

# Draft Compatibility Determination

## Title

Draft Compatibility Determination for competitive running races, bicycle races and birding cups, Back Bay National Wildlife Refuge.

## Refuge Use Category

Outdoor Recreation (General)

## Refuge Use Type(s)

Competitive sporting event

## Refuge

Back Bay National Wildlife Refuge (NWR)

## Refuge Purpose(s) and Establishing and Acquisition Authority(ies)

... as a refuge and breeding ground for migratory birds and other wildlife. Executive Order 7907, dated June 6, 1938

"... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 U.S.C. § 715d (Migratory Bird Conservation Act)

"... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions ..." 16 U.S.C. § 3901(b) (Emergency Wetlands Resources Act of 1986)

## National Wildlife Refuge System Mission

The mission of the National Wildlife Refuge System (NWRS), otherwise known as Refuge System, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (Pub. L. 105-57; 111 Stat. 1252).

## Description of Use

Is this an existing use?

No

## What is the use?

Competitive running races, bicycling races, and birding cups (hereto referred as “competitive sporting events”). Competitive sporting events can be used for a variety of purposes including organizational fundraising, charity fundraising, official races for national/international rankings, and community engagement. For the purpose of this document, a competitive sporting event includes those running, bicycling, or birding cup events where a permittee charges a participant a fee for a program or service to that includes a competition for participants. Birding cups include participants competing to hear and/or see the most number of bird species in a given time period. This CD does not cover commercial activities lacking a competitive nature including guided tours, rentals, and transportation services entering the refuge all hosted by a third party for profit. Bicycling events may include both manual and electric bicycles (e-bikes). Each event request will be required to include an interpretation or outreach component related to the refuge. This use would be allowed as a means to facilitate connection to natural resources and a sense of stewardship for the National Wildlife Refuge System.

## Is the use a priority public use?

No

## Where would the use be conducted?

Competitive sporting events would be allowed in limited areas of the refuge open to the public. This includes the entrance road, parking lots, beach (excluding the North Mile), trails, and canoe/kayak launch facilities as an access point. Competitive sporting events would not be conducted at Black Gut. Activities would not be permitted in areas and times the Refuge is closed to public.

Competitive running and bicycling races must enter onto the refuge at the beach ramp near the Fee Booth, travel on the entrance road (avoiding the closed North Mile on the beach), and re-enter the beach via the Seaside Trail near the Visitor Center. Races would not be permitted on the East and West Dikes. Please see Figure 1 for a map of these locations.

## When would the use be conducted?

All competitive sporting events must be conducted during times the refuge is open to the public. Further, competitive running and bicycling events would only be permitted from November 1 through March 31, and would not be considered during other times of year due to impacts to other users and natural resources. Birding cups would be considered year-round, although not permitted on the East or West Dikes during the refuge’s seasonal closure of these areas from November 1-April 30. Other locations on the refuge would be considered year round for birding cups. No events

will be permitted during times the refuge is closed, including from 30 minutes after sunset to 30 minutes before sunrise. Any refuge facilities and grounds may temporarily close to the public for a refuge management activity, safety, special event, or other programs, causing the cancellation of a planned competitive sporting event.

### How would the use be conducted?

Competitive sporting events at Back Bay NWR will be reviewed annually to ensure the program is providing a safe, high-quality experience for participants and maintains a connection related to the refuge. If monitoring indicates this use materially interferes with or detracts from fulfillment of the Refuge System mission or the purposes of the refuge, staff would curtail or eliminate the use. Only competitive events that support public outreach, environmental education, interpretation, conservation, refuge purposes and the Refuge System mission will be permitted. Requests that do not directly support these will be considered on a case-by-case basis to see if a secondary component can be considered to ensure compatibility and appropriateness.

