Before the Department of Interior
National Park Service

WASHINGTON, D.C. 20240

In Re: Hunting in Cape Cod National)
Seashore, Massachusetts)
Petition for Rulemaking Governing Hunting)
in Cape Cod National Seashore)

To the Secretary of the Interior and
the Director, National Park Service

cc: Superintendent, Cape Cod National Seashore

Petition for Rulemaking

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SUMMARY

This Petition, filed by Public Employees for Environmental Responsibility ("PEER"), pursuant to 5 U.S.C. § 553(e),[1] requests that the Department of the Interior ("DOI") and the National Park Service ("NPS") promulgate regulations governing hunting on the Cape Cod National Seashore ("Seashore" or "CACO") in the Commonwealth of Massachusetts. Petitioners are "interested persons" under the Administrative Procedure Act, 5 U.S.C. § 500 *et seq*., ("APA"), Section 5, and seek to ban the hunting of mammalian carnivores on Seashore lands and ensure the effective management of wildlife consistent with the best available science and relevant legal authorities and policies for national parks and public lands in general. Specifically, this petition seeks the following regulations:

(a) Hunting is allowed only for big game ungulates (*i.e.*, white-tailed deer), rabbits, and game birds, as such species are defined by Commonwealth regulations, during a one (1) week season within the timeframe established by the Commonwealth of Massachusetts Department of Fish and Game.

Such a regulation is necessary to bring the DOI and the NPS into compliance with the National Park Service Organic Act of 1916, NPS management policies, and the terms of the Environmental Impact Statement ("EIS") for the Seashore. This policy allows for consumptive uses, while also preserving the Seashore's natural resources in a relatively unimpaired manner.

When the NPS established the CACO in 1961 it specifically acknowledged the concerns of traditional subsistence hunters in and around the Seashore. *See* National Park Service, *Cape Cod National Seashore Hunting Program, Final Environmental Impact Statement*, 72 Fed. Reg. 44176, Aug. 7, 2007 [hereinafter "CACO EIS"]. Indeed, the establishing legislation recognized that traditional hunting practices centered on edible species such as deer, duck, rabbit, and game birds, but hunting of predatory species such as coyote, raccoon, and fox was uncommon. *Id.* at 11–15. Despite an historical disinterest in predator hunting, hunting of predator species has increased as killing contests and trophy hunting have infiltrated Cape Cod hunting circles, as have the length of hunting seasons for game species, since the 1961 designation of the CACO as a National Seashore. For instance, the original hunting policies within CACO kept hunting seasons for game species to a brief hunting season.[2] Such an increase goes against historical, cultural, and legislative inclinations, and frustrates the founding purposes of the CACO.

The purpose of the NPS is "to conserve the scenery, natural and historic objects, and wild life in the [National Park System] units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them *unimpaired* for the enjoyment of future generations." 54 U.S.C. § 100101 (emphasis added). Pursuant to this purpose, the NPS manages wildlife and other natural resources to maintain natural ecosystems and genetic and biological diversity. *Wildlife Management*, Nat'l Park Serv. (last updated July 20,

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[1] The Administrative Procedure Act, Section 5, provides that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule."

[2] Deer harvest data, Mass.gov, https://www.mass.gov/service-details/deer-harvest-data; Mass Division of Fisheries and Wildlife, 1970-2012: A Summary, Mass.gov 138, 140, 146, 162, 181, 213, 218, 220, 22, and 223, *available at* http://www.mass.gov/eea/agencies/dfg/dfw/about-masswildlife/dfw-1970-2012-pages-138-231.pdf.

2009), https://www.nature.nps.gov/biology/wildlifemanagement/. As such, it is the duty of the NPS to implement policies and regulations that are consistent with these goals. Adopting the proposed regulation that is the subject of this petition will ensure consistency by protecting mammalian carnivore populations that are vital to a diverse ecosphere and reducing excessive hunting of edible game species to shorter seasons, similar to when the Seashore was established in 1961.

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In Re: Hunting in Cape Cod National	**)**
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To the Director, National Park Service

Petition for Rulemaking

Public Employees for Environmental Responsibility ("PEER"), pursuant to the Administrative Procedure Act (5 U.S.C. § 553(e)) and the Department of Interior regulations (43 C.F.R. § 14), hereby petition the National Park Service ("NPS") to govern through rulemaking the activity of hunting within the Cape Cod National Seashore, Massachusetts, ("Seashore" or "CACO") an area of the National Park system. The Administrative Procedure Act directs that "each agency [of the Federal Government] shall give an interested person the right to petition for the issuance . . . of a rule." 5 U.S.C. § 553(e).

Standing to File. PEER is an IRS 501(c)(3) non-profit organization incorporated under the laws of the District of Columbia. PEER serves the professional needs of local, State, and Federal employees—the scientists, hydrologists, biologists, and rangers —charged with the protection of America's environmental resources, including the resources within the National Park system. As such, PEER is "an interested person" under the Administrative Procedure Act.

ARGUMENTS IN SUPPORT OF PETITION

I. Congress authorized the Secretary of the Interior to regulate the areas under the jurisdiction of the National Park Service

> The National Park Service Organic Act of 1916 directs the Secretary of the Interior to regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

39 Stat. 535, 535 (1914) (current version at 54 U.S.C. § 100101). The Organic Act further directs the Secretary to "make and publish such rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments, and reservations under the jurisdiction of the [NPS]." *Id.* The regulations published pursuant to this authority are found in Title 36 of the Code of Federal Regulations, Chapter I. *See* 36 C.F.R. §§ 1–80.

