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Cc: pfield@cbuilding.org
Subject: info for Monday meeting
Date: 02/13/2009 08:44 AM
Importance: High
Attachments: [NightTurtleProtection&Access2-6.doc](#)
[NR S-C ResProt Table.01-19-09.doc](#)

Attached is information to be discussed at Monday's meeting.

- 1) Latest version of the night driving proposal
- 2) Revised Resource Protection Measures (based on NR subcommittee discussions, we have revised the NPS Resource Protection Measures Table and will consider it as a Committee recommendation (or as part of a consensus alternative). Please review it carefully. We would appreciate your input about any sections of concern and any suggestions for further refinement. Can any of it be less stringent? Does any of it need to be more stringent? Is it about right?



NightTurtleProtection&Access2-6.doc



NR S-C ResProt Table.01-19-09.doc

Thanks,

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Survey Time and Frequency	Piping Plover	American Oystercatcher	Colonial Waterbirds
All Bird Species	<p>Species Management 1 (SM1): Will use larger, longer lasting buffers with less monitoring to alleviate the need for constant monitoring and frequent fencing changes. Will be used at locations which would likely be closed anyway if SM2 buffers were used. Estimated staffing requirements TBD by NPS.</p> <p>Species Management 2 (SM2): Will use smaller buffers and require more frequent monitoring and fencing changes. Will be used at selected inlets and Cape Point, and, at the discretion of NPS, at other locations in which more labor intensive management would provide access. Estimated staffing requirements TBD by NPS.</p> <p>Pass-through Corridors: At a limited number of locations (TBD), a smaller buffer may be used as part of a controlled study with adequate monitoring (daily?) to determine if a smaller buffer for an ORV pass-through corridor is adequate to prevent disturbance.</p>		
Pre-Nesting Surveys	<p>By March 1, all potential habitats will have been evaluated. PIPL prenesting closures will be recommended based upon that habitat evaluation. Those closures will be installed by March 15.</p> <p>March 15 – July 15: Survey prenesting areas at least 3 times per week. Outside of prenesting areas and existing closures, survey suitable habitat 3 times per week; more often if breeding PIPL are observed in the area.</p> <p>Survey for Wilson’s plover during piping plover surveys.</p> <p>Prenesting buffers will not be modified in cases where the beach erodes into the buffered habitat.</p>	<p>March 15 – July 15 survey historic breeding areas (last ten years) 2 times per week. If/when AMOY pairs are observed in an area, survey site 3 times per week. As of May 1 turtle staff will observe for AMOYs during daily patrols. Turtle patrol will take over monitoring after July 15th.</p>	<p>April 1 – July 15 survey historic breeding areas (last ten years) 2 times per week. If/when CWB are observed in an area, survey site 3 times per week. As of May 1 turtle staff will observe for CWBs during daily patrols (i.e., survey for CWB while observing for AMOY.) Turtle patrol will take over monitoring after July 15th.</p>
Pre-Nesting Buffers	<p>SM1: Areas designated as SM1 Resource Areas will not allow ORV or pedestrian access during the prenesting period.</p> <p>SM2: Areas designated as SM2 may have a designated ORV and/or pedestrian access corridor, provided prescribed buffers for the respective species are maintained. In areas open to ORV use, delineate the ORV corridor with posts placed up to 100 feet above the high tide line, or as designated in a site specific plan (e.g., Bodie Island Spit, Cape Point, and South Point). During the breeding season, pets are prohibited in pass-through corridors or at the points and spits. As breeding season progresses, SM2 prenesting closures may be modified as needed to maintain adequate buffers around breeding birds of all species.</p>		

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	<p>In February or March of each year, NPS natural resource staff will conduct an annual assessment of piping plover breeding habitat to plan pre-nesting closures in recent breeding areas that are adapted to current habitat and physiographic conditions. Recent breeding areas will be closed by posting symbolic fencing by March 15. Closures will be removed if no breeding activity is seen in the area by July 15, or 2 weeks after chicks in the area have fledged, whichever comes later.</p>	<p><u>SM1 and SM2</u>: Pre-nesting closures will be installed by March 15 in areas that had nest(s) in the past 3 years, if habitat is still suitable. Closures will be removed if no breeding activity is seen in the area by July 15, or 2 weeks after the site is abandoned by AMOY, whichever comes later.</p>	<p><u>SM1 & SM2</u>: Pre-nesting closures will be established for CWB by April 1 in areas that had a colony (or colonies) of at least ____ (#) nests in the past 3 years, if habitat is still suitable. Closures will be removed if no breeding activity is seen in the area by July 15, or two weeks after the site has been abandoned by CWB, whichever comes later.</p>
<p>Courtship/Mating Surveys:</p>	<p>If PIPL, AMOY, or CWB are observed exhibiting territorial or courtship behavior in suitable habitat, or if scrapes are observed in the absence of courtship behavior, observe 3 times per week. Survey potential new habitat 2 times per week; increase to 3 times week once birds are observed in the area.</p>		
<p>Courtship/Mating Buffers:</p>	<p>If courtship or copulation is observed outside of existing pre-nesting closures, establish or expand buffer to ensure 50 m buffer for the observed birds. Buffer will be increased in 50 m increments if disturbance occurs.</p>	<p><u>SM1</u>: Outside of existing pre-nesting closures, if one observation of scraping or territorial behavior has been documented or if a scrape is being maintained, a 300 meter buffer will be established around the bird activity.</p> <p>Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access.</p> <p><u>SM2</u>: Outside of existing pre-nesting closures, if one observation of scraping or territorial behavior has been documented or if a scrape is being maintained, a 150 meter pedestrian/ORV buffer will be established around the bird activity. If, in the judgment of NPS Resources Management staff, a pair</p>	<p><u>SM1</u>: Outside of existing pre-nesting closures, if one observation of scraping or territorial behavior has been documented or if scrapes are being maintained, a 300 meter buffer will be established around the scrape locations. Closure establishment will be based on the locations of scrapes and not locations for copulation or “fish flashing”.</p> <p>Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access.</p> <p><u>SM2</u>: Outside of existing pre-nesting closures, if one observation of scraping or territorial behavior has been documented or if scrapes are being maintained, establish a buffer around the scrape location. Buffer will be 100 meters for least terns and 200 meters if the colony contains common terns, gull-billed terns or black skimmers</p>

