

# Town of Wellfleet 2005 Open Space and Recreation Plan



## **Prepared for**

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**Town of Wellfleet**  
**2005 Open Space and Recreation Plan**

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***Photographs***

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- Additional Photos as credited in text

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**Photo Credit:**

**Nathan Johnson, Orion**

This 2005 Open Space and Recreation Plan update is a revision of Wellfleet's earlier plan (revised 1998 and 1992). It is designed to give it meaning for today's town, and to meet the state's 2001 Open Space and Recreation Plan Requirements. It recognizes that a large part (61%) of the town falls under the jurisdiction of the National Park Service and the need to protect/manage/conservate the remaining portion (39%) is increasingly important due to accelerating development pressure. The update builds on the earlier plans, incorporating goals of protecting natural resources, conserving open space and providing a varied recreation program. The plan seeks to address these goals simultaneously where possible by encouraging preservation of open space, while allowing opportunities for its enjoyment through modest improvements which provide access for passive recreation.

Public participation was a large part of the Plan's development. During the winter and spring of 2004-05, the Open Space Committee met regularly to assign tasks and review drafts periodically meeting with representatives from other groups including the Wellfleet Conservation Trust, Conservation Commission and Planning Board.. Information was collected by all members, some of whom contributed to writing sections of the Plan in their areas of expertise. The overall Plan was compiled, formatted and updated by the Open Space/Land Bank Committee and submitted to the State Division of Conservation Services for review. In a letter dated June 22, 2005, Melissa Cryan, the State's Urban Self-Help coordinator gave conditional approval of the Plan through June 2010, with several revisions. In order to accomplish these revisions in the allotted time-frame, the town hired land planning consultant Jeff Thibodeau, owner of *Helios Land Design* to assist. The 2005 Open Space and Recreation Plan herein is the result of these collective efforts.

Due to the fact that this Open Space and Recreation Plan update is being completed prior to the completion of the 2005 LCP, we have used the results from the 1995 Local Comprehensive Plan as well as more recent statistics such as the 2000 U.S Census and updated statistics and other information compiled by the Cape Cod Commission, the Town of Wellfleet and others. Several surveys conducted in conjunction with the creation of the town's Local Comprehensive Plan (LCP) have been incorporated into this Open Space and Recreation Plan. They were used by both projects to obtain a real sense of public opinion on the town's approach to open space and recreation, and public hearings were held throughout the planning process. The LCP, approved by the Cape Cod Commission and town officials, serves as the town's response to the Cape Cod Regional Policy Plan (1991, amended 1996) and is the central document guiding planning and growth decisions for the town. The LCP is presently in the process of being updated and will reflect the updates presented in the 2005 Open Space and Recreation Plan update.

This update presents some new ideas for recreation. There is an equal emphasis on open space preservation by means other than direct acquisition, for instance, through conservation restrictions, donation, cluster zoning, undevelopment and other means in response to current economic conditions. Most importantly this update includes discussion of the new Community Preservation Act, the successor to the Land Bank.

Since the passage of the Land Bank Act in 1998 the Open Space/Land Bank Committee has worked with citizens of Wellfleet, Town Government and several public and private agencies to increase the acreage of conservation to the maximum available while doing this at the lowest cost per acre. By working within these guidelines the Town was able to secure more land for conservation at a lower cost per acre than would otherwise have been possible considering the very high cost of land in Wellfleet. Also, by working with various agencies and organizations, both public and private, the Open Space/Land Bank Committee was able to obtain land which in almost every case was contiguous with other conservation land, thereby providing larger natural corridors for wildlife as well as making more of a conservation impact. Over this six year history of the Land Bank more than 64 acres of prime upland open space has been acquired with 56% of the purchase cost being accomplished through funds provided by private and public agencies outside of the Wellfleet Land Bank. The 2005 Town meeting approved the purchase of 29.63 additional acres bringing the total acreage of land purchased through the life of the Land Bank to 93.84 acres. When these purchases are consummated, the average purchase cost to the Land Bank will be slightly in excess of \$41,000 per acre. If Self-Help applications are successful in 2006 and 2007, the final per acre cost will be reduced to \$32,000 per acre. To put this number in perspective, the average assessed value per acre of land in Wellfleet is \$393,600!

Yet in spite of increased efforts and success, conservation efforts will always struggle to keep pace with the unceasing development pressure placed on the region, which continues to lure droves of visitors each season. With every passing year, more and more of these visitors have become permanent residents, and the town's carrying capacity is being pressed to its limit. This must be taken into consideration not only with economic and business development but with the development and use of conservation and recreation resources as well. While some of the adverse impacts of increased development and more intense land use are obvious, it will probably be years before the full impact of the last 35 years of growth can be seen. Conservation and recreation planning in the 21<sup>st</sup> century will need to respond appropriately and creatively to the changing natural and cultural landscape. In addition to continued efforts to preserve the remaining open space, many towns in the region, including Wellfleet, are rewriting the rulebook for conservation by razing abandoned buildings, reclaiming and cleaning up contaminated sites and reusing the land for conservation and recreation related purposes. Recent trends toward reclaiming developed lands known as "undevelopment" and the greening of contaminated sites, known as "Brownfield redevelopment," will need to continue and be built upon.

Though many of the survey results, environmental characteristics and issues facing the town remain consistent with the last Plan, there are several notable demographic trends. Population data indicates that middle aged and retired people are the most numerous and fastest growing age groups in Wellfleet and that in the coming decades, open space and recreation planning will need to provide ample passive recreational opportunities that will serve this largest segment of the population well into retirement age. Wellfleet reached an estimated 2,841 residents in 2003, up 92, or 3.2 percent, from the U.S.Census count of 2,749 in 2000. This amounts to an approximate yearly average population growth of 1 percent since 2000. Though this is still much lower than in the past, its percent rate of population increase exceeds both the region and the state during the same period. From 2002 to 2003, Wellfleet increased its population by only 26 people, ranking 185<sup>th</sup> in the state but had a relatively high population growth rate, ranking at 116<sup>th</sup> , with a 0.9

percent population increase. This was slightly higher than the Capewide average of 0.7% and significantly higher than the statewide average of 0.2% during the same time period. In short, population gains have been steady for decades until 1990, when a notably sharp decline occurred and has continued to the present day, maintaining a growth rate of approximately 1% per year.

U.S. Census 2000 found the Northeast had the highest median age in the nation at 36.8 years. Since 1990, the Cape's median age increased 5.1 years, from 39.5 to 44.6 in 2000. According to the 2000 census, Wellfleet ranked 13<sup>th</sup> in the state with a median age of 47.0 years. By comparison, the statewide median age increased from 33.6 in 1990 to 36.5 in 2000.

Wellfleet's annual unemployment rate has been consistently higher than the state's. However, the year 2004 showed a slight decrease in Wellfleet's unemployment rate from 6.5 percent in 2003 to 6.0 percent (Mass DET) which has continued into 2005 with the most recent unemployment rate at 4.3% (DET May 2005 figures). The economy continues to improve overall, which bodes well for the near future.

Both employment and wages have increased slightly each year since 2001. Industries with the highest wages are consistently in the following sectors:

- Professional and Technical Services
- Real Estate and Rentals and Leasing
- Finance and Insurance
- Health Care and social assistance

Wages in Construction and Arts, Entertainment and Recreation were also notably and consistently high, possibly owing to the relatively large number of professional artists, musicians and actors in town. Though not providing the highest wages, the largest employment sector is accommodation and food services followed by retail trade, owing to the town's large number of bed and breakfasts, restaurants and retail shops, all of which cater to tourists, primarily during the summer months. These figures illustrate the town's thriving and diverse economy employing both professional and blue collar workers and its dependence on tourism.

The total value of the shellfishing industry to Wellfleet is over \$2.75 million annually. Fifty-five percent of this crop comes from the "wild" fishery, while 45% comes from the practice of aquaculture. The "wild" fishery consists of harvesting the bivalves generally where they have grown, without any intervention except the dumping of an occasional load of cultch. This fishery is closely managed by the Shellfish Constable with a view towards limiting the harvest to the extent that the resource remain self renewable. This is done by setting quantity limits, area limits, and seasonal closures.

While much of Wellfleet uses private wells for their water there is a public water supply system. The original wells located on Town property off Grist Mill Road have a permitted capacity of 20,000 GPD and are designed to serve approximately 50 residential connections to lots potentially subject to contamination from the old land fill and septage pit. In 2004, the town has

also added a third well, significantly increasing the available GPD and increasing the total connections to 57.

Although groundwater quantity in Wellfleet is presently ample for domestic, small-volume wells, municipal withdrawal could lower water levels and cause ecological damage to surface waters such as kettle ponds and vernal pools. This can occur where wells are located too closely to surface waters or rates of withdrawal are too high. Extensive pumping for human use can dramatically alter the levels of ponds and other wetlands to their detriment and, if located near the seashore, can cause salt water intrusion as well. Several private wells exceeded the target sodium threshold level of 20 mg/L over a decade ago. Now in 2005 and a projected water use increase of over 1,000% by buildout, it is extremely important to identify and develop water supply sources that will accommodate this expectedly high demand while protecting against salt water intrusion and other contaminant sources

The biggest, persistent problems are environmental and public health issues related to wastewater disposal and drinking water quality. Because of its relatively low population density and political climate, sewers have not yet been installed. Wellfleet continues to rely solely on on-site septic systems. Though most of the town's soils are highly permeable, there are still failed systems due to overloading, particularly during the summer. Although many lots are currently using alternative wastewater treatment systems, pollution in the most densely developed portions of Wellfleet is a pressing issue which will only be alleviated through serious planning measures which reduce pollution sources, improve waste treatment systems, provide public sewerage, and/or provide a municipal water supply. Until these things happen, Wellfleet's drinking water quality in the central district is extremely tenuous.

Along with the water supply and waste disposal come the very important consideration of protection of Wellfleet Harbor for the benefit of commercial fishing, shellfishing as well as recreational boating and fishing. The town, through its Natural Resources Advisory Board, is writing a Harbor Management Plan that addresses all aspects of the Harbor. The Draft Plan is complete and posted on the town's website. Many of these needs are echoed in this Open Space and Recreation Plan.

One of the town's larger recreational areas is the privately owned Chequesset Yacht and Country Club, which covers approximately 108 acres, with a nine hole golf course, small sailing basin, 5 tennis courts, boat house and club house. It is the only Chapter 61B property in Wellfleet and should be maintained as a public resource in perpetuity even if it does not always remain a privately owned golf course.

As of 2005 various agencies and organization are working on the Herring River restoration Project. One step was taken in the process when the Annual Town Meeting in April 2005 voted to acquire approximately 25 acres of the Chequesset Yacht and Country Club. This land will be allowed to revert to its natural state and therefore will not be adversely affected by the proposed opening of the Herring River dike. In taking this step the town showed its interest in having the Herring River Restoration Project go forward and simultaneously beginning to place permanent protection on parts of the Club. Continued efforts are necessary to ensure perpetual protection of the entire acreage through the use of fee purchase, conservation restriction or other means.

The Town of Wellfleet is rapidly approaching buildout, and demand for the few remaining buildable parcels in town is high. The Town's Open Space/Land Bank Committee has compiled a list of vacant land in town and has prioritized these parcels for protection. This list includes all vacant lots of significant size; many smaller open lots within subdivisions will not be included. Most of the highest priority parcels are abutting existing conservation areas and are listed in the Plan. As presently constituted, this list contains 524 vacant acres which could be protected for conservation/recreation. The Wellfleet Conservation Trust (WCT) also has a list of high priority parcels. It is recommended that these groups compile these to create a *Master Priority Parcel Acquisition List* and work cooperatively, as they have in the past, to protect the parcels listed

In its first 20 years, WCT has protected 96 parcels of land totaling approximately 268 acres (The Compact of Cape Cod Conservation Trusts Inc.). Wellfleet Conservation Trust properties are located to a large extent near the Wellfleet Harbor, where protection of the land helps to protect its water quality. Some of this land is contiguous with other protected open space such as at Indian Neck where the WCT and Commonwealth of Massachusetts jointly protect over 100

According to The Compact of Cape Cod Conservation Trusts, there are 10 properties totaling 24.6 acres under conservation restrictions in Wellfleet. Conservation restrictions are the easiest and most reliable means of ensuring the perpetual protection of land. The town should continue to work in conjunction with land trusts (i.e. the Wellfleet Conservation Trust, The Compact of Cape Cod Conservation Trusts, Inc. etc.) to acquire conservation restrictions on all unprotected municipal lands even if they are currently designated as conservation and recreation land and on any privately owned land that exhibits conservation values including wetland resource areas.

According to Town of Wellfleet fiscal year 2004 figures there are approximately 96 acres owned and managed by the Town of Wellfleet Recreation Commission and a total of 22 parcels totaling 13.49 acres under the care, custody and control the Town of Wellfleet Conservation Commission, plus another 56.02 acres bought with Land Bank revenues and managed by the Conservation Commission. All of these are detailed in the Plan.

The Open Space/Land Bank Committee (now the Open Space Committee since July 1, 2005) has done an admirable job of governing land acquisition in the Town of Wellfleet for the last five years. Current and near future land acquisition funding will come largely through Community Preservation Act (CPA) funds, which will be managed by a CPA Committee (Committee appointments underway). CPA funds can be used to address three core community concerns:

- Acquisition and preservation of open space
- Creation and support of affordable housing
- Acquisition and preservation of historic buildings and landscapes

A minimum of 10 percent of the annual revenues of the fund must be used for each of the three core community concerns. The remaining 70 percent can be allocated for any combination of the allowed uses, or for land for recreational use.

The new CPA Committee will have the responsibility of identifying, prioritizing and pursuing

land acquisition opportunities for the purposes of open space and recreation, historic preservation and affordable housing. Because these three interests may sometimes compete with each other, it is imperative that each group has a representative or liaison to the CPA Committee that will represent these interests. Some of the tasks this Committee should consider include development of the proposed master *Priority Parcel Acquisition List* and protection of the private parcels listed. It should also prioritize all town owned parcels for their conservation and recreation value, regardless of category, and pursue their permanent protection through the establishment of conservation restrictions. Finally, it should establish a strategy for the ongoing management of these properties to ensure healthy ecosystem functioning, sanitation and public safety

Of the 44,600 total acres in the Cape Cod National Seashore about 8,000 are in the Town of Wellfleet. Several major visitor areas are within the town. These are:

- Great Island is connected by land to the mainland. The Great Island Walking Trail goes to the end of Great Beach Hill, site of the former 18<sup>th</sup> century Human Society Hut for shipwrecked seamen.
- Atlantic White Cedar Swamp is located next to the Marconi Historical Site and consists of a 1.2 mile nature trail.
- Marconi Beach area - bathhouse, lifeguard and handicapped scenic overlook
- Marconi Historical Site - Site of the sending of the first transoceanic radio message from the United States
- Atwood-Higgins House - on Bound Brook Island

According to Town of Wellfleet fiscal year 2004 figures contained there is approximately 838 acres owned and managed by the Massachusetts Audubon Society at the Wellfleet Bay Wildlife Sanctuary. This land comprises a broad expanse of salt marsh, pine woods, brooks, and ponds including five miles of trails, a children's day camp, educational workshops and classes as well as lectures - all dealing with aspects of nature, conservation and wildlife.

The *goals* included in this 2005 Open Space and Recreation Plan are the long-range aspirations of the Town of Wellfleet for the protection of natural resources and the provision of recreational opportunities for its citizens and visitors. The *objectives* are conceptual steps to be undertaken to achieve these goals. Specific, tangible *actions* to implement the objectives are found in Section 9.

The goals and objectives listed below were developed by the Open Space Committee and/or borrowed from the Town's Local Comprehensive Plan (LCP). They respond directly to the public opinion survey and workshops conducted during preparation of this Plan and the 1995 Local Comprehensive Plan, supplemented by the results of other planning efforts. The goals and objectives listed are intended to be consistent with the LCP, the Cape Cod Commission Regional Policy Plan and the 2000 Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP).

**GOAL 1:** Acquire, retain, preserve and protect a maximum of open space for the community and its natural and wildlife habitats. Balance the above with the practical needs of the town such as, but not limited to: recreation, affordable housing, future water needs.

**OBJECTIVE 1:** Enhance existing protected open space (Open Space Committee in cooperation with WCT, Massachusetts Audubon, etc.)

**OBJECTIVE 2:** Continue developing criteria for future land acquisition  
(See Appendix G)

**OBJECTIVE 3:** Consider formulating changes to a bylaw or subdivision regulation requiring a minimum open space set aside percentage in new developments

**OBJECTIVE 4:** Actively Pursue and Work on Individual Land Acquisition Projects

**OBJECTIVE 5:** Continue education of population regarding the relationship between excessive growth and ground water quality, waste disposal, harbor health, natural resources, and town character

**OBJECTIVE 6:** Work to preserve the rural, historic, and scenic character of the town

**OBJECTIVE 7:** Continue policy to acquire and keep for open space tax title lands except where such community priorities such as affordable housing or municipal services may arise and listen to any comments from these boards and committees

**OBJECTIVE 8:** Establish procedures for approval and assessment of conservation restrictions

**OBJECTIVE 9:** Facilitate and/or encourage private investment to facilitate the efforts of private land conservation groups such as Mass Audubon, WCT.

**GOAL 2:** Protect Wellfleet Harbor and Estuary

**OBJECTIVE 1:** A better Management Plan needs to be developed. Shellfish industry needs to have clean water space and facilities and these needs to be balanced with the recreational demands of seasonal traffic.

**OBJECTIVE 2:** Continue efforts to restore Herring River and other tide-restricted estuaries and wetlands

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**GOAL 3:            Protect the town’s present and future water supply.**

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**OBJECTIVE 1:     Continue to identify and protect present and future well field areas through zoning, land management strategies/plans or acquisition**

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**GOAL 4:            Improve waste disposal systems**

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**OBJECTIVE 1:     On site septic systems are a threat to ground water in some areas. Special consideration needs to be given to the Central District and areas in close proximity to ponds and coastal areas.**

**OBJECTIVE 2:     Eliminate roadside and beach litter and illegal dumping**

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**GOAL 5:            Protect ponds, rivers, and streams**

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**OBJECTIVE 1:     Strengthen protective regulations in A.C.E.C.**

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**GOAL 6:            Protect beach areas**

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**OBJECTIVE 1:     Explore opportunities to minimize development of new residences or expansion of existing ones in or adjacent to buffer zones to avoid endangering our coastal banks and barrier beaches**

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**GOAL 7:            Coordinate recreation needs with open space priorities to benefit each**

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**OBJECTIVE 1:     Develop and improve recreational areas and facilities**

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**GOAL 8:            Accomplish the goals and objectives above expeditiously and at minimum expense. This will involve determination of the most effective organizational and administrative arrangements for their achievement, importantly including the cooperation and coordination among town boards, commissions, committees and executive agencies**

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**OBJECTIVE 1:     Coordinate cooperative meetings among various groups involved in Wellfleet's land use planning including new CPA Committee to establish needs and assign tasks**

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The future of Wellfleet's natural and cultural landscape, now more than ever before, is dependent on a collaborative and timely effort to define, plan, and then implement our collective vision for the future. The achievement of each of the goals and objectives contained in this Plan is possible within the next five years provide consistent and concerted effort is expended by each of the parties charged with their implementation and adequate funding is provided. By doing so together we can protect and continue to create anew Wellfleet's natural and cultural environment, which continues to enchant us with its richness, mystery and beauty.

**Section 2 - Introduction**

---



## A. Statement of Purpose

The purpose of this plan is to provide direction for the use of open space and recreation land in Wellfleet. Put another way, the purpose of this plan is to provide a framework for responsibly managing presently undeveloped open space, while affording flexibility for future management changes.

Any open space plan for the Town must deal with some unusually complex and, in some ways, contradictory community characteristics and needs. Wellfleet's rather small land area contains a splendor of natural resources and natural beauty that can be easily disrupted by overuse. And yet, it is just that fragile richness which makes the place the object of intense desire for so many thousands of people. Moreover, different groups want to use the resources for different purposes; some want to make a living from activities such as development, shellfishing or tourism, others want to preserve the Town's village qualities as the setting for their year round living, while many others come here on an intermittent, seasonal basis for recreational and vacation activities that make full use of the natural environment.

Taken together, such use patterns can interfere with each other, as well as placing heavy stress on natural systems. Extensive residential development, for example, may add polluting nutrients to the harbor, which in turn, threatens both commercial and recreational shellfishing. Again, as tourism increases, the quality of life for year round residents can be substantially altered. And for second home owners, the very qualities that attracted them to Wellfleet are diminished as their numbers increase. No open space plan can possibly resolve all these problems. What it can do is indicate how the judicious use of open and generally undeveloped land can contribute to providing and preserving certain fundamental resources and values on which the future life of the Town will depend. These include the protection of:

- water supply;
- environmentally sensitive areas;
- public access to beaches, ponds and the harbor;
- important local industries such as shellfishing; as well as providing for residential housing, business, and facilities for the storage and repair of necessary equipment;
- affordable housing opportunities for those who work in the area; and,
- services for residents and visitors.

Working through the Land Bank legislation, Wellfleet has obtained 64.21 additional acres of particularly valuable land to be set aside for conservation (see Appendix E). This has occurred through the cooperation and support of both private and public agencies. The Open Space Land Bank Committee has worked with the Wellfleet Conservation Trust, The Audubon Society, The Executive Office of Environmental Affairs Division of Conservation Services and the Department of Fisheries and Wildlife to maximize the tax funds available to purchase open space.

There is also a special situation in that approximately 61% of the Town is under the control of the Cape Cod National Seashore and additional acreage is owned by the Massachusetts Audubon Society. These extensive undeveloped lands contribute much to the environmental and aesthetic quality of the town; however, at the same time they constrain development to the remaining 39% of the town's area, where most of the people of Wellfleet spend most of their lives.

Consistently rapid development during the last several decades has resulted in the creation of an increasingly suburban landscape, increasing highway strip development, groundwater pollution, and the destruction of unique and irreplaceable resources such as shellfish beds.

In spite of this, the town has made great strides in open space acquisition during this time. Major acquisitions include the following:

- Rinzler –6-acre purchase on 1-5-05 for \$370,000 (\$61,667/acre);
- Koessel –1.56-acre purchase on 8-15-03 for \$200,000 (\$128,205/acre);
- Ziering –7.26-acres purchase on 5-15-03 for \$380,000 (\$52,342/acre);
- Chavez 1 – 6.98-acre purchase on 6-24-02 for \$600,000 (\$85,948/acre)
- Chavez 2 –0.93-acre purchase on 5-15-03 for \$125,000 (\$134,553/acre)
- Baker Estate Properties (Geiger Family) –Almost 9 acres of upland were acquired over a three-year period. This acquisition ties in with the 16 contiguous acres owned by the Wellfleet Conservation Trust and brings the total conservation holdings by the Town, Wellfleet Conservation Commission and State (Mass Wildlife) in this area to about 140 acres. The third and final phase of the acquisition was completed by June 1, 2001. The total cost of \$650,000 has been offset by \$250,000 because the Town received an Executive Office of Environmental Affairs (EOEA) Self-Help grant.
- Ernst Property – The Town approved at the October 2001 Town meeting the purchase of approximately six acres of land abutting an existing conservation area off Lt. Island Rd./Compass Hill Road at Box Turtle Lane for \$562,000 to be phased over the three year period 2002 – 2004. Of this, the Land Bank provided \$305,400 with \$106,600 coming from an EOEA Self-Help grant and \$150,000 from Mass. Audubon, phased over three years. A \$94,640 EOEA additional Self Help Grant has been applied for the Phase III final purchase of the Ernst property to further reduce the use of Land Bank funds. This purchase expands the 32-acre conservation area already owned by the Wellfleet Conservation Trust and the Mass. Audubon Society.

Since the last iteration of this Plan in 1995, the town has continued its aggressive land acquisition strategy. Since the inception of the Land Bank, the town has purchased 57 parcels totaling 64.21 acres for an approximate total of \$ 2, 155,800 (approx. \$33,574/acre)<sup>1</sup>. A

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<sup>1</sup> See Appendix E for complete list of parcels.

complete listing of all existing conservation and recreation lands in Wellfleet is included in Appendix E, *Wellfleet Tax Exempt Land*, and further described in Section 5.

Private land purchases have also helped protect undeveloped lands. Since its founding in 1984, the Wellfleet Conservation Trust has preserved approximately 81 parcels totaling 268 acres<sup>2</sup> throughout the town, protecting river corridors and wetlands and filling in gaps in the town's green belt.

These collective conservation efforts have been buoyed over the last decade by such legislative tools as the Cape Cod Land Bank, mentioned above, the Cape Cod Commission Act and most recently the Community Preservation Act (CPA). Yet in spite of increased efforts and success, conservation efforts will always struggle to keep pace with the unceasing development pressure placed on the region, which continues to lure droves of visitors each season. With every passing year, more and more of these visitors have become permanent residents, and the town's carrying capacity is being pressed to its limit. This must be taken into consideration not only with economic and business development but with the development and use of conservation and recreation resources as well.

While some of the adverse impacts of increased development and more intense land use are obvious, it will probably be years before the full impact of the last 35 years of growth can be seen. Conservation and recreation planning in the 21<sup>st</sup> century will need to respond appropriately and creatively to the changing natural and cultural landscape. In addition to continued efforts to preserve the remaining open space, many towns in the region, including Wellfleet, are rewriting the rulebook for conservation by razing abandoned buildings, reclaiming and cleaning up contaminated sites and reusing the land for conservation and recreation related purposes. Recent trends toward reclaiming developed lands known as "undevelopment" and the greening of contaminated sites, known as "Brownfield redevelopment," will need to continue and be built upon.

A recent publication produced by The Compact of Cape Cod Conservation Trusts Inc., entitled *Take Back the Cape – Discovering Opportunities for Undevelopment*, defines undevelopment as "the removal of existing manmade structures and influence upon the land followed by site restoration to a more natural state".<sup>3</sup>

In 1998 the Town completed a successful undevelopment project at the town-owned Geiger property in which an existing cottage was removed. Such creative approaches to land protection will enable conservation and recreation resources to keep pace with the increased demands and impacts of development while simultaneously improving the quality of life.

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<sup>2</sup> The Compact of Cape Cod Conservation Trusts, Inc. 2005 figures, Appendix F. These figures are higher than those provide by the Town listed in Appendix E because the town's records do not yet reflect recent additions..

<sup>3</sup> The Compact of Cape Cod Conservation Trusts, Inc., *Take Back the Cape – Discovering Opportunities for Undevelopment*, Sunderland Printing, Hyannis, MA., 2001.

## **B. Planning Process and Public Participation**

In 2004, the town's Conservation and Recreation Departments began to address the need for a revised Open Space and Recreation Plan that would reflect the town's evolving land use identity and enable the town to be eligible to receive Self Help funds from the State.

As with the 1998 Plan, most of the information needed existed and could be used as a basis for the update. Foremost among these resources was the town's 1998 Open Space and Recreation Plan, the town's 1995 Local Comprehensive Plan (LCP), and extant maps produced for each and also for other local and regional projects relevant to the town's planning initiatives. Using these resources as a springboard, work on the new Plan was begun.

To facilitate the process, an ad hoc Wellfleet Open Space and Recreation Plan Workgroup was formed. During the winter and spring of 2004-05, the group met regularly to assign tasks and review drafts periodically meeting with representatives from other groups including the Wellfleet Conservation Trust, Conservation Commission and Planning Board.. Information was collected by all members, some of whom contributed to writing sections of the Plan in their areas of expertise. Open Hearings were held by the Open Space Committee on January 5, 2005 and January 12, 2005 to discuss the draft 2005 Open Space Plan Update. A similar meeting with the Planning Board. The overall Plan was compiled, formatted and updated by the Open Space/Land Bank Committee and submitted to the State Division of Conservation Services for review.

In a letter dated June 22, 2005, Melissa Cryan, the State's Urban Self-Help coordinator gave conditional approval of the Plan through June 2010 with the stipulation that "no final grant payments will be made until the plan is completed". In order to complete the Plan to the state's satisfaction, eight revisions were suggested, with deadline of August 1, 2005 in order to be eligible to collect Self-Help funds that had already been awarded to the town amounting to several hundred thousand dollars.

In order to accomplish these revisions in the allotted time-frame, the town hired Jeff Thibodeau, owner of *Helios Land Design*, a land planning consulting firm in Orleans, Massachusetts to assist. The 2005 Open Space and Recreation Plan herein is the result of these collective efforts.

The Executive Office of Environmental Affairs' *Open Space and Recreation Plan Requirements* and the *Open Space Planner's Workbook - Companion to the 1990 Open Space and Recreation Plan Requirements*, were used as guides for preparing the Plan. Wellfleet's 1998 Open Space and Recreation Plan and 1995 Local Comprehensive Plan (LCP) provided much of the information contained in this plan and are consistent with it. Whenever possible and prudent, existing documents and records were incorporated directly into the revised Plan.

### **Incorporation of the Local Comprehensive Plan**

In April 1995, Wellfleet completed its Local Comprehensive Plan (LCP). This was an extensive study undertaken to develop policies and actions to guide the development of the Town. This resulted in a document (370 pages) which defined goals and policies for the Town, and also

detailed an implementation program with specific actions to be accomplished in order to achieve these goals<sup>4</sup>. The 1995 Local Comprehensive Plan is currently being updated and will reference the findings and recommendations of this 2005 Open Space and Recreation Plan in relevant Sections. The updated LCP is scheduled for completion in spring of 2006, though an extension may be required.

Due to the fact that this Open Space and Recreation Plan update is being completed prior to the completion of the 2005 LCP, we have used the results from the 1995 Local Comprehensive Plan as well as more recent statistics such as the 2000 U.S Census and updated statistics and other information compiled by the Cape Cod Commission, the Town of Wellfleet and others. The listing of goals, and the definition of an implementation program as presented in the 1995 Local Comprehensive Plan, represents much hard work on the part of the Town. The document was voted on (and accepted) at Town Meeting, and has been approved by the Cape Cod Commission. LCP goals which are pertinent to issues of open space and recreation in Wellfleet have influence the development of this Open Space and Recreation Plan and the two documents are consistent with each other and with the Cape Cod Commission's Regional Policy Plan.

The 1995 Local Comprehensive Plan was developed under the guidance of the Local Planning Committee (LPC). The LPC was established by the Board of Selectmen in 1992 and consists of representatives of seven Town Boards concerned with growth management, development and environmental protection: the Planning Board, the Zoning Board of Appeals, the Open Space/Land Bank Committee, the Conservation Commission, the Natural Resources Advisory Board, the Board of Health and the Housing Authority. In addition, the LPC has one at-large member. The 2005 LCP update is being conducted by a similar committee. Draft chapter of the Plan will be distributed to various boards for comment and specific meetings will be arranged as needed to solicit input.

The 1995 Local Comprehensive Plan was developed with extensive outreach to the residents of Wellfleet and the 2005 update is using a similar outreach strategy. All meetings of the Local Planning Committee are public, with appropriate notice given. Information on the progress of the planning process is disseminated through the media and through brochures. In addition to these ongoing efforts, a number of special efforts are being made to garner public opinion, through a town-wide survey and public workshops.

### **Public Opinion Survey**

For the current update, a random sample of residents and non-residents is being conducted with a distribution of approximately 1,500. This survey is included as Appendix D, *2005 Town Planning Survey*. Results are scheduled to be unveiled during at a public meeting scheduled for July 30, 2005. Since the results are not currently available, for the purposes of this Open Space and Recreation Plan update, results of the 1995 LCP survey are being used.

In the 1995 LCP, a comprehensive survey was distributed to all year-round residents of the Town (about 2,100 households) and a sample of 400 nonresident taxpayers (i.e., seasonal residents and

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<sup>4</sup> See "Setting A Course For Our Future" - The 1995 Local Comprehensive Plan, Wellfleet, Massachusetts, April, 1995

other nonresident property owners). Responses were received from 535 of these 2,500 households, representing an overall response rate of about 21 percent. The response rate from non-residents was somewhat higher than that from residents. Appendix B, *1995 LCP Opinion Survey*, contains the questions and Appendix C, *Results of the 1995 LCP Opinion Survey*, a, abbreviated summary table of the results. Following are brief descriptions of some of the more important results relevant to open space and recreation planning:

## **1995 LCP Survey Results Relevant to Open Space and Recreation Planning**

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### **Business**

- **Develop more waterfront commercial uses at the marina (1995 Town of Wellfleet LCP Opinion Survey Results, p.7)**

Overall, there is some support for commercial growth at the marina: 47 percent of respondents support this, and 41 percent oppose it. However, this question elicited a clear difference of opinion among the various groups of respondents: while year-round residents support the establishment of waterfront commercial uses (50% in favor, 38% opposed) and seasonal residents are split on the issue (44%–42%), non-residents tend to oppose such development by a 53% to 32% majority.

Those in the 31–50 age group support additional waterfront commercial uses by a margin of almost two to one (58%–30%). Younger respondents present the strongest opposition (50% opposed, 38% in favor).

- **Establish a small marine research and education center at Wellfleet Harbor (Ibid.)**

This question elicited strong support for establishing a research and education center that would provide jobs and economic growth while building on the town's image as a traditional maritime community: 76 percent of respondents support this concept and only 12 percent oppose it. Support is generally strong among year-round residents (77%), seasonal residents (78%) and non-residents (69%). Similarly, support is strong among respondents of all ages, ranging from 66 percent of those over 70 years old to 84 percent of the 31–50 age group.

- **Implement a comprehensive harbor management plan to promote effective harbor development and allocate resources equitably among diverse interests (Ibid., p.9)**

This statement also elicited strong support from all groups: 76 percent expressed support, including 77 percent of year-round residents, 78 percent of seasonal residents, and 69 percent of non-residents. Among the various age groups, support ran from 69 percent of those over 70, to 83 percent of those in the 31–50 group. Appendix J, *Draft 2005 Harbor Management Plan – Overview Statement*, provides more detail regarding this ongoing project.

- **Encourage expansion of traditional marine industries, e.g., shellfishing, as an integral part of the town’s economy (Ibid.p.9)**

This statement received the strongest support of all the business development questions: 81 percent of respondents indicated support and only 11 percent were opposed. Support is strongest among year-round residents of the town (83%–12%), but 78 percent of seasonal residents and 72 percent of non-residents also support expansion of shellfishing and other marine industries. While all age groups support this strategy by wide margins, there is a clear variation of support along age lines. The strongest support is among the youngest respondents (92% of those aged 19–30); support decreases somewhat in the next older groups (86% and 83% of those aged 31–50 and 51–70, respectively); and the lowest level of support is from the oldest respondents (73% of those over 70 years old).

