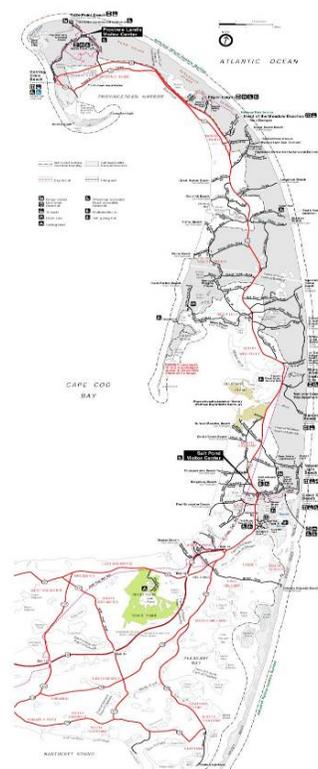


## 1.0 INTRODUCTION: PURPOSE AND NEED

The development of this Final Environmental Impact Statement (EIS) reflects an opportunity to evaluate and consider potential modifications to the hunting program of the Cape Cod National Seashore (CACO) (Figure 1). Hunting has been a traditional recreational activity long before the establishment of CACO and is part of the cultural heritage of Outer Cape Cod. Due to its place in the history and culture of the Cape, the opportunity for the continuation of hunting was specifically included in the enabling legislation that was passed establishing CACO in 1961. CACO's establishment itself was unique and controversial; as it was the first time that a National Park was created from what was primarily privately-owned lands. The elements in the enabling legislation were the specific results of the extensive negotiations leading to creation of the National Park.

The National Park Service (NPS) completed ecological studies and an Environmental Assessment (EA), during 1996, regarding the stocking and hunting of ring-necked pheasants (*Phasianus colchicus*). In 2002, a legal challenge was filed claiming improper compliance with the National Environmental Policy Act of 1969 (NEPA) in regard to the hunting program in general and the pheasant hunting program specifically. After a trial, the court ruled in 2003 that an EA on the hunting program needed to be completed by the NPS. Furthermore, the court enjoined the pheasant stocking and hunting program until the EA was completed. The NPS concluded that while an EA would meet the letter of the court's decision, a more complete approach to NEPA compliance would be to meet the more rigorous assessments and broader review of an EIS. The following document provides that more thorough assessment in seeking to meet NEPA compliance.



**Figure 1. The Outer Cape Cod Region, Most of which is within the Cape Cod National Seashore.**

### 1.1 Purpose and Need for the Action

The NPS is reviewing the CACO hunting program, providing an opportunity to make policy and program modifications to it. The following purpose and need statements reflect NPS goals for the overall visitor program and how the program coalesces with the management objectives, regulations, enabling legislation, and policies of the NPS for CACO. The purpose and need also address problems that may need to be remedied or other actions that need to be implemented. The draft statements were prepared through internal NPS scoping meetings and a review of the CACO General Management Plan (GMP), NPS policies, and management documents. The purpose and need focus on answering the questions on both whether hunting is an appropriate activity at CACO, and whether modifications to the program can adequately address concerns that have been raised and can be considered in the NEPA process. The purpose of the proposed action is to:

1. balance diverse uses of the Park while minimizing effects to wildlife populations, ecosystems, and sustaining natural processes;
2. reduce or avoid conflicts during recreational uses of the Park;

3. protect natural and cultural resources, cultural heritage, and recreational values;
4. provide opportunities for future generations to enjoy the natural and cultural resources, cultural heritage, and recreation values of the CACO; and
5. develop management solutions that address concerns related to the current hunting program to ensure diverse and high quality public experiences.

This EIS evaluates the current hunting program at CACO and provides the NPS with the necessary information for making associated decisions related to the management of wildlife, vegetative resources, and other public uses, in the limited way in which they specifically relate to the hunting program.

The CACO hunting program has been the subject of regional and local debate for many years. There is strong support for the continuation of hunting at CACO from a variety of constituencies, as well as from the Massachusetts Division of Fisheries and Wildlife (MDFW). In addition, there is a strong regulatory and historical foundation for continuing to allow hunting at CACO, and hunting continues to be a part of the cultural heritage and fabric of life on Outer Cape Cod. The creation of the Park under President Kennedy specifically included the provision to continue hunting in the enabling legislation. Allowing the Secretary of the Interior to take steps to maintain the unique character and traditions of the Outer Cape, including hunting, was essential in helping to secure the necessary local and state support to create CACO in 1961.

In recent years, some members of the public have questioned the continuation of hunting in general, whether it is an appropriate activity within CACO, and whether it conflicts with other uses. Questions have included the appropriateness and the legality of an annual “put-and-take” pheasant-stocking program that has occurred in certain areas of CACO since prior to the establishment of the Park. In addition, some residents and visitors have expressed their concerns about the safety of hunting, particularly given the proximity of some hunting areas to residences and to parts of CACO with high levels of public use (i.e., trails and beaches).

This EIS summarizes several studies that were initiated to provide information on questions relating to hunting. A number of informational sources were also used to provide a background of the situation including pertinent information about hunting. In developing this EIS, the NPS initiated the following studies:

- a literature search of scientific studies on the effects that hunting has on wildlife;
- a visitor use and opinion survey, including summer visitors, fall visitors, residents, and hunters (Kuentzel 2006);
- an assessment of the presence of New England cottontail (*Sylvilagus transitionalis*) and eastern cottontail (*Sylvilagus floridanus*) (Boland *et al.* 2005);
- an assessment of the social and socioeconomic effects of hunting;
- a review of information relating to hunting safety, ballistics, and hunting related injuries;
- a review of other Department of the Interior (DOI) managed hunting programs (NPS 1995);
- a review of the history of hunting at CACO; and
- a summary of the goals, policies, and regulatory background of the CACO hunting program.

Preparation of this Final Draft EIS was guided by an interdisciplinary team that included biologists, social and economic researchers, genetic researchers, CACO staff, and MDFW staff. They have identified the specific issues and potential problems related to the current hunting program through an extensive scoping process, with input from the public, affected agencies, and CACO personnel. The scoping process also helped the team identify the goals and objectives of the action and to develop a list of alternatives to consider. With the completion of this EIS, the NPS has gained a clearer understanding of the environmental and social effects related to hunting at CACO, and used this knowledge to identify a

preferred alternative that will best meet CACO's overall mission, its goals, and its commitment to conserve and provide opportunities for the public enjoyment of CACO's many resources and values.

