

	Natural Resources					Health, Safety, & Visitor Experience				
Indicator (highlight represents those items more likely to be monitored).	Vegetation Damage	Wildlife Disturbance	Disturbance to T&E Species	Violation of Areas Closed to Dogs (T/E and Sensitive Habitat)	Violation of Areas Closed to All (T/E and Sensitive Habitat)	Pet Excrement (grid or observations for noncompliance)	Hazardous Condition (aggressive behavior, pet rescues)	Degree of Compliance with special regulation (no dogs, on-leash, ROLA)	Government Property Damage	Violation of Areas Closed to Dogs (Safety)
<p>Standard: Reduce moderate impacts that result from noncompliance to minor. Descriptions here are moderate impact thresholds broadly described for each impact topic. Not all impacts as described result from noncompliance.</p>	<p>Effects would be measurable and perceptible over a larger area, and would affect the overall integrity of a plant community, including changes to plant structure and abundance as well as distribution, quality, and quantity of the habitat. Inclusion of an adaptive management strategy in park policies could be required to allow changes in local management practices at the site that could protect vegetative resources.</p>	<p>Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and could be outside the natural range of variability. Frequent responses to disturbance from dogs by some individuals could be expected, with some negative impacts on feeding, migration, overwintering, reproduction, resting, or other factors that may affect wildlife at the park. However, sufficient habitat in the park would remain functional to support wildlife at GGNRA.</p>	<p>Impacts would result in measurable and/or consequential changes to individuals of a species or its habitat; however, the impact would remain relatively localized. The reproductive success of individuals of a species would be affected, but the species itself would not be permanently lost. Adverse impacts may include frequent disturbance or avoidance of certain areas, injury, or mortality of individuals, but the long-term viability of the species would be maintained. Essential features of critical habitat may be impacted. For federally listed species, this impact intensity would equate to a determination of “may affect, likely to adversely affect.”</p>		<p>Effects would be readily apparent and they would result in substantial, noticeable effects to human health and safety (both park visitors and park employees) on a local scale. Revision of park policies could be required to ensure human health and safety.</p>	<p>Effects would be readily apparent and they would result in substantial, noticeable effects to human health and safety (both park visitors and park employees) on a local scale. Revision of park policies could be required to ensure human health and safety.</p>	<p>A few critical characteristics of the existing visitor experience would increase or decrease. The number of visitors engaging in a specific use would be altered resulting in a noticeable change in visitor satisfaction. Other park areas would remain available for similar visitor uses and experiences; however, some visitors participating in that use or experience might be required to pursue their choice in other available local or regional areas; or some individuals participating in that use or experience in other local or regional areas could return to or begin using the park due to the improved visitor experience.</p>	<p>GGNRA replaces no more than X signs per site, per year.</p>	<p>Effects would be readily apparent and they would result in substantial, noticeable effects to human health and safety (both park visitors and park employees) on a local scale.</p>	
Code of Federal Regulations	36 CFR 2.1 (a) (1) (ii)	36 CFR 2.2(a)(2)	36 CFR 2.2 (a) (2), 50 CFR Part 17	NEW PART 7 SPECIAL REGULATION	36 CFR 1.5 (f)	36 CFR 2.15 (a) (5)	36 CFR 2.34 (a)	NEW 36 CFR PART 7 SPECIAL REGULATION	36 CFR 2.31 (a) (3)	36 CFR 1.5 (f), NEW PART 7 SPECIAL REGULATION

<p>What is being measured? (NOTE: each indicator is measured per site, and is not additive across the multiple sites where dogs are allowed).</p>	<p>Direct observations of dogs digging or destroying vegetation (outside of ROLA's).</p>	<p>Direct observations of dogs disturbing/chasing/harassing wildlife. This would primarily include dogs chasing shorebirds and coyote interactions.</p>	<p>Direct observations of dogs harassing threatened or endangered species. This primarily would include dogs disturbing western snowy plovers, dogs dislodging California red-legged frog egg masses, or dogs trampling T&E plants.</p>	<p>Direct observations of dogs in areas closed to dogs for species and habitat protection.</p>	<p>Direct observations of dogs in areas closed to all for species and habitat protection.</p>	<p>Direct observations of dog owners not picking up and/or improperly disposing of dog waste. Violations may also be measured by utilizing grid counts of dog waste.</p>	<p>Direct observations and law enforcement citations of aggressive behavior (dogs jumping on visitors, aggressive barking, dog fights, or bites). Pet rescues as documented by case incidents.</p>	<p>Direct observations of dogs outside of designated areas, or dogs violating the conditions of an area. SHIRWIN - INCLUDE CONDITIONS OF A ROLA SUCH AS VOICE CONTROL? ETC.</p>	<p>Periodic inventory of signs and/or fencing related to dog management, closures, or habitat protection have been damaged or removed.</p>	<p>Direct observation of dogs or law enforcement citations for being in areas closed to all for safety.</p>
<p>STEP 1 Trigger</p>	<p>Multiple dogs frequently digging outside of ROLA on over a six month period.</p>	<p>Multiple dogs frequently disturbing wildlife over a six month period.</p>	<p>Violation of terms and conditions of BO over six month period.</p>	<p>Multiple dogs frequently entering closed areas over a six month period.</p>	<p>Multiple dogs frequently entering closed areas over a six month period.</p>	<p>Multiple dog owners frequently failing to pick up and properly dispose of dog waste over a six month period.</p>	<p>Multiple dogs demonstrating aggressive behavior, or multiple pet rescues over a six month period.</p>	<p>Multiple dogs frequently outside of an area designated for dogs over a six month period.</p>	<p>Frequent vandalism, destruction, or theft of signs and/or fences related to dog management over a six month period.</p>	<p>Multiple dogs frequently entering areas closed for safety over a six month period.</p>

STEP 2 Trigger	Multiple dogs frequently digging outside of ROLA over a one year period after STEP 1 triggered.	Multiple dogs frequently disturbing wildlife over a one year period after STEP 1 triggered.	Violation of terms and conditions of BO over a one year period after STEP 1 triggered.	Multiple dogs frequently entering closed areas over a one year period after STEP 1 triggered.	Multiple dogs frequently entering closed areas over a one year period after STEP 1 triggered.	Multiple dog owners frequently failing to pick up and properly dispose of dog waste over one year period after STEP 1 triggered.	Multiple dogs demonstrating aggressive behavior, or multiple pet rescues over a one year period after STEP 1 triggered.	Multiple dogs frequently outside of an area designated for dogs over one year period after STEP 1 triggered.	Frequent vandalism, destruction, or theft of signs and/or fences related to dog management over a one year period after STEP 1 triggered.	Multiple dogs frequently entering closed areas over a one year period after STEP 1 triggered.
Example	Locations with a ROLA adjacent to natural areas, native habitat, or areas that could recover or be restored, such as Fort Funston or Oakwood Valley.	Shorebirds: monitoring locations would be beaches with high shorebird abundance during overwintering or migration. Coyotes: monitoring would occur where dog/coyote interactions are reported.	Snowy plover protection areas at Ocean Beach and Crissy Field. Areas with threatened and endangered species habitat adjacent to trails, such as Mori Point, Milagra Ridge, and Presidio Coastal Trail.	Dogs in areas closed to dogs, including T&E and sensitive habitat. Dog entry into closed areas represents an index of dog impacts that would potentially include vegetation trampling and displacement of wildlife (e.g. Homestead Valley, Oakwood Valley, Rodeo Valley), and disturbance to T&E species and habitat (e.g. mission blue butterfly habitat at Milagra Ridge).	Dogs in areas closed to all, including T&E and sensitive habitat. Dog entry into closed areas represents an index of dog impacts to T&E and sensitive species and their habitat (e.g. Crissy Marsh, Habitat Protection Area Closure at Fort Funston, and Rodeo Lagoon).	ROLAs, high use areas, and areas with special use permits allowing more than 3 dogs.	ROLAs, high use areas, and areas with special use permits allowing more than 3 dogs.	Off-leash dog in a no dog or on leash area. On leash dog in a no dog area. Dog not under voice and site control. (SHIRWIN?!)	Sign describing dog restrictions has been spraypainted, defaced, damaged, or removed.	Dogs entering areas closed for public safety, such as the cliffs at Ft. Funston.