### **Traffic and Parking**

- **Offer free or low-cost shuttle service between remote parking lots, (e.g., the marina or IGA site) and the town center and ocean beaches. (Ibid., p.16)**

More than two-thirds of the respondents favor providing a shuttle service between remote parking lots, the town center and ocean beaches (69 percent in favor, 18 percent opposed). The strongest support is from year-round residents (72%–17%), and the lowest level of support is from non-residents (50%–31%). Unlike the previous two questions, the support for a shuttle service appears to decrease with increasing age. The 18–30 age group supports the idea by a margin of more than four to one (75%–17%), while the oldest age group favors the shuttle service by 64% to 17%. This decrease in support, however, is not accompanied by a rise in the proportion of each group that is opposed to the concept; rather, the numbers in the “unsure or no opinion” category increase from below 10 percent for the younger two groups to almost 20 percent for the oldest group.

### **The Environment**

The questionnaire included four questions about respondents attitude toward environmental protection strategies. Strong support was expressed for all four statements. Of all groups of questions in the survey, this section generated the strongest positive response: 316 respondents (59 percent of the total) expressed support for all four policies, and only 17 respondents opposed all four statements. Although all groups of respondents strongly support strategies to protect Wellfleet’s natural resources, the greatest proportional support comes from non-residents and seasonal residents. No clear trends based on age of respondents were evident from the data.

- **Enact more stringent regulations to protect wetlands, floodplains, freshwater resources, beaches, woodlands, etc. (Ibid., p.23)**

A wide majority of Wellfleet residents and property owners support the enactment of stronger regulations to protect the town’s natural resources: this question elicited support

from 71 percent of the respondents, including 76 percent of seasonal residents, 72 percent of non-residents, and 70 percent of year-round residents. Only 21 percent of respondents indicated opposition. In terms of age, the strongest support is from those aged 18 to 30 (83%–9%) and over 70 (75%–22%).

- **Protect scenic views (Ibid., p.23)**

An even greater majority of respondents supported this statement: 87 percent are in favor, and only 7 percent were opposed. Again, support is strongest among seasonal residents (90%) and non-residents (89%), but 86 percent of year-round residents support protection of scenic views. Respondents in the 18-to-30 year-old age group support view protection by 78 percent in favor to 9 percent opposed; and between 86 percent and 88 percent of respondents in all other age groups are in favor, with fewer than 8 percent in each group opposed.

- **Preserve pond water quality through use limitations (Ibid., p.24)**

Wellfleet residents and property owners support limitations on use to preserve pond water quality by a margin of eight to one (82%–10%). The level of support is highest among seasonal residents (89%–2%) and non-residents (97%–3%). All age groups are strongly in support of use limitations to preserve water quality, with the strongest support coming from those 51 to 70 years old (83%–10%) and over 70 years old (87%–55).

- **Protect groundwater quality through limitations on residential density (Ibid., p.24)**

There is strong support for residential density limitations to protect groundwater quality: 81 percent of respondents indicated support, while 12 percent were opposed. As in response to the other questions regarding the environment, seasonal residents and non-residents tended to support such regulations more strongly than year-round residents: the proportions in support and opposed were 78%–15% for year-round residents, 92%–4% for seasonal residents, and 93%–7% for non-residents. Respondents over the age of 70 appear to favor use limitations most strongly (89%–8%), followed by those between 18 and 30 years old (83%–9%).

- **Respondents favor regionalization of water supply facilities and services by a three-to-one margin (60%–20%). (Ibid., p.29)**

Support among year-round residents exceeds a margin of two to one (58%–23%), and seasonal residents favor regionalization by more than ten to one (74%–7%). All age groups expressed support by at least three-to-one margins, except that support from those over 70 was somewhat lower (55%–21%).

## **Recreation and the Arts**

- **Expand recreational facilities for young people**

There is very strong support, particularly among year-round residents, for expansion of

recreational facilities for young people: this idea is favored by 79 percent of all respondents and 81 percent of year-round residents, and opposed by only 11 percent. Non-residents expressed a similar level of support, while seasonal residents were somewhat less likely to favor expanded recreational facilities (68% in favor, 15% opposed). All age groups strongly favor expanded recreational opportunities for the young. The strongest support is from those between the ages of 18 and 30 (83%–8%), and the lowest level of support is among those over 70 years old (72%–14%).

- **Expand recreational facilities for adults**

Although support is not as strong as for facilities for young people, there is moderate support for recreational facilities designed to serve adults: 65 percent of respondents favor expansion of such facilities, while 16 percent oppose it. As in the previous question, support is strongest among year-round residents (68%–14%) and weakest among seasonal residents (51%–28%). As with the previous question, support for expanded recreational facilities appears to decline somewhat with increasing age of respondents: among the youngest group of respondents the support ratio is 71%–8%, while margin for the oldest group is 56%–17%.

- **Extend the proposed Boston-Provincetown bike trail from the present South Wellfleet General Store terminus to Truro**

There is strong support across the board for extending the Boston-Provincetown bike trail through Wellfleet to the Truro town line: 82 percent of respondents favor taking this action, and only 9 percent oppose it. Extension of the regional bike trail is supported by more than 80 percent of year-round residents, seasonal residents and non-residents, and by more than 80 percent of those in all age groups except the 18–30 group, where the ratio of support to opposition is 62%–12%.

- **Develop a town community center**

There is moderate support for developing a town community center, with 56 percent in favor and 20 percent opposed. About the same percentages of year-round residents, seasonal residents and non-residents support this idea, but non-residents are more likely to be unsure about it (38%) and less likely to oppose it (7%).

- **Strengthen the town’s role as an arts center encompassing galleries, music, theatre, etc.**

Support for strengthening the town’s role as an arts center is fairly strong, particularly among seasonal residents and non-residents. Overall, 70 percent of the respondents favor this strategy and 17 percent oppose it. Support is strongest among seasonal residents (83%–10%), and non-residents (79%–14%), while year-round residents are less likely to be in favor (67% in support, 19% opposed).

- **Provide a town bandstand for seasonal concerts, celebration, etc.**

Residents and taxpayers support the provision of a town bandstand by a margin of three-to-one (62%–20%), with somewhat stronger support from non-resident respondents (71%–7%).

### Public Workshops

For the 1995 LCP, three public workshops were held. The first, held in the Wellfleet Public Library on May 25, 1993, served as the public “kickoff” of the planning process. This workshop was designed to elicit general ideas from Wellfleet’s residents about the Town’s economy and natural environment, and to identify aspects of Wellfleet that residents like and other features that they would like to change. The second public workshop, August 10, 1993, was scheduled so as to provide a forum for the Town’s seasonal residents as well as year-round residents. As the flyer used to advertise the workshop stated:

*“We recognize that the Wellfleet community extends beyond those who live in the Town year-round. This special place is important to those who live and work here for only a few months each year, and to others who may only visit for a few days or weeks at a time. Many of these people have demonstrated their love for the Town, returning again and again to enjoy its small-town feeling its vital arts community, and the recreational opportunities available on the Outer Cape. Many also represent the future of Wellfleet, just as many of our current residents were once “only” summer visitors.”*

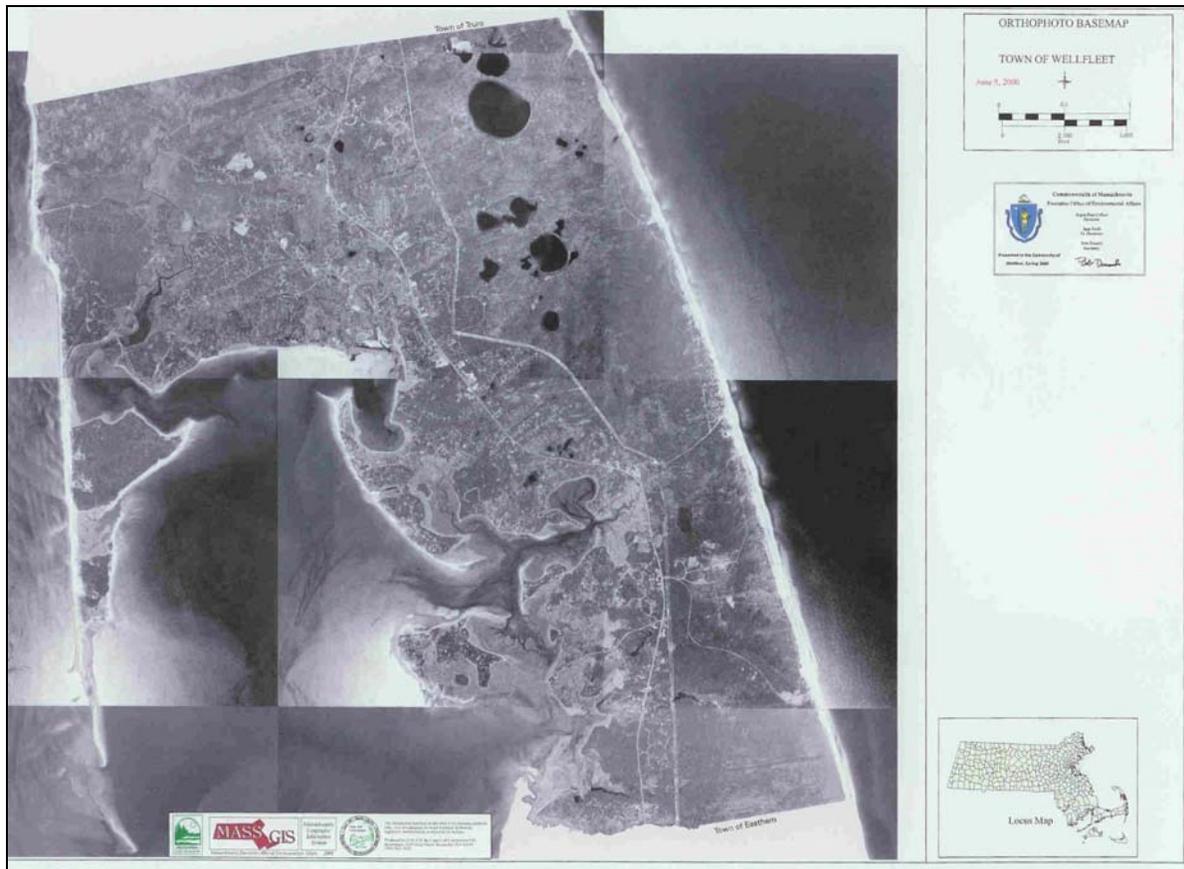
The third public workshop, held on November 9, 1993, focused on coastal and inland natural resources, including water quality issues that had been addressed in the August 10 workshop. Participants were organized into subgroups to discuss particular aspects of the Town’s natural resources. Participants were asked to discuss issues of natural resources quality, protection and enhancement using several prepared questions to frame the discussion. At the conclusion of the meeting the discussions were summarized and all participants had an opportunity to comment on the issues and recommendations for policies and actions identified by small groups.

In addition, the Plan incorporates and synthesizes several separate planning efforts that had taken place over the prior few years, including:

- The 1988 nomination of Wellfleet Harbor as an Area of Critical Environmental Concern, prepared by the Wellfleet Conservation Trust;
- The 1998 *Open Space and Recreation Plan Update*, prepared by the Open Space Committee under the sponsorship of the Conservation Commission;
- The *Harbor Management Plan*, prepared by the Natural Resources Advisory Board, scheduled for revision (see Appendix J, *Draft 2005 Harbor Management Plan – Overview Statement*).

### Section 3 - Community Setting

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#### **Wellfleet Aerial Orthophotograph**

Source: Executive Office of Environmental Affairs website  
([http://commpres.env.state.ma.us/community/cmt\\_main.asp?regionID=cpis&regionName=Cape+Cod+and+Islands&communityID=318&communityName=Wellfleet#Absolute](http://commpres.env.state.ma.us/community/cmt_main.asp?regionID=cpis&regionName=Cape+Cod+and+Islands&communityID=318&communityName=Wellfleet#Absolute))

## A. Regional Context

Wellfleet is a heavily tourist-oriented rural town which occupies 20.47 square miles of the outer portion of Cape Cod. It is bounded on the east by the Atlantic Ocean and the west by Cape Cod Bay, to the north lies the Town of Truro, and to the south the Town of Eastham. Sixty-one percent of these 20.47 square miles is under the administration of the National Park Service as The Cape Cod National Seashore. This is shown on Map 1, *Town of Wellfleet*.

One of the fifteen towns comprising Barnstable County, Wellfleet has a town meeting form of government and a five member Board of Selectmen who appoint a full-time Town Administrator. Wellfleet is included in the 10<sup>th</sup> Massachusetts Congressional District; the Cape, Plymouth and Island States Senatorial District; and the Cape and Islands States Representative District.

Besides Route 6, which runs the length of the Cape, there are other public services that are shared among adjacent towns. There is an agreement to make police and fire services of the adjacent towns available to Wellfleet and vice versa; natural potable groundwater sources in the north of Wellfleet and in the south are shared by the Town of Truro and the Town of Eastham, respectively. Proposed walking and bike trails would connect with these two towns. The Town of Truro shares the Wellfleet Harbor Area of Critical Environmental Concern (A.C.E.C.), including northern portions of the Herring River flood plain. Hatches Creek forms the boundary between Wellfleet and Eastham; thus, any disturbance to this estuary would affect both towns. On the private side, grocery and other shopping is limited in Wellfleet and most people use facilities in Orleans or Provincetown for their routine purchases. For larger items, some people go to other towns, including Hyannis and Boston where shops are more plentiful. Use is also made of Eastham for indoor recreation. Conversely, Wellfleet's golf course (Chequessett Country Club) is used by residents and visitors from Eastham and Truro.

### Cape Cod National Seashore

The Cape Cod National Seashore, established by an Act of Congress on August 7, 1961, is administered by the National Park Service with resource preservation as its primary goal. As the enabling Legislation states:

*“In order that the Seashore shall be permanently preserved in its present state, no development or plan for the convenience of visitors shall be undertaken which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing or with the preservation of such historic sites and structures. (P.L. 87-126, 75 Stat, 284)”*

Together with preservation, the enabling Legislation provides for:

*“the public enjoyment and understanding of unique natural, historic and scientific features of Cape Cod within the seashore by establishing such trails, observation points, and exhibits and providing such services as he [the Secretary of the Interior] may deem desirable for such public*

*enjoyment and understanding..... (and) may develop for appropriate public uses such portions of the Seashore as he deems especially adaptable for camping, swimming, boating, sailing, hunting, fishing, the appreciation of historic sites and structures and natural features of the Cape Cod and other activities of similar nature. (P.L. 87-126, 75 Stat. 284)”*

The Seashore’s designated boundary includes a total of 43,650 acres of the outer Cape including submerged lands. There are approximately 27,000 upland acres, of which about 8,000 are in the Town of Wellfleet. This represents about 61% of the town’s 13,100 acre total area. Since September 1, 1959, a person can still buy private land and erect a house within the Seashore; however such property is subject to acquisition by the Seashore, which is empowered to purchase such land with the goal of preserving the park land in its natural state. There are 600 improved properties built before September 1, 1959 which can remain in private ownership in perpetuity. Large areas of important outer Cape, and particularly Wellfleet, ecosystems like the kettle ponds and the Herring River basin, are at least partially under the land management policies and guidelines of the National Park Service; however, significant portions of these systems are outside the Seashore, or on private or town owned land within the Seashore boundaries. The resultant jurisdictional mosaic necessitates close cooperation among federal, state and local authorities, and interested individuals, to effectively (and collectively) preserve public resources.

In 1998, the National Seashore completed a General Management Plan to update the Master Plan of 1970. The draft was reviewed by Boards of Selectmen in Provincetown, Truro, Wellfleet, Eastham, Orleans, and Chatham as well as numerous citizens (as reflected in the 300 to 400 letters received by the National Seashore). Many of the comments and suggestions have been incorporated in the final report which includes a detailed Environmental Impact Statement.

One of the important objectives of the General Management Plan is to improve relations with the Towns, including Wellfleet, helping to develop solutions to challenges confronting both town governments and the National Seashore. The management philosophy of the Plan states:

*“The quality of life and the economic needs of nearby communities affect seashore resources, just as the management of resources within the National Seashore has significant effects on the towns. For this reason a collaborative approach to stewardship..... is essential.”*

The objectives of the Plan include management of the natural and cultural resources to sustain the distinctive character of the Outer Cape, protection of water resources, encouragement of stewardship of buildings and other artifacts, and stimulation of a diverse range of quality experience with the town. These, of course, are central goals for the Town of Wellfleet as well.

## **B. History of the Community**

Wellfleet’s town seal shows a famous early incident in the history of what would eventually become the Town of Wellfleet. The seal depicts the moment when nine men in the Mayflower’s shallow ventured into what is now Wellfleet Harbor and saw Indians cutting up stranded

blackfish (pilot whale). Blackfish have continued to beach themselves here down to the present day. In 1644, some residents of the little town of Plymouth chose to move from that first settlement to Nawsett, a general name for most of the lower Cape. William Bradford wrote in his History of Plimoth Plantation, “Thus was this poore church left , like an ancient mother grown old and forsaken of her children...”

The soil on this part of the Cape was not fertile, but the fishing grounds were bountiful. Remembering London’s prosperous fish market, early settlers reportedly gave this area its early name of Billingsgate. Slowly this community grew. The hamlet of Billingsgate built a small meeting house above the harbor and soon began to think of itself as a town separate from Eastham.

In a distressing tangle of church affairs, the control of fishing resources, and personal animosities, the North Precinct of Eastham became a separate Township. A petition to the General Court for incorporation was denied in 1721, but in 1723 a bill at least defined the borders of the Precinct whereupon the citizenry began to elect officers and levy taxes. In 1763 the General Court established the North Precinct as a district to which the name Wellfleet was given. Twelve years later the Revolutionary General Court converted all districts in the Commonwealth into townships and thus, at last, the Town of Wellfleet came into existence.

In its earliest years, Wellfleet was a scattered settlement of subsistence farmers. By 1670, however, Wellfleet increasingly depended on fishing. Whaling with its ancillary activities of barrel making and outfitting vessels became increasingly important. Before the Revolution more than a score of whaling vessels sailed out of Wellfleet Harbor. The most successful Wellfleet whalers became known as the “seed corn gang of whalers” because it was from them that whaling techniques were spread to other coastal towns and to Nantucket. In fact, Captain Jesse Holbrook was so successful that he was asked to teach whaling skills to English seamen. Other men were engaged in the mackerel and cod fishery and in the oyster business.

Just before the Revolution all of Wellfleet’s oysters died from an unknown cause. This was a serious blow to the town’s economy. The Revolutionary War, with the British attempt to embargo the Cape, turned prosperity into want, if not destitution. The whaling vessels rotted where they were hauled out. Ships that tried to go out from Wellfleet Harbor were captured by the British. But Enoch Pratt says, “The inhabitants were truly patriotic. Having a poor soil, and their fisheries and commerce being cut off, they were reduced to such poverty as to be poorly able to pay their portion of public taxes, with the ministerial, school, and other charges, during the war and for some time afterward. Soon, however, under the fostering protection of our free government, they again engaged in the fisheries; by a vigorous prosecution of this branch of industry on the wide ocean and developing the riches hid in the sands on their shores (clams), they recovered from their poverty and became prosperous and wealthy.” Resourcefully, Wellfleet oystermen began to bring oyster spat from Chesapeake waters and to lay them down on the flats where they doubled in size and “took the Wellfleet flavor.” The fishing industry also prospered again. Cod and mackerel were the two principal catches of the Wellfleet vessels. In 1837, 496 men were employed in fishing and 39 ships had to be outfitted and kept in repair at the wharves that were beginning to be built near Mayo’s Beach.

The area around Duck Creek had at first been no more important than any of the other settlements scattered within the bounds of Wellfleet. However, when the harbors at the other settlements began to silt up and Billingsgate Island began to erode, then Wellfleet Harbor and Duck Creek commenced to dominate the commercial life of the town. More and more town citizens found it convenient to live as near to the harbor as they could. Local people began to move their houses onto the streets nearest the center of maritime activity. Dozens of houses were moved into Wellfleet's central district from 1830 to 1880.

But the growing town needed services and stores for domestic purposes as well as for the fishing industry. In 1832 Simon Atwood built a grocery store which still stands near the town pump and in the 1850's Dr. William Stone joined two dwelling houses that he had "hailed off" Billingsgate and made them into a general store on what was to become Main Street. And still the maritime activities grew. A ship yard was established on Duck Creek, 39 salt works were developed to make the salt needed to salt down the catches on Wellfleet fishing vessels. The general prosperity was further evidenced in the expansion of retailing, the establishment of a local bank, and the building of private homes. The public schools were expanded and the church buildings were enlarged and then replaced.

While other parts of the country were building up industries as the basis of their economy, Wellfleet continued to depend on fishing. Only one industrial structure was built in the town, vernacular in style, a wood frame building with a flat roof and few windows. Even with financial help from the town, the factory never prospered whether it was making pants, shirts, or metal dies. The railroad that came in the 1870's brought the factory's raw materials here and carried its products back to Boston, but freighting Wellfleet's seafoods was more prosperous for the town. Changes were to come.

The nautical technology developed during the Civil War displaced the familiar fishing schooner with steam engines and metal hulled vessels. The local entrepreneurs began a period of retrenchment. Risk capital grew tight although it was in the 1860's that Wellfleet business men had established the first local bank. The expansion of the railroads, also locally financed, further weakened the coasting trade. The railroad dike, built across the mouth of Duck Creek, sealed off the upper reaches of that stretch of water changing it from a busy maritime center to a backwater of salt marsh and tidal flats. Wellfleet's population waned, young people left the town for jobs off Cape, stores were empty, houses were actually abandoned, vessels again rotted at decaying wharves, prosperity faded. Even though Wellfleet was far from centers of commerce, still the panics in the financial world affected its small economy. Many people, especially the young men, had to leave Wellfleet to find work in Boston or New York.

For the average fisherman or clerk in the local businesses that struggled on there were hard times. But Wellfleet survived. Tourism began to take up the slack. The first "tourists" were only family members returning from their city jobs to old homes for brief visits. Then the railroad began to bring more visitors. Lorenzo Dow Baker, the Wellfleet "boy who made good" in the fruit import business, came home each summer with friends, business associates, and servants, and invested some of his United Fruit Company profits in a hotel built out into Wellfleet Harbor on Wellfleet's former wharves. Residents took in summer boarders or rented houses to summer visitors who arrived by train. Residences became rooming houses or were divided into apartments. Outbuildings were remodeled into summer rentals. As roads improved

and the automobile began to dominate travel, the first cabins were built and cottage colonies and motels developed. From Captain Baker's Yacht Club at his Chequessett Inn grew the Chequessett Country Club with a nine hole golf course and a fleet of sailboats for club competition. A marina has been developed at the harbor making Wellfleet a pleasure-boating center. Charter boats leave the pier daily during the tourist season. Summer theater offers entertainment; while concerts and square dancing enliven the summer season.

Perhaps the most important factor in changing Wellfleet from a fishing village to a tourist center has been the development of land. The establishment of the National Seashore park which took so much acreage out of development possibilities made the remaining land even more valuable. Developers have sold house lots in ever-increasing numbers since World War II. Private houses are built for seasonal use now, but are planned for year-round use when the new home owners retire.

Increasingly, Wellfleet has become the center for creative arts. The rapid increase in Wellfleet's summer and year-round population has begun to exploit the center of town. Fine old houses are becoming retail shops; art galleries, needing unbroken wall space are "blinding" their property by removing windows; additions which change roof lines and entrances are altering the style of still other houses. In such small increments come fundamental changes in the town.

### C. Population Characteristics

The analysis of population statistics is important in the determination of the needs of the community. With approximately 61% of the town within the official designated boundary and jurisdiction of the National Seashore, growth and development pressure on land outside the Seashore has intensified. This trend will continue to escalate as both the seasonal and year round population increases. Data on population composition and change, labor force, employment/unemployment, seasonal population and population projections has been collected and analyzed in this section.

#### Population Change

Historic changes in Wellfleet's year-round resident population since the turn of the century are listed in Table 1, *Year Round Wellfleet Population Change 1900-2000*. The year-round population increased 43% from 1,743 in 1970 to 2,493 in 1990 raising the overall year-round town density from 85 in 1970 to 122 persons per square mile in 1990. Note the very high population increases in each decade between 1950 and 1980 followed by a sharp decline since then. The density of people per square mile continues to increase.

**Table 1 Year Round Wellfleet Population Change 1900-2000**

<b>Year</b>	<b>Population</b>	<b>Change</b>	<b>% Pop. Change</b>	<b>Density ( Pers./ sq.mi.)</b>
1900	988			48

1910	1022	34	+3.5	50
1920	826	-196	-19.24	40
1930	823	-3	-0.4	40
1940	890	67	+8.1	43
1950	1123	233	+26.2	55
1960	1404	281	+25.0	69
1970	1743	339	+24.1	85
1980	2209	466	+26.7	108
1990	2493	284	+12.9	122
2000	2749	256	+10.3	135

Source: U.S. Census of Population; computation of density includes all land on the Cape Cod National Seashore within the town boundaries.

Population in Wellfleet and throughout Cape Cod has been steadily increasing over most of the last several decades. Table 2, *Cape Growth Rate 1920-2001*, shown below and illustrated graphically in Chart 1, *Cape Cod Population Growth 1920-2000*, indicate that population growth in the region during this century has always been high, ranking in the top three regions across the state. The most notable trend here is the drop in growth since 1990.

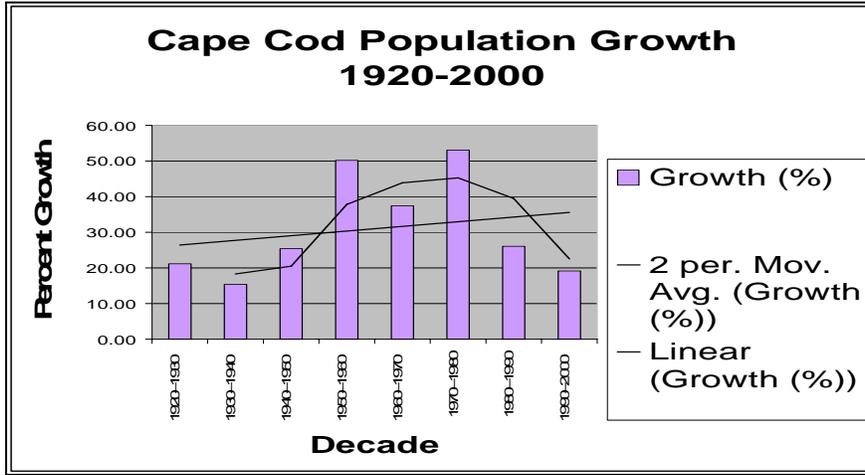
**Table 2 Cape Growth Rate 1920-2001**

Years	Rank	Growth (%)	Population (in latter year)	Gain in Decade/Year
1920–1930	3	21.20	32,305	5,635
1930–1940	1	15.4	37,295	4,990
1940–1950	1	25.5	46,805	9,510
1950–1960	1	50.2	70,286	23,481
1960–1970	1	37.5	96,656	26,370
1970–1980	1	53	147,925	51,269
1980–1990	2	26.1	186,605	38,680
1990–2000	3	19.1	222,230	35,625
2000–2001	3	2.1	226,809	4,579 (year)

Source: Cape Cod Commission Web site  
<http://www.capecodcommission.org/data/CapeTrends-Population080102.pdf>

Chart 1

Cape Cod Population Growth 1920-2000



Recent Regional and Local Growth Rates

Growth rates are affected by many factors including economic trends, employment rates, real estate costs, and the availability of buildable land. By comparing Tables 1 and 2, we can see that whereas Cape Cod started showing rapid and consistent growth as early as 1920, Wellfleet did not show comparable growth until after 1950, probably owing to its outer Cape location and limited economic opportunity.

Very recent annual growth rates are continuing at a relatively slower pace across the entire state than in past decades. Nonetheless, according to *Cape Trends*, published regularly by the Cape Cod Commission, Cape population reached 229,545 in 2003, according to the latest estimates from the U.S. Census Bureau. Cape Cod Commission staff analysis finds that growth levels in five Cape towns during this period ranked in the state’s top 35 of its 351 cities and towns.

Table 3, *Wellfleet and Cape Cod Population Change 1980-2000*, shows that between 1980 and 1990, there was a 12.9 percent increase in Wellfleet’s population (1.29 percent avg. per year). This was significantly lower than (approximately half) the 26.1 percent increase for the entire region over the same ten year period. Percent population change for 1990-2000 in Wellfleet was even lower at 10.3% percent (1.03 percent avg. per year). As in the preceding decade, this was about half the rate for the Cape as a whole, which showed an increase of 20.8 percent for the same period. In the last few years growth has continued but at a similarly modest rate.

Table 3 shows clearly that in the last two decades Wellfleet’s growth rate has declined to half that of the region’s.

**Table 3 Wellfleet and Cape Cod Population Change 1980-2000**

Population Change 1980-2000							
Location	1980	1990	2000	1980-1990		1990-2000	
				Net Change	Percent Change	Net Change	Percent Change
<b>Cape and Islands Region</b>	161,954	204,256	246,737	42,302	26.10%	42,481	20.80%
<b>Wellfleet</b>	2209	2493	2749	284	12.9%	256	10.3%

Source: Massachusetts Department of Employment and Training (DET) Web site ([http://www.detma.org/pdf/WIA\\_Pop.pdf](http://www.detma.org/pdf/WIA_Pop.pdf))

Table 4, *Wellfleet Population Estimates 2000-2003*, indicates that Wellfleet reached an estimated 2,841 residents in 2003, up 92, or 3.2 percent, from the U.S. Census count of 2,749 in 2000.. This amounts to an approximate yearly average population growth of 1 percent since 2000. Though this is still much lower than in the past, its percent rate of population increase exceeds both the region and the state during the same period. From 2002 to 2003, Wellfleet increased its population by only 26 people, ranking 185<sup>th</sup> in the state but had a relatively high population growth rate, ranking at 116<sup>th</sup>, with a 0.9 percent population increase. This was slightly higher than the Capewide average of 0.7% and significantly higher than the statewide average of 0.2% during the same time period.

**Table 4 Wellfleet Population Estimates 2000-2003**

Wellfleet Population Estimates					
Town	July 2003	July 2002	July 2001	July 2000	U.S. Census Count April 2000
Wellfleet	2,841 (+0.9% change)	2,815 (+1.0%)	2,786 (+0.9%)	2,761	2,749

Source: Cape Cod Commission Web site (<http://www.capecodcommission.org/data/CapeTrends-Population080504.pdf>)

Today, due to the limited area and fragile natural resources here, the town is rapidly approaching its carrying capacity. As the Cape approaches buildout and there is less land available for even higher cost, growth rates may either slow down or possibly speed up as people race to get their share of the pie before there is none left. Past population growth trends in Wellfleet, however, are clear. Population gains have been steady for decades until 1990, when a notably sharp decline occurred and has continued to the present day, maintaining a growth rate of approximately 1% per year.

## Age Profile<sup>5</sup>

Table 5, *Wellfleet Population Composition 1971- 2000*, shows Wellfleet's age profile for the years 1970, 1980, 1990, and 2000 the age groups being; pre-school (under 5), school age (5-18), employable age (19-59), and retirement age (60+). A significant factor in Wellfleet population growth is the continued influx of residents over the age of 60. As shown, between 1970 and 1980 population of this age group grew by 33.6% to represent 27% of all town residents and, while the rate of growth has been less in the most recent decades, the total percentage and growth rate of the over 60 age group remained high. The economic ramifications of this are substantial, as are the demands and desires for public services and goods and services both general and particularly those associated with elder populations.

**Table 5 Wellfleet Population Composition 1971- 2000**

Age	Year				Percent Change		
	1970	1980	1990	2000	1970-1980	1980-1990	1990-2000
Under 5	113	162	153	118	+43.3	-5.6	-22.9
5-18	429	343	371	418	-20.0	+8.2	+12.7
19-59	760	1115	1303	1454	+46.7	+16.9	+11.6
60+	441	589	666	759	+33.6	+13.1	+14.0

Source: U.S. Census

Table 6, *School Enrollment Levels*, includes only public schools, including those Wellfleet students attending Nauset Regional Middle and High Schools and the Cape Cod Regional Technical High School. It shows that while total school enrollment in public schools has not fluctuated dramatically over these decades, there has been a marked change in the distribution between those in K-8 and 9-12. Between 1990 and 2000 there was a notable decrease in the K-8 age group and an apparently associated increase in the 9-12 age group. Year 2004 figures show further reductions in both age groups, indicating a lull in the addition of young children.

**Table 6 School Enrollment Levels**

Year	K-8	9-12	Total School Enrollment	School Age Population(5-18)
1970	208	112	320	429
1980	219	111	330	343
1990	273	70	343	371
2000	225	152	377	388
2004	204	93	297	

Source: US Census Bureau, Census 2000 Survey File 3

<sup>5</sup> Information obtained from Cape Trends on Cape Cod Commission Website, town records and U.S. Census.

## Median Age

U.S. Census 2000 found the Northeast had the highest median age in the nation at 36.8 years. Since 1980 the median age of Barnstable County residents has been the highest of the 14 Massachusetts counties. Since 1990, the Cape's median age increased 5.1 years, from 39.5 to 44.6 in 2000. Eleven of the Cape's 15 towns comprised more than half the state's top 20 communities in median age. Seven of the Cape's top eleven in the state in median age are the Lower/Outer Cape towns of Orleans, Chatham, Harwich, Eastham, Wellfleet, Brewster and Provincetown. According to the 2000 census, Wellfleet ranked 13<sup>th</sup> in the state with a median age of 47.0 years. By comparison, the statewide median age increased from 33.6 in 1990 to 36.5 in 2000.

U.S. Census 2000 documented the 35–44 and 45–54 age groups as the Cape's largest with 33,982 and 32,802 residents, respectively, together comprising 30 percent of the Cape's 222,230 residents. The Cape's 45–54 age group registered the highest growth—both numerical and percentage—nearly doubling from 17,573 in 1990 to 32,802 in 2000, a gain of 15,229 or 87 percent. Wellfleet also showed the 45-54 year old age group ranking highest with a total of 535 people, 19.5% of the total. The 35-44 year age group was a close second at 413 people, or 15% of the total.

Barnstable County's share of residents age 65 and over has long led the state. In the past 50 years, the over-65 proportion of Cape population nearly doubled from 12.1 percent in 1950 to 23.1 percent in 2000, compared with statewide growth from 10 percent of all residents in 1950 to 13.5 percent in 2000. Over the past decade, Cape Codders age 65-plus increased from 22.0 to 23.1 percent of all residents, nearly double the national rate of 12 percent, while residents age 65-plus throughout Massachusetts slipped from 13.6 percent to 13.5 percent. With 23.1 percent of residents age 65-plus in 2000, Barnstable County ranked 126<sup>th</sup> of the 3,141 U.S. counties. Wellfleet ranks very high at 11<sup>th</sup> in the state with 21.7% of its residents aged 65 or over, a little lower than the region's average of 23.1%.