## **1.2 Project Background**

### **1.2.1 General Features**

The boundaries of Cape Cod coincide with those of Barnstable County, a peninsula approximately 50 miles southeast of Boston. The county is bounded by Cape Cod Bay to the north and Nantucket Sound to the south. Cape Cod's land area is approximately 396 square miles (mi<sup>2</sup>), with a density of about 472 people per mi<sup>2</sup>. The Cape Cod Canal (which was completed in the 1930s) separates the peninsula from the mainland. Two bridges, the Sagamore and the Bourne, link the Cape to the mainland. The county is composed of 15 communities. Barnstable is the county seat. For the purposes of this Final Draft EIS the Outer Cape is defined as the six towns associated with CACO: Chatham, Eastham, Orleans, Provincetown, Truro, and Wellfleet (Figure 1). The Outer Cape's land area is about 95.1 mi<sup>2</sup>; the average population density is 284 people per mi<sup>2</sup>. The highest population densities are found in Orleans (414 people per mi<sup>2</sup>) and Chatham (401 people per mi<sup>2</sup>). Truro has the lowest population density (75 people per mi<sup>2</sup>). Population density on the Cape (562 people per mi<sup>2</sup>) is relatively sparse compared to the rest of Massachusetts (810 people per mi<sup>2</sup>).

The Outer Cape communities are directly affected by CACO's management policies. CACO has the highest visitation rate of all Cape Cod attractions and therefore has an immediate effect on the entire Barnstable County region. As one might expect, the effect on the whole county is not nearly as palpable as the relationship CACO has with its six immediate neighbors. For the purposes of this document, the whole of Barnstable County must be considered as the socioeconomic impact area, with special attention to the six Outer Cape communities.

### **1.2.2 History and Significance of CACO**

The enabling legislation which formed the Cape Cod National Seashore and other policy documents which followed, including the 1998 General Management Plan, discuss "cultural" aspects of hunting on the Outer Cape, including within the boundary of the Seashore. The cultural practices referenced are those of the six towns on the Outer Cape and hunters of modern times. These writings are true observations of the traditions since European settlement, but do not include prior Native American practices as well. Nomadic Paleo-Indian people—hunters and gatherers—arrived on Cape Cod about 12,000 years ago. Succeeding populations developed more permanent occupation. By 1600 the Wampanoag Indians had established six villages along the creeks and bays from Chatham to Wellfleet, relying on a combination of hunting, fishing, and farming for sustenance. The cultural tradition of hunting, fishing and gathering has been documented to have gone on within the Seashore for thousands of years, including evidence at the Carns site near Coast Guard Beach in Eastham dated approximately 2100 to 1100 years before present. There were numerous Wampanoag villages during the 17<sup>th</sup> century located within what is now the Seashore at the time of European contact including: Mannamoyik in Chatham; Nauset in Wellfleet; and Pamet in Truro. Native American hunting and cultural practices and interaction with European settlers are an important part of the history of the Cape and should not be forgotten.

CACO is a unique unit of the National Park system that contains significant natural, cultural, historical, and recreational resources. It consists of 44,000 acres on the outer arm of the Cape Cod peninsula, including lands under the ownership and jurisdiction of the NPS as well as lands owned by the Commonwealth of Massachusetts, portions of Chatham, Orleans, Eastham, Wellfleet, Truro, Provincetown, and approximately 600 private owners. CACO is different from most National Parks in

that it was carved out of a relatively populous area, encompassing not only natural and cultural resources, but also vital communities with a rich history of political, economic, social, and recreational activities. CACO's founding marked the first time a National Park was created largely through acquisition of private lands, and significant ongoing non-federal ownership. The founding of the Park was, therefore, the subject of tremendous controversy and highly detailed negotiations, resulting in enabling legislation that was very carefully crafted and scrutinized.

Figure 2 shows the locations of areas open to hunting relative to the locations of private lands. The legislation that created CACO in 1961 acknowledged the need to protect the variety of Cape Cod's outstanding resources for the enjoyment of residents and visitors alike, while at the same time seeking to perpetuate many of the traditional values, pastimes, and ways of life that have helped shape the special ambiance of the Cape. Striking that balance was essential in creating the public and legislative support that enabled the creation of the Park. Maintaining that balance remains the challenge today. One of the customary activities at CACO, the hunting of upland game and waterfowl, is the focus of this Final EIS.

### 1.2.3 CACO Hunting Program

The following is a summary of the current hunting program at CACO; a summary of the history and background of the CACO hunting program is also included. The locations of areas open to hunting and corresponding acreages are presented in Figure 2. Hunting at CACO generally follows the species, season dates, bag limits, and regulations established by the MDFW (Tables 1 and 2) although there are some differences discussed below. The MDFW establishes these regulations for all species, although they incorporate the migratory bird hunting regulations based on the seasons and bag limits provided by the U.S. Fish and Wildlife Service (USFWS).



**Hunting related signs, including regulations and restrictions.**

The MDFW regulates safety, hunter education, prohibited activities and equipment, licenses and permits, and additional regulations for Wildlife Management Areas (WMA). The NPS has added some rules and made others more stringent as necessary to best meet park objectives and NPS policies, for example regarding hunting proximity to buildings and bicycle paths. In addition, NPS does not allow hunting from March 31 to August 31 and only allows hunting of waterfowl and upland game species. MDFW manages all aspects of the hunting program, but coordinates with the NPS for the pheasant stocking program and local deer check stations. CACO rangers are responsible for enforcement duties. This close coordination between the state and federal entities has several benefits, in particular consistency where possible between the state and federal hunting programs and policies allows for clear regulations and expectations for the hunting community, as well as economies between the governmental agencies.

The most popular aspects of the hunting program include the annual deer, waterfowl, pheasant, and rabbit hunting seasons, which represent the four most commonly hunted species. Brief summaries are provided below. Current seasons and bag limits are provided in Table 1, and a summary of general regulations is provided in Table 2. A complete list of the species hunted and applicable statewide regulations are included in Appendix A.

Figure 2: OVERVIEW - Hunting Areas and Non-Federal Land within Cape Cod National Seashore

**Legend**

- hunting prohibited
- hunting permitted

**Ownership within NPS Boundaries**

- PRIVATE
- TOWN
- STATE

**Other Features:**

- NPS boundary
- Town boundaries
- structures
- bike paths
- foot trails
- roads

**NOTES:**  
Map subject to revisions as public safety needs dictate.

Hunting on non-federal lands subject to owners' permission.