This use would be permitted in limited areas of the refuge that can accommodate competitive sporting events. All competitive sporting events would require a Special Use Permit (SUP) for these activities, and the seasonal entrance fee from April 1 through October 31 will be charged to all participants (if applicable). The Special Use Permit does not give the permittee or its designees' exclusive use or access to any site or facility. Requests for events must be received at least 60 days in advance of the desired date. Each request must be presented in writing with details of who, what, where, when, why, and how the activity will be conducted. The provider would supply the refuge with their fees charged per participant. The event host is responsible for acquiring and/or renewing any necessary state and federal permits prior to beginning a competitive sporting event. Any collection of money for fund raising aspects of events and the giving of prizes to winners will be conducted off Federal property.

The refuge would permit up to four birding cups per year with a maximum participation of 35 participants. The refuge would permit up to two competitive running races and up to two competitive bicycling races through the refuge per year with up to 50 maximum number of participants per event. Priority consideration for competitive sporting events would be given to events hosted by False Cape State Park due to a Memorandum of Understanding signed in 1996 where the Service agreed to support the mission and purposes of False Cape State Park to the extent permitted by the purposes of Back Bay NWR. Depending on the details of an event, a CPR/First Aid certified individual provided by the event host may be requested to support the activity. Vehicles are not permitted to follow runners and bicyclists. Competitive running and bicycle races must start and stop off refuge lands, entering onto the refuge at the Fee Booth, traveling on the entrance road (avoiding the closed North

Mile on the beach), and re-entering the beach via the Seaside Trail near the Visitor Center. Bicycles must be walked on the Seaside Trail for the safety of other visitors. Please see Figure 1 for a map of these locations.

As stated above, the refuge will issue a limited number of Special Use Permits for competitive events per year. Events that are permitted will only be considered for an additional approved activity every three years, to ensure fair opportunity to other events. If the refuge does not receive any requests from applicants who have not received a permit within three years, requests will then be accepted by those applicants who have recently received a permit.

Each competitive sporting event request has different logistics, and potential impacts will be evaluated for conflict with other scheduled activities during the proposed time of an activity, conflict with other refuge visitors, and impacts on refuge purposes. Each request will receive confirmation that their proposed activity is either approved, approved with modifications requested, or denied.

### Why is this use being proposed or reevaluated?

Competitive sporting events conducted as an independent activity are not considered a priority public use of the National Wildlife Refuge System under the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee), as amended by the National Wildlife Refuge System Improvement Act of 1997. However, one of the goals stated in the Back Bay NWR Comprehensive Conservation Plan (Goal 5, CCP 2010) is to “Provide additional viewing opportunities of migratory birds and other wildlife to increase the general public’s appreciation and support of natural resources.” This use may provide a connection to natural resources and a sense of stewardship for the Refuge System.

### **Availability of Resources**

The resources necessary to provide and administer this use are available within current and anticipated refuge budgets. Staff time associated with administration of these uses are related to reviewing requests, issuing Special Use Permits, providing programs to participants, and ensuring compliance with regulations. However, the program would require an annual permit fee. No special equipment, facilities, or improvements are necessary to support competitive sporting events.

### **Anticipated Impacts of the Use**

Potential impacts of a proposed use on the refuge's purpose(s) and the Refuge System mission

The effects and impacts of the proposed use to refuge resources, whether adverse or beneficial, are those that are reasonably foreseeable and have a reasonably close causal relationship to the proposed use of competitive sporting events. This CD

includes the written analyses of the environmental consequences on a resource only when the impacts on that resource could be more than negligible and therefore considered an “affected resource.” Resources that will not be more than negligibly impacted by the action, including geology, hydrology, air and water quality, threatened and endangered species, cultural resources, socioeconomics and environmental justice, have been dismissed from further analyses. Since competitive sporting events would be hosted in areas already open to the public and on established trails and roads, impacts are expected to be similar to those of wildlife observation and photography, and environmental education and interpretation at the refuge.

Competitive sporting events can result in varying impacts to wildlife resources, both positive and negative. This use would promote public understanding and appreciation of the National Wildlife Refuge System. Recreational visitation and associated economic contributions made to local and state economies provide a powerful catalyst for conserving public lands (Marion 2019).

