

2.0 ALTERNATIVES

2.1 Introduction

The CEQ defines reasonable alternatives as those that are economically and technically feasible and that show evidence of common sense. Alternatives that cannot be implemented or that do not fulfill the stated purpose should be eliminated as unreasonable alternatives. The following alternatives have been considered based on what is feasible and could be implemented by the NPS. This EIS considers three alternatives for the hunting program:

- Alternative A – No Action (continue the hunting program as it was prior to the court enjoining the pheasant hunt)
- Alternative B – Provide a modified hunting program
- Alternative C – Eliminate the hunting program

The establishment of these alternatives was completed by members of the interdisciplinary team through the use of screening criteria and a filtering process.

The proposed alternatives were generated from four basic sources: public input; NEPA guidance documents; internal scoping and internal consideration to achieve a management based decision. Specific portions of the alternatives were taken directly from public meetings, while the No Action alternative is a NEPA requirement. The No Hunting alternative was taken from public input. Through internal scoping, the interdisciplinary team reviewed the public input and considered specific alternatives that would be consistent with the purpose and need of the project. The alternatives are a derivative of these sources, as are the alternatives that were considered but dismissed. Following public review and comment on the Draft EIS, the alternatives were reviewed and revised to reflect the NPS consideration of the suggestions and concerns raised in the public comment process. These revisions are reflected in the alternatives and in the discussion of options.

The following is a description of the filtering process used to develop the three alternatives selected for a more detailed impact assessment. The three alternatives selected for detailed analysis are described in sections 2.3, 2.4, and 2.5.

2.2 Screening of Options Consolidated from Public Scoping

A series of options were drafted as a result of the input received from the public scoping process. The input included suggestions for improving the hunting program in several key areas including modifications to the timing of hunting seasons, alterations to the species hunted, and changes to the locations where hunting is permitted. The suggestions that hunting should remain as it has in the past or that hunting should be discontinued entirely, were also put forth and will form stand-alone alternatives. The remaining options were reviewed to develop alternatives that are the most practical and appropriate to carry out through further analysis. The objective was to define the components of a modified hunting alternative for the detailed impact analysis. The following screening criteria were used to examine the various options:

- public health and safety;
- practical ability to implement;
- covered more effectively by other options;
- consistent with the project purpose and need;
- supports customary uses;

- supports diverse public attitudes and uses;
- minimizes conflicts among users;
- provides fairness;
- ecological effects; and
- consistency with NPS policy.

The range of options associated with a modified hunting program is summarized below. This list is directly derived from public input and is in no specific order. Each item is followed by a brief discussion and the outcome in terms of further consideration under the alternatives.

2.2.1 Modify Hunting – Options That Describe Alterations to Season Length

I. Shorten all Hunting Seasons; Combine all hunting season to a one-week period:

As is the case throughout the state, hunting seasons at CACO are established and managed by the MDFW. This is in keeping with the cooperative agreement between the NPS and the MDFW. Where CACO management objectives or policies differ from MDFW, modifications to the state's hunting seasons or other regulations have been made. For example, modification to the MDFW hunting seasons occurs in CACO in recognition of the seasonally intense use of beaches by the public. In general, it is the intent of CACO to provide consistency where possible with the state's hunting regulations. This reduces the likelihood for confusion within both the hunting and non-hunting public. Unless there is a specific potential or actual problem with respect to accommodating multiple uses within CACO which cannot be managed by other means, or where NPS policies or objectives indicate the necessity for CACO-specific hunting modifications, hunting seasons and other regulations are consistent with those of the state. This relationship between the state and CACO with respect to the state's establishment of open seasons for hunting is clearly envisioned in the CACO enabling legislation. Given the absence of evidence of an actual user conflict with respect to hunting that cannot be managed by other available means, the overriding interest of CACO is to maintain consistency with state hunting regulations, maintain recreational uses that are part of the Outer Cape's cultural heritage, and accommodate appropriate uses through careful management of the resource. Other options consider ways to reduce the perception and further reduce any potential conflict between the hunting and non-hunting public, while maintaining the current recreational use of the Park.

Option outcome: This option was not considered further under the alternatives analysis.

