

**APPENDIX C: PROJECTS CONSIDERED FOR CUMULATIVE
IMPACTS**

**Past, Present, and Future Actions
in Hyde and Dare County, N.C.
to be evaluated in the
Cumulative Impacts Analysis
for the ORV Improvement Projects proposed for
Cape Hatteras National Seashore**

**Revised Draft
prepared by Mangi Environmental, LLC
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Assessment of Cumulative Effects

According to CEQ implementing regulations for NEPA at 40 CFR 1508.7, “Cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Past, present and reasonably foreseeable future actions at Cape Hatteras National Seashore that were considered in evaluating the potential cumulative impacts of the proposed ORV improvement projects are listed here. The park issues about 200 special use permit annually for all types of one-time events. These events would fall into the present actions and future actions categories. Hurricanes and other storms and weather events can and have significantly affected Cape Hatteras and would be expected to occur according to seasonal patterns into the future. Because these weather events are not the actions of any public or private entity and because their effects are impossible to predict, they are not listed here. Storm recovery efforts that have occurred or that are underway are part of the set of actions considered.

Past Actions

Hurricane and Other Storm Recovery

Berm Construction by Civilian Conservation Corps and berm maintenance

USFWS: species recovery plans

USFWS: Pea Island National Wildlife Refuge Comprehensive Conservation Plan

NPS: Resource Management Plan

NPS: 2007 Cape Hatteras National Seashore Long-Range Interpretive Plan

NPS: Cape Hatteras National Seashore General Management Plan

NPS: Previous attempts to complete ORV plans

NPS: Concession permits/operations

NPS and USDA-APHIS: Predator Control Program for Protected Species Management

NPS: Species management at Cape Lookout National Seashore

Species research efforts

NPS: Multi-use trail on Ocracoke Island

Description: NPS constructed a 3¼ mile –long paved, multi-use trail on Ocracoke Island. The entire length of the trail has an asphalt-paved surface. The trail is located along a corridor parallel to NC-12 in Hyde County between the Village of Ocracoke and the NPS Campground. The trail corridor is located on NPS property to provide a safe and direct linkage between the Village of Ocracoke and the NPS Campground. Long-term impacts were anticipated on 5.5 acres and short-term impacts were anticipated on 4.3 acres. The total footprint of the project was 9.8 acres which was located within the 100-year floodplain (NPS, 2008a).

Timeline: EA Completed in 2008

NPS: Relocation of Bodie Island U.S. Coast Guard Station Complex

Description: NPS relocated the Bodie Island U.S. Coast Guard Station Complex to a site on Bodie Island to protect the structures from encroachment of the Atlantic Ocean and shoreline erosion. The Complex is comprised of three historic structures: 1879 U.S. Life-Saving (USLS) Station, 1916 Boat House, and 1925 U.S. Coast Guard Station. The Complex is listed on the National Register of Historic Places. Support facilities (e.g., walkways, parking areas, septic mound system, and other utilities) were installed to facilitate use of the buildings for park operations. The relocation site is located west of the Coquina Beach parking area and the intersection of NC-12 and Lighthouse Bay Drive, approximately 0.6 linear miles south of the site currently occupied by the Complex. This project impacted 0.35 acres within the 100-year floodplain (NPS, 2008b).

Timeline: EA completed in 2008

NPS: NC-12 Improvements

Description: NPS working in cooperation with the Federal Highway Administration (FHWA) made highway improvements within Cape Hatteras National Seashore. The improvements were on 5.28 miles of NC-12 on Bodie Island, from Whalebone Junction to the Bodie Island District Ranger Station at Coquina Beach Access Road. The proposed highway improvements included rehabilitation of the roadway, replacement of existing culverts, and expansion of the existing 2-foot paved shoulder to a paved 5-foot shoulder. The proposed improvements were needed to improve the safety of cyclists and pedestrians using NC 12.

Timeline: The construction was completed in 2011 (NPS, n.d.).

U.S. Coast Guard: Construction of a Remote Fixed Facility (RFF) Buxton, Dare County, N.C.

Description: The U.S. Coast Guard replaced an existing U.S. Coast Guard-owned 425-foot-tall guyed communications tower with a new 525-foot-tall guyed tower on Coast Guard-administered property on Cape Hatteras in Dare County, North Carolina. The tower was constructed near the former Coast Guard Station Cape Hatteras offices and maintenance buildings, which were transferred to the National Park Service in 2004. The U.S. Coast Guard identified the need to modernize and replace its antiquated maritime search and rescue communications system in North Carolina as part of a nationwide mandate. The new communications system known as "Rescue 21" has repeatedly demonstrated its ability in helping the U.S. Coast Guard save lives and will improve maritime safety within surrounding waters. The total footprint of this project was 11.25 acres and 0.106 acre of wetlands was impacted (USDHS and USCG, 2009).