Table 7, *Wellfleet Age Profile 1990 and 2000*, shows changes in Wellfleet's age distribution over the 1990's. Notable changes since the 1990 Census figures are the general increase in residents over the age of 45 and a decrease in children under 5 years old.

Clearly population data indicates that middle aged and retired people are the most numerous and fastest growing age groups in Wellfleet and that in the coming decades, open space and recreation planning must continue to provide ample passive recreational opportunities that will serve this largest segment of the population well into retirement age.

**Table 7 Wellfleet Age Profile 1990 and 2000 (U.S. Census)**

<b>Age Group</b>	<b>1990</b>	<b>% of 1990 Total</b>	<b>2000</b>	<b>% of 2000 Total</b>	<b>Change Since 1990</b>
Under 5	153	6.1	118	4.3	-22.8%

5-9 years	173	6.9	103	3.7	-40.5%
10-14 years	131	5.3	151	5.5	15.3%
15-19 years	90	3.6	164	6.0	82.2%
20-24 years	92	3.7	89	3.2	3.3%
25-34 years	354	14.2	228	8.3	-35.6%
35-44 years	464	18.6	413	15.0	-11.0%
45-54 years	248	10.0	535	19.5	116%
55-59 years	122	4.9	189	6.9	55%
60-64 years	168	6.7	162	5.9	-3.6%
65-74 years	278	11.1	334	12.1	20.1%
75-84 years	182	7.3	195	7.1	7.1%
85 and over	38	1.5	68	2.5	80%
<b>TOTALS</b>	<b>2493</b>	<b>100</b>	<b>2,749</b>	<b>100</b>	<b>N/A</b>
Median Age			47		

Source: Cape Cod Commission website ( and U.S. Census American Fact Finder website ([http://factfinder.census.gov/servlet/QTTTable?\\_bm=y&-geo\\_id=06000US25001070&-qr\\_name=DEC\\_1990\\_STF1\\_DP1&-ds\\_name=D&-\\_lang=en](http://factfinder.census.gov/servlet/QTTTable?_bm=y&-geo_id=06000US25001070&-qr_name=DEC_1990_STF1_DP1&-ds_name=D&-_lang=en))

## Seasonal Population

It is difficult to gauge accurately the seasonal population as neither the federal nor state census covers this group. Peak summer population and projections, shown in *Table 8, Seasonal Population History and Projections*, were compiled in June 1982 by the Cape Cod Planning and Economic Development Commission (CCPEDC) and have been updated. July was assigned as “peak summer” since municipal water records indicate that peak water usage occurs during July. Peak summer population consisted of the total of three different segments of the population: the year-round residents, the population in second homes who visit during the summer, and the population in non-dwelling accommodations (motels, campgrounds, trailer parks and children’s camps). This represented a peak seasonal density of approximately 700 persons per square mile for the Town of Wellfleet.

**Table 8 Seasonal Population History and Projections**

<u>Year</u>	<u>Winter Population</u>	<u>Change</u>	<u>Winter Density</u>	<u>Peak Summer (July) Population</u>	<u>Peak Summer (July) Density</u>
<i>history</i>					
1980	2209		108	15,470	707
1985	2352	143	115	15,762	770
1990	2644	292	129	16,839	823
1995	2875	231	140	17,968	878
2000	2749	229	135	18,849	921
<i>projections</i>					
2010	2964	215	145	21,044	1,030
2015 <sup>1</sup>	3278	314	160	23,078	1,030
2015 <sup>2</sup>	6081	3,117	298	23,981	1,173

<sup>1</sup> – Assumes current mix of year round and seasonal homeowners remains the same

<sup>2</sup> – Assumes current percentage of seasonal units reduced by half, representing significant growth in housing used year round. (Baby-boomers retiring)

Note: Discrepancies between Tables 2, 3 and Table 8 winter 1990 figures are due to the use of different sources.

**Source: Commission (Cape Cod Commission) Outer Cape Capacity Study**

According to National Park Service records, several million people each year visit the National Seashore and Outer Cape communities. Although seasonal population is expected to increase, this will probably occur at a significantly slower rate than that of the year-round population. Increased visitation of all types can be expected to tax open space and natural resources proportionally.

### **Population Projections**

Table 8 indicates an 8% increase in the year-round population by the year 2010, a little less than the recently observed growth rate of 1% per year. As noted previously, this increase will center primarily on lands not included within the boundaries of the National Seashore. Additionally, the peak summer population is expected to increase almost 12% in the same time period. The summer population surge of 600-700% brings unique pressures to bear on the town in the way of open space use, services, and water resources in particular. When assessing Wellfleet's open space and recreation resources, it is important to realize the high stress put upon natural systems during these peak population periods. As the winter population increases over time, there will be serious impacts to be addressed. The town's capacity for further development and its need for

open space must be considered in regard to this eventuality. For more information regarding future growth scenarios, see Section 4D, below.

**Income (U.S. Census)**

According to the Cape Cod Commission’s Cape Trends data, between 1989 and 1999 Barnstable County led the 14 Massachusetts counties both in the rate of median household income growth and in the decline in percent of families with income below poverty level. Cape Cod median household income increased 44.6 percent (from \$31,766 in 1989 to \$45,933 in 1999), compared with statewide growth of 36.7 percent (from \$36,952 in 1989 to \$50,502 in 1999). Median income growth in the Town of Wellfleet rose an incredible 80.4 percent from \$24,149 in 1989 to \$43,558 in 1999, the highest rate of all Cape towns and double that of the state.. However in spite of the increase, the actual income dollar figure ranked only 8<sup>th</sup> in the county. Table 9, *Median Household Income in Wellfleet*, shows decennial census figures for the years 1979, 1989 and 1999.

**Table 9 Median Household Income in Wellfleet**

Median Household Income in Wellfleet							
	1979		1989		1999		
Town	Income	County Rank	Income	County Rank	Income	County Rank	% Change 1989-1999
Wellfleet	\$12,816	14	\$24,149	14	\$43,558	8	+80.4%

Source: Cape Cod Commission Web site  
<http://www.capecodcommission.org/data/CapeTrends-Population080504.pdf>

Clearly, Wellfleet ranks relatively high in income compared to other Massachusetts towns, though it still falls below the Cape average. The marked percentage increase during the 1980’s, however, is without explanation. One reason may be that many of the higher income town residents have higher off-Cape incomes and commute to work and/or use their Cape address as their primary residence for tax purposes, thereby inflating the income figures for their towns. In other words, income in those towns may not be earned in those towns. Also, as can be seen by looking at Table 10, *Town and State Labor Force, Employment and Unemployment Figures 1990-2003*, many jobs on the Cape fall into the lower wage sectors of retail sales, construction and tourism-related services, which are seasonal and dependant on variable factors such as weather, public safety, etc.

## Labor Force, Employment and Unemployment

### Cape Cod

U.S. Census data indicates that over the past decade, the resident labor force (employed and unemployed) in Barnstable County increased by 17,329 or 19.3 percent, from 89,855 in 1990 to 107,184 in 2000. Resident workers age 16 and up increased by 17,413 or 21.3 percent, from 81,784 in 1990 to 99,197 in 2000. Self-employed residents increased by 2,807 or 28.7 percent, from 9,766 in 1990 to 12,573 in 2000, while Cape residents who worked at home increased by 1,752 or 51.7 percent over the decade, from 3,392 in 1990 to 5,144 in 2000. Official data of the Massachusetts Division of Employment and Training (DET) derived from employers' reports indicate job growth of 25.9 percent over the decade in Barnstable County, a gain of 18,250 jobs from an annual average of 70,333 in 1990 to 88,583 in 2000. All of this data illustrates the healthy economic growth occurring in Barnstable County during the last decade with a notable trend towards greater worker autonomy as there was a 50 percent increase in the number of people working at home.

### Wellfleet

Table 10, *Town and State Laborforce, Employment and Unemployment Figures 1990-2003*, and Chart 2 *Town and State Unemployment Comparisons 1990-2003* show Wellfleet labor force, employment and unemployment figures for the years 1990-2003 as well as state unemployment figures for comparison purposes.

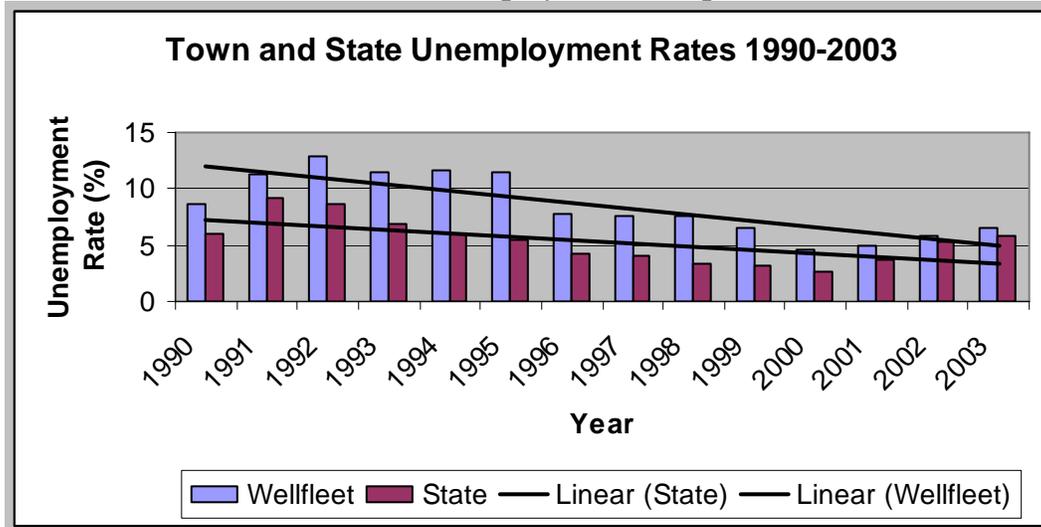
**Table 10 Town and State Laborforce, Employment and Unemployment Figures 1990-2003**

Year	Town Labor Force	Town Employed	Town Unemployed	Town Unemployment Rate (%)	State Unemployment Rate
2004	1,660	1,561	99	6.0	5.1
2003	2,149	2,010	139	6.5	5.8
2002	2,113	1,989	124	5.9	5.3
2001	1,596	1,516	80	5.0	3.7
2000	1,531	1,460	71	4.6	2.6
1999	2,048	1,915	133	6.5	3.2
1998	2,026	1,872	154	7.6	3.3
1997	1,997	1,845	152	7.6	4
1996	2,000	1,844	156	7.8	4.3
1995	2,074	1,835	239	11.5	5.4

1994	2,038	1,799	239	11.7	6
1993	2,013	1,782	231	11.5	6.9
1992	1,946	1,695	251	12.9	8.6
1991	1,884	1,672	212	11.3	9.1
1990	1,820	1,663	157	8.6	6

Source: Mass DET Web site ([http://lmi2.detma.org/lmi/lmi\\_town.asp](http://lmi2.detma.org/lmi/lmi_town.asp)) and <http://www.infoplease.com/ipa/A0931330.html>

**Chart 2 Town and State Unemployment Comparison 1990-2003**



Source: Massachusetts Division of Employment and Training website ([http://lmi2.detma.org/lmi/lmi\\_town.asp](http://lmi2.detma.org/lmi/lmi_town.asp))

They indicate that town and state unemployment rates followed the same annual trends during this period except for the years 1998 and 1999.. However, Wellfleet's annual unemployment rate has been consistently higher than the state's. Also in the last few years there has been a steady increase in unemployment rates, likely associated with the general economic downturn. However, the year 2004 showed a slight decrease in Wellfleet's unemployment rate from 6.5 percent in 2003 to 6.0 percent (Mass DET) which has continued into 2005 with the most recent unemployment rate at 4.3% (DET May 2005 figures). The economy continues to improve overall, which bodes well for the near future.

Table 11 *Employment and Wages by Industry in Wellfleet 2001-2003* shows that both employment and wages have increased slightly each year since 2001. Industries with the highest wages are consistently in the following sectors:

- Professional and Technical Services
- Real Estate and Rentals and Leasing
- Finance and Insurance
- Health Care and social assistance

Wages in Construction and Arts, Entertainment and Recreation were also notably and consistently high, possibly owing to the relatively large number of professional artists, musicians and actors in town.

Though not providing the highest wages, the largest employment sector is accommodation and food services followed by retail trade, owing to the town's large number of bed and breakfasts, restaurants and retail shops, all of which cater to tourists, primarily during the summer months.

These figures illustrate the town's thriving and diverse economy employing both professional and blue collar workers and its dependence on tourism. Though the shellfishing industry is not specifically categorized in this table, it is an extremely important and central industry in the town with the most recent figures estimating it at \$2.75 million annually.

**Table 11 Employment and Wages by Industry in Wellfleet 2001-2003**

Year	Industry	Establishments	Total Wages	Average Employment	Average Weekly Wage
2003	<b>Total, All Industries-- All Ownership</b>	171	\$27,441,191	918	\$575
	<b>Total, All Industries-- Private Ownership</b>	155	\$17,960,709	662	\$522
	Construction	22	\$2,629,389	74	\$679
	Retail Trade	37	\$3,482,217	158	\$423
	Finance and Insurance	4	\$851,787	21	\$780
	Real Estate and Rental and Leasing	9	\$651,898	18	\$693
	Professional and Technical Services	6	\$1,166,577	23	\$965
	Administrative and Waste Services	12	\$720,903	33	\$416
	Arts, Entertainment, and Recreation	5	\$614,980	19	\$617

	Accommodation and Food Services	33	\$4,936,249	201	\$473
	Other Services, Ex. Public Admin	15	\$572,595	32	\$350
<b>2002</b>	<b>Total, All Industries-- All Ownership</b>	<b>157</b>	<b>\$25,705,352</b>	<b>943</b>	<b>\$524</b>
	<b>Total, All Industries-- Private Ownership</b>	<b>143</b>	<b>\$17,010,065</b>	<b>675</b>	<b>\$485</b>
	Construction	20	\$2,030,937	66	\$590
	Retail Trade	36	\$3,304,226	169	\$376
	Finance and Insurance	4	\$752,807	21	\$701
	Real Estate and Rental and Leasing	9	\$1,020,828	20	\$990
	Professional and Technical Services	6	\$1,142,988	24	\$929
	Administrative and Waste Services	12	\$626,469	32	\$377
	Arts, Entertainment, and Recreation	5	\$647,078	17	\$718
	Accommodation and Food Services	31	\$4,866,369	216	\$432
	Other Services, Ex. Public Admin	9	\$528,546	27	\$375
<b>2001</b>	<b>Total, All Industries-- All Ownership</b>	<b>158</b>	<b>\$25,371,770</b>	<b>952</b>	<b>\$512</b>
	<b>Total, All Industries-- Private Ownership</b>	<b>144</b>	<b>\$16,461,575</b>	<b>683</b>	<b>\$463</b>
	Construction	20	\$2,226,385	76	\$566
	Retail Trade	35	\$3,175,122	172	\$354
	Finance and Insurance	4	\$690,639	22	\$613
	Real Estate and Rental and Leasing	10	\$834,170	21	\$767

Professional Technical Services	and <sub>6</sub>	\$1,038,704	25	\$813
Administrative Waste Services	and <sub>13</sub>	\$667,547	32	\$399
Health Care and Social Assistance	<sub>3</sub>	\$962,415	36	\$517
Arts, Entertainment, and Recreation	<sub>5</sub>	\$406,259	16	\$504
Accommodation Food Services	and <sub>33</sub>	\$4,571,836	209	\$421
Other Services, Public Admin	Ex. <sub>7</sub>	\$489,507	27	\$354

Source: Massachusetts DET

## Commuting Trends, 1960–2000<sup>6</sup>

### On-Cape Commuters

Off-Cape residents commuting into Barnstable County numbered 7,845 in 2000. Eighty percent (5,761) of off-Cape commuters working in Barnstable County came from neighboring Plymouth and Bristol counties: 61 percent (4,371) from Plymouth County, and 19 percent (1,390) from Bristol. Another 13 percent of off-Cape residents working on Cape hailed from the three-county Boston area: 355 or 5 percent from Norfolk County, 325 or 4.5 percent from Middlesex County, and 237 or 3 percent from Suffolk County. Providence County, Rhode Island, represented both the origin and the destination of 2 percent of Cape trips: 285 or 2 percent of Cape-resident commuters traveled to work there, while 159 or 2 percent of off-Cape residents commuting to work in Barnstable County were from Providence County.

### Off-Cape Commuters

Until 1980, off-Cape residents commuting onto the Cape outnumbered Cape residents commuting off Cape, but by 2000 outbound Cape commuters were nearly double their incoming counterparts. In April 2000, 14,493 of Barnstable County's 99,197 working residents commuted off Cape to work, almost half again the 10,477 who commuted in 1990. Over the past 40 years, Barnstable County population more than tripled from 70,286, while off-Cape commuting increased 1,440 percent.

<sup>6</sup> Most of the information contained in this section is taken verbatim and/or adapted from *Cape Trends*, published by the Cape Cod Commission and found on their Web site at: <http://www.capecodcommission.org/data/CapeTrends-Population080504.pdf>

Nine out of ten Cape commuters went to five adjacent counties. Nearly half (48 percent) of Cape commuters traveled to the three-county Boston area, and another 41 percent traveled to neighboring Plymouth and Bristol counties. With only county data available so far, the single top destination for Cape residents commuting off Cape in 2000 was Plymouth County, attracting 4,152 or 31 percent of Cape commuters. Another 1,264 or 9.5 percent of Cape commuters traveled to Bristol County. Boston-bound commuters included 2,767 or 21 percent of Cape commuters headed to Suffolk County, another 1,888 or 14 percent to Norfolk County, and 1,768 or 13 percent to Middlesex County.

### Off-Cape Commuting and Cape Population Growth Rates

The rate of growth in off-Cape commuting peaked in the 1970s when Cape commuters nearly tripled from 2,095 in 1970 to 6,239 in 1980, after doubling from 941 in 1960. Although the percentage of commuters has continued to increase in the past two decades, growth rates have slowed to double-digit from the triple-digit rates of the prior two decades. The 1980–1990 rate of growth in off-Cape commuting was 67.9 percent, falling by nearly half in the most recent decade to 38.3 percent. Still, that growth rate is double the 19- percent rate of overall Cape population growth from 1990 to 2000. In numbers, the 1980s saw the greatest 10-year gain in off-Cape commuters of the past four decades, up 4,238 from 1980 to 1990, ahead of the 4,144 added from 1970 to 1980 and the gain of 4,016 in the most recent decade. Overall Cape population growth peaked in the 1970s with the addition of 52,269 residents, followed by another 38,680 in the 1980s, and 35,625 in the 1990s. Over the past 40 years, off-Cape commuters as a share of all Cape residents grew fivefold, from 1.3 percent of all residents in 1960 to 6.5 percent in 2000.

### **Who Is Commuting Off Cape?**

Nearly 15,000 Cape Cod residents —approximately 15 percent of the Cape ’s working residents —traveled off Cape to work in 2000, according to Cape Cod Commission staff analysis of new town-level data from U.S. Census 2000. The data were collected on the long-form U.S. Census questionnaire distributed to one in seven households across the nation in April 2000. The Census question from which the data were derived sought the location where residents worked in the prior week and if at multiple sites, the location where residents worked most that week.

Residents from all 15 towns of Barnstable County commuted off Cape to work in April 2000, ranging from Bourne ’s 3,062 to Truro ’s 39. More than one third (34.9 percent) of all Bourne resident workers commuted off Cape to work, the highest proportion of any Cape town, followed by 25.3 percent of Sandwich resident workers, 20.3 percent of Mashpee’s, 15.5 percent of Falmouth ’s and 11.5 percent of Barnstable ’s. Dennis followed with 10.4 percent of resident workers commuting off Cape, while Provincetown had the Cape ’s lowest proportion at 3.7 percent. Wellfleet had the 4<sup>th</sup> lowest number of off-Cape commuters in 2000 at 5.6% of the total work force (Cape Cod Commission Cape Trends).

## **D. Growth and Development Patterns**

### **1. Patterns and Trends**

Wellfleet has changed from the small fishing village that it was in the middle of the seventeenth century to a largely summer resort and retirement community, with art galleries and shell fishing as its main additional forms of business. Probably by far the single most important event to shape the character of Wellfleet was the establishment in 1961 of the Cape Cod National Seashore, about 8,000 acres of which are in the Town of Wellfleet. This represents approximately 61% of the land area of the town. There are 600 improved properties throughout the National Seashore built before September 1, 1959 which can remain in private ownership in perpetuity, some of which are in Wellfleet. Since September 1, 1959, a person can still buy private land and erect a house within the Seashore; however such property is subject to acquisition by the Seashore, which is empowered to purchase such land with the goal of preserving the park land in its natural state. While the overall effect of the Seashore on the town has been very positive, in terms of preserving open space, it has had the effect of concentrating the town into about one third of its otherwise available area. Ecosystems like the kettle ponds and Herring River basin are at least partially under the land management policies and guidelines of the National Park Service; however, significant portions of these systems are outside the Seashore, on private or town owned land within the Seashore boundaries, or otherwise affected by the jurisdiction or physical manipulations of the state or town agencies, e.g. for mosquito control, fisheries and water management, etc.. The resultant jurisdictional mosaic necessitates close cooperation among federal, state and local authorities, and interested individuals, to effectively (and collectively) preserve public resources. A good example of this is the Herring River Estuary, where Town, Seashore and State must join forces if we are to save a now dying estuary and herring run.

Notable trends to be considered include the increasing conversion of seasonal homes to year-round use, and the impact of potential development of privately owned recreational facilities including the drive-in theater and Wellfleet's two campgrounds. Such changes could dramatically alter the open space and recreation makeup of the town. The most important trend, however, remains the quick approach to buildout, discussed further in Section 3-D3, below.

These trends leave us to make difficult but necessary choices about the next steps in the evolution of our town. The ongoing building boom which is affecting the entire region reflects the economy and translates into more numerous and better paying jobs. Yet there is a certain level at which the economic benefits of development are outweighed by the strain placed on natural resources and infrastructure. Should our fast approach towards buildout continue? How can we provide affordable housing within our town? Can we slow it down even if we want to? Should we work harder to protect the little remaining open space for both our economic and non-economic needs? How much open space do we need as a community? These are difficult questions even in a town which enjoys so much open land within the bounds of the National

Seashore. Only so many people can be squeezed into one place before traffic gridlock and ecological damage stifle the economic and environmental lifeblood of the town.

**2. Infrastructure**  
**a. Transportation system**

Wellfleet is approximately 110 miles southeast of Boston, 135 miles east of Worcester, 110 miles east of Providence, R.I. and 285 miles northeast of New York City. Access to the Cape from Metropolitan Boston and areas north and west, is provided by I-93, I-95, I-495 and Route 3. Access from Providence R.I., New York and south is provided by Interstate Routes I-95, I-195 and State Route 6. Route 6 (Mid-Cape Highway) is the principal highway serving the Cape, and the only access highway to the outer Cape north of the Orleans rotary. This highway narrows to two lanes at the Wellfleet/Eastham town line, and is heavily traveled in the summer months. Daily traffic volume monitored at the Eastham/Wellfleet town line averaged 18,168 in 1996, ranging from 13,450 vehicles per day in January to 24,883 per day in July. According to the Route 6 Outer Cape Traffic Flow & Safety Study<sup>7</sup>, in 1999 existing annual average daily traffic in Eastham was up to 26,000, jumping to 33,000 in 2000. For Wellfleet it was expectedly lower but still relatively high at 19,000 and 27,000 respectively. These number increase considerably during the summer. Consideration must be given to the fact that since visitors and residents rely on private transportation, growth planning must include traffic and parking facilities.

Air service is provided to the Cape at Barnstable and Provincetown airports. Bus service is provided from Hyannis to Provincetown by the Plymouth and Brockton Street Railway Company which also has regular service to and from Boston and Cape Cod. In addition to daily connecting service to and from Hyannis to Wellfleet and beyond, adjusted slightly both ways for the tourist season, the Company has recently added direct service to Boston from nearby Orleans and vice versa.

Regional Transit Authority provides B-bus and dial-a-ride, which services mainly the elderly and handicapped; with the growth of the retirement community, the demand for this has increased significantly as can be seen from data supplied by the Authority which show that ridership (round trip) on a typical off seasonal month (February) was 13,433 in 1990 and 17,395 in 1997 for an increase of 29 percent.

**b. Water Supply System**

While much of Wellfleet uses private wells for their water there is a public water supply system. In response to an Administrative Consent Order, the Town has expanded the Public Water System by extending the water main from Cole's Neck Road and Pole Dike Road with an 8-inch and 12-inch water main along Pole Dike Road, West Main Street, Bank Street to Commercial Street, and Commercial Street to Kendrick Avenue as far as Baker Field. The extension serves nine connections: five municipal facilities and four commercial properties.

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<sup>7</sup> See Cape Cod Commission website: [http://www.gocapecod.org/rt6outer/Route6\\_Final.pdf](http://www.gocapecod.org/rt6outer/Route6_Final.pdf)

The original wells located on Town property off Grist Mill Road have a permitted capacity of 20,000 GPD and are designed to serve approximately 50 residential connections to lots potentially subject to contamination from the old land fill and septage pit. In 2004, the town has also added a third well, significantly increasing the available GPD and increasing the total connections to 57. This additional well is tied into the old marina area near the pier (personal communication with Kevin Cahoon).

The DEP has approved long term pump tests up to 99,900 GPD at three sites: the Cole's Neck area site, the Scout Camp site and the Wellfleet-by-the-Sea site. Tests have been conducted at the first two sites and approved for the installation of wells at each site with a capacity of 99,900 GPD.

The Town has installed a well with a permitted capacity of 99,999 GPD at the Cole's Neck area site.. This capacity could serve about an additional 250 residential equivalents and could serve "down town" including a number of municipal and commercial facilities in addition to the original 50 or so lots. The addition of a storage tank could permit the use of all of the allowable 99,999 GPD. The USGS has conducted simulations of long term pumping at the three approved test sites. The simulation indicated no damage to the aquifer. The water level of Duck Pond was reduced by about six inches and there was a reduction of run-off to the Herring River. There are no standards for surface water effects and some sort of environmental assessment would be required to determine if there would be any environmental damage to Duck Pond, Vernal Pools and the Herring River.

To help further address water quality and quantity issues in the downtown area, Coastal Zone Management (CZM) Stormwater Remediation Grants are being sought to upgrade stormwater runoff facilities. There is also discussion about planning for a forced stormwater pumping system to reduce runoff impacts to Duck Creek.

The Dyer Pond wellhead protection district currently has no wells within its bounds and none are planned. The town is divided on whether to fund the expansion of the municipal water supply system. The DEP is looking at the proximity of leach areas and septic systems in some places and considering mandating a connection to the municipal water supply system or the construction of a sewer system (personal communication with Kevin Cahoon).

**c. Sewer service.**

The town has no public sewer system, though it is being considered as one potential way to address water quality problems, particularly in the downtown area.

**3. Long term development patterns**

In the past the town developed organically around the main commercial area near the coast and then later along the Route 6 highway. Over time, residential areas expanded outwards from there. Planning for future development trends depends largely upon existing zoning district delineations and bylaws. For zoning purposes, the Town is divided into the following districts:

Central District -----	CD
Residential 1 -----	R1
Residential 2 -----	R2
National Seashore Park -----	NSP
Commercial -----	C
Commercial 2 -----	C2

The objectives of these districts are as follows.

Residential 1(R1) - To provide moderate density residential environment in areas generally unserved by public utilities, but containing land characteristics to accommodate such densities without endangering the public’s health, safety or welfare.

Residential 2 (R2) - To provide for variety and choice in residential environments and compatible employment opportunities; avoiding the creation of hazards or congestion and wherever possible maintaining the character of rural environs.

Central District (CD)- To provide concurrent development of residential and non-residential uses subject to conditions to assure spatial segregation of incompatible uses.

Commercial (C)- To provide for small and moderate-scale business development for local and transient service, at the same time preserving or enhancing ocean views from highway, preserving or enhancing landscaping, minimizing visibility of parked autos, and avoiding creation of hazards or congestion.

Commercial 2 (C2) – To provide for small and moderate-scale business development for local and transient service, low-intensity light industrial and enhanced service trade use.

National Park (NSP)- To provide for those residential and commercial uses that do not conflict with the regulations governing the activities of the National Seashore Park and are not incompatible with the character of the park, including the preservation of natural and scenic areas, as well as providing of certain recreational and leisure time activities for users of the park.

Map 2, *Zoning Map*, delineates these zoning districts. Areas left white are residentially zoned. The National Park District employs three acre zoning for residential lots within its bounds.

Table 12, *Intensity of Use Schedule*, governs minimum lot area, minimum frontage, minimum setbacks (yard requirements), maximum building coverage, and maximum building height. Also proposed are zoning changes which will allow local service trades to operate within current residential zones without harming the quality of neighborhoods.

**Table 12 Intensity of Use Schedule**  
 (Amended 4/30/85 ATM, Art. 61 & 63; 4/29/86 ATM, ART.22)

<b><u>INTENSITY OF USE SCHEDULE</u></b>						
<b>ZONE</b>	<b>CD</b>	<b>R1</b>	<b>R2</b>	<b>NSP</b>	<b>C</b>	<b>C2</b>
<b><i>Minimum Lot requirements</i></b>						
Area, Square feet	20,000	30,000	40,000	3 Acres	40,000	30,000
Frontage, feet	125	135	135*	200	200	135
<b><i>Minimum Yard Requirements</i></b>						
Front, feet	25	30	30**	50	100***	50
Side, feet	20	25	25	35	35	35
Rear, feet	25	30	30	35	35	35
<b><u>Maximum Building Coverage</u></b>	15%	15%	15%	5%	25%	15%
<b><i>Max height of Buildings</i></b>						
Stories	2	2	2	2	2	2
Feet	28	28	28	28	28	28

- \* Increase to 200 on route 6
- \*\* Increase to 300 on route 6
- \*\*\* Of which, not less than 25% of the required front yard must be maintained with vegetative cover.

**Source: Town of Wellfleet Website**

Based on the current zoning map commercial development is only allowed along extended portion of Route 6, the downtown Central District, and in scattered pockets to the northwest. Each of these areas is already commercially developed. The majority of the town outside the CCNS Park is residentially zoned and developed. Conservation lands protected by public and private groups are well distributed throughout town, with a particular concentration around coastal and inland wetland areas (see Section 4 for in depth discussion of wetland resources).

**Growth Control, Open Space and Affordable Housing**

Today the town is experiencing the boom and bust cycle brought on by the development rush of the 1980's followed by the economic downturn experienced for most of the 1990's. The regulation and control of growth is a priority, but this continues to be a period of time when the town is attempting to play "catch-up" in developing infrastructure and services needed to serve the development boom of the 1980s and 1990s. For many of the most important issues facing the town, the state can act as a planning partner by providing technical assistance as well as

incentive and funding programs. One of the most important programs recently instituted is the Community Preservation Act which, through its enactment, recognizes the importance for working now to shape a community's long term development patterns.

### The Community Preservation Act<sup>8</sup>

The Community Preservation Act (CPA) was signed into law by former Governor Paul Cellucci and Lt. Governor Jane Swift on September 14, 2000. The CPA allows communities to create a local Community Preservation Fund in the municipality to be used through a surcharge of up to 3 percent of the real estate tax levy to be spent on real property for open space, historic preservation and low and moderate income housing. The act also creates a significant state matching fund of more than \$25 million annually, which will serve as an incentive to communities to take advantage of the provisions of this legislation. As noted in Table 13 *Community Preservation Act Details* the town passed the CPA in 2004 by popular referendum.

The CPA is an innovative tool for communities to address important community needs. Once adopted locally, the Act requires at least 10 percent of the monies raised to be distributed to each of three categories: historic preservation, open space protection and low and moderate income housing, allowing the community flexibility in distributing the majority of the money for any of the three categories as determined by the community. Each of the three areas highlighted by the fund is an important focus for Wellfleet's open space and recreation planning. To assist in identifying the town's future needs, the state Executive Office of Environmental Affairs (EOEA) sponsored the creation of a set of buildout maps and analyses for all 351 cities and towns within the Commonwealth of Massachusetts.

**Table 13 Community Preservation Act Details**

Wellfleet Community Preservation Act Details	
Date of passage:	5/2/2005
Vote count of passage:	Passed election 7565 yes, 3448 no (69% yes)
Percentage:	3%
Exemptions:	None
Description of spending:	
Contact:	300 Main St. Wellfleet, MA 02667 Phone: 508349-0300

Source: EOEA Web site  
([http://commpres.env.state.ma.us/community/cmt\\_main.asp?communityID=20#Absolute](http://commpres.env.state.ma.us/community/cmt_main.asp?communityID=20#Absolute))

<sup>8</sup> Much of the following information was taken verbatim from the Massachusetts Executive Office of Environmental Affairs (EOEA) Web site at <http://commpres.env.state.ma.us/content/cpa.asp>.

## Buildout Analysis<sup>9</sup>

To help communities consider and address questions regarding future community issues and needs, the state EOEА sponsored the creation of a set of buildout maps and analyses for all 351 cities and towns within the Commonwealth of Massachusetts. The maps and analyses developed by EOEА depict currently developed and protected land within a community and what a community would look like if remaining undeveloped land was completely developed in accordance with current local zoning maps and ordinances (see Map 1, *Zoning*, for more details).

Given the home rule nature of Massachusetts land use governance, EOEА thought it was critical to provide all 351 cities and towns this useful tool to explore growth and development planning. The buildout project allows every community to see its current and potential future development, and determine whether or not it is near buildout, or growth pressures are scarce. Another intent of the project is to inspire communities to work together across borders to address issues such as shared water supplies that pay no attention to political borders.

A buildout analysis consists of a series of 4-5 GIS maps that visually show a community its development patterns and future growth projections based upon existing local zoning. The maps act as storyboards that unfold a picture of land use decisions the community has made to date and what these decisions may mean for the community in the future. These buildout maps project the default scenario for growth by graphically illustrating what the community may look like if all remaining developable lands were developed to their maximum potential based on existing zoning. Thus, the buildout provides a good basis for decisions about future development and potential impacts on the community.

EOEA contracted with Massachusetts' 13 regional planning agencies to utilize a common methodology to develop buildouts for communities within their jurisdiction. A standard protocol was followed which involved meetings with local officials to acquire current information, confirm assumptions and customize this standard methodology to reflect the details of each individual community's unique zoning regulations. In fact, some communities that are closer to buildout chose to conduct redevelopment analyses in areas of underutilized sites where new development might be seen as an improvement to the community.

