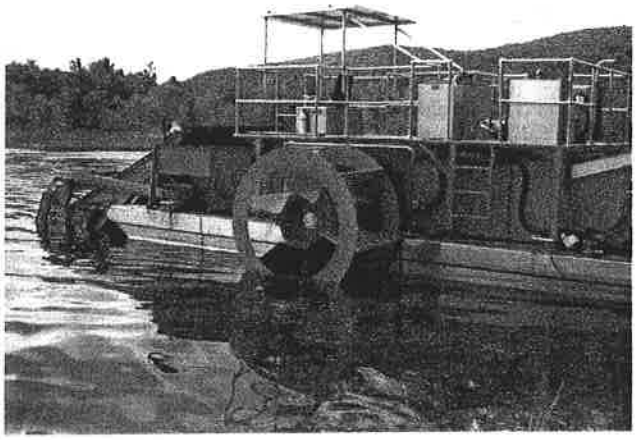
Clark W. Bryan, The Book of Berkshire, 1886.

Lakes: Lake Garfield and Lake Buel are the town's most important surface water features. Both provide recreational opportunities for residents and contribute to the town's economy through tourism and property taxes. The lakes and their associated wetlands also provide fish and wildlife habitat, groundwater recharge, flood control, storm damage prevention, and add to the town's aesthetic beauty. Although many year round residents use Lake Garfield, many fewer use Lake Buel. In the recent survey, 88% of respondents felt that the Town should participate in the maintenance and upkeep of public lakes, including land management and weed control to preserve tax values and recreational opportunities for the entire community.

Lake Garfield was first called 12-Mile Pond for its distance from Sheffield, then Brewer Pond (after a large family who lived on the north shore). In 1881 it was renamed Lake Garfield, for the country's then- President, James Garfield, who had spent some of his boyhood visiting relatives in town near the lake. The lake, considered one of Berkshire County's most beautiful, is a natural pond that was dammed in the mid-1800s to generate waterpower. It is linked to Brewer Pond, which was created in 1972 when a new dam was built. Together the two water bodies cover 272 acres. The maximum depth of the lake is 31 feet, with the deepest areas occurring on the north side. The town maintains a small sandy beach for residents at the western edge. Alternative public access is still being discussed.

The lake is eutrophic, meaning that it is aging and tends to be overly productive of weeds and algae. High phosphorus levels may be due to leachate from septic and gray water systems around the lake. It also has at least one known rare species as well as a small population of the invasive Eurasian Milfoil (Melissa Dow-Cullina, pers. obs. 2002). Currently, the Eurasian milfoil does not pose a threat as present, but it is an aggressive invader that can compromise a lake's recreational and water quality values. Purple loosestrife, however, is a problem, and the Lake Garfield Association plans to introduce leaf-mining beetles (*Galerucella calamariensis* and *G. pusilla*) to control it and reduce its spread.

Lake Buel, about 20% of which is in New Marlborough, covers approximately 196 acres. It has a deep basin at each end and is connected by a shallow area in the middle. Originally half its present size, Buel was dammed in 19XX and now has a maximum depth of 46 feet. Like Lake Garfield, its waters become stratified into warm and cold layers and it is eutrophic. Buel, however, suffers from thick weed growth. This is attributable to a combination of factors: (1) a thick layer of peat and muck; (2) a higher than expected alkalinity level; and (3) high nutrient levels from leachate and gray water runoff from surrounding cottages. Of its weeds, most troublesome is Eurasian Milfoil. The local lake association controls milfoil each summer by using a mechanical weed harvester (*photo right*). To date, Lake Buel has not been drawn down. Because it meets the state definition for a "great pond" (i.e. a natural lake greater than 10 acres), public access is available at the state boat ramp off Route 57.



Ponds: Many ponds occur in Monterey, the largest of which were artificially created. Royal Pond, Stedman Pond (New England Keswick), Steadman Pond (on the border of Monterey), Stevens (or Schweitzer) Pond, Palmer (Fargo) Pond and Benedict Pond are all manmade and privately owned. Natural ponds in town are much smaller and were created primarily by beavers. Noteworthy among the natural ponds is one located near the intersection of Art School and Tyringham Roads; for the last several years great blue herons have nested here. This species

is tracked by the state; in 2003 three nests, supporting eight young, were observed.

Groundwater Supplies
Monterey has ample groundwater supplies for domestic wells, but generally lacks the high-yielding groundwater sources that would be needed to support a large population or industry. Although significant supplies may be available in the interconnected marble and limestone caverns in the town's west end, most of the gneissic bedrock in Monterey lacks large fractures and fissures where groundwater could collect. Moreover, the till covering approximately 90% of town has low water yielding capacity rates and aquifers are few. At present aquifers in Monterey are suspected in the (1) glaciofluvial deposits between Route 57 and Lake Buel, (2) possibly beneath an ice channel deposit that extends southeastward from Steven's Pond to the Konkapot River, then south along the river, and (3) along the Konkapot River between Brewer Pond and the village center, and extending west to the River's intersection with Rawson Brook. From there, an arm may extend upstream for about a mile. Aquifers may also exist below the gravel pits and town's sanitary landfill and on the peninsula that extends into Lake Garfield.

Recharge Areas
The most important source of groundwater recharge is Monterey's extensive open land—its forested hillsides and hayfields. Especially important are upland areas underlain with stratified deposits where water can easily infiltrate. When stratified deposits intersect streams, they are often important in recharging base flows during periods of low water. Depending on the underlying substrate, Monterey's wetlands and streams can also contribute to ground water recharge. For instance, the large wetland in Great Barrington near Lake Buel may play a significant role in the lake's hydrology; it may also contribute to the aquifer located west of the lake in Great Barrington.

Flood Hazard Areas
The Federal Emergency Management Agency Maps show several areas in town that are prone to flooding. These areas include: Lake Garfield, Lake Buel, Stevens Pond, certain stretches along the Konkapot River and Rawson Brook, and along the unnamed tributary that passes west of Swann Road. At present the majority of these areas are undeveloped or agricultural. Flooding on the Konkapot could, however, affect certain downtown properties and Route 23 **(See Map 6)**.

Wetlands
Wetlands play a crucial role in maintaining the quality of water resources. They help recharge groundwater supplies, provide water for public and private drinking water supplies, temper the damaging effects of storms, control flooding, prevent pollution by a combination of physical, chemical and biological functions, provide fish habitat, and shelter, breeding areas and food for wildlife. They also provide scenic, recreational, and educational benefits. In Monterey significant wetland areas for wildlife are found around Fargo Pond, along Rawson Brook and on

the northeast edge of town. Some of the most scenic are those around Fargo Pond, the large beaver pond in Beartown State Forest, the wetland near the boundary of Otis, Tyringham, and Monterey, and the shallow marsh on Chestnut Hill. In the recent questionnaire, 82% of respondents felt that the preservation and conservation of wetland areas was important-very important.

D. Vegetation

Vegetation patterns in Monterey reflect the town's geologic history, past and present land use, and its abundance of water. In areas where gneissic bedrock is near the surface, the soils tend to be acidic and hemlock, mountain laurel, witch-hazel and other acid-tolerant plant species are common. In areas where limestone, marble or schists occur, the soils are neutral or basic, with higher levels of calcium and magnesium, two essential plant nutrients. Because of these soil conditions, other essential nutrients like nitrogen and phosphorus are more available to plants. One consequence is greater diversity of both plants and animals. In rich woods settings, sugar maple, yellow birch, basswood, striped maple, mountain maple, hobblebush, and yew are common and there is a lush layer of ferns and wildflowers.

Natural Communities: Forests & Wetlands

In 2000 the University of Massachusetts-Amherst began a project to identify all the areas within the Housatonic watershed of Massachusetts that were expected to be most important for biodiversity. UMass researchers began by identifying and mapping the watershed's major natural communities (*see text box right*), consistent with the Natural Heritage & Endangered Species Program (NHESP) classification (Swain and Kearsley 2000). They accomplished this by using a combination of field survey, remote sensing data (soils, lithology, satellite images) and aerial photo interpretation. In Monterey, developed land (roads, residential, business) currently accounts for 6.5% of the town, while the remainder is divided into 17 different natural community types (arranged below from most common to least):

- Northern hardwood forest (37 %)
- Mixed Transitional forest (26 %)
- Temperate conifer forest (16 %)
- Agricultural/Managed open (3%)
- High-gradient Headwater (3 %)
- Lake (3 %)
- Pond (1 %)
- Grassland (0.9%)
- Deciduous/mixed forested wetland (0.7%)
- Shrub Swamp (0.7%)
- Coniferous forested wetland (0.6%)
- Old field (0.4%)
- Emergent Marsh (0.4%)
- Streams/Rivers (0.2%)
- Powerline Shrubland (0.1%)
- Rocky Summits (less than 0.1%)
- Vernal Pool (less than 0.1%)

Map 7 shows the locations of the different types of natural communities in Monterey. Detailed descriptions of each community type are listed in Appendix 4.

Agricultural Land

As in most of southern New England, over the last 100 years, nearly all of Monterey's pastures and hayfields have succeeded to forests. Today forests cover 80% of the town and agricultural land makes up less than 5%. Most of agricultural land is located south of Route 23, and the majority is maintained as tree nurseries or hay/pasture. Hayfields in town provide nesting sites for bobolinks and given the relatively large size of some (e.g. along Wallace Hall Road), may also provide suitable nesting areas for grasshopper sparrows. The town has five areas that are deemed prime agricultural land (i.e. with slopes less than 1%).