Timeline: EA was completed in 2009

U.S. Coast Guard: Removing Facilities at the Former Buxton Coast Guard Station

Description: U.S. Coast Guard removed their facilities at the Former Buxton Coast Guard Station within the National Seashore. This area is located near Cape Hatteras Lighthouse.

Timeline: Completed summer of 2012

N.C. Department of Transportation: Herbert C. Bonner Bridge Repair Work

Description: The N.C. Department of Transportation completed its latest repair project on May 9, 2012 which included repairing the steel and painting three of the main spans of the Bonner Bridge over the main channel (NCDOT, n.d. [a]).

Timeline: Completed May 2012

Cost: \$741,000

Company: Astron General Contractors

Description: In early November 2011, crews completed a \$3.2 million scour protection project to prevent sand around the bridge's support structures from eroding with the flow of water through the inlet. They installed devices called A-Jacks around 20 of the bridge's piles (NCDOT, n.d. [a]).

Cost: \$3.2 million

Timeline: Completed in 2011

N.C. Department of Transportation: NC-12 Recovery Efforts- NC-12 Sandbag and Dune Rebuilding

Description: NC-12 Sandbag and Dune Rebuilding –Dunes along NC-12 were washed away during Hurricane Sandy and a pair of Nor'easters in 2012. N.C. Department of Transportation Crews are working on rebuilding the dunes in this area. While the work is under way, the highway remains open to traffic. In order to rebuild the dunes, Cape Dredging first had to dig a trench along the former dune line. Once a trench was dug, crews placed sandbags in rows along the trenches (NCDOT, n.d. [b]).

Timeline: As of Sunday, Jan. 6, crews had approximately 620 sandbags left to put along this section of roadway. Weather permitting, this work could be complete as early as Jan. 18. Once all the sandbags are in place, they will be covered with approximately 6-8 feet of sand. The sand used for filling sandbags and dune reconstruction is trucked in from a sand pit in Avon (NCDOT, n.d. [b]).

Dare and Hyde Counties: County Land Use Development Plan for Dare and Hyde counties

Commercial Fishing

Dare County: Designation of Outer Banks Scenic Byway

Outer Banks Scenic Byway Committee: Multi-Use Path(s) paved pathways on Hatteras Island

Description: The 2006 Off-Road Pathways for the Hatteras Island Villages proposed several projects for paved pathways on Hatteras Island. These pathways are supported by the Outer Banks Scenic Byway Corridor Management Plan, published

by the North Carolina Department of Transportation in September 2003. The purpose of this project is to provide safe and comfortable travel routes connecting people with places in Hatteras Island's villages by installing off-road, paved pathways. Such pathways are intended to provide safe corridors for walkers and cyclists, reduce traffic congestion, increase mobility for children and those without vehicles, promote healthy lifestyles and enhance the island's economic activity (OBSBYC, 2006).

Guidelines in developing plans included: (1) village pathways start and end at specific destinations and (2) pathways will be in a N.C. Department of Transportation right-of-way. No acquisition of right-of-way is envisioned or anticipated (OBSBYC, 2006).

Pathways include:

- 4.2 miles of soundside multi-use pathway(s) from the Rodanthe-Waves-Salvo Community Center to the Salvo Day Use Area in the Cape Hatteras National Seashore.
- 2.53 miles (approximate) of multi-use pathway(s) in Avon that starts at the northern sound ramp at milepost 53 in the Cape Hatteras National Seashore and proceeds on the soundside of NC-12 to soundside Ramp 57 in the seashore (OBSBYC, 2006).
- 9.3 miles (approximate) of multi-use pathway(s) in Buxton and Frisco. Paths would connect Buxton and Frisco residents and visitors with village places. The plan calls for raised sidewalks with curb and gutter installation on both sides of NC-12 from the high density motel district to the entrance to the Lighthouse district, where the pathway will connect the park service's trail. A loop entrance to the Fessenden Center is indicated as well as a crosswalk across NC-12 (OBSBYC, 2006).

The raised sidewalk continues on the soundside to the intersection with Buxton Back Road. From the Lighthouse district entrance an at-grade pathway continues and connects with an at-grade pathway running the length of Buxton Back Road, State Road 1232. At the community review, adding an at-grade pathway on Crossway Road, State Road 1234, was suggested. The addition would create a mile-long loop for safe walking (OBSBYC, 2006).