II. Establish a Longer Hunting Season for Coyotes and Other Predators: The intent of the option is clear in the title.

This is one area where CACO's special regulations differ from the hunting regulations of MDFW as a result of a specific potential user conflict. Due to the heavy increase in visitors to the beach areas at CACO, the hunting season for these species is truncated as compared to the state, and hunting is prohibited from March 1 to August 31 of each year. Changing this prohibition would provide only a negligible actual benefit in increasing the recreational hunting use of CACO, as there are very few coyote and predator hunters on CACO. Changing the prohibition would also be exceedingly complex, but more importantly would undermine the reason for the prohibition's intent, which is to minimize the potential for recreational user conflict.

Option outcome: This option was not considered further under the alternatives.

III. Extend the Deer Hunting Season to Help Limit the Potential for Lyme Disease: This option would allow for taking of deer such that there would be a likely decrease of the potential for Lyme disease.

The deer hunt season at CACO is established by the state, and is regulated by MDFW and monitored such that the numbers of deer taken on a year-to-year basis are generally consistent with the state's goals for the maintenance of the population. The deer population on CACO and the surrounding Outer Cape is generally maintained within the carrying capacity of the habitat from the established hunting season and additional hunting pressure would raise questions about unsustainable impacts to the deer population. With respect to the control of Lyme disease through management of the deer population, other reservoirs for Lyme disease exist in CACO, and although substantially reducing deer numbers has been shown to reduce Lyme disease occurrences in some instances, research indicates that drastic reductions in the deer population are required to have any meaningful impact, and that even significant reductions in deer populations do not necessarily result in reductions in disease. The success of deer reduction efforts alone in reducing Lyme disease is extremely variable, but the reductions in deer population required to potentially impact Lyme occurrence would likely place the sustainability of the annual deer hunt in question. At best, drastic deer population reductions could be only one part of an aggressive plan to reduce Lyme occurrence on the Cape, as deer do not provide the only reservoir of Lyme-carrying species.

Option outcome: This option was not considered further under the alternatives.

2.2.2 Modify Hunting – Options That Describe Alterations to the Management of People or Hunting Location

IV. *Limit the Number of Hunters:* Limit the density of recreational hunting (i.e., set a cap on the number of hunters in CACO on any given day).

This objective would be inconsistent with existing MDFW regulations and CACO policies and objectives. CACO policies could be modified, but reducing recreation, in this case in the form of hunting, would have to be clearly necessitated in order to meet other CACO objectives. However, currently, the density of hunters is not exceeding the area available to them and other CACO visitors. Hunters are not crowding each other, and a review of experience over the past several years indicates that their numbers are not creating actual safety hazards to the non-hunting public. Therefore, pursuing the limitation of hunting by restricting the numbers of hunters runs contrary to CACO's goals of maintaining and enhancing actual recreational opportunities. Other options consider alternatives to address the perception and potential for user conflict while maintaining recreational use.

Option outcome: This option was not considered further under the alternatives.

V. *Hire Two Seasonal Rangers for Regulating Hunting:* The NPS would increase enforcement staff by adding two seasonal part-time rangers, whose duties would include enforcement of hunting regulations. These rangers would work opening days, Saturdays, and mornings from the opening of the waterfowl season (October 14) through the end of the waterfowl season (January 10). These rangers would work full-time during the deer season.

Existing enforcement staff during the hunting season is primarily dedicated to hunting. Current experience with hunting and minimal report of hunter/non-hunter conflicts at CACO indicates that current staff levels are adequate to manage the existing hunting program. However, other measures that can be expected to further reduce the potential for hunter/non-hunter conflicts and the need for additional oversight are included in the alternatives analysis.

Option outcome: This specific option was not considered further under the alternatives, although other options to further reduce the potential for hunter/non-hunter user conflicts are considered.

VI. Establish a Hunting Permit System and Hunting Fees: Hunters would be required to obtain and sign a copy of the CACO hunting regulations, serving as a seasonal hunting permit.

Hunting currently is regulated by state regulations which require hunter education, firearm identification cards, and a license to carry a firearm. This option would make the requirements and cost to hunt higher than what is currently in effect. The purpose of introducing new requirements for participating in the hunting program is unclear given the absence of a widespread or persistent problem with the current hunting program and the adequacy of the existing regulations at CACO. Fees could also potentially impact the availability of hunting as a recreational opportunity for some.

Option outcome: This option was not considered further under the alternatives.