Table 4: Farms	Acreage
Bradley's Farm	118
Brookmead Farm	82
Enoe Farm	157
Fenn Farm	180
Gould Farm	600
Lowland Farm (Tryon)	185
Malowista	75
McLaughlin Field	
Phillips Farm	82
Rawson Brook Farm (Sellew)	100
Ravine Falls Farm (Scheffey_	
Tall Pine Farm (Thieriot)	
Thompson (Lyman)	
Thompson (Warren)	
Turkeybush Farm	
Wilson Field	
Woodburn	

AREA 1. Bordered to the north by Route 23, to the east by New Marlborough Road, south by Wellman Road and west by Corashire Road.

The **Wilson** and **McLaughlin fields** on New Marlborough Road are owned by the town and leased to Gould Farm. **Brookmead Farm** consists of 82-acres of rolling pastureland that has been kept open by grazing stock. The land to the south has

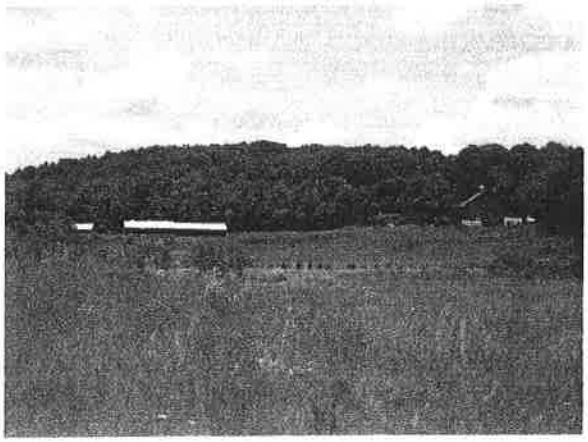
been protected by the Monterey Land Trust, while the land to the north is privately owned and mowed. Wellman Road has two farms: **Tall Pine Farm** and **Turkeybush Farm.** Tall Pine Farm has lain fallow since the death of Robert Thieriot, who used to grow vegetables. Turkeybush Farm, half of which is under a conservation easement, is used by the Tryon's for hay. The marshy wetland at Turkeybush Farm historically had a breeding pair of American Bitterns (Special Concern), and the fields on and around Turkeybush Farm are important nesting areas for bobolinks. The Tall Pine Farm includes a stretch of the Konkapot River, while Turkeybush includes a meandering stretch of Rawson Brook.

Area 2. South of Wellman Road & New Marlborough Road.
Rawson Brook flows through this area. **Lowland Farm** owned by Barbara and Richard Tryon was a dairy farm until the 1980s. The Tryons now grow hay, corn, raspberries and Christmas trees and produce maple syrup. **Rawson Brook Farm** on New Marlborough Road is owned by Susan Sellew. The farm produces goat cheese and covers more than 100 acres, of which about 12 acres are actively used for farming. This farm, which is open to the public, is considering participation in the Farm Viability Program; the land is enrolled in Chapter 61. Both farms have considerable brook frontage and provide valuable open space. Further east on New Marlborough Road is **The Ravine Falls Farm Trust**, owned by the Scheffey family. It is not actively farmed, but the old fields are kept cleared. These old fields have been mowed for more than 60 years.

Area 3. Corashire Road and Blue Hill Roads, north and south of Route 23.
Woodburn Farm, south of Route 23, has been protected through the APR program. The 10-acre pasture owned by the **Webb's** is an important scenic area along Route 23; it is used by horses. The **Bradley** (118 acres), **Thompson** (? Acres) and **Malowista** (75 acres) farms lie further along Blue Hill Road, which is main gateway to Beartown Forest and Benedict Pond. Some of the fields are hayed by local farmers and the high views and surrounding open space are valued by many residents.

Area 4. Gould Road, Route 23 - Barnum Flats Area.
This is among the most significant open land in Monterey because it lies above the town's largest aquifer. Three farms are located here: **Enoe** (157 acres), **Phillips** (82 acres) and **Gould** (600 acres). The Gould Farm is now the largest farm in town. Barnum Flats is the first significant open space in the approach to town from the west with significant views of Dry Hill to the south and bordered by Swann Brook. This area is the most visible open space in town and its preservation is of great concern to town residents.

Area 5. Sandisfield Road. The largest farm along Sandisfield Road is owned by Warren **Thompson**, a descendant of one of the town's earliest farming families. Thompson raises farm animals and chickens for eggs. In addition to fields, the farm includes woods and wetlands.



The Tryon Farm.

Rare Plant Species
Several rare and uncommon plant species have been documented in Monterey. The majority occur in natural community types that are rare or unusual within the Commonwealth (Table 5).

TABLE 5	Common Name	Scientific Name	Status	Habitat	Last Seen
Tree	Northern White Cedar	*Thuja occidentalis*	E	A northern species at the edge of its southern range	1998
Shrub	Autumn Willow	*Salix serissima*	WL	Fen swamps with neutral/basic pH.	1990
	Hoary Willow	*Salix candida*	WL	Fen swamps	1983
Grass/ Sedge	Pod-Grass	*Scheuchzeria palustris*	T		1912
	Fen Sedge	*Carex tetanica*	SC	Calcareous meadows/wetlands	1990
	Slender Cottongrass	*Eriophorum gracile*	T		1912
Orchid/ Wildflower	Hooded Ladies'-Tresses	*Spiranthes romanzoffiana*	E	Calcareous seeps.	1990
	Large-flowered Bellwort	*Uvularia grandiflora*	WL	Rich woods	2003
	Dwarf Scouring-Rush	*Equisetum scirpoides*	SC	Wet, nutrient poor sands and fens	1998
Fern/ Horsetail	Climbing Fern	*Lygodium palmatum*	SC	Calcareous, open shrub thickets	1925
	Adder's-Tongue Fern	*Ophioglossum pusillum*	SC	Wet meadows	1917
Aquatic Plant	Vasey's Pondweed	*Potamogeton vaseyii*	E	Buffered lakes	2002

E. Fisheries & Wildlife

The diversity, size and high quality of natural areas in Monterey provide excellent habitat for a range of animal species. The town's extensive tracts of habitat are also excellent for wide-ranging larger mammals, such as bear, bobcat, deer and moose. A range of aquatic habitats also occur--from cold, fast flowing streams that support native brook trout and rare spring salamanders to warm-water ponds and lakes, where red-spotted newts, bluegill and large mouth bass thrive. The diversity of birds is also high, thanks to the diversity of habitats. Over a year an avid birdwatcher can observe more than 200 species of birds in town. The powerline shrublands provide nesting habitat and stopover areas for rufous-sided towhees and brown thrashers, the larger hayfields serve as nesting areas for bobolinks and performance space for displaying male woodcocks. The cold swamps found at higher elevations attract purple finches, while larger wetland areas in town are the preferred haunts of wood ducks, rails, bitterns, and herons. As forests have grown back in town, the populations of turkeys, grouse, Cooper's Hawks and ravens have also increased. The large blocks of relatively unfragmented forest in Monterey are especially important to tropical migrants—wood thrushes, cerulean warblers, red-eyed vireos and scarlet tanagers--, all of which have declined during the last 50 years. These declines have been attributed to habitat losses in the tropics as well as habitat fragmentation on their breeding grounds, which makes their nests more vulnerable to parasitism and predation.

Of special note are the 25 *potential* vernal pools that were mapped by the Natural Heritage & Endangered Species Program (Burne 2001). NHESP staff identified potential vernal pools from 1:12,000 scale, color infrared, leaf-off aerial photographs flown between late March and Early May. Statewide coverage included photos taken in 2000 for towns in Berkshire County. Vernal pools are small bodies of water that hold water during the fall, winter and spring but dry out during the summer. Because of this lack of water, fish can't survive and over time, many species of salamanders and frogs have evolved to breed exclusively in these fish-free environments. Many other animals--fairy shrimp, fingernail clams, various beetles and many invertebrate species--also depend on vernal pools, either throughout their life cycle or during the breeding phase. Vernal pools are also used transitionally by many larger animals (wood ducks, raccoons, etc), but they are especially important for many of the state's rarest reptiles and amphibians. Because of their small size, their importance as wildlife habitat has historically been overlooked. Only during the last 20 years have biologists recognized their ecological significance. Aside from biological values, vernal pools help prevent flooding by storing water and play a role in recharging groundwater.

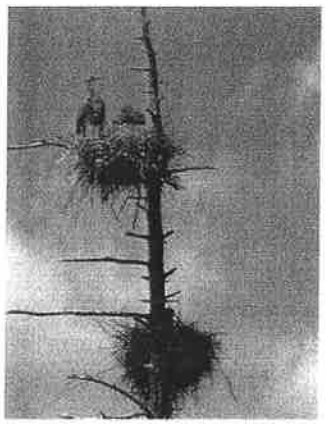
To help safeguard vernal pools, the state's natural heritage and endangered species program has developed a process to certify vernal pools. The pools must meet strict criteria for inclusion and all the documents are available at **http://www.state.ma.us/dfwele/dfw/nhesp/nhvernal.htm**. At present, only two vernal pools in Monterey have been certified.

Rare Animal Species

At present, eight rare animal species have been documented in Monterey (Table 6).

	Common Name	Scientific Name	Status	Last Seen
Mammal	Long-tailed Shrew	*Sorex dispar*	SC	1951
	Water Shrew	*Sorex palustris*	SC	1953
Bird	American Bittern	*Botaurus lentiginosus*	E	1991
Reptile	Wood Turtle	*Clemmys insculpta*	SC	2003
Salamander	Spring Salamander	*Gyrinophilus porphyriticus*	SC	1987
Fish	Bridle Shiner	*Notropis bifrenatus*	SC	1978
Insect	Twelve-spotted Tiger Beetle	*Cicindela duodecimguttata*	SC	1965
	Skillet Clubtail Dragonfly	*Stylurus scudderi*	E	2003

Table 6. Rare and endangered species historically documented in Monterey.