At the intersection with Buxton Back Road, an at-grade pathway begins and continues on the soundside of NC-12 to the park service's Frisco Bathhouse. At the community review, it was suggested that a section of at-grade pathway extend on the Oceanside of NC-12 to Rocky Rollinson Road (OBSBYC, 2006).

- A multi-use pathway in Hatteras to create a loop of existing pathways. The plan also calls for an at-grade pathway along Eagle Pass Road, State Road 1241. Mileage is estimated at 5.4 miles (OBSBYC, 2006).

The Dare County Board of Commissioners received a \$1.95 million grant to complete 7.9 miles of scenic byway on Hatteras Island in April, 2011. The new-pathway, a 5-foot wide concrete surface along the Pamlico Sound side of NC-12, will run through the villages of Rodanthe, Waves, Salvo, and Avon. The pathways will provide a safer route than NC-12 for walkers, runners and bicyclists and will put a spotlight on historic village centers, according to the grant application. They will become part of the Outer Banks Scenic Byway, which follows the North Carolina

coastline for 111 miles from Whalebone Junction through the Core Outer Banks (IFP, 2011).

Present Actions

1. ***Hurricane and Other Storm Recovery***
2. ***Berm maintenance***
3. ***USFWS: species recovery plans***
4. ***USFWS: Pea Island National Wildlife Refuge Comprehensive Conservation Plan***
5. ***NPS: Resource Management Plan***
6. ***NPS: 2007 Cape Hatteras National Seashore Long-Range Interpretive Plan***
7. ***NPS: Cape Hatteras National Seashore General Management Plan***
8. ***NPS: Concession permits/operations***
9. ***Increased vehicle traffic and village events***
10. ***NPS and local government: Ongoing law enforcement***
11. ***NPS: Predator Control Program for Protected Species Management***
12. ***Species research efforts***
13. ***NPS: Ongoing resource surveying***
14. ***U.S. Army Corps of Engineers: Dredging Walter Slough***
15. **Ongoing**
16. ***Description:*** Water Slough Channel extends from the Outer Banks of North Carolina southwesterly about 1.5 miles into Pamlico Sound. Two separate boat basins are located at the northeastern end of Water slough or the west side of Bodie Island. One basin contains a U.S. Coast Guard station and a public boat ramp. The other basin is the Oregon Inlet Fishing Center which is owned by NPS and operated by a concessionaire. This project was conducted under the authority of Section 107 of the Rivers and Harbors Act of 1960, as amended. The project included construction and ongoing maintenance of dimensions adequate to accommodate resident and transient vessels traveling to and from the Oregon Inlet Fishing Center. The total channel alignment is 7,900 feet. The channel dimensions are considered the minimum necessary for navigation on open water during periods of darkness and inclement weather. The channel depth is 7 feet mlw plus two feet of overdepth. The channel bottom has a bottom width of 60 feet. Construction of the proposed channel resulted in the disposal of 84,000 cubic yards of dredged material. Normal maintenance (hydraulic pipeline dredge) of this channel would result in the disposal of approximately 50,000 cubic yards of dredged material every 4 years. Dredge material is placed on Island D. Island D is the closest disposal island to Water Slough large enough to handle the volume of material to be dredged (USACE, 2002).
17. ***Timeline:*** EA completed in 2002 and the project timeline is 50 years with maintenance occurring every 4 years (USACE, 2002).
18. ***N.C. Department of Transportation: Herbert C. Bonner Bridge Repair Work***
19. ***Company:*** American Bridge Company Inc. of Coraopolis, Pa.
20. ***Timeline:*** Work began in October 2012, with final completion scheduled for early 2013.

21. N.C. Department of Transportation: Herbert C. Bonner Replacement Project

22. *Description:* N.C. Department of Transportation is replacing the Herbert C. Bonner Bridge. A portion of the existing bridge will remain in place and be transformed into a fishing pier. N.C. Department of Transportation has begun work on Phase II of the project, which includes long-term solutions to the portions of NC-12 that were damaged during Hurricane Irene in 2011.
23. *Timeline:* Construction is set to begin in early 2013, pending the results of an ongoing lawsuit. The bridge's completion date is estimated for spring 2015. The existing bridge will be demolished in 2016 (NCDOT, n.d. [c]).
24. *Company:* PCL Civil Constructors Inc. and HDR Engineering Inc.
25. *Cost:* \$215.8 million

26. N.C. Department of Transportation: Long-term Solutions for NC-12 Breaches, Phase II of Herbert C. Bonner Bridge Replacement Project