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		has abandoned a territory and established a new territory at another location, the buffer may be removed at the abandoned territory.	If, in the judgment of NPS Resources Management staff, a colony has abandoned a territory and established a new territory at another location, the buffer may be removed at the abandoned territory.
Nesting Surveys:	Nesting survey (walk-through to look for nests) conducted every 3 days.	Nesting survey (walk-through to look for nests) conducted when observations suggest a nest is present.	Colonies will be surveyed by foot during the “peak” nesting period which is during the last week of May and the first week of June.
Nest Observation:	Observe nests daily from a distance that does not disturb the birds, based on professional judgment. Approach nests once per week to observe and record data. If nest buffer is less than ___ m observe nest at least 1 hour per day to determine if disturbance is occurring.	<u>SM1</u> : Observe nests at least 3 times per week from a distance. For incubating birds that cannot be observed from a distance, check nests on a weekly basis (or as staff is available). <u>SM2</u> : Observe nests daily from a distance that does not disturb the birds, based on professional judgment. For incubating birds that cannot be observed from a distance, check nests every 3 days.	<u>SM1</u> : Observe colonies at least three times per week from a distance. For incubating birds that cannot be observed from a distance, check colonies on a weekly basis. <u>SM2</u> : Observe nests daily from a distance that does not disturb the birds, based on professional judgment. For incubating birds that cannot be observed from a distance, check colonies every three days.
Nesting Buffers:	<u>All species</u> : The park retains the discretion to expand buffers under SM1 and SM2 depending on staffing and bird behavior. In unprotected areas, a closure will be established immediately when a nest with egg(s) is found. When nesting occurs in the immediate vicinity of paved roads, parking lots, campgrounds, buildings and other facilities, NPS retains the discretion to provide resource protection to the maximum extent possible while still allowing those sites to remain operational. Buffers will remain in place for 2 weeks after a nest is lost to determine if pair will re-nest, if no other species nesting in area. After July 15, closures will be removed outside of prenesting closures two weeks after all nesting is complete or all chicks in area have fledged, whichever is later. After August 1 the 2-week removal period will no longer be required for closure removal.		
	<u>SM1 & SM2</u> : Establish 50 m buffer around piping plover nests occurring outside existing closures. If bird leaves nest due to human disturbance, buffer will be increased in 50 m increments until disturbance is abated. If the nest buffer falls within the intertidal zone a full-beach closure will result.	<u>SM1</u> : Use buffer of 300 m. Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access. <u>SM2</u> : Use buffer of 150 m around nests occurring outside of existing closures.	<u>SM1</u> : Use buffer of 300 m. Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access. <u>SM2</u> : Use buffer of 100 m for least terns and 200 m if the colony contains common terns, gull-billed terns or black skimmers. <u>All</u> : Establish buffer immediately when

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	<p>If buffer is adequate to prevent human disturbance, a designated ORV or pedestrian access corridor can be maintained during incubation. During breeding season, pets are prohibited in pass-through corridors or at the points and spits.</p>	<p><u>All</u>: Establish buffer immediately when nest is located. Increase buffer in flexible increments if necessary to prevent human disturbance. If the buffer falls within the intertidal zone a full-beach closure will result.</p> <p>For AMOY nests that occur inside a prenesting closure at one of the points or spits <u>and</u> requires a buffer expansion of the prenesting area, if the nest is lost due to overwash or predation, the buffer expansion shall be removed to the original prenesting closure.</p> <p>During breeding season, pets are prohibited in pass-through corridors or at the points and spits.</p>	<p>nest/colony is located. Increase buffer in flexible increments if necessary to prevent human disturbance. If the buffer falls within the intertidal zone a full-beach closure will result.</p> <p>For a colony that occurs inside a prenesting closure at one of the points or spits <u>and</u> requires buffer expansion of the prenesting area, if the colony is over-washed or predated, the buffer expansion shall be removed to the original prenesting closure.</p> <p>During breeding season, pets are prohibited in pass-through corridors or at the points and spits.</p>
<p>Pass-through Corridors during Courtship/Mating and Incubation</p>	n/a	<p>At a limited number of locations (TBD), a smaller buffer (less than 150 m) may be used as part of a controlled study with adequate monitoring (daily?) to determine if a smaller buffer for an ORV pass-through corridor is adequate to prevent disturbance.</p>	<p>At a limited number of locations (TBD), for the respective CWB species, a smaller buffer (100 m for LETE; 200 m when other species present) may be used as part of a controlled study with adequate monitoring (daily?) to determine if a smaller buffer for an ORV pass-through corridor is adequate to prevent disturbance.</p>
<p>Adult Foraging Surveys & Buffer:</p>	<p>Survey suitable piping plover breeding habitat 3 times per week to monitor for breeding adults (with an associated scrape or nest territory) foraging outside of an existing closure. If observe foraging outside of existing closure, survey site <u>daily</u>. If observe foraging outside of buffer on two consecutive surveys, establish or expand the buffer using flexible increments based on observed bird behavior to include foraging site if the foraging area is associated with a prenesting closure.</p>	<p>No additional buffers/closures.</p>	<p>No additional buffers/closures.</p>