Great blue herons, a species tracked by state biologists, have nested in Monterey for several years in the pond near Art School Road. In 2003 3 nests produced with a total of 8 young..

F. Biomap, Biodiversity Value & Monterey

In 2001 the Massachusetts Natural Heritage & Endangered Species Program developed a map identifying areas that represents key habitat for the state's rare species. The project, known as BioMap, focused on areas where rare plants, animals, and natural communities have been

observed during the last 25 years (Natural Heritage & Endangered Species Program, 2001). By incorporating landscape data (topography, wetland cover), the known habitat requirements for individual rare species and locations of high-quality natural communities, state biologists drew boundaries outlining important habitat, called Core Habitat, across Massachusetts. Supporting Natural Landscape areas were mapped to enhance Core areas. Supporting Natural Landscape is composed of buffers around Core Habitat, large patches of vegetation, and undeveloped and roadless areas around or adjacent to Core areas.

In Monterey, BioMap identified several streams as critically important habitat. Three of these originate in the Beartown State Forest: Swann Brook, which flows into the Konkapot, and East Brook and West Brook, tributaries of Beartown Brook, which flows north into the Housatonic River in Lee. Rawson Brook and Harmon Brook are also identified as critical core area, as was Hall's Hill. Other isolated areas include unique plant community types, such as calcareous seeps and rich woods habitats. **Map 8** shows the areas identified in Monterey as core habitat and supporting natural landscape habitat. **Map 9** shows the overlap between existing protected open space in Monterey and BioMap. Core habitat areas represent the highest priority for biodiversity protection in the BioMap analysis. Supporting Natural Landscape is important in the state analysis, but plays—as the name suggests—a supporting role and provides extra protection for core areas.

A second tool to help prioritize areas for protection of biodiversity is the UMass-Amherst Biodiversity Project's Conservation Assessment and Prioritization System (CAPS). The CAPS approach is a two-step process that begins with a landcover map of developed and undeveloped land. Undeveloped lands are natural communities consistent with the NHESP classification scheme (see Sect D, Vegetation). Produced in the Landscape Ecology Lab at UMass, natural communities were classified and mapped using a combination of techniques including extensive field work, terrain data, remote sensing, and statistical analysis to predict what natural communities are likely to be at each point on the ground. Developed lands were derived from the 1999 Land Use Map produced by the Resource Mapping Lab at UMass. Additional maps were photo-interpreted roads, potential vernal pools, and streams. All of these map layers were aggregated to create one final map of developed lands and undeveloped (natural communities) landcover types for the Housatonic watershed in Massachusetts.

The second step involves running a computer program to calculate the biodiversity value of each 30 meter square of land on the natural communities map. Every location is assigned a biodiversity value between 0 (low) and 1 (high). CAPS uses ecological measures from principles of conservation biology to highlight patches of land with the highest biodiversity value. For example, a large patch of northern hardwoods forest supports more species and intact ecosystems processes (water, nutrient, and energy flow) than a smaller patch of the same type. Roads fragment habitat and may increase mortality for dispersing species, so a large patch of land with low road density that includes a matrix of forest types also supports more species and better functioning habitats for those species. CAPS uses a suite of 15 different metrics applied to each natural community type. The analysis considers the area of a natural community, its distance from roads, development, and water, edge effects from roads and development, and how connected a natural community type is to a similar type, among other measures. All the metrics are combined to produce a single map of biodiversity value for the entire landscape in question.

The final biodiversity value reflects the unique way each community type interacts with the structure of the landscape.

CAPS produces a simplified representation, a model, of the landscape. It is a useful tool for conservation planning at a coarse scale—the town, watershed, or ecoregional level. Although the predictions of biodiversity value it calculates are likely to be true in general, some exceptions are noted. For example large intact blocks of forest may occur where many species have been lost due to past land use practices. We also know that many species are habitat generalists and some rare species thrive in small patches of certain forest types.

In Monterey, the areas predicted to have the highest biodiversity were the Beartown State Forest, the wetlands along Rawson Brook, the Palmer (Fargo) Pond area, the uplands north of Hunger Mountain and in the Dry Hill area, where historical, anecdotal accounts of state Endangered timber rattlesnakes. **Map 10** shows the areas predicted through CAPS to have the highest biodiversity; **Map 11** shows the intersection of CAPs and the existing protected open space.

BioMap and CAPS as Complimentary Planning Tools

BioMap and CAPS are complimentary tools for conservation planning. BioMap Core habitat identifies estimated habitat necessary to protect known records of rare species and occurrences of exemplary natural communities: it is an excellent tool for protecting what we already know about the landscape. CAPS is based entirely on modeling of landscape structure and on ecological principles for many species and allows for the assessment of the entire landscape, including areas not yet inventoried: CAPS identifies the 'hidden biodiversity' of the landscape. BioMap's Supporting Natural Landscape is a coarse-filter method generally similar in approach to CAPS, but uses a different set of metrics, is not natural community-based, and does not allow for the prioritization of areas within large blocks. For more information about CAPS visit the UMass website: **http://www.umass.edu/landeco/research/caps/caps.html**

By combining BioMap with the UMass Biodiversity Project gives we have the best tools available to prioritize and protect based on their ecological significance. **Map 12** shows the intersection between BioMap, CAPS, Vernal Pools and Protected Open Space.

Other areas of ecological interest noted in Monterey's 1990 Open Space & Recreation Plan include Chestnut Hill, Dry Hill, Konkapot River, and grasslands at Barnum Flats, above the Old Firehouse, along New Marlborough and Wellman Roads.

G. Scenic & Recreational Features, Unique Environments & Historic Resources

Scenic roads, views and other unusual natural areas contribute to Monterey's rural charm and identity (**See Map 13: Features**). There are many places in town with impressive vistas. Tyringham Road includes two views that are especially pleasing: (1) a long view of rolling, wooded mountains dotted by several small white houses, and (2) a view of Stedman Pond, set in the middle of a pasture and flanked by the mountain. Another beautiful vista is from the highest point of Blue Hill Road; just above the Bradley Farm is an unspoiled view of farms and rolling hills. Brett Road, just north of Beartown State forest Headquarters, also offers an outstanding view, in this case of fields and Butternut Basin. Less familiar to many residents is the view from

the Appalachian Trail, between Route 23 and Blue Hill Road. It encompasses a beautiful view of Lake Buel, and the tip of Butternut Basin along with rolling hills and a farm fields.

Scenic roads also contribute to our community, not only for their aesthetic value, but also recreationally. Many people use them for walking, horseback riding, skiing and jogging. In the recent survey, 77% of those responding felt that the preservation and maintenance of dirt roads was important or very important to them.

In general, the most scenic pass through varied landscapes, are bordered by trees and stone walls, have limited development and shifting vantage points. Some, like Wallace Hall Road, are dirt or but others are paved. And although many are isolated and seldom used, others, like stretches of Route 23, are heavily traveled. Among Monterey's best examples of unspoiled by-ways are: Wallace Hall Road (*see photos*), Wellman Road, portions of Art School Road, Tyringham Road, New Marlborough Road, Mt. Hunger Road, Fairview Road, Blue Hill Road, Harmon Road and Corashire Road. From Route 23, the undeveloped area between Keyes Corner and the Otis town line is especially scenic. At present the town has not adopted Scenic Road legislation or a Scenic Road Overlay District.

Trails & Recreational Resources

Although smaller, private trails are present throughout town, public trails include the Appalachian Trail, the trails within Beartown State Forest, Diane's Trail on the Gould Farm and Tall Pine Trail on the Theriot Farm. Beartown State Forest is open to all residents and offers a variety of activities. Winter recreational use is oriented toward ice fishing on Benedict Pond, but many people cross-country ski or snowmobile on designated trails. Diane's Trail at the Gould Farm is a 1.5 mile loop through several habitats and across Rawson Brook. This trail was a collaboration between the Farm and friends in neighboring towns to honor Diane Rausch, a nurse at Gould Farm who died in 1992. The trail has interpretive signs and seven small wooden walkways and one elevated bridge. Tall Pine Trail on the Thieriot Farm passes by massive old pines and through a carefully managed forest, which supports a broad mix of plants and is good wildlife habitat. At the bottom of the Tall Pine Trail is the Konkapot River Forest, which is where the Route 23 by-pass proposed in the 1970's would have passed! Another favorite hiking area in town is Mount Wilcox, which has a view that encompasses the whole valley. Bidwell Park is small, town-owned property along the Konkapot in the town's center. This pocket park is perfect for more passive leisure activities, such as picnicking, birding, enjoying the Konkapot, or just sitting and taking in the scenery.

For more active recreation, Monterey residents can swim, fish and/or boat at Lake Garfield, Lake Buel,or Benedict Pond. They can also play ball at Greene Park and at the school Playgrounds. Recreation at Greene Park includes a basketball court, baseball diamond, and football field as well as a playground for young children. The school playground is generally used only during school hours.

Geologic Features

One of the most unusual geologic features in town is the sculptured marble ravine along the Konkapot River near River Road. Small potholes, carved by the powerful mix of water, sand and gravels, pocket the rocks and the water cascades past. In other areas of town, there are impressive rock outcrops, which warrant further study—not only out of geologic curiosity, but as habitats for unusual plants and animals. Among these is Dry Hill, on the border with New Marlborough. The Trustees of Reservations owns portions of Dry Hill in New Marlborough. The area is purportedly home to timber rattlesnakes, an endangered species in Massachusetts. This is possible, but no photograph or specimen has ever been confirmed. If rattlesnakes are present, they need a winter denning area (known as hibernaculum). Typically this is a cavity in the rocks, where all the snakes in the area enter and get below frostline. The Trustees of Reservations intends to study this area more closely in the coming years.