**Draft Compliance Management Strategy
GGNRA dog management plan/EIS
8.4.10**

Background:

The compliance management strategy monitors and records observed violations of the Code of Federal Regulation related to dog management, including the new 36 CFR Part 7 special regulation, and redirects resources as needed to address those violations. Noncompliance with federal regulations related to dog management will be met with a variety of management responses.

Timeline:

Monitoring in the first 3-6 months of the plan will be used to establish a baseline of numbers of visitors with dogs, type of use, and violations. All sites will be monitored. After 6 months, monitoring areas will be prioritized based on noncompliance. All areas that are noncompliant with the regulations will be the focus of increased park management actions, as described in Step 1 below. Monitoring will also inform park management, including law enforcement, when, where, and how to prioritize responses to noncompliance. If after 2 years the rolling average for noncompliance is below 70%, park management actions as described in Step 2 below will be implemented.

Monitoring will continue in all areas for at least 4 years, although the park may reduce the frequency of monitoring in low use areas to focus on high use areas as needed.

NPS will prepare annual reports documenting monitoring data collected and consequent management actions, when they occur.

Standard: Compliance with federal regulations applicable to dog management.

Indicators: Noncompliance with federal regulations applicable to dog management (see chart below).

Vegetation Damage	Wildlife Disturbance	Disturbance to T&E Species	Violation of Areas Closed to Dogs (T/E and Sensitive Habitat)	Violation of Areas Closed to All (T/E and Sensitive Habitat)	Pet Excrement (grid or observations for noncompliance)	Hazardous Condition (aggressive behavior, pet rescues)	Degree of Compliance with special regulation (no dogs, on-leash, ROLA)	Gov't Property Damage	Violation of Areas Closed to Dogs (Safety)
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36 CFR 2.1 (a) (1) (ii)	36 CFR 2.2(a)(2)	36 CFR 2.2 (a) (2), 50 CFR Part 17	NEW PART 7 SPECIAL REGULATION	36 CFR 1.5 (f)	36 CFR 2.15 (a) (5)	36 CFR 2.34 (a)	NEW 36 CFR PART 7 SPECIAL REGULATION	36 CFR 2.31 (a) (3)	36 CFR 1.5 (f), NEW PART 7 SPECIAL REGULATION
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Triggers and management response:

1. Step 1 trigger and management response: When noncompliance occurs, NPS will respond with focused enforcement of regulations and education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, etc.), establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.
 - a. Areas with the highest rates of noncompliance, and/or sensitive resources, will receive first priority for Step 1 management responses.
 - b. Aggressive dogs or unsafe behavior (e.g. resulting in cliff rescues) are treated on an individual basis, and may result in banning the dog from the park.

2. Step 2 trigger and management response: When noncompliance (measured as a cumulative total of violations per area) falls below 70% (measured by number of visitors with dogs per site), over a two year rolling average, the area flips – ROLA to on-leash, and/or on-leash to no dogs. If monitoring shows that the majority of violations are occurring in one particular area within a site, such as a ROLA, only that area would flip. If noncompliance is widespread, the entire site would flip to the next most restrictive level. **Once an area has flipped to the next most restrictive use, it can be relaxed again only after 1 year rolling average of greater than 70% compliance with the existing regulations area-wide.**
 - a. Rationale for 70%:
 - i. The dog management plan/EIS and the resulting special regulation, along with existing regulations applicable to dog management, determine appropriate behavior for visitors with dogs within Golden Gate National Recreation Area. NPS does not condone any level of noncompliance, but the Step 1 remedies are sufficient to address noncompliance where it is not widespread. The Step 2 remedy is meant to apply when it is clear both that park management has been unable to reduce noncompliance through conventional means, and when there is widespread noncompliance occurring over a longer period of time. It provides visitors with dogs an additional incentive to comply with the dog regulations. And because it is specific to an individual area, it encourages a communal response to address noncompliance. It also places a burden on NPS to first take a proactive approach to dog management through Step 1 remedies, and not punish the majority for individual or isolated violations.

- b. Rationale for 2 years:
 - i. Need 3 months to educate the public about the plan, and 3 - 6 months to establish baseline through monitoring
 - ii. Need 1 – 1.5 years to implement the full range of possible management actions addressing noncompliance as outlined in Step 1, as well as provide notice to the public that the Step 2 remedy may be implemented for noncompliance.

Call agenda – draft Dog Mgmt Plan Compliance Strategy 8.12.10

1. Issues with current compliance based strategy
 - a. Current iteration of the compliance based strategy monitors for violations. When number of violations reaches a moderate impact for species, veg, health and safety, or visitation, management action is triggered. *How to determine number of violations that generally equal a moderate impact? Need modeling showing cause and effect.*

2. Possible remedies:
 - a. **PROPOSED REMEDY:** Keep compliance based mgmt strategy, but utilize different triggers not tied to impacts, but to the goals of the planning effort itself. Rationale is compliance with the preferred alternative and corresponding special regulation, the justification for which is already contained in the dog management plan/EIS. This is really just mitigation, not adaptive management, without the need for additional modeling.
 - b. Keep compliance based mgmt strategy unchanged, tied to moderate impacts, but broadly defined.
 - c. Reduce scope of compliance based mgmt strategy. Keep Step 1, based only on noncompliance, drop Step 2 closures.
 - d. Drop compliance mgmt. strategy altogether.
 - e. Reduce number of CFR violations to be monitored to just those for which we can develop objective standards, AND/OR develop monitoring plan in place of standards that clearly show ties between data collected and triggers.
 - f. Keep compliance mgmt. strategy, but tier to an implementation plan/NEPA doc, once we have baseline data and can better put together a design model for impacts.

Call agenda – draft Dog Mgmt Plan Compliance Strategy

Issues with current compliance based strategy:

1. Current iteration of the compliance based strategy monitors for violations. When number of violations reaches a moderate impact for species, veg, health and safety, or visitation, management action is triggered. (SEE ATTACHED CHART)
 - a. Issue: How to determine number of violations that generally equal a moderate impact? Park staff not able to determine this number, in part due to a lack of baseline data and modeling. Need studies showing cause and effect.
 - b. Issue: Are general objectives sufficient as triggers? Can we use the same assumptions on which the impacts analysis was based? Or could a monitoring plan showing what is being monitored and how the data is being evaluated be sufficient?
 - c. Issue: Adaptive management can be used as a tool to develop numbers in the face of uncertainty, however the DOI Handbook on Adaptive Management warns that adaptive management should not be employed if one or more of the following factors occurs:
 - i. “Monitoring cannot provide useful information for decisionmaking:”
 1. Issue: monitoring number or type of dog violations does not resolve the fundamental underlying question of level of impact. Need two levels of monitoring: a) effects of dogs on species, visitor experience, etc, and b) number of violations tied to effects.
 - ii. “A design for experimental management and monitoring cannot be developed to test hypotheses. If understanding of the resource system is so limited (or management is so constrained) that designing a meaningful experiment becomes problematic, adaptive management may not be appropriate. This problem is most likely to occur when the geographic scale of the problem is extensive, replication is difficult or impossible, or there are many potentially confounding environmental factors that combine to influence outcomes.”
 1. Issue: park has noted that such a design would require extensive funding, and cannot be done based on the current monitoring being proposed. Impacts from dogs are intertwined with other impacts, can be difficult to tease out.
 - iii. “There are irresolvable conflicts in defining explicit and measurable management objectives or alternatives.”

Proposed remedies:

1. Keep compliance based mgmt strategy unchanged, with broad mgmt triggers

- a. Issues: as described above
- 2. Keep compliance based mgmt strategy, but utilize different triggers not tied to impacts, but to the goals of the planning effort itself. Rationale is compliance with the preferred alternative and corresponding special regulation, the justification for which is already contained in the dog management plan/EIS. Monitoring continues in all areas for at least 4 years. Monitoring informs park management, including law enforcement, when and where to prioritize responses to noncompliance. The park may reduce monitoring in low use areas to focus on high use areas as needed.
 - a. Reframe management triggers and remedies:
 - i. Triggers:
 - 1. Step 1 trigger: broadly described as “when non-compliance occurs,” and not tied to a threshold.
 - a. For aggressive dogs or unsafe behavior, resulting in cliff rescues, the park may ban the dog from the park.
 - 2. Step 2 trigger: when noncompliance falls below 60%, after a 2 year rolling average. Noncompliance measured broadly as any CFR violation related to dog management in each site; % measured as number of visitors with dogs per site.
 - ii. Remedies:
 - 1. Step 1 remedy: Park will respond with focused enforcement of regulations and education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.
 - 2. Area flips – ROLA to on-leash, on-leash to no dogs. If noncompliance widespread, the entire site would flip. If monitoring shows that violations are occurring in only a particular area, such as a ROLA, only that area would flip.
- 3. Reduce scope of compliance based mgmt strategy
 - a. Reframe management triggers and remedies:
 - i. Triggers:
 - 1. Broadly described as “when non-compliance occurs,” and not tied to any threshold or standard.
 - ii. Remedies:
 - 1. Step 1 remedy: Park will respond with focused enforcement of regulations and education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public

meetings, meetings with user groups, establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.