27. *Description:* The N.C. Department of Transportation is working to provide long-term solutions for the two breaches caused by Hurricane Irene in August 2011 along NC-12 on the Pea Island National Wildlife Refuge and in Rodanthe. This work is considered Phase II of the Bonner Bridge Replacement Project.
28. N.C. Department of Transportation's proposed project includes the following.
29. On Pea Island, N.C. Department of Transportation will build a permanent bridge within the existing easement where the temporary bridge is currently located; and
30. In Rodanthe, N.C. Department of Transportation is considering two options: (1) elevating NC-12 onto a bridge within the existing easement, which would end just north of the community center and not require beach nourishment and (2) constructing an approximately 2.5 mile bridge that would extend into Pamlico Sound and connect back to Rodanthe just north of the community center (NCDOT, n.d. [d]).
31. *Timeline:* Projects are currently moving through the environmental planning process required by the state and the federal governments (NCDOT, n.d. [d]).

32. N.C. Department of Transportation: NC-12 Improvement Projects South of Rodanthe

33. *Descriptions:* The NC-12 Transportation Improvements include three projects in Dare and Hyde counties. The primary purpose of the proposed projects are to implement interim measures to maintain the integrity and viability of a transportation system (movement of people, goods and services) with minimal interruption of traffic service. Projects include:
34. The Buxton/Canadian Hole "hot spot" (TIP No. R-4070 B) begins near Old Lighthouse Road in Buxton and extends north approximately 4.7 miles to Ocean View Drive. A portion of NC 12 in this area was relocated shortly after Hurricane Dennis in 1999, but flooding and overwash still occur at the north and south ends.
35. The Hatteras Village "hot spot" (TIP No. R-3116 B) begins near Elizabeth Avenue in Hatteras Village and extends north 1.7 miles.
36. The Hatteras Village "hot spot" (TIP No. R-3116 B) begins near Elizabeth Avenue in Hatteras Village and extends north 1.7 miles (NCDOT, n.d. [e]).

37. *Timeline*: The N.C. Department of Transportation is currently developing preliminary designs for each of the design options under consideration for projects R-311A (Ocracoke) and R-3116B (Hatteras Village). Environmental studies to quantify and document the potential impacts to natural resources, local communities and the Outer Banks are also underway (NCDOT, n.d. [e]).

38. *Dare and Hyde Counties: County Land Use Development Plan for Dare and Hyde counties*

39. *Town of Nags Head: Stormwater management / flood control*

40. *Ongoing*

41. *Description*: 2006 Stormwater Management Plan for the Town of Nags Head. This plan suggests nineteen flood control project which will concentrate stormwater within the conveyance system thereby increasing Stormwater flows and potentially increasing pollutant loads in the conveyance system (Nags Head, 2011). The Town of Nags Head currently conducts ditch clearing on Bodie Island for stormwater drainage. The work is conducted on Park property through a special use permit issued by the park.

42. *Commercial Fishing*

43. *NPS: Silver Lake Docks at Ocracoke*

Future Actions

- 1. Hurricane and Other Storm Recovery**
- 2. Berm maintenance**
- 3. USFWS: species recovery plans**
- 4. USFWS: Pea Island National Wildlife Refuge Comprehensive Conservation Plan**
- 5. NPS: Resource Management Plan**
- 6. NPS: 2007 Cape Hatteras National Seashore Long-Range Interpretive Plan**
- 7. NPS: Concession permits/operations**
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- 9. NPS: Species management at Cape Lookout National Seashore**
- 10. Species research efforts**
- 11. Increased vehicle traffic and village events**
- 12. NPS and local government: Ongoing law enforcement**
- 13. NPS: Ongoing Seashore Maintenance Projects**
- 14. NPS: Update of the 1984 Cape Hatteras National Seashore General Management Plan**
- 15. Development of Cape Lookout National Seashore ORV Management Plan/EIS**
- 16. Cape Hatteras Electric Cooperative: Pole Improvement Project (Beach Nourishment or Moving Poles Closer to NC-12). Description: The Cape Hatteras Electric Cooperative would replace damaged and old poles along NC-12.**
- 17. NPS: Repairing Oregon Inlet Public Boat Ramps**
- 18. NPS: Removing or Rebuilding the Frisco Pier**
- 19. NPS and Dare County: Building of a bulkhead around the Salvo Cemetery to protect it from storm damage.**
- 20. NPS: Permanent Offices for the ORV permits**
- 21. USFWS & SHPO: Removal of "The Sand Castle" at North end of Coquina Beach**
- 22. NPS: Placing Water Line from NC-12 to Frisco Campground**
- 23. Wildlife Resources Commission: Public Boating Access Area at Hatteras**
- 24. DOD: Potential for military training operations, overflights**
- 25. U.S. Coast Guard: Building Fee Kiosks at the Ocracoke Ferry**
- 26. U.S. Coast Guard: Hatteras Island Coast Guard Station**
- 27. U.S. Coast Guard: Expanding Boat Ramp at Hatteras Inlet**
- 28. U.S. Army Corps of Engineers/Dare County: Dredging and Repairing Bulkheads at Oregon Inlet Fishing Center**
- 29. N.C. Department of Transportation: NC-12 Improvements**
- 30. Dare and Hyde Counties: County Land Use Development Plan for Dare and Hyde counties**
- 31. Commercial Fishing**
- 32. Hatteras Island Ocean Center, Inc.: Hatteras Island Ocean Center and Pier**
- 33. Description: Hatteras Island Ocean Center, Inc. proposed to build an ocean center and pier at the northern edge of Hatteras Village, between the Sea Gull Motel and Hatteras Cabanas. The Coastal Ecology Education Center will be very close, south**