Cultural & Historic Areas

Several of Monterey's more significant cultural and historic resources (e.g. parade grounds, Bidwell House) have already been protected, but many others--such as the locations of historic mills and old stone foundations--are less well-known and still need to be mapped and documented. Our town's historic resources include:

- Tryon teahouse
- Present town center
- Old town center
- Congregational church
- General Store and surrounding area
- Library
- Old Parsonage
- The Manse and its grounds
- Bidwell House

The old center, 1 ½ miles northwest of the village, includes many important historical features: the Parade Common where the militia drilled; the Old Center Cemetery; the site of the Rev. John Avery House (1789); the site of the John Chadwick House (1760); and the site of the first church (1750). Two miles north along the Art School Road is "Deep Woods Manse" (1750), the home of the first minister, the Reverend Adonijah Bidwell House. Now known as the Bidwell House Museum, it is open to visitors and sponsors many programs. On Hunger Mountain Road is the Old Garfield Place (Circa 1750), where President James A. Garfield, for whom Lake Garfield is named, spent part of his boyhood.

Other notable historic buildings in Monterey include: the Julius Miner House, a double wing

Greek Revival; the Old Tavern, a twin end chimney Georgian Federal, with its original 12/12 and 12/8 windows; and the Third Church (1844), built in Greek Revival style. Several other fine early houses which should be surveyed exist along Route 23 toward Great Barrington, and on the Sandisfield and New Marlborough Roads. Along the Konkapot Brook are the sites of a saw, shingle, planing and carding mill and the McDonald Paper Mill.

H. Environmental Challenges

At present, Monterey fortunately does not have any known hazardous waste sites, brownfield locations, significant erosion problems, chronic flooding or sedimentation issues. We do, however, face unprecedented growth. Since 1998 alone, 70 new homes have been built. The areas around Lake Garfield and Stevens Pond have been noticeably affected by clearing and construction. Most recently Mount Hunger Road and Beartown Mountain Road have come under development pressure. In the face of unprecedented growth the ongoing environmental challenge in Monterey is the protection of water resources and preservation of important open space. These challenges require direct action and tough decisions including:

- Protecting the town's rural character by precluding changes that would damage scenic roads, views, sensitive resource areas (cultural, natural, agricultural or recreational), water quality through creative zoning overlays and land protection;
- Protecting and enhancing the water quality of Lake Garfield and Lake Buel;
- Protecting water quality by addressing septic system failures, educating land owners about vegetative buffers, underground storage tanks;
- Monitoring the quality of the leachate below the town's former landfill to ensure that the quality of the Konkapot is not compromised;
- Managing invasive species that can impair recreational opportunities (swimming and boating) and natural systems
- Improving recreational resources (trails, bike paths)
- Creating incentives for agriculture
- Identifying and protecting cultural/historical resources

SECTION 5. INVENTORY OF LANDS OF CONSERVATION & RECREATION INTEREST

At present 38% of Monterey is permanently protected (**Map 14**). This includes land that is owned by the town, state and federal agencies, as well as privately-held lands. For instance, the Monterey Preseveration Land Trust owns or has an interest in 36 parcels (1896 acres) in town. In addition, X acres are currently enrolled in the state's Chapter 61 program. Chapter 61, Chapter 61A or Chapter 61B are tax programs designed for landowners who own more than 10 acres of land that is maintained in forestry, agriculture or simply as open land. By reducing the tax rate, Chapter 61 gives larger landowners an incentive to hold on to their land and not sell it for development. However, when the property is withdrawn from the program, the owner must pay a percentage of the back taxes and give the town the right-of-first refusal. The town may transfer its right-of-refusal to a non-profit conservation organization or a state environmental agency,

which will maintain the land in its natural state.

At present, Monterey has no funding program or plan for acquiring new parcels. It also does not have a plan or fund for enhancing its protected holdings.

A. Private Parcels

As of December 2003, X parcels in Monterey are enrolled in the Chapter 61 property. These include Y agricultural lands (Chapter 61A), Z forest lands (Chapter 61B) and Q in the general Chapter 61 program. Of those in agriculture, X fall within prime agricultural land. Of the forest properties, Y overlap with areas identified through BioMap and CAPS as priority areas.

In addition, 11 properties in town are privately owned but protected through agricultural or conservation restrictions. The 180-acre Fenn Farm along River Road, 52 acres of the Slater Farm on the Monterey-Tyringham line and 20 acres of the Smith/Markwood Farm have been protected through Massachusetts' Agricultural Preservation Restriction (APR) program. Conservation restrictions have been placed on 998 acres in town and are held by the Berkshire Natural Resources Council and Monterey Preservation Land Trust.

The Gould Farm has been approved to enter the APR program, and is currently awaiting final paperwork. The Gould Farm is a private, non-profit psychiatric facility at which the staff and residents live and work on the farm, tending to all the tasks necessary to maintain the grounds and facilities. Aside from agricultural fields, the farm also owns wetlands and forests, and maintains a network of hiking trails.

New England Keswick is a 400-acre, private holding in Monterey. It is a non-denominational evangelical Christian youth camp and retreat center that began in 1941. The property includes Stedman pond along with a mix of open fields and woodlands. Prior to its use by New England Keswick, the property was owned by the Sudan Interior Mission, which trained its missionaries here from 1929 to 1941. Before this the land was a privately-owned farm, with its use dating back to about 1780. The name "Keswick" was taken from an annual Bible convention that began in 1875 in Keswick, England and grew into the "Keswick Movement." In 2003 *New England Keswick* acquired neighboring Hephzibah Heights (pronounced "Hep-see-bah"). This 200-acre property had been owned since 1928 by a New York City-based Christian ministry known as Hephzibah House. The Hephizbah property includes cottages to accommodate guests, a dining hall, a lounge with a stone fireplace, a chapel and extensive forest land.

B. Public & Non-Profit Parcels

- The Town of Monterey owns two cemeteries, a public beach at the western end of Lake Garfield, Bidwell Park, the Edith Wilson homestead, Greene Park and a small holding along the Konkapot on River Road. Eleven acres of open space exists behind the town offices. The library and school account for another 2 acres and the Parade Grounds include another acre. The old landfill site is 23 acres. Along Route 23 the town also owns a 4-acre field, which it leases to a local farmer.

- The Department of Conservation Resources (formerly the Department of Environmental

Management) owns the 5500-acre Beartown Forest, the majority of which is in Monterey. Most of the forest is in the northwest corner of town, but an isolated 178-acre holding is near Mount Hunger. The state also owns a small public boat ramp off Route 57 for access to Lake Buel.

- The federal government owns the Fish Hatchery and a corridor along the Appalachian Trail (11.5 acres). The rest of the trail corridor in Monterey is owned by the State of Massachusetts.

- The Old Manse is a private non-profit that maintains the historic Bidwell House and the surrounding 200 acres. The entire parcel has been placed under a conservation restriction.

- The Monterey Preservation Land Trust, established in 1986, owns 14 properties totaling 633 acres. In addition, the non-profit holds conservation easements and agricultural restriction on 11 other properties, 1263 acres. The Trust also holds the mortgages on two small properties, which together add up to just 2 acres. All told, the Trust's holdings include 36 properties totaling 1896 acres.

C. Summary of Permanently Protected Land

Private Parcels
The holdings of the Monterey Preservation Land Trust include 36 properties totaling 1896 acres. Public access is provided on 14 of these.

B. Public Parcels (Town, State & Federal)
The town of Monterey has completed the ADA paperwork and self-evaluation (see Appendix 5).

1. Greene Park - Agricultural/Residential
   size: 2.5 Acres
   ownership: Town
   management: Park Commission
   comments: This property includes a field for Little League and softball, a playground , basketball court and parking . It is well-used and in excellent condition. Handicapped accessible.

2. Bidwell Park - Agricultural/Residential
   size: 1.65 Acres
   ownership: Town
   management: Park Commission
   comments: This peaceful, scenic site has 2 picnic tables and is within walking distance of the town center. Few people realize it is a town-owned property. Not Handicapped Accessible.

3. Town Beach - Lake District

size: 13.69 acres (with Brewer Pond)
ownership: Town
management: Park Commission
comments: This property includes a sandy beach, a grassy area and a dock. It is very heavily used in the summer and only open to town residents. Brewer Pond is adjacent to Lake Garfield. Handicapped accessible.

4. Parade Grounds Agricultural/Residential

size: 1.2
ownership: Town
management: Park Commission
comments: This attractive area was the historic town green but is unused. Handicapped accessible.

5. Monterey School playground - Business District

size: 9,660 square feet (approx. ¼ acre)
ownership: Town
management: Southern Berkshire Regional School District
comments: A small playground. Handicapped accessible.

6. Library yard - Business District

size: 1.2 acres
ownership: Town
management: Library Trustees
comments: A small grassy spot next to the Konkapot River in the center of town. A bridge leads to Bidwell Park.

7. Land near Firehouse - Agricultural/Residential

size: 10.78 acres
ownership: Town
management: not currently managed
comments: Acquired in ?? for a town hall.

Landfill??
River Road parcel??
Cemeteries??
Edith Wilson??

8. Beartown State Forest

size: 4,794 acres
ownership: MA Department of Environmental Management
comments: Three separate areas are owned by the State in the northern half of Monterey: (a) a 44-acre parcel; (b) a 178-acre parcel, and (c) is 4,572 acres. There are extensive forests, trails, a swimming area open to the public at Benedict Pond, picnicking and camping areas.