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	These closures are intended to provide foraging opportunities close to breeding sites. Remove closure if no foraging observed for a 2-week period during the breeding season, or when associated breeding activity has concluded.		
Unfledged Chicks Surveys:	<p><u>SM1</u>: Observe brood once daily.</p> <p><u>SM2</u>: Observe brood at least 1 hour each in am and pm daily. Have monitor(s) present during periods of ORV or pedestrian access.</p> <p>Observations end once chicks have fledged. Chicks are considered fledged at 35 days or are observed in sustained flight of >15 m.</p>	<p><u>SM1</u>: Observe brood at a minimum every other day.</p> <p><u>SM2</u>: Observe brood once daily. Observations end once the chicks have fledged. Chicks are considered fledged if they have been observed to be proficient in flying or observed in sustained flight of >30 m.</p>	<p>Colonies will be surveyed by foot during the “peak” hatching period which should fall 21 days after initial nest counts.</p> <p>A follow-up survey by foot should be conducted during the “peak” fledge which should fall 20 days after hatch counts.</p> <p><u>SM1</u>: Observe colony weekly.</p> <p><u>SM2</u>: Observe colony at two-three day intervals; or daily if shoreline is open to ORV use.</p> <p>Observations end after no unfledged chicks have been observed on two consecutive occasions. Closure can be removed after all chicks have fledged.</p>
Unfledged Chick Buffers:	<p><u>SM1</u>: Establish a minimum 1000 meter buffer on either side of brood based on observation of bird behavior and terrain conditions at site. No ORV or pedestrian access until all chicks have fledged.</p> <p><u>SM2</u>: For the first 2 weeks after hatching, establish a 1000 m buffer for ORVs and pedestrians on either side of the brood.</p> <p>Based on mobility of the brood, at the discretion of park management, the buffer can be reduced after the first two weeks to 500 m for ORVs and 200 m for pedestrians. (If ORV buffer is less than 500 m, then constant monitoring is required.) Points and spits would only</p>	<p><u>SM1</u>: Establish a 300 meter buffer when unfledged chicks are present. Include foraging and roosting habitat from the ocean intertidal zone to the dune (or sound shoreline, if applicable), if accessible. Closure would be removed 2 weeks after fledging. Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access.</p> <p><u>SM2</u>: Establish a 200 meter buffer around the unfledged chick(s) location. Include foraging and roosting habitat from the ocean intertidal zone to the dune (or sound shoreline), if accessible.</p>	<p><u>SM1</u>: Use 300 m buffer. If chicks move outside of the buffer, it will be adjusted to include an additional 200 meters from the chick(s) location outside of the closure.</p> <p>Consider using SM2 buffer and survey frequency at sites in which the smaller buffer would still allow access.</p> <p><u>SM2</u>: Establish a 200 meter buffer around the chick(s) location. Adjust buffer as needed when chicks are mobile. Monitor daily if shoreline in front of colony open to ORV use.</p>

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	be accessible from 7 a.m. to 7 p.m. as long as unfledged PIPL chicks are in the area and only if prescribed buffers can be maintained. The 7 a.m. opening may be delayed until the chicks have been located. If chicks are highly mobile, the 1000 m buffer may need to be maintained. Buffer moves with chicks. Vehicles may be allowed to pass through portions of the protected area that are considered inaccessible to PIPL chicks because of steep topography, dense vegetation, or other naturally occurring obstacles.	Adjust/increase buffer as needed when chicks are mobile. ORV access would not be allowed until 2 weeks after AMOY chicks have fledged (observed flight of 30 meters); a pedestrian corridor may be established prior to 2 week requirement for access to the points and spits.	
	Reopen access corridor outside of prenesting area after chicks fledge (except for AMOYs where the area will remain closed to ORVs for an additional 2 weeks). During breeding season, pets are prohibited in pass-through corridors or at the points and spits. Remove prenesting closure 2 weeks after all chicks in the area have fledged.		
Non-breeding / Wintering Survey	NPS will monitor presence, abundance and behavior of migrating and wintering PIPL, AMOY, WIPL, and REKN 3 times per month at the points and spits July 1 through May 31 following the existing NPS winter monitoring protocol. In addition, the International Shorebird Survey (ISS) protocol will be used to document other migrating/wintering species.		
Non-breeding / Wintering Areas	An annual migrating/wintering habitat assessment will be conducted of the points and spits by NPS after all chicks have fledged in the area. Migrating/wintering <u>resource closures</u> will be established at designated points and spits in conjunction with the removal of prenesting closures at the respective sites, and will be based on habitat used by migrating/wintering PIPLs in the past 3 years, the presence of birds at the beginning of the migratory season, and suitable habitat types based on the results of the annual survey. Access to inlet shoreline will be maintained via a corridor TBD by NPS Resources Management staff based on an annual habitat assessment. To benefit all species of migrating shorebirds, at other locations (TBD), designated non-ORV areas (open to pedestrians) will also provide relatively less disturbed foraging areas for migrating/wintering birds. Actual locations of suitable foraging and resting habitat may change periodically due to natural processes.		
Data Collected	Collect data as recommended by USGS (<i>list</i>) and use GPS to document nest locations. Record locations where territorial/courtship behavior occurs, including	Collect data as recommended by USGS (<i>list</i>) and use GPS to document nest locations. Record presence and abundance of birds. Assess productivity and	Collect data as recommended by USGS (<i>list</i>) and use GPS to document colony locations. Record presence and abundance of birds.