### Short-term impacts

Short-term impacts resulting from anthropogenic disturbance from visitors engaging in competitive sporting events may include changes in wildlife behavior, distribution or abundance (Leblond et al. 2013). Wildlife may employ a variety of avoidance strategies in response to human disturbance that may result from visitors participating in wildlife observation or photography, often including departures from a site, use of suboptimal habitat, altered behavior and increased energy expenditure. Tolerance to human disturbance varies among species and depends on multiple factors, including adaptation to urbanization and body mass (Samia et al. 2015). Overall, recreational activities tend to have at least temporary effects on the behavior and movement of birds and other animals within a habitat or localized area. However, Gill (2007) maintains that conservation of public areas depends on public interest and public education and that restricting such access should only occur when those impacts are considered severe. Burger (Burger et al. 1995) determined that with careful planning people and birds can coexist without undue disturbance.

Among activities considered as disturbing to wildlife, Korschen (1992) determined that birdwatching was among the least disturbing, but Klein (1993) noted that approaching birds on foot was the most disruptive of usual refuge activities. There are many recommendations for reducing impacts to wildlife: provide visitor education, require staying on trails, closing areas during sensitive periods such as nesting, require minimum set back distances for approach to areas such as rookeries, etc. (Boyle et al. 1985, Erwin 1989, Haverra et al. 1992, Klein 1993, Miller 2001, Morton 1989, Rodgers 1995, Taylor 2003).

Human disturbance to avifauna has been thoroughly documented around the world. Several studies have examined the effects of trail-based recreation on birds inhabiting wildlife refuges and coastal habitats in the eastern United States. McNeil et

al. (1992) found that many waterfowl species avoid disturbance by feeding at night instead of during the day. Similarly, Martín et al. (2015) found that human presence caused resident shorebird species to spend less time feeding and more time displaying avoidance behavior, and that the number of shorebirds and gulls within their study site dramatically decreased in response to increased recreation of the area. Disturbance can increase the risk of predation when individuals are forced to forage in more dangerous habitats and can increase intraspecific competition when avoiding humans necessitates movement into suboptimal habitats (Frid and Dill 2002). Some uses, such as bird observation, are directly focused on viewing certain wildlife species and can cause more significant impacts during the breeding season and winter months. Research has shown that as the intensity of human disturbance increased, avoidance response by birds increased, and that out-of-vehicle activity was more disruptive than vehicular traffic (Klein 1993, Freddy et al. 1986, Vaske et al. 1983). Miller et al. (1998) found bird abundance and nesting activities (including nest success) increased as distance from a recreational trail increased, in both grassland and forested habitats. Some studies have found that some songbird species habituate to repeated intrusion. Frequently disturbed individuals of some species vocalize more aggressively, have higher body masses, or tend to remain in place longer (Cairns and McLaren 1980). Disturbance may affect the reproductive fitness of males by hampering territory defense, mate attraction, and other reproductive functions of song (Arcese 1987, Ewald and Carpenter 1978).

Overall, the existing research clearly demonstrates that disturbance from recreation activities always have at least temporary effects on the behavior and movement of birds within a habitat or localized area (Burger 1981, Burger 1986, Klein 1993, Burger et al. 1995, Klein et al. 1995, Rodgers and Smith 1997, Burger and Gochfeld 1998). The location of recreational activities and the size of participating groups are also important factors affecting the magnitude of disturbance. A number of species have shown greater reactions when pedestrian use occurred off-trail (Miller et al. 2001, Samia et al. 2015), and when pedestrians traveled in large groups (Beale and Monaghan 2004).

Many shorebirds that nest, migrate, and/or over-winter in the United States are in decline and are of conservation concern due to threats and pressures they experience throughout their annual cycle. Over the last 40 years, shorebird populations across North America have declined by 70% (NABCI 2016). During migration, many shorebirds visit stopover sites to forage and roost before continuing their north or southward journey. The ability to rest and refuel at stopover sites is essential to successful migration (Mengak et al. 2019).