9. Boat ramp on Lake Buel - Lake Shore
size: 4.9 acres
ownership: Commonwealth of Massachusetts
management: Department of Environmental Management
comments: Parking and a boat ramp.

10. Appalachian Trail Lands
Size: 11.5 acres
Ownership: National Park Service
Management: Appalachian Trail Club

SECTION 6: COMMUNITY VISION

Description of Process & Statement of Open Space & Recreation Goals

The questionnaire sent to each residence by the Selectboard asked for input on a range of topics--from affordable housing and transportation to open space and recreation. For the 36% that responded, the preservation of open space and the town's rural character were priorities. Following the questionnaire, three public meetings were held and a poster soliciting input in the Open Space & Recreation planning process was posted at town hall. At meeting in November 2003, 23 community members discussed goals and objectives for the town. Participants felt strongly about maintaining and protecting the town's open fields and providing incentives for farmers to remain viable. Water quality and the protection of areas of significant ecological interest were also important. The preservation of historical resources, in particular the future of the Edith Wilson house, is another priority issue in town. To help cover the costs of open space protection, participants at Open Space meetings felt that there would be important benefits to linking with partners (e.g. The Monterey Preservation Land Trust, Berkshire Natural Resources Council, Trustees of Reservations, The Nature Conservancy, MA Department of Conservation Resources, MA Division of Fisheries & Wildlife, and National Park Service).

SECTION 7: ANALYSIS OF NEEDS

A. Community and Resource Protection Needs

The 2001 build-out analysis (**Map 15**) completed by the Berkshire Regional Planning Commission demonstrated that, given current zoning and various physical constraints, nearly 1/3 of the town remains available for development. If developed, the character of Monterey would change drastically. Although areas of historical significance may not be impacted, the town's water quality, recreational opportunities, aesthetic resources (vistas/scenic roads) and ecologically significant lands would be significantly altered. In particular, areas identified by BioMap as core habitat for rare species and those areas predicted by CAPS to have high biodiversity values would be affected. Monterey is currently in the process of reviewing its existing by-laws and it is likely that changes will be recommended to ensure that the town's growth and development proceeds in a way that is compatible with the community's vision. Using these datalayers, in combination with protected open space, trails, historic resources, are

the tools that the Open Space Committee will use to prioritize lands for protection.
Beyond protection, community members have made recommendations for a new trail that links the town center with Lake Garfield, either along Tyringham Road or along the Konkapot. Another trail connection that has been proposed by BRPC is a connection along Route 23 between the Appalachian Trail and the town center as many through-hikers have supplies and mail sent to the Monterey post office. As part of the Community Development Planning process, BRPC also evaluated the town for a pedestrian walking/bike path. Specific recommendations include:

- Bicycling signage, shoulder upgrades along Route 23
- Bicycling signage, pavement marking upgrades along Tyringham Road
- Bike racks in center of town, at Lake Garfield beach
- Other off-road trail networks, linking particularly with Beartown State Forest

Residents who responded to the recent survey felt strongly about preserving historic areas (81% rated this as important – very important), farmland and wooded areas (85%) and 57 percent were strongly in favor of establishing a land bank fund to preserve open space. With respect to protecting open space, the combined analysis of BioMap and CAPS gives Monterey the best-to-date available tool for quantitatively evaluating land based on its ecological merits. This analysis can be taken one step further. Each type of natural community can be evaluated with respect to how much is protected versus how abundant it is in town (**Table** 7). Of the 38% of protected open space, the majority is mixed transitional forest. Northern hardwoods, coniferous forested wetlands, and ponds are natural community types that are well-represented in the town's protected lands. Old fields, shrub swamps, and emergent marsh, however, are under-represented given their overall abundance in the community. Future protection efforts may want to focus on these under-represented and rarer community types.

B. Management Needs

Like all towns, Monterey's management needs are multiple and varied.

Recreation:

- Maintain recreation-related buildings, ballfields, Bidwell Park, trails and the town beach.
- Enhance recreational opportunities for residents and visitors through the creation of new trails (pedestrian & bicycling).
- Improving accessibility to town-owned areas for all (ADA requirements).

Historic

- Maintain town-owned historic resources (cemeteries, buildings).
- Ensure un-protected historic features are not inadvertently destroyed.
- Develop a plan of action for the historic Edith Wilson house and property.

Water Quality

- Water quality issues have been a priority for years in Monterey. Future educational efforts are outlined in our goals and objectives section to help reduce

non-point source pollution. To be effective, the town will work with riparian land owners, the Lake Garfield Association, Lake Buel Association and the Conservation Commission.

Agricultural

- Provide incentives for farmers to remain in farming and keep farm fields open. At the town level, we can do this through education and where possible, local tax incentives.

Ecological

- Update & revision of local by-laws to help ensure the maintenance of the town's ecologically important areas.
- Maintain the integrity of natural areas by controlling the spread of invasive non-native species.
- Conduct biological investigations by qualified biologists to help further refine our town's conservation priorities. Certify vernal pools.

SECTION 8: GOALS & OBJECTIVES

At a public meeting on November 17, 2003 23 participants endorsed the following goal and objectives for our community:

Goal:	**Objectives:**
To preserve and protect the natural resources, rural character and historic assets of our community, while enhancing opportunities for diversity in housing, employment and recreation.	1) Preserve a variety of open space in Town including open fields and wooded areas, held both publicly and privately. 2) Protect all water resources: lakes, ponds, streams, wetlands and sub-surface storage areas from alteration and pollution. 3) Preserve familiar vistas, roadsides, dirt roads, gateway areas and historic sites. 4) Encourage agricultural enterprises. 5) Develop and maintain opportunities for active and passive recreation and appreciation of nature and the environment for all.

Table 7				
Class in Monterey	Town_acres	% in town	% in Protected Open Space in _town	% of community type in BioMap core_town
High-intensity urban	37.7	0.2		
Low-intensity urban	35.4	0.2	8.3	0.6
High-density residential	100.5	0.6		
Low-density residential	452.0	2.6	3.9	5.4
Agricultural/Managed open	590.1	3.4	17.4	17.9
Medium Dam (50-1000 acre-ft or 15-40 ft high)	0.3	0	39.7	40
Small Dam (15-50 acre-ft or 6-15 ft high)	1.2	0		
Non-jurisdictional or Unknown Dam (<15 acre-ft or <6 ft high)	0.8	0		
Class 3 road (secondary highway)	110.3	0.6	4.8	4.6
Class 4 road (light duty road)	234.6	1.4	17.2	12
Class 5 road (unpaved)	157.9	0.9	19.3	6.4
Northern hardwood forest	6336.1	36.6	41.9	16.9
Temperate conifer forest	2806.5	16.2	31.3	25.4
Mixed Transitional forest	4477.8	25.9	49.2	10.4
Deciduous/mixed forested wetland	117.7	0.7	26.0	44.1
Coniferous forested wetland	111.0	0.6	40.2	36.7
Powerline Shrubland	18.4	0.1		
Old field	62.2	0.4	6.3	9.8
Grassland	157.7	0.9	36.2	32.3
Rocky Summits	2.9	0		
Shrub Swamp	120.5	0.7	27.5	42.5
Emergent Marsh	66.1	0.4	10.1	30.6
Streams/Rivers	34.1	0.2	22.6	66.9
High-gradient Headwater	552.7	3.2	37.4	29.5
Pond	184.3	1.1	40.3	20.5
Lake	533.7	3.1	3.7	
Vernal Pool	1.2	0	31.9	9.1

SECTION 9: 5-YEAR ACTION PLAN

Objective	Implementation:	Boards/Agencies Involved	Year
1. Establish Open Space Committee	a) Oversee & monitor implementation of the Open Space & Recreation Plan	Selectboard	2004
2. Protect all water resources: lakes, ponds, streams, wetlands and aquifers from alteration and pollution.	a) Work with Lake Garfield Association and Lake Buel District to actively educate lake-dwellers and other landowners about fertilizers, fuels, pesticides, vegetative buffers, low flush toilets, septic system monitoring/upgrading.	Open Space Committee Conservation Commission Board of Health	2004
	b) Work with Highway Dept for use of Best Management Practices to reduce NPS pollution by sand, salt, fuel and gravel, mitigate existing problems, and minimize salt use.	Conservation Commission, Selectboard	2004
	c) Maintain rigorous standards for perc tests (1" in 30 minutes)	Board of Health	2004
	d) Ensure adequate erosion controls are in place during construction and forestry operations until the ground is stabilized	District Foresters, Conservation Commission	2004
	e) Manage aquatic invasive species	DPW, lake & streamside residents, lake associations	Annual
3. Preserve significant open space in Town including open fields and wooded areas, held both publicly and privately.	a) Identify high value areas using biomap and biodiversity models, historic, agriculture and recreation features and levels of development risk using assessor's maps and protected land data	Open Space Committee, Planning Board, Parks Commission, Conservation Commission	2004
	b) Evaluate and prioritize areas for action, and acquire/conserve key parcels to safeguard wildlife corridors, fields and meadows; prevent forest fragmentation and protect lands of significance within Monterey and along its borders	Open Space Committee, Planning Board, Parks Commission, Conservation Commission, DCR (formerly DEM), neighboring towns, and local non-profit conservation organizations	2004
	c) Designate stumpage fees for maintenance of town-owned open space	Selectboard, Conservation Commission	2004
	d) Amend subdivision control law to	Planning Board	2004