2. Drop closures as Step 2 remedy, but note that closures could still occur, including emergency species closures.
 - b. Continue monitoring portion of strategy for at least 2 years so that you have baseline information on impacts. This information will help justify future closures, if needed. After 2 years, continue monitoring in high use areas. Monitoring data also informs where management actions will be focused, such as additional law enforcement.
 - c. Issue: Would require additional NEPA and rulemaking for future changes.
 - d. Issue: Would require reworking the impacts analysis to affirmatively state that impacts would be controlled through increased law enforcement, etc., but no guarantee that impacts will be reduced.
4. Drop compliance mgmt. strategy altogether
 - a. Issue: Would require additional NEPA and rulemaking for future changes.
 - b. Issue: Would require reworking the impacts analysis to affirmatively state that impacts would be controlled through increased law enforcement, etc., but no guarantee that impacts will be reduced.
5. Reduce number of CFR violations to be monitored to just those for which we can develop objective standards, AND/OR develop monitoring plan in place of standards that clearly show ties between data collected and triggers:
 - a. T & E disturbance: standards tied to Terms and Conditions in the BiOp
 - b. Wildlife disturbance: standards tied to impact analysis? EIS team thinks this should go away b/c don't have good numbers on wildlife.
 - c. Violation of closed or restricted areas (on-leash or no dogs):
 - i. T & E: BiOp standards – but this assumes that BiOp sets objective standards, and not vague desired future conditions.
 - ii. Visitor experience: use numbers from EIS impacts analysis, could possibly tie to more visitor use on the site.
 - iii. Health and Safety: set low number based on intolerance for aggressive dogs or cliff rescues. Change mgmt. remedy here to just a management response (revoke owner's ability to walk dog in park, but don't close an area).
6. Keep compliance mgmt. strategy, but have actual implementation (standards, etc.) tied to an implementation plan/NEPA doc, once we have baseline data and can better put together a design model for impacts.

- a. Issue: will still require an expensive model/design, unless enough to do this with observational data and tying violations with condition of habitat.

Draft Compliance Management Strategy
GGNRA dog management plan/EIS
10.1.10

Background:

The compliance management strategy has been designed to ensure that compliance with the Code of Federal Regulations (CFR) applicable to dog management is high to ensure protection of park resources, visitors and staff. It will provide the framework for monitoring and recording observed CFR violations applicable to dog management, including the new 36 CFR Part 7 special regulation, and will guide use of park resources to address those violations. Noncompliance with federal regulations related to dog management will be met with a range of management responses.

Timeline:

Monitoring will begin with plan implementation, or soon thereafter. A detailed monitoring plan will be developed to guide compliance monitoring, data management, and reporting. All sites in the dog management plan will be subject to monitoring. Beginning with initiation of the dog management plan, months 1-3 will be a public education period, and months 3-6 will test the monitoring strategy. A baseline of numbers and rates of visitors with dogs, type of use (on-leash or voice-control), and violations of regulations (even if not resulting in citations) will be established during months 6-18. After this baseline has been established, monitoring efforts may be prioritized and limited to specific areas based on noncompliance and use levels. Park management responses will focus on all areas with demonstrated noncompliance with the regulations, as described in the primary management response section below. Monitoring will inform park management and law enforcement when, where, and how to prioritize responses to noncompliance. If the rolling 12 month average for compliance falls below 75%, park management actions as described in the secondary management response will be implemented. The initial 12 month rolling average is based on data collected during months 6-18 after plan initiation.

Monitoring will continue in all areas for at least 4 years, although the park may reduce the frequency of monitoring in low use or high compliance areas to focus on areas with high use or low compliance as needed. Regular monitoring of an area over a 12 month period is required before secondary management responses can be implemented, however, the frequency of monitoring at any one site may vary over time.

NPS will prepare annual reports documenting monitoring data collected and any consequent management actions. NPS will release a preliminary report providing baseline data after the first 6 months of monitoring (month 12 after plan initiation).

Standard: Compliance with federal regulations applicable to dog management.

Indicators: Noncompliance with federal regulations applicable to dog management (see chart below).

Vegetation Damage	Wildlife Disturbance	Disturbance to T&E Species	Violation of Areas Closed to Dogs (T/E and Sensitive Habitat)	Violation of Areas Closed to All (T/E and Sensitive Habitat)	Violation of Areas Closed to Dogs (Safety)	Hazardous Condition (aggressive behavior, pet rescues)	Degree of Compliance with special regulation (no dogs, on-leash, ROLA)	Gov't Property Damage	Pet Excrement (grid or observations for noncompliance)
36 CFR 2.1 (a) (1) (ii)	36 CFR 2.2(a)(2)	36 CFR 2.2 (a) (2), 50 CFR Part 17	NEW PART 7 SPECIAL REGULATION	36 CFR 1.5 (f)	36 CFR 1.5 (f), NEW PART 7 SPECIAL REGULATION	36 CFR 2.34 (a)	NEW 36 CFR PART 7 SPECIAL REGULATION	36 CFR 2.31 (a) (3)	36 CFR 2.15 (a) (5)

Triggers and management responses:

1. Primary management response: When noncompliance is observed at an area, NPS would weigh appropriate management options and would respond from a suite of potential actions that include: focused enforcement of regulations, education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, etc.), establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.
 - a. Areas with the highest rates of noncompliance, and/or sensitive resources, will receive first priority for primary management responses.
 - b. Aggressive dogs or unsafe behavior (e.g. resulting in cliff rescues) are treated on an individual, case-by-case basis, and may result in banning a particular dog or dog walker from the park.
 - c. Management responses related to threatened and endangered species will be governed by the Terms and Conditions described in the Biological Opinion pursuant to the Endangered Species Act, and are separate from the compliance based strategy.

2. Secondary management response: When compliance falls below 75% in a site (measured as the percentage of total dogs violating the regulations) over a yearly rolling average (measured by the previous 12 months' data), the area flips to the next more restrictive level of dog management, for example: ROLA to on-leash, or on-leash to no dogs. The secondary management response would not be implemented until after the first 18 months, during which the monitoring plan will be tested and baseline data collection begun. If monitoring shows that a simple majority of violations (more than 51%) are occurring in one particular area within a site, such as a ROLA, only that area would flip, not the entire site. If

noncompliance is widespread across the site – not focused in one area only, the entire site would flip to the next most restrictive level.