A major factor in population declines of shorebirds is repeated disturbance, which can be defined as “a human activity that causes an individual or group of shorebirds to alter their normal behavior, leading to an additional energy expenditure by the birds. It disrupts or prevents shorebirds from effectively using important habitats and from conducting the activities of their annual cycle that would occur in the absence

of humans. Productivity and survival rates may also be reduced.” (Mengak et al. 2019). Human disturbance can be caused by both intentional and unintentional actions. Unfortunately, the impacts of disturbance will likely increase in the future as the human population in coastal areas is projected to grow (NOAA 2013) and as quality shorebird habitats decrease due to coastal development and sea-level rise driven by climate change (Comber et al. 2021). We do not anticipate impacts to shorebirds from competitive races due to time of year and event size restrictions. Birding cups will include education to participants to remain at distances to prevent disturbance to birds and other wildlife.

Since users engaged in jogging travel at a faster rate than hikers and may be more likely to disturb wildlife than walking, there is the potential for this activity to result in conflicts between joggers and other user groups (e.g., photographers). By flushing wildlife these activities could potentially reduce the quality of experience for other visitors, photographing birds from portable blinds in designated areas, or hiking in designated areas.

Three species of sea turtles protected under the Endangered Species Act have been documented nesting on refuge beaches: the loggerhead sea turtle (*Caretta caretta*) Green turtle (*Chelonia mydas*) and Kemp’s ridley (*Lepidochelys kempii*). Leatherback sea turtles (*Dermochelys coriacea*) are seen passing through state waters as they migrate north along the Atlantic coast and feed in nearby Chesapeake Bay. The majority of sea turtle nesting usually occurs between dusk and dawn hours in Virginia from May through September. Low levels of disturbance can deter nesting activity, to include human disturbance and lighting (Dodd 1988). Additionally, incubating nests and emerging hatchlings from nests could be negatively impacted by daytime and nighttime beach activities. Hatchlings typically emerge an average of 60 days after being deposited, crawling from their nest to the ocean. This emergence usually occurs during the night hours in the months of July through September. We do not anticipate impacts to nesting sea turtles from competitive sporting events due to management protocols in place that locate, mark, and protect nests from human disturbance.

Conflict among users tends to arise when visitors disregard the established refuge rules and regulations. Crowding from this use may deter some recreationists or refuge visitors; these individuals may alter their time or location of visitation or develop other coping mechanisms, such as rationalization or shifting their understanding of the activity or place (Manning and Valliere 2001, Marcouiller 2008). Potential positive impacts of competitive sporting events include a deepened sense of place, heightened appreciation for the refuge’s habitat and wildlife, and inspired engagement in conservation efforts (Ardoin 2006, Kudryavtsev et al. 2012). We anticipate minimal impacts to other user groups as competitive sporting events will be planned, scheduled, and coordinated with staff to limit disturbance to other user groups.

## Long-term impacts

The long-term impacts that may result from competitive sporting events may have implications for wildlife populations including the potential to alter species composition in certain areas or habitats. For example, generalist species are typically more abundant near trails, whereas specialist species are less common. Frequent use of areas or trails repeatedly for competitive sporting events could alter species composition in the immediate areas utilized for these activities. Evaluation and approval of competitive sporting events should carefully consider and monitor the duration and proximity of the encounters with wildlife. Some birds will adapt and habituate to the presence of people, but there is a distance beyond which closer interactions will cause disturbance or disruption, and may lower reproductive success, decrease foraging efficiency, or force birds to abandon suitable habitats (Burger et al. 1995).

Frequent disturbance may cause shifts in habitat use, abandonment of habitat, and increased energy demands on affected wildlife (Knight and Cole 1991). Trails may block movements of small mammals, and therefore a trail network could decrease gene flow within and among the population. Fragmentation also may reduce potential habitat for dispersal, as well as decrease availability to water and food, and ultimately reduce biodiversity (Haddad et al. 2015). Fragmentation may ultimately lead to smaller population sizes within each fragment, and increased vulnerability to population decline and extinction (Fahrig and Merriam 1994). Reducing survival could cascade into the higher trophic levels that utilize these animals as prey (Haddad et al. 2015).