Cape Cod National Seashore acres open to hunting = 16,507 land + 14,639 water = 31,146 total acres

Total acres closed to hunting within NPS boundary = 12,436

Total Land and Water Acres within NPS boundary = 43,582

Total upland acres within NPS boundary = 26,852

(NOTE: NPS BOUNDARY VARIES WITH SHORELINE AND TIDAL CONDITIONS. FIGURES ARE APPROXIMATIONS)

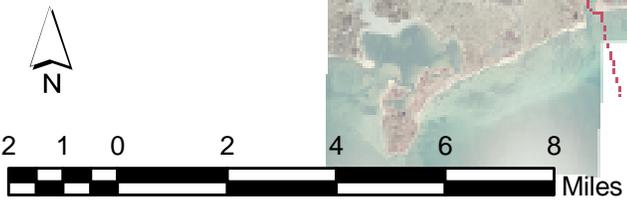
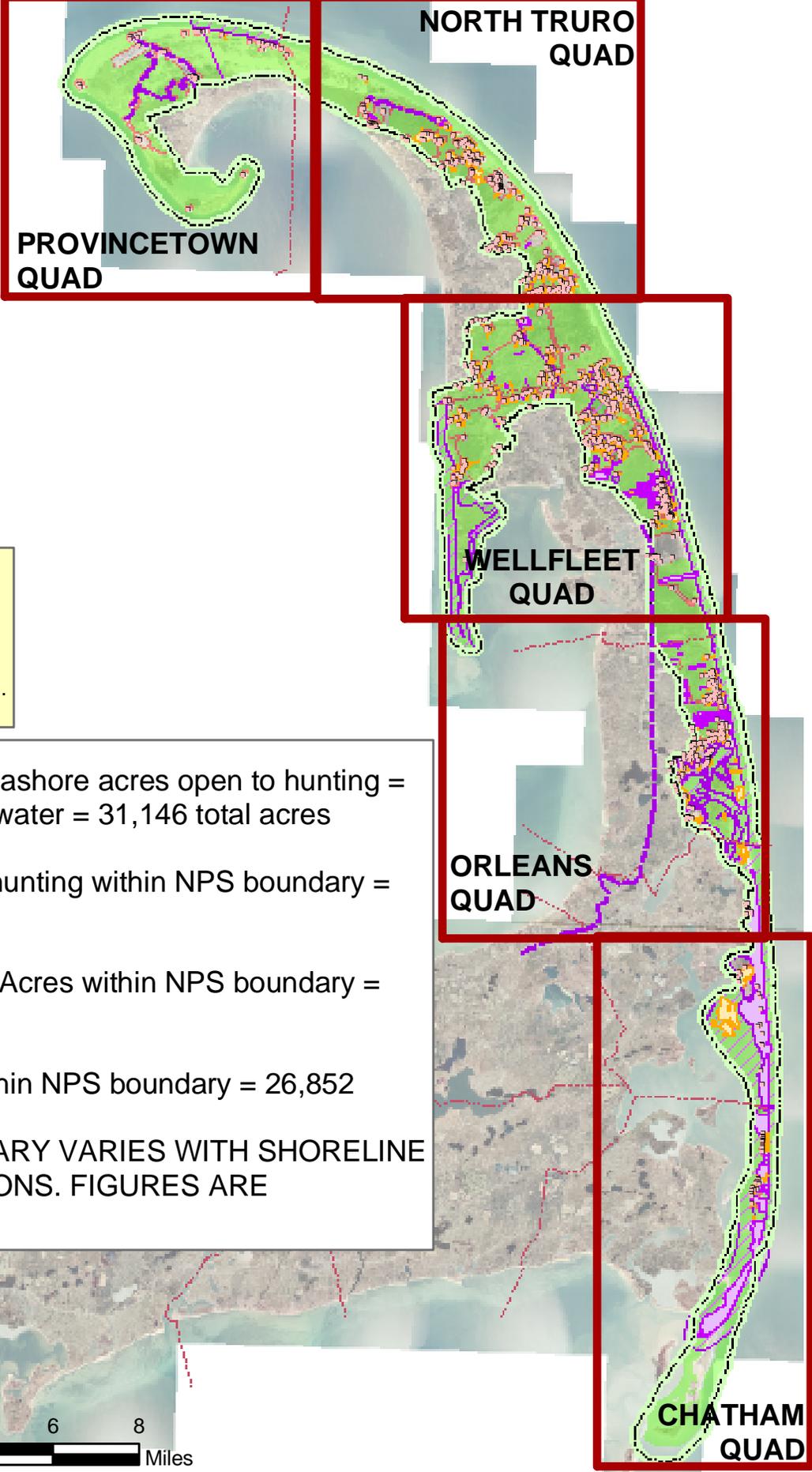


Figure 2a: Hunting Areas and Non-Federal Land within Cape Cod National Seashore

National Park Service  
U.S. Department of the Interior



**NOTES:**  
Map subject to revisions as public safety needs dictate.  
  
Hunting on non-federal lands subject to owners' permission.

-  Example of 500-foot buffer for scale
-  Example of 150-foot buffer for scale

**Legend**

-  hunting prohibited
-  hunting permitted
- Ownership within NPS Boundaries**
-  PRIVATE
-  TOWN
-  STATE
-  NPS boundary
-  Town boundaries
-  structures
-  bike paths
-  foot trails
-  roads



Provincetown Quad

Figure 2b: Hunting Areas and Non-Federal Land within Cape Cod National Seashore

National Park Service  
U.S. Department of the Interior



**NOTES:**  
Map subject to revisions as public safety needs dictate.  
Hunting on non-federal lands subject to owners' permission.