The Organic Act is supplemented by the General Authorities Act of 1970. *See* 84 Stat. 825 (1970) (current version at 54 U.S.C. § 100101). The General Authorities Act directs that "[e]ach area within the national park system shall be administered in accordance with the provisions of any statute made specifically applicable to that area." *Id.* Shortly after the General Authorities Act was passed, in 1978, Congress passed the Redwood amendments, which clarified the General Authorities Act and reaffirmed the principles of the Organic Act. *See* 92 Stat. 163, 166 (1978) (current version at 54 U.S.C. § 100101). In the Redwood amendments, Congress amended the General Authorities Act to read:

> Congress declares that the national park system . . . [shall be] preserved and managed for the benefit and inspiration of all people of the United States . . . and directs that the promotion and regulation of the various areas of the National Park System . . . shall be consistent with and founded in the purpose established by the first section of the [Organic Act] . . . to the common benefit of all the people of the United States. The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the national park system and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress.

Id.

Complementing the goals of the NPS and its governing statutes, the idea of "parks as sanctuaries for wildlife" is pervasive throughout the early history of the National Parks and the NPS. In 1936, the first formal regulations for the National Park system were published in the Federal Register. Under the heading "Protection of wildlife," the regulations stated that the

National Parks "are sanctuaries for wildlife of every sort, and all hunting, or the killing, wounding, frightening, capturing, or attempting to capture . . . any wild bird or animal, except dangerous animals when it is necessary to prevent them from destroying human lives or inflicting personal injury, is prohibited." 1 Fed. Reg. 673–74 (1936). This early declaration affirms that the killing of animals in National Parks should only be done in rare, life-threatening situations. While this original intent still holds persuasive weight, Congress proceeded to establish areas of the National Park system in which the Secretary was required to allow recreational or sport hunting. One of the earliest examples was at Cape Hatteras National Seashore, North Carolina in 1940. *See* 54 Stat. 702 (1940) (codified at 16 U.S.C. § 459a-1).

In order to clarify their conflicting directives, Congress distinguished between National Parks and national preserves. National Parks fit within the traditional framework described in the 1936 regulations by preventing consumptive activities such as hunting and mining within their boundaries. *See Designations of National Park System Units*, Nat'l Park Serv. (last updated Apr. 2, 2015), https://www.nps.gov/goga/planyourvisit/designations.htm. While national preserves have many of the same ecological characteristics as natural parks, consumptive activities like hunting are allowed to a certain extent. *Id.* National Parks, national preserves, and all other designations of National Park system units have equal legal standing and should not be considered lesser areas. *Id.*; *Nomenclature of Park System Areas*, Nat'l Park Serv. (last updated Jan 16, 2003), https://www.nps.gov/parkhistory/hisnps/NPSHistory/nomenclature.html (noting that other park designations such as national reserves or national seashores have similar qualities to national preserves, though national seashores may specifically allow for water-based recreational activities).

From the very inception of the national preserve concept in 1974, Congress expected the Secretary of the Interior to apply reasonable regulations to the conduct of authorized sport hunting. While Congress authorized sport hunting in the preserves and many other areas of the National Park system, Congress also viewed authorized hunting as subject to NPS oversight so as to protect the fundamental purpose that binds all areas of the National Park system together. The purpose of our rule-making petition is to note that CACO should not follow Massachusetts hunting laws, but should revise and shorten them accordingly as to treat the area as a national park in order to maintain a balanced and natural ecosystem within the seashore area.

II. Congress authorized the Secretary of the Interior to regulate hunting on the Cape Cod National Seashore in compliance with applicable state and federal laws

Since 1966, the NPS has allowed (but not mandated) hunting within national recreational areas, including the CACO. *See* 36 C.F.R. § 2.2 (authorizing hunting and trapping in certain circumstances). The Seashore's enabling legislation from 1961 provides that "[t]he Secretary *may* permit hunting and fishing . . . within the seashore in such areas and under such regulations as he may prescribe during open seasons prescribed by applicable local, State and federal law." 16 U.S.C. § 459b-6(c) (emphasis added). CACO is one of only four national seashores where the enabling statute contains similar conditional language.[3] For all the other seashores, the Secretary is directed that they "*shall* permit hunting and fishing." *See, e.g.*, 16 U.S.C. § 459e-4 (Fire Island National Seashore); 16 USCS § 459g-3 (Cape Lookout National Seashore) (emphasis added). The plain language of the CACO enabling statute, as opposed to certain other enabling statutes, indicates that the Secretary has discretion as to whether or not to allow hunting at CACO.

Notwithstanding the apparent discretion of the Secretary, there appear to be two limits on the Secretary's discretion: (1) he or she must make any new hunting regulations in accordance with the state's previously established open seasons, and (2) he or she must consult with state officials before issuing any new hunting regulations. 16 U.S.C. § 459b-6(c). Additionally, a Memorandum of Understanding dated December 30, 1968 between the Seashore and the Commonwealth of Massachusetts calls for cooperation respecting wildlife management practices. *See Fund for Animals v. Mainella*, 283 F. Supp. 2d 418, 423 (D. Mass. 2003) (discussing the Memorandum of Understanding).

Significantly, the park's enabling legislation language is not a mandate to preserve hunting; instead, it authorizes discretionary action predicated on measured consideration of public opinion, emerging science, and policy considerations. The park may allow hunting in its discretion, but the enabling legislation does not *require* hunting to be allowed.