With respect to mammalian carnivores, Baker and Leberg (2018) found that coyotes and bobcats had higher occupancy in protected areas with more human disturbance (i.e., trails) but overall, protected areas with less human disturbance had greater carnivore community diversity. Their results varied among species, however, the general trend showed that carnivores are impacted by human activity. Reed and Merenlender (2008) found that human activity decreased carnivore density and shifted community composition significantly from native species to non-native species.

Trails and access paths to sites necessary to support interpretation and environmental education activities can lead to habitat fragmentation, loss, and heterogeneity (Brock and Green 2003, Lewin et al. 2006). Visitors can introduce invasive plants, animals, and pathogens to habitats (Anderson et al. 2015, Brock and Green 2003, Davies and Sheley 2007, Marion et al. 2006). Once present, invasive species can outcompete native plants and animals, thereby altering habitats (Anderson et al. 2015, Marion et al. 2006). Invasive species can alter animal and plant composition, diversity, and abundance (Davies and Sheley 2007, Eiswerth et al. 2005). These changes may reduce native forage, cover, and water sources (Brock and Green 2003, Eiswerth et al. 2005). Certain invasives species may even impede access to



interpretation and environmental education sites such as hydrilla blocking waterways.

The effect of human intrusion is not limited to habitat fragmentation or shifts in species' behavior. A study conducted by Gibson et al. (2018) found that Piping Plovers (*Charadrius melodus*) exposed to human disturbance, in conjunction with habitat loss, had greatly reduced body mass compared to those in undisturbed areas, and suffered lower annual survival rates.

Continued public use of the refuge can affect habitats in various ways. Damage to ecosystems is known to occur when informal trails are created and used by the public (Barros and Pickering 2017). The uses described herein are only permitted in areas that are generally hard-surface roads and trails, and no informal or off-trail activity is permitted. Impacts to vegetation and soil should therefore be minimal.

Within the refuge, human disturbance most commonly results in temporary displacement of wildlife, without long-term effects on individuals or populations. Careful, strategic placement of trails and viewing areas is critical to minimizing negative impacts of these uses, while emphasizing the positive results of recreational access.

The Northern long-eared bat (NLEB) (*Myotis septentrionalis*) is federally listed as a threatened species under the Endangered Species Act. The bats typically spend winter hibernating in caves and mines, called hibernacula. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, NLEBs roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). These bats seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices. They rarely roost in human structures like barns and sheds.

The bat's range includes much of the eastern and north-central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. The species' range includes 37 states and the District of Columbia. Bats have been captured and recorded within Back Bay NWR; however, no confirmed recordings of NLEBs have occurred and no summer maternity roosts are known to occur on the refuge currently. NLEBs are not likely to be impacted by competitive sporting events. Other than temporary impacts from potential presence disturbance, we do not anticipate long-term negative impacts would occur.

Minor effects may occur in association with hiking, backpacking and jogging, such as temporary wildlife disturbance, littering, soil erosion and compaction, and trail departures. Outdoor recreation, including nature-based tourism, has long been recognized as an agent of ecological change in natural systems (Monz et al. 2010). Like all uses, the refuge will need to monitor this use and weigh management decisions to limit negative impacts on habitat and wildlife.

Finally, severity of wildlife response and associated impacts correlate directly to the frequency and duration of human disturbance. Therefore, impacts associated with

hiking or backpacking are likely to be minimal where group sizes are small (<10) and/or infrequent, particularly in areas where other non-consumptive uses already occur. Providing well-maintained and well-marked trails and roadways further mitigates the likelihood of off-trail use, which in turn reduces impacts.

