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John P. Murray, Commissioner
Department of Conservation and Recreation
Attention: Office of Public Outreach
251 Causeway, Suite 900
Boston, MA 02114

RE: Nickerson Management Complex Draft RMP

Dear Commissioner Murray:

The Association to Preserve Cape Cod (APCC) submits the following comments regarding the draft Resource Management Plan (RMP) for the Nickerson Management Complex.

Founded in 1968, APCC is the largest regional non-profit environmental organization on Cape Cod. Representing more than 5,000 members, APCC's mission is to promote policies and programs that foster the preservation of the Cape's natural resources. APCC focuses its efforts on the protection of groundwater, surface water, and wetland resources, preservation of open space, the promotion of responsible, planned growth and the achievement of an environmental ethic.

Overall, APCC supports the draft RMP and commends DCR on the effort that went into its preparation. Below are some general comments about the RMP along with some comments on the management plans for specific properties within the Nickerson Management Complex.

General Comments

DCR budget and staffing

Although not a subject discussed in detail in the RMP, the budget challenges faced by DCR in recent years are recognized as a major impediment to adequately maintaining and improving many of the properties on the Cape controlled by DCR. APCC supports increasing state funds for DCR programs in order to improve property management, which would include increasing DCR staffing levels to

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facilitate a greater presence at DCR's properties.

Best management practices

The RMP states that DCR's Bureau of Planning, Design & Resource Protection has begun development of Best Management Practices for common park activities that have the potential to affect natural resources. Such a policy is long overdue for these critical state properties, and APCC supports the continued development and implementation of Best Management Practices for this purpose.

DCR and NHESP collaboration

APCC strongly supports increased collaboration between DCR and the state's Natural Heritage and Endangered Species Program (NHESP) in the development of RMPs for DCR properties, as well as NHESP's work with DCR in developing plans for the protection and management of rare species and priority natural communities. Most of the DCR properties on Cape Cod are mapped as Priority Habitat or Estimated Habitat for rare species, so close coordination with NHESP is vital. APCC encourages DCR to continue to work closely with NHESP on the proper management of DCR properties and the resources those properties support.

Natural Resources Inventories

Information provided in the RMP suggests DCR has little to no accurate information about the plant and animal species found on several of the properties it controls. In one example relating to some of the reforestation lots discussed in the RMP, DCR states that it relies on property plans from the 1920s for tree species information rather than contemporary surveys. Once again, APCC acknowledges DCR's budgetary and staffing constraints. Still, APCC recommends that DCR strive to develop a more reliable species inventory of the properties it is responsible for managing if/when staffing or funds allow. Such information is fundamental to a good land management plan.

Invasive Species

According to the RMP, there is no complex-wide invasive plant species management policy. Information about invasive plant species on individual DCR properties is incomplete or absent. The RMP states that control of invasive species is addressed on the property level, if at all. On properties where some invasive species management does occur, the programs are very limited in scope. Invasive species control consists of Continuous Forest Inventory sampling protocols and removal of invasives as necessary.

APCC recommends that DCR should consider an increased effort to document and remove invasive species, at a minimum, in sensitive habitat areas that have the potential to be adversely impacted by invasives. If herbicide use is a part of DCR's invasive species control program or other vegetation management program, APCC recommends that DCR establish a policy of refraining from herbicide use as a matter of normal practice, and only use herbicides when other means are not viable.

Fertilizer management

Information in the RMP regarding the status of municipal fertilizer regulations in Cape Cod towns is outdated and inaccurate. This information should be verified and updated in the final plan. Although some towns where DCR property is located have adopted regulations under the Fertilizer Management District of Critical Planning Concern (DCPC) while other towns have not, DCR should proactively adopt a policy that, at a minimum, conforms with the model regulations developed by the Cape Cod Commission for the DCPC. However, APCC recommends that DCR eliminate the use of fertilizers on its properties, if fertilizers are currently used.

Climate change

DCR should include assessments in the RMP of climate change impacts and recommendations for appropriate management of the various resource types found on DCR property. This should not be limited to just coastal properties, as described in the RMP, but should include inland properties and the variety of habitats found on those properties. In addition to the RMP's assessment of property vulnerabilities relating specifically to sea level rise and flooding, a more comprehensive assessment of climate change impacts to resources such as cold water streams, pine barrens, coastal plain pondshore communities and other critical habitats should be considered.

Salt marshes

According to the RMP, salt marshes are predicted as "likely to greatly benefit" from climate change and should "increase in extent." The RMP cited this conclusion as coming from a study conducted by the Manomet Center for Conservation Sciences. It is not clear in the RMP to what extent this study is applicable to the salt marsh properties owned by DCR. For example, another section of the RMP states that Namskaket Creel salt marsh, which is associated with DCR's Cape Cod Rail Trail, is likely to be adversely affected by sea level rise. This prediction appears to contradict the Manomet study.