	require "linkage", or the setting aside of open space as a condition of approval. Consider tax implications and the use of cluster zoning.		
	e) Study Community Preservation Act	Selectboard, Conservation Commission	2005
	f) Update Zoning By-laws to reflect biodiversity values. For divisions of land not requiring approval, work w/ developer for best possible outcome based on biomap and biodiversity criteria.	Planning Board	2006
	g) Study logging by-laws	Planning Board, Conservation Commission, Selectboard	2007
	h) Survey and certify vernal pools	ConCom, Residents, BCC, Simon's Rock students	2004, Annual
	i) Educate landowners about conservation options and inform all stakeholders to guide impact of buildout Host workshops with TTOR for landowners. Distribute summary sheet of conservation issues pertinent to Monterey to landowners, real estate agents, etc. Have Highlands Community Booklet available at Town Hall and Library and for distribution.	Conservation Commission, Selectboard	2004, Annual
	i) Identify, map and control invasive plant species that may threaten the integrity of sensitive natural areas	Conservation Commission, local conservation organizations, BCC & Simon's Rock students	2005, Annual
4. Preserve familiar vistas, roads, gateway areas and historic sites.	a) Have highway department apply Best Management Practices for road maintenance	Highway Department, Selectboard	2004
	b) Have highway department and tree warden cut and trim trees using Best Management Practices/arboricultural techniques	Tree Warden, Highway	2004
	c) Research a lighting bylaw	Planning Board	2004
	d) Study a subdivision control law to help maintain rural criteria: ie.native plantings, screening??? driveway permits	Planning Board	2005
	e) Consider scenic roads legislation MGL 40 ch. 15, scenic road overlay district & investigate the Scenic By-Way program to access federal and state grants to acquire	Selectboard, Planning Board	2006

	scenic easements and limit incompatible development activities		
	f) Inventory historical assets and develop programs that encourage appreciation/preservation of Monterey history	Historical Commission, Town Clerk	2006
5. Encourage agricultural enterprises/landscapes.	a) Permit B&B/agri-tourism	Selectboard, BRPC, Schools	2005
	b) Allow worker housing on working farms	Selectboard, BRPC, Schools	2004
	c) Publicize the farm viability program	Selectboard	2005
	d) Eliminate tax on farm animals	Selectboard	2005
	e) Promote agricultural careers and apprenticeship opportunities through schools and town events	Selectboard	2005
	f) Identify all the farms in town where farmers could rent land	Assessors	2005
	g) Preserve agricultural land	Selectboard, State and Private agencies	As opportunity permits
6. Develop and maintain opportunities for active and passive recreation and appreciation of nature and the environment.	a) Plan for use of town-owned land:McLaughlin/Wilson Property, community center/farming/facilities. Fox Hill Property:Walking trail/some parking/croquet etc.	Park commission, Historical Commission, Conservation Commission, McLaughlin/Wilson Committee, Town Clerk	2007
	b) Walking Trails from Bidwell Park/Konkapot Greenway; Brewer Pond Trail and Picnic Area; from Lake Garfield Beach to town center	Park commission, Historical Commission, Conservation Commission	2008
	c) Investigate beach @ Lake Buel and public/fishing access for Lake Garfield	Park commission, Conservation Commission, Open Space Committee	2007
	d) Annual event by Cultural Council	Local Cultural Council	Annual

SECTION 10: PUBLIC COMMENTS

See Appendix 1: Public Questionnaire and letters from Selectboard, Planning Board, Conservation Commission, Berkshire Regional Planning Commission

SECTION 11: REFERENCES

Bryan, Clark. 1886. The Book of Berkshire Describing and Illustrating its Hills and Homes. Clark W. Bryan & Co. Publishers, Great Barrington, MA.

Buildout Analysis, Berkshire Regional Planning Commission, 2000

Burne, Matthew. 2001. Massachusetts Aerial Photo Survey of Potential Vernal Pools. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

Monterey Open Space & Recreation Plan, Town of Monterey. 1990.

Swain, P.C. and J.B. Kearsley. 2000. Classification of the Natural Communities of Massachusetts (Draft). Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

Natural Heritage & Endangered Species Program, 2001. BioMap Technical Report: A supplement to *BioMap: Guiding Land Conservation for Biodiversity in Massachusetts*. Massachusetts Division of Fisheries and Wildlife, Westborough, MA.

NRCS. 1988. Soil Survey of Berkshire County, Massachusetts.

U.S. Census Bureau, 2000 Census.

Appendices

Appendix 1: Public Questionnaire and letters from Selectboard, Planning Board, Conservation Commission, Berkshire Regional Planning Commission

Appendix 2: Open Space Poster

Appendix 3: *Monterey News article Printed November 2003*

During the last year Monterey has been working on several important planning documents, including an update of our 1990 Open Space & Development Plan. The plan (which is supposed to be updated every 5 years) is strictly an advisory document; it will summarize Monterey's ecological, historical and recreational resources, identify our conservation priorities, and include a five-year action plan to help us reach our goals and objectives. When its complete, town officials can use the plan to minimize Monterey's vulnerability to development activities that are damaging to the environment and the town's character. The completed plan will also enable the town to receive state grants to buy land for conservation and recreation purposes.

For small communities like Monterey, preparing a plan like this can be challenging. To help the town through the process, Monterey is working with staff from UMass Extension's Natural Resources and Environmental Conservation Program. The connection with UMass developed after Bryan Boeskin, a planner with the Berkshire Regional Planning Agency, saw a presentation on UMass's Biodiversity Project. Developed by researchers in UMass' Department of Conservation and Natural Resources, the Biodiversity Project uses state-of-the-art computer technology to identify areas in the Housatonic River watershed that are predicted to have the highest level of biodiversity. Biodiversity is shorthand for biological diversity, and in its broadest sense its definition encompasses all of the variety of life forms and their environments. It turns out that Monterey has several areas that, thanks to their large size and connections to other natural areas, are predicted to be among the very best in all of Housatonic watershed for biodiversity. From a planning perspective, knowing where these areas are gives our town another way of identifying and prioritizing land for protection. In the past pinpointing areas of ecological importance really boiled down to a combination of educated guesses and first-hand experience. Although we generally know where trails are or where important recreation lands or historical features are located, until this point it has been impossible to objectively, quantitatively and comprehensively evaluate areas for biodiversity. This is really brand new tool that has only become available thanks to the power of computers, and we're one of the first towns in the country to actually incorporate ecology into our planning process.

Many people in town have gotten a glimpse of these new ecological planning tools. Since last December, Scott Jackson, the head of UMass Extension's Natural Resources and Environmental Conservation Program, has come to Monterey three times to give presentations on the topic. In addition, you may have seen other UMass Extension staff exploring Monterey this summer. Laurie Sanders and Kasey Rolih, both biologists, have visited town several times, familiarizing themselves with the roads and lay of the land and getting a sense of our town's special natural areas and recreation lands. Thanks to helpful input from Monterey residents and members of various town boards, UMass Extension is currently in the home stretch of writing a final draft. To see a copy and add your comments, please call Bonnie at Town Hall at 528-1443. Funding for the project has come from the state and also from a grant from The Trustees of Reservations' Highlands Communities Initiative.

Appendix 4: Mapped & Modeled Natural Communities

Northern hardwood forest– Upland forests dominated by any combination of sugar maple, beech, or birch and which may include several other hard species; conifers less than 25%; may include small patches of Rich Mesic Forest or Forested Seep Communities

Temperate conifer forest – upland forests dominated by any combination of hemlock, white pine, spruce, or fir but may include up to 25% hardwoods; may include the Hemlock Ravine community type.

Mixed Transitional forest – upland forests dominated by one or several oak and/or hickory species but that also include other hardwoods; conifers less than 25%; may include unusual community types such as Hickory-Hophornbeam Forest, or Yellow Oak Calcareous Forest.

Deciduous/mixed forested wetland – forested wetlands that occur on low-gradient landscapes that include a roughly 50-50 mix of hardwoods (red maple, black ash, others) and softwoods, usually hemlock or white pine, but also more rarely tamarack or spruce.

Coniferous forested wetland – conifer-dominated wetlands, including hemlock hardwood swamps, or swamps with high cover of white pine, and the more rare spruce-tamarack bogs; hardwoods not more than 25%.

Powerline Shrubland – lands in powerline rights-of-way maintained in a constant early successional habitat, usually a mix of grassland and shrubs; of conservation interest for shrubland bird species.

Old field – open land succeeding to forest, with a mixture of grasses, shrubs, and young trees; usually found on sites that have been cleared and plowed then abandoned.

Grassland – natural or human created and maintained open community dominated by grasses; maintained by mowing or grazing; of conservation interest for grassland bird community

Rocky Summits – areas of discontinuous vegetation and exposed rock, including acidic bedrock outcrops or the much rarer calcareous rock outcrop communties.

Shrub Swamp – shrub-dominated wetlands on mineral or mucky soils which can be divided into several different types, including alder, button-bush, or blueberry dominated swamps; this category may also include acidic shrub fens or calcareous fens where shrubs dominate.