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	<p>scrape locations.</p> <p>Estimate where adult and chick foraging occurs. Chicks should never be disturbed to obtain this information.</p> <p>Record presence and abundance of birds. Assess productivity and reasons for nest failure.</p>	<p>reasons for nest failure.</p>	
Sea Turtles (a minimum of 7 field personnel is required to meet the daily monitoring requirements on the Park's 67 miles of shoreline)			
Survey Time and Frequency	<p>Sea turtle patrol will begin on May 1, unless leatherback nests have been reported within the state, in which case CAHA will follow the direction of NCWRC. Patrol will continue until September 15, or two weeks after the last sea turtle nest or crawl is found, whichever is later.</p> <p>Conduct daily morning surveys by ATV/UTVs and possibly ORVs for crawls and nests on all beaches before onset of heavy public ORV use. Daily surveys for nests end September 15, or two weeks after the last sea turtle nest or crawl was found, whichever is later. Periodic monitoring (e.g., every two to three days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation from that date until November 15.</p> <p>Monitoring will also occur for post-hatchling washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations stop when all nests have hatched or excavation indicates that the nest was not viable.</p> <p>Once a light filter fence is installed, monitor nests daily for signs of hatchling emergence.</p>		
Data Collected	<p>Follow the North Carolina Wildlife Resources Commission Handbook and record:</p> <ul style="list-style-type: none"> -Turtle species -Nest vs. false crawl -Location (physical description and GPS location) -If nest needs to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day -Necessary protective measures for nest and hatchlings -Information regarding any post hatching nest excavation and analysis <p>Examine all nests after hatching to determine productivity rates. Excavate nests in the evening a minimum of 72 hours after hatching event. In cases where hatching events or dates were unknown, unearth nest cavities 80–90 days after the lay date. Any live hatchlings found during excavations will be released after dark on the same day as excavation.</p> <p>For strandings the following will be recorded: species, location, measurements, and signs of human interactions. Samples and photos will be collected when necessary. Necropsies will be conducted when possible.</p>		
Nest Closures/ Buffers	<p>Establish a buffer approximately 10 meters by 10 meters with symbolic fencing and signage around nest. Closure size may be modified due to environmental conditions at the nest site.</p> <p>Approximately 50– 55 days into incubation, closures expanded to the surf line. The width of the closure based on the type and level</p>		

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	<p>of use in the area of the beach where the nest was laid:</p> <ul style="list-style-type: none"> a. Vehicle-free areas with little or no pedestrian traffic – 25 meters wide (total width); b. Villages or other areas with high levels of day use –50 meters wide (total width); c. Areas with ORV traffic –105 meters wide (total width). <p>Opposite the surf line on the landward side of the closure, expand the closed area to 15 meters where possible, but no less than 10 meters landward from the nest. Traffic detours behind the nest area clearly marked with signs and reflective arrows.</p> <p>Where present within closure, vehicle tracks manually smoothed with rakes or a steel mat attached to an ATV, so as not to impede hatchlings attempting to reach the surf.</p> <p>Use light filtering fence behind nests nearing hatch dates to block light pollution from the villages and vehicles operating on the beach after dark.</p> <p>If multiple nests are located near each other (within 150 feet), and have similar hatch dates (14 days), then closures will encompass all nests in the area, and will not be removed until all nests within the closure have hatched.</p>
Nest Relocation	<p>By April 15th, areas deemed unsuitable for turtle nests (i.e. high erosion rate) will be identified by Park staff. Maps and descriptions of these areas will be analyzed by NCWRC prior to nesting season.</p> <p>When a nest is found, staff assesses need for nest relocation and follows relocation guidance identified in the NCWRC handbook.</p> <p>If it is determined the nest will not be relocated, it will be immediately protected with a symbolic fencing and signs and will measure approximately 10 meters by 10 meters in size. Closure size may vary at the discretion of staff due to the environmental factors at a nest location.</p> <p>If a nest is threatened by an imminent storm event, NPS will consult with NCWRC to determine appropriate action.</p>
Light Management	<p>Establish turtle friendly lighting standards and/or reduce light for all Seashore (NPS) structures.</p> <p>Encourage concessioners to install turtle friendly lighting.</p> <p>Develop educational material to inform visitors about their impact on the success of sea turtle nests.</p>
Research	<p>Support research efforts looking at the sex ratios of sea turtles.</p> <p>Respond to sea turtle strandings in a timely manner, and report all information, pictures, and signs of human interaction to NCWRC.</p> <p>Necropsies of strandings will be done when possible.</p>
Seabeach Amaranth	
Survey Time and Frequency	<p>August An annual survey of potential habitat will be conducted. Some bird closure areas may not be surveyed due to the potential to disturb nesting birds. Some areas may not be surveyed until just prior to re-opening an area to ORV traffic.</p> <p>July– September Before opening any species closure or identifying alternate ORV corridors, survey for seedlings/plants.</p> <p>End observations when all plants have died back.</p>

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Data Collected	Record location of all individual plants or plant clusters using a GPS and note if the plant is located in an area open or closed to recreational use.
Buffers	<p>April 15 – November 30</p> <p>If a plant/seedling is found outside of an existing closure, the Seashore will erect symbolic fencing with signage creating a 10 meter by 10 meter buffer around the plant. If plants are located next to each other, the area will be expanded to create one enclosure protecting several plants.</p> <p>If a SBA is found during the survey prior to reopening a bird closure to ORV and pedestrian use, the Seashore will protect the SBA as described above and reopen the areas of the bird closure where no plants exist.</p> <p>Areas reopened if no plants are present by September 1. Where plants occur, the closed areas will be reopened after the plants have died.</p>

See Shorebird/Waterbird Buffer Summary on next page.