The summary data below is for the Town of Wellfleet. This data profile includes summary statistics that are a component of a buildout map and analysis series. The analysis starts with available land in each zoning district and makes projections of additional housing units and commercial/industrial space according to each district's minimum lot size and other regulations. The projections only account for as of right development and do not include development by special or comprehensive permit that may increase the amount of development. These buildout

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<sup>9</sup> Most of the information contained in this section is taken verbatim and/or adapted from the EOEА Web site.

projections were combined with U.S. Census 2000 and other data to create a profile of each community at buildout according to its current zoning.

**Table 14 Wellfleet Buildout Analysis Summary**

<u>Wellfleet Buildout Analysis Summary</u>	
Buildout completion date: 2000	
<b>Demographic Projections</b>	
<b>Residents</b>	
1990	2,493.00
Current	2,749.00
Buildout	3,709.00
<b>Students (K-12)</b>	
1990	354.00
Current	384.00
Buildout	497.00
<b>Residential Units</b>	
1990	1,129.00
Current	3,998.00
Buildout	4,434.00
<b>Water Use (gallons/day)</b>	
Current	24,041.10
Buildout	267,625.10
<b>Buildout Impacts</b>	
Additional Residents	960.00
Additional Students (K-12)	113.00
Additional Residential Units	1,364.00
Additional Developable Land Area (sq ft)	55,991,327.00
Additional Developable Land Area (acres)	1,285.00
Additional Commercial/Industrial Buildable Floor Area (sq ft)	2,283,154.00
Additional Water Demand at Buildout (gallons/day)	243,584.00
Residential	72,347.00
Commercial and Industrial	171,237.00
Additional Solid Waste (tons/yr)	495.00
Non-Recyclable	143.00

Recyclable 352.00  
Additional Roadway at Buildout (miles) 21.00

**Source:**

[http://commpres.env.state.ma.us/community/cmt\\_profile.asp?communityID=318&communityName=Wellfleet&communityCode=wflt&communityType=](http://commpres.env.state.ma.us/community/cmt_profile.asp?communityID=318&communityName=Wellfleet&communityCode=wflt&communityType=)

**Notes:**

1. "Developable Land Area" includes undeveloped upland that has not been subdivided. Both salt and fresh water wetlands were excluded from the residential and comm./ind undeveloped land.
2. "Residential Water Use" is based on 75 gallons per person per day.
3. "Comm./Ind. Water Use" is based on 75 gallons per 1,000 square feet of floor space
4. "Municipal Solid Waste" is based on 1026 lbs. per person per year. All waste estimates are for residential uses only
5. "Non-Recycled Solid Waste" is a subset of the Municipal Solid Waste and is based on information from the EPA report "Characterization of Municipal Solid Waste in the U.S.", 1994 update.
6. The number of "Students" at buildout is based on a student per household ratio taken from external demographic estimates, including student population from town
7. "New Roads" are based on an assumption that 60 percent of the new residential lots will have required frontage on new roads. Town and Commission planners feel this is a "worst case" number and road mileage would be less due to reduced frontage in cluster sub
8. No new residential lots are expected to have more than one dwelling Additional dwellings come from affordable housing on municipal land. developments.

**Source: EOE A Web site**

[http://commpres.env.state.ma.us/print/pcmt\\_profile.asp?communityID=20&communityName=Barnstable&communityCode=barn&communityType=TownWithCityGvt&displayType=&regionID=CPIS&regionName=Cape+Cod+and+Islands](http://commpres.env.state.ma.us/print/pcmt_profile.asp?communityID=20&communityName=Barnstable&communityCode=barn&communityType=TownWithCityGvt&displayType=&regionID=CPIS&regionName=Cape+Cod+and+Islands)

The buildout scenario, by definition, attempts to illustrate what the town will look like when completely developed. Thus, all trends and impacts are upwards and usually dramatic. Based on the numbers provided by the EOE A, demographic projections indicate increases of at least 10 percent in all categories: Population (35 percent), Students (29 percent), Households (11 percent), Water Use (1,000 percent)<sup>10</sup>. Due to these significant increases, it can be expected that impacts upon town services will be high. Increased traffic is likely to overburden some major roads, where gridlock is already a problem. Schools may not be able to accommodate larger numbers of students. Issues with water and wastewater are likely to intensify, particularly since water use is expected to increase an incredible eleven times its current rate. The number and availability of open space and recreation facilities will need to keep pace with the needs of a growing population.

According to the Outer Cape Capacity Study (OCCS) (1997) and the 1995 LCP projections, buildout in Wellfleet is expected to occur sometime between 2042 and 2060 depending on growth rates (1995 LCP, p. 1-18, and LCP Figure 1-2). Findings from that study vary somewhat from the state's buildout projections, however they tell a similar story of intense impact. In short, the OCCS residential buildout analysis estimates that an additional 2,400 homes could be

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<sup>10</sup> Percentage calculation conducted by Helios Land Design based on EOE A figures.

developed under existing zoning regulations; a total of 6,000 dwelling units<sup>11, 12</sup>. This represents an increase of 66% over 1990 total of 3,600 building units. The commercial buildout analysis estimates that up to 602,200 square feet of commercial floor area could be developed in the Central District (4,400 s.f. buildout per lot) and 1,031,200 square feet could be built in the Commercial District (19,100 s.f. buildout per lot). Based on these numbers and other findings, buildout in Wellfleet could nearly triple its current level of commercial development (LCP), although this number is considered to be unrealistically high by the Local Planning Committee and further details need to be ironed out to arrive at a firmer estimate<sup>13</sup>. Suffice it to say, however, that buildout will mean a very different Wellfleet from the one we know today.

## **Affordable Housing and Open Space**

The Commonwealth of Massachusetts encourages the creation of more affordable housing for its citizens through the establishment and enforcement of M.G.L. Ch. 40B, The Massachusetts Comprehensive Permit Law, whose purpose is to increase the supply and improve the regional distribution of low and moderate income housing by allowing a limited suspension of existing local regulations which are inconsistent with construction of such housing (Mass DHCD Web site: <http://www.mass.gov/dhcd/ToolKit/ch40Bgl.htm>).

Prior to applying for a comprehensive permit, a proposal to build affordable housing must receive preliminary approval (normally a Project Eligibility or Site Approval letter) under a state or federal subsidy program. The application, containing the eligibility letter and preliminary development plans, is then filed with the local zoning board of appeals. The board then notifies and seeks recommendations from other local boards.

The zoning board of appeals holds a public hearing to ensure that local concerns are properly addressed. Local concerns include health, safety, environmental, design, open space and other concerns raised by town officials or residents. In making its decision, the board acts on behalf of all other town boards and officials, but only with regard to matters where local restrictions are more stringent than state requirements. The board can issue a single comprehensive permit, which subsumes all local permits and approvals normally issued by local boards. It can also issue a comprehensive permit with conditions or deny the permit. If a comprehensive permit is granted, the applicant, prior to construction, must normally present final, detailed construction plans to the building inspector or similar officials to ensure that the plans are consistent with the comprehensive permit and state requirements.

The general principle governing hearings before the local board and the Housing Appeals Committee is that all local restrictions, as applied to the proposed affordable housing, are "consistent with local needs." General Laws c. 40B, § 20 defines consistency with local needs as being reasonable in view of the need for low and moderate income housing balanced against

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<sup>11</sup> Table 14 from the state's figures shows only a total buildout of 4,434 units - and additional 1,364 units over current

<sup>12</sup> Of the total potential increase, it is estimated that 1,662 dwelling units can be developed on 1,783 acres of vacant land (0.93 units per gross acre); the remaining 695 units represent parcels that are currently developed but have enough area to be subdivided for additional homes (see p.1-14 of LCP)

<sup>13</sup> It may be found that revised OCCS figures are more in keeping with the State's figures.

health, safety, environmental, design, open space and other local concerns. If less than 10 percent of municipality's total housing units are subsidized low and moderate income housing units, there is a presumption that there is a substantial housing need which outweighs local concerns. See 760 CMR 31.07(1)(e); Board of Appeals of Hanover v. H.A.C., 363 Mass. 339, 367, 294 N.E.2d 393, 413 (1973).

In addition to M.G.L. Ch. 40B, the Community Preservation Act also encourages spending on affordable housing, requiring that at least 10 percent of generated revenues be spent on affordable housing.

In Wellfleet there is an active push to create more affordable housing spearheaded by the Wellfleet Housing Authority in order to be consistent with the state's requirements. Table 15, *DHCD Wellfleet Affordable Housing Inventory*, indicates only a 2.7 percent affordable housing inventory, well below the state-mandated 10 percent.

**Table 15 DHCD Wellfleet Affordable Housing Inventory**

<b>DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT (DHCD) CHAPTER 40B SUBSIDIZED HOUSING INVENTORY</b>				
<b>Community</b>	<b>2000 Census Year Round Housing Units</b>	<b>Total Development Units</b>	<b>Total SHI Units</b>	<b>Percent SHI Units</b>
Wellfleet	1,430	39	39	2.7

Source: Mass. DHCD Web site (<http://www.mass.gov/dhcd/ToolKit/shi.pdf>)

However, the creation of more affordable housing can often present a challenge to open space and recreation planning efforts when developments are proposed on land that may also be valuable for open space and recreational purposes. Even though the state's description of the CPA states "there is a presumption that there is a substantial housing need which outweighs local concerns", not all would agree with this, particularly when important natural resource values can be overlooked. However, according to the Wellfleet Housing Authority (WHA) co-chair Elaine McIlroy, when the WHA pursues land for potential affordable housing development, it consults with other town boards that have an interest in that property and together they arrive at a mutually agreeable solution. Wherever possible, affordable housing projects will incorporate open space and recreation interests into their developments. This has occurred on the project slated to be built on Paine Hollow Road, where the WHA has agreed to set aside approximately half of the four acre site for open space (personal communication with Elaine McIlroy, Co-Chair of the WHA, 7-19-05).

Currently, the town has identified two parcels of land that could support construction of affordable housing. The town will continue to search for other such parcels while working to

prepare these sites for construction. Below is a brief description of the two highest priority parcels slated for affordable housing development<sup>14</sup>.

1. Paine Hollow Road

The Paine Hollow Road property is approximately 4 acres with half the land being set aside for open space. A total of 11 rental bedrooms are intended and a Request for Proposals from qualified firms is open until approximately September 2005.

2. Gull Pond Road

The Gull Pond Road property is approximately 2.9 acres slated for two clustered buildings with a total of 9 bedrooms for ownership. The current Request for Proposals for qualified developers has been extended indefinitely.

The town's Open Space/Land Bank Committee has reviewed and approved use of these properties for affordable housing purposes and the land has been designated for use as such at Town Meeting. Also, the WHA is examining the potential for affordable housing in and around the land near the nine-acre Senior Center/Council on Aging property, which directly abuts a vacant commercially zoned 12-acre parcel and a town-owned seven-acre CCNS in-holding. In addition to these immediate housing projects, the WHA has the following long term goals (Ibid.):

1. Development of additional senior/elder housing; and,
2. Establishment of a dialogue with the Cape Cod National Seashore (CCNS) regarding the potential use of town-owned properties lying within the boundaries of the Park;

In order for the town to achieve the state-mandated goal of 10 percent subsidized housing inventory and also to achieve its open space and recreation planning goals, it will need to continue to cooperatively identify and purchase lands for each of these uses. To accomplish this, the Wellfleet Housing Authority should continue to meet with the Conservation and Recreation Departments, the CCNS, the Planning Department and the Open Space/Land Bank Committee to discuss and identify needs and ways to integrate their specific interests.

### **Commercial, Industrial and Large Scale Residential Development Projects**

The following notable development projects are currently underway in Wellfleet:

- New boat ramp construction – the boat ramp is being completely rebuilt under a funding grant from the State; ramp building completion is expected in September of this year.
- Herring River Estuary Project (see discussion in Section 4F)

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<sup>14</sup> Descriptions of these parcels provided by Elaine McIlroy, personal communication 7-19-05.



**Photo Credit:** Nathan Johnson, Orion (Wellfleet Shellfish website)

## **A. Geology, Soils and Topography**

### **1. Geology**

The Wellfleet area of Cape Cod was formed some 12,000 years ago during the final glacial era of the Wisconsin Stage of the Pleistocene Epoch (Strahler, 1966). Overlying the area's bedrock is approximately 400 feet of glacial sand and gravel (Chamberlain, 1964). Wellfleet is a plain resulting from morainal outwash. Strahler (1966) suggests there was an interlobate moraine between Cape Cod Bay and the South Channel glacial lobes, which was situated east of the present arm of the Cape.

As a glacial ice mass receded, boulders and ice blocks were deposited on the scoured countryside. Granite rocks can still be seen scattered throughout Wellfleet. The larger ice blocks formed kettle holes and hollows after glacial retreat. The ice blocks melted slowly and outwash materials deposited around them. The resulting depressions filled with water to form ponds. Hollows were open and were unable to retain water because of sectional erosion. Great Pond, Duck Pond, and the ponds east of the Herring River are examples of the kettle ponds. Hollows are more numerous, and Dyer's Hollow, Cahoon's Hollow, and Snow's Hollow are typical examples.

Present geography is also the result of postglacial modifications. Channels in outwash deposits evolved into rivers such as the Herring and Blackfish Creek. Rising sea level punctuated by storm wave action cut deeply into the coastline forming the steep marine scarps (e.g. Indian Neck) on both bay and ocean shorelines. Wave action introduced another modification - shoreline sediment drifting. In the last century, Bound Brook Island, Griffin Island, Great Island and Great Beach Hill were all independent islands. However, due to southerly sediment movement and accretion, these "islands" were connected by narrow strips of land called tombolos. Jeremy Point was also formed from wave washed sand transported down the bay shore. The point constantly changes configuration with storm action.

Another modification of Wellfleet's coastal zone was the formation of mud flats and salt marshes as sea level rise slowed about 4,000 years B.P. (Before Present). River and tidal silts were deposited and densely compacted, resisting the effects of erosion. With time and the stabilizing effects of vegetation like marsh grasses, shoreline deposits evolved into supratidal area and the first stages of terrestrial plant succession.

### **2. Soils**

Soils maps and data for Wellfleet were obtained from the U.S. Soil Conservation Service (currently Natural Resources Conservation Service). Soils are mapped on the basis of properties such as natural permeability, texture, slope and other features which can be interpreted to determine the limitations of a particular kind of soil for a specific purpose. Soils are depicted on Map 3, *Geology and Soils*, and soil limitations for specific land use are given in Table 16, *Soil Limitations for Specific Urban Land Use*.

**Table 16 Soil Limitations for Specific Urban Land Use**

**SOIL LIMITATIONS FOR SPECIFIC URBAN LAND USE**

<b>Soil Type</b>	<b>Septic System</b>	<b>Sanitary Landfill (trench)</b>	<b>Building</b>	<b>Acreage (% of total Acreage)</b>
Freetown & Swansea Muck	Severe-wetness	Severe-wetness-	Severe-wetness	170 (2.6%)
Ipswich & Pawcatuck Muck Peats	Severe-floods	Severe-floods	Severe-floods	1057 (16.4%)
Udipsamments, sloping	Severe-filter	Severe-sandy	Severe-slope	66 (1.0%)
Beaches	Severe-floods	Severe-floods	Severe-floods	162 (2.5%)
Freetown course sand	Severe-wetness	Severe-wetness	Severe-wetness	141 (2.2%)
Carver Course Sand				
0-3% slope	Severe-	Severe-	Slight	52 (0.8%)
0-8% slope	rapid	rapid	“	58 (0.9%)
3-8% slope	filter	filter	“	1286 (19.9%)
8-15% slope	“	“	Moderate	1892 (29.3%)
15-35% slope	“	“	Severe slope	1050 (16.3%)
Birdsall Silt Loam (-3% slope)	Severe-wetness	Severe-wetness	Severe-wetness	138 (2.1%)
Urban Land	- Not Rated -			311 (4.8%)
Sanitary Landfill (discontinued)	- Not Rated -			13 (0.2%)
Sand Pits	- Not Rated -			21 (0.3%)

Major factors limiting growth in the Town of Wellfleet, as in other Cape towns, are the limitations of on-site septic systems and contamination of the fragile water supply. In general,

soils fall into four major categories; muck, peat, silt and sand. The following is a description of the major soil types:

Carver Series. These are excessively drained soils that formed in deep deposits of coarse and very coarse sand. They are on outwash plains and terraces. Carver soils have sand and loamy sand surface soils, and coarse sand or very coarse sand subsoils. They contain only small amounts of gravel and are stone-free. The rapid permeability of the coarse sandy material causes these soils to be droughty. Carver soils are closely associated with the excessively drained Hinckley and Windsor soils. These soils are extremely acid and highly erosive; water moves rapidly downward.

Freetown and Swansea Mucks. Consists of nearly level, deep, very poorly drained organic soils in depressions and low flat areas of uplands and glacial outwash plains and terraces. They formed in 16 to 51 inches of black, highly decomposed organic material (muck) with moderate to rapid permeability, over sandy or loamy mineral material with very rapid permeability. They have a water table that is at or near the surface most of the year. Major limitations are related to wetness and low strength.

Birdsall Series. These are very poorly drained soils that formed in deep deposits of very fine sand and silt. They occur in depressions and on low-lying flat areas. Birdsall soils have gray or black surface soils, and gray subsoils. They are water-logged most of the year due to high water table or lack surface drainage.

Udipsammets (Dune Lands). Consists of highly quartzitic sand, gently sloping to very steep, deep excessively drained to poorly drained soils on coastal sand dunes. They formed in wind-deposited sand blown from nearby beaches. Udipsammets are vegetated sand dunes and are subject to deflation and deposition by the wind.

Urban Land. Consists of areas where the soil has been altered or obscured by buildings, industrial areas, paved parking lots, sidewalks, roads and railroad yards. These structures cover 75% or more of the surface area. Slopes range from nearly level to steep.

Ipswich & Pawcatuck Series. These are very poorly drained soils that formed in deposits of organic material over sandy material. They are on level tidal marshes adjacent to the ocean or on estuarine marshes, and they are regularly flooded by salt water. Soils have mucky peat surface and subsurface layers. They are underlain by loamy sand or sand at depths ranging from 16 inches to more than 51 inches. These soils are saturated with salt water all of the time.

Soils with wetness problems (muck, peat and saturated sands) account for about 1,560 acres, or 24% of town land (land inside the National Seashore has not been considered). About 345 acres (5%) is classified as Urban land, or developed with structures over more than 75% of the surface area. Steeply sloped land (surface slope over 15 to 35%) or surface slope so steep that construction is impractical, amounts to about 1,050 acres (16%). The remaining land, about 3,445 acres or 55%, consists of sand deposits.

Importantly, although these remaining 3,445 acres comprise soils that would be classified as appropriate for septic leaching under Title V, extremely high permeability allows effluent

(especially nitrates) to percolate freely and potentially affect groundwater supplies. In addition, soils and slopes which are currently unsuitable for construction, may become so in the future with engineering improvements and a greater demand for a quickly dwindling number of buildable lots. The use of composting and other alternative waste treatment systems will help to reduce the impacts of residential development even further but may also allow development on soils which were formerly unsuitable for leaching areas. Geology and soils are shown on Map 3.

## **B. Landscape Character**

Wellfleet is a narrow arm of land, extending out into the Atlantic. Probably its single most important asset, from a tourist point of view, is the Ocean beach below a dramatic sea cliff of glacial outwash. Fortunately for the town, this asset is well protected from development by the Cape Cod National Seashore. Its many fresh water kettle ponds are also an important recreational resource. While the National Seashore protects these from development, they are in danger of eutrophication from over use. This is much more difficult to control, as more and more people come into the town every summer, and go off in search of just such spots for swimming. For the rest of the Wellfleet, its small town, village character is valued by visitors and year round residents alike. The marshes and wetlands contribute not only to the scenic character of the town, but also are absolutely essential to support the shell fishing industry, which is by far Wellfleet's largest year round occupation. The Herring River, in Wellfleet, was the largest estuary on outer Cape Cod, before it was diked at the turn of the 20<sup>th</sup> century. It is still the longest all natural (i.e., no man-made "ladders") herring run on the Cape. A plan to restore the river is discussed in greater detail in Section 4F. - Water Resources. The town's character can be summarized as that of a rural fishing and retirement village which, in the summer, becomes a tourist haven.

## **C. Water Resources**

### **1. Salt Water Bodies**

Wellfleet's landscape character and 44 miles of salt water shorefront are a primary focus of informal outdoor activities and form the background for the town's tourist-based economy. Primary among these are shellfishing (commercial and recreational), recreational finfishing, boating, boardsailing, surfing, swimming, and walking. These activities are spread throughout the town's marine areas including the beaches of the Atlantic Ocean, and Cape Cod Bay. Major bayside public bathing beaches are at Indian Neck, Mayo Beach, Pleasant Point, Duck Harbor, The Gut, and Powers Landing. On the Atlantic Ocean within the Cape Cod National Seashore are Newcombs Hollow, Cahoons Hollow, White Crest, and LeCount Hollow (Maguire's Landing) beaches. The primary boat facilities are found in Wellfleet Harbor at the Marina. There are 217 slips, 270 moorings (350 cap), two launching ramps and boat storage areas as well as restroom facilities. With state funding, the boat ramp is being completely rebuilt and is scheduled for completion in September 2005. Sailing occurs everywhere, although more often on the calmer, more accessible bayside waters.

Surfcasting for bluefish and striped bass is a popular pastime along the beaches on the Bay and Ocean sides. Deep sea fishing is conducted by both private boats and charters which sail from the pier at Wellfleet Harbor. Off-road vehicles are not allowed on any beaches except by commercial shellfishermen who use their trucks to haul equipment and shellfish to and from grants off Indian Neck, Field Point, Mayo Beach, Blackfish Creek, and Chipman's Cove.

The Town of Wellfleet conducted a study of water quality of its embayments specifically regarding nitrogenous and bacterial pollution. The \$250,000 grant was administered through the Massachusetts Mini Bays Program, Wellfleet being the only harbor on Cape Cod to receive such a grant. The Town is presently hosting a State Estuaries Program study of the potential for nitrogen loading and eutrophication to its coastal bays and is the second year of data collection. To date the main findings have been that water quality problems are due more to confinement of waters by diking than they are to human use, septic leaching, and surface water runoff. Town meeting has recently voted further funds to continue to study this problem in order to find ways to solve it. Human uses, particularly domestic waste-water disposal, do impact water quality and almost all of Wellfleet's land area contributes via groundwater discharge to a coastal embayment, salt pond or estuary. Hence, land use throughout much of town can affect the quality of saltwater bodies.

(See Section 4F for further discussion of Herring River. See also, the Coastal Resources Element of the Local Comprehensive Plan, 1995)

## **2. Fresh Water Bodies**

The town's primary freshwater resources are its 13 kettle ponds, totaling over 284 acres of surface area. These ponds are all located within the National Seashore boundaries, with five having public access managed by the Town of Wellfleet. The kettle ponds of the Cape Cod National seashore are a unique and fragile resource with ecological, aesthetic, and recreational value. These ponds, dependent solely on the fluctuation in the aquifer's water table for their own surface level, often expose a wide shore during the summer when the water table is low. These exposed shorelines comprise the unique habitat called "coastal plain pondshores," which harbor rare and endangered plants, such as Plymouth gentian and long-beaked bald rush, and rare animals, such as the comet darner and New England bluet (damselflies). For several years now, the National Park Service has conducted and coordinated monitoring and research programs on the kettle ponds to investigate the status of pond water quality. These and other studies indicated there are five major areas of concern for pond water quality: (1) excess nutrient addition resulting in cultural eutrophication (cultural eutrophication is the term used to describe human induced addition of nutrients in excess of their natural quantity and rate of availability); (2) sediment addition from shoreline erosion; (3) possible public health hazards from bacterial contamination; (4) possible chemical pollution; and (5) potential acid rain impacts. (from CCNS data). The two most pressing of these are eutrophication, due to shoreline development and recreational use of the ponds, and acidification due to both cultural and natural causes.

Seven of the ponds are greater than ten acres in size, which classifies them as Great Ponds of the Commonwealth. The public owns Great Ponds and is entitled to access, while other ponds can

be owned privately by surrounding landowners and public access can be prohibited. Ownership and special characteristics of these ponds are detailed below.

Recreationally, the most important swimming ponds are Gull, Great, Long, Higgins, Dyer and Duck Ponds, each with a town landing. Swimming programs take place at Gull Pond for six weeks during the summer for children and adolescents three - 16 years old. Although boats can be used at all ponds in Wellfleet, gasoline-powered motors are prohibited. Therefore, pond boating is limited to canoes, kayaks, rowboats, sailboats, and other small craft.

A totally natural anadromous fish run extends up the Herring River corridor into the “Gull Ponds Chain” (Gull, Herring, Higgins, and Williams ponds) which serves as the headwaters of the river. Blueback and alewife herring, as well as white perch, spawn in all four. Catadromous American eels also use the run. Although the annual run of the herring represent an important ecological element of the river and provide a unique cultural attraction, herring can accelerate eutrophication by eating the zooplankton which normally feed on algae. Without this zooplankton, the algae is free to grow relatively unchecked. In addition, dying herring may contribute nutrients to the water.

### **3. Surface Water Quality**

Most of Wellfleet’s waters are generally of high quality, though problem spots exist. The Massachusetts Department of Environmental Protection<sup>3</sup> lists nearly all of the marine (salt) waters of Wellfleet as Class SA, the top salt water ranking, meaning they are an “outstanding resource” whose purity should be suitable for all types of water recreation, including swimming and shellfishing. The one exception is the Herring River, recently classified on the DEP 313d List of Impaired Waters for low dissolved oxygen, acidity and metals; all three water quality problems are the result of the long period of diking and wetland drainage; efforts are underway to restore the river’s water quality along with tidal flow and salinity (see below). All freshwater ponds are included in Class B, the top freshwater ranking for ponds not used as a source of a public drinking water supply. These ponds must be maintained at a high level of purity and are not supposed to be degraded by point source discharges, such as sewage outfalls. In fact, it is non-point sources of pollution (road runoff, septic systems, lawn maintenance, etc.) that are the more potent threat to water quality of ponds and bays in Wellfleet.

Recharge areas are land areas that collect precipitation and release it to the ground water system and to surface water bodies, such as ponds, streams and bays. Recharge areas are much more relevant on Cape Cod, where sandy soils readily transmit groundwater, rather than land surface watersheds that contribute most water to ponds and bays off-Cape. Land uses within recharge areas significantly influence surface water quality.

Eutrophication is the process by which a pond experiences algal blooms, oxygen depletion, fish kills, noxious odors and visual deterioration as a result of excessive nutrient inputs (usually from runoff and septic systems).

Freshwater ponds on the Cape tend to be naturally acidic due to a lack of alkaline materials in the soils, and accelerated acidification is apparent in several ponds. Between 1983-85 the Acid Rain Monitoring Project, coordinated by the University of Massachusetts at Amherst, sampled 3370 surface waters throughout the state and found, using only pH as a criteria, that 5.5 percent were acidified, 16.8 percent were critical, 20 percent were endangered and 21.7 percent were highly sensitive (in descending order of degradation.) In Wellfleet the following ponds were found to be “acidified”<sup>4</sup>, according to the ARM Project: Duck, Dyer, Great, Kinnacum, Long, and Northeast; however, paleolimnological research has shown that these ponds have become quite acidic since their formation, well before anthropogenic “acid rain” (Portnoy et al. 2001). Ironically, the high acidity keeps the pond waters attractive for swimming because the water looks very clear and feels “soft”.

In relation to this issue, scientists at the Cape Cod National Seashore have discovered some yellow perch are showing signs of mercury poisoning due to long range atmospheric transport. Mercury tends to be mobilized more readily in acidic ponds (Portnoy et al. 2001). Fish in Dyer, Great, Wellfleet, and Duck Ponds have shown lesions on their head, otherwise known as “hole in the head disease”. Although the exact cause is uncertain, it is likely associated with stress related to low pH and mercury toxicity.

As previously described, saltwater bodies are generally excellent in quality except where tidal flushing is restricted as it is in Herring River, Duck Creek and in some other sections of the harbor. The pier which blocks the mouth of Duck Creek diminishes the amount of tidal flushing which can occur and noticeably higher pollution has resulted. Some areas of high shellfish concentrations sometimes show increased nutrient counts perhaps due to wastes excreted by both the shellfish themselves and by foraging waterfowl. For example, although water near Field Point shows no bacterial problems it does show extremely dense macro algae blooms which have a detrimental impact to the area, in addition to their positive impact as a food source. Eutrophication is a common result of nitrogenous water pollution and dense algal growth. Although the waters here are kept generally oxygen rich and flushed clean by regular tidal ebb and flow, algal blooms are still sometimes thick enough to prevent shellfish from setting in certain places and to foul the undersides of boats. Nitrogen counts increase dramatically near Field Point in July and August when warmer temperature, increased waterfowl, and a seasonal population increase probably contribute to the increased readings.

This increased nitrogen level during the summer is a water quality issue which needs to be monitored. Contribution from human sources, including terrestrial and marine septic systems needs to be controlled (this has been partly addressed by the designation of Wellfleet Harbor as a No-Discharge Zone ). Title 5 regulation changes should do a decent job of limiting increases in this potential source of pollution, although the use of alternative septic treatment systems is recommended wherever possible.

#### **4. Floodplains**

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<sup>4</sup> These ponds had pH measurements ranging between 4.4 and 4.83.

Wellfleet participates in the Federal Flood Insurance Program, which requires that new shorefront development meet engineering standards for flood proofing, but does not prohibit development. Flood velocity zones, or V-zones, are land areas where storm surge or direct wave action occurs. All of Wellfleet's westward facing barrier beaches, as well as the entire Atlantic side is within a velocity zone. The bays at the mouth of Blackfish Creek and Fresh Brook are also within V-zones.

Landward of the velocity zones are other flood-prone areas, A-Zones, in which standing water can be expected during 100-year storm events. B-zones are between the limits of the 100-year flood and 500 year flood; or certain areas subject to the 100 year flooding with average depths less than one foot or where contributing drainage area is less than one square mile; or areas protected from the base flood (FEMA). These areas consist mostly of salt marshes and shorefront uplands.

In the coming decades, flooding and erosion will be increasingly exacerbated due to global warming. This phenomenon is predicted to cause current rates of sea-level rise to increase as the polar ice caps melt and seawater undergoes thermal expansion. Accelerated sea-level rise could result in the loss of large amounts of open space in Wellfleet in the coming decades, particularly in low-lying wetlands and shoreline uplands. The first areas to be submerged will basically coincide with the 100 year floodplain, lands which are currently important open space for the town. Sea level rise will also mean an increase in the frequency and severity of damaging storms. The town must consider this issue when examining long-term public investment in shoreline facilities, such as in siting new parking lots. Perhaps even more importantly, the town needs to adopt an aggressive new strategy to protect shorelines from development, bulkheading, revetments, etc. so that upland-fringing salt marshes can retreat uphill, and survive, with rising sea level; otherwise our salt marshes will be trapped between the rising sea and upland development and will disappear.

## 5. Wetlands

Wetlands, both fresh and salt water types, are the food factory and habitat for most of Wellfleet's wild animals. Fortunately, Wellfleet is blessed with a diversity of wetland types and sizes scattered throughout the Town.

A salt marsh's high productivity makes it excellent feeding and nursery habitat for birds, shellfish, and finfish. About two-thirds of commercially-important finfish spend some of their life cycle feeding or spawning in or near salt marshes.<sup>6</sup>

Wellfleet's vegetated wetlands are extensive, extending in all directions from the waters of Wellfleet Harbor. The Harbor's many inlets, bays and islands represent one of the largest estuarine systems on the Cape. It is protected from the onslaught of direct ocean waves by the

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<sup>6</sup> Sterling, Dorothy, Association for the Preservation of Cape Cod, Our Cape Cod Salt Marshes, (Orleans MA, 1976), p. 21.

peninsula of Great Island and Jeremy Point. This is the origin of the herring run and the recipient of water flowing from inland freshwater tributaries. Most of the well developed salt marshes in Wellfleet are in the protected areas on the lee side of islands and spits including Indian Neck, Lieutenant's Island, and behind barrier beaches. The Herring River and Blackfish Creek corridors represent the furthest inland extent of this extensive marsh system. As previously discussed, the interior marshlands of the Herring River have been tremendously impacted by diking. Restoration of these marshlands is being actively studied by the National Park Service, Massachusetts Audubon Society, the Town and other cooperators.

As with Wellfleet's ponds, freshwater wetlands are dependent on groundwater discharge rather than surface water runoff. Wellfleet's wetlands are at low elevations, close to the water table and the sand and gravel soils readily transmit groundwater through wetlands. Both salt marshes and freshwater wetlands play an important role in filtering out contaminants, especially nitrogen before groundwater discharges into the Harbor. The Town's fringing salt marshes also buffer storm surges, thereby protecting coastal structures. In addition to town administration of the Massachusetts Wetlands Protection Act, the Town simultaneously administers two local environmental protection by-laws:

1. Stormwater By-law - no surface water can be directed towards a water body. Natural drainage is permitted but no constructed drainage systems are allowed.
2. Floodplain By-law - further restricts building in the floodplain.

These bylaws help to protect further the integrity of valuable wetland resources in the Town of Wellfleet.

## 5.1 Special Wetland Resources

### a. Freshwater Wetlands

#### Atlantic White Cedar Swamps

The 1990 Critical Habitats Atlas for Cape Cod<sup>7</sup> identifies one wetland area in Wellfleet which is dominated by Atlantic White Cedar (*Chamaecyparis thyoides*) located in the Cape Cod National Seashore near Marconi Station/Beach. This is the archetypical site for this habitat in the entire Park and the most well known cedar swamp on Cape Cod. Cedar swamps are highly acidic and are uncommon throughout the Cape. Regionally, cedar swamps were once much more extensive before the trees were harvested for shingles and fence posts in earlier centuries or swamps were converted to cranberrying. Of the 6,000 acres of cedar swamp thought to exist at the time of the Pilgrim's landing on Cape Cod,<sup>8</sup> only 135 acres persist today.<sup>9</sup>

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<sup>7</sup> Association for the Preservation of Cape Cod, Cape Cod Critical Habitats Atlas 1990.

<sup>8</sup> Cape Cod Commission, Monomoy Capacity Study: Summary Report, July 1996, p. 92.

<sup>9</sup> University of Massachusetts-Amherst, Glenn Motzkin, Atlantic White Cedar Wetlands of Massachusetts, 1991, pp. 11.

Other small stands of Atlantic white cedar occur south of Paine Hollow Road and in the swamplands of the upper Herring River east of Route 6. The significance of Wellfleet's cedar swamps for both wildlife habitat and education argues for continued efforts to insure their protection. Cedar swamps are sensitive to water table drawdown, e.g. through nearby municipal groundwater withdrawal.