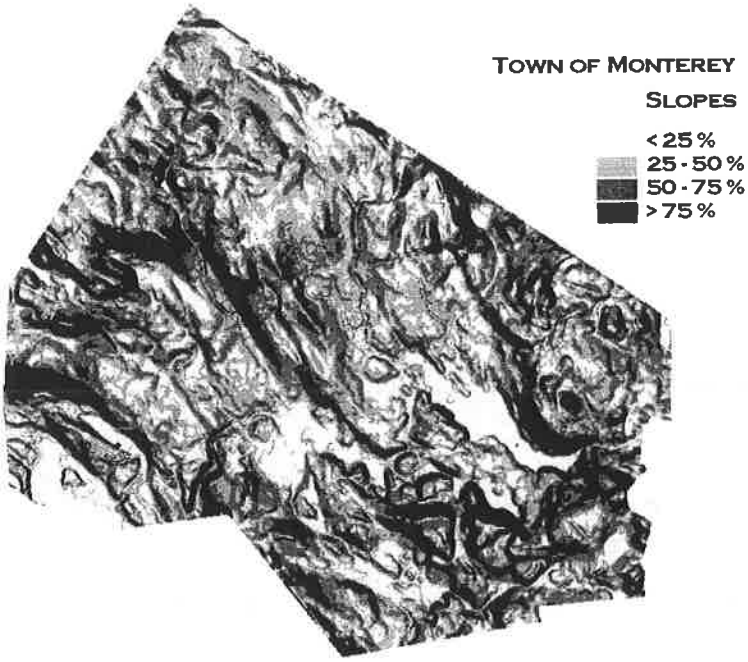
Emergent Marsh – grass or herbaceous-dominated wetlands that are seasonally inundated and permanently saturated; this category may include cattail or phragmites dominated wetlands, but also some of the rarer types, including calcareous fens.

Streams/Rivers
High-gradient Headwater
Pond
Lake
Vernal Pool – potential; photo interpreted

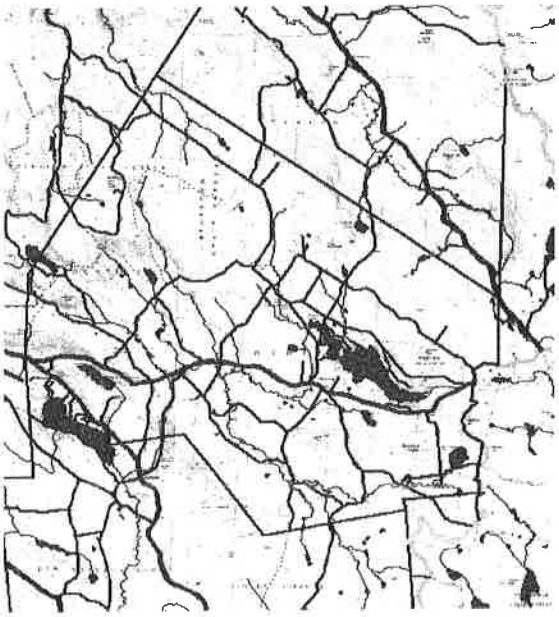
Appendix 5: ADA Materials & Self-Evaluation

BRPC will create all the maps. These are provided strictly for reference.