Studies show that humans can exert a strong disturbance effect over time, affecting such factors as latency to feed, vigilance, foraging time, number of feeding visits, and number of animals feeding together in a comparison of disturbances caused by humans, dogs, wolves, and bears (Clinchy 2016). Human disturbances can be indirect as well, as species changing behavior to avoid humans may become active during different times of day and come into contact or competition with species that otherwise occupy separate niches (Patten et al. 2019). Trail placement may offset impacts. An examination of impacts associated with hiking and mountain biking on bison, mule deer, and pronghorn antelope revealed the greatest disturbances when users passed tangentially above rather than below animals (Taylor & Knight 2003). The same study revealed alert behavior at greater distances when associated with off-trail use compared to users adhering to designated trail locations. Thus, long-term impacts may be mitigated through initial selection of appropriate trails for hiking and backpacking and continued monitoring and enforcement to ensure compliance with trail regulations. Long-term impacts associated with competitive sporting events are expected to be negligible.

Activities that may occur as part of competitive sporting events including hiking, backpacking, jogging, and cycling, may cause long-term physical impacts on soil surfaces, however, soil erosion is largely avoidable with good trail design and maintenance. Cessford (1995) notes the shearing action of wheels creates damage to trails, which increases when trail conditions are wet or when traveling up a steep slope. Properly designed drainage features will divert water from the trail, where vegetation and organic litter can filter out sediments (Volpe 2021). Where designated public use trails are established in part to funnel visitors through approved areas and prevent impacts from occurring across larger areas of habitat, impacts related to soil compaction, litter, and transport of invasive plant material are similar to those associated with other trail user groups. The degree of surface compaction is dependent on topography, soil structure, soil moisture, and time of year (Whittaker 1978). Impacts of trampling on vegetation and soils commonly noted on trails (Dale and Weaver 1974; Liddle 1975) are unlikely to occur on exiting road systems, except for shoulder areas.

Where compatible, bike riding, including both manual bicycles and the use of e-bikes, facilitates opportunities for wildlife observation, photography, hunting, and other wildlife-dependent recreational opportunities. This use may provide opportunities for visitors to observe and learn about wildlife and refuge lands firsthand and at their own pace in an unobstructed environment. Individuals who visit strictly to engage in recreational cycling may be enticed to participate in the more educational facets of public programming as well as the priority public uses. Increased cycling may reduce

impacts associated with car-dependent recreation, including congestion and emissions. In addition, bicycling promotes the national and regional priority, Connecting People to Nature, and other health-related initiatives.

Bicycling along the edges of the trail or off trail may also cause vegetation to be trampled. Complete loss of vegetation cover occurs more quickly in shady forested areas and less quickly in open areas with resistant grassy vegetation. Once trampling occurs, vegetation is slow to recover; however, studies have consistently shown that the most impact occurs with initial or low use with a diminishing increase in impact associated with increasing levels of traffic (Volpe 2021). Litter may be intentionally or incidentally deposited by trail users. As stated above, where designated public use trails are established in part to funnel visitors through approved areas and prevent impacts from occurring across larger areas of habitat, impacts related to soil compaction, litter, and transport of invasive plant material are similar to those associated with other trail user groups.

E-bikes and mountain bikes have similar impacts on trails. Studies on the impacts of e-bikes on wildlife are conflicting. Some studies suggest that e-bikes cause greater disturbance to wildlife than non-motorized, manual bicycles because they disrupt wildlife within a shorter distance. Other studies suggest that e-bikes cause less disturbance because they exit the area more quickly than non-motorized bikes (Nielson et al. 2019). If conflicts arise between e-bike users and non-motorized, manual bicycle users, or if safety becomes an issue due to speed, the refuge may designate specific trails for specific user groups.

## **Public Review and Comment**

The draft compatibility determination will be available for public review and comment for 14 days. The public will be made aware of this comment opportunity through local media sources, social media, and posting on the refuge website. A hard copy of this document will be posted at the refuge Headquarters (1324 Sandbridge Road, Virginia Beach, VA) and Visitor Center (4005 Sandpiper Rd, Virginia Beach, VA 23456). It will be made available electronically on the refuge website <https://www.fws.gov/backbay/>. Please contact the Refuge Manager if you need the documents made available in an alternative format.