VII. Set Aside 10 Percent of CACO Land for Hunting and the Remainder for Non-Hunting Activities: This alternative is intended to reduce potential conflict between hunters and non-hunters. The 10 percent corresponds to the estimated percentage of hunters as members of the total user group.

As a practical matter, the resulting 10 percent acreage for hunting would be too small to safely support hunting as a continuing recreational activity. As a policy direction, the precedent of supporting recreational activities based upon numbers of users would result in impractical management of CACO's resources. For example, summer beach recreation users are by far the most numerous. If the Park were to allocate acreage for use based upon the percentage of total users, many more public beach areas would need to be provided. This would impact and impair areas designated for natural resource conservation and wildlife observation. While percentages of visitors engaged in a particular form of recreation is one consideration the NPS management uses in making land use management decisions, the overarching objective is to balance recreational uses within the context of overall Park objectives and goals. This option would effectively end the hunting program while creating a policy precedent that would impede CACO's ability to provide a broad range of opportunities for visitors to enjoy park resources in a manner that protects those resources for future generations.

Option outcome: This option was not considered further under the alternatives.

VIII. Ban all Human Activity: This option should be clear from the title.

This alternative is contrary to the mission of the NPS and CACO and is inconsistent with the purpose of this project. Current CACO management of the Park does result in managing and limiting human activity as necessary when environmental conditions or balancing user interests warrants it. For example, hunting is banned as an activity during the Park's summer beach season. Limiting or banning human activity selectively or in limited portions of the Park, and as warranted by conditions, Park goals, and objectives will continue to be used as a management tool. Other options included in this analysis do consider banning elements of certain activities in some areas of the Park.

Option outcome: This option was not considered further under the alternatives.

IX. Provide Properly Trained Personnel to Provide Oversight of Hunting:

The objective is already met through the presence of CACO rangers and the rules and regulations that apply to hunters for education, firearm identification cards, and the requirement of a license to carry a firearm. In addition, a review of experience with hunting to date does not support a determination that hunting is currently receiving inadequate oversight, or that the current personnel implementing the hunting program are inadequately trained.

Option outcome: This option was not considered further under the alternatives.

X. *Prohibit Non-hunters from Using the Areas Where Hunting is Allowed:* Providing this type of regulation would address the perceived issue of safety, although actual experience indicates that hunting and non-hunting uses currently coexist without sacrificing safety. This option would have the consequence of reducing non-hunter recreational use of CACO without an added benefit in terms of expected safety gain. Other measures to further reduce the potential for hunter/non-hunter conflicts are included in the alternatives analysis.

Option outcome: This option was not considered further under the alternatives.

XI. *Enact Legislation Declaring CACO a Recreation Wildlife Refuge in Order to Eliminate Hunting:* The NPS does not have a designation of “Recreation Wildlife Refuge”. Wildlife refuges are part of the National Wildlife Refuge system operated by the USFWS and generally allow hunting. Some Refuges operated by the NPS also allow hunting, and such a designation would therefore not necessarily change the status of hunting at CACO, since hunting is permissible per the enabling legislation. Alternative C considers the elimination of hunting; therefore, analysis of Alternative C meets the intent of this suggestion.

Option outcome: The intent of this option is analyzed under Alternative C.

XII. *Require Advanced Hunter Education:* Require hunters to take an advanced hunter education class.

Hunters are already required to take a hunter education and safety class and obtain a firearms permit. Hunter awareness of safety concerns and the rules of sportsmanship do not appear to be issues. Other safety concerns are addressed through other aspects of Alternative B.

Option outcome: This option was not considered further under the alternatives.

XIII. *Hunting Program Geographic Alterations:* Several geographic alterations were suggested during public scoping meetings: In areas with heavier residential use or visitation pressure, establish “safety zones” to add an additional buffer area adjacent to the hunting areas; extend all hunting area boundaries to one mile from all roads, trails, bike paths, runways, buildings, etc.; and prohibit hunting west of Race Point Road in Provincetown.

Increasing the hunting setbacks to a mile would eliminate many parcels and acreage from the hunting-allowed areas, in fact making many large tracts unsuitable for hunting. More hunters would be concentrated into very small hunting areas in the field. This would likely increase the potential of accidents among hunters. Some areas west of Race Point Road are already closed to hunting. Eliminating hunting from the remaining areas west of Race Point Road would eliminate a sizable tract from the allowed hunting areas and would not improve safety. Elements of geographic alterations are considered in the alternatives analysis, with the intent shared with this option to reduce potential and perceived hunter and non-hunter safety.