FAQ's:

1. How do law enforcement citations or other violations factor into the plan? While violations will likely occur that are not documented by the monitoring team, including those resulting in law enforcement citations, those would not count towards the cumulative total for a particular site, because the number of violations at any site must be measured against the total number of dogs in the area during monitoring. However, all violations reported to the park, including citations, may be used to inform the monitoring team where to focus its efforts.
2. What are some examples of the compliance-based strategy in practice at different periods in time?
 - a. Month 15 of the plan implementation: The monitoring team visits a specific site at random times of the day and week. The team will count the total number of dogs and types of use over a pre-set monitoring period, while also recording the number of violations. This information will be compiled with the preceding months' monitoring data to develop a cumulative total number of dogs and violations. Information gained through monitoring will direct use of park resources to initiate primary management responses as required. In 3 more months the monitoring team will have 12 months of data to evaluate, to determine if a secondary management response is warranted.
 - b. Month 18 of the plan: The monitoring team has continued to visit this specific site at random times of the day and week, following the same monitoring protocols as noted above. If compliance falls below 75% based on the previous 12 months' monitoring data, in spite of the park's primary management actions, the site or area will change to the next most restrictive dog management guideline.
3. Rationale for 75%:
 - a. The dog management plan/EIS and the resulting special regulation, along with existing regulations applicable to dog management, determine appropriate behavior for visitors with dogs within Golden Gate National Recreation Area. NPS does not condone any level of noncompliance, and the primary management response detailed above is sufficient to address noncompliance where it is not widespread. The secondary management response is meant to apply when it is clear both that park management has been unable to reduce noncompliance through conventional means, and when there is continued and widespread noncompliance occurring over a

longer period of time which could result in moderate, or even major adverse impacts. It provides visitors with dogs an additional incentive to comply with the dog regulations, and because it is specific to an individual area, it encourages a communal response to address noncompliance. It also places a burden on NPS to take an initial, proactive approach to dog management by addressing individual violators and by increasing public awareness through community education and outreach, and not punish the majority for individual or isolated violations. At the same time, this secondary response is intended to ensure that NPS does not allow activities that do not correspond with its primary conservation mandate. It recognizes that NPS has multiple competing priorities to address with its funding and does not have unlimited resources with which to ensure compliance with dog regulations. Compliance less than 75% would not be sustainable for park operations, and could only be addressed through increased restrictions.

4. Rationale for 18 month period before a secondary management response could initially be applied:
 - a. Need 3 months after plan implementation to educate the public about the plan, and 3 months to begin implementation of the monitoring plan.
 - b. Need one year to implement the full range of possible management actions addressing noncompliance as outlined in the primary management response, as well as to have 12 months of monitoring data.
 - c. One year rolling average is measured at the end of each month; action could be taken after any month as long as there are 11 consecutive preceding months of data.

Draft Compliance Management Strategy
GGNRA dog management plan/EIS
10.3.10

Background:

The compliance management strategy has been designed to ensure that compliance with the Code of Federal Regulations (CFR) applicable to dog management is high to ensure protection of park resources, visitors and staff. It will provide the framework for monitoring and recording observed noncompliance with the CFRs applicable to dog management, including the new 36 CFR Part 7 special regulation, and will guide use of park resources to address those violations. Noncompliance with federal regulations related to dog management will be met with a range of management responses.

Timeline:

Monitoring will begin with plan implementation, or soon thereafter. A detailed monitoring plan will be developed to guide compliance monitoring, data management, and reporting. All sites in the dog management plan will be subject to monitoring. Beginning with initiation of the dog management plan, months 1-3 will be a public education period, and months 3-6 will involve testing the monitoring strategy. A baseline of numbers and rates of visitors with and without dogs, numbers of dogs per visitor, type of use (on-leash or voice-control), and noncompliance with regulations (includes violations not resulting in citations) will be established during months 6-18. After this baseline has been established, monitoring efforts may be prioritized and limited to specific areas based on noncompliance and use levels. Park management responses will focus on all areas with demonstrated noncompliance with the regulations, as described in the primary management response section below. Monitoring will inform park management and law enforcement when, where, and how to prioritize responses to noncompliance. If the rolling 12 month average for compliance falls below 75%, park management actions as described in the secondary management response will be implemented. The initial 12 month rolling average is based on data collected during months 6-18 after plan initiation.

Monitoring will continue in all areas for at least 4 years, although the park may reduce the frequency of monitoring in low use or high compliance areas to focus on areas with high use or low compliance as needed. Regular monitoring of an area over a 12 month period is required before secondary management responses (see below) can be implemented, however, the frequency of monitoring at any one site may vary over time.

NPS will prepare annual reports documenting monitoring data collected and any consequent management actions. NPS will release a preliminary report providing baseline data after the first 6 months of monitoring (month 12 after plan initiation).

Standard: Compliance with federal regulations applicable to dog management.

Indicators: Noncompliance with federal regulations applicable to dog management (see chart below).

Vegetation Damage	Wildlife Disturbance	Disturbance to T&E Species	Violation of Areas Closed to Dogs (T/E and Sensitive Habitat)	Violation of Areas Closed to All (T/E and Sensitive Habitat)	Violation of Areas Closed to Dogs (Safety)	Hazardous Condition (aggressive behavior, pet rescues)	Degree of Compliance with special regulation (no dogs, on-leash, ROLA)	Gov't Property Damage	Pet Excrement
36 CFR 2.1 (a) (1) (ii)	36 CFR 2.2(a)(2)	36 CFR 2.2 (a) (2), 50 CFR Part 17	NEW PART 7 SPECIAL REGULATION	36 CFR 1.5 (f)	36 CFR 1.5 (f), NEW PART 7 SPECIAL REGULATION	36 CFR 2.34 (a)	NEW 36 CFR PART 7 SPECIAL REGULATION	36 CFR 2.31 (a) (3)	36 CFR 2.15 (a) (5)

Triggers and management responses:

1. Primary management response: When noncompliance is observed at an area, NPS would weigh appropriate management options and would respond from a suite of potential actions that include: focused enforcement of regulations, education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, etc.), establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.
 - a. Areas with the highest rates of noncompliance, and/or sensitive resources, will receive first priority for primary management responses.
 - b. Aggressive dogs or unsafe behavior (e.g. resulting in cliff rescues) are treated on an individual, case-by-case basis, and may result in banning a particular dog or dog walker from the park.
 - c. If Section 7 consultation pursuant to the Endangered Species Act requires preparation of a Biological Opinion, management responses related to threatened and endangered species will be governed by the Terms and Conditions described in the Biological Opinion, and would be separate from the compliance based strategy. Emergency closures for listed species protection could occur outside of the compliance-based strategy.

2. Secondary management response: When compliance falls below 75% in a site (measured as the percentage of total dogs not in compliance with the regulations) over a yearly rolling average (measured by the previous 12 months' data), the area's management changes to the next more restrictive level of dog management, for example: ROLA to on-leash, or on-leash to no dogs. The secondary management response would not be implemented until after the

first 18 months, during which the monitoring plan will be tested and baseline data collection begun. If monitoring shows that a simple majority of violations (more than 51%) are occurring in one particular area within a site, such as a ROLA, only that area would change, not the entire site. If noncompliance is widespread across the site – not focused in one area only, the entire site would change to the next most restrictive level.

FAQ's:

1. How do law enforcement citations or other violations factor into the plan? While violations and/or noncompliance will likely occur that are not documented by the monitoring team, including those resulting in law enforcement citations, those would not count towards the cumulative total for a particular site, because the number of incidents of noncompliance at any site must be measured against the total number of dogs in the area during monitoring. However, all violations reported to the park, including citations, may be used to inform the monitoring team where to focus its efforts.
2. What are some examples of the compliance-based strategy in practice at different periods in time?
 - a. Month 15 of the plan implementation: The monitoring team visits a specific site at random times of the day and week. The team will count the total number of dogs and types of use over a pre-set monitoring period, while also recording the number of violations. This information will be compiled with the preceding months' monitoring data to develop a cumulative total number of dogs and violations. Information gained through monitoring will direct use of park resources to initiate primary management responses as required. In 3 more months the monitoring team will have 12 months of data to evaluate, to determine if a secondary management response is warranted.
 - b. Month 18 of the plan: The monitoring team has continued to visit this specific site at random times of the day and week, following the same monitoring protocols as noted above. If compliance falls below 75% based on the previous 12 months' monitoring data, in spite of the park's primary management actions, the site or area will change to the next most restrictive dog management guideline.
3. After the secondary management strategy has been initiated, if compliance later rises above 75%, can an area be changed back to the next least restrictive management regime? No. The secondary management response is a permanent change.
4. Rationale for 75%:

- a. The dog management plan/EIS and the resulting special regulation, along with existing regulations applicable to dog management, determine appropriate behavior for visitors with dogs within Golden Gate National Recreation Area. NPS does not condone any level of noncompliance, and the primary management response detailed above is sufficient to address noncompliance where it is not widespread. The secondary management response is meant to apply when it is clear both that park management has been unable to reduce noncompliance through conventional means, and when there is continued and widespread noncompliance occurring over a longer period of time which could result in moderate, or even major adverse impacts. It provides visitors with dogs an additional incentive to comply with the dog regulations, and because it is specific to an individual area, it encourages a communal response to address noncompliance. It also places a burden on NPS to take an initial, proactive approach to dog management by addressing individual violators and by increasing public awareness through community education and outreach, and not punish the majority for individual or isolated violations. At the same time, this secondary response is intended to ensure that NPS does not allow activities that do not correspond with its primary conservation mandate. It recognizes that NPS has multiple competing priorities to address with its funding and does not have unlimited resources with which to ensure compliance with dog regulations. Compliance less than 75% would not be acceptable for park operations, and could only be addressed through increased restrictions.
5. Rationale for 18 month period before a secondary management response could initially be applied:
 - a. Need 3 months after plan implementation to educate the public about the plan, and 3 months to test, possibly modify, and implement the monitoring plan.
 - b. Need one year to implement the full range of possible management actions addressing noncompliance as outlined in the primary management response, as well as to have 12 months of monitoring data.
 - c. One year rolling average is measured at the end of each month; action could be taken after any month as long as there are 11 consecutive preceding months of data.