## **Vernal Pools**

Vernal pools were officially recognized as critical habitat in 1987 when the Massachusetts General Court amended the Wetlands Protection Act to include their protection. These small temporary ponds are crucial breeding grounds for woodland amphibians, such as Eastern spadefoot toads and salamanders. Spotted salamanders are the most common amphibian found in Wellfleet's vernal pools.

As with other wetlands, these habitats are susceptible to acidification and to the effects of groundwater withdrawal. Although wetlands on Cape Cod are naturally acidic, especially sensitive wildlife begin to show signs of toxicity at certain levels. Groundwater withdrawal, however, is the more immediate threat to the viability of vernal pools and inhabiting wildlife because of their extreme sensitivity to water level fluctuation. There are several certified vernal pools dotting the entire town of Wellfleet. These are shown on Map 7, *Wetlands and other Significant Natural Resource Areas* and Map 10D, *MNHESP 2003 Vernal Pools*. The National Park Service is conducting ongoing studies within its boundaries on the hydrogeology, biology, and water chemistry of vernal pools.

### **b. Saltwater Wetlands**

#### **Tidal Flats**

Another significant, though often overlooked, wetland resource in Wellfleet is tidal flats.<sup>10</sup> Wellfleet has broad expanses of estuarine flats, which are portions of the beds of salt ponds or estuaries exposed at low tide. They are particularly productive for shellfish populations (see discussion of fisheries in Section 4E). There are also large expanses of marine flats of the type found in open coastal areas, primarily along Cape Cod Bay. Both of these types of flats are an important recreational resource in the town. The firm, hard footing of the flats is popular for activities ranging from shellfishing to walking to kite flying. Threats to the flats include overuse by pedestrians and off-road vehicle (ORV) compaction. ORVs are used regularly by shellfishermen tending their grants. Potential impacts include disturbance of wildlife, particularly shorebirds, and the destruction of marine organisms which live in the mud. Oil and gas leaks are another potential hazard with no effective means of monitoring except through

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<sup>10</sup> Massachusetts Coastal Zone Management Office, Barrier Beaches, Salt Marshes & Tidal Flats: An Inventory of the Coastal Resources of the Commonwealth of Massachusetts, 1985, p. 12.

strict vehicle checks. A management plan for the Fox Island Conservation Area in Wellfleet recommended that ORVs be checked before entering the beach area in order to help prevent this potential pollution. This sort of vigilant monitoring may be necessary in other places to insure the continued viability of both the shellfish resource and the shellfish trade.

### c. Streams and Water Courses

Wellfleet has three notable tidal riparian corridors: Herring River, Blackfish Creek, and Fresh Brook. Each courses east to west through the bottom of old glacial outwash channels, providing freshwater inputs to Wellfleet's portion of Cape Cod Bay. [A large fraction of freshwater discharge to the Bay occurs as diffuse groundwater seepage along the shore.] Whereas Herring River originates in the Gull Pond chain, the other two have no headwater ponds. Instead they emerge from lowlands lying to the east of the harbor within the National Seashore. Protection of their headwaters will help to insure their continued health. Although both of these rivers are diked off by Route 6, culverts help to maintain normal waterflow and only the highest tides reach this far east. Sixteen years ago, road runoff problems from Route 6 were mitigated during construction work done by the state. Catch basins and leaching pits were constructed to capture direct runoff before it reaches the wetland areas. Only in emergency situations will any overflow be allowed to occur (J. Chatham).

Surface waters of the Herring River suffer from summertime oxygen depletions and perennial acidity and toxic metals, all caused by diking, drainage and the lack of tidal flushing. The National Park Service and State and university cooperators have studied the river's ecological problems and options for habitat restoration since 1980. Throughout the 18<sup>th</sup> and 19<sup>th</sup> centuries the Herring River was a major focus of Wellfleet political, social and economic life, with salt hay farming, shellfishing and a herring run whose annual auction paid the salaries of all elected town officials (Wellfleet Annual Reports). In 1908 a dike was constructed at Chequessett Neck road to control mosquitoes and create arable land. In the nearly 100 years since then, the upper reaches of the river, including its associated marshlands, have converted to either Phragmites (an invasive exotic plant) marshland or upland forest. Attention was first drawn to the problem in October 1980 when National Park Service and Mass. Division of Marine Fisheries biologists and local fishermen documented a massive mortality of American eels due to extremely low pH (high acidity). Since that time, the Park Service has been working with the Department of Environmental Protection, Coastal Zone Management, the Town of Wellfleet, and Massachusetts Audubon on correcting the problem. Although the cause is simple, correcting it is not. Outstanding questions regarding tidal restoration include the potential for flooding of golf course fairways and two residences, saltwater intrusion into domestic wells, effects of fecal coliform and sedimentation on downstream shellfish grants, and the stability of The Gut. Recent research has shown that opening or removal of the Herring River Dike will not affect domestic water supplies (Martin 2004), The Gut, nor sediment on shellfish grants (Doherty 2004); nevertheless, the NPS and US Geological Survey are monitoring both the groundwater salt/fresh interface and sedimentation in the Harbor. This discussion was recently reinvigorated through public presentations of this research. The future of the Herring River and its associated marshlands will depend on thoughtful planning by these collaborating agencies. It will take extensive public education to adequately explain why a seemingly radical change is necessary to preserve one of the most important features of the town. As of 2005 various agencies and organization are

working on the Herring River restoration Project. One step was taken in the process when the Annual Town Meeting in April 2005 voted to acquire approximately 25 acres of the Chequesset Yacht and Country Club. This land will be allowed to revert to its natural state and therefore will not be adversely affected by the proposed opening of the Herring River dike. In taking this step the town showed its interest in having the Herring River Restoration Project go forward. As reported by the Cape Cod Times, this project received a large boost recently “when the U.S. Senate Appropriations Committee approved \$500,000 towards the purchase of 25 acres of a Wellfleet Golf Course” (CCT, Doug Fraser, 7-04-05). This grant would be added to the town’s contribution of \$1.25 million (half of the \$2.4 million purchase price), which was recently approved to be borrowed from Land Bank funds contingent upon the remaining funds being raised through grants and donations (Ibid.).

The culverts under Route 6 for blackfish Creek and Fresh Brook do not allow for normal flow. These areas are considered Tidally Restricted. The Cape Cod Atlas of Tidally Restricted Salt Marshes published in 2001 by the Cape Cod Commission contains excellent maps and descriptions of the problems here and elsewhere and can be found at their website at: <http://www.capecodcommission.org/tidalatlas/> .

#### **d. Groundwater Resources**

In 1982 the U.S. Environmental Protection Agency designated all of Barnstable County as a Sole Source Aquifer in recognition of the region’s complete reliance on groundwater as its potable water supply. Wellfleet draws its water from two lenses, the Chequessett (shared with Truro) and the Nauset lens (shared with Eastham and Orleans) - see Map 6, Lower Cape Cod Water Lenses. These lenses provide water for all of Wellfleet. In 1992 the Lower Cape Water Management Task Force was formed. It consisted of representatives from the towns of Eastham, Wellfleet, Truro, Provincetown, the Cape Cod National Seashore, and the Cape Cod Commission. Its aim was to look at water resource issues on the lower Cape, using hydrogeological, rather than political, boundaries as the parameters for decision making. They looked at the four groundwater lenses of the lower Cape: Chequessett, Nauset, Pamet, and Pilgrim. In Wellfleet, where the vast majority of drinking water is supplied by private wells, water protection is a very local issue, related directly to the land use in the immediate vicinity of each well as much as it is to the larger recharge area. The Lower Cape Water Quality Task Force looked at data collected between 1985 and 1994 from over 6,000 private wells in the area, mapped the information and analyzed nitrate distribution across town. The presence of nitrate served as the basic indicator of water quality; currently the Cape Cod Commission holds a 5 ppm (mg/L) planning limit, while the federal limit is 10 ppm (mg/L). When nitrate levels exceed 5 ppm, there is cause for concern while water containing nitrate concentrations greater than 10 ppm is considered unpotable. From 1985 to 1994, one out of three wells in Wellfleet center exceeded the 5 ppm nitrate threshold. **The most important finding was that nitrate concentrations, and therefore water quality problems, increased proportionately with housing density.** Wellfleet Center, where the greatest housing density exists, is the only known water quality problem area, with respect to nitrate. This trend is further supported by looking at adjacent towns of Eastham and Truro. The northern central part of Eastham, which has a higher

density than Wellfleet, was another problem area whereas Truro, with the lowest population density on Cape, has the best water quality.

With a median lot size of 1/3 of an acre and almost urban density, water pollution potential is notably higher in the Center. In planning for Wellfleet's Future, it is clear that water quality depends directly on the density of development allowed. Most towns require one acre zoning for new subdivisions to insure protection of their water supplies, although this brings with it a more sprawling sort of development which has broader impacts to wildlife, scenery, and land values. In its local comprehensive plan, Wellfleet encourages cluster zoning for these reasons, although this may necessitate sewerage or waste water treatment systems. A sewer and wastewater treatment system has been considered for years for the central district of Wellfleet.

The Task Force also looked at potential sites for future municipal wells, taking into consideration water quality and the impact of water extraction on other natural resources. The site which was identified is just south of Dyer Pond, near the boundary of the Cape Cod National Seashore. The South Dyer site shows up clearly as an area free of contamination and inclusive of both Town-owned land and seashore restricted land. The findings and recommendations of this Task Force's final report are summarized below.

- Most private wells in Wellfleet provide high quality drinking water
- The number of wells that provide high quality drinking water will decrease in the future
- Cross-contamination (instances where groundwater contaminated with effluent intercepts a well) periodically occurs in all areas of the Outer Cape.
- Wellfleet Center and the Route 6 corridor of Eastham are areas which are approaching the point where "lot by lot" measures are not long term solutions.

Although there are 37 potential municipal drinking water well sites on the lower Cape, the study determined that the South Dyer Pond site would be the best location for a well which could serve Wellfleet Center and perhaps other areas of town, should water quality become irreversibly impaired there in the future. The South Dyer Wellhead Protection District has been roughly located and approved by the state. It is likely that any future public water supply system for Wellfleet will be located here. Secondary sites for wells identified in the report include the Coles Neck, Duck Pond, or Great Pond sites. Map 8, *Wellfleet's Wellhead Protection Districts*, shows both the South Dyer and Cole's Neck Wellhead Protection Districts.

Although groundwater quantity in Wellfleet is presently ample for domestic, small-volume wells, municipal withdrawal could lower water levels and cause ecological damage to surface waters such as kettle ponds and vernal pools. This can occur where wells are located too closely to surface waters or rates of withdrawal are too high (Water Quality Task Force). Extensive pumping for human use can dramatically alter the levels of ponds and other wetlands to their detriment and, if located near the seashore, can cause salt water intrusion as well. Several private wells exceeded the target sodium threshold level of 20 mg/L over a decade ago. Now in 2005 and a projected water use increase of over 1,000% by buildout, it is extremely important to identify and develop water supply sources that will accommodate this expectedly high demand while protecting against salt water intrusion and other contaminant sources

Since the major percentage of Wellfleet's land lies within the Cape Cod National Seashore, it is clear that water resource management must be a cooperative effort between the town and the Federal Government. Establishing an arrangement which simultaneously meets the needs of the town and protects the resources of the Park is essential for the future of Wellfleet.

Wellfleet, because of its small median lot size (one third of an acre) has several parcels which are designated as Nitrogen Sensitive Lots; that is, both private well water supply and septic systems are located on the same lot. In these cases, the State's revised Title V septic regulations require the use of alternative denitrification technology when a system fails and needs replacement or improvements. Wellfleet's only water protection overlay district establishes protective radii between 100-200 feet around wells on Nitrogen sensitive lots. The size of the radius depends upon environmental factors and usage. Placement of septic within these zones is discouraged; alternative septic systems are often employed when lot characteristics prohibit full Title 5 systems. There are several alternative systems currently available and in use in Wellfleet including Ekofin Bioclere, Recirculating Sand Filters, and Peat Filters. Although effective at reducing nitrates, these systems cannot control chemical and microbial pollutants. They are also more expensive to install and maintain. Often, however they are the best and only solution to the problem of nitrogenous pollution.

#### **D. Vegetation**

The Town includes a wide diversity of habitats for native flora and fauna. There is a strong maritime influence because of the proximity to the coast and salt spray from winter storms. The soil is generally sandy with little organic matter, except in hollows and around wetlands. Wellfleet was essentially treeless at the turn of the century because of historic forest clearing. The existing forest is second growth and no mature forest community exists in Wellfleet.

Oak-Hickory woodland, one of the rarest habitats on Cape Cod is found in South Wellfleet. A climax woodland, it is comprised of white (*Quercus alba*) and black oak (*Q. velutina*) and mockernut hickory (*Carya tomentosa*); it was the original forest community found by the Pilgrims when they landed. A woodland of beech (*Fagus grandifolia*), another climax forest tree, is developing around the headwaters of the Herring River.

The dominant forest type in Wellfleet is pitch pine (*Pinus rigida*) which is an early successional woodland tree. In many areas the oak woodlands, comprised of black and white oaks, are slowly succeeding pitch pine and replacing them. Historically, fire, mostly man created, slowed the spread of growth of the oaks. This no longer is the case and many fire dependent communities, including heathlands, are becoming increasingly rare.

Today, the threat to forestland is primarily from displacement by residential development. Since the 1950's, when residential development on Cape Cod began to skyrocket, there has been a steady decline in forested land in Wellfleet as indicated by the numbers below:

**Table 17 Forestland Area in Wellfleet 1951-2000**

<b>FORESTLAND AREA IN WELLFLEET 1951-2000</b>	
<b>YEAR</b>	<b>ACRES</b>
1951	8,094
1971	7,374
1980	8,080
1984	6,915
2000	6,441

**Source: MacConnell Land Use updates, University of Massachusetts**

The predominant pine/oak forests, by themselves, are often considered of limited value from a wildlife standpoint because of their short height, crown density and the poor quality of the dominant soil association. When a wetland, cranberry bog or power line plant community occurs adjacent to the woodlands, the wildlife value of both the open and wooded areas is greatly enhanced for many species. “Forest-interior” species (those that depend upon large blocks of unfragmented woodland, such as neotropical migrant breeding songbirds) will primarily use the woodlands within the Cape Cod National Seashore as well as out on Great Island peninsula.

The habitat significance of the woodlands of the Seashore is important in that it is one of the few remaining large tracts of contiguous wooded land on Cape Cod. As such, it may be considered one of only a few true wildlife reserve areas. Most woodlands on the Cape are too fragmented to provide this function. Rather, they, like the woodlands of more urban sections of Wellfleet, provide cover, food, and migration corridors on a more local scale.

The recreational value of these wooded areas, particularly within the seashore, is notable as well. For much of the off-season, the great recreation areas of the beaches are not as popular as one might expect because of the exacerbated cold there. Woodlands offer important shelter and relief from the bitter winds off the Bay and Ocean.

The most mature stage in the development of the sand dune community is the coastal maritime forest. Well protected from salt spray, but still subject to occasional exposure are species associated with a mature maritime forest of black oak, black cherry, pitch pine, quaking aspen, red cedar, and sassafras. The majority of Wellfleet’s maritime forest and open space, including the dune land, lies within the National Seashore boundary.

There are three rare habitat types located around Wellfleet which represent some of the rarest plant communities in Massachusetts. These include coastal shrublands above the marine scarp of the Cape Cod National Seashore dominated by scrub oak (*Quercus ilicifolia*) and huckleberry (*Gaylussacia baccata*), coastal heathlands such as those on Bound Brook Island and within the Seashore, characterized by broom crowberry (*Corema conradii*) and bearberry (*Arctostaphylos uva-ursi*), and sandplain grasslands, such as the one at Massachusetts Audubon's Wellfleet Bay Wildlife Sanctuary, which are identified by the presence of little bluestem grass (*Andropogon scoparius*).

Wellfleet's numerous freshwater habitats include the kettle ponds, some of the real treasures of Wellfleet. These are naturally acidic ponds characterized by steep sides and deep bottoms with sparsely vegetated shores. They are oligotrophic, or low in nutrients and organic productivity, making their waters very clear. Located adjacent to the kettle ponds are numerous wetlands such as white cedar swamps, red maple swamps, vernal pools and other types of freshwater wetlands. On the east side of Route 6 the Herring River forms an extensive freshwater system and Wellfleet's largest estuary.

Salt marsh represents a significant coastal habitat type, and is an extensive high inter-tidal area consisting of salt marsh grasses (*Spartina alterniflora*, *S. patens* and *Distichlis spicata*), sedges (*Scirpus robustus*), rushes (*Juncus gerardi*), seaweeds and few succulent plants (*Limonium carolinianum*, *Solidago sempervirens*) and shrubs (*Iva frutescens*). Salt marshes are located behind the barrier beaches and around most of the small embayments which are part of Wellfleet Harbor.

Beaches are located on the Atlantic Ocean, Cape Cod Bay and within Wellfleet Harbor. Most are characterized by fine sand of glacial origin that has been sorted and ground by waves and winds. There are numerous, small barrier beach systems scattered around Wellfleet Harbor as well as two major barrier beaches, one at the northern end of Indian Neck and the second south of Great Beach Hill in the Cape Cod National Seashore

Dune systems are found in three areas of Wellfleet, on the bayside, between Great Beach Hill, Great, Griffin and Bound Brook Islands these dunes are known as tombolos and link each island. On the oceanside and the bayside, wind deposited sand creates sand dunes on top of the coastal banks on both side of Wellfleet but are particularly noticeable in the Marconi area. The beach and dune systems are areas in which productive vegetation is minimal. Its close relationship and proximity with the ocean make it an area prone to instability. Salt water spray, wind velocity, and lack of absorbable fresh water close to the surface make plant survival almost impossible. The dominant plant species of the sand dune is the American beach grass. An intricate network of roots and rhizomes anchors the sand which holds the dune surface in place. Other species that can tolerate wind and salt are the beach pea, the seaside goldenrod, and the dusty miller.

Tidal Flats are comprised of fine silts, mud or sand in the area between low water and the break in the lower berm of the beach. Flats generally are devoid of vegetation but may have seaweeds if large rocks or shells are present. Also, both eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*) patches are present. Eelgrass may be the rarest of all the plant communities in Wellfleet and the most threatened.

Rare plants in Wellfleet protected under the 1991 Massachusetts Endangered Species Act include those listed as Endangered, Threatened and Species of Special Concern, in descending order of rarity. State regulations prohibit the taking or habitat alteration of these species without a state permit.

Much of the information regarding vegetative communities has been gathered over the years by town, Massachusetts Audubon and Cape Cod National Seashore staff and volunteers. In addition to this data, there has recently been a regional study of vegetative communities, *The Cape Cod Wildlife Habitat Conservation Project*, which identified and mapped significant vegetation types across Cape Cod.

### Cape Cod Wildlife Habitat Conservation Project<sup>15</sup>

The central goal of the Cape Cod Wildlife Habitat Conservation Project, conducted by The Compact of Cape Cod Conservation Trusts, Inc., is *to preserve and enhance biodiversity on Cape Cod*. To achieve this ambitious goal, the project focused upon the identification, mapping and ranking of natural communities, including existing areas held for conservation or other open space purposes. Existing sources were utilized to identify and map 32 distinct community types<sup>16</sup>. By integrating principles of landscape ecology and conservation biology, the project acknowledges the importance of both habitat quantity *and* quality. Although “bigger is usually better” since larger areas provide greater opportunities to sustain populations, protection of smaller areas, such as sites that contain vernal pools or rare habitat types are also important for maintaining overall diversity. Thus, the project has attempted to determine the habitat requirements for the more than 400 species that are known or expected to occur within Barnstable County and map these habitats in order to determine priority areas for protection<sup>17</sup>.

The results of this analysis provide a comprehensive view of the best *potential* wildlife habitats on Cape Cod based upon natural community type (i.e. vegetation cover, geologic and hydrologic features), size, condition and landscape context<sup>18</sup>. One of the greatest threats to wildlife populations on Cape Cod is the continued fragmentation of habitat resulting from land development practices. This project presents an opportunity to lessen the impact of habitat loss by identifying the most important remaining areas in need of protection for use by those interested in preserving the Cape's wildlife diversity.

### Summary of Regional Results and Recommendations

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<sup>15</sup> Much of this section was taken verbatim directly from the project's final report entitled *Cape Cod Wildlife Conservation Project: A Strategy for Preserving Natural Diversity*, published by The Compact of Cape Cod Conservation Trusts, Inc. and reorganized and adapted for use in this Plan. For a copy of the complete report, contact The Compact at 508-362-2565.

<sup>16</sup> This number is approximate and may include other community types not mentioned.

<sup>17</sup> Does not include fish or marine species.

<sup>18</sup> No wildlife surveys were conducted in conjunction with this project.

- 32 habitat types were identified and mapped. 7,754 individual areas or habitat "patches" were mapped which contained a total of approximately 160,000 acres, or 61 percent of the Cape's land area<sup>19</sup>.
- Town-by-town summary tables were prepared which identify the total amount of each habitat type (in acres) mapped and illustrate the distribution of habitat types across the region.
- Most of the highest ranking habitat areas are contained within six large "core" areas which include the Massachusetts Military Reservation, the Sandy Neck/Chase Garden Creek complex in Barnstable/Yarmouth, Punkhorn Parklands in Brewster, Nickerson State Park in Brewster/Orleans, Monomoy National Wildlife Refuge and much of the Cape Cod National Seashore.
- Other significant areas include Bournedale in the northwestern corner of Bourne, Town Neck Beach and marsh system in Sandwich, the town conservation lands in East Sandwich/West Barnstable area, Quivet Neck/Crowe's Pasture in Dennis and Brewster, Namskaket Creek in Brewster/Orleans, and Herring River/Boat Meadow Creek in Eastham,
- Roughly half (46 percent) of the identified habitat areas are protected as open space by public agencies or private organizations. Some of these areas may not be adequately protected or managed to maximize conditions for wildlife.
- In general, wildlife habitat is highly fragmented on Cape Cod as a result of land development for residential, commercial, recreation, transportation and other uses. Overall, the average "patch" size mapped, irrespective of habitat type, was approximately 20 acres.
- Forested woodlands are the most common habitat types on the Cape, accounting for 60 percent (104,368 acres) of the total mapped area. The dominant woodland community type is the mixed pitch pine -oak that is characteristic of much of the dry upland sites in the Upper and Mid-Cape region.
- Woodland habitats support the greatest potential number of breeding species (134) than any other habitat type found on Cape Cod. Grasslands and heathlands (52) and wooded swamps (45) support the next highest potential number of species, respectively.
- The most important breeding habitats for the protection of state-listed rare species (Endangered, Threatened, or Special Concern) are coastal plain pondshores, vernal pools, and barrier beaches and dune systems.
- Sandplain grasslands, coastal heathlands, and pitch pine/scrub oak barrens are important rare habitats found on the Cape which also provide habitat for a number of state listed species. Fire suppression, development and natural succession have reduced these open habitats dramatically. Today, these habitat types represent only about two percent of the total area mapped.
- Due to the scarcity of the grassland and heathland communities, there are few opportunities to protect more of these habitat types through outright acquisition. Some expansion and enhancement of these habitats may be achieved through the active management and habitat restoration efforts.

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<sup>19</sup> Total area includes both protected and unprotected areas as well as the undeveloped portions of properties that may contain some development, such as one dwelling unit on a multiple-acres parcel.

Approximately 30,000 real estate parcels were identified that contained one or more habitat types. The total area associated with these properties is approximately 138,000 acres. These included existing protected areas, as well as undeveloped and under-developed properties of two acres or greater.

Each parcel was ranked for its conservation value. The criteria used to determine conservation value were parcel size, habitat value, surrounding land uses (context), and percent upland.

Parcel Ranking Summary: Cape Cod Totals

<u>Ranking</u>	<u>Number of Parcels</u>	<u>Acres</u>	<u>% Acres Protected</u>
Maximum	1,633	42,763	86 %
High	11,388	61,591	48 %
Medium	13,382	31,174	16%
Low	2,810	2,923	8%
Total	29,213	138,451	52%

- More than half (52 percent) of the total acreage associated with parcels containing some wildlife habitat are protected. According to the ranking, the Cape has managed to protect most (86 percent) of the highest ranked properties.
- Roughly half of the total area associated with protected parcels occurs in the following towns: Barnstable, Bourne, Eastham, Sandwich, Truro, and Wellfleet.
- The land area associated with the remaining unprotected parcels is 66,467 acres. The distribution in terms of the habitat ranking is as follows: 5,867 acres in the Maximum category, 31,876 acres in High category, 26,040 acres in Medium category, and 2,683 acres of Low category.
- The towns with the largest amount of unprotected acreage in the Maximum parcel category are: Mashpee (1,412 acres), Harwich (883 acres), Bourne (743 acres), Falmouth (640) and Barnstable (458 acres). This represents 70 percent of the total acreage in the Maximum category Cape-wide.
- A significant number of opportunities exist to preserve additional habitat areas through land acquisition and other conservation techniques, but few large, unprotected properties remain. The mean size for all parcels evaluated is 4.74 acres. The largest parcel ranked occurs within the Massachusetts Military Reservation in Bourne and is nearly 9,000 acres.
- The greatest opportunity for protecting additional acreage falls within parcels that are ranked in the High and Medium categories. Many of these properties are located adjacent to existing protected open space and may present opportunities to expand existing areas or provide a linkage between habitats using buffers or linear corridors.

Habitat Classification Results and Summary Statistics

The project has identified and mapped 32 wildlife habitat types based on vegetation, hydrology, or geologic features. The classification scheme resulted in the delineation of 21 wetland and

eleven upland habitat types or natural communities. The project did not support any fieldwork and therefore relied upon existing information and some local knowledge to identify community types. Numerous sources were consulted, including the Cape Cod Commission, Mass GIS, Department of Environmental Protection, MA Natural Heritage and Endangered Species Program, Association for the Preservation of Cape Cod and The Compact's panel of Scientific Advisors. GIS mapping technology was used to integrate geographic data from the different sources and distinguish habitat types.

### Habitat Descriptions

The Wildlife Conservation Project began with a detailed mapping of each major habitat type found Cape Cod. Habitats types were described based on definable natural community characteristic including dominant vegetation cover, hydrology and/or geology. In and of themselves the maps proved to be useful tools for understanding the occurrence and distribution of the remaining wildlife habitats on the Cape. For the first time, these maps show the proximity of developed and undeveloped areas at a scale which is useful for local planning purposes. What they did not show was which of the remaining habitat areas are the most important for conserving wildlife. In order to accomplish this, the Compact had to develop a method for comparing the relative value of these areas to wildlife. Since it was beyond the scope of the project to determine this information from field surveys, the Compact sought to assemble the best available, existing information to approximate these values.

Thirty-two community types have been identified and mapped from existing sources. The 32 community types identified include salt marsh, barrier beach, barrier beach/dunes systems, coastal beach, coastal dune, coastal bluff, rocky inter-tidal shore, tidal flat, ponds and lakes, streams and riparian corridors, fresh marsh, shrub swamp, wooded swamp deciduous, red maple swamps, wooded swamp coniferous, Atlantic white cedar swamp, wooded swamp mixed, coastal plain pond shores, vernal pools, bog, cranberry bog, sandplain grassland, coastal heathland, grassy heath, cultural fields, pitch pine-scrub oak barrens, pitch pine-oak woodland, white pine-hardwood woodland, American beech woodland, oak-hickory woodland and unclassified woodlands. Other "significant woodland communities" were included where small stands of unique tree species were known to exist

Although mostly upland forest, there are significant differences in the occurrence and distribution of many of the other habitat types found on Cape Cod. Each town has its own unique mix or "natural signature" reflected in the mosaic of community types present. To some extent, these variations reflect the patterns of development in each town as well as the amount and location of existing open space. But there are also geographic differences that are related to geologic conditions, topography, exposure and soil characteristics that provide an environment which allows some community types to thrive while prohibiting the establishment of others altogether. These regional differences define the natural landscape and help point out the opportunities for protecting biodiversity by emphasizing which towns contain the most of each community type.

For more specific information relevant to Wellfleet's wildlife habitats, contact The Compact of Cape Cod Conservation Trusts Inc. for a copy of the report at 508-362-2565.

## **E. Fisheries and Wildlife**

### **1. Fisheries**

Wellfleet Harbor has long been a major source of oysters and clams (both quahogs and soft shells). The evidence indicates that the exploitation of this resource long preceded the advent of the European on these shores. Wellfleet Harbor has provided a habitat especially favorable to marine fauna, particularly to shellfish, which have unusually high rates of growth as well as appearing to proliferate into unusually large populations. The harbor enjoys a unique set of features when taken all together. A ten-foot tidal range gives the harbor better than a 70% flush rate on a twice daily basis. Further this flow over the generally shallow and originally clean hard sand bottom causes a complex system of rapid tidal currents of relatively warmer water. Into this water mass flow a number of estuaries and streams of varying sizes—Herring River, Mayo's Creek, Duck Creek, Loagy Bay and Blackfish Creek with their bays and marshes as well as Sewell's Gutter, Power's Landing Meadow, Margaret's Meadow, and Middle Meadow. These all contribute a large amount of fresh water which lowers the salinity progressively as you move up harbor, until in the area of the Town Pier the salinity is 7 - 10 parts per thousand lower than the water off Jeremy Point. This complex system of streams, wetland and marshes which stretch inland to within a half mile of the Atlantic Ocean comprise rich nursery and feeding habitats for marine fish, shellfish and birds. This unique array of natural advantages existed eons before the Pilgrims arrived. However it took only one and one half centuries to deplete the resource to the point of extinction of the original Wellfleet oyster. It was only through relaying of oysters harvested in the Chesapeake Bay that the resource was reestablished. This process of depletion and reseeded took place again in the 19<sup>th</sup> century. The "native" beds of today are all scions of stock brought in from the Chesapeake and other beds to the south.

Over the years we have done serious mechanical damage to the hydrodynamics of the harbor and its rivers and estuaries:the construction of the railway embankment across Duck Creek, the dike across Herring River, the widening and extending of Shirt Tail Point, the dike across Mayo's Creek, the breakwater, the rail and highway embankments in Blackfish Creek. These and similar projects were undertaken with little or no knowledge of their individual and cumulative environmental impact. Reversing the damage done by the historical restriction of the tides will take many decades, but is worth pursuing if only for the benefit of Wellfleet's important shellfish resource. Map 9A, *Wellfleet Harbor Shellfishing Areas*, shows the location of shellfish resources in Wellfleet Harbor.

### **Commercial shellfishery**

The total value of the shellfishing industry to Wellfleet is over \$2.75 million annually. Fifty-five percent of this crop comes from the "wild" fishery, while 45% comes from the practice of aquaculture. The "wild" fishery consists of harvesting the bivalves generally where they have

grown, without any intervention except the dumping of an occasional load of cultch. The Colonial Ordinances allow the free use of intertidal lands for fishing, fowling and navigating. Oysters are picked up from those areas in the harbor where they thrive. Quahogs are dug where they mature and the deeper harbor is under constant pressure from draggers. This fishery is closely managed by the Shellfish Constable with a view towards limiting the harvest to the extent that the resource remain self renewable. This is done by setting quantity limits, area limits, and seasonal closures.

### **Aquaculture**

Historically Wellfleet has supported the aquaculturist through the process of licensing areas in the harbor which have been generally perceived as non-productive of shellfish. These grants, after a reasonable trial period, are licensed for ten years, and usually renewed upon expiration. This allows the license holder to plan for the future.

About twenty years ago the growing of quahog seed on a commercial basis became economically feasible. This enables the aquaculturist to buy seed, handle the seed in a manner which would optimize growth, and increase productivity. In fact, the last twenty years have seen threefold increase in the output of quahogs from licensed areas. As more areas are approved for licensing this methodology for growing quahogs will continue to enhance production.

The historic practice with oysters has been to pick seed oysters out of the open areas and relay them in licensed areas. In addition cultch has been laid by the town as well as by license holders. The town has laid cultch where, in the opinion of the Shellfish Constable at the time, it would catch the best set. License holders have laid cultch in their own areas. The success of the restocking of Chipman's Cove is an example of how well this practice works when conditions are good. QPX may present future problems to the aquacultural economy and should be recognized as a potential hazard to the industry.

More lately, new methods of encouraging the veliger (larval state of the oyster) to attach itself to a medium, which will allow for continuous control of the growth and development of the oyster, have emerged. The most commonly used and most successful device is the so called Chinese Hat. These are covered with a substrate of mortar with a high lime content. They are then placed in areas of the harbor which are deemed to have a high passage rate of the veligers. After the veligers attach themselves to the lime they are left for the balance of the season in situ. The lime is removed from the device with the spat and bagged for winter storage. Using coarser bags the spat is allowed to grow to a size which can be laid directly on the bottom, where they will remain until they are harvestable. This promising development should do for the oyster crop that which the advent of commercial seed did for the quahog.

There has been some success in trapping soft-shelled clam seed, but it remains primarily a sporadic and "wild" harvest.

There are sporadic crops of bay scallops, and do not presently lend themselves to aquaculture therefore they remain in the wild harvest. Maps 9B, *Wellfleet Harbor South Shellfishing License*

Areas, and 9C, *Wellfleet Harbor North Shellfish License Areas*, show the locations of leased grant areas in Wellfleet.

### **Fin fishing**

Fin fishing in Wellfleet harbor is primarily recreational . The fish caught are the fluke, winter flounder, scup, tautog, and the more sporting bluefish and striped bass. The alewife may be making a comeback in the Herring River as a result of the cooperative efforts of the National Seashore and interested parties in the Town of Wellfleet.

### **Management**

Ever since the seminal work by Dr. David L. Belding in 1906, Wellfleet has had a Shellfish Management Plan of some kind in place. Today the Oyster Task Force Plan remains in effect while the Wellfleet Harbor Shellfish Management Plan is undergoing a major up-dating. The stated objective of the Plan is “the restoration and management of the fishery resources, the development of extensive and intensive aquaculture and enhancement of anadromous fisheries...”.

### **Specifics include**

1. Maintain biological diversity in Wellfleet harbor.
2. Restore economically important marine animals by improved habitat management.
3. Enhance the propagation of the wild populations of oysters, quahogs, soft-shelled clams, and bay scallops .
4. Protect and enhance the natural populations of alewives, eels, razor clams, sea worms and other protected species.
5. Prevent further encroachment on the salt marshes and estuaries.
6. Prevent or mitigate the pollution of the waters of the harbor.
7. Resolve conflicting interests among shellfishermen, swimmers, boaters and other recreational users.
8. Promote scientific research supportive of the shellfishing industry.

### **Issues**

1. Rights of upland owners versus the needs of the shellfishing industry.
2. Impact of non point source pollution on rivers, marshes and estuaries.
3. Effects of the accumulation of “black mayonnaise” north of Shirt Tail Point.
4. Impact of the desalinization of Herring River.
5. Resolution of any questions pertaining to the uses of the west side of Wellfleet harbor.