Option outcome: Elements of this option were not considered further under the alternatives, although a reduction in hunting areas and increased setbacks along areas used by non-hunters are carried forward as part of Alternative B.

XIV. *Clearly Delineate Existing Areas that are Closed to Hunting:* Accurately designate areas in the field where hunting is prohibited for safety and regulatory reasons (i.e., 500-foot setbacks), along with areas off-limits to hunting.

Option outcome: This option is assessed under Alternative B.

XV. Clearly Designate Areas Where Hunting is Permitted:

Geographic Information System data would be used for identifying large tracts of open land where hunting is currently permitted, and a limited number of these tracts would be selected for hunting, being cognizant of the types of habitat that support valued hunted species. Areas that have small tracts and slivers of hunting-permitted zones would be removed. Essentially this approach would reshape and simplify the scope of areas open to hunting and designated hunting permitted areas, versus the current policy, which allows hunting at CACO in all areas that are not prohibited.

Option outcome: This option is assessed under Alternative B.

XVI. Improve Information About the Hunting Program for All Users:

Improve information about hunting at CACO, hunting regulations, safety procedures, and non-hunting areas for all autumn and winter CACO users

Option outcome: This option is considered in Alternative B.

2.2.3 Modify Hunting – Options that Describe Alterations to Hunting Techniques

XVII. Eliminate the Use of Deer Drives: Eliminate the process of driving white-tailed deer for hunting.

Deer drives are a legal and customary technique for hunting deer in Massachusetts and are an effective method for hunting low-density deer populations. Unless otherwise indicated by environmental or other CACO-specific considerations, NPS policies or goals, the hunting that occurs at CACO is consistent with state law.

Option outcome: This option was not considered further under the alternatives.

XVIII. Eliminate/Limit the Use of Hunting Dogs: Reduce the number of hunting dogs allowed per hunting group from six to four, or eliminate their use altogether.

The use of hunting dogs currently operates under some limitations. The regulation of hunting is consistent with state law unless otherwise indicated by CACO or National Park Service policies or goals. The use of hunting dogs is consistent with state law and is part of the tradition of hunting that occurred on the Cape prior to the creation of CACO/

Option outcome: This option was not considered further under the alternatives.

2.2.4 Modify Hunting – Alternatives That Describe Alterations to Species Hunted or Species Specific Changes

XIX. Eliminate Pheasant Hunting: Pheasant hunting would be permanently discontinued, effective immediately.

Option outcome: This option is considered under both Alternative B, with a phase out, and Alternative C.

XX. *Eliminate Pheasant Stocking at the Marconi Area and Establish a New Stocking Area:* Discontinue pheasant stocking and hunting at the Marconi WMA and designate a new pheasant stocking and hunting area elsewhere on CACO.

While it is possible to discontinue stocking in one or more areas, opportunities to create new areas are limited by size, configuration, and location of other tracts of land. Another tract of suitable size and quality would be difficult to locate and likely would not provide any benefits that would resolve the questions raised under the court action. While finding an area outside of CACO to continue pheasant stocking might not trigger the issues raised by stocking a non-native species within a National Park, such action would be under the jurisdiction of MDFW and local towns, and assessment of this option is not part of this project.

Option outcome: This option was not considered further under the alternatives.

XXI. *Create Habitat for Sustaining a Local Pheasant Population:* Convert woodlands to herbaceous and shrub communities for pheasant nesting, foraging, cover, and over-wintering.

This form of habitat management would encourage a non-native species and is specifically inconsistent with NPS policy.

Option outcome: This option was not considered further under the alternatives.

XXII. *Eliminate Agricultural Pest Species Hunting:*

Agricultural pest species hunting is consistent with state regulations, which are applicable to CACO as part of the NPS relationship with the State of Massachusetts. The CACO program has special regulations (numbers of dogs, shortened season) specifically to accommodate the needs, goals and policies of the National Park. Evidence of a problem for CACO resources related to any element of the hunting program could result in consideration of CACO-specific modifications from the state hunting program at CACO. Overall, maintaining consistency with state hunting regulations provides the ability for hunters and non-hunters alike to more readily comply with overall hunting regulations. Agricultural pest species hunting is not associated with any known problem; therefore the goal of consistency with the state program unless modifications are warranted due to substantiated concerns is maintained.