Draft Compliance-Based Management Strategy GGNRA dog management plan/EIS

Background:

The compliance-based management strategy has been designed to encourage compliance with sections of the Code of Federal Regulations (CFR) applicable to dog management, and ensure protection of park resources, visitors and staff. It will provide the framework for monitoring and recording observed noncompliance with the applicable sections of the CFR, including the new 36 CFR Part 7 special regulation, and will guide use of park resources to address those violations. Noncompliance with federal regulations related to dog management will be met with a range of management responses.

Timeline:

Monitoring will begin with plan implementation, or soon thereafter. A detailed monitoring plan will be developed to guide compliance monitoring, data management, and reporting.

All areas and zones (see FAQ 1 below) addressed by the dog management plan will be subject to monitoring. Starting with the implementation of the dog management plan, months 1-3 will be a public education period, and in months 3-6 the monitoring strategy will be tested. During months 6-18, a baseline of numbers and rates of visitors with and without dogs, numbers of dogs per visitor, type of use (on-leash or voice-control) and noncompliance with regulations (includes noncompliance observed but not resulting in citations) will be established. After this baseline has been established, monitoring efforts may be prioritized, with the park reducing the frequency of monitoring in low use or high compliance areas to focus on areas with high use or low compliance as needed. Monitoring will continue in all areas for at least 4 years. However, all areas addressed in the dog management plan will be periodically monitored for changes in baseline to reprioritize monitoring as needed. Park management responses will focus on areas with demonstrated noncompliance with the regulations, as described in the primary management response section below. Monitoring will inform park management and law enforcement when, where, and how to prioritize responses to noncompliance. If the rolling 12 month average for compliance in any of the management zones addressed by the dog management plan falls below 75% (measured as the percentage of total dogs / dog walkers observed during the previous 12 months not in compliance with the regulations), park management actions as described in the secondary management response will be implemented. The initial 12 month rolling average is based on data collected during months 6-18 after the dog management plan initiation. Regular monitoring of an area over a 12 month period is required before secondary management responses (see below) can be implemented.

NPS will prepare annual reports documenting monitoring data collected and any consequent management actions, which will be made available to the public. NPS will also release a preliminary report providing baseline data after the first 6 months of monitoring (month 12 after plan initiation).

Standard: Compliance with federal regulations applicable to dog management.

Indicators: Noncompliance with federal regulations applicable to dog management (see chart below).

Vegetation Damage	Wildlife Disturbance	Disturbance to T&E Species	Violation of Areas Closed to Dogs (T/E and Sensitive Habitat)	Violation of Areas Closed to All (T/E and Sensitive Habitat)	Violation of Areas Closed to Dogs (Safety)	Hazardous Condition (aggressive behavior, pet rescues)	Degree of Compliance with special regulation (no dogs, on-leash, ROLA)	Gov't Property Damage	Pet Excrement
36 CFR 2.1 (a) (1) (ii)	36 CFR 2.2(a)(2)	36 CFR 2.2 (a) (2), 50 CFR Part 17	NEW PART 7 SPECIAL REGULATION	36 CFR 1.5 (f)	36 CFR 1.5 (f), NEW PART 7 SPECIAL REGULATION	36 CFR 2.34 (a)	NEW 36 CFR PART 7 SPECIAL REGULATI ON	36 CFR 2.31 (a) (3)	36 CFR 2.15 (a) (5)

Triggers and management responses:

1. Primary management response: When noncompliance is observed at an area, NPS would weigh appropriate management options and would respond from a suite of potential actions that include: focused enforcement of regulations, education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, etc.), establishment of buffer zones to protect sensitive habitat and species, time/use restrictions, and SUP restrictions.
 - a. Areas with the highest rates of noncompliance, and/or sensitive resources, will receive first priority for primary management responses¹.
 - b. Aggressive dogs or unsafe behavior (e.g. resulting in cliff rescues) are treated on an individual, case-by-case basis, and may result in banning a particular dog from the park, or if applicable, a special use permit (SUP) restriction. However, violations recorded by the monitoring team will count towards the rate of noncompliance.
2. Secondary management response: When compliance falls below 75% over a yearly rolling average (measured as the percentage of total dogs / dog walkers observed during the previous 12 months not in compliance with the regulations), in a management zone (on-leash, voice-control, or no dogs) in any of the specific areas addressed by the plan, the zone's management changes to the next more restrictive level of dog management, for example:

¹ If Section 7 consultation pursuant to the Endangered Species Act requires preparation of a Biological Opinion, management responses related to threatened and endangered species will be governed by the Terms and Conditions described in the Biological Opinion, and would be separate from the compliance based strategy. Emergency closures for listed species protection may also occur outside of the compliance-based strategy.

ROLA to on-leash, or on-leash to no dogs. The secondary management response could not be implemented until after the first 18 months, during which the monitoring plan will be tested and baseline data collection begun. Note that primary management responses may continue to apply.

FAQ's:

1. What is an area versus a zone? An area is a specific geographic site. The dog management plan addresses 21 areas, plus new lands. A zone denotes a type of use allowed in an area (on leash, voice-control, or no dogs). An area may have more than one zone, depending on the alternative.
2. Will the monitoring plan be peer-reviewed before implementation? Yes, the plan will be subject to peer review, as required by DOI policy to ensure integrity of scientific data. Such a review will include monitoring protocols to ensure statistical rigor and accuracy, and training of monitoring staff to ensure uniform measurement and interpretation of data.
3. How do law enforcement citations or other instances of noncompliance, such as a case incident report, factor into the 75% criteria in the secondary management response? While violations will likely occur that are not documented by the monitoring team, including those resulting in law enforcement citations, those would not count towards the cumulative total for a particular zone, because the number of incidents of noncompliance at any zone must be measured against the total number of dogs in the area during monitoring. However, all violations reported to the park, including citations, may be used to inform the monitoring team where to focus its efforts.
4. Does baseline information factor into the 75% criteria in the secondary management response? No. Baseline information is used to prioritize monitoring initially, and reevaluate monitoring if use patterns change. It does not set a standard against which the 75% criteria is measured. The 75% criteria is measured as the percentage of total dogs / dog walkers observed during the previous 12 months not in compliance with the regulations.
5. What are some examples of the compliance-based strategy in practice at different periods in time?
 - a. Month 15 of the plan implementation: The monitoring team visits a specific area at random times of the day and week. The team will count the total number of dogs, dog walkers and types of use (on-leash, voice control) over a pre-set monitoring period, while also recording the number of violations in each zone contained in the area. This information will be compiled with the preceding months' monitoring data to develop a cumulative total number of dogs and violations. Information gained through monitoring will direct use of park resources to initiate primary management responses as required. In 3 more

months the monitoring team will have 12 months of data to evaluate, to determine if a secondary management response is warranted.