Other studies not included in the RMP suggest that salt marsh habitat could be adversely affected by sea level rise, not benefited by it. Rising sea level may push a marsh to migrate landward, provided there are no topographical (high elevation areas) or anthropogenic (roads, structures) barriers to migration and there is available land for the marsh to occupy (Morris et al. 2002, Donnelly and Bertness 2001). However, if sea level rises too quickly, existing marshes may not vertically accrete fast enough to keep pace with the rising water levels, subsequently causing them to drown. Or, the rising sea may cause the low marsh to migrate landward. If the salt marsh has no land upon which to migrate, or there are barriers to migration, the low marsh will take over the area currently occupied by the high marsh and high marsh will be lost, which would result in a loss of marsh structure and function (Smith 2014).

There are also other climate change impacts besides sea level rise that may negatively impact salt marshes that should be considered in DCR's assessment in the RMP. These include rising temperatures and increasing nutrient inputs from sewage-contaminated groundwater and runoff. Climate change is predicted to slow down groundwater recharge rates and decrease the depth of the water table. Subsequently, nutrients from runoff and sewage inputs will have less time to filter and recharge before entering a salt marsh.

Five Cape Cod salt marshes identified as tidally-restricted in the Cape Cod Commission's atlas of tidally-restricted salt marshes are located on DCR property, according to the RMP. The RMP reports that the restrictions at three of those salt marshes have been corrected. APCC could not find any information in the RMP regarding the remaining two salt marsh restrictions on DCR property that have not been corrected. The RMP should identify those locations and discuss the potential for future restoration of those sites.

Property-Specific Comments

Waquoit Bay National Estuarine Research Reserve

The recommendations in the RMP for the Waquoit Bay National Estuarine Research Reserve (WBNERR) include development of a management plan for the property's barrier beaches, as do the recommendations for other DCR properties in the Nickerson Complex where barrier beaches are located. The barrier beach management plan for WBNERR should include proper planning and management of this resource against anticipated affects from climate change and sea level rise.

South Cape Beach State Park

As is recommended by APCC for WBNERR, the RMP for South Cape Beach State Park should include climate change preparedness and resiliency in the park's barrier beach management plan. Integration of climate change preparedness should also be factored into an assessment of park infrastructure in general, which due this property's low topography is particularly vulnerable to storm surge and sea level rise.

The RMP recommends measures to prevent pedestrians from crossing the dunes. Pedestrian crossings create cuts in the dune and increase dune and backland vulnerability to storm surges. APCC supports this recommendation, and similar recommendations for other beachfront DCR holdings.

APCC also supports a recommendation in the RMP to continue rare shorebird monitoring and management at South Cape Beach. Protection and proper management of these rare species is one of DCR's more important responsibilities at this and other beach properties where shorebird species are found.

Washburn Island

As with other DCR properties within the Complex, APCC recommends that other types of predicted impacts from climate change be assessed at Washburn Island, in addition to impacts from sea level rise and storm surge.

Based on information provided in the RMP, Washburn Island's composting toilets appear to be a difficult maintenance challenge, including seasonal use by island visitors exceeding the infrastructure's capacity. One of DCR's recommendations is to "develop and implement a strategy for the long-term maintenance of composting toilets." Given the water quality issues

associated with Waquoit Bay and the "natural" setting of Washburn Island, conventional septic systems or other alternate disposal systems are not viable options.

Quashnet Woods State Reservation

The Quashnet River in the Quashnet Woods State Reservation is characterized as a cold water stream. Predicted rising temperatures and changes to vegetation along the stream due to climate change may be factors that could impact the ecological function of the stream. A management plan, such as promoting greater vegetative shading of the stream, may lessen any potential adverse effects. A comprehensive climate change assessment of DCR's resources at Quashnet could help determine if adoption of future management strategies is warranted.

Roland C. Nickerson State Park

The RMP reports that unauthorized trails created by park campers and other users at Nickerson State Park are causing erosion and sedimentation problems in park ponds. The RMP recommends reducing the number of trails from the camping areas to ponds, eliminating eroding trails on steep slopes, and designating official connector trails from camping areas to ponds. The RMP also calls for an assessment of the park's official loop trails around Cliff Pond and Little Cliff Pond for impacts to globally rare coastal plain pondshore communities, with the possible action of closing or rerouting the trails to eliminate or prevent trampling of these fragile plant communities. APCC expresses support for the actions proposed above. Protection of coastal plain pondshore habitat and other high value habitats should be a DCR management first priority, and should take precedence over visitor access.