III. Current Cape Cod National Seashore management policies require that hunting within the Seashore be compatible with the Seashore's purpose and have minimal impacts on resources.

In 1998, the NPS laid out the Cape Cod National Seashore General Management Plan ("CACO Management Plan" or "Plan") to guide park policy and decision making. *See generally* Nat'l Park Serv., Cape Cod National Seashore General Management Plan (1998), https://irma.nps.gov/DataStore/DownloadFile/587706 [hereinafter CACO Management Plan]. The CACO Management Plan sets forth two primary purposes: (1) to outline "how natural and cultural resources, public use, nonfederal lands, and national seashore operations would be managed over the next [fifteen] years";[4] and (2) to "provide the framework for the [NPS] to help in developing solutions to a wide range of challenges that are confronting local residents and towns, as well as the national seashore." *Id.* at 15. The Plan directs that it provides guidance for future, specific action plans that will generally require environmental assessments under the National Environmental Policy Act ("NEPA"). *Id.* The specific action plans may need to be changed over time as circumstances and conditions change. *Id.*

The CACO Management Plan acknowledges that resource protection and conservation are sometimes at odds with public use pressures, which affects the public's access to certain areas and resources. *Id.* at 71. Furthermore, historically, activities like hunting have been closely regulated. *Id.* In keeping with this tradition, while balancing competing pressures, the NPS states that its goal

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[3] The other seashore-enabling legislations that contain similar conditional language are Point Reyes National Seashore, Padre Island National Seashore, and Cape Hatteras National Seashore.

[4] While the Plan notes that this provides guidance for fifteen years after the date of the Plan, the NPS still lists the 1998 plan as the applicable management plan on their website.

is to "[c]onsider and allow public activities at [CACO] that are compatible with the seashore's purpose and that have minimum impacts on resources and other uses." *Id.* at 72. There are several factors the NPS considers when evaluating public activities such as hunting. *Id.* Those factors include whether: (1) "[t]he use will be compatible with the purpose and management objectives of the national seashore[; (2) *u*]*ser conflicts will be minimized*[; (3) the] use will not result in resource degradation beyond what is reasonable in the relevant management zone[; (4) t]he use *will not impair the quality of the desired experience* defined for the relevant management zone[; (5) t]he scale of use will be in character with Cape Cod[; and (6) t]he use will not constitute a public health or *safety hazard*." *Id.* (emphasis added). Not all factors will be relevant to every situation, but the Plan directs that activities must be in harmony with these factors.

Additionally, the Plan specifically addresses the standards by which the NPS must consider access to wildlife resources through activities such as fishing and hunting. The Plan directs that activities that affect wildlife populations, like hunting, should be managed "to minimize ecosystem impacts and to sustain natural processes." *Id.* at 40. Specifically, the Plan directs that hunting must be compatible with the CACO purposes and maintain sustainable wildlife populations and stable ecosystems. *Id.* at 41. Additionally, habitats may not be altered merely for the purpose of supporting game animals. *Id.* Allowing hunting of predators in CACO violates the Plan because such hunting is inconsistent with the purposes of the Seashore and because it will have a great impact on resources.

The Seashore's purposes are to:

> preserve the nationally significant and special cultural and natural features, distinctive patterns of human activity, and ambiance that characterize the Outer Cape, along with the associated scenic, cultural, historic, scientific, and recreational values[; and to] provide opportunities for current and future generations to experience, enjoy, and understand these features and values.

Id. at 8. Predator hunting frustrates these purposes by disturbing the natural features, ambiance, and scenic and scientific values of the CACO. Predators are vitally important to a balanced ecosystem, and over-hunting threatens to destroy these values for future generations. *See, e.g.*, Caroline Fraser, *The Crucial Role of Predators: A New Perspective on Ecology*, Yale Environment 360 (Sept. 15, 2011), http://e360.yale.edu/features/the_crucial_role_of_predators_a_new_perspective_on_ecology (*quoting* Oswald Schmitz, ecologist at Yale School of Forestry & Environmental Studies: "We have to pay attention to [predator] health and well-being if we want a healthy ecosystem.").

Despite myths to the contrary, federal land management agencies are responsible for managing both fish and wildlife as public trust resources even when state regulations exist. *See* Martin Nie, et al., *Fish and Wildlife Management on Federal Lands: Debunking State Supremacy*, 47 Environmental Law 797 (2017), *available at* https://law.lclark.edu/live/files/25224-5tojciniepdf. In the absence of collaborative management, public trust resource management may be subject to fragmented wildlife conservation policies, unproductive battles over agency turf, and an abdication of federal responsibility over wildlife. Nie, *et al.* argue that intergovernmental cooperation must be a mutual and reciprocal process, meaning that state agencies need to constructively participate in existing federal processes, and federal agencies should be provided meaningful opportunities to participate in, and influence, state decision making affecting federal lands and wildlife. *Id*. at 802. Thus, when there is a conflict between conserving resources and providing enjoyment of them, conservation is to be predominant. *Id.* at 849-50.