- b. Month 18 of the plan: The monitoring team has continued to visit this specific area at random times of the day and week, following the same monitoring protocols as noted above. If compliance falls below 75% based on the previous 12 months' monitoring data in one of the zones, in spite of the park's primary management actions, the zone will change to the next most restrictive dog management regulation.
6. What kind of public notice will be provided before initiation of the secondary management response? The public will receive notice when an area is approaching the 75% compliance benchmark, that is, if compliance decreases the public will be notified before compliance falls below 75%, most likely through a website, notices posted in the specific area, and outreach to affected groups.
7. After the secondary management strategy has been initiated, if compliance later rises above 75%, can a zone within an area be changed back to the next least restrictive management regime? No. The secondary management response is a permanent change given NPS's limited administrative resources. The NPS goal is that compliance rates stay above 75% after the primary management response, but believes that the possibility of a permanent secondary management response will help ensure this.
8. Why is the secondary management response set at a 75% compliance rate? The dog management plan/EIS and the resulting special regulation, along with existing regulations applicable to dog management, determine appropriate behavior for visitors with dogs within Golden Gate National Recreation Area. NPS does not condone any level of noncompliance, and the primary management response detailed above is sufficient to address noncompliance where it is not widespread. The secondary management response is meant to apply when it is clear that park management has been unable to reduce noncompliance through conventional means, and when there is continued and widespread noncompliance occurring over a longer period of time, at which point the benefits in allowing the use is outweighed by the NPS administrative burden required to manage the use, draining limited resources needed for other important park programs. The secondary management response provides visitors with dogs an additional incentive to comply with the dog regulations, and because it is site-specific, it encourages a communal response to address noncompliance. It also places a burden on NPS to take an initial, proactive approach to dog management by addressing individual violators and by increasing public awareness through community education and outreach, and not punish the majority for individual or isolated violations. At the same time, this secondary response is intended to ensure that NPS does not allow activities that do not correspond with its primary conservation mandate. It recognizes that NPS has multiple competing priorities to address with its funding and does not have unlimited resources with which to ensure

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1 USER CAPACITY

2 3 INTRODUCTION

5
6 General management plans for national park units are required by law to identify and
7 address implementation commitments for user capacity, also known as carrying capacity.
8 The National Park Service defines user capacity as the types and levels of visitor use that
9 can be accommodated while sustaining the quality of park resources and visitor
10 experiences consistent with the purposes of the park. Managing user capacity in national
11 parks is inherently complex and depends not only on the number of visitors, but also on
12 where the visitors go, what they do, and the “footprints” they leave behind. In managing
13 for user capacity, the park staff and partners rely on a variety of management tools and
14 strategies, rather than relying solely on regulating the number of people in a park area. In
15 addition, the ever-changing nature of visitor use in parks requires a deliberate and
16 adaptive to approach to user capacity management.

17 The foundations for making user capacity decisions in this general management plan are
18 purpose, significance, special mandates and management zones associated with each of
19 the two parks. The purpose, significance, and special mandates define why the park was
20 established and identify the most important resources and values, including visitor
21 opportunities, that will be protected and provided. The management zones in each
22 alternative describe the desired resource conditions and visitor experiences, including
23 appropriate types of activities and general use levels, for different locations throughout
24 the two parks. The zones, as applied in the alternatives, are consistent with, and help each
25 park achieve, their specific purpose, significance and special mandates. As part of the
26 National Park Service’s commitment to implement user capacity, the park staff will abide
27 by these directives for guiding the types and levels of visitor use that will be
28 accommodated while sustaining the quality of park resources and visitor experiences
29 consistent with the purposes of both parks.

30 In addition to these important directives, this plan also includes indicators and standards
31 for Alcatraz Island in Golden Gate National Recreation Area and for Muir Woods
32 National Monument. Indicators and standards are measureable variables that will be
33 monitored to track changes in resource conditions and visitor experiences. The indicators
34 and standards help the National Park Service ensure that desired conditions are being
35 attained, supporting the fulfillment of both parks’ legislative and policy mandates. The
36 general management plan also identifies the types of management actions that would be
37 taken to achieve desired conditions, and related legislative and policy mandates.

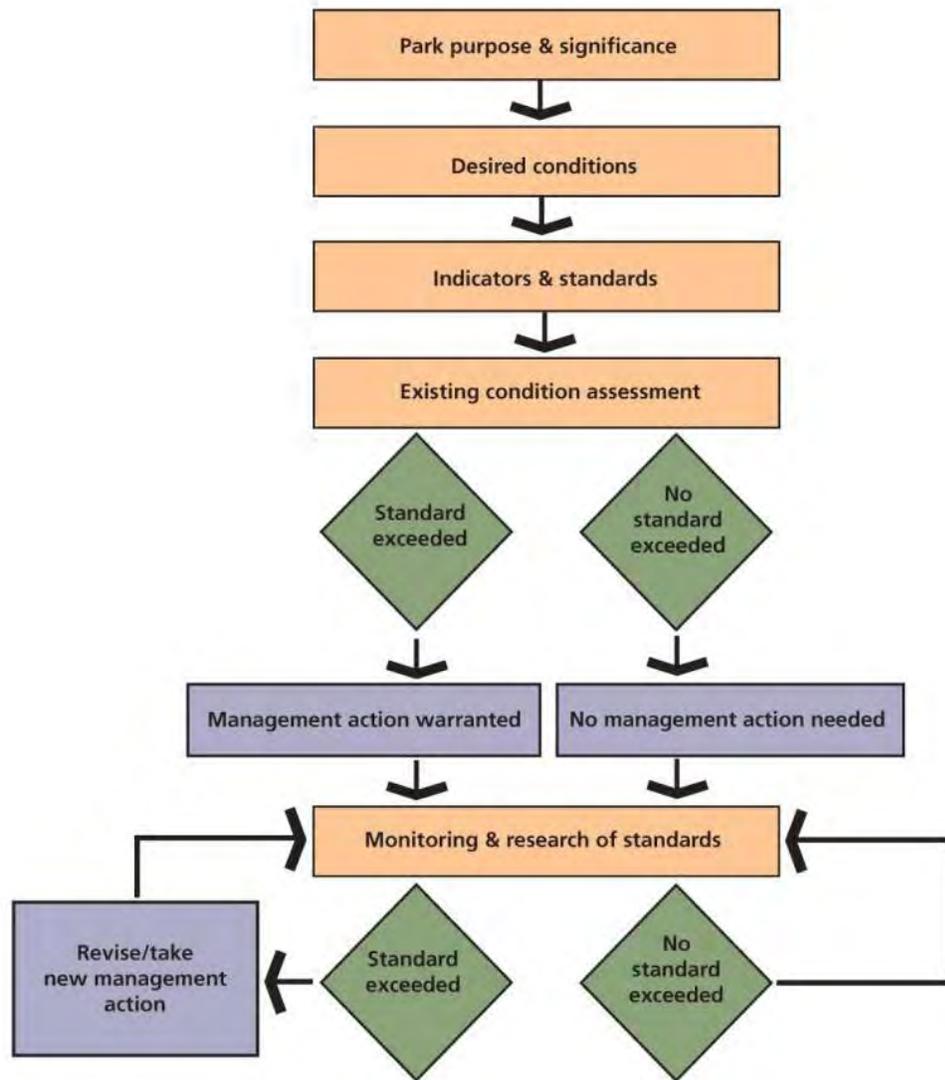
38 Tables 20 and 21 include the indicators, standards, and potential future management
39 strategies, allocated by management zones for Alcatraz Island and Muir Woods National
40 Monument, that would be implemented as a result of this planning effort. The planning
41 team considered many potential issues and related indicators that would identify impacts

1 of concern, but those described below were considered the most salient and feasible,
2 given the importance and vulnerability of the resource or visitor experience affected by
3 visitor use. Standards that represent the minimum acceptable condition for each indicator
4 were then assigned taking into consideration the qualitative descriptions of the desired
5 conditions, data on existing conditions, relevant research studies, staff management
6 experience, and scoping on public preferences.

7 User capacity decision making is a form of adaptive management (see figure 18). It is an
8 iterative process in which management decisions are continuously informed and
9 improved by monitoring the indicators and standards. Adjustments are made as
10 appropriate. As monitoring of the park's conditions continues, managers may decide to
11 modify or add indicators if better ways are found to measure important changes in
12 resource and social conditions. Information on the NPS monitoring efforts, related visitor
13 use management actions, and any changes to the indicators and standards would be
14 available to the public.

15
16

1
2 **Figure 1: User Capacity Framework**
3



4

GOLDEN GATE NATIONAL RECREATION AREA

2

3 Golden Gate National Recreation Area is a popular, heavily visited national park with
4 extensive and diverse visitor opportunities that are in great demand. In addition, the park
5 contains unique resources, some of which are highly vulnerable to visitor use impacts.
6 Further, visitor use opportunities occur over an extensive area with many access points
7 and use areas that make regulating use levels, activities, and patterns complex. Managing
8 user capacity in this unique setting is highly challenging.