Option outcome: This option was not considered further under the alternatives.

XXIII. *Reproduction Intervention for Deer in lieu of the deer hunting season:*

Hunting within the park is a recreational activity, not a management activity. At this time, there is no reason to believe that reproductive intervention for deer management is necessary in the park. The use of reproduction intervention has been employed in other Parks for control of deer populations on an experimental basis (NPS 1995). The deer hunt at CACO occurs as part of the cultural heritage and recreational activities supported at CACO, not to manage population size for deer.

Option outcome: This option was not considered further under the alternatives.

XXIV. *Establish a "Put and Take" Quail Hunt:* This alternative would replace the existing pheasant "put and take" (stocking) program with a similar program with the native quail without necessarily any passive habitat restoration to enhance the native quail population

Option outcome: This was proposed as a possible alternative in the Draft EIS. However, after weighing public response to this option, it is no longer being considered for inclusion in the preferred alternative (Alternative B). Specifically, one commenter pointed out that stocking quail could dilute, and possibly extinguish, the gene pool of the native quail population currently present in CACO and on the Outer Cape. Additionally, in meetings to discuss the Draft EIS, MDFW indicated they did not support the proposal to stock quail at CACO.

XXV. Modify the Pheasant Hunting Program: The pheasant hunting program would be managed as it was prior to the court ordered suspension of the program, with minor modifications that address public concern.

Option outcome: This option is carried forward under the alternatives analysis.

XXVI. Apply Adaptive Management to Phase-out the Pheasant Hunting Program: Retain all stocked areas, but only stock the number of pheasants based on hunter demand according to MDFW recommendations and in coordination with Park management objectives.

The MDFW would monitor the take and stocking effort, ensuring that the two are equal. CACO staff in coordination with MDFW would develop a phase-out schedule that would be specific to location, the numbers of birds stocked, and timing. At the same time, other native hunting opportunities would be enhanced.

Option outcome: This option was included in the DEIS preferred alternative. However, following public comment, this option was revised and it is described in detail in the preferred alternative and environmental consequences.

XXVII. Reduce the Number of Species that are Hunted: Remove some species that are not hunted regularly on CACO from the hunted list, including sparrows, crows, and woodchucks.

Hunting occurs consistent with state regulations. In the absence of a problem or other policy objectives at CACO associated with the hunting of a particular species, this consistency remains one goal of the hunting program.

Option outcome: This option was not considered further under the alternatives.

XXVIII. Establish Turkey Hunting Consistent with MDFW Regulations: Include a new hunting season for eastern wild turkeys in the spring consistent with the regulations of the MDFW.

This would be a controlled hunt limited to turkey requiring a permit, limiting the number of hunters, and designating specific areas open to hunting. It would also require a modification to an existing federal regulation, which would entail rulemaking to add the spring hunting season and would also require consultation with the CACO Advisory Commission. Fall hunting would be initiated only if the MDFW established such a season in their southeast region. This option would not expand CACO's hunting season for any other species.

Option outcome: This option is discussed in detail in the preferred alternative.

XXIX. Monitor Wildlife and Hunting: Evaluate and integrate MDFW annual wildlife-monitoring results into CACO management decisions to insure sound wildlife management focusing on deer, eastern cottontail rabbits, eastern wild turkey, and northern bobwhite quail.

Data would be used to develop population or harvest indices for evaluating population trends, over a long-term timeframe (i.e., five years or more). The population and harvest data collected by the MDFW and provided to CACO would help document the population trends of CACO game species and help to monitor the effects of hunting, if any, on local populations. Surveys conducted by MDFW may include turkey brood counts, quail covey counts, deer abundance indicators, rabbit abundance indicators, various hunter bag checks, monitoring pheasant releases, and evaluating specific harvest data for deer, pheasants, and turkey.

A scientific study of New England cottontail and eastern cottontail hunting and ecology has been initiated to assess hunting pressure on cottontail populations, distribution and habitat preferences of each species. The data collected will be provided to MDFW and USFWS for their use in managing these two species. Eastern cottontails are abundant throughout Massachusetts. The New England cottontail is uncommon or rare in much of the state and is a candidate for Federal listing as a threatened or endangered species. CACO would reserve the prerogative to implement protection measures if needed.