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Shorebird / Waterbird Buffer Summary

Species	Breeding Behavior/ Nest Buffer	ORV Pass-through	Unfledged Chicks
	SM1 / SM2	SM2 only	SM1 / SM2
Piping Plover	50 m / 50 m	50 m	1000 m / 200-1000 m
American Oystercatcher	300 m / 150 m	Use SM1 or SM2 buffer, based on level of monitoring assigned. Conduct study to determine if a smaller SM2 buffer is adequate for ORV pass-through corridor.	300 m / 200 m
Least Terns	300 m / 100 m	Use SM1 or SM2 buffer, based on level of monitoring assigned. Conduct study to determine if a smaller SM2 buffer is adequate for ORV pass-through corridor.	300 m / 200 m
Other Species CWB	300 m / 200 m	Use SM1 or SM2 buffer, based on level of monitoring assigned. Conduct study to determine if a smaller SM2 buffer is adequate for ORV pass-through corridor.	300 m / 200 m

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Adaptive Management Proposal for Night Access during Sea Turtle Nesting and Hatchling Season

Acknowledgement

Numerous factors may affect sea turtles, turtle behavior, and turtle habitat including natural factors (ocean water quality, water temperature, storm events, predators, etc.), general human activity on beaches, artificial lighting (stationary in particular), and ORVs. Though the scope and focus of this plan is ORV management, this is not to imply numerous other management actions are not necessary and important to maintain and improve turtle populations on CAHA.

General Goals of Night Driving, Seasonal Restrictions, and Turtle Management

- Protect the sea turtles and contribute to the recovery of the species. More specific goals include:
 - Reduce the potential for false crawls due to night activity on the beach;
 - Reduce the potential for female turtles not emerging onto the beach due to night activity on the beach;
 - Reduce the potential for hatchling disorientation, when attempting to return to the sea, due to night activity on the beach;
 - Reduce potential direct impact to hatchlings seeking to reach the ocean, especially those hatchlings emerging from undiscovered/unmarked nests.
 - Reduce potential direct impact to nesting females.
- Protect the opportunity for access.

General Question

- What are the restrictions on pedestrians regarding beach access, use, behavior, etc., during turtle nesting season?

General Concepts

This overall plan includes desired conditions established by the NPS, a adaptive management program, robust education, a permit system, a related but separate predator control plan, NPS facility lighting controls, and a related but separate effort to reduce and manage lights from villages adjacent to the Seashore. Specific measures are as follows.

- In general, night driving would be prohibited during the dates of (options listed below):
 - 22 May, until 14 September;
 - Friday before Memorial Day until the Tuesday after Labor Day;
 - May 1 to 14 September;
- In general, night driving would be prohibited during the times of (options listed below):

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- 1 hour after sunset until 30 minutes after sunrise, unless otherwise noted below.
- Night driving on specific designated routes to spits and points that are not otherwise closed due to bird breeding activity would occur with nighttime restrictions from X date to Y date, with sufficient NPS monitoring.
- Specifically, in four areas of the Park (Bodie Island Spit, Cape Point, Hatteras Spit and South Point Ocracoke), provided those areas are not otherwise closed due to bird breeding activity, limited access for appropriate nighttime parking and appropriate stationary recreational activity, with significant restrictions, would be permitted from during the summer (to be defined). At the designated location(s), drivers would have to park and stay parked at night, with lighting restrictions. Fishing or other appropriate recreation (i.e., stargazing) would occur though vehicles must remain stationary until the area reopens to ORV access in the morning.
- From September (dates to be determined) until 14 November night driving on all routes and areas (not otherwise subject to resource closures) with low or no density of turtle nests would occur with nighttime restrictions with appropriate NPS monitoring. Geographic ORV access openings would be dictated by the location of turtle nests and at the discretion of the NPS.
- Night driving on all routes and areas would occur without any nighttime restrictions from November 15 until April 30.

Monitoring

- Daily sea turtle patrols will begin on May 1 or before, unless leatherback nests have been reported within the state, in which case CAHA will follow the direction of NCVRC. Patrol will continue until September 15, or two weeks after the last sea turtle nest or crawl is found, whichever is later.
- Conduct daily morning surveys by ATV/UTVs and possibly ORVs for crawls and nests on all beaches before onset of heavy public ORV use. Daily surveys for nests end September 15, or two weeks after the last sea turtle nest or crawl was found, whichever is later. Periodic monitoring (e.g., every two to three days) for unknown nesting and emerging hatchlings will continue, especially in areas of high visitation from that date until November 15.
- Monitoring will also occur for post-hatchling washbacks during periods when there are large quantities of seaweed washed ashore or following severe storm events. Nest observations stop when all nests have hatched or excavations indicates that any nests remaining are not viable.
- At approximately 50-55 days into incubation, NPS will expand the closure around a nest to the surf line, establish the filter fencing, and monitor the nest daily for signs of hatchling emergence.
- More intensive night monitoring focused on the appropriate turtle life stage (nesting or hatching) will occur from 1 May until XX May (nesting) and again from XX September until 15 November (hatching).
- Because night activities also have potential effects on nesting birds, monitors need to take notes on bird disturbances particularly during the 1 May --XX May period.