States have erroneously asserted supremacy over wildlife management on federal lands based on a model that directly conflicts with federal law. *See generally* Nie, *et al.* Specifically, states have frequently used the North American Model of Wildlife Conservation to claim state supremacy over wildlife management, with federal supremacy over wildlife habitat management. *Id.* at 803, 811-15. However, this Model has no independent legal authority. *Id.* at 811. In fact, there is constitutional basis that indicates that federal agencies are obligated to manage and conserve wildlife on federal lands, specifically within the Property clause and public trust duty. *Id.* at 898. For these reasons, provided in more detail within Nie, *et al*., state public trust obligations are subordinate to federal obligations. *Id*. at 798.

Furthermore, most state game agencies get nearly the entirety of their funding directly from hunters and anglers through the sale of licenses and permits to hunt and fish. This presents a very striking problem in that this approach assumes the point of public wildlife is to serve the needs of the community that hunts it and excludes the needs and perspectives of the vastly larger non-hunting public. That perspective excludes or demotes the needs of non-game animals, the vast majority of people who watch but don't hunt, ecosystems that depend on a balance of predators and prey, and places that don't support popular game animals. *See* Rob Chaney, *Forest Service tried to quash paper debunking Montana wildlife authority*, Missoulian, Sep. 24, 2017, http://missoulian.com/news/state-and-regional/forest-service-tried-to-quash-paper-debunking-montana-wildlife-authority/article_91ef1437-4df9-5ea0-8667-728e6f63ae91.html. This form of wildlife management and disregard of competing interests is particularly egregious given that U.S. Fish and Wildlife Service data has shown that less than one percent (0.7%) of the Massachusetts population regularly hunts, with an even smaller subset hunting carnivores. USFWS, *2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation*, http://digitalmedia.fws.gov/cdm/ref/collection/document/id/1684.

In the case of CACO, the Park's current hunting regulations give excessive deference to MA Wildlife hunting policies that clearly conflict with their federal mandate to "maintain wildlife unimpaired for future generations." Specifically, a nearly six month "coyote" hunting season (October-March), a 4 month fox season, and 3 month deer season illustrate unusually long hunting seasons – particularly given the significantly shorter deer season and lack of carnivore hunting at the Seashore's inception. The wildlife conservation mandates given to NPS unambiguously obligate it to prioritize conserving fish and wildlife. The National Park Service Organic Act makes the conservation of park resources, including wildlife, a primary management goal and the courts are consistent in their reading that conservation is to be prioritized over facilitating public enjoyment. *Nie, et al.* at 97; *see also* 54 U.S.C. § 100101.

IV. The 2007 Environmental Impact Statement fails to adequately address the ecological issues presented by current carnivore hunting practices

In July 2007, the NPS issued its final EIS for hunting at CACO. *See* CACO EIS, *supra* p. 1. One of the more surprising findings in the EIS is the acknowledgement that coyote (*Canis latrans*) hunting had increased in the four to five years leading up to the study, which is now outdated, but the EIS maintains that hunting pressure on coyotes is low at CACO. *Id.* at 15. The EIS further states that coyotes are hunted irregularly and usually killed in pursuit of other game species, stating that only two coyote pelts were reported to the Massachusetts Division of Fisheries and Wildlife ("MDFW") between 1996 and 2004. *Id.* at 119. However, the EIS attempts to qualify this point by stating that the "data would suggest that the actual Cape Cod harvest may be several times higher than the pelt data show, but probably not more than 5 to 10 coyote a year from within CACO." *Id.* However, the report contradicts itself on this point too by noting that the number may be up to twenty coyotes per year. *Id.* The primary take away from this, is that CACO lacks any meaningful information concerning coyote hunting and its impacts on the Seashore.

Despite discrepancies between the numbers, the NPS' support for hunting at CACO appears to stem from the use of an outdated 1975 study upon which most of the EIS harvest analysis is based. The outdated and inadequately peer-reviewed study by Connolly and Longhurst claims that western coyote populations can withstand an annual reduction of seventy percent. *Id.* at 118 (*citing* G.E. Connolly & W.M. Longhurst, *The Effects of Control on Coyote Populations: A Simulation Model* (1975)). Throughout the EIS, the study is widely cited to support continued eastern coyote killing due to its findings that western coyote populations could recover from significant reductions in populations. However, even if this data were reliable, it is irrelevant to the proper management of eastern coyotes (*Canis latrans* var., *Canis latrans* × *Canis lycaon* × *Canis lupus*, or *Canis oriens*), and instead focuses on data concerning populations of *Canis Latrans* from the western United States. *See generally*, G.E. Connolly & W.M. Longhurst, *The Effects of Control on Coyote Populations: A Simulation Model* (1975).

Recent research has found that the eastern coyote is approximately 25-30% eastern wolf (*Canis lupus*), and only 60-65% western coyote (the rest of their genome consisting of domestic dog (*Canis familiaris*)). Jonathan G. Way & William S. Lynn, *Northeastern Coyote/Coywolf Taxonomy and Admixture: A Meta-Analysis*, Canid Biology & Conservation 3 (2016), http://canids.org/CBC/19/Northeastern_coyote_taxonomy.pdf. It is evident that the research related to western populations of *Canis latrans* is inapplicable and unreliable in the establishment of management policy for the eastern coyote given the vastly different social and reproductive behavior. In fact, the eastern coyote is considerably larger than other coyote populations and acts as an intermediary to western coyotes and eastern wolves. *Id.* Due to genetic differences from most western coyotes, eastern coyotes have a later date of sexual maturity (2 years instead of 1) resulting in slower population recovery. Moreover, in many aspects eastern coyote biology is intermediate to wolves, meaning that they have longer generation times and less compensatory reproduction. *See* Gerry Parker, *Eastern Coyote: The Story of Its Success* (1995). Currently, there is a dearth of knowledge related to the ecology of the eastern coyote, especially as it relates to mortality patterns discussed above. *See* Jonathan G. Way & William S. Lynn, *Northeastern Coyote/Coywolf Taxonomy and Admixture: A Meta-Analysis*, Canid Biology & Conservation 1-7 (2016), http://canids.org/CBC/19/Northeastern_coyote_taxonomy.pdf. Thus, it is dubious at best to assert that eastern coyotes are as prolific as western coyotes in recovering from mortality.