In addition, unauthorized trails through dunes in the portion of the park located on Cape Cod Bay are creating breaks in the dune that make the dunes and the land behind the dunes vulnerable to storm surge. Plans to address both issues should be developed according to recommendations in the RMP, and should be implemented as soon as possible to protect these resources.

As part of developing a solution to address unauthorized trails over dunes, the RMP proposes that DCR conduct a survey of the coastal shore and dunes for the presence of historically occurring state-listed rare plants. The findings of the survey would guide where two official dune crossings would be allowed, and would determine which locations should be closed to foot traffic through the use of fencing and signs. APCC agrees with this recommendation as a means to minimize erosion of dunes and control pedestrian access to sensitive areas.

The RMP notes that a model airplane club has been observed using the beach location to fly their model airplanes, potentially disturbing nesting shorebirds. However, plans to address this issue are not included in the list of recommendations in the management plan. Plans to address this potential impact to shorebirds should be added to DCR's recommendations for Nickerson.

Cliff Pond has been the focus of ongoing water quality concerns related to high phosphorus concentrations, low oxygen levels and recurring algal blooms. In an attempt to address these water quality issues, the RMP recommends phosphorus inactivation through alum treatments

followed by oxygenation as needed. Alum treatment of Cliff Pond should be considered with caution, as improper application can produce adverse environmental impacts, including fish kills.

Finally, APCC recommends that potential climate change impacts be assessed at Nickerson Park for more than just the sea level rise and flooding impacts to coastal areas that are described in the RMP. For example, what are the potential impacts from rising temperatures, droughts and other consequences of climate change on the park's coastal plain ponds, some of which are already experiencing water quality issues? Will climate change have any impact on other resources such as rare species, natural communities, vernal pools, etc.? If so, how do these potential impacts affect DCR's management of those resources?

Hawksnest State Park

APCC is pleased to see increased presence of DCR staff at Hawksnest State Park as one of DCR's priority recommendations for this property. Increasing staff visibility at this location would help address illegal uses of the park such as ORV use, illegal camping, vandalism, or abutter incursions onto park property. Signage at the property would help define park boundaries and rules. Unfortunately, Hawksnest has a history of neglect by DCR, and park resources are showing the effects of that neglect.

The dirt road and boat ramp at Hawksnest Pond are a source for stormwater runoff and erosion to the pond. According to the RMP, plans have been developed to correct the erosion associated with the boat ramp. DCR should act swiftly to implement the plans that were developed to correct this issue.

The RMP reports that visitor parking is occurring among the trees and in a small opening at the west end of Round Cove Road. The consequence is that vehicles and pedestrians have created eroding pathways between these parking areas and the beach. Designated trails, with regular trail maintenance, could help reduce erosion. Trails and other uses around the Hawksnest Pond coastal plain pondshore should be assessed, as indicated in the RMP recommendations. Protection of the pondshore should be a priority mission of the park.

APCC agrees with the RMP's recommendations that DCR should post entrance and parking signs, install trail signs and post park rules, all of which could help with many of the problems concerning inappropriate use within the park. But, these improvements will only go so far. Ultimately, DCR needs to increase its presence at the park. As stated earlier, APCC recognizes that lack of funding is a major obstacle to this effort.

Cape Cod Rail Trail

The RMP discusses the culvert replacement beneath the Cape Cod Rail Trail at Namskaket Creek salt marsh, which was done to improve tidal flow to the marsh. APCC has monitored the salt marsh at Namskaket Creek since 2006 as part of the organization's Cape-wide salt marsh restoration monitoring program. Prior to the culvert replacement under the Cape Cod Rail Trail at this location, salinity, vegetation and bird surveys were conducted by APCC to assess current

health of the ecosystem. After the culvert was replaced in January of 2007 (not 2002, as incorrectly stated in the RMP), APCC continued to monitor the salt marsh for these parameters in 2007-2009, 2011-2012, and again in 2014 after the flashboards were removed from the culverts. Additionally, a pilot study was conducted in 2011 and 2012 with the Center for Coastal Studies to analyze pore water for dissolved inorganic nutrients (nitrate, ammonia, ortho-phosphate and silicate).

Given APCC's history at Namskaket Creek salt marsh, APCC recommends the collection of additional data at the salt marsh to better manage the marsh and understand the impacts of increased tidal flow. Parameters that should be included are nitrogen, water elevation, salinity, water temperature, water flow, dissolved oxygen and the tide differential between up and downstream sides of the culvert.

Conclusion

APCC thanks DCR and the Commissioner for this opportunity to provide comments, and looks forward to the release of the final Resource Management Plan for the Nickerson Management Complex.

Sincerely,



Ed DeWitt
Executive Director



Don Keeran
Assistant Director