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Management

- In general, NPS will follow the guidance found in the NCWRC Handbook for Sea Turtle Volunteers. Specific buffers regarding nests are detailed in the separate Resource Protection Tables produced separately by the NPS.
- November 16 - April 30: Designated ORV routes and areas are open to ORV use 24 hours a day subject to other natural resource closures.
- May 1 – September 15: The general (parkwide) approach to sea turtle management during these dates includes the following:
 - All potential sea turtle nesting habitat (ocean intertidal zone, ocean backshore, and dunes) will be closed to non-essential ORV use from 1 hour after sunset until the beach is cleared by the turtle patrol, which shall be ½ hour after sunrise.
 - Areas of beach shall be cleared by turtle patrol prior to allowing ORV morning access. NPS shall provide sufficient personnel to meet the ½ hour after sunrise standard.
 - Early morning monitoring will be done in the most effective and efficient fashion possible. This may include: an initial sweep for marking of new nests and false crawls followed by a second sweep for detailed fencing, more permanent protections, etc.; beginning patrols at first twilight on the beach; and so forth.
 - The turtle patrols will prioritize for first patrols those areas that are currently open to ORV access, and as necessary, further prioritize those open areas within the spits and points.
 - Signaling of some kind should be established at ORV access ramps to indicate if the beach is closed. This may be signage, traffic-light lights, or so forth.
 - The Park shall seek, in partnership with the NCWC, Dare County, and a volunteers program to provide for at least 8 separate turtle patrols per day during the turtle-nesting season.
 - The Park shall provide for sufficient and necessary enforcement to ensure the beach is cleared at night by the night closure time, and that any violators are found and receive appropriate penalties.
 - Nest closures and buffers will be established as described in the CAHA ORV Resource Protection Tables, dated 11/15/08 (see page 9 of Table).
 - Pedestrian access to the ocean beaches after dark is allowed at any location(s) adjacent to the villages or established parking, subject to site specific resource closures as needed for bird breeding activity or sea turtle nests.
- Site Specific Management 1 May to XX May: Designated ORV routes and areas to Bodie Island Spit, Cape Point, Hatteras Inlet and South Point Ocracoke, if not otherwise closed due to bird breeding activity, are open to ORV use in the nighttime with the following additional restrictions within those ORV routes/areas:

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- All ORVs must be permitted for driving.
 - Permits will be accompanied by education about sea turtles, their protection, the rules of night driving, and a phone number to report any violations or specific turtle behavior (nesting, false crawls, etc.).
 - In areas open to night driving, campfires, use of vehicle headlights (other than as below), auxiliary lights, vehicle battery powered spotlights, or lanterns that cast light in a 360 degree direction are prohibited, except as needed in a true emergency situation, from 1 hour after sunset until sunrise, whichever comes first. Intermittent use of lighting (5 minutes or less) is limited to handheld flashlights, headlamps or other battery powered lighting devices that cast a one-directional beam of light.
 - Headlights may only be used when in transit and will be turned off when the vehicle is parked.
 - Drivers and pedestrian should not approach turtles or turtle nests closer than 75 feet, and should not aim any lights including flash photography toward adult sea turtles or hatchlings.
 - NPS will conduct night monitoring of the specific ORV routes and areas open to night driving, with at least one monitor per ranger district, to identify, record, and monitor nesting females and record false crawls.
 - Incentives should be established for beach users to report any turtle activity.
- From XX May – XX September, Specific: Limited ORV Access for Appropriate Night Recreation during Turtle Nesting Season (i.e., park and stay). The following areas are designated as open to limited ORV access for appropriate and stationary night recreation from May XX to September XX, subject to site specific resource closures as needed for bird breeding activity or sea turtle nests; and subject to the terms and conditions of a permit (see next section) and to the overnight vehicle limit indicated in (parentheses):
 - Bodie Island Spit limit – 25 (if not otherwise closed)
 - Cape Point: Vehicle limit – 50 (Access via eastern corridor, if not otherwise closed.)
 - Hatteras Inlet Vehicle limit – 25 (Access via Spur Road, if not otherwise closed.)
 - Ocracoke South Point limit – 25 (Access via designated corridor, if not otherwise closed.)
 - The above limits will be established in the Superintendent’s Compendium under the authority of 36 CFR § 1.5, subject to periodic review by NPS, and adjusted as appropriate (could be increased if no negative impacts to resources are determined or decreased if needed to protect park resources).
 - The above areas will be accessible by ORV only during daylight hours, subject to resource closures for bird breeding activity or turtle nests, and subject to terms and conditions of a special use permit, which include the following:
 - Such vehicles must have a special use permit that is in addition to any standard beach access permit or pass.
 - Appropriate recreation would include fishing, stargazing, or other relatively stationary activities.