Even if the larger wolf-like eastern coyotes/coywolves could withstand similar mortality patterns as described in Connolly and Longhurst's study of western coyotes, national seashores are intended to serve as refuges for wildlife. Refuges serve as habitats to provide emigrants the ability to colonize and populate other areas. *See* Jonathan G. Way, Movements of Transient Coyotes (*Canis latrans* var.) in Urbanized Eastern Massachusetts (2007); Jonathan G. Way et. al, *Coywolf,* Canis latrans x lycaon, *Pack Density Doubles Following Death of a Resident Territorial Male*, 12 Canadian Field-Naturalist 364-369 (2009). The Connolly study, and accompanying models, relies on the immigration of species to sustain stable populations. The EIS relies heavily on this study for its decision making and implies that coyotes would have to colonize the Seashore from other areas if hunting pressure was high in the CACO. It is highly erroneous and unreliable to allow predator hunting within a national park based in part on a decades old, non-peer reviewed study, especially considering that neither CACO nor MDFW have accurate and reliable knowledge of predator numbers in the national parklands or even statewide.

The use of this study was challenged by a Data Quality Act complaint filed by PEER with the USDA Animal and Plant Health Inspection Service (APHIS) in December of 2017. This complaint draws upon a wealth of peer-reviewed publications to argue that the Connolly and Longhurst study does not meet "the USDA's requirements for the use of the best available science nor does it reflect data collected through the best available methods." *See* Public Employees for Environmental Responsibility, *Complaint about Information Quality*, available at https://www.peer.org/assets/docs/usda/12_20_17_PEER_DQA_Complaint.pdf. Although APHIS rejected the Data Quality Act complaint, that complaint was co-signed by nearly 30 national conservation scientists and advocates and offers numerous, more recent peer-reviewed publications as evidence that the Connolly and Longhurst study is outdated, erroneous, and should not be used as the basis for modern coyote management.

Even assuming that the 1975 study were still reliable, the analysis of the EIS is problematic because it relies on estimated numbers with no concrete basis upon which its data can stand. The closest the EIS comes to looking at current numbers is from a statewide harvest estimate from 1988. That report confirmed that the actual coyote harvest numbers were significantly higher than the numbers reported in the MDFW database. *CACO EIS* at 119 (*citing* R.A. Kennedy, *An Analysis of the Massachusetts Game Harvest Study* (1988) (M.S. thesis, University of Massachusetts)). However, irrespective of these findings, the EIS concludes that coyote hunting is unlikely to have major ecological impacts on coyote populations. *Id.*

An additional failure of the EIS is evident in the NPS's justifications for the legitimacy of hunting activities at CACO. It states that "[a]side from environmental and visitor experience concerns, the appropriate role of the NPS and MDFW is to provide laws, rules, and guidelines to make hunting as safe as possible for both hunters and non-hunters, and to balance the many user interests to provide opportunities for all visitors to enjoy the Park's resources." *Id.* at 41. While these roles may generally be applicable, in the context of the EIS, the NPS's understanding of its role is cause for concern; the NPS appears to ineffectively analyze how to protect wildlife and resources by prioritizing visitor usage ahead of environmental protection.

The EIS was not sufficiently prepared regarding the proper study of coyotes or other predators. The shortcomings of the report are evident through various claims such as, the "[e]ffects of control, sport hunting, and trapping [of coyotes] are not well known" and "[m]uch of the literature on coyote is related to managing their populations because of livestock depredation, which is not relevant to CACO." *Id.* at 118, 120. However, these claims contrast with news reports and scholarly research. In 2008, 442 coyotes were killed in Massachusetts, with 199 being killed in the southeast part of the state alone. *See* Dan Ring, *Coyote Kill Hits Record Number in Massachusetts*, Masslive (June 12, 2008, 11:16 PM), http://www.masslive.com/news/index.ssf/2008/06/coyote_kill_hits_record_number.html. These numbers are staggering considering that there are only 200–250 estimated adult eastern coyotes living on Cape Cod. *See* Jonathan G. Way, *Eastern Coyote/Coywolf Life Cycle in Southeastern Massachussetts and Some Commonly Asked Questions* 5 (2012), http://www.easterncoyoteresearch.com/downloads/EasternCoyoteLifeCycle.pdf. Furthermore, there is a plethora of research on coyotes that relates to more than just managing their populations. *See, e.g.*, *id.*; Shannon E. Lawrence & Paul R. Krausman, *Reactions of the Public to Urban Coyotes (Canis latrans)*, 56 Southwestern Naturalist 404 (2011) (surveying public reactions to coyotes and how they have adapted to urban living); Walter E. Howard et. al, *Understanding Coyote Behavior*, Cal. Agric. Mar.–Apr., at 4 (1985) (analyzing the effectiveness of coyote control techniques). An effective and thorough survey of available literature would have provided a more rational basis upon which to base the EIS and may have shown the significant impacts of hunting in the Seashore on predators such as coyotes.