○ Example of 500-foot buffer for scale  
▭ Example of 150-foot buffer for scale

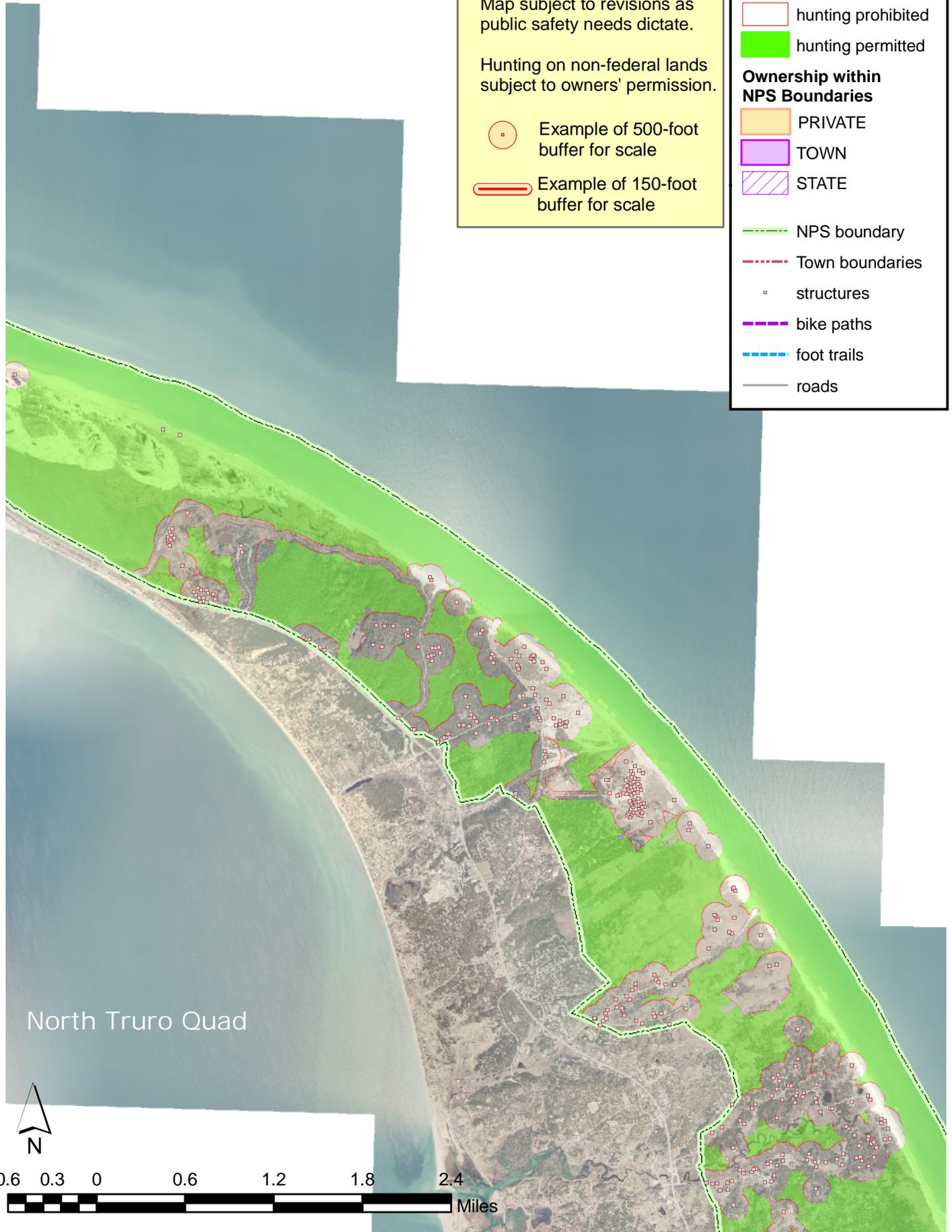
**Legend**

- ▭ hunting prohibited
- ▭ hunting permitted

**Ownership within NPS Boundaries**

- ▭ PRIVATE
- ▭ TOWN
- ▭ STATE

- NPS boundary
- - - Town boundaries
- ▭ structures
- bike paths
- foot trails
- roads