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- Permitted vehicles must arrive at the site no later than one hour after sunset and remain parked within the designated area with headlights off until the beach is cleared by turtle patrol, which shall be ½ hour after sunrise.
- Under rare circumstances, should a “park and stay” permittee need to leave the beach during the night due to a serious emergency, they must make a call to Dare County central dispatch (473-3444) or 911. Dispatch information will be listed on the nightly permit.
- Parking areas at the respective night access sites will be designated by NPS law enforcement staff and marked with signage (e.g., carsonite or barricades) that will be maintained by the LE staff. Permittees must park their vehicles only in the designated area. Such areas will be contained and shall prevent vehicles from being spread up or down large sections of beach.
- Pets are prohibited
- Campfires, use of vehicle headlights, vehicle battery powered spotlights, or lanterns that cast light in a 360 degree direction are prohibited, except as needed in a true emergency situation. Intermittent use of lighting is limited to handheld flashlights, headlamps or other battery powered lighting devices that cast a one-directional beam of light.
- Drivers and pedestrian should not approach turtles or turtle nests closer than 75 feet, and should not aim any lights including flash photography toward adult sea turtles or hatchlings.
- Special use permits will be issued one night at a time and must be obtained in person at a designated NPS permit issuing station (locations TBD).
- Each vehicle must have a functional portable toilet.
- NPS may impose a limit on the number of nights in a row an individual may obtain a night fishing permit, if it appears that there is routinely more demand for permits than the vehicle limit allows.
- NPS retains the right to not issue night parking permits when weather forecasts dangerous conditions.
- NPS may utilize volunteer park-and-stay site hosts as a management tool to monitor compliance with the permit requirements.
- If a permittee or individual accompanying a permittee violates the terms and conditions of the permit, including any natural resource protection rules or any of the above provisions, the violator is subject to a citation and the person’s privilege to obtain a night-access permit will be revoked for the remainder of the season. If there are three (3) or more documented violations of these requirements at a particular site within a 30-day period, all night access to that site will be suspended for a 30 day period. If night access is suspended at a location due to repeated violations, NPS will evaluate apparent causes of non-compliance (is it training? signing? something else?) and take proactive steps to address manageable causes prior to reopening. If, in the judgment of NPS, causes of non-compliance cannot be effectively managed, NPS will not reopen an area to night access until all turtle nests in the area have hatched.

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- **ADDITIONAL OPTION:** The NPS may provide an escort for a one-time leaving of the park and stay area each night in one or more of the four points and spits' designated areas at midnight. Such an escort would be a one-time action per night, would not involve escorting any vehicles on the beach after night as defined as one hour after sunset, and would follow appropriate procedures to minimize all light, speed, noise and other measures that might adversely influence turtle nesting behavior.
- **September XX – November 14:** Based on the location(s) of remaining unhatched sea turtle nests, NPS will designate routes/areas that are reopened to night driving (i.e., night driving will be reopened on routes/areas that do not have unhatched turtle nests). NPS will publish the list of routes/areas open to night driving in a regular and frequency beach access report and will update the list weekly until all turtle nests have hatched. The Park will ensure an appropriate width of filter fencing for managing light and will provide for an appropriate buffer around turtle nests to ensure hatchlings may make their way to the sea, especially after Day 55 of incubation.
 - All ORVs must be permitted for night driving (either a special use permit or part of the overall general beach use permit/pass).
 - Permits will be accompanied by education about sea turtles, their protection, the rules of night driving, and a phone number to report any violations or specific turtle behavior (nesting, false crawls, etc.).
 - In areas open to night driving, campfires, use of vehicle headlights (other than as below), auxiliary lights, vehicle battery powered spotlights, or lanterns that cast light in a 360 degree direction are prohibited, except as needed in a true emergency situation, from 1 hour after sunset until sunrise. Intermittent use of lighting (less than 5 minutes) is limited to handheld flashlights, headlamps or other battery powered lighting devices that cast a one-directional beam of light.
 - Headlights may only be used when in transit and will be turned off when the vehicle is parked.
 - No flash or fixed light photography is allowed of turtles, nests, or hatchlings and any flash photography should be kept some distance (XX m?) from turtles, nests, or hatchlings.
 - Drivers and pedestrian should not approach turtles or turtle nests closer than 75 feet.
 - Flashlights, headlamps, and other low light sources may be used on an intermittent basis.
- **As of September 16 if unhatched sea turtle nests remain that block night access to Bodie Island Spit, Cape Point, Hatteras Spit or South Point Ocracoke, NPS may continue to utilize the ORV limited night access special use permit for night procedures described above to allow night access to those locations until all such turtle nests have hatched (NEEDS MORE EXPLANATION).**
- NPS will conduct night nest monitoring/watch during expected hatching to ensure the safety of hatchlings in any areas open to ORV use with turtle nests present. The NPS will work to establish a nest watch program with volunteers under appropriate supervision.
- Resources Management staff will examine all sea turtle nests after hatching to determine productivity rates. Excavate nests in the evening a minimum of 72 hours after hatching

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event. In cases where hatching events or dates were unknown, unearth nest cavities 80–90 days after the lay date, or later if eggs are still viable. Any live hatchlings found during excavations will be released at dusk or after dark on the same day as excavation. Provided no other unhatched nests remain in the area, areas will reopen to nighttime driving in accordance with what is published in the weekly beach access report.

- The Superintendent retains the authority under 36 CFR § 1.5 (a) to close all or a portion of a park area to all public use or to a specific use or activity, as needed to protect park resources.

Education and Outreach

The NPS will develop an appropriate, robust and effective turtle education and outreach program to help inform all beach users, regardless of the means they use to access the beach, regarding turtle species, their behavior, and all appropriate human behavior to ensure the success of nesting and hatching of turtles on Cape Hatteras National Seashore.

Research and Knowledge Base

The NPS will commit sufficient resources to the monitoring, science and adaptive management approach to build a detailed, thorough knowledge of turtle management on Cape Hatteras National Seashore and to share that knowledge with others within the state, other Parks, and up and down the Atlantic Seashore.