Appendix J, *Draft 2005 Harbor Management Plan – Overview Statement*, includes several points relevant to the management of the Harbor and its shellfish resources.

## **2. Wildlife**

Wellfleet is located at the juncture of two major wildlife zones: the Virginian and the Acadian biogeographic regions. Cape Cod separates the warm Gulf Stream waters of Nantucket Sound

(northern edge of the Virginian zone) from the cold Labrador Current coursing down through the Gulf of Maine into Cape Cod Bay (southern edge of the Acadian zone.) The Cape Cod Bay shoreline is the innermost area recently proposed by the National Marine Fisheries Service as critical habitat for the federally-endangered North American right whale.

Wellfleet Harbor is one of only five Cape embayments identified as important wintering areas for black ducks, a National Species of Special Emphasis.<sup>12</sup> Shore birds include terns (common, least and an occasional roseate) and piping plovers, all listed as protected rare species in Massachusetts.

While a complete inventory of birds is not available for Wellfleet, other important or interesting breeding birds include osprey, northern parula warbler, pine warbler, orchard oriole, eastern bluebird, savannah sparrow, sharp-tailed sparrow, eastern meadowlark, red-tailed hawk, killdeer, woodcock, horned lark, ruby-throated hummingbird, eastern phoebe, great horned owl, willet.<sup>13</sup>

Mammals in Wellfleet include the common assemblage of adaptive species: red and gray squirrel, white-tailed deer, raccoon, red fox, rabbit, skunk, otter, opossum, shrew, muskrat, bat, weasel, woodchuck, mice and voles. In recent years, a top-of-the-food-chain predator, the eastern coyote, has extended its range throughout all of Cape Cod and is seen throughout Wellfleet, particularly along salt marsh edges, where they stalk mice and voles. The main threat to the coyote is alarm by an uninformed citizenry; there is little evidence that coyotes will bother humans, though pets may be stalked and perhaps attacked.

Wildlife corridors enable animals, particularly upland mammals, to migrate to new territories in search of food or breeding grounds. Biologists estimate that undisturbed linear areas of 300 feet in width are necessary for many species to feel comfortable moving undetected through an area. Owing to the dispersal of residential development throughout the town and its continuing saturation, wildlife corridors are fewer and narrower than perhaps they should be. The Cape Cod National Seashore provides a uniquely large contiguous area of unfragmented woodland wildlife habitat. The Great Island peninsula provides a more isolated though smaller preserve while the marshlands surrounding Wellfleet's bayside waters provide extensive habitat for numerous shoreline species. An unusually diverse array of coastal habitats provides for a correspondingly high diversity of coastal organisms. Outer Cape Cod, though somewhat isolated from the mainland, nevertheless attracts many typically "mainland" birds and mammals, and is especially important to migratory species. In addition, its unique geographical position and ocean-moderated climate, are in part responsible for the presence of many plants and animals at the limits of their geographical range.

Wetlands and wetland-dependent flora and fauna predominate. Most important game animals, as well as "passively" enjoyed songbirds, raptors, colonial water birds, reptiles, amphibians, and of course fish, depend on wetland habitats for food and cover. Coastal swamps, marshes and wet

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<sup>12</sup> U.S. Fish and Wildlife Service, Concept Plan for Preservation of Black Duck," cited in U.S. Environmental Protection Agency, "Priority Wetlands in New England," September 1987, p. 55.

<sup>13</sup> Richard Veit & Wayne Petersen, Birds of Massachusetts, Massachusetts Audubon Society, 1993.

meadows are habitat for deer, muskrat, raccoon, red fox, cottontail rabbits, woodcock, and migratory waterfowl among hunted species. The shrubby borders of coastal marshlands and kettle hole swamps provide outstandingly good feeding and nesting cover for songbirds and small mammals. In addition, the beneficial contribution of organic detritus from these coastal marshes to estuaries and nearshore marine systems is well appreciated.

Several agencies compile information on rare, threatened or endangered species. The Massachusetts Natural Heritage Program (Department of Fisheries and Wildlife) maintains an ongoing inventory of rare, threatened and endangered plants and animal species, as well as the geographic location of critical ecosystems. The U.S. Fish and Wildlife Service also conducts field investigations on nationally significant species. Scientific staff of Cape Cod National Seashore and Massachusetts Audubon Society monitor rare species within the park. Also, many local people provide information to these agencies based on extensive observation. Table 18, *MNHESP Rare Species List for Wellfleet*, includes the most recently updated lists of known rare plants and animals in Wellfleet as documented by the Massachusetts Natural Heritage and Endangered Species Program.

**Table 18 MNHESP Rare Species List for Wellfleet**

<b>RARE SPECIES IN WELLFLEET</b>			
<b>Taxonomic Group</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>State Rank</b>
Amphibian	<i>Hemidactylum scutatum</i>	Four-Toed Salamander	SC
Amphibian	<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	T
Reptile	<i>Clemmys guttata</i>	Spotted Turtle	SC
Reptile	<i>Malaclemys terrapin</i>	Diamondback Terrapin	T
Reptile	<i>Terrapene carolina</i>	Eastern Box Turtle	SC
Bird	<i>Accipiter striatus</i>	Sharp-Shinned Hawk	SC
Bird	<i>Charadrius melodus</i>	Piping Plover	T
Bird	<i>Circus cyaneus</i>	Northern Harrier	T
Bird	<i>Pooecetes gramineus</i>	Vesper Sparrow	T
Bird	<i>Sterna antillarum</i>	Least Tern	SC

Bird	<i>Sterna dougallii</i>	Roseate Tern	E
Bird	<i>Sterna hirundo</i>	Common Tern	SC
Bird	<i>Sterna paradisaea</i>	Arctic Tern	SC
Snail	<i>Ferrissia walkeri</i>	Walker's Limpet	SC
Dragonfly/Damselfly	<i>Enallagma laterale</i>	New England Bluet	SC
Dragonfly/Damselfly	<i>Enallagma recurvatum</i>	Pine Barrens Bluet	T
Butterfly/Moth	<i>Abagrotis nefascia benjamini</i>	Coastal Heathland Cutworm	SC
Butterfly/Moth	<i>Catocala herodias gerhardi</i>	Gerhard's Underwing Moth	SC
Butterfly/Moth	<i>Cicinnus melsheimeri</i>	Melsheimer's Sack Bearer	T
Butterfly/Moth	<i>Hemileuca maia</i>	Barrens Buckmoth	SC
Butterfly/Moth	<i>Lithophane viridipallens</i>	Pale Green Pinion Moth	SC
Butterfly/Moth	<i>Oligia hausta</i>	Northern Brocade Moth	SC
Butterfly/Moth	<i>Oncocnemis riparia</i>	Dune Noctuid Moth	SC
Butterfly/Moth	<i>Papaipema sulphurata</i>	Water-Willow Stem Borer	T
Butterfly/Moth	<i>Psectraglaea carnosus</i>	Pink Sallow	SC
Butterfly/Moth	<i>Atrium favonius</i>	Oak Hairstreak	SC
Vascular Plant	<i>Carex striata var brevis</i>	Walter's Sedge	E
Vascular Plant	<i>Corema conradii</i>	Broom Crowberry	SC
Vascular Plant	<i>Dichanthelium commonsianum</i>	Commons's Panic-Grass	SC
Vascular Plant	<i>Eleocharis obtusa var ovata</i>	Ovate Spike-Sedge	E

Vascular Plant	<i>Helianthemum dumosum</i>	Bushy Rockrose	SC
Vascular Plant	<i>Mertensia maritima</i>	Oysterleaf	E
Vascular Plant	<i>Opuntia humifusa</i>	Prickly Pear	E
Vascular Plant	<i>Rhynchospora scirpoides</i>	Long-Beaked Bald-Sedge	SC
Vascular Plant	<i>Sagittaria teres</i>	Terete Arrowhead	SC
Vascular Plant	<i>Spartina cynosuroides</i>	Salt Reedgrass	T
Vascular Plant	<i>Sphenopholis pennsylvanica</i>	Swamp Oats	T
Vascular Plant	<i>Utricularia striata</i>	Fibrous Bladderwort	T
Vascular Plant	<i>Utricularia subulata</i>	Subulate Bladderwort	SC

**Source: Natural Heritage & Endangered Species Program, Massachusetts Division of Fish and Wildlife**

Data have been collected about the fauna of Wellfleet by the staff at the Cape Cod National Seashore and the Massachusetts Audubon Society as well as individuals reporting to the Massachusetts Natural Heritage and Endangered Species Program. Maps 10A, B, C, and D show the locations of significant and/or rare habitats and wildlife. Following is a description of notable rare species:

Diamondback terrapin (*Malaclemys terrapin*) is a state listed threatened species which reaches its northern limit in Wellfleet. Terrapins nest in the upland areas adjacent to extensive salt marshes. The Wellfleet Bay Wildlife Sanctuary, Lieutenant Island, Indian Neck and Great Island all have significant numbers of nesting terrapins.

Box turtle (*Terrapene carolina*) is a species of special concern in Massachusetts whose population declines as roads and houses increase. The densest concentration of box turtles in the state is found in South Wellfleet.

Spadefoot toad (*Scaphiopus h. holbrooki*) is the most endangered amphibian in Wellfleet and is listed by the State as endangered. Its annual cycle is connected to vernal pools and spadefoots are confirmed from six locations including the center of town. These fossorial creatures live as deep as 8 feet underground and emerge only after hours of torrential rains.

Four-toed salamander (*Hemidactylium scutatum*) is the smallest salamander in Massachusetts and is listed as a Species of Special Concern. Usually associated with shallow pools, red maple

and white cedar swamps and sphagnum wetlands, four-toed salamanders have been found at either end of Wellfleet. As adults they are terrestrial.

Least Terns (*Sterna albifrons*), the only species of tern to nest in Wellfleet, are found south of Little Beach Hill and on Marconi Beach in the Cape Cod National Seashore and a small colony at the Wellfleet Bay Wildlife Sanctuary. Least terns are a Species of Special Concern in Massachusetts.

Piping plovers (*Charadrius melodus*) are a federally protected species and listed as threatened. Never a common shore nesting bird, piping plovers all but disappeared by the 1970's. Diligent conservation work by the State, Federal Government and MAS has brought back the piping plover here in Massachusetts. Plovers nest at Marconi, Great Beach Hill and Little Beach Hill beaches and at the Wellfleet Bay Wildlife Sanctuary.

Barrens Bluet Damselfly (*Enallagma recurvatum*) is a State listed Threatened Species which is found around coastal plains ponds. One of 10 state populations has been found in Wellfleet, adults can be seen flying in June. Bluets need clean ponds with emergent vegetation.

Barrens Buck Moth (*Hemileuca maia*) is a State listed Threatened Species of expansive shrub heathland. Loss of habitat is the biggest threat for this 2" moth. Wellfleet has one of only four documented populations on Cape Cod

Broom crowberry (*Corema conradii*) inhabits sandy pine and bear oak barrens and is especially abundant in several areas of Wellfleet. It is increasingly rare due to the development of these upland sites. Broom crowberry is a State listed Species of Special Concern.

Prickly pear (*Opuntia humifusa*) occurs in Wellfleet and in only ten other sites throughout the State. This hearty cactus is found in the open heathlands and disappears as the habitat is lost. Prickly pear is a State listed Species of Special Concern.

In addition, the Massachusetts Audubon Society is presently preparing a herpetological atlas for Massachusetts, which should be consulted for additional information.

## **F. Scenic Resources and Unique Environments**

### **1. Scenic Resources**

The assessment of scenic landscape quality is a difficult task. Though the subjective approach may resonate more harmoniously with most residents and visitors on Cape Cod, it is important to attempt to answer questions like "why is this beautiful?" or "what makes this piece of land more beautiful than that parcel, which is half as expensive?" These are worthwhile questions and their answers may mean the difference between land preservation and development. The challenge is to combine the advantages of a purely objective representation with the equally necessary subjective determination of visual beauty.

There are as many methodologies for scenic resource assessment as there are scenic resources. There is one study, however, which is most relevant to Wellfleet's landscape. This study, the

Massachusetts Landscape Inventory, evolved from the efforts of the Department of Environmental Management (DEM ) and the Nature Conservancy, which began by seeking to identify and locate the state's important natural features. An advisory committee composed of public and private conservation professionals, academics, a consulting naturalist, and the DEM staff "sought a system of visual assessment that would provide an accurate statewide survey of scenic areas". To this end, they did a thorough literature search and ended up basing their work on two precedents: Scotland's Scenic Heritage, which offered similarity of cultural history and values, and the U. S. Forest Service Method of assessment, which breaks components of landscape beauty down into objectified visual criteria. This study focused on two variables ; landscape complexity and visual / cultural compatibility.

With an objective basis of visual criteria, the advisory team was left to their personal assessments. The result is a cooperative but subjective determination of the presence or absence of specific, predetermined objective criteria. These criteria are partly based on public opinion research, i.e.; "visual / cultural compatibility".

For every square mile of Massachusetts, landscapes were annotated as either Distinctive, Noteworthy, or Common in order of descending uniqueness. The state was broken down into physiographic regions, with the Coastal Plain region composing all of Cape Cod and the Islands. Whereas one may suppose the bias to be towards the declaration of Distinctive landscapes, only 4% of the state was labeled as such. Noteworthy landscapes comprise 5% and the remaining 91% was deemed common, though this does not imply unimportance.

## **2. Unusual Geologic Features**

Wellfleet enjoys three separate Distinctive areas: the bluffs on the Atlantic shore, the Wellfleet Center area, and Great Island peninsula. Noteworthy landscapes cover the barrier beaches north of Great Island on the bayside, the marshlands around Blackfish Creek and Fresh Brook, and the Gull Pond Chain area. Not surprisingly, all of these landscapes have immediate views to coastal resources. Most of the interior of Wellfleet is considered a common scenic landscape (see Map 11, Scenic Landscape Inventory).

Wellfleet offers beautiful views of several landscape types including marsh, woodland, beach, dune, open water, and sky. In addition, the cultural landscape, enhanced by views of fishermen working their plots, boats hauling their catch, people walking the shore, and wharves punctuating the horizon, adds remarkably to the visual and personal satisfaction of those who visit this area. This aspect is extremely important to scenic resource assessment. The combination of natural and cultural scenery is the sort of beauty people want to experience when they come to Cape Cod, and the sort of beauty this Open Space and Recreation Plan seeks to preserve. As the inventory states, " The most important justification for surveying and preserving prime landscapes is that scenic beauty - and the environmental and social well-being it reflects - is a basic human need." (DEM) Open space planning in Wellfleet should reflect that need by incorporating scenic assessment in its open space protection efforts. Following is a partial list of Wellfleet's most special environments. These are illustrated in Map 4, *Unique Environments*.

3. **Cultural and Historic Areas and Unique Environments (described together in this section)**

1. **Pine Barrens habitat**, an increasingly rare plant community in Massachusetts, remains somewhat common in Wellfleet and the Outer Cape. A pine barren is a mosaic of scrub oak, pitch pine and huckleberry which often forms dense thickets. It is a community which has adapted to fire and disturbance, but because it usually grows on level sandy soils, it is prime for development. Birds such as towhees, whip-poor-wills and rare moths and butterflies are common to this habitat and are declining state wide.
2. **Kettle Ponds** are steep sided, deep water ponds which have little or no emergent or pond shore vegetation. Wellfleet has several of these fragile pond communities. They are low pH depauperate communities, and because they are closed systems they can be easily disrupted. They are important as recharge areas for our aquifers and often have many rare plants and animals associated with them.
3. **Vernal pools** are a poorly protected freshwater habitat. Because they are temporary bodies of water, isolated in low spots in woodland, they are easily overlooked and deemed to be insignificant. These fish-free environments are required by fairy shrimp, spotted salamanders, wood frogs and a variety of insects.
4. Wellfleet has two **globally significant plant communities**, the coastal heathland and the sandplain grassland, which form extensive open treeless habitats. These two habitats are rare in Massachusetts mostly confined to Nantucket, Martha's Vineyard and the Outer Cape. These open rugged environments of pioneering species are essential habitat for a declining number of species. The suppression of fire and development have been the major reason for the decline of these habitats.
5. The entire **Wellfleet Harbor Area** has been designated by the state as an **Area of Critical Environmental Concern (ACEC)**. One of only 10 such areas in the Commonwealth (five of them are on Cape Cod), ACEC's are state designations for areas which have "unique natural and human resource values whose protection requires regional as well as local consideration. ACEC designation does not add bureaucratic layers; instead, it intensifies review by government agencies and the public, and boosts performance standards. These performance standards protect an ACEC's marine productivity, habitat value, water quality, and storm buffering capability". These areas are designated as important to the entire state. An ACEC designation only affords more strict review and does not prohibit or eliminate existing uses. The program is administered by the Massachusetts Executive Office of Environmental Affairs (EOEA) Coastal Zone Management Office.. Several offices within the EOEA have regulations relating to ACEC's. "Within the Department of Environmental Quality Engineering (DEQE)" which is now the Department of Environmental Protection, "three Divisions administer programs that affect ACEC's" (CZM publication):
  - Wetlands Division ( through the Wetlands Protection Act )

- Waterways Division ( permits the licenses for dredging and construction work below the high tide line )
- Division of Water Pollution Control ( discharge permits and water quality standards )

Two Department of Environmental Management programs have provisions for ACEC's:

- Wetlands Restriction Program
- Ocean Sanctuaries Program

There are also some provisions within the Massachusetts Environmental Policy Act (MEPA), and some federal agencies outside the EOEA, such as the U.S. Army Corps of Engineers, that must work within the ACEC guidelines outlined by Massachusetts Coastal Zone Management. The Wellfleet Harbor ACEC enjoys a wealth of critical habitats, the protection of which is necessary in order to insure the continued balance and well-being of several species and of this area.

6. The **“Indian Neck Ossuary”** is an extremely important archaeological site in Wellfleet on the Indian Neck peninsula which is so named because the land was set aside by the English colonial government as “Indian land” because of its long previous inhabitation by them. What is surprising, however, is the discovery of an “ossuary” on Cape Cod. An ossuary is a type of community burial ground in which the bones of several individuals are buried together. Based on what archaeologists know of the Hurons in Ontario, who constructed numerous ossuaries, these structures typically reflect a sedentary population. Many think they served as the focus of rituals which were designed to “reassert social ties among villages that had budded from a single ancestral village as its population grew.” (Scientific American; 1988 ) Every eight to twelve years outlying villages would collect remains and return bones to the ancestral village in a ceremonial burial. This is a surprising a find on Cape Cod because the prevailing theory has been that Cape Cod natives migrated seasonally, erecting only temporary camps along the shore. Most ossuaries in Ontario were located within 100 yards of a primary year round settlement lying in close proximity to several outlying villages. The ossuary find, as well as an examination of shell remains which indicated a largely wintertime taking of shellfish, has pointed to a more established coastal habitation, perhaps lasting year round in some cases. If true, this more permanent habitation of the shore was thought to have begun at least as early as the Late Archaic period ( ca. 1000 B.C. ). The ossuary is arguably the most important archaeological discovery on Cape Cod. The evidence suggests that “by the Late Woodland ” ..... “ and probably earlier, a cultural system that included permanent settlements had developed on the outer Cape” with Nauset Bay, High Head, and Wellfleet Harbor being the three primary settlements. This interesting academic debate is also important because it suggests that there could be several more, yet undiscovered archaeological sites here, both on the mainland and beneath the flats which were formally upland areas. The sites’ existence also proves that this area has a long history of human habitation and that the natural resources here have supported life for thousands of years. This reality supports a sense of place which speaks of humans connecting with their environment in a sustainable way. It reminds us that we need to care for the land here not just for ourselves today, but for those who came before and for

those who will come afterwards. The land outlasts us all. Archaeology reminds us how fleeting our stay here is, and it reminds us that our impact upon the land lasts a very long time. Map 17 shows locations of some of the known archaeological resources of Wellfleet particularly in the Indian Neck area where the ossuary is found.

7. The **Herring River**, with its tributaries Bound Brook, Duck Harbor, Pole Dike Creek and Mill Creek, once formed the largest estuarine system on the outer Cape. The mainstream originated from headwaters in the Gull Pond Chain (Gull, Higgins, Williams, and Herring) and meandered for almost three miles southwesterly to Wellfleet Bay through a floodplain that comprised over 1,000 acres of productive saltmarsh, the largest contiguous saltmarsh in town. Up until the turn of the century, organic production from the estuary and marshlands was sufficient to maintain a thriving shellfish, eel, and herring fishery. The annual proceeds from the herring fishery paid salaries of all elected town employees.

Initial alteration to tidal flow in the basin began with construction of railroad dikes around 1860. With the reported intentions of eliminating mosquito breeding habitat and creating arable land, the entire estuary was diked off from tidal flow around 1908. In subsequent campaigns against mosquitoes, the diked and subsequently desalinized river system was intensively channeled, ditched and drained, especially in the 1930's. Unfortunately, the immense value of saltmarshes to shellfish and finfish production was not widely appreciated until the 1960's. Intensive wetland drainage continues, all but eliminating habitat upstream of the dike.

Although the present upland meadow/shrub cover type does comprise habitat for a variety of riparian plants and animals, diking and drainage have eliminated extensive wetlands and severely degraded wetland water quality (Portnoy and Soukup). The adverse effects have been expressed in accelerated plant succession and periodic fish kills.

Fortunately, the potential commercial, recreational, and aesthetic value of the estuary is still apparent. Recent studies of the saltmarshes just seaward of the dike show organic production to be as high as anywhere in the state. This area represents the northernmost location for diamondback terrapin turtles over the entire Atlantic coast and important feeding and nesting habitat for a once overly harvested species in recovery. The rare salt reed grass (*Spartina cynosuroides*) also occurs in low numbers just upstream of the dike. For the benefit of the rare species, and for various other environmental, economic, and aesthetic reasons that are well documented, the Herring River Basin would benefit greatly from the planned restoration of tidal flow as discussed in Section 4C. The planning which is currently underway is essential to the future health of one of Wellfleet's most important and unique features.

8. **Wellfleet's Central District**, in most respects, has a well preserved 19th century quality, so much so that in 1989 it was placed on the National Register of Historic Places. Most of the buildings date from the early to middle 1800's, including some 40 art galleries and a variety of craft shops. Uncle Tim's Bridge spans Duck Creek and leads to Hamblin

Park from which there are impressive views of Wellfleet Harbor, the marina, and Cape Cod Bay. The town pier, built in 1960, consists of about six acres of automobile parking, two boat launching ramps, and 185 slips for seasonal boat use as well as the year round commercial fishing fleet. Two hundred and thirty moorings in Chipman Cove, adjacent to the pier, are available from June to November. The west end of Main Street has fine examples of Greek Revival houses, while on School Street there are original 18th century Cape houses. The Congregational Church tower houses the town's clock - unique in the world for tolling time using the system of ship's bells rather than the conventional 12 hour system. Taken as a whole, there are no other places left on Cape Cod that look so much like a 19th century fishing village as does the center of Wellfleet.

9. Both **bayside and ocean beaches** in Wellfleet are widely popular. The town provides public access and, in season, life guard services at four beaches along the Atlantic side of Wellfleet. In addition, there are three Wellfleet Bay and one Cape Cod Bay beach, each with public access, for the use of swimmers, surfers, fishermen, and small boat owners.
10. **Chequessett Neck, Great Island, and Billingsgate** provide unique opportunities for learning about and experiencing the history and ecology of Wellfleet. A road built in the 1950's leads to the town pier along the edge of the harbor to Great Island, an unspoiled area where Cape Cod National Seashore conducts nature walks during the summer. In the winter, harbor seals sun on Jeremy Point - the tip of Great Island. At low tide, Billingsgate, site of late 19<sup>th</sup> century Wellfleet settlements, can be seen off the end of Great Island. The drive along Chequessett Neck affords views of Wellfleet Harbor and Cape Cod Bay that are nothing short of spectacular.

## **G. Environmental Challenges**

Many of the environmental challenges which Wellfleet faces are a direct result of its development pace and pattern over the past three hundred years. As Wellfleet enters the new millennium, it is increasingly important to reduce the impacts of increasing development through planning which incorporates the protection of conservation land.

1. As described in earlier chapters, the biggest, persistent problems are environmental and public health issues related to wastewater disposal and drinking water quality. Because of its relatively low population density and political climate, sewers have not yet been installed. Wellfleet continues to rely solely on on-site septic systems. Though most of the town's soils are highly permeable, there are still failed systems due to overloading, particularly during the summer. Because the soils are highly permeable, nitrates and viruses are readily transmitted off-site to surface waters, particularly ponds and streams, and ground water. There is insufficient depth to ground water on many lots, leading to the design of "mounded" systems, which can be aesthetically displeasing to many people as well as enabling development to go where it otherwise should not. Although many lots are currently using alternative wastewater treatment systems, pollution in the most densely developed portions of Wellfleet is a pressing issue which will only be alleviated through serious planning measures which reduce pollution sources, improve waste treatment systems, provide public sewerage, and/or provide a municipal water supply.

Until these things happen, Wellfleet's drinking water quality in the central district is extremely tenuous.

2. As this is being written in 2004 the town landfill is in the process of being capped. Wellfleet may explore the usefulness of the landfill for conservation and recreation purposes, though nothing has been decided as yet and the site's minimal size (5-6 acres) limits its possibilities.
3. A third issue relates to the impact of continued development on biodiversity and open space availability in general, since there is no local mechanism for requiring dedication or reservation of open space to match the amount of lots being developed. Relative to other Cape towns, there are very few potential subdivisions which would exceed 30 acres in size and fall under the purview of the Cape Cod Commission as Developments of Regional Impact (DRIs). Residential DRIs must dedicate 60 percent of the parcel to open space use; commercial DRIs, 40 percent. Perhaps with the approval of the town Local Comprehensive Plan, development agreements for subdivisions of any size can be instituted by the Planning Board. Commercial developments currently undergo site plan review with input from multiple town boards and agencies.
4. Resource management problems include illegal trash dumping in conservation areas; unauthorized off-road vehicle use in conservation areas; upgrading specific facilities; and, resident Canada geese fouling the golf course and waterways throughout the year.
5. One of the most significant resources of Wellfleet is the harbor. Over the last decade, the Town has been very aggressive in studying this resource and protecting it. Also, by providing a pump-out facility for boaters and replacing storm drains flowing into the harbor, coliform counts after rains have decreased significantly. However, there is still the problem of nitrogen loading, especially in the smaller embayments of Blackfish Creek, Loagy Bay and Chipman's Cove. Excess nitrogen acts as a fertilizer for marine systems, causing algae to proliferate and eventually die, in turn leading to dissolved oxygen depletion in the water column. This, of course, is detrimental to marine fish and shellfish. For the long-term health of the harbor, it is critical for the Town to adopt a water shed protection plan that incorporates some type of de-nitrifying septic system.
6. Tidal restrictions on Duck Creek, Blackfish Creek, Mayo Creek, and the largest on Herring River are serious problems that, sooner or later, Wellfleet will have to address (see above discussions). In addition to eliminating estuarine habitats and salt marsh functions such as pollution control and storm buffering, tidal restrictions cause severe water quality problems so that most diked marshes have few aquatic animals, except for mosquitoes.



Wellfleet is a town of approximately 13,000 acres with seemingly abundant open space and recreational land. However, these land resources must be guarded carefully to prevent overuse and over development. Of the 13,000 acres, approximately 8,000 are within the Cape Cod National Seashore. The following inventory indicates those areas which fall within the National Seashore. In addition the Massachusetts Audubon Society's Wellfleet Bay Wildlife Sanctuary and the Wellfleet Conservation Trust have preserved additional acres as listed in the following sections. The Wellfleet Conservation Commission has a growing amount of land under its care due to the implementation of the Land Bank in 1998. See Map 13, *Conservation and Recreation Land*, showing all open space in the Town of Wellfleet.

There follows an inventory of lands of conservation and recreation interest. See Appendix I for the complete ADA Report on accessibility of properties owned by the town, conservation commission or recreation department, etc. Map 13, *Conservation and Recreation Land* and Appendices E and F, G and H provide specific parcel information for protected lands as well as unprotected open space in need of protection. Also included are quasi-protected lands such as the Chequessett Yacht and Country Club.

Protected open space is that land which has been set aside by federal, state, town or private organizations for conservation and/or limited recreation usage. Such designated open space may not be sold or in any way developed. Such restrictions are usually stated clearly in the title of ownership. Unprotected open space is that land which is undeveloped but does not have any restriction placed on it preventing future development.

The Town Assessor maintains detailed lists of all properties in town, including both privately owned land at the full assessed value and municipal or privately owned tax-exempt land and tax-reduced lands. Lands taxed at their full assessed value include primarily privately owned commercial and residential properties and generate income for the town through property tax collections. Tax exempt properties include all land owned by the town regardless of its land use status as well as land owned by private non-profit organizations such as the Wellfleet Conservation Trust, Massachusetts Audubon Society, and others. Because these lands are not being used for financial profit, do not generate substantial income, and are in the public's best interests, this land is not taxed. Lands that have a reduced tax assessment include lands with conservation restrictions and lands under M.G.L. Chapter 61 tax incentive programs. Owners of these parcels have agreed to forfeit some or all development rights for a specified period of time while agreeing to keep part or all of their property in conservation or recreation uses, thereby lowering their assessed value and associated property taxes.

The following discussion is divided into two sections, one concerning privately owned land and the other concerning public and nonprofit lands.

## **A. Private Parcels**

Privately owned parcels include all land that is not owned by a municipal, state or federal agency. This land may be used for commercial or residential purposes. Private lands that have

specific open space and/or recreation values are widely considered the most valuable properties in town – financially, ecologically and socially – and are therefore coveted for both development and preservation. On Cape Cod, where land is relatively scarce and the amount of available undeveloped land is dwindling, the competition for this land is intense and land values have skyrocketed. Conservation groups and individuals have felt for decades now that theirs is a race against time to protect as much of this land as possible before it is completely developed. Recognizing the need to prioritize their interests, various initiatives and lists have been developed over the years by these groups to help focus their efforts and money. Some of these land protection initiatives are facilitated by local and state governments, such as the state’s Wetlands Protection Act and Chapter 61 programs. Others are run by regional private non-profit groups such as the Priority Ponds and Cape Cod Wildlife Conservation projects, both conducted by The Compact of Cape Cod Conservation Trusts Inc. For these private projects, desirable land has been prioritized for potential acquisition. Most of these privately generated lists are kept behind closed doors, used only for preservation purposes, in an attempt to avoid their potential misuse by developers.

Though each of these groups holds a slightly different set of priorities, and therefore uses a different list(s), there is often overlap and sharing of these lists amongst groups. In the future, the Town of Wellfleet should work closely with land conservation groups to develop a master *Priority Parcel Acquisition List*, to help focus and integrate all land preservation efforts in town. A master list will help to integrate and streamline efforts between groups, make land protection opportunities more widely visible and fundraising and public relations efforts more cooperative.

Successful protection of high priority private parcels requires a commitment to implementation. Thus, the first task is to contact private landowners to seek permission to use part or all of their land for conservation and/or recreation purposes. For all properties included on the proposed master *Priority Parcel Acquisition List*, it is suggested that first contact be made by letter and followed up by phone. Appendix A contains a list of legal land protection tools that may be employed in this process. Wellfleet Town Counsel should draft all legal documents and preside over all transactions conducted with landowners.

## **1. Agricultural Properties**

### **a. Agricultural Land Tax Law Property (M.G.L. Chapter 61A)<sup>20</sup>**

The agricultural and horticultural land classification program under Massachusetts General Laws Chapter 61A is designed to encourage the preservation of the state’s valuable farmland and promote active agricultural and horticultural land use. It offers significant local tax benefits to property owners willing to make a long term commitment to farming. In exchange for these benefits, the city or town in which the land is located is given the right to recover some of the tax benefits afforded the owner when the land is removed from classification and an option to

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<sup>20</sup> Chapter 61, 61A and 61B information presented in this section is from the Massachusetts Department of Revenue Division of Local Services Property Tax Bureau’s “Taxpayer’s Guide to Classification and Taxation of Agricultural/Horticultural Land in Massachusetts”, Brochure dated October 1997.

purchase the property should the land be sold or used for any purpose other than to continue raising farm products.

Eligible property must consist of at least 5 contiguous acres of land under the same ownership and be "actively devoted" to agricultural or horticultural land use under Chapter 61A. Land is used for agricultural or horticultural purposes if it is used primarily and directly to raise or grow the following for sale in the regular course of business:

- Animals, including, but not limited to dairy cattle, beef cattle, poultry, sheep, swine, horses, ponies, mules, goats, bees and fur-bearing animals, or products derived from the animals.
- Fruits, vegetables, berries, nuts and other foods for human consumption, feed for animals, tobacco, flowers, sod, trees, nursery or greenhouse products.
- Forest products under a forest management plan approved by the State Forester (see Chapter 61 discussion).

Land is also used for agricultural and horticultural purposes if it is used primarily and directly in a manner related to the production of the animals or crops and that use is necessary and incidental to the actual production or preparation of the animals or crops for market.

For the land to be considered "actively devoted" to a farm use, it must have been farmed for the two fiscal years prior to the year of classification and must have produced a certain amount of sales. The minimum gross sales requirement is \$500 for the first 5 acres of productive land. That amount is increased by \$5 for each additional acre of productive land being classified, unless the additional acreage is woodland or wetland. In that case, the amount is increased by only \$.50 for each additional acre.

The minimum gross sales requirement for land being used to cultivate or raise a farm product that takes more than one season to produce its first harvest is satisfied if the land is being used in a manner intended to produce those sales within the product development period set by the Farmland Valuation Advisory Commission<sup>21</sup> for the particular crop or animal.

Buildings and other structures located on the parcel, as well as any land on which a residence is located or regularly used for residential purposes, do not qualify for classification and continue to be assessed a regular local property tax.

There are no currently in Chapter 61A status in Wellfleet.

b. Other Agricultural Lands

There are no other privately held agricultural lands of mention in Wellfleet.

**2. Forested Land**

a. Forestland Tax Law Property (M.G.L. Chapter 61)

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<sup>21</sup> The Farmland Valuation Advisory Commission is a state board made up of a representative from the Department of Food and Agriculture, Department of Revenue, University of Massachusetts College of Food and Natural Resources, Executive Office of Communities and Development and a local Board of Assessors.

The forest land classification program under Massachusetts General Laws Chapter 61 is designed to encourage the preservation and enhancement of the state's forests. It offers significant local tax benefits to property owners willing to make a long term commitment to forestry. In exchange for these benefits, the city or town in which the land is located is given the right to recover some of the tax benefits afforded the owner when the land is removed from classification and an option to purchase the property should the land be sold or used for non-forestry uses.