North Truro Quad



Figure 2c: Hunting Areas and Non-Federal Land within Cape Cod National Seashore

National Park Service  
U.S. Department of the Interior

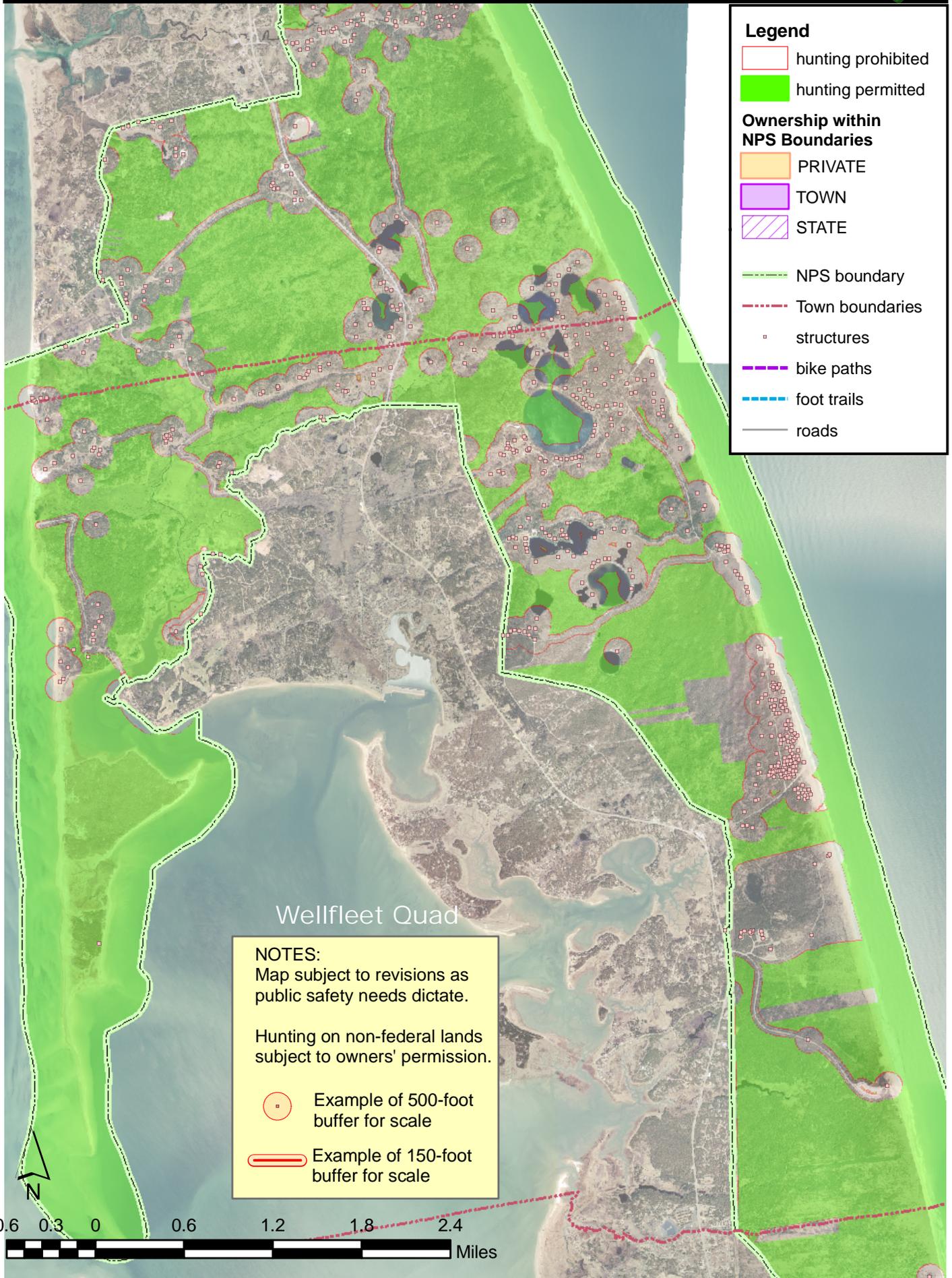
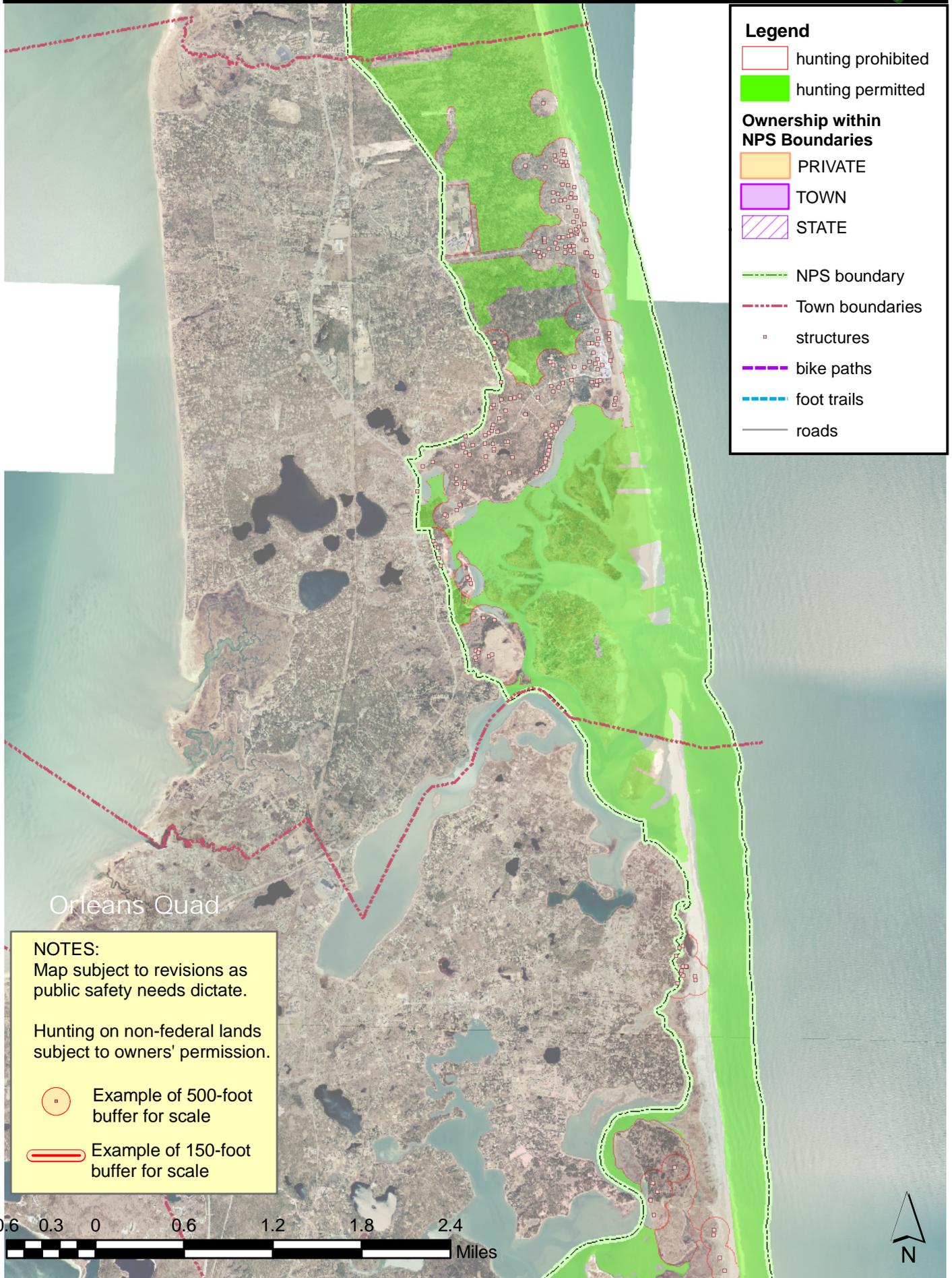