Volunteer Program

The NPS will develop an appropriate and effective volunteer program to increase its access to resources, to inform and educate interested members of the public, and to help advance the recovery of turtle species. To the greatest extent possible, the NPS will also partner with such state agencies as the North Carolina Wildlife Resources Commission (NCWRC) to maximize resources and abilities to achieve the goals noted above. Volunteers may assist with turtle patrols and may also serve as nest watchers during hatching.

Stationary Lighting within the Control of the NPS

The NPS will work with FWS, the NCWRC, and appropriate others to develop turtle-friendly lighting at all NPS facilities that might affect lighting on or near the beach, as well as require all concessionaires with potential impact to utilize the same lighting through their special use permits.

Village Lighting

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The NPS, Dare County, Hyde County, and the North Carolina Wildlife Commission with technical assistance from the FWS, will work in good faith to develop a turtle friendly lighting program to reduce the amount of light from outdoor lights associated with residential and commercial structures. The program may include:

- Outreach and education such as homeowner education, homeowner stickers or emblems designating “turtle friendly household,” reminder light switches, and other outreach efforts to ensure broad education and participation in lighting reduction efforts.
- A rebate program to provide incentives for the installation of turtle-friendly lighting, potentially funded, at least in part, by state and federal funds.
- A lighting ordinance to promote and encourage the installation of turtle-friendly lighting. The ordinance might include requirements for new construction, timelines for retrofits or renovations, grants, technical assistance, and other means to achieve the end goal.
- Review of any building or other codes that may require stronger or more substantial light on structures than is preferred for turtle resource protection.

Predator Control

Under a separate process, NPS will develop and implement a predator control plan for predators of turtles, particularly hatchlings, in order to reduce harm and death to hatchlings.

Commercial Fishing

Commercial fishing permittees regulated pursuant to 36 CFR 7.58(b)(2) are not subject to the provisions of this ORV regulation during times or periods when beach use occurs while engaged in commercial fishing from seashore beaches. Appropriate requirements for protection of turtles will be managed separately through the commercial fishing special use permit.

Adaptive Management

***Caveat:* This section needs to be reviewed by someone with expertise in adaptive management methodology in order to confirm or improve the technical sufficiency of the following proposal. The information that is collected by the Resources Management staff is anecdotal in nature. It can reasonably be used to inform management decisions or to support the need for additional formal research studies. The anecdotal information alone should not be used as the sole basis for making significant changes in management practices. Any significant changes in management should include consultation with recognized experts in the field.**

Objective: To determine the effect of management on nesting rate, hatching success, sea-finding by hatchlings (prevalence of misorientation/disorientation and trapping by obstacles), and proportion of false crawls.

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Proposal: Identify the “management category” of each ocean beach segment as one of the following:

1. ORV areas (ORV/pedestrian segments, open to ORV use during daylight hours)
2. Non-ORV areas (pedestrian only segments)
3. Resource Areas that are closed from (date) to (date) to all ORV and pedestrian use (control segments)
4. Other resource closures (i.e., a category # 1 or # 2 segment that is closed during the season for resource protection and then it become a category # 3 segment at that time)

Monitor and Document the following information:

1. Turtle species
2. Nest vs. false crawl
3. Dates and times of activities (nest, false crawls, hatching)
4. Location (physical description and GPS location)
5. Management category (ORV, Non-ORV, Resource Area, other Resource Closures, or Experimental) of the nest site at the time it was laid
6. If nest needs to be relocated and, if so, why and where (new physical description and GPS location), number of eggs relocated, and time of day
7. Necessary protective measures for nest and hatchlings
8. Information regarding any resource closure violations, predation, hatchling misorientation, trapping by obstacles, or possible “take” incidents
9. Information regarding any post hatching nest excavation and analysis
10. Visitor use in terms of number of visitors using the beach from May 1 to November 15, kinds of use, night use, kinds of night activities, and other appropriate socio-economic data.
11. Examine all nests after hatching to determine productivity rates. Excavate nests in the evening a minimum of 72 hours after hatching event. In cases where hatching events or dates were unknown, unearth nest cavities 80–90 days after the lay date, or later if the eggs are still viable (i.e., late season nests). Any live hatchlings found during excavations will be released after dark on the same day as excavation.

Evaluate:

1. Compare the number and proportion of nests, false crawls, hatchling misorientation/disorientation incidents, predation incidents, and hatchling emergence rate that occur in the respective management categories. Document in annual sea turtle report.
2. Evaluate data over multiple years to help determine management actions chosen in terms of dates, times, and restrictions, to the extent possible, against such criteria as nests, false crawls, and others noted above, generally related to risk management, overall impact, etc.
3. Conduct periodic review and evaluate trends every 5 years and include a summary of that analysis in the annual sea turtle report for the respective year. Review results with USFWS and NCWRC. (Note: Loggerhead and green turtles typically nest every 2-3 years, so this would allow for a minimum of two nesting cycles to be considered.)

Adapt:

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1. If a significant effect of recreation at a particular site is found, recreational restrictions can be varied systematically to distinguish the effects of type and level of activity. This might include changing dates, times, and locations. On the other hand, if no effect is detected, then the next round of experiments could entail allowing similar night access to other selected sites. Any change in management would require consultation with USFWS and NCWRC, prior to implementation.

Further Studies to Consider:

1. Design a systematic research study to monitor and determine the effects of night access on sea turtle nesting