Option outcome: Elements of this option were included in the preferred alternative in the Draft EIS. The option was subsequently revised based on comments from MDFW and is evaluated as part of Alternative B in this Final EIS.

XXX. Eliminate Hunting: Hunting would be phased out according to an implementation plan created by CACO staff in consultation with MDFW.

Option outcome: This option is considered under Alternative C.

2.2.5 Screening the Range of Options

The interdisciplinary team reviewed each of the 30 options generated through the public input process and selected those that would weigh positively relative to the screening criteria. At the opposite ends of the spectrum, it was a given that the “No-action” (Alternative A) and “Discontinue Hunting” (Alternative C) alternatives would be analyzed and each evaluated relative to potential effects on the scoping issues. The screening of the 30 options created a third alternative (Alternative B) that addresses issues of concern and could be implemented by the NPS if it were determined to be the preferred alternative. As a result of the input and screening of the range of options, several options for improving hunting came to the forefront. These include:

- Element XIV: Clearly Delineate Existing Areas that are Closed to Hunting;
- Element XV: Clearly Designate Areas Where Hunting is Permitted;
- Element XVI: Improve Information About Hunting for All Park Users;
- Element XXV: Apply Adaptive Management to Phase-out the Pheasant Hunting Program;
- Element XXVIII: Establish Turkey Hunting Consistent with MDFW Regulations; and
- Element XXIX: Monitor Wildlife and Hunting.

Alternative B has been proposed to improve and modify the hunting program, incorporating the above-referenced six modifications. These modifications are intended to address and resolve as many of the issues raised during the scoping process as possible.

Option XIX: Eliminate Pheasant Hunting Program is a variation of an Eliminate Hunting alternative, and will be addressed in the analysis of see Alternative C – Eliminate Hunting.

2.3 Alternative A – No Action

The No Action alternative serves two functions: first, it provides a baseline upon which to compare the effects of the other alternatives; and second, it is an alternative action under evaluation for implementation. The hunting program at CACO is described in Section 1.2. The No Action alternative sets a baseline of existing effects continued into the future against which to compare effects of the other alternatives. The No Action alternative considers retaining hunting at CACO as it was prior to the court's decision to enjoin the pheasant stocking and hunting program. Thus, under this alternative, the pheasant program would be reestablished and managed as it had been prior to the injunction.

2.4 Alternative B – Develop a Modified Hunting Program – Preferred and Environmentally Preferred Alternative

The hunting program at CACO would be modified as described below. The modifications presented in the DEIS were derived from input received during public scoping. They have been revised and reorganized in response to comments on the Draft EIS. Collectively, these changes are designed to address NPS policies regarding non-native species, hunting opportunities for native upland game bird species, public safety, and the enjoyment of both hunting and non-hunting park visitors. Additionally, these measures are feasible and fiscally sustainable given current and projected funding.

As described Sections 1.25 and 1.26, CACO's hunting program generally follows the Commonwealth of Massachusetts' program administered by the MDFW, with additional specific provisions or restrictions as necessary to meet park objectives and NPS policies. CACO has adopted many of the State's regulations without additional restrictions. Although the ultimate responsibility for developing and managing an appropriate hunting program for CACO rests with the NPS, CACO regards MDFW as a key expert agency, with the state- and region-wide perspective important for determining hunting seasons, bag limits, and other elements of a sound hunting program. As a result, management of hunting at CACO is best accomplished through close coordination between CACO and MDFW. This coordination is reflected in several of elements of the preferred alternative.

2.4.1 Element 1: Increase hunting opportunities for native upland game bird species.

Eastern wild turkeys and northern bobwhite quail are native species that were traditionally hunted on Cape Cod. Both turkeys and quail were extirpated from Cape Cod and other parts of New England in the past, but populations have now been restored to the point where hunting has been allowed by MDFW for some time (see Section 3.3.2 for more information). However, opportunities to hunt these species at CACO are limited by CACO's current hunting regulations and habitat conditions. The following measures would restore opportunities to hunt turkeys through modifications of CACO's hunting season, and would increase the opportunity to hunt quail as an ancillary benefit of cultural landscape restoration focusing on heathland and grassland plant communities. This element does not purport to replace the pheasant hunting experience - pheasant hunting involves pursuit of a farm raised and stocked non-native species, and hunting wild native upland game birds cannot replace that experience. Rather, the objective of this element is to enhance opportunities to hunt wild native upland game birds to improve the overall range of hunting experiences at CACO in a manner consistent with NPS policies.