Figure 2d: Hunting Areas and Non-Federal Land within Cape Cod National Seashore

National Park Service  
U.S. Department of the Interior



**Legend**

- hunting prohibited
- hunting permitted

**Ownership within NPS Boundaries**

- PRIVATE
- TOWN
- STATE

- NPS boundary
- Town boundaries
- structures
- bike paths
- foot trails
- roads

**NOTES:**  
Map subject to revisions as public safety needs dictate.

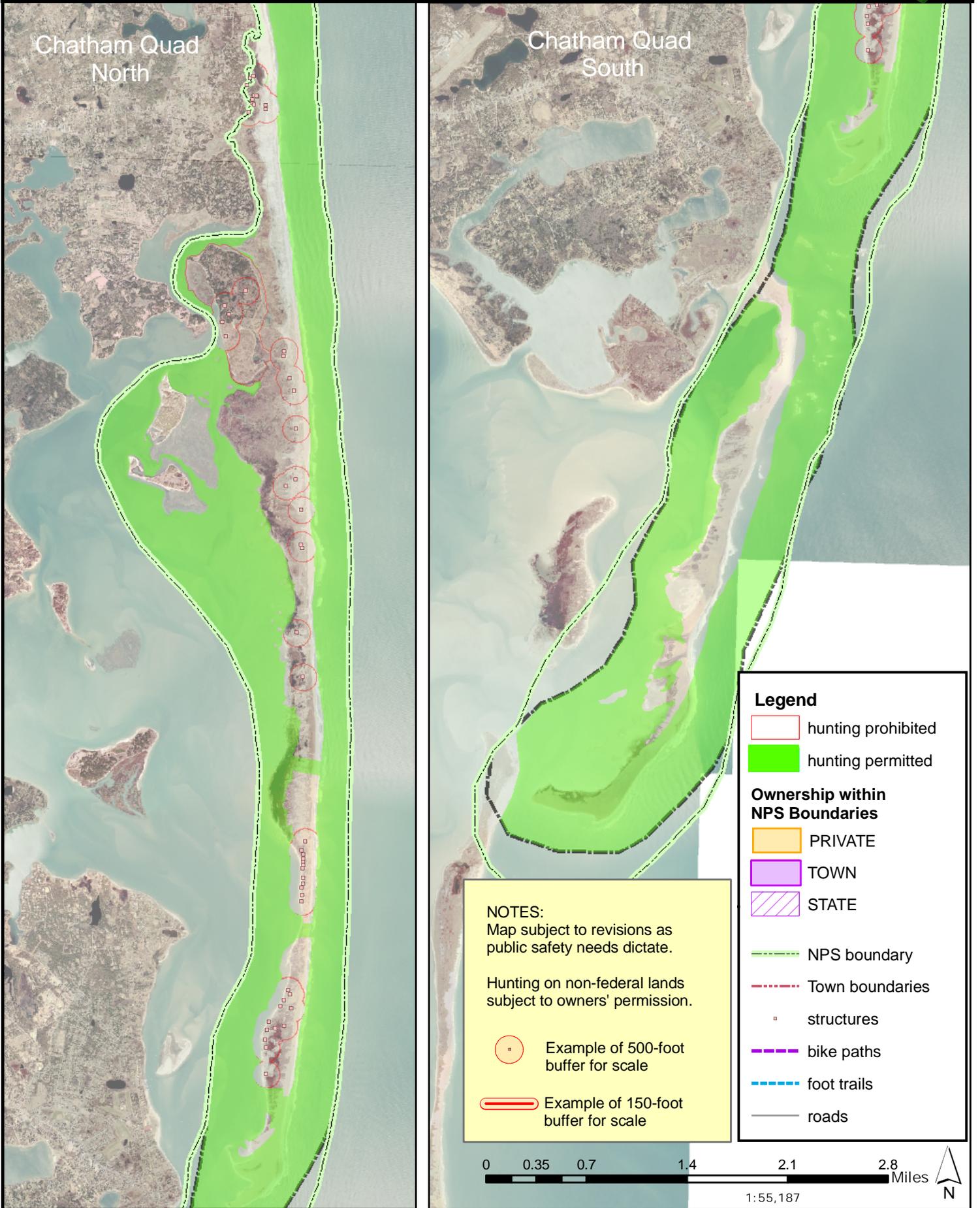
Hunting on non-federal lands subject to owners' permission.

- Example of 500-foot buffer for scale
- Example of 150-foot buffer for scale



Figure 2e: Hunting Areas and Non-Federal Land within Cape Cod National Seashore

National Park Service  
U.S. Department of the Interior



Chatham Quad North

Chatham Quad South

**Legend**

- hunting prohibited
- hunting permitted

**Ownership within NPS Boundaries**

- PRIVATE
- TOWN
- STATE

- NPS boundary
- Town boundaries
- structures
- bike paths
- foot trails
- roads

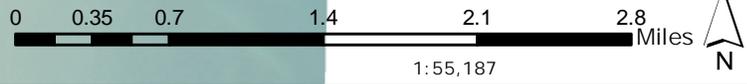
**NOTES:**

Map subject to revisions as public safety needs dictate.

Hunting on non-federal lands subject to owners' permission.

Example of 500-foot buffer for scale

Example of 150-foot buffer for scale



**Deer hunting:** White-tailed deer (*Odocoileus virginianus*) are hunted throughout the areas open to hunting on CACO. Deer hunting is divided into three distinct seasons: archery, shotgun, and muzzleloader. The shotgun season is the most popular, with most hunters using 12-gauge shotguns loaded with either buckshot or slugs. All hunters who hunt during the shotgun and muzzleloader seasons must wear hunter orange for safety purposes. Deer may be hunted from temporary tree stands; permanent tree stands are not allowed. Stalking and still hunting are also used to locate deer. Deer drives are permitted, but hunters may not shoot across a paved road or bicycle trail. All deer must be checked-in at 1 of 3 official check stations located in the Outer Cape. Antlerless deer may be taken with a valid permit in addition to a valid hunting license. Approximately 20 to 30 deer are taken each year at CACO with some 75 to 100 hunters participating in the annual hunt. Deer hunting activity generally peaks during the mornings of the shotgun season. Deer are most active during dawn and dusk periods. Hunting pressure is most intense during “shotgun” hunting week for deer, which is the first full week following Thanksgiving (November 26 through December 2, 2006). This is a relatively slow time for general CACO visitation and with the majority (5 of 6 days) of the hunting occurring during the week (when most residents are either working or in school), the potential for accident and/or injury is very low.

**Table 1. Summary of Wildlife Species Hunted at CACO, Seasons and Limits<sup>1,2</sup>**

| Species                      | Season                              | Bag Limits             |            |        | Notes and Comments   |
|------------------------------|-------------------------------------|------------------------|------------|--------|--|
|                              |                                     | Daily                  | Possess    | Season |  |
| Crow                         | 1/1 – 2/28/07<br>9/1 – 2/29/08      | -                      | -          | -      | Not commonly hunted at CACO.   |
| Pheasant                     | 10/13 – 11/24/07                    | 2                      | 4          | 6      | 800 pheasants are stocked in three locations annually.                                     |
| Quail                        | 10/13 – 11/24/07                    | 4                      | 8          | 20     | Not abundant enough to be hunted effectively.  |
| Cottontail rabbit            | 1/1 – 2/28/07<br>10/13 – 2/29/08    | 5                      | 10         | -      | A popular species often hunted using dogs.   |
| Deer (archery)               | 10/15 – 11/24/07                    | Same as shotgun limits |            |        | Very few hunters.  |
| Deer (shotgun)               | 11/26 – 12/1/07                     | 2                      | 2          | 2+     | Very popular hunt.   |
| Deer (muzzleloader)          | 12/10 – 12/31/07                    | Same as shotgun limits |            |        | Very few hunters.  |
| Coyote                       | 1/1 – 2/28/07<br>11/1 – 2/29/08     | -                      | -          | -      | Very few hunters.  |
| Fox                          | 1/1 – 2/28/07<br>11/1 – 2/29/08     | -                      | -          | -      | Very few hunters.  |
| Gray squirrel                | 10/13 – 1/2/08                      | 5                      | 10         | -      | Very few hunters.  |
| Opossum                      | 1/1 – 1/31/07<br>10/1 – 1/31/08     | -                      | -          | -      | Very few hunters.  |
| Raccoon                      | 1/1 – 1/31/07<br>10/1 – 1/31/08     | 3                      | -          | -      | Very few hunters.  |
| Ducks, mergansers, and coots | 10/13 – 10/28/06<br>11/23 – 1/17/07 | 6, 5, 15               | 12, 10, 30 | -      | Popular hunting season, specific bag limits are established for some species (Appendix A). |
| Sea ducks                    | 10/5 – 1/20/07                      | 7                      | 14         | -      | Popular hunting season, specific bag limits are established for some species (Appendix A). |
| Canada goose                 | 9/5 – 9/25/07                       | 5                      | 10         | -      | Popular hunting season.  |
| Snow and blue geese          | 10/13 – 10/28/06<br>11/23 – 1/17/07 | 15                     | 30         | -      | Few hunters as they are generally not common species.                                      |
| Brant                        | 11/23 – 12/27/07                    | 3                      | 6          | -      | Few hunters as they are generally not common species.                                      |