9 Given these challenges and limited staff and budgets, user capacity management must be
10 strategic through the efficient use of staff time and funding, targeted focus on areas of
11 most concern within the park, and creative approaches to monitoring and developing
12 management strategies. For all areas of Golden Gate National Recreation Area, the
13 management zones provide the most important implementation commitment for user
14 capacity, because they describe the desired resource conditions and visitor experiences—
15 including appropriate types and levels of use, visitor services, and development—for all
16 sites within the planning area. These management zones are consistent with and help
17 achieve Golden Gate National Recreation Area’s purpose, significance, and special
18 mandates. Further, there are many existing visitor use management strategies already in
19 use that will continue to be implemented to help the park staff achieve these desired
20 conditions. Examples of some of these existing management strategies include the
21 following:

- 22 • providing visitor education materials on low impact practices (e.g., informational
23 signs about off-trail impacts)
- 24 • establishing maximum group size limits (e.g., no more than 10 bicyclists per
25 group)
- 26 • site management (e.g., closure of informal trails and active restoration)
- 27 • closure of sensitive resource areas (e.g., no visitor access to the tide pools at
28 Point Bonita)
- 29 • establishing regulations on visitor activities (e.g., hiking restricted to on-trail
30 travel on the Coastal Trail)
- 31 • requiring permits (e.g., all special events require a special use permit)

32

33 The management strategies for some specific visitor use activities have recently been the
34 focus of separate public planning processes. These activities include the management of
35 beach fires at Ocean Beach, equestrian activities in the Marin Headlands, dog walking
36 throughout Golden Gate National Recreation Area, and transportation within and outside
37 park boundaries. The decisions that have been made or are being considered in these
38 efforts on appropriate visitor use management strategies for these activities are consistent
39 with desired conditions outlined in this plan, and will help the National Park Service
40 achieve these conditions.

41 In addition to the implementation commitments for the desired conditions (identified in
42 the zone descriptions), the park staff have selected user capacity indicators and standards

1 for Alcatraz Island, given the popularity of the site, the specialized visitor experience
2 objectives, and the sensitivity of some natural and cultural resources. In the future, as the
3 need presents itself and other planning opportunities arise, indicators and standards will
4 be identified for other areas within Golden Gate National Recreation Area. Some of the
5 topics for future consideration will likely include traffic congestion, parking in non-
6 designated locations, informal trails, invasive plants, and encounter rates on trails.

7 The park staff considered many potential resource and social indicators that would
8 represent visitor use influences on resource and social conditions at Alcatraz. The
9 indicators selected for inclusion in the general management plan were those that were
10 considered to be the most important, as well as feasible, for long-term evaluation.

11 The priority resource indicators for Alcatraz are associated with the issues of disturbance
12 to birds, vandalism, and disturbance and wear on cultural resources. The condition of
13 these resources are already being monitored in various forms, but the indicators identified
14 below will help the park staff track specific influences to these resources as a result of
15 visitor use.

16 Impacts to bird populations from visitor activities can include unintentional disturbance,
17 harassment, and feeding. These types of impacts can have significant effects on the
18 abundance and diversity of targeted bird species. Alcatraz serves as one of the few
19 estuarine breeding sites for many marine birds (Saenz, et al. 2006). Disturbance to
20 Brandt's Cormorants was selected as the user capacity indicator, since the island is home
21 to San Francisco Bay's only Brandt's Cormorant colony. The populations of Brandt's
22 Cormorants on Alcatraz have been the focus of study by the Point Reyes Bird
23 Observatory since 1995, as part of their annual seabird monitoring program. The bird
24 disturbance trend data collected by the observatory, along with the long-term desired
25 conditions for marine bird habitat on Alcatraz, served as the basis for selection of the
26 standards for this indicator. Some of the existing management activities the National Park
27 Service has already been employing in relation to this issue include visitor education via
28 signs, staff, and docents; barriers in specific areas; and area and seasonal closures.

29 Visitor use impacts to cultural resources include general wear on historic structures and
30 some occurrences of unintentional disturbance and vandalism to archeological resources,
31 historic structures, and the recently restored historical gardens. Cultural resources are
32 nonrenewable, so impacts, especially those that represent depreciative behavior, must be
33 minimized to the extent possible. These impacts can disturb significant features of these
34 resources, which may cause a loss of site integrity over time. Some of the existing
35 management activities the National Park Service has already been employing in relation
36 to this issue include visitor education via signage, interpretive programs and roving
37 patrols, barriers in specific areas, and area closures.

38 The priority social indicators selected for Alcatraz are associated with the issues of
39 crowding and congestion. Given the popularity of Alcatraz as a tourist destination within
40 San Francisco, the issues of crowding and congestion have been the focus of management
41 efforts. In addition, these topics have been addressed in long-term visitor use studies
42 conducted by the Park Studies Laboratory at the University of Vermont in cooperation
43 with the National Park Service (Manning et al. 2007). The visitor activities within the
44 cellhouse have been, and will continue to be, the highest priority area for some of these
45 issues. Crowding and congestion problems may affect visitors' ability to experience high
46 quality educational opportunities and could on occasion, affect visitor health and safety.

1 The importance of the indicators selected, which include people at one time in the
2 cellhouse and the wait times for the ferry, are supported by the visitor survey research
3 (Manning et al. 2007) along with on-going feedback provided to park staff by the visiting
4 public. Many of these concerns are already tracked to some degree through periodic
5 monitoring of visitor use levels in the cellhouse, tracking of wait times for the ferry, the
6 recording of visitor complaints, and law enforcement incident reporting. The indicators
7 below will increase the degree of systematic monitoring and assessment of these issues.
8 Some of the management activities the National Park Service has already been employing
9 in relation to these issues include pre-trip planning information to encourage voluntary
10 redistribution of use, reservation systems, and onsite education and programming to
11 direct the flow of visitor use once on the island.

12 Currently, Alcatraz Island receives about 4,400 visitors per day during the peak season
13 and up to 5,000 visitors per day if evening programs are being offered. This level of use
14 is—and will continue to be—closely regulated through the number of tickets that are
15 offered each day for ferry access to the island. Given the National Park Service’s existing
16 knowledge of resource and social conditions on the island, this amount of use allows the
17 National Park Service and its partners to protect resources and provide high quality
18 visitor experiences, including meeting the standards outlined below. In this plan, all of
19 the alternatives for Alcatraz provide for new visitor opportunities that will allow the
20 National Park Service and its partners to better distribute and manage use on the island.
21 In the future, incremental increases in the levels of visitor use may be considered.
22 However, increases in use levels would be approached very carefully, and in an
23 incremental and experimental way using monitoring data and related research, to ensure
24 that the National Park Service’s implementation commitments to the park’s legislative
25 and policy mandates, desired conditions, and related standards are always being achieved.

26

MUIR WOODS NATIONAL MONUMENT

2 Similar to Golden Gate National Recreation Area, the management zones provide the
3 most important implementation commitment for user capacity for Muir Woods National
4 Monument because they describe the desired resource conditions and visitor
5 experiences—including appropriate types and levels of use, visitor services, and
6 development—for all sites within the monument. These zones are consistent with and
7 help achieve the monument’s purpose, significance, and special mandates. Further, there
8 are many existing visitor use management strategies already in use that will continue to
9 be implemented to help the park staff achieve these desired conditions. Examples of some
10 of these existing management strategies include visitor education on low impact practices
11 (e.g., quiet zones and quiet days); management of visitor access (e.g., dedicated park
12 shuttle access during peak season); closure of sensitive resource areas (e.g., no fishing or
13 swimming in Redwood Creek); regulations on visitor activities (e.g., hiking restricted to
14 on-trail travel on the main trail through the woods); and permit requirements (e.g., all
15 special events require a special use permit).

16 In addition to the implementation commitments for the desired conditions, the park staff
17 have selected user capacity indicators and standards for Muir Woods National
18 Monument. The park staff considered many potential resource and social indicators that
19 would represent visitor use influences on resource and social conditions within Muir the
20 monument. Similar to Alcatraz, the indicators selected for inclusion in the general
21 management plan were those that were considered to be the most important, as well as
22 feasible, for long-term evaluation.