Element 1A – Establish turkey hunting consistent with MDFW regulations:

A new hunting season for eastern wild turkeys consistent with MDFW regulations would be established. Currently, MDFW only allows spring turkey hunting in the southeast region of the state. Therefore, a turkey hunt would likely be held for two weeks in late April and early May. A change to CACO's special hunting regulations would be required to add the spring hunting season. Fall turkey hunting would be

initiated if MDFW established such a season in their southeast region. This element would not expand the hunting season for any other species.

Given that CACO currently supports about 6,000 acres of turkey habitat, and considering that each hunter would need about 100 to 200 acres in order to avoid disturbances from other hunters and ensure hunter safety, the number of turkey hunters would be limited. As a result, this would be a controlled hunt requiring a permit, limiting the number of hunters, and likely managed through a lottery system. Specific areas would be designated as open to turkey hunting. Continuation of this program would be based on monitoring of the annual hunt by MDFW, and responsive management to ensure NPS goals regarding natural resource protection, visitor experience, and safety are met.

Element 1B – Ancillary improvement of upland game bird habitat:

As outlined in CACO's GMP, CACO has established goals for restoration and management of cultural landscapes, management of heathland and coastal grassland habitat, and fire management. Toward this end, CACO has developed a Cultural Landscape Restoration Plan that addresses these goals, and is consistent with the Fire Management Plan and its Environmental Assessment and Finding of No Significant Impact (NPS 2005c,d; NPS 2007). An ancillary benefit of this restoration will be to improve habitat conditions for northern bobwhite quail. CACO anticipates restoring and maintaining heathland and grassland habitat on 270 acres over a 15-year period using an adaptive management approach. Most of the restoration effort will occur in the Marconi area. This will represent a significant increase in the acreage of habitat suitable for quail in the Marconi area specifically, and in the park in general. All restoration activities will be implemented as presented in the Cultural Landscape Restoration Plan and the Fire Management Plan contingent on the continued availability of federal appropriated funding.

2.4.2 Element 2: Apply adaptive management to phase out the pheasant stocking and hunting program.

An adaptive management approach would be used to phase out pheasant stocking as opportunities to hunt native upland game birds increase. The success of the heathland and grassland habitat management, called for by the cultural landscape restoration plan, will be used as an indicator of native species hunting opportunity. The number of pheasants stocked during the first year the program is resumed will be determined in coordination with MDFW, but will not exceed 800 - the number of pheasants released during the years preceding the court injunction that stopped the pheasant hunt. In each subsequent year, the number of pheasants stocked would be reduced as the number of restored heathland and grassland acres increases. This element would result in the end of pheasant stocking and hunting at CACO within 14 to 17 years. In no case will pheasant stocking continue beyond 17 years.

If the overall goal of phasing out the pheasant hunt can be achieved in a manner that is also sensitive to hunter interest and that reflects quail density, those considerations could be incorporated into the annual determination of the number of pheasants to be released. CACO would work with MDFW to determine if feasible measures of hunter interest and quail numbers can be developed, and to evaluate ways of integrating those considerations into this adaptive management approach.

In the years that pheasant hunting is being phased out, the program would also be managed to minimize the potential for impacts to natural resources and other park users. In addition to the adaptive management considerations above, the number of pheasants stocked within each year would be adjusted to reflect the number harvested from the park during the preceding season in order to ensure the number stocked is approximately equal to the take. The goal is to ensure that the number of pheasants released does not exceed hunter interest, and to minimize take by predators. In addition, pheasant release locations would be re-assessed at least every five years to determine if they are still suitable for pheasant stocking.

This assessment would consider hunter success, visitor and resident complaints, and other recreational uses in the vicinity. The goal would be to eliminate release locations that few hunters use, and those that conflict with other visitor and resident uses. MDFW will be encouraged to monitor the take of pheasants at each release location within the park to assist in implementing this element. If the State is unable to conduct this monitoring, CACO will develop methods to estimate the numbers of pheasants taken. CACO will require that MDFW ensure that medications will be withdrawn from pheasants prior to release according to the drugs' prescribed withdrawal period, and that written documentation be provided certifying the health of the pheasants released in the park.