1. <http://www.mass.gov/dfwele/dfw/regulations/abstracts/abstracts.htm>

2. NPS 2004b

**Table 2. Brief Synopsis of Hunting Regulations in Massachusetts and CACO**

| Species                                      | Regulation  | Purpose   |
|--|---|---|
| All waterfowl                                | The use of non-toxic shot.  | Preventing lead poisoning.  |
| All species                                  | Hunting is prohibited within 500 feet of all buildings.   | Protects occupants and structures.  |
| All species                                  | Hunting is prohibited within 150 feet of all bicycle trails and hunters may not shoot across a paved road or bicycle trail. | Protects visitors using roads and bicycle trails.   |
| All species                                  | No hunting from March 1 through August 31.  | Most hunting seasons are occurring during the fall and winter. This restriction improves summer visitor's safety. |
| Deer   | All deer must be taken to a check station.  | Allows biologists to collect data on the health of the deer herd and helps to regulate and track the harvest.     |
| All waterfowl                                | Hunters must purchase a duck stamp.   | Provides funding for waterfowl conservation.  |
| Upland game birds, rabbits, deer, and others | Hunters must wear hunter orange.  | Helps protect hunters from possible accidents.  |
| Most species                                 | Hunting is prohibited earlier than one-half hour before sunrise and later than one-half hour after sunset.                  | Protects hunters and non-hunters from accidents and minimizes disturbance to many species.                        |
| Rabbits, pheasants, and quail                | Hunters are limited to 6 hunting dogs per group.  | Minimizes disturbance to wildlife and visitors. Most upland bird hunters use only one or two dogs.                |
| All species                                  | No hunting on Sundays.  | Allows non-hunters to recreate during hunting season without encountering hunters.                                |

**Pheasant Stocking and Hunting:** Pheasants are not a native species to the area and are introduced only for hunting purposes. The MDFW began stocking ring-necked pheasants (*Phasianus colchicus*) for hunting on Outer Cape Cod during the 1930s and 1940s, prior to the 1961 establishment of CACO. The area that became the Marconi WMA was used for stocking before 1961. Pheasant stocking and hunting within the boundaries of CACO have been permitted under a Memorandum of Understanding (MOU) (Appendix B) until enjoined by a court order in 2003. Under a 24-year old experimental designation, specified within the MOU, 1,500 acres in the Marconi Station area have been managed jointly by the MDFW and the NPS as a wildlife management area. CACO records show this experimental area was established in 1971 as an “experimental one with no time limit shown” (Arenberger 1971 as cited in NPS 1996). This 1,500-acre wildlife management area was still used for pheasant stocking by the MDFW as the main pheasant hunting area on Outer Cape Cod, until the 2003 court order enjoining the hunt. Other historically stocked areas were established prior to the creation of CACO and were used up until the court injunction, including the Bound Brook area in Wellfleet and Hatches Harbor area in Provincetown. Prior to the injunction, these were the only remaining stocking areas on Outer Cape Cod, as others have been shut down due to habitat loss, increased urbanization, and/or for public safety (MDFW 1995 as cited in NPS 1996). MDFW continues to stock pheasant at seven other locations on Cape Cod.



**Bound Brook Island area.**

The pheasants released in the Marconi Station area are raised on a farm in a free-ranging environment, not in cages, and thus are able to

develop natural behaviors, including flying. The beaks are trimmed during the first two weeks of life to prevent injuries from pecking. The beak grows back and is functional for feeding and drinking. A small amount of antibiotic is put into the pheasant feed when the birds are chicks. The antibiotic is not long lasting, and its effects have worn off by the time the pheasants reach maturity. While the pheasants are farm-raised, they are not completely tame and retain much of their natural instincts for taking cover and running and flying away from predators (R. Deblinger MDFW presentation at the July 12, 2004, scoping meeting).

The pheasant hunting season is typically six weeks in length, beginning in mid-October. Most of the hunting activity occurs on holiday and Saturday mornings. Moderate to light hunting occurs on weekday mornings. Hunting is prohibited throughout the state on Sundays. On Saturday mornings, with good weather, as many as 150 to 200 pheasant hunters may be found in the vicinity of the release site. Ninety percent of the hunting activity happens within a two-hour period immediately following sunrise. Many hunters use one or more specially trained hunting dogs for locating and retrieving birds and consider their hunting activities to be enhanced by the use of their dogs.

Most of the hunting activity occurs near the release sites which are fairly isolated from buildings or nearby development. Hunting is prohibited within 500 feet of any building and within 150 feet of any paved roadway or bicycle trail. Hunting areas are accessed from adjacent parking lots and paved roadways and involve short to moderate walking distances, typically 0.1 to 1.0 miles. Other CACO visitors using the same areas at the same time include sightseers, walkers and hikers, cyclists, joggers, dog walkers, mushroom collectors, and cranberry pickers. Each year several complaints are received from non-hunters about the hunting activity in general, as well as from hunters toward the other users. There have been only two reported actual verbal or physical conflicts between hunters and non-hunters since the 1970s (B. Grant, personal communication, April 8, 2004).

Management of the Marconi WMA, including the stocking and hunting of pheasants, has remained fairly unchanged since 1971, with current fall releases of pheasants and associated hunting activity generally managed today as it was then. The area has changed dramatically from an ecological perspective, with pine and oak forests replacing heathland habitats. Stocking and hunting of pheasants in other locations inside CACO also continues. The largest numbers of birds stocked and hunted are in the Marconi area (Table 3). Hunting pressure was probably at its peak during the early 1970s (Table 4), and has likely decreased since that time (B. Grant, personal communication, April 8, 2004).