For example, recent research suggests that lethal control may generate public opposition to wildlife managers, undermines positive attitudes toward wildlife and results in the devaluation of large carnivores such as wolves and coyotes. Bruskotter, J. T., J. J. Vaske, and R. H. Schmidt. 2009, *Social and Cognitive Correlates of Utah Residents' Acceptance of the Lethal Control of Wolves*, Human Dimensions of Wildlife 14:119-132; Treves A., L. Naughton-Treves, and V. Shelley, 2013, *Longitudinal analysis of attitudes toward wolves*, Conservation Biology 27: 315-323; Treves, et al., 2015, *Predators and the Public Trust*, Biological Reviews 92: 248-270. Research also illustrates declining public acceptance of lethal predator control over the past two decades, with people increasingly finding lethal methods inhumane. Slagle et al., 2017, *Attitudes toward predator control in the United States: 1995 and 2014*, Journal of Mammalogy, 98, 7-16. In fact, a study on Cape Cod (including residents living within CACO) found that voters overwhelmingly opposed coyote hunting practices once they became aware of them. Jackman, J. L., and J. G. Way, 2017, *Once I found out: Awareness of and attitudes toward coyote hunting policies in Massachusetts*, Human Dimensions of Wildlife, DOI: 10.1080/10871209.2017.1397824. The American Society of Mammalogists recently published a series of papers presenting new evidence of the greater efficacy and social acceptability of nonlethal deterrents for large carnivores, as well as the lack of justification for and possible harm to populations and ecosystems resulting from lethal control of these predators. Bergstrom, B.J., 2017, *Carnivore conservation: shifting the paradigm from control to coexistence*, Journal of Mammalogy 98: 1-6. None of these studies were specific to national parks but these findings are particularly relevant given the Park's duty to manage its resources responsibly.

In addition to these peer-reviewed publications, nearly 8,200 signatories joined a Change.org petition calling upon Cape Cod National Seashore to ban hunting of coyotes and other carnivores. See *Make Cape Cod National Seashore a True National Park: Ban Carnivore Killing*, available at https://www.change.org/p/superintendant-of-national-seashore-and-other-park-staff-make-cape-cod-national-seashore-a-true-national-park-ban-carnivore-killing. The response to this petition underscores the extent to which hunting of non-game species is highly unpopular, especially within units of the National Park Service. Given the duty of the NPS to consider local and regional popular opinion in its crafting of park policy, the results of this petition should be weighed when crafting hunting policy within Cape Cod National Seashore.

Non-hunting visitors are a much higher percentage of the population than hunters: in a 2011 survey, USFWS found that roughly 56,000 people went hunting in Massachusetts, slightly more than half of whom did so on public land, while 1,828,000 engaged in wildlife watching recreation, 662,000 of whom traveled to a natural area like the Seashore to do so.[5] In part because of this use-disparity, the majority of people are averse to lethal control. Finally, despite the slogan that "sportsmen pay for wildlife," budgetary analysis demonstrates hunting and fishing revenues account for only 4.6 % of NPS funding.[6]

Thus, due to the inadequacy of the current EIS and the potential effects on predator populations, under the NEPA, a supplementary environmental assessment ("EA") or EIS must be completed. *See* 42 U.S.C. § 4332 (requiring a detailed assessment of the environmental impact of an action by an agency). In *Fund for Animals v. Mainella*, the court addressed a similar issue on the CACO relating to the sufficiency of an environmental assessment for pheasant hunting. 283 F. Supp. 2d 418, 423 (D. Mass. 2003). The court held that while there is no need for an EA if the federal action does not change the status quo, it is the agency's job to "determine if conditions have so changed . . . that a new EA is required." *Id.* at 431. Further, if there are significant new circumstances or information relevant to environmental concerns and that information relates to a major federal action, and if the new information shows that the action will "affect the quality of the human environment" in a significant manner or extent that has not been considered, then an additional EIS or EA must be prepared. *Id.* at 428 (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989)). In this case, allowing hunting is considered a major federal action, and, as previously discussed, the circumstances have changed in regards to our understanding of the value of predators to the ecosystem and the incidence of coyote hunting in Massachusetts. This change in understanding and lack of applicable research used is clear evidence that the current EIS is deficient, therefore a supplemental EA and/or EIS is necessary, or the existing justifications for allowing hunting are illegal and carnivore hunting should end immediately.

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[5] USFWS & U.S. CENSUS BUR., 2011 NATIONAL SURVEY OF FISHING, HUNTING, AND WILDLIFE-ASSOCIATED RECREATION—MASSACHUSETTS 22 (2011) (the survey approximated that 59 percent of hunters used public land but the sample size was small so the potential margin of error is significant), https://digitalmedia.fws.gov/digital/collection/document/id/1684.

[6] Smith, M.E., and D.A. Molde, Wildlife Conservation & Management Funding in the U.S., Nevadans for Responsible Wildlife Management 1-12 (2014), https://www.mountainlion.org/featureimages/whopaysforwildlife/USA-O-NRWM-Smith-Molde-2014-Wildlife-Conservation-Management-Funding-in-the-US.pdf.

V. To preserve native wildlife and flora, regional directors of the Seashore must employ their discretion in reducing the amount of hunting allowed on the Seashore.