## **Determination**

Is the use compatible?

Yes

## **Stipulations Necessary to Ensure Compatibility**

The following stipulations are necessary to ensure compatibility for all competitive sporting events:

- 1) Competitive running and bicycle racing events would not be permitted during periods of critical migration of shorebirds and sea turtles.
- 2) The refuge would permit up to four birding cups per year with up to 35 maximum number of participants per event to minimize negative impacts to other users and natural resources.
- 3) The refuge would permit up to two competitive running races and up to two bicycling races through the refuge per year with up to 50 maximum number of participants per event. Competitive running and bicycle races must start and stop off refuge lands to minimize users congregating and causing negative impacts to natural resources.

## **Justification**

Competitive sporting events are not a wildlife-dependent priority public use of the refuge as defined by statute (16 U.S.C. 668dd et seq.), but it can contribute to the fulfillment of refuge purposes by connecting people with nature and generating deeper awareness and appreciation for the refuge and Refuge System. Under certain circumstances, competitive sporting events can support priority public uses of the National Wildlife Refuge System such as environmental education, interpretation, and wildlife observation by increasing public awareness, understanding, and support of the U.S. Fish and Wildlife Service, and the conservation of natural resources, in general. Further, competitive sporting events can promote ethical outdoor behavior, thereby helping to reduce and minimize adverse impacts to wildlife and habitats. Approved competitive sporting events would not conflict with the national policy to maintain the biological diversity, integrity, and environmental health nor would they materially interfere with or detract from the purposes of Back Bay NWR, nor cause an undue administrative burden. Potential for wildlife disturbance is minimal given the non-threatening, indirect approach of this activity. Restricting the disturbance to designated established roads would increase the predictability of public use on the refuge, allowing wildlife to habituate to nonthreatening activities. Impacts from the use would be monitored. This activity will not materially interfere with, or detract from, the mission of the Refuge System or purposes for which the refuge was established. In addition, this activity will fulfill one or more purposes of the refuge or Refuge System.