Eligible parcels must consist of at least 10 contiguous acres of land under the same ownership and be managed under a 10-year management plan approved and certified by the State Forester in order to qualify for and retain classification as forest land under Chapter 61. Buildings and other structures located on the parcel, as well as the land on which they are located and any accessory land, do not qualify for classification and continue to be assessed a regular local property tax.

Massachusetts General Laws Chapter 61 allows landowners to reduce the property tax burden on their woodlands if they are willing to keep the forested land undeveloped and in wood production. Land certified under Chapter 61 is taxed at 5 percent of fair market value or at \$10 per acre, whichever is greater. In addition, a products tax of 8 percent is charged on the stumpage value of any wood cut from the property.

To qualify for Chapter 61, landowners must have 10 or more contiguous acres of private woodland managed for wood production under an approved long-term forest management plan. The plan must be approved by the DEM service forester and then filed with the local board of assessors. To continue in the program, the plan must be renewed every 10 years. As part of the agreement, the town receives an option to purchase the property if the owner decides to sell to someone other than a relative.

Generally speaking, if the land is not kept in wood production for at least 10 years, the costs incurred will be greater than paying the normal tax bills as they come due. If landowners choose to remove their land from Chapter 61 prior to the 10 year anniversary, they must repay all the taxes which were avoided and a 14 percent interest penalty.

There are no Chapter 61 properties currently existing in Wellfleet.

### **3. Recreation Land**

#### **a. Recreation Land Tax Law Property (M.G.L. Chapter 61B)<sup>22</sup>**

The recreational land classification program under Massachusetts General Laws Chapter 61B is designed to encourage the preservation of the Commonwealth's valuable open space and promote recreational land uses. It offers significant local tax benefits to property owners willing to make a long term commitment to preserving land in an undeveloped condition or for use for

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<sup>22</sup> The majority of this section is copied verbatim from the TAXPAYER'S GUIDE TO CLASSIFICATION AND TAXATION IN MASSACHUSETTS CHAPTER 61B RECREATIONAL LAND Massachusetts Department of Revenue Division of Local Services Property Tax Bureau found at <http://www.dls.state.ma.us/Ptb/pdfs/Ch61B.pdf>

outdoor activities. In exchange for these benefits, the city or town in which the land is located is given the right to recover some of the tax benefits afforded the owner and an option to purchase the property should the land be sold or used for any purpose other than to maintain it as open space or for recreational use.

Property must consist of at least five contiguous acres of land under the same ownership in order to qualify for and retain classification as recreational land under Chapter 61B. The land must fall into one of the following two categories to qualify:

1. It must be maintained in a substantially natural, wild or open condition or must be maintained in a landscaped condition permitting the preservation of wildlife and natural resources. It does not have to be open to the public, but can be held as private, undeveloped, open space land.
2. It must be used for certain recreational purposes and must be open to the public or members of a non-profit organization. Recreational purposes include land used primarily for any of the following outdoor activities, so long as they do not materially interfere with the environmental benefits of the land: hiking, camping, nature study and observation, boating, golfing, non-commercial youth soccer, horseback riding, hunting, fishing, skiing, swimming, picnicking, private non-commercial flying, hang gliding, archery, and target shooting. Buildings and other structures located on the land, as well as the land on which a residence is located or regularly used for residential purposes, do not qualify for classification and will continue to be assessed a regular local property tax.

Under Chapter 61B, the owner still pays an annual property tax to the city or town in which the classified land is located. However, the tax is based on the commercial tax rate for the fiscal year applied to the value of the land for recreational purposes, rather than its fair market value as would be the case if the land were not classified. The value of the land for recreational purposes is determined annually by the assessors and cannot exceed 25 percent of the fair market value of the land. The property tax is due in the same number of installments and at the same time as other local property tax payments in the city or town. Interest is charged on any overdue taxes at the same rate applicable to overdue local property taxes.

The city or town has an option to purchase any classified land whenever the owner plans to sell or convert it to a residential, commercial or industrial use. The owner must notify by certified mail the mayor and city council or the selectmen, assessors, planning board and conservation commission of the city or town of any intention to sell or convert the land to those uses. If the owner plans to sell the land, the city or town has the right to match a bona fide offer to purchase it. If the owner plans to convert it, the city or town has the right to purchase it at its fair market value, which is determined by an impartial appraisal. The city or town may also assign its option to a non-profit, conservation organization. The owner cannot sell or convert the land until at least 120 days after the mailing of the required notices or until the owner has been notified in writing that the option will not be exercised, whichever is earlier. This option is not available to the city or town and the notice requirement does not apply if the recreational use is simply discontinued, or if the owner plans to build a residence for his or her use, or the use of his or her

parent, grandparent, child, grandchild, brother or sister, the surviving spouse of any of those relatives, or an employee working full time in the recreational use of the land.

The 108-acre Chequesset Yacht and Country Club covers approximately 108 acres, with a nine hole golf course, small sailing basin, 5 tennis courts, boat house and club house. It is the only Chapter 61B property in Wellfleet and should be maintained as a public resource in perpetuity even if it does not always remain a privately owned golf course. As mentioned in Section 4C, the town has recently appropriate money to purchase 25 acres of the Club as part of its Herring River Restoration Project. Continued efforts are necessary to ensure perpetual protection of the entire acreage through the use of fee purchase, conservation restriction or other means (see Appendix A, *Non Regulatory Land Protection Tools*.) As mentioned earlier, for properties in Chapter 61B status, the town has 120 day right-of-first refusal periods on any pending sale. There is relatively little insurance against the possibility of full scale development of this land.

b. Other Private Recreational Facilities

Oliver's Tennis Courts (eight public tennis courts) represent another private recreational facility in Wellfleet which are currently open but unprotected.

c. Seasonal accommodations

Wellfleet has a relatively moderate selection of motels and inns along with several bed and breakfast establishments. Some of these are seasonal while others remain open for all or most of the year. There are also several cottage colonies, condominiums and rentals which are operated seasonally.

d. Camping facilities

- Paine's Campground on 14.7 acres with 150 sites and 44 hook ups
- Maurice's Campground on 21.1 acres with 240 sites and 140 hookups

These operations play an important role in Wellfleet's open space, recreation, and economy. It is essential that such amenities be protected through use of Chapter 61B or conservation restrictions or other means, or additional ones planned for in the event that any of them are lost to development.

#### 4. Areas Significant for Water Resource Protection

The entire Cape is significant for water resource protection due to the presence of a single underground sole source aquifer and the abundance of surface water resources, as well as their importance to the region's economy. Surface water resources include salt and freshwater bodies and wetland habitats of all kinds.

Wetland resources are protected through the regulatory oversight of the town Conservation Commission in accordance with the Massachusetts Wetland Protection Act (M.G.L. Chapter 131), and the town local wetlands bylaw. The town also establishes rules and regulations for the public use of municipal recreational and drinking water resources. In addition, there are regional and town-wide initiatives aimed at protecting specific resource types including the land-based initiatives discussed below.

a. Cape Cod Priority Ponds Project – A Land Conservation Guide for Cape Cod's Freshwater Ponds<sup>23</sup>

The Cape Cod Priority Ponds Project was conducted by the Compact of Cape Cod Conservation Trusts, Inc. to assist public and private land conservation programs on Cape Cod. The focus of the guide is the identification of the remaining undeveloped land parcels adjoining fresh water ponds<sup>24</sup>. The primary goal of the project is to assist in the protection of the most important remaining undeveloped pond shore areas on Cape Cod for water quality, conservation and passive recreation purposes.

The specific objectives of the project include:

- To identify, map and rank all the remaining pond shore parcels on Cape Cod (both undeveloped and under-developed).
- To develop protection strategies for the top priority properties, particularly those surrounding Great Ponds and Coastal Plain Ponds.
- To conduct targeted outreach for landowners controlling priority parcels to provide information on land values and identify protection options.
- To provide a digital database containing maps and a parcel-specific database to support ongoing land protection and water quality monitoring activities.
- To promote further cooperation among the Commonwealth's environmental agencies, Town environmental protection committees, and local non-profit land trusts in protecting the public interest in freshwater ponds.

The Cape Cod Priority Ponds Project is the first comprehensive evaluation of pond shore property ever done for Cape Cod. The regional study is inclusive of all ponds, regardless of size, location or public recognition and included well over 1,000 ponds and more than 3,000 land parcels. From this extensive database, 200 properties have been culled out based upon an assessment of their conservation values. The top 200 Priority Parcels are intended to serve as a guide for decision-making by the local land trusts and town Land Bank Committees. Ideally this

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<sup>23</sup> The majority of this section is copied verbatim from the report authored by The Compact of Cape Cod Conservation Trusts, Inc. with minor changes to accommodate the purposes of this report.

<sup>24</sup> Though the protection of undeveloped property is the primary interest of most land conservation efforts, this study also includes so-called under-developed parcels. Under-developed parcels are large lots that may contain existing structures, but also include sufficient additional land area (beyond the minimum lot size required by zoning) to warrant consideration for conservation purposes.

information will allow these groups to determine which properties they should protect before the land comes on the market or a development proposal is initiated.

One important step in maintaining pond ecology and water quality is to conserve as much of the surrounding uplands as possible. However, it is not possible (or necessary) to protect all the remaining open land around the Cape's ponds. It is simply too costly and in those instances where the shoreline is already extensively developed, conservation may not achieve the desired effect. The delineation of surface watersheds and ground water recharge areas can help focus protection efforts to achieve maximum water quality benefit. Where available, pond (ground water) recharge areas were considered in setting priorities for protection in this project.

Nearly 3,000 parcels, with a total area in excess of 12,000 acres, were evaluated and ranked. All of these properties were mapped and the general parcel information stored in The Compact's project files. From this list, the top 200 highest scoring parcels were selected for further analysis and information gathering. As would be expected, the top 200 parcels are not evenly distributed among the Cape's 15 towns. Some towns may contain several of the "top 200 priority parcels", while others may only contain one or two. The intent is to stimulate a collective, local effort that will help ensure protection of a regional resource and to provide an opportunity to target local funds to properties that may have greater than local value. It is also expected that this approach will help stretch limited acquisition funds by highlighting those properties that may be most likely to attract additional sources of funding.

The Cape Cod Commission is currently compiling substantial additional information for many of the Cape's fresh water ponds. While not used specifically to rank parcels in this study, it is expected to be of value to the land trust community, particularly when selecting among priority parcels that may be competing for available funding. The Commission's Ponds Atlas contains information on water quality, depth, bathymetry (where available), recreational uses, types of public access, herring runs, fish stocking and water quality monitoring activities.

### **Summary of Significant Regional Finds and Results**

- 1,032 ponds have been inventoried Cape-wide. Hydrologic information provided by the Cape Cod Commission.
- 170 of these are Great Ponds (10 acres or more in size).
- 191 ponds are considered Coastal Plain Ponds that provide important habitat for several state-listed rare (Special Concern, Threatened or Endangered) plant and animal species.
- 60 percent (615) of the ponds inventoried have further development potential along their shorelines.
- Roughly 40 percent (415) ponds have shorelines that are either completely developed or completely protected.
- 2,672 undeveloped or under-developed pond shore properties have been identified for analysis and ranking purposes.
- Falmouth has the highest number of parcels inventoried at 465 (16 percent of the total) followed by Harwich with 377 (13 percent), and Mashpee and Barnstable with 344 and 343, respectively (12 percent).

- The top 200 parcels contain approximately 2,800 acres around 69 ponds in 13 towns.
- Sandwich has the most acreage associated with the top 200 parcels with 875 acres, followed by Brewster (482), Barnstable (347), Mashpee (321), Harwich (283), Falmouth (226), Yarmouth, (181). The remaining 133 acres is split nearly evenly by the towns of Chatham, Orleans, Dennis, Truro, Eastham and Provincetown.
- The towns with the highest number of top 200 parcels around ponds are Mashpee (50), Brewster (48), Sandwich (27), Harwich (26), Barnstable (19), and Falmouth (18).

Though the priority ponds maps and parcel lists are not available for public viewing, they should be used to help focus land acquisition efforts, particularly those related to pond protection. Future land acquisition efforts in the Town of Wellfleet should incorporate Priority Ponds Project findings into the decision making process and, at a minimum, the high-priority parcels identified in Wellfleet, should be added to the proposed master Priority Parcel Acquisition list for the town. For more specific information regarding Wellfleet’s priority pond parcels, contact The Compact of Cape Cod Conservation Trusts Inc. at 508-362-2565.

## **5. Priority Areas for Protection of Rare Species and Exemplary Natural Communities**

### **a. Massachusetts Natural Heritage and Endangered Species Program**

The Massachusetts Natural Heritage and Endangered Species Program (MNHESP) regularly updates and publishes its lists and maps of endangered, threatened and special concern species in each town (see Table 18, above). MNHESP also actively inventories and tracks the distribution and status of uncommon and exemplary natural communities across the state. The location of these habitats and species impacts potential development projects and is often a criteria used when prioritizing parcels for conservation land acquisition<sup>25</sup>. MNHESP information relevant to the prioritization of privately owned parcels is discussed below. For further information regarding wildlife habitats and species, see also Section 4E and Maps 10A, B, C and D.

### **b. Cape Cod Wildlife Habitat Conservation Project**

The Cape Cod Wildlife Conservation Project was undertaken to help bring wildlife conservation planning to the forefront in public and private land acquisition and open space management efforts in the region. The results of this analysis are primarily intended to guide the Cape's private land trusts on land acquisition decisions pertaining to habitat protection. This information, however, may also be of general interest and benefit to other conservation-minded organizations involved in wildlife education, protection and habitat management, such as town land bank committees. The most important result of the Cape Cod Wildlife Habitat Conservation Project is the identification of the region’s most important wildlife habitat and the prioritization of parcels for protection. This information should be used by the Town of Wellfleet to help guide Town’s land protection efforts. This project is discussed in depth in

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<sup>25</sup> This is, in fact, one of the criteria used in the Cape Cod Wildlife Conservation Project and the Priority Ponds Project, both produced by the Compact of Cape Cod Conservation Trusts, Inc.

Section 4E and illustrated in Map 11, *Cape Cod Wildlife Conservation Project Significant Habitats Map*.

## **6. Private Vacant Unprotected Land**

The Town of Wellfleet is rapidly approaching buildout, and demand for the few remaining buildable parcels in town is high. The Town's Open Space/Land Bank Committee has compiled a list of vacant land in town and has prioritized these parcels for protection. This list includes all vacant lots of significant size; many smaller open lots within subdivisions will not be included. Appendix G, *Areas of Concern for Land Conservation*, lists the criteria used in determining a parcel's acquisition priority. Most of the highest priority parcels are abutting existing conservation areas and are listed in Appendix H, *OSC List of High Priority Salt Marsh Parcels*. As presently constituted, this list contains 524 vacant acres which could be protected for conservation/recreation. The Wellfleet Conservation Trust also has a list of high priority parcels. It is recommended that these groups compile these to create a *Master Priority Parcel Acquisition List* and work cooperatively, as they have in the past, to protect the parcels listed

## **7. Conservation Restrictions and other Less than Fee Interests**

It is not commonly known that land purchased or designated and used for conservation purposes is not always protected from development in perpetuity. The best way to ensure a parcel's perpetual protection is to place language in the deed to that effect. Such language is known as a "conservation restriction", and is one of the major land protection tools being used today. This conservation restriction may be owned by a non-profit land trust or another non-profit organization including the town itself; it does not necessarily have to be held by the owner of the land. In many cases, a land trust may hold a conservation restriction on land that is owned by a private landowner or even on land that is owned by the town or state. Conservation restrictions may vary in duration; to ensure *perpetual* protection, a permanent conservation restriction is necessary.

Contrary to popular knowledge, town land used for conservation and recreation is not always protected and can be developed by the town at any time, provided the appropriate legal steps are followed. According to state law, land acquired for the purposes of natural resource protection cannot be converted to any other use without the following actions:

- 1.) the matter must be taken up at town meeting or city council and pass by a 2/3 vote;
- 2.) the town must file an Environmental Notification Form (ENF) with EOEA's MEPA Unit; and,
- 3.) the matter must pass by a 2/3 vote of the Massachusetts Legislature.

Finally, if the land was acquired with assistance from one of the EOEA's Division of Conservation Service's funding programs, the converted land must be replaced with land of

equal monetary value and recreational or conservation utility (EOEA DCS Open Space Planner's Workbook).

These steps are meant to ensure that land acquired for conservation and recreation remains protected, however if these steps are adhered to, it is possible to change a parcel's designation and that possibility scares many open space planners. It is conceivable that future politics and municipal land use needs may change a town's approach to conservation and recreation parcels, and develop them for other purposes. Also, many parcels do not have clear deed language, or even if they do, their land use status not always known by land planners. Therefore, for the purposes of open space planning, these parcels must be perceived and treated as unprotected land until a thorough deed examination is conducted. The Horsley Witten Group has recently completed a study of all publicly owned land in Wellfleet to establish their legal ownership and land use (conservation and recreation) status. Lands that are not legally protected in perpetuity should have a permanent conservation restriction assigned to their deed and recorded in the Barnstable County Registry of Deeds.

According to The Compact of Cape Cod Conservation Trusts, there are 10 properties totaling 24.6 acres under conservation restrictions in Wellfleet, shown in Appendix F, *Land Holdings of the Wellfleet Conservation Trust*.

Conservation restrictions are the easiest and most reliable means of ensuring the perpetual protection of land. The town should continue to work in conjunction with land trusts (i.e. the Wellfleet, The Compact of Cape Cod Conservation Trusts, Inc. and Orenda Wildlife Preservation Trusts) to acquire conservation restrictions on all unprotected municipal lands even if they are currently designated as conservation and recreation land and on any privately owned land that exhibits conservation values including wetland resource areas.

## **8. Major Institutional Holdings**

There are no other major private institutional land holdings in the town of Wellfleet.

## **9. Other Resources**

### **a. Railroad and Utility Rights of Way**

As previously noted, sections of the abandoned Cape Cod Railroad right of way have been converted to recreational use as a biking and/or walking trail in other towns. Similarly, the electric power line corridors running through town and some public and private road right of way are used for various open space and recreational purposes including walking, hunting, and nature observation. These major corridors are an extremely valuable conservation and recreational resource. Without them, the town would lose one of its most important but overlooked "borrowed" amenities. To ensure the continued availability of these areas for public use, the town should seek to acquire conservation restrictions or rights of way on private land along these corridors that afford continued public use. As tracts of land become available for purchase, the town should consider buying them.

## B. Public and Nonprofit Parcels

Wellfleet has approximately 44 miles of shoreline. This shoreline is used by residents and visitors for swimming, surfing, fishing, surfing, and walking and serves as a natural playground for children and adults.

### 1. Public Facilities

#### a. State

According to Town of Wellfleet fiscal year 2004 figures contained in Appendix E, *Wellfleet Tax Exempt Land*, there is a total eight parcels totaling 81.94 acres owned and managed by the Commonwealth of Massachusetts in Wellfleet. The state holds three conservation or recreation areas in Wellfleet, two within the Fox Island Conservation Area; one on the east side of Indian Neck and the other at Field Point, the other is part of the Cape Cod Rail Trail near LeCount Hollow Road

#### b. Town

### Recreation

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#### Recreation Commission

According to Town of Wellfleet fiscal year 2004 figures contained in Appendix E, *Wellfleet Tax Exempt Land*, there is a total of approximately 96 acres owned and managed by the Town of Wellfleet Recreation Commission. Most of the more prominent sites are listed and described by category, below.

<i><b>Ocean Beaches</b></i>	<u>Acres</u>	<u>Management</u>	<u>Facility</u>
Newcombs Hollow	1.8	Town	Comfort Station, Life Guards
Cahoons Hollow	3.9	Town	Comfort Station, Life Guards
White Crest	41.4	Town	Comfort Station, Life Guards, Surfing
Maguire's Landing/LeCount	45.0	Town	Comfort Station, Life Guards
Marconi Beach	-	NPS	<i>see note below</i>

*Note:* Marconi Beach is part of the National Seashore. Facilities include a designated surfing area, bath house with showers, handicapped scenic overlook, interpretive shelter and environmental study area.

#### ***Bay Beaches***

Indian Neck	4.2	Town	Portable Toilet
Mayo Beach	4.4	Town	Comfort Station, handicap access
Pleasant Point	4.2	Town	Launching Area
Duck Harbor	10.7	Town	Portable Toilet
The Gut	8.8	Town/NPS	Great Island Trail head

Powers Landing	0.4	Town	Beach Access
Burton Baker	1.4	Town	Launching Area

***Fresh Water (Kettle) Ponds***

There are thirteen fresh water kettle ponds in Wellfleet. All of the ponds are located within the National Seashore boundaries; five have public access managed by the Town of Wellfleet . These kettle ponds are a unique and fragile resource with ecological, aesthetic and recreational value. In the past few years, the National Park Service has conducted and coordinated research programs on the kettle ponds to investigate the status of pond water quality (see Section 4C).

***Ponds***

<b>Pond</b>	<b>Size (Acres)</b>	<b>Access</b>	<b>Ownership</b>	<b>Comments</b>
Gull	106	5.3A	NPS, Town, Private	Swimming, fishing, ice fishing bed owned by state non-motor boating, stocked trout, alewives spawning, boat rental
Great	44	2.8A	NPS, Town, Private,	Clear swimming hole, poor fishing bed owned by state
Long	37	1.3A	NPS, Town, Private,	Swimming, minor fishing, bed owned by state very acid
Higgins	28	500'	NPS, Town, Private,	Swimming, fishing, ice fishing, alewives spawning
Herring	20	----	NPS, Town, Private,	Alewives spawning bed owned by state
Duck	13	7500'	NPS, Town, Private,	Clear swimming hole bed owned by state
Dyer	11.8	----	NPS, Private,	bed state
Williams	9.0	3.0A	NPS, Private	Shallow murky pond, minor bass fishing
Kinnacum	6.4	none	Private	
Turtle	3.9	None	NPS, Private	

Southeast	2.7	None	NPS, Private
Northeast	2.4	None	NPS, Private
Spectacle	2.0	Town	NPS

Public access to both marine and fresh water ways-to-water, in the Town of Wellfleet has been a way of life associated with Cape Cod for several centuries. Ways to water can be defined as legally defined public rights of access to shoreline water resources including fresh and salt water beaches, town and state landings, fresh water walkways, boat launches, streams, ponds, etc. Ways to water are owned and managed either by the town or the state. Recently the Horsley Witten Group conducted a study of all town-owned ways to water in order to identify their ownership and public accessibility status. That report should be referenced as the town strives to establish permanent protection of these recreational resources wherever it is needed. These are shown on Map 13, *Conservation and Recreation Land*.

***Town Recreational Sites***

Bakers Field - located on Kendrick Avenue. Here the town provides a playing field, 4 tennis courts, children’s playground, basketball courts, a skate board park, and rest rooms. This area can also be used for town fairs and the like.

Headstart playground ( across from Elementary School) - a playground for young Wellfleet Elementary School has a large playing field used by various ball teams throughout the year. It also has a playground.

Elementary School Gymnasium - the Wellfleet recreation program has unlimited use of the school during available hours.

Hamblin Park/Cannon Hill - This is a four acre area accessible via Uncle Tim’s Bridge (a wooden foot bridge)

Schools also provide an important quasi-public recreation resource. To ensure that the most important town owned land is protected in perpetuity for public conservation and recreation use, the town should prioritize all town owned parcels for their conservation and recreation value, regardless of category, and pursue their permanent protection through the establishment of conservation restrictions.

## Conservation

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### *Conservation Commission and Land Bank*

According to Town of Wellfleet fiscal year 2004 figures contained in Appendix E, *Wellfleet Tax Exempt Land*, there is a total of 22 parcels totaling 13.49 acres under the care, custody and control the Town of Wellfleet Conservation Commission plus another 56.02 acres bought with Land Bank revenues and managed by the Conservation Commission. Most of these are listed below and in Appendix E.

- 3,000 square feet off Cross Street, Old Wharf Point
- Old Wharf Point - 29 lots encompassing approximately 132000 sq. ft
- Mill Hill Island - 6 lots - approximately 39,600 sq. feet
- Paine Hollow Road 3 lots approximately 0.28 acres
- Highland Avenue, Paine Hollow, Lot 358 & 359, total .41 acre
- Off Briar Lane, Lot 118 - 2.70 acres
- Off Morea Park Road, Brown's Neck Road - Lot 155 - 2.70 acres
- Off Lt. Island Road, at Bayberry Rd. - 10.8 acres
- Geiger I & II – 15 lots – 14.6 acres (see further discussion on page 19)
- Oliver – 3 lots – 3 acres
- Frank – 7 lots – 8 acres
- Chavchavadze – 5 lots – 7.910 acres
- Ziering – 8 lots - 7.26 acres
- Ernst – 3 lots – 3.43. acres (see further discussion on page 19)
- Koessel – 2 lots – 1.56 acres
- Rinzler – 6 lots – 6.00 acres
- Sand Pit – 3 lots – 3.4 acres
- Approved at Town Meeting April 2005 – Chequessett Yacht and Country Club - 25 acres,

The Open Space/Land Bank Committee (now the Open Space Committee since July 1, 2005) has done an admirable job of governing land acquisition in the Town of Wellfleet for the last five years. For the foreseeable future, the Community Preservation Act will provide the funding for land acquisition in town, which will be managed by a CPA Committee (Committee appointments underway). As discussed in Section 3 funds can be used to address three core community concerns:

- Acquisition and preservation of open space
- Creation and support of affordable housing
- Acquisition and preservation of historic buildings and landscapes

A minimum of 10 percent of the annual revenues of the fund must be used for each of the three core community concerns. The remaining 70 percent can be allocated for any combination of the allowed uses, or for land for recreational use. This gives each community the opportunity to determine its priorities, plan for its future, and have the funds to make those plans happen ([www.communitypreservation.org](http://www.communitypreservation.org)).

The new CPA Committee will have the responsibility of identifying, prioritizing and pursuing land acquisition opportunities for the purposes of open space and recreation, historic preservation and affordable housing. Because these three interests may sometimes compete with each other, it is imperative that each group has a representative or liaison to the CPA Committee that will represent these interests. Some of the tasks this Committee should consider include development of the proposed master *Priority Parcel Acquisition List* and protection of the private parcels listed. It should also prioritize all town owned parcels for their conservation and recreation value, regardless of category, and pursue their permanent protection through the establishment of conservation restrictions. Finally, it should establish a strategy for the ongoing management of these properties to ensure healthy ecosystem functioning, sanitation and public safety.

### **Other Municipal Properties**

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In addition to parcels that are clearly dedicated for conservation and recreation uses, there is a large amount of tax exempt land (public and private) that is designated for other uses including those listed below. These undesignated parcels present a challenging opportunity for creative conservation and recreation planning in town. The town should absorb and being to implement the recommendation of the recently completed town-owned lands inventory conducted by the Horsley Witten Group.

- General Municipal Use – 70 acres
- Community Organizations - 15 acres
- Church Properties - 8.58 acres
- Tax Title Properties – 365 acres
- School Properties – 13 parcels totaling 280 acres;
- Housing Authority – 17 acres
- Cemeteries – updated acreage unavailable at time of writing
- Public Landings – updated acreage unavailable at time of writing
- Ways to Water – updated acreage unavailable at time of writing

## **c.. Cape Cod National Seashore Recreational Sites**

Of the 44,600 total acres in the Cape Cod National Seashore about 8,000 are in the Town of Wellfleet. Several major visitor areas are within the town. These are:

- Great Island is connected by land to the mainland. The Great Island Walking Trail goes to the end of Great Beach Hill, site of the former 18<sup>th</sup> century Human Society Hut for shipwrecked seamen.
- Atlantic White Cedar Swamp is located next to the Marconi Historical Site and consists of a 1.2 mile nature trail.
- Marconi Beach area - bathhouse, lifeguard and handicapped scenic overlook
- Marconi Historical Site - Site of the sending of the first transoceanic radio message from the United States
- Atwood-Higgins House - on Bound Brook Island

## **2. Private Non-Profit Conservation Lands**

### **a. Massachusetts Audubon Society - Wellfleet Bay Wildlife Sanctuary (WBWS)**

According to Town of Wellfleet fiscal year 2004 figures contained in Appendix E, *Wellfleet Tax Exempt Land*, there is approximately 838 acres owned and managed by the Massachusetts Audubon Society at the Wellfleet Bay Wildlife Sanctuary. This land comprises a broad expanse of salt marsh, pine woods, brooks, and ponds including five miles of trails, a children's day camp, educational workshops and classes as well as lectures - all dealing with aspects of nature, conservation and wildlife.

### **b. Wellfleet Conservation Trust**

The Wellfleet Conservation Trust was established in 1984 to aid and promote the preservation of natural resources and rural character of the town of Wellfleet. This is done through the conservation, preservation and maintenance of beaches, meadows, woodlands, marshes, wetlands and wildlife habitats. The Trust acquires land by gift or purchase, acts as steward for its protection, and encourages the study and implementation of sound environmental practices. The WCT also works with the Open Space/Land Bank Committee and contributes funds toward purchases made with Land Bank monies thus increasing the ability to purchase acreage.

In its first 20 years, WCT has protected 96 parcels of land totaling approximately 268 acres (The Compact of Cape Cod Conservation Trusts Inc.)<sup>26</sup> (see Appendix F, Land Holdings of the Wellfleet Conservation Trust). Wellfleet Conservation Trust properties are located to a large extent near the Wellfleet Harbor, where protection of the land helps to protect its water quality. Some of this land is contiguous with other protected open space such as at Indian Neck where the WCT and Commonwealth of Massachusetts jointly protect over 100 acres.

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<sup>26</sup> Appendix E, Wellfleet Tax Exempt Land, shows only 230 acres, probably indicating that town records are not as up to date.

### 3. *Open Space Planning Efforts*

#### a. **Regional Open Space Greenbelt**

In 1991 the Cape Cod Commission proposed a regional open space greenbelt system throughout Barnstable County, whose purpose is to “link existing protected open space and sensitive resources including wildlife habitat, wetlands, and zones of contribution to public wells to establish a regional network of connected open space.”<sup>15</sup> Towns were asked to refine this greenbelt as it falls within their borders, as they develop local comprehensive plans. In Wellfleet, the greenbelt extends throughout the Cape Cod National Seashore, which is currently protected, and extends beyond into the important marshlands in and around Wellfleet Harbor including Blackfish Creek, several stream systems, and the Chequessett Neck Yacht and Country Club.

The greenbelt is a regional and local look at how open space and recreation lands might link together, keeping in mind current development patterns. Although Wellfleet can never have too much open space for its environmental health, priority should be focused on the most important ecological areas, namely the saltwater marshlands and river corridors.

#### b. **Cape Cod Pathways**

Wellfleet’s Board of Selectmen has endorsed the concept of Cape Cod Pathways, a countywide effort to create a growing network of walking trails linking open space in all 15 Cape Cod towns from Falmouth to Provincetown. In November 1993, the Barnstable County Commissioners conceived the Cape Cod Pathways project as a way to:

- enable residents and visitors to enjoy and learn about the natural, recreational, historical and cultural values of Cape Cod;
- enhance access for walkers and hikers to the Cape’s woodlands, ponds, beaches and historical villages;
- foster the preservation of open space in order to protect scenic views, wildlife habitat and sensitive natural areas; and,
- serve as a regional amenity, attracting visitors to Cape Cod during all seasons of the year.

Numerous individuals and organizations across Cape Cod have been involved in this effort through the years including the presently dormant organization called Partners for Cape Cod Pathways (Association for the Preservation of Cape Cod, Cape Cod Commission, The Compact of Cape Cod Conservation Trusts, Inc. and The Conservation Fund), as well as trail advocates and local town committees.

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<sup>15</sup> Cape Cod Commission, Regional Policy Plan Atlas, 1991.

The Cape Cod Pathways trail network directly enhances Wellfleet's conservation and recreation resources, providing an additional reason for the ongoing acquisition and protection of conservation land, thereby assisting in regional open space conservation efforts.

In 1998, The Compact of Cape Cod Conservation Trusts Inc. completed a *Trail Plan and Environmental Assessment - Cape Cod Pathways National Seashore Trails Project: Salt Pond Visitor Center to Marconi Station (Headquarters) Area*. The Trail Plan detailed a large portion of the proposed Cape Cod Pathways trails route through the Park and indicated how it would link up to adjacent areas and trails. These walking trails are located within the federally owned Seashore but serve the entire public. They can be accessed at several points within town. They also intersect with the Cape Cod Rail Trail bicycle corridor.

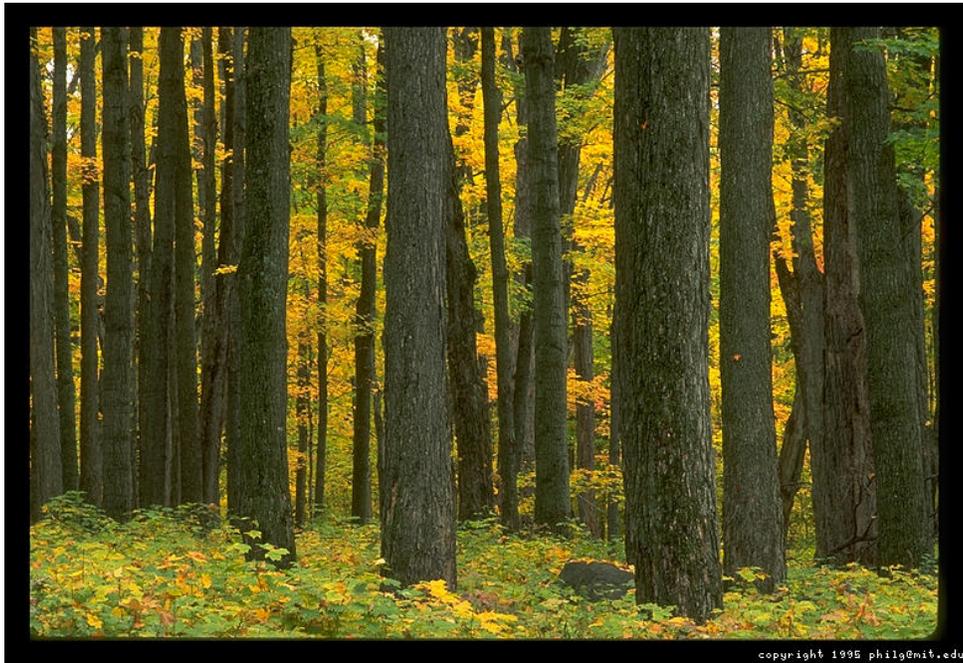
### **c. Bike Trails**

The Cape Cod Rail Trail runs from Wellfleet to Dennis and is the most popular bike trail on Cape. The Rail Trail runs mostly over the abandoned rail bed of the Old Colony Rail Road. In 1976 the State of Massachusetts purchased the right-of-way for \$1 and started plans for recreational use of the corridor. Beginning in 1978 the first sections of trail were improved for pedestrian, bicycle and equestrian use. In 1994 the Rail Trail was extended from Locust Road in Eastham to LeCount Hollow Road in South Wellfleet. And in 1997, the Town of Harwich built a 3.5 mile spur off the Rail Trail to the Chatham town line. In 2002 the first of two 'bicycle' bridges were built that eliminated most of the areas where one must ride with traffic. In all the Rail Trail and its connections provide more than 30 miles of off-road riding. Nickerson State Park is the official trail head and overseer of the trail<sup>27</sup>. Wellfleet has some of the best trails on the Cape, particularly in and around the Cape Cod National Seashore.