There is a wealth of research documenting the benefits of predators to ecosystems. *See, e.g.*, James A. Terborgh et. al, *Trophic Downgrading of Planet Earth*, 15 Science, July 2011, at 301 (arguing that the loss of apex predators may be "humankind's most pervasive influence on nature"). Research on carnivores in National Parks dates back to the 1930s and 1940s when researchers began studying coyotes in Yellowstone and grey wolves in Denali. *See generally* Adolph Murie, *Fauna of the National Parks of the United States: Ecology of the Coyote in the Yellowstone* (1940); Adolph Murie, *Fauna of the National Parks of the United States: The Wolves of Mount McKinley* (1944). The results of these studies helped end predator control in National Parks. However, under Massachusetts state law, carnivore hunting is allowed, and hunters are allowed to use controversial methods such as baiting, night hunting, and the use of dogs. *See* Mass. Div. of Fisheries & Wildlife, *Massachusetts Guide: Hunting, Freshwater Fishing, and Trapping Laws* 22 (2017). These non-traditional methods of hunting contradict the values of the National Park System and public lands in Massachusetts, and without careful monitoring of predator populations, predator hunting will likely become unsustainable. *See* Adrian Treves, *Hunting for Large Carnivore Conservation*, 46 J. Applied Ecology 1350 (2009) (stating that predators are difficult to conserve because they have to compete both directly and indirectly with humans, and that sustainable hunting is more theoretical than practical). The NPS already understands that state laws do not adequately protect predator species, as evidenced by its work in Alaska to implement widespread and broader protections for predators on National Park lands. *See Drawing the Line: National Park Service Releases Bold New Proposal to Protect Alaska's Bears and Wolves*, Nat'l Parks Conservation Ass'n (Sept. 4, 2014), https://www.npca.org/articles/635-drawing-the-line-national-park-service-releases-bold-new-proposal-to#sm.0001m4nhkv11if6cv9k2qmzz97oq0. These principles need to be applied in the CACO in order to protect the ecological integrity of the Seashore and to comply with the tenets of the Organic Act.

The application of reasonable management principles by the NPS will help alleviate the following concerns with predator hunting in the CACO. First, elevated levels of large predator mortality can jeopardize ecosystem health because as the large predator population decreases, the populations of smaller predators and herbivores increases, which increases the risk of disease and allows alien species to invade an area more quickly. *See* William J. Ripple et. al, *Status and Ecological Effects of the World's Largest Carnivores*, Science, Jan. 2014. Second, contrary to popular belief, hunting carnivores does not reduce predation on domestic animals and pets; in fact, indiscriminate killing of carnivores may actually raise the likelihood of domestic animal deaths due to the destruction of vital pack social dynamics. *See* Marco Musiani et. al, *Seasonality and Reoccurance of Depredation and Wolf Control in Western North America*, 33 Wildlife Soc'y Bull. 876, 883 (2005) (concluding that wolf removal does not reduce depredation); Robert B. Wielgus & Kaylie A. Peebles, *Effects of Wolf Mortality on Livestock Depredations*, PLoS One (Dec. 3, 2014), https://doi.org/10.1371/journal.pone.0113505 (noting a positive correlation between depredation of livestock and the number of wolves killed). Third, non-selective killing of coyotes may alter social structures by breaking up packs, increasing species dispersal, and causing younger animals to search for food in human areas, thus exacerbating conflicts with humans. *See* Frederick F. Knowlton et. al, *Coyote Depredation Control: An Interface Between Biology and Management*, J. Range Mgmt. 398 (1999). Though coyotes typically self-limit breeding, they will engage in "responsive reproduction" when heavily hunted – resulting in altered juvenile survival rates and the sex ratio imbalances for the species. Dave Anderson, *Why Coyotes Seem to be Everywhere*, Feb. 19, 2016, Society for the Protection of New Hampshire Forests, https://forestsociety.org/something-wild/why-coyotes-seem-be-everywhere. Therefore, some coyote populations have sustained even with excessive hunting and trapping practices but indiscriminate hunting disrupts the stability of pack dynamics. *Id*. Fourth, heavy hunting of predators can cause higher stress resulting in reproductive issues; these effects may be subtle, but the harm can be acute, chronic, and permanent across generations. *See* Heather M. Bryan, *Heavily Hunted Wolves Have Higher Stress and Reproductive Steroids Than Wolves with Lower Hunting Pressure*, 29 Functional Ecology 347 (2015); Larry Pynn, *Heavily-Hunted Wolf Populations Have Elevated Stress, Reproductive Hormones, Study Reveals*, Vancouver Sun (Nov. 12, 2014), http://www.vancouversun.com/news/metro/Heavily+hunted+wolf+populations+have+elevated+stress/10374289/story.html#__federated=1. The purpose of the national parks is to preserve wildlife undisturbed; how will researchers be able to understand naturally functioning populations if hunting is allowed in them? Fifth, predator hunting is contrary to traditional notions of ethical hunting because most predator hunting is done for sport, rather than sustenance. *See, e.g.*, *Predator Hunting*, Cabelas, http://www.cabelas.com/category/Gun-Sports-Predator-Hunting/486176580.uts (last visited July 26, 2017) (describing the thrill of predator hunting and the sense of reward that comes with it). Sixth, the continued viability of predator populations and stricter hunting regulations are vital to preventing the spread of diseases (such as chronic wasting disease) amongst wild ungulates. C.E. Krumm et al., *Mountain lions prey selectively on prion-infected mule deer*, Biology Letters 6: 209-211 (2009). Finally, federal courts have required the U.S. government to act as trustees to manage wildlife sustainably under the public trust doctrine for current and future generations, however currently, there are no federal public lands in Massachusetts without predator hunting. Jeremy T. Bruskotter, *Rescuing Wolves from Politics: Wildlife as a Public Trust Resource*, Science, Sept. 30, 2011, at 1828.