## Signature of Determination

Refuge Manager Signature and Date

## Signature of Concurrence

Assistant Regional Director Signature and Date

## Mandatory Reevaluation Date

2034

## Literature Cited/References

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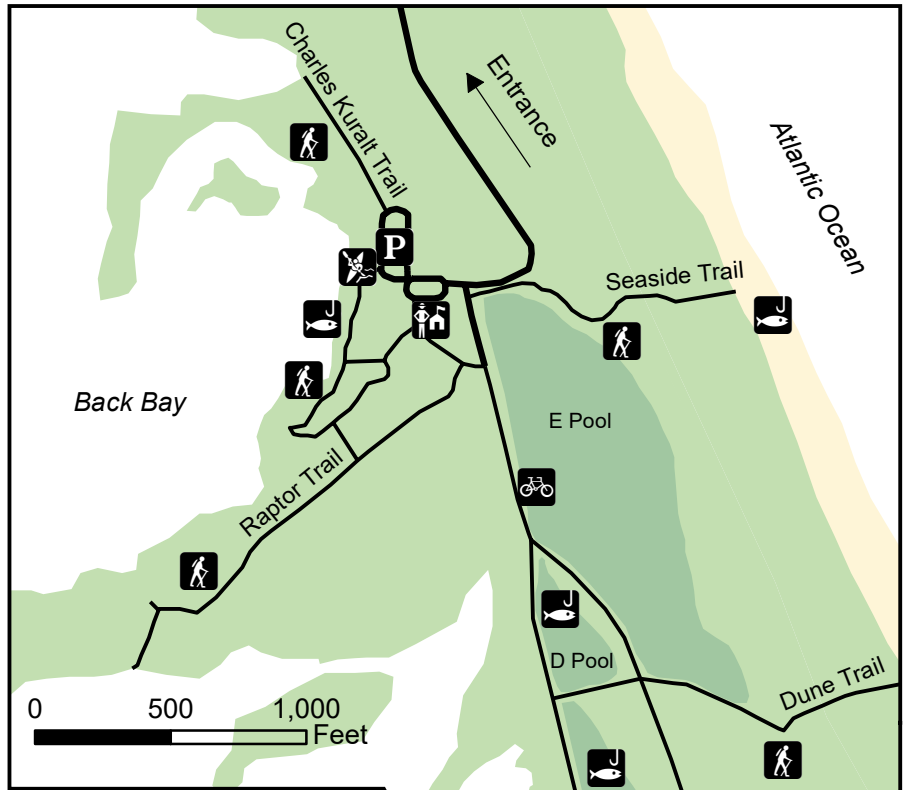
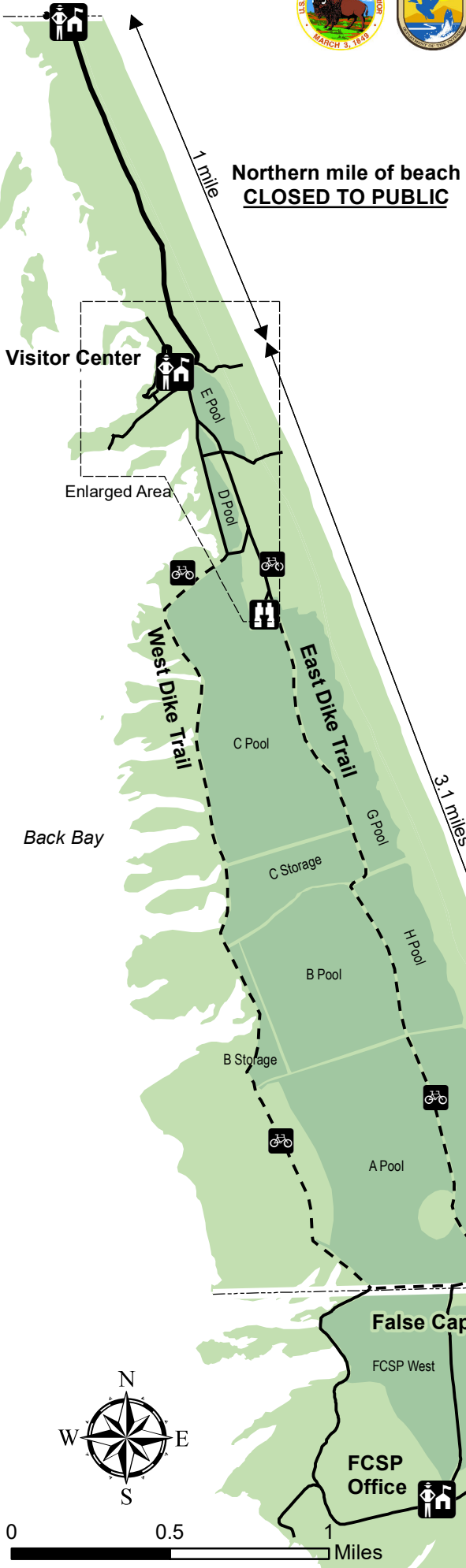
## Figure(s)

Figure 1. Map of Back Bay National Wildlife Refuge.

Entrance / Ranger Station



# Back Bay National Wildlife Refuge



## One way mileage from Back Bay NWR Visitor Center

To beach via Seaside Trail	0.25
To end of Raptor Trail	0.4
To beach via Dune Trail	0.5
To Wildlife Viewing Window	0.8
To FCSP Visitor Center	4.0
To NC state line (via beach)	8.8
To Little Island City Park	1.6

## Legend

- Office / Information
- Wildlife Viewing Window (with restrooms)
- Kayak launch
- Fishing
- Parking

## Roads and Trails

- Open all year
- Open seasonally (Apr-Oct). Please inquire.
- Bike / Hike
- Hike only (walk bikes)

**Please stay on the trails and do not pass through any closed gates.**