Further discussion is needed as to how we might extend the Bike Trail through Wellfleet without impacting on the fresh water ponds which have been seriously threatened by overusage. The Open Space Committee has recommended to the Selectmen that if and when they decide to grapple with this question that they appoint a separate Bike Trail Committee to explore all dimensions of the problem. Open Space would ask to have a representative on that Committee.

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<sup>27</sup> Much information in this summary has been taken verbatim from the Cape Cod Rail Trail Web site, <http://www.ccrailtrail.com/>



## **A. Description of Process**

See Section 2B, Planning Process and Public Participation, for a description of the planning process. The process was driven by the following concerns, expressed by the citizens, related to growth.

- Stifling seasonal traffic congestion on Route 6 and within the Central Village makes intra-town travel virtually impossible.
- Increased taxes - stemming, in part, from increased growth demands on the town's infrastructure - allegedly threaten the ability of some long-time residents to meet their tax obligations.
- Subtle changes in the town's character perhaps due to an ever expanding tourist season.
- Lack of comprehensive town-wide fresh water resources planning makes protection of vital future well-head locations, via zoning changes, difficult.
- Ponds jeopardized by seasonal overuse.
- The threat of strip development on Route 6.

## **B. Statement of Open Space and Recreation Goals**

Wellfleet is a town which relies highly on tourism for its income. The tourists come here to experience the open beaches, the unspoiled woods, and the fishing, to name a few of the characteristics of the town which depend on adequate open space for their existence. Therefore, it is of primary concern, not only to the "conservationists" among us, but also to members of the business community to protect and preserve the fragile natural resources of the town.

Unfortunately, not only are the natural resources of the town of primary importance in maintaining an economic base, they also are unusually fragile, as the entire Cape is sand, and its plants will not withstand even the foot traffic that those in a more stable environment would.

Although nearly two thirds of the land area of the town is National Seashore, and hence is kept open, the remaining third of the town is becoming heavily developed and is quickly approaching buildout (see Section 3). The townspeople are becoming increasingly aware of the need to protect what little space is left. This is being done through the use of conservation restrictions, and also by the acquisition of desirable lots of land for conservation.

It should be the goal of each Wellfleet resident and visitor to protect the town's fragile resources, on land, on the shore, and in the Bay, and to enhance the opportunities for healthful recreation for young and old, resident or visitor, alike.

Wellfleet continues to experience the pains of growth which stretch some of the very resources which are needed to support an increased population. This is particularly true of its water supply and waste disposal. The Local Comprehensive Plan completed in 1995 discusses this in detail. That Plan is presently being updated. . Most residents depend on individual private wells for their water with groundwater the sole source of that supply. Most people also rely on individual septic systems for disposal of waste water. The sensitivity of the Cape Cod aquifer to contamination is well documented and is compounded by the increasing problem of saltwater intrusion along coastal areas. With this in mind it is critical that all resources which impact on our water resources be guarded carefully. The interconnectedness of our natural resources is only amplified over time and growing use.

Along with the water supply and waste disposal come the very important consideration of protection of Wellfleet Harbor for the benefit of commercial fishing, shellfishing as well as recreational boating and fishing. The town, through its Natural Resources Advisory Board, is writing a Harbor Management Plan that addresses all aspects of the Harbor. The Draft Plan is complete and posted on the town's website (Appendix J contains an overview statement). As a result of this study the Local Comprehensive Plan contains a large number of specific recommendations for action. Many of these needs are echoed in this Open Space and Recreation Plan. A listing of the needs identified in both resource protection and in the community follows:

**A. Summary of Resource Protection Needs**

**1. Ground Water Protection**

- a. The future supply, quantity and quality of ground water is a major concern to the residents of Wellfleet due to the sensitivity of the aquifer and the continuing threat of increased development.
- b. Water testing in the central district and several residential areas should be continued on an ongoing basis to stay abreast of changes over time.
- c. There should be the further provision of wellfields as needed and appropriate.

**2. Waste Disposal**

- a. On-site septic systems are a threat to ground water quality in some areas. Special consideration needs to be given to wastewater disposal needs in the Central District, and in areas near ponds and fragile coastal areas.
- b. A plan for updating all cesspools to Title 5 should be implemented as soon as possible. Continued effort is needed to determine the feasibility of alternative means of septic disposal including the potential for sewers and increased utilization of alternative waste treatment systems such as community or cluster systems.

- c. Need to expand and refine our successful initial efforts at recycling to the extent a market is available.
- d. Eliminate roadside and beach litter and illegal dumping.

### **3. Wellfleet Harbor Protection**

- a. The shellfish industry needs to have clean water, space and facilities and these can and should be balanced with the recreational demands of seasonal traffic.

### **4. Protection of Coastal Resources**

- a. Intense residential building, including expansion of existing houses, in or adjacent to the buffer zone endangers our coastal banks, barrier beaches and the quality of water in our harbor and estuaries. We need to continue and improve cooperation and coordination between all Town agencies to ensure protection of these natural resources.
- b. Development of shorelines must provide space for salt marsh retreat in the face of sea-level rise which is expected to accelerate.
- c. Intense use of beaches seasonally must be monitored wisely.
- d. Erosion of beaches should be monitored.
- e. Tide restrictions degrade extensive marshlands in Town with severe impacts to marine animals and loss of ecological functions that are fundamental to the health of the harbor, i.e. important to both wildlife and people.

### **5. Protection of Kettle Ponds**

- a. Fresh water kettle ponds become overused in the height of the summer and this threatens their very essence.
- b. Constant monitoring, providing limited and controlled access, and toilet facilities are important

### **6. Land Conservation**

- a. Determine and establish a minimum percentage of remaining developable land that the town would like to preserve and begin to implement that goal with an emphasis on protecting natural the resources, scenery and the character of the Town.
- b. Continue cooperative open spacepreservation efforts in accordance with LCP - working with Conservation Commission, Wellfleet Conservation Trust, Open Space Committee, Cape Cod National Seashore, and others.

## **B. Summary of Community's Needs**

### **1. Maintaining present character of town, especially in the Central District.**

The attraction of Wellfleet of year round residents as well as seasonal residents and visitors continues to be its charming and historic town center, much of which resembles a fishing village of years gone by. Equally important to that character is the large amount of open space surrounding the central village and stretching from Cape Cod Bay to the Atlantic Ocean.

## **2. Transportation**

- a. Ways to reduce traffic congestion. We need to better address the issue of summer traffic congestion in the central District as well as on Route 6.
- b. Improve parking facilities in village and at beaches.

## **3. Need to improve and expand specific recreational areas keeping in mind the environmental consequences.**

- a. A teenage recreation center is badly needed for year round families.
- b. Continue to maintain/improve accessibility standards (see Appendix I for ADA report)
- c. Consider creating neighborhood recreational areas in order to improve public accessibility to recreational opportunities.

## **4. Need to consider water supply, waste, and open space requirements when the town builds new buildings or remodels older ones (as a case in point, in 2003 a new Senior Center was completed; in 2004 a water supply system for all public buildings was installed).**

## **5. Need for continued education to improve citizen awareness of the relationship between population growth and ground water protection, waste disposal, recreational areas, town character, and natural resources such as beaches, wetland, harbors, etc.**

## **6. Need to ensure that Open Space and Recreation needs are addressed adequately by the CPAC Committee.**

## **C. Management Needs, Potential Change of Use**

There are at least three needs which can be classified under the rubric of management in Wellfleet. First, it is important that the Open Space Committee and the Board of Selectmen work to counter the commonly held misconception that, because 61% of its land is in the National Seashore and that additional acreage is owned by the Audubon Society, the matter of open space has been resolved. While the facts are correct, the conclusion is erroneous.

Most of the citizens of Wellfleet spend most of their time and conduct most of their activities within the boundaries of the town and therefore the quality of life of most people is heavily influenced by the physical characteristics of the land within the town. The town proper contains the harbor and its estuaries, ponds, wetlands, scenic vistas, historic areas, woodlands and wildlife

habitats. It also contains a population with needs for both active and passive recreation facilities and a shellfish industry which forms an important economic asset, directly for those involved and indirectly for other residents and visitors.

Reconciliation of pressures for development on the one hand and the maintenance of rural characteristics on the other have been a recurring problem. While recognizing the legitimate and reasonable needs for development and the ever changing lifestyle in Wellfleet , care must be taken to keep significant options open for future generations.

Secondly, voters should also be reminded that the cost of open space is considerably less than land which has been developed, at least residentially. In other words, the costs of town services (including police, fire-ambulance, public works and education) increase more than proportionally as the town becomes further developed and there are increases in population. Thus, the tax rate goes up.



The *goals* included in this 2005 Open Space and Recreation Plan are the long-range aspirations of the Town of Wellfleet for the protection of natural resources and the provision of recreational opportunities for its citizens and visitors. The *objectives* are conceptual steps to be undertaken to achieve these goals. Specific, tangible *actions* to implement the objectives are found in Section 9.

The goals and objectives listed below were developed by the Open Space Committee and/or borrowed from the Town’s Local Comprehensive Plan (LCP). They respond directly to the public opinion survey and workshops conducted during preparation of this Plan and the 1995 Local Comprehensive Plan, supplemented by the results of other planning efforts, including the Wellfleet Harbor Management Plan and the Outer Cape Capacity Study as well as such relevant reports as the Master Plan and its Summary and the Model Towns Program dealing with the Eastham/Wellfleet Route 6 Corridor Management Study. The goals and objectives listed are intended to be consistent with the LCP, the Cape Cod Commission Regional Policy Plan and the 2000 Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP).

The **principal goal of the open space and recreations efforts of the Town is the preservation and enhancement of open space in order to protect the natural resources, scenery and character of the Town and to provide wildlife and recreational opportunities.** The latter should encompass both active and passive recreation to meet the needs of residents and visitors alike. The resource protection and community needs should be addressed as noted in the section of this Plan referring to them. More specifically, they would include the following:

<b><u>GOAL 1:</u></b>	<b>Acquire, retain, preserve and protect a maximum of open space for the community and its natural and wildlife habitats. Balance the above with the practical needs of the town such as, but not limited to: recreation, affordable housing, future water needs.</b>
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**OBJECTIVE 1:** Enhance existing protected open space (Open Space Committee in cooperation with WCT, Massachusetts Audubon, etc.)

**OBJECTIVE 2:** Continue developing criteria for future land acquisition (See Appendix G)

**OBJECTIVE 3:** Consider formulating changes to a bylaw or subdivision regulation requiring a minimum open space set aside percentage in new developments

**OBJECTIVE 4:** Actively Pursue and Work on Individual Land Acquisition Projects

**OBJECTIVE 5:** Continue education of population regarding the relationship between excessive growth and ground water quality, waste disposal, harbor health, natural resources, and town character

**OBJECTIVE 6:** Work to preserve the rural, historic, and scenic character of the town

**OBJECTIVE 7:** Continue policy to acquire and keep for open space tax title lands except where such community priorities such as affordable housing or municipal services may arise and listen to any comments from these boards and committees

**OBJECTIVE 8:** Establish procedures for approval and assessment of conservation restrictions

**OBJECTIVE 9:** Facilitate and/or encourage private investment to facilitate the efforts of private land conservation groups such as Mass Audubon, WCT.

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**GOAL 2:** Protect Wellfleet Harbor and Estuary

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**OBJECTIVE 1:** A better Management Plan needs to be developed. Shellfish industry needs to have clean water space and facilities and these needs to be balanced with the recreational demands of seasonal traffic.

**OBJECTIVE 2:** Continue efforts to restore Herring River and other tide-restricted estuaries and wetlands

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**GOAL 3:** Protect the town's present and future water supply.

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**OBJECTIVE 1:** Continue to identify and protect present and future well field areas through zoning, land management strategies/plans or acquisition

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**GOAL 4:** Improve waste disposal systems

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**OBJECTIVE 1:** On site septic systems are a threat to ground water in some areas. Special consideration needs to be given to the Central District and areas in close proximity to ponds and coastal areas.

**OBJECTIVE 2:** Eliminate roadside and beach litter and illegal dumping

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**GOAL 5:** Protect ponds, rivers, and streams

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**OBJECTIVE 1:** Strengthen protective regulations in A.C.E.C.

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**GOAL 6:** Protect beach areas

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**OBJECTIVE 1:** Explore opportunities to minimize development of new residences or expansion of existing ones in or adjacent to buffer zones to avoid endangering our coastal banks and barrier beaches

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**GOAL 7:** Coordinate recreation needs with open space priorities to benefit each

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**OBJECTIVE 1:** Develop and improve recreational areas and facilities

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**GOAL 8:** Accomplish the goals and objectives above expeditiously and at minimum expense. This will involve determination of the most effective organizational and administrative arrangements for their achievement, importantly including the cooperation and coordination among town boards, commissions, committees and executive agencies

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**OBJECTIVE 1:** Coordinate cooperative meetings among various groups involved in Wellfleet's land use planning including new CPA Committee to establish needs and assign tasks



The following actions are designed to implement the Goals and Objectives outlined in Section 8 and to address the needs identified in Section 7 above. They are also intended to conform to the maximum extent practical, to the implementation actions outlined in Wellfleet's Local Comprehensive Plan. Each specific action is subject to additional directed town approval and/or appropriation. The recommended group/individual with responsibility for implementing the action is identified at the end of each action and the year in which the action is presumed to occur is noted where appropriate.

<b><u>GOAL 1:</u></b>	<b>Acquire, retain, preserve and protect a maximum of open space for the community and its natural and wildlife habitats. Balance the above with the practical needs of the town such as, but not limited to: recreation, affordable housing, future water needs.</b>
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**OBJECTIVE 1:** Enhance existing protected open space (Open Space Committee in cooperation with WCT, Massachusetts Audubon, etc.)

**ACTIONS:**

- a. Formulate and complete management plans for all town owned conservation land – *Conservation and Open Space Committee; FY2005 and ongoing*
- b. Complete an annual audit of each of the Land Bank properties on behalf of the Conservation Commission; the Wellfleet Conservation Trust currently performs an annual audit on each of its properties; - *Process established FY2005 and ongoing thereafter.*
- c. Complete acquisition of 4.63-acre extension to the Fox Island/Pilgrim Spring Conservation Area known as “Whale Bone Point – *Open Space, WCT, December 2005*
- d. Formulate and complete management plan for “Whale Bone Point” acquisition – *Conservation Commission, Open Space Committee, WCT; FY2006*
- e. Contact neighbor abutters to conservation lands to request assistance in policing against illegal dumping and cutting – *DPW, Police, Conservation Commission; FY2006*
- f. Complete acquisition of 25-acre Mill Creek property from Chequessett Yacht and Country Club to facilitate the Mill Creek Restoration – *Conservation Commission, Open Space Committee, FY2006-FY2010 depending upon matching funding.*

**OBJECTIVE 2:** Continue developing criteria for future land acquisition  
(See Appendix G)

**ACTIONS:**

- a. Continue developing list of land falling under the criteria – *Open Space Committee, CPA Committee, WCT; funding not needed; FY2006 and ongoing*
- b. Set priorities for land acquisitions based on the criteria - *Open Space Committee, CPA Committee, WCT; funding not needed; FY2006 and ongoing*

- c. Coordinate and review with NPS, WCT, Mass Audubon, Town Boards including newly organized CPA Committee – *All of the above, funding not needed, FY2005 and ongoing*
- d. Modify list - final version - *Open Space Committee, CPA Committee, WCT; funding not needed; FY2006 and ongoing*
- e. Utilize the accepted process for the identification of town owned land might be put into conservation and open space - *Open Space Committee, WCT; funding not needed; FY2006 and ongoing*
- f. Work with the CPA Committee through the Open Space representative on this committee to establish criteria within the resources of the CPA committee for the acquisition of land for conservation and recreation – *Open Space Committee, CPA Committee, WCT; funding not needed; FY2006 and ongoing*

**OBJECTIVE 3:      Consider formulating changes to a bylaw or subdivision regulation requiring a minimum open space set aside percentage in new developments**

**ACTIONS:**

- a. Determine possible benefit of such a bylaw by reviewing remaining large developable tracts of land – *Planning Board, Open Space Committee, etc.; funding not needed; FY2007*
- b. Discuss with Planning Board and other appropriate town Boards and Committees - *Planning Board, Open Space Committee, etc.; funding not needed; FY2007*
- c. Work on developing bylaws and subdivision regulations draft – *Planning Board, Open Space Committee, etc.; funding not needed; FY2007*

**OBJECTIVE 4:      Actively Pursue and Work on Individual Land Acquisition Projects**

**ACTIONS:**

- a. Focus efforts on protection of lands adjacent to existing conservation land, lands within scenic and historic areas, lands within habitat restoration areas (e.g. Herring River, Mayo Creek flood plains), and property just landward of salt marshes; use existing maps and list of vacant parcels – *Open Space Committee, CPA Committee, WCT, Planning Board, funding from various public and private sources as in past; FY 2006 and ongoing.*
- b. Identify and map all vacant undeveloped land and develop a *Master Priority Parcel Acquisition List*; - *Open Space Committee, Planning Board, Private Consultants; Land Bank Fund; FY2005 and ongoing*
- c. Work with the National Sea Shore, the Chequessett Yacht and Country Club on the Mill Creek 25 acre land acquisition as approved by the Town at its April 25th, 2005 Annual Town Meeting. The Mill Creek flood plain, tributary to the Herring River comprises a total of 80 acres of originally tidal wetland. This acquisition will enable the original 80-acre wetland system to be restored – *Open Space Committee, Conservation Commission, Recreation Commission, etc.; various existing funding sources; FY 2005 and ongoing.*

- d. Prepare Self-Help Application for matching funds for the \$1,250,000 Mill Creek land purchase in the year the property is to be acquired. *Open Space Committee, Conservation Commission, Recreation Commission, etc.; various existing funding sources; FY 2005 and ongoing.*
- e. Support the Herring River Restoration project through the successful purchase of the 25-acre Mill Creek Preserve. Acquisition of these 25 acres removes a major impediment to the restoration of the 1100-acre Herring River estuary, the largest salt marsh restoration in the Gulf of Maine - *Open Space Committee, Conservation Commission, Recreation Commission, etc.; town and state funding; FY 2005 and ongoing.*

**OBJECTIVE 5: Continue education of population regarding the relationship between excessive growth and ground water quality, waste disposal, harbor health, natural resources, and town character**

**ACTIONS:**

- a. Pursue interviews with press and create informational materials for general public - *Open Space, Conservation, Planning, interested volunteers; Land Bank fund or funds not needed; on an ongoing basis.*
- b. Explore educational projects with schools and libraries – *Open Space, Conservation, Planning, Recreation, interested volunteers; funds not needed; FY 2005 and ongoing.*
- c. Clarify data regarding water supply and quality issues before dissemination information – *Health, Conservation, possibly outside consultants, volunteers, DPW, Water Department, FY 2006 and ongoing.*

**OBJECTIVE 6: Work to preserve the rural, historic, and scenic character of the town**

**ACTIONS:**

- a. Work with Wellfleet Historical Commission through the CPA committee – *WHC, Open Space, CPA; funds not needed; FY2006 and ongoing.*

**OBJECTIVE 7: Continue policy to acquire and keep for open space tax title lands except where such community priorities such as affordable housing or municipal services may arise and listen to any comments from these boards and committees**

**ACTIONS:**

- a. Open Space Committee in conjunction with Town and Selectmen recommends tax title lands to be placed under the aegis of the Conservation Commission for conservation purposes – *Open Space, Conservation, Planning, interested volunteers; Committee cash funds; FY 2006 on an ongoing basis.*



- c. Strengthen support for wetlands protection efforts and bylaws in town through education and policies – *Conservation Commission, funding not needed; FY 2005 and ongoing.*

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**GOAL 3:            Protect the town’s present and future water supply.**

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**OBJECTIVE 1:        Continue to identify and protect present and future well field areas through zoning, land management strategies/plans or acquisition**

**ACTIONS:**

- a. Identify land acquisitions necessary – *Health, Conservation , Water; Planning town meeting appropriation as need; FY 2006 and ongoing.*
- b. Open Space Committee act as required to support the objective – *Open Space Committee; FY2006 and as needed.*

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**GOAL 4:            Improve waste disposal systems**

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**OBJECTIVE 1:        On site septic systems are a threat to ground water in some areas. Special consideration needs to be given to the Central District and areas in close proximity to ponds and coastal areas.**

**ACTIONS:**

- a. Continue use of alternative systems where necessary or appropriate - *Health, conservation; private funding and town meeting appropriation for public facilities; ongoing.*
- b. Explore means of making alternative systems less costly to homeowners - *Health, conservation; funding not needed; FY2006 and ongoing.*
- c. A plan for updating cesspools to Title V should be implemented as soon as possible - *Health, funding not needed; ongoing.*

**OBJECTIVE 2:        Eliminate roadside and beach litter and illegal dumping**

**ACTIONS:**

- a. Work with DPW and Recreation to provide tougher penalties and stricter enforcement – *DPW, Recreation, Wellfleet Community Forum; FY2006*
- b. Expand and refine our successful initial efforts at recycling - *Recycling Committee; funding not needed; ongoing*
- c. support recycling committee and resident drop-off center - *Recycling Committee; funding not needed; ongoing*

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**GOAL 5: Protect ponds, rivers, and streams**

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**OBJECTIVE 1: Strengthen protective regulations in A.C.E.C.****ACTIONS:**

- a. Consider developing an ACEC Management Plan - *Open Space, Planning, Conservation, etc.; public/private funding of consultant or state; FY 2006.*
- b. ConsCom needs to formulate ACEC regulations - *Cons Com; funding not needed; FY 2006 and ongoing.*
- c. Work with NPS and town to monitor heavy use of ponds during summer – *Health, Cons Com; funding not needed; FY 2006 and ongoing.*
- d. Reevaluate criteria for closing ponds at designated threshold levels- *Health, Cons Com; funding not needed; FY 2006 and ongoing.*
- e. Monitor status of Herring River Dike (see above).

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**GOAL 6: Protect beach areas**

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**OBJECTIVE 1: Explore opportunities to minimize development of new residences or expansion of existing ones in or adjacent to buffer zones to avoid endangering our coastal banks and barrier beaches****ACTIONS:**

- a. Establish working relationship between Conservation Commission and Planning Board to accomplish above objective while working within ACEC regulations– *Conservation and Planning; funding not needed; FY2006*

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**GOAL 7: Coordinate recreation needs with open space priorities to benefit each**

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**OBJECTIVE 1: Develop and improve recreational areas and facilities****ACTIONS:**

- a. Identify all open space areas suitable for recreational use - *Recreation; funding not needed, FY 2006*
- b. layout additional jogging, walking, and riding trails as well as nature walks with emphasis on linking conservation and recreation areas and on connections to the existing Cape Cod Pathways trail system - *Recreation; funding not needed, FY 2006.*
- c. Develop picnic areas to include, where possible, adjacent playground areas - *Recreation; funding not needed, FY 2006*

- d. Develop solutions for active and passive recreation and associated facilities for both residents and visitors, especially for youth and the elderly - *Recreation; recreation budget, FY 2006*
- e. Develop subcommittee composed of recreation, conservation, and open space committee members to coordinate and review above - *Recreation, Conservation, and Open Space Committee ; funding not needed; FY2006.*
- f. Above formed subcommittee to review ADA status of Town Recreation areas - *Recreation, Conservation, and Open Space Committee ; funding not needed; FY2006 and ongoing.*
- g. Work with Cape Cod Pathways Program and the National Seashore to develop trail network - *FY2007*
- h. Explore potential trail planning in Herring River area and other sites of similar character – *Open Space, WCT; funding not needed; FY2008.*

<b>GOAL 8:</b>	<b>Accomplish the goals and objectives above expeditiously and at minimum expense. This will involve determination of the most effective organizational and administrative arrangements for their achievement, importantly including the cooperation and coordination among town boards, commissions, committees and executive agencies</b>
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**OBJECTIVE 1:**      **Coordinate cooperative meetings among various groups involved in Wellfleet’s land use planning including new CPA Committee to establish needs and assign tasks**

**ACTIONS:**

- a. Organize meeting involving Local Comprehensive Plan Implementation Committee, Open Space Committee, Conservation Commission, Recreation Commission, Wellfleet Conservation Trust, and other groups involved in open space and recreation planning to discuss findings of the new Open Space and Recreation Plan and Local Comprehensive Plan when it is completed – *all of above, funding not needed; FY2006*
- b. Assign tasks to each organization for completion - *all of above, funding not needed; FY2006*
- c. Meet at appropriate date(s) to evaluate success and assign new tasks - *all of above, funding not needed; FY2007 and beyond*
- d. *Assign Open Space Representative to the CPA committee as liaison between Open Space Committee and CPA committee activities – Open Space Committee, no funding needed; FY2005.*



**Photo Credit: Jeff Thibodeau, Helios Land Design**

Open Hearings were held by the Open Space Committee on January 5, 2005 and January 12, 2005 to discuss the draft 2005 Open Space Plan Update. A similar meeting with the Planning Board was held on July 20, 2005. Positive comments recommending approval of this Plan were received from the Cape Cod Commission, the Town of Wellfleet Planning Board, Town of Wellfleet Conservation Commission and the Town of Wellfleet Board of Selectmen, all included below. Groups and individuals receiving and/or reviewing sections or all the Draft Plan are listed below. The Plan was also listed on the town's website for general public viewing.

<b>GROUPS/INDIVIDUALS RECEIVING/REVIEWING DRAFT PLAN</b>				
<b>TITLE</b>	<b>NAME</b>	<b>MAILING ADDRESS</b>	<b>PHONE (508)</b>	<b>DISTRIBUTION /REVIEW DATE</b>
Town Administrator	Timothy C. Smith	300 Main Street Wellfleet, MA 02667	349-0300	June-July 2005
Assistant Town Administrator	Rex Peterson	300 Main Street Wellfleet, MA 02667	349-0300	June-July 2005
Cape Cod Commission Executive Director	Margo Fenn	3225 Main St., Barnstable, MA 02630	362-3828	June-July 2005
Wellfleet Board of Selectmen Chair	Ira Wood	300 Main Street Wellfleet, MA 02667	349-0300	June-July 2005
Wellfleet Board of Assessors	Nancy Vail	300 Main Street Wellfleet, MA 02667	349-0304	June-July 2005
Wellfleet Planning Board Chair	Dennis O'Connell	300 Main Street Wellfleet, MA 02667	349-0314	June-July 2005
Health and Conservation Agent	Hillary Greenberg	300 Main Street Wellfleet, MA 02667	349-0308	June-July 2005
Recreation Director	Rebecca Rosenberg	300 Main Street Wellfleet, MA 02667	349-0300	June-July 2005
Wellfleet Conservation Trust President	Dennis O'Connell	300 Main Street Wellfleet, MA 02667	362-2565 (The Compact)	June-July 2005
Cape Cod National Seashore, biologist	John Portnoy	99 Marconi Station Site Road Wellfleet, MA 02667	349-3785	June-July 2005
Massachusetts Audubon Society Wellfleet Bay Wildlife Sanctuary, Executive Director	Robert Prescott	291 State Highway, Route 6 P.O. Box 236 South Wellfleet, MA 02663	508-349-2615	June-July 2005
The Compact	Mark	Main St.,	362-2565	June-July 2005

of Cape Cod Conservation Trusts Inc., Executive Director	Robinson	Barnstable, MA 02630		
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# TOWN OF WELLFLEET

300 MAIN STREET WELLFLEET MASSACHUSETTS 02667

Tel (508) 349-0300 Fax (508) 349-0305

www.wellfleetma.org

BOARD OF  
SELECTMEN

TOWN  
ADMINISTRATOR

July 12, 2005

Ms. Jennifer Soper  
Division of Conservation Services  
Executive Office of Environmental Affairs  
100 Cambridge Street, Ninth Floor  
Boston, MA 02114

Dear Ms. Soper:

The Wellfleet Board of Selectmen have had the opportunity to review our updated Open Space and Recreation Plan. Indeed, the entire Town has had the opportunity because it has been available to the public on our Town Web Page since the early spring.

The Open Space and Recreation Plan is comprehensive and addresses both short term and long term goals and opportunities throughout our Town. It is important to note that appropriate elements of it will be incorporated into Wellfleet's Local Comprehensive Plan, which is in the process of revision. The Board of Selectmen have repeatedly indicated their strong commitment to the Plan and its successful implementation.

Our Open Space Committee has had a continuous, long term record of outstanding performance and results. They were effective in the years preceding the adoption of the Cape Cod Land Bank; in the acquisition of significant properties through Land Bank funds (41 acres acquired at an average cost of \$32,000 per acre, despite the skyrocketing real estate market here); and they will continue to be effective now that the Town has adopted the Community Preservation Act.

Their work in creating the updated Open Space and Recreation Plan in concert with a host of both public committees and private groups is consistent with that superb performance, and the Plan will be an invaluable tool in the years ahead.

Sincerely,

Dale W. Donovan, Chairman  
WELLFLEET BOARD OF SELECTMEN

cc: Robert Hubby, Open Space Committee

BOS:im



## CAPE COD COMMISSION

3225 MAIN STREET  
P.O. BOX 226  
BARNSTABLE, MA 02630  
(508) 362-3828  
FAX (508) 362-3136  
E-mail: [frontdesk@capecodcommission.org](mailto:frontdesk@capecodcommission.org)

July 15, 2005

Robert O'Connor, Director  
Office of Land and Forest Conservation Services  
100 Cambridge Street  
Boston, MA 02114

Re: Wellfleet Open Space and Recreation Plan

Dear Mr. O'Connor:

The Cape Cod Commission staff has reviewed the Town of Wellfleet Open Space and Recreation Plan Update and would like to recommend its approval by the Office of Land and Forest Conservation Services.

This plan provides both a comprehensive assessment of the town's open space and recreational needs and serves as an important framework for addressing the community's land protection goals. The plan includes an excellent inventory, including plant and wildlife habitats, upland and wetland resources, shellfish resources, culturally significant resources and landscapes, as well as a comprehensive inventory of protected lands, beaches, and ponds. This inventory, together with a comprehensive analysis and discussion of the development pressures in Wellfleet, lays the framework for the plan.

The Wellfleet plan incorporates the open space goals of the Regional Policy Plan and advances several of its recommended actions. In addition, Wellfleet has put the plan into action: through its Land Bank fund, the town has successfully pursued protection of sensitive areas outside of the National Seashore, recently focusing on expanding protected lands in the Fox Island Marsh area. Partnerships with the Wellfleet Conservation Trust and Massachusetts Audubon, as well as generous funding from the state, have secured significant acreage in this area.

We appreciate the opportunity to comment on this plan. Please let me know if you need any additional information.

Sincerely,

Margo L. Fenn  
Executive Director

cc: Alan Platt, Wellfleet representative to the Cape Cod Commission



## **Wellfleet Planning Board**

Wellfleet Town Hall  
300 Main Street  
Wellfleet, MA 02667

### **Memo**

**To:** Open Space Committee

**From:** Planning Board

**Date:** July 21, 2005

**Re:** Open Space Plan

The Wellfleet Planning Board had a very productive meeting with the Open Space Committee July 20, 2005. The Board reviewed the Open Space Plan draft, made comments and suggested changes that were accepted and made other suggestions for consideration. The Planning Board looks forward to more dialogue. We believe the general concepts in the plan will provide for acquisition and protection for future open space.



TOWN OF WELFLEET  
CONSERVATION COMMISSION

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220 West Main Street  
Wellfleet, MA 02667  
508-349-0308

July 20, 2005

Robert Hubby, Chairman  
Open Space Committee  
Wellfleet Town Hall  
300 Main Street  
Wellfleet, MA 02667

Dear Mr. Hubby:

The Wellfleet Conservation Commission strongly supports the 2005 updated Open Space and Recreation plan as presented. We believe this updated plan will be a credible asset to guide the town in its protection of natural resources, conservation of open space, and recreation program efforts. The Commission believes that it is imperative to conserve the open space that is left and also to allow for passive recreation at the same time.

We appreciate the opportunity to comment on this plan. Please let us know if we can be of any further assistance to your Committee.

Yours Truly,

*Debbie Cunniff* - HEALTH & CONSERVATION AGENT



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- Cape Cod Commission (in cooperation with Whiteman and Taintor, Planning Consultants Outer Cape Capacity Study; Prepared for the Outer Cape Capacity Study Steering Committee; December 1996.
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National Park Service, Department of the Interior in cooperation with Cape Cod National Seashore, *Analysis of Water Resource Management Alternatives - with Environmental Assessment*. June 1981.

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The Compact of Cape Cod Conservation Trusts, Inc., *Cape Cod Priority Ponds Project: A Land Conservation Guide for Cape Cod's Freshwater Ponds*, 2003.

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Town of Wellfleet, *Town of Wellfleet 1995 Local Comprehensive Plan*, prepared by the Wellfleet Local Planning Committee, 1995.

Town of Wellfleet, *The Town of Wellfleet 1998 Open Space and Recreation Plan*, prepared by the Town Open Space Committee under the sponsorship of the Conservation Commission with assistance from Jeff Thibodeau, The Compact of Cape Cod Conservation Trusts Inc., 1998.

**Web sites:**

Barnstable County Department of Health and Environment,  
<http://www.barnstablecountyhealth.org/>

Cape Cod Commission, <http://www.capecodcommission.org/>

Massachusetts Division of Employment and Training, <http://www.detma.org/>

Massachusetts Executive Office of Environmental Affairs,  
[http://commpres.env.state.ma.us/community/cmtty\\_main.asp?communityID=20](http://commpres.env.state.ma.us/community/cmtty_main.asp?communityID=20)

Metropolitan Area Planning Council, [http://www.mapc.org/data\\_gis/data\\_center\\_data.html](http://www.mapc.org/data_gis/data_center_data.html)

Massachusetts Natural Heritage and Endangered Species Program,  
<http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm>

The Compact of Cape Cod Conservation Trusts, Inc., <http://www.compact.cape.com/>

Town of Wellfleet, Massachusetts, <http://www.wellfleetma.org/Home/>

U.S. Census 2000 American Fact Finder, <http://factfinder.census.gov/home/saff/main.html>

## APPENDICES

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