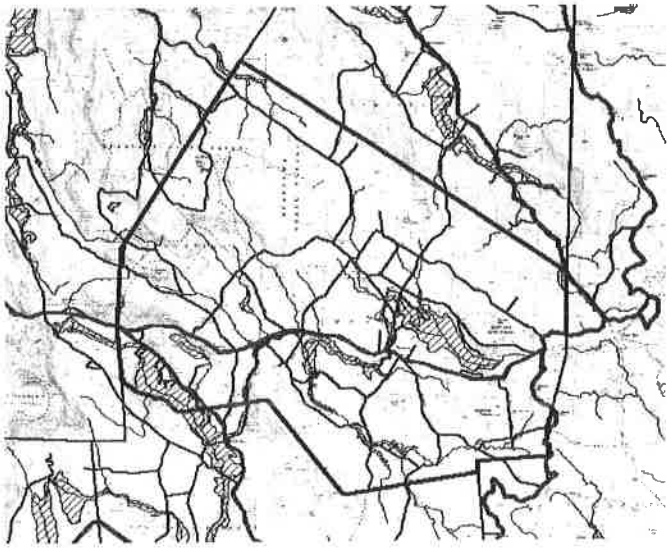
Map 4: Slopes



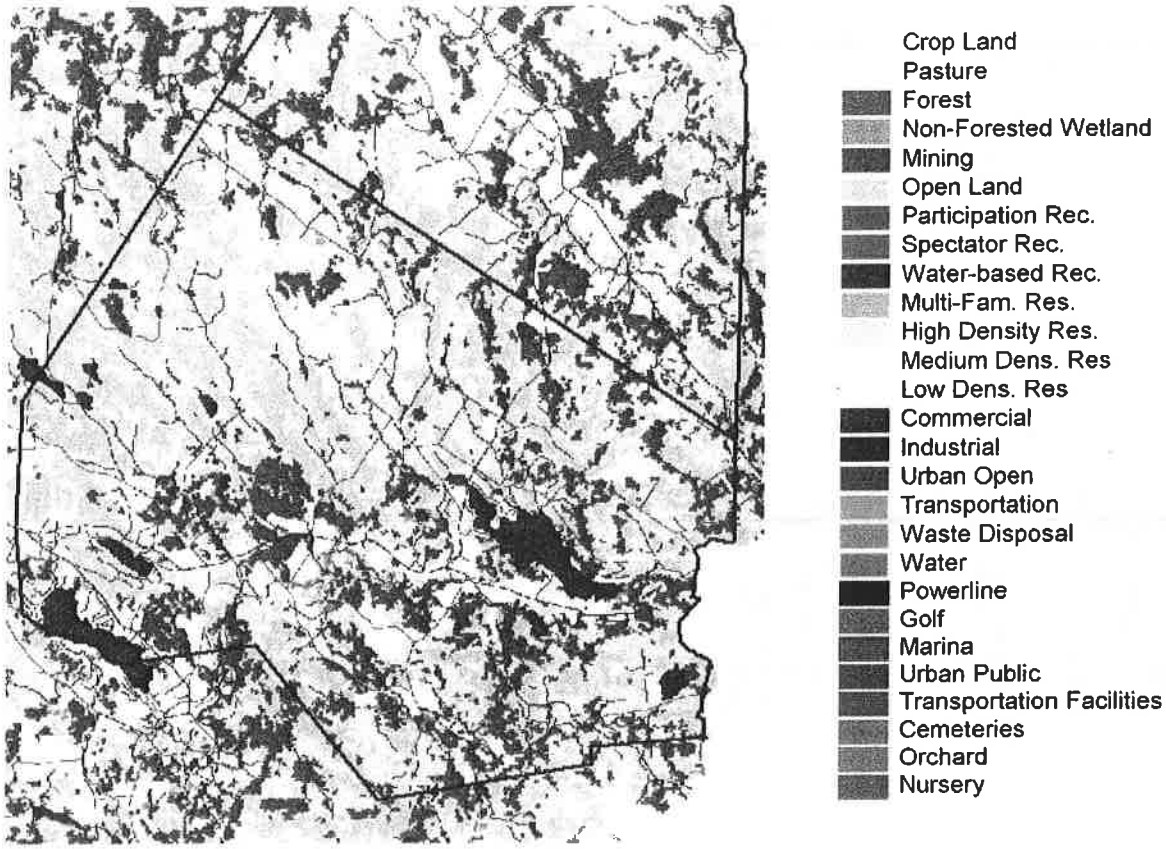
Map 5: Water Resources



Map 6: Flood Hazard Areas



Map 7: Natural Communities

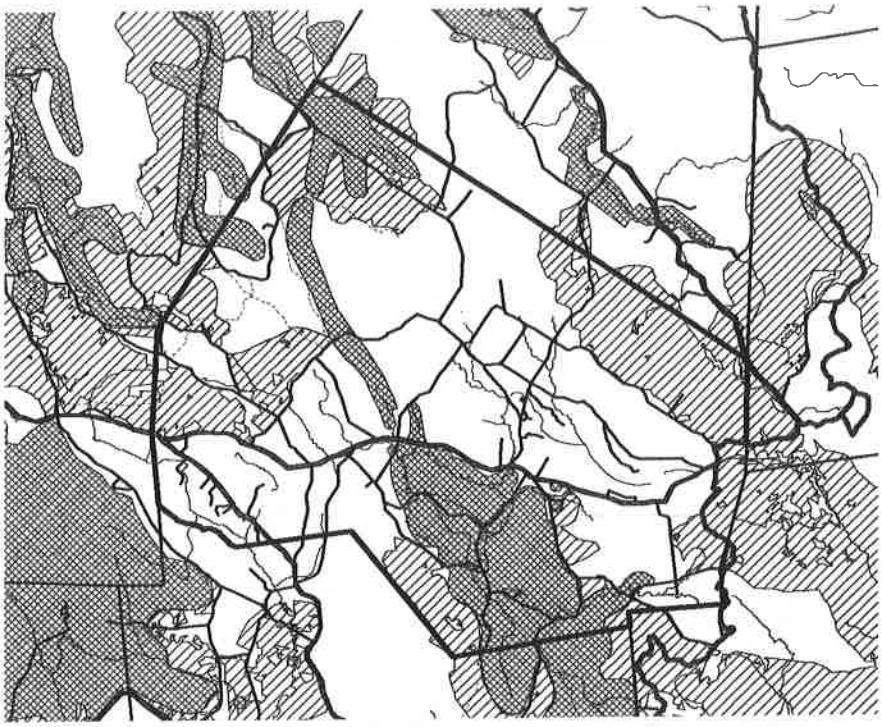


Map 8: BioMap Core & Supporting Natural Landscape

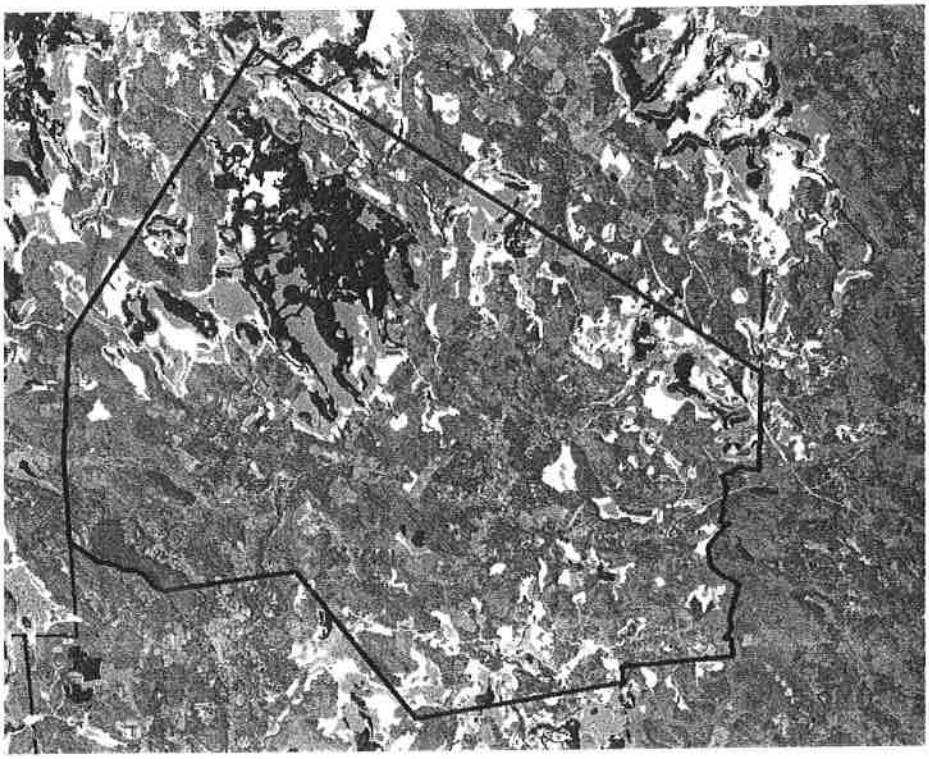
Core: Hatched

Diagonal: SNL

Map 9: BioMap Core, SNL and Protected Open Space

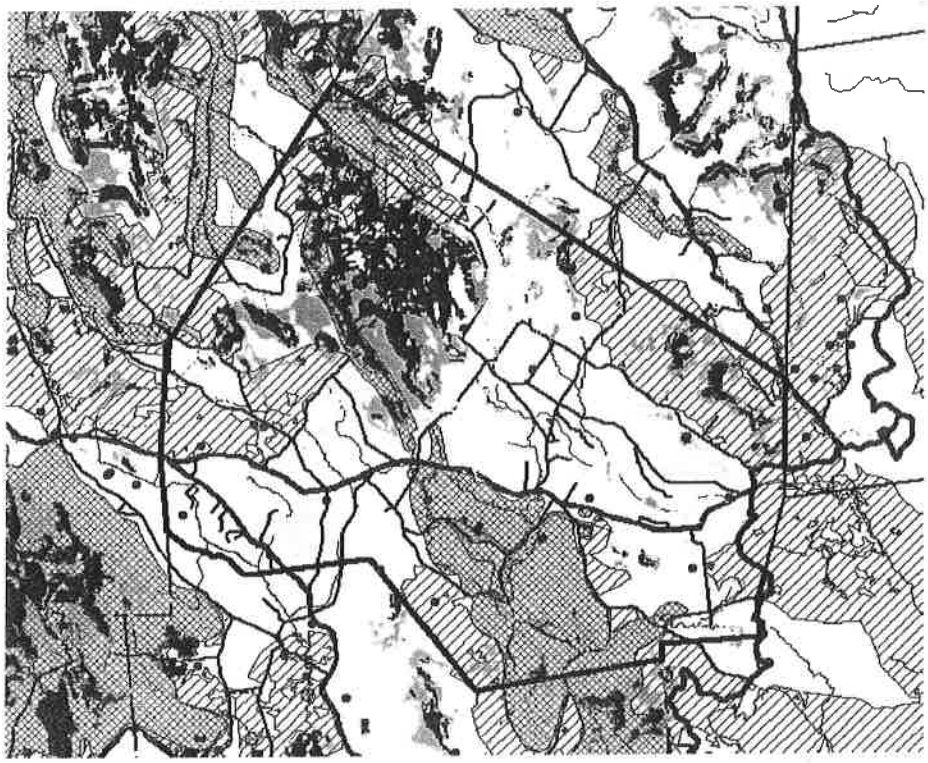


Map 10: CAPS

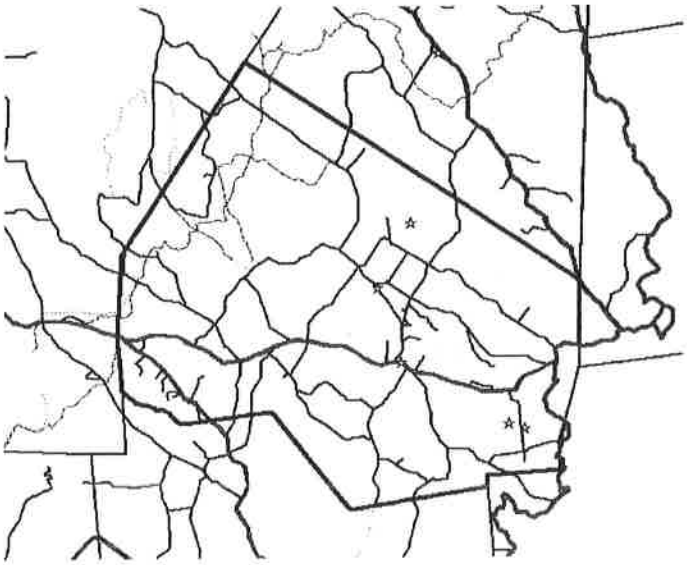
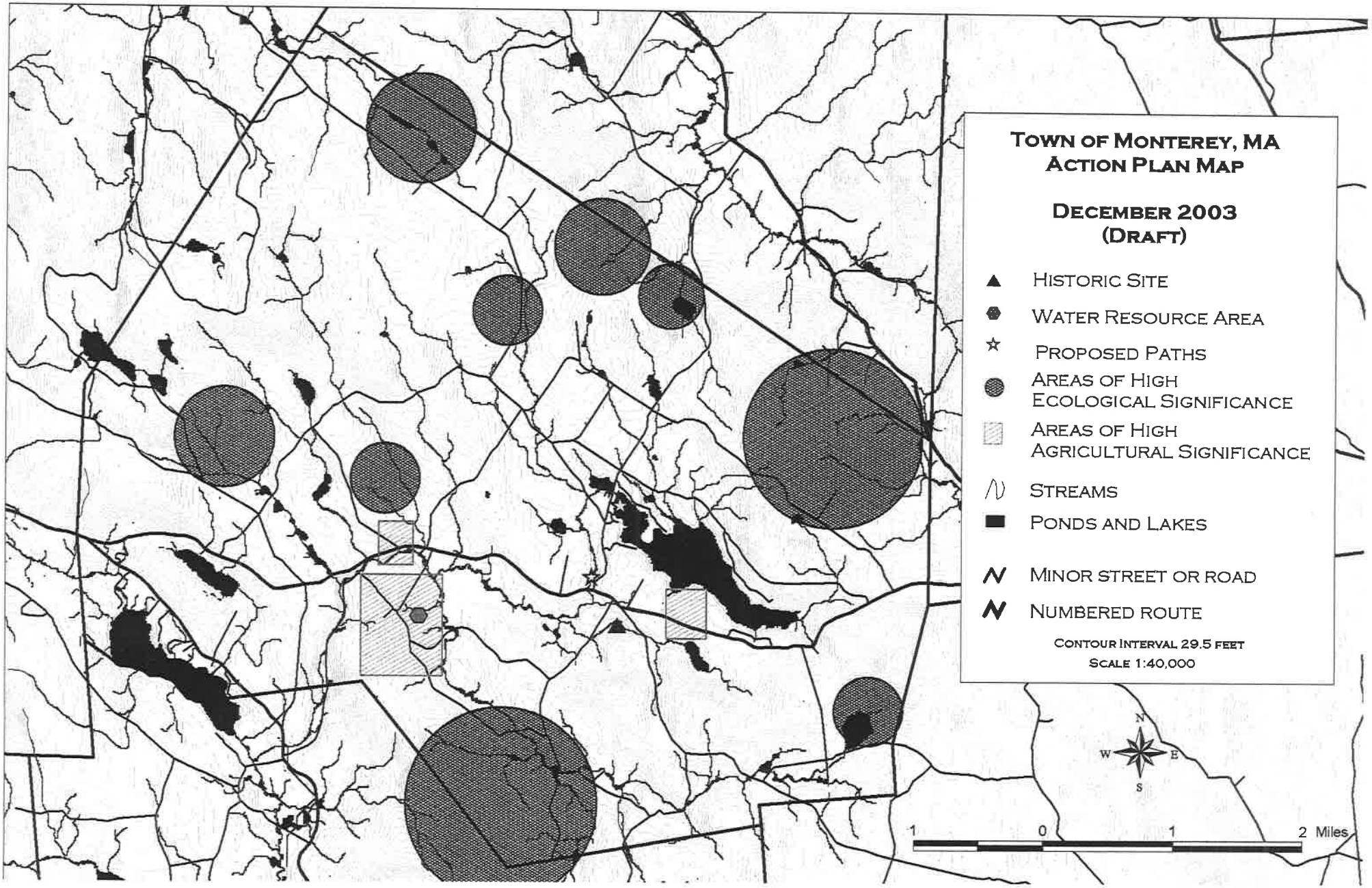


Map 11: CAPS and POS (pending new open space layer)

Map 12: BioMap, CAPS, vernal pools and Protected Open Space (needs updated POS layer)



Map 13: Scenic, Historic Features, Trails (needs updating to note important views, correct track of Appalachian Trail)



Open Space Unprotected