While the weight of research clearly shows the ecological importance of carnivore preservation, state agencies discount this value through lackadaisical hunting restrictions that disregard the biological needs and social structure of carnivores. The poor management by state agencies results in ecologically destructive practices, such as killing contests whereby hunters in many places (including potentially on CACO), attempt to kill as many coyotes or other predators as they can. *See* Jeremy C. Fox, *Animal rights activists and hunters face off in Hyannis over coyote hunting contest*, Boston Globe, Feb. 11, 2018 https://www.bostonglobe.com/metro/2018/02/10/animal-rights-activists-and-hunters-face-off-hyannis-over-coyote-hunting-contest/3eQjy6RDKW0nIzuMBnWomJ/story.html. (Demonstrating a season long coyote killing contest on Cape Cod, including within CACO, offering prizes for killing the most and the biggest). Predator hunting and killing contests disrupt pack structures, threaten the overall health of the species, and may upset ecological balances within an ecosystem. As stated previously, public opinion now recognizes the value of predators, yet, in spite of this, hunting and killing contests are allowed to continue. The killing of carnivores has no basis in science or rational thought; rather, hunters attack these animals for sport and trophy. Yet state agencies effectively do nothing to prevent these contests and heavy hunting pressure from occurring despite their conservation mandates.

The NPS must ban predator hunting in order to advance ecologically sound precautionary management principles and to discourage wasteful and damaging hunting practices that hinder the effective and ethical management of resources. Furthermore, as the annual harvest of deer in Massachusetts has grown by nearly ten-fold over the 1967 rate, the hunting season for game species should be reduced to the 1-week season that was established when the Seashore became a unit of the National Park system in order to preserve the Seashore's natural resources in a relatively unimpaired manner. Mass. Division of Fisheries and Wildlife, *1970-2012: A Summary*, http://www.mass.gov/eea/agencies/dfg/dfw/about-masswildlife/dfw-1970-2012-pages-138-231.pdf; *see also*, Mass. Dep't of Fish & Game, 2006-1966 Deer Harvest Summary, http://www.mass.gov/eea/agencies/dfg/dfw/hunting-fishing-wildlife-watching/hunting/massachusetts-deer-harvest-history.html;

Per the founding legislation for the CACO, the NPS has discretion about what activities may be conducted on parklands, including hunting activities. When evidence exists that shows certain uses are incompatible with the park's purpose, unnecessarily damaging, or even unpopular, the NPS may ban those uses. Such discretion has already been exercised by the CACO with much success by banning the hunting of ring-necked pheasant due to its ecological harm. Such discretion and conservation minded action should be applied to the hunting of predators as well. Predator hunting is ecologically damaging and at odds with traditional and ethical hunting practices. The CACO is a National Seashore, and as such, it is the duty and legal responsibility of the NPS to utilize the best science available alongside adaptive management practices to protect, maintain, and preserve all of its public trust resources. *See* 54 U.S.C. § 100702 (directing that Park management shall be "enhanced by the availability and utilization of a broad program of the highest quality science and information").

CONCLUSION

As a matter of law, the NPS is empowered to promulgate regulations to limit hunting in Cape Cod National Seashore for reasons of public safety, administration, or compliance with applicable law in order to minimize ecosystem impacts. As a matter of Management Policies, the NPS must publish special regulations to govern the activity of hunting on the Seashore while maintaining natural processes and ensuring ecological integrity.

The NPS cannot rely on the MDFW to achieve the objectives imposed upon the NPS by law and policy. While MDFW manages wildlife throughout Massachusetts pursuant to its own laws, the State does not manage wildlife specifically to fulfill the mandate of the Organic Act. The Organic Act directs that the NPS preserve and protect, in their natural state, the significant and diverse ecosystems of the Massachusetts coast, including the conservation of wildlife in an unimpaired state. The NPS must manage the Seashore for the purpose it was established in accordance with the Organic Act. However, the NPS is not a helpless giant in this instance.

Congress equipped the NPS with the power to discharge its legal obligations; which it must do to preserve the unique ecosystems of CACO in their unimpaired states.

For the reasons we have given, we petition the NPS to promulgate special regulations restricting mammalian carnivore hunting within the Cape Cod National Seashore and give the Seashore the protection it deserves in accordance with the Organic Act and NPS management policies. In summary, this rule-making petition intends for the NPS to:

1) Immediately end carnivore hunting in CACO, including on foxes, eastern coyotes/coywolves, fishers, and future populations of black bears and bobcats, and any other mammalian carnivore species;

2) Revise game seasons for deer, rabbits, and game-birds to be 1 week in length as this was roughly the length of hunting seasons when CACO was created in 1961 and reflects a commitment to maintaining CACO in a relatively undisturbed state yet allowing consumptive activities;

3) Hire a full-time NPS carnivore conservation biologist based at CACO who has previously used box traps to capture carnivores in Massachusetts and has obtained federal NPS approval for carnivore research;

4) Publicly issue a statement explaining the reasons for this rule change; and

5) Send a letter to the MA Wildlife explaining the different management strategies of wildlife on a national park unit compared to state managed lands.

Respectfully submitted,

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