Pheasant hunters may use shotguns ranging in bore from 12 to 20 gauge and generally loaded with small game or birdshot (medium to light load) shotgun shells. Most pheasants that are taken are felled with one or two shots in the air. Some individuals hunt within small groups, often a pair or trio of hunters, which can aid in locating and flushing pheasants. Walking through areas stocked with pheasants is the most effective; still-hunting is much less effective. Hunters are permitted the use of specially trained dogs, and generally use only one dog. Hunters prefer to take pheasants on the wing. Pheasant hunters are required to wear hunter orange.

**Table 3. Numbers of Ring-necked Pheasants Released within CACO by the MDFW<sup>1</sup>**

| <b>Locations</b>  | <b>1990</b> | <b>1991</b> | <b>1992</b> | <b>1993</b> | <b>1994</b> |
|---|-------------|-------------|-------------|-------------|-------------|
| Marconi Area (Wellfleet and Eastham)                    | 488         | 440         | 440         | 440         | 440         |
| Bound Brook Island and Griffin Island Areas (Wellfleet) | 216         | 224         | 224         | 224         | 224         |
| Hatches Harbor Area (Provincetown)                      | 160         | 160         | 160         | 160         | 160         |
| <b>Total</b>  | <b>864</b>  | <b>824</b>  | <b>824</b>  | <b>824</b>  | <b>824</b>  |

<sup>1</sup> Data provided by the MDFW

**Table 4. Estimates of Pheasant Hunting Pressure During the Early 1970s**

| Year | Total Number of Hunters | Holiday and Saturday Hunters | Percentage of Total Hunters that Hunted on Holidays and Saturdays. |
|------|-------------------------|------------------------------|--|
| 1971 | 1,380                   | 830                          | 60.1%  |
| 1972 | 1,500                   | 920                          | 61.3%  |
| 1973 | 1,800                   | 850                          | 47.2%  |
| 1974 | 1,960                   | 1,150                        | 58.7%  |
| 1975 | -                       | 900                          | -  |
| 1976 | -                       | 813                          | -  |

**Rabbit Hunting:** The hunting of eastern cottontail rabbits is especially popular among local hunters and many hunting groups from the New Bedford area. This is often a family sport, with two or three generations of hunters present (M. Minnerath, personal communication, May 12, 2004). Rabbit hunters are permitted the use of up to six dogs, many of which are beagles or similar small, stocky, breeds. Most rabbit hunting groups use the maximum complement of six dogs, while others use only two to four dogs. Shot guns are used, with a bore ranging from 12 to 20 gauge, and small game shot with a medium to light load. Once a rabbit is located and jumped the dogs chase the rabbit and bring it into range of the hunter. The resulting shots are typically low to the ground in medium to thick vegetation. Most rabbits are taken with two to three shots. Slow stalking without the use of dogs is generally less effective for hunting rabbits and still hunting is virtually ineffective.

As part of the development of this EIS, the NPS has initiated an assessment of the presence of the New England cottontail and eastern cottontail. Upon completion of this study, CACO will coordinate with MDFW and USFW to determine if action is necessary to protect the New England cottontail at CACO. CACO maintains the ability to implement protection measures if indicated. This could include limiting rabbit hunting to areas outside of New England cottontail habitat or the discontinuation of rabbit hunting in the Park.

**Waterfowl Hunting:** Coastal New England has a longstanding waterfowl hunting tradition. Waterfowl hunting on CACO almost exclusively occurs within aquatic habitats, primarily estuarine and intertidal areas for dabbling and diving sea ducks, mergansers, Canada geese (*Branta canadensis*), and brant (*B. bernicla*). Offshore hunting for sea ducks also occurs. Hunting techniques can take several forms, including pass shooting, stalking and flushing, and hunting from a blind. Often hunters use specially trained dogs to retrieve the downed birds. Pass shooting may occur on land, on a jetty, or from a boat, with the hunters generally attracting waterfowl with calls and decoys, and waiting for them to fly over. Stalking involves walking salt marsh areas, flushing waterfowl from small tidal creeks, and shooting on the wing. Temporary or portable blinds or camouflaged boats are used with decoys and calling to conceal the hunter and lure waterfowl within range. Shooting is on the wing and generally over water. Larger gauge shotguns are the most effective, and 12 gauge is the most popular with small game and waterfowl shot and heavy to medium load shotgun shells. Waterfowl hunters attempt to remain concealed and are not required to wear hunter orange.

The bag limit for ducks is contingent upon the year and species that are taken. For example, while hunters may take a total of six ducks per day, their daily bag may contain only one black duck (*Anas rubripes*), one hooded merganser (*Lophodytes cucullatus*), and two female mallards (*A. platyrhynchos*).

**Other Species Hunted:** Several other species are hunted by a more limited number of hunters (Table 1). A small number of quail (i.e., northern bobwhite [*Colinus virginianus*]) are taken while hunters engage in other upland game hunting. The presence of mature pine and oak habitat is not conducive as quail

habitat. Gray squirrels (*Sciurus carolinensis*) are hunted on an irregular basis, more often while hunting other upland game. Gray squirrels are relatively abundant, but not hunted relative to their population. Other species, including common crow (*Corvus brachyrhynchos*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and red fox (*Vulpes vulpes*) are hunted on an irregular basis, more often while pursuing other game species. Coyote hunting has been increasing in the last 4 to 5 years, largely due to the belief that coyotes are competing with deer hunters for that species. Hunting pressure on these species is low.

**Hunting Regulations:** Table 1 lists those species that are commonly hunted on CACO, taking into consideration the actual presence and abundance of those species. A more complete summary of the hunting seasons is provided in Appendix A.

Currently, the NPS allows hunting in all areas except where specifically prohibited. There are two general categories of areas where hunting is prohibited: areas with high levels of public use, such as nature trails and cultural landmarks; and areas designated as safety zones, such as those within 500 feet of any building or within 150 feet of a bicycle trail (Table 2). Other restrictions and regulations are intended to keep hunting a safe sport and to regulate the take of various game species.

The overall acreages of areas open and closed to hunting by terrestrial and wetland type have been estimated by the NPS (Figure 2 and Table 5). Based on these figures, there are 16,507 acres of upland and wetland habitat open to hunting and 12,436 acres of upland and wetland habitat closed to hunting; therefore, approximately 43 percent of the upland and wetland (excluding submerged lands) areas are closed to hunting. Of the total CACO acreage (including submerged lands), approximately 29 percent is closed to hunting and 71 percent is open to hunting. Of the 16,507 upland and wetland acres open to hunting, 2,000 acres are stocked with pheasants. Areas closed to hunting are described in the CACO compendium and are depicted on the hunting information brochure. These areas are posted each year by sign.