After reviewing cultural landscape restoration monitoring data, numbers or estimates of pheasant taken the preceding season, and the other considerations described above, CACO will inform the State each spring how many pheasants can be released within the park in the coming hunting season.

2.4.3 Element 3: Simplify and clearly delineate hunting areas

This element would simplify the scope of hunting areas and would designate hunting-permitted areas versus the current policy that allows hunting in all areas except where specifically prohibited.

When examining the areas where hunting has been permitted, CACO staff found large cohesive blocks of habitat, such as the Marconi Area, Nauset Marsh, and the Province Lands, and thin slivers that are more than 500 feet from a hard-surfaced road, buildings, or bike path, but that contain relatively little land area for hunting. These small patches are of only minimal value for hunting and in fact may not be regularly used by hunters. These slivers would be closed to hunting under this alternative. In addition, the no-hunting buffer adjacent to bike paths would be increased from 150 feet to 500 feet. Through these two changes, 1,546 acres would be closed to hunting under Alternative B that would ordinarily remain open under Alternative A (Table 8). Since most of the acres removed cannot be practicably hunted, this would not materially affect hunting opportunities. These changes are depicted in the maps in Figure 4. Minor adjustments to these maps may be made if errors are found in the underlying data regarding locations of structures or other facilities and ownership. Hunting areas may be further revised if necessary to meet public safety needs. Any changes to these maps will be made through the Superintendent’s Compendium. Maps of the hunting-permitted areas, along with CACO and MDFW regulations, will be made readily available at various locations within CACO, and will be integrated into the outreach materials and objectives described in Element 4 below.

Table 8. Proposed Acreages of Hunting Areas Based on Expanded Buffers and an Evaluation of Areas that are Impractical to Hunt

Location or Type	Current Acres	Proposed Acres
Open to Hunting	31,146	29,581
Closed to Hunting	12,436	14,000
Net Reduction in Hunting Acres		-1,564

This element would provide an added safety precaution protective of visitors using the bike paths; should result in more predictable areas where hunting is likely to be encountered and where it will not; would provide consistent buffers for hunting set-backs from roads, buildings, and bike paths; would facilitate more efficient monitoring by law enforcement staff; and would result in little reduction in hunting opportunities.

2.4.4 Element 4: Expand hunting-related outreach to hunting and non-hunting users

CACO would develop and implement an expanded outreach plan aimed at hunting and non-hunting visitors. Outreach to non-hunting visitors would focus on where and when hunting occurs in the park,

where visitors can go to avoid hunting, safety precautions when in or adjacent to hunting areas (such as wearing orange), how to report any unlawful behavior or safety concerns, and the importance of courteous and respectful behavior to all users. Outreach to hunters would also focus on where and when hunting is permitted in the park, hunting regulations, the importance of courteous and respectful behavior to other users, and how to report any unlawful behavior or safety concerns. The outreach program would use the park's existing communication venues, such as the website and visitor centers, and would coordinate with MDFW, hunting organizations, and other entities as appropriate and as opportunities arise.

2.4.5 Element 5: Cooperative monitoring and management

CACO would invite MDFW to cooperate in integrated and expanded game species monitoring to support sound wildlife management with a focus on deer, eastern cottontail rabbits, eastern wild turkey, and northern bobwhite quail. Emphasis would be placed on monitoring abundance and harvest of these species on the outer Cape to better inform coordinated wildlife management decisions by both CACO and MDFW.

Currently, MDFW monitoring is very limited, and CACO's monitoring programs are focused on ecosystem processes and biological communities rather than single species. Implementation of this element would depend on funding to support expanded MDFW monitoring efforts. CACO would also invite MDFW to collaboratively locate and secure additional funding for related studies as needed.

Regardless of funding, discussions regarding protection of New England cottontail rabbits will be a first priority. A study of New England cottontail and eastern cottontail rabbit hunting and ecology was initiated in 2004 (see Section 3.3.4 for a summary of preliminary results). Upon completion of this study, CACO will coordinate with MDFW and USFWS to review the results, and determine if action is necessary to protect the New England cottontail within CACO. CACO would preserve the prerogative to implement protection measures if indicated. This could include limiting rabbit hunting to areas outside of New England cottontail habitat, or discontinuation of rabbit hunting in the park.