of the Stow on Twelve shops. Facilities include a fishing pier including an event center, food stands including an indoor ocean-view dining area, covered playground, parking, public bathhouse, tackle shop, coastal ecology education center, and marshwalks. These facilities will be fully accessible to those with ambulatory disabilities (HIOC, n.d.).

34. *Timeline*: Site plans have been developed and the project components are currently raising money for the project.

35. Avon Pier Safety Concerns

36. The pier crosses park service land and is permitted by the park service.

37. New Proposed Water Line from Avon to Little Kinnakeet Historical District (If Historical District Goes Through)

38. The historical district has been established by NPS. NPS does not have a proposal for this project.

39. Putting jetties in at Oregon Inlet

40. This project would be implemented by the Army Corps of Engineers. There is much renewed interest in this project.

41. NPS: Prescribed Burn on 2,061 acres within Cape Hatteras National Seashore.

42. *Description*: NPS fire management staff, as part of the Outer Banks Group Fire Management Plan, will conduct prescribed burning on Bodie Island within Cape Hatteras National Seashore. The planned burn will occur on approximately 2,061 acres located west of NC Highway 12, south of the Whalebone Junction and north of the Navy Tower Access Road.

43. The intent of the burn is to reduce fuel loading in the area as well as to restore vegetative communities to historically accurate patterns. In order to safely accomplish the burn, some mechanical reduction of fuels will be conducted to establish breaks to the south along the access road to the Navy Tower and the powerlines on the southeast portion of the burn unit. All of these breaks will be constructed utilizing a combination of light weight, tracked mowers and hand tools. Ignition would be accomplished utilizing a combination of aerial ignition, along the sound and in the interior areas, and hand ignition along the remaining edges (NPS, 2013).

44. Bonner Bridge wetland mitigation

45. Bonner Bridge wetland mitigation will occur at Bodie Island marsh beginning this summer. It will involve aerially spraying of 50 acres of phragmites.

References

Hatteras Island Ocean Center (HIOC)

n.d. "Hatteras Island Ocean Center." Available on the Internet at www.hioceancenter.org.

Island Free Press (IFP)

2011 "Hatteras Island's Scenic Byway gets \$1.95 Million Federal Grant." Available on the Internet at [http://www.islandfreepress.org/2011Archives/04.29.2011-HatterasIslandsScenicBywayGets\\$1.95MillionFederalGrant.html](http://www.islandfreepress.org/2011Archives/04.29.2011-HatterasIslandsScenicBywayGets$1.95MillionFederalGrant.html).

National Park Service (NPS)

2013 "NPS Announces Prescribed Burn Planned on Bodie Island". Available on the Internet at <http://www.nps.gov/caha/parknews/nps-announces-prescribed-burn-planned-on-bodie-island.htm>.

2008a *Ocracoke Island Multi-Use Trail Environmental Assessment*. Available on the Internet at <http://parkplanning.nps.gov/projectHome.cfm?projectID=14059>.

2008b *Relocation of the Bodie Island U.S. Coast Guard Station Complex Environmental Assessment*. Available on the Internet at <http://parkplanning.nps.gov/documentsList.cfm?projectID=17729>.

n.d. "Planning, Environment & Public Comment (PEPC): NC 12 Improvements. Available on the Internet at <http://parkplanning.nps.gov/projectHome.cfm?projectID=22422>.

North Carolina Department of Transportation (NCDOT)

n.d. [a] "Bonner Bridge Repair Work." Available on the Internet at <http://www.ncdot.gov/projects/bonnerbridgerepairwork/>.

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n.d. [c] "Bonner Bridge Replacement Project." Available on the Internet at <http://www.ncdot.gov/projects/bonnerbridgereplace/>.

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