23 The prioritized resource indicator topics for Muir Woods National Monument are
24 associated with the issues of informal trails (i.e., trails created by visitors leaving
25 designated trails), impacts to soundscapes from human-caused noise, evidence of visitor-
26 caused wear or disturbance on the redwood trees, and the amount and distribution of
27 invasive species.

28 The proliferation of informal trails in Muir Woods National Monument is not currently a
29 serious problem because the NPS staff have greatly increased efforts to clearly delineate
30 designated trails and to educate visitors to stay on trails. Although conditions have
31 improved and informal trails are not a significant concern currently, any future expansion
32 of informal trails was still considered a high priority issue given the related impacts of
33 vegetation loss, soil erosion, fragmentation of wildlife habitats, and disturbance to rare
34 flora, fauna and archeological sites (Marion, 2008). The indicator for informal trails is
35 based on a modified version of a trail condition classification system developed by Jeff
36 Marion of the United States Geological Survey (Marion 2008). As mentioned, some of
37 the existing management activities the National Park Service has been employing in
38 relation to this issue include educating visitors to stay on trails and clearly marking
39 designated trails. Further, the National Park Service has placed barriers and actively
40 restored informal trails to minimize their continued use. Roving patrols and other
41 education and enforcement techniques have also been used.

42 Given the high levels of use in the woods, including use by families and groups, noise
43 levels and the frequency of human introduced sound can affect the natural soundscape,
44 disrupting wildlife and impacting visitor experiences. These changes can sometimes

1 influence normal wildlife activities, leading to altered behavior and productivity in
2 individuals, and possible modifications in the abundance and distribution of populations
3 (Knight and Gutzwiller, 1995). Baseline conditions for much of the monument's
4 soundscape were established through comprehensive noise monitoring in 2006 and 2007
5 (citation). These data, along with visitor surveys, were used to identify the best metrics
6 for the soundscape indicators and establish associated standards. There is more discussion
7 below on the studies conducted and how they were used in the planning process. Some of
8 the existing management activities the National Park Service has been employing in
9 relation to this issue have focused on education regarding low impact practices, including
10 introducing "quiet days" and "quiet zones" within the woods to encourage visitors to
11 voluntarily modify their behavior and better protect the natural soundscape.

12 Evidence of human caused wear or disturbance to the redwood trees is another resource
13 impact of concern that primarily results from visitors' curiosity about the trees, including
14 wanting photo opportunities in close proximity to a redwood. Visitors often touch the
15 bark of redwood trees or crowd in front of a tree for a photo, and these activities can
16 cause the outer layer of bark of the trees to wear or be removed altogether. These impacts
17 are most pervasive on trees in close proximity to the main trail system, especially those
18 that are considered "iconic" trees (e.g., the Pinchot Tree). The long-term impact of
19 thinned tree bark is not completely understood; however, it is likely that an excessive
20 amount of this impact could stunt the growth of the tree or result in its mortality.
21 Minimizing the severity of impact on all trees, and isolating the most significant amounts
22 of impact to only a few trees, has been the focus of many existing management strategies
23 in the monument including re-routing trails, educating visitors on low-impact practices,
24 and regulations, fencing, and signage.

25 Although visitor use is not the only or even the primary source of invasive species, these
26 species can be introduced and spread through visitor and vehicle activity within the
27 monument. The NPS Inventory and Monitoring program has been monitoring the number
28 of detections and the extent of cover of invasive species as part of the Vital Signs
29 Program. The goal of the program is to target new or expanding infestations (NPS, 2006).
30 The indicators and standards included in Table 21 are consistent with those being pursued
31 by the NPS Inventory and Monitoring program. If monitoring detects a change in the
32 number or extent of invasive species, then a problem analysis would be needed to isolate
33 the causal factors. If visitor use was determined to be a contributor to the observed
34 change in conditions, then the necessary visitor use management strategies would be
35 implemented. Some of the existing management activities the National Park Service has
36 already been employing in relation to this issue include educating visitors to stay on
37 trails, clearly marking designated trails, and restricting activities that may increase the
38 introduction of invasive species.

39 The prioritized social indicator topics for Muir Woods National Monument are associated
40 with the issues of crowding and use conflicts. The Park Studies Laboratory at the
41 University of Vermont has conducted a program of social science research at the
42 monument from 2003 to the present (Manning et al. n.d.). These studies collected
43 baseline data on visitor use and users (including detailed travel patterns throughout the
44 park), potential indicators of quality of the visitor experience, potential standards of
45 quality for specific types of crowding and use conflicts, and visitor attitudes toward
46 alternative management practices. The research resulted in recommended potential

1 indicators that included the number of visitors within a person's view, noise impacts, and
2 arrival delays, which contributed to visitors' perception of crowding and conflict while
3 visiting the woods (Manning et al. n.d.).

4 Additional visitor studies were targeted to collect data on visitor preference and
5 acceptability of various use densities (people per view) along trails in the woods, which
6 contributed to selection of the standards for this indicator by zone (Manning et al. n.d.).
7 In addition, visitor reactions to visitor-caused noise were studied using a series of audio
8 clips simulating a range of visitor-caused noise in the park, which contributed to the
9 standards selected for this indicator. The indicators of the percentage of time human
10 sounds are audible and sound pressure level were considered the most meaningful and
11 measurable indicators related to visitor-caused noise (Newman and McCusker 2009).
12 Finally, the visitor studies evaluated visitor perceptions on acceptable waiting times to
13 find parking and walking times from the parking area. This information in combination
14 with other national standards for wait times at high-use areas and attraction sites
15 contributed to the selection of a standard for this indicator for both auto and shuttle
16 visitors (Manning et al. n.d.; Orca Consulting 2008). Some of the existing management
17 activities the National Park Service has been employing in relation to these issues include
18 educating visitors regarding low impact practices, providing pre-trip planning
19 information to encourage voluntary redistribution of use to less busy times, and
20 employing the park shuttle system during peak periods to help modify the flow of visitor
21 use to the woods.

22 Currently, Muir Woods National Monument receives about **XXX** visitors per day during
23 the peak season. The level of use to the woods is not as regulated as it is to Alcatraz
24 Island, but it is currently constrained during the peak season through the amount of
25 parking available and the frequency and size of shuttle buses. All of the alternatives for
26 Muir Woods National Monument call for visitation to be better distributed and managed.
27 However, it is uncertain at this time whether the amount of use per day, or at any one
28 time, would need to be further regulated in order to achieve the desired conditions and
29 related standards identified for the monument. In order to better assess those needs, the
30 National Park Service will conduct further analysis of current and potential visitor use
31 patterns as part of the planning for the redesign of the monument's entrance and parking
32 areas, which is proposed in this plan's action alternatives. The implementation plan will
33 closely examine the need for further regulation of the amount and timing of use as part of
34 the alternatives for reduced parking and an increased emphasis on shuttle access.

35 Some of the issues and related indicators noted for both Golden Gate National Recreation
36 Area and Muir Woods National Monument, such as impacts to bird populations, invasive
37 species, and wear on cultural resources, are also highly influenced by regional and global
38 threats such as pollution, disease, and climate change. Isolating visitor use impacts to
39 these resources is not easy and may seem less significant than these other serious threats.
40 However, there are visitor management actions that can help minimize these impacts and
41 reduce the stress on park resources, providing tangible resource and social benefits.

42 The park staff will continue general monitoring of use levels and patterns throughout the
43 two parks. In addition, the park staff will monitor these user capacity indicators. The
44 rigor of monitoring the indicators (e.g., frequency of monitoring cycles, amount of
45 geographic area monitored) may vary considerably depending on how close existing
46 conditions are to the standards. If the existing conditions are far from exceeding the

1 standard, the rigor of monitoring may be less than if the existing conditions are close to
2 or trending towards the standard.

3 In addition, the initial phases of monitoring for the indicators and standards defined
4 above will help the National Park Service determine if any revisions are needed. The
5 initial testing of the indicators and standards will determine if the indicators are
6 accurately measuring the conditions of concern and if the standards truly represent the
7 minimally acceptable condition of the indicator. Park staff may decide to modify the
8 indicators or standards and revise the monitoring program if better ways are found to
9 measure changes caused by visitor use. Most of these types of changes should be made
10 within the first several years of initiating monitoring. After this initial testing period of
11 monitoring indicators and standards, adjustments would be less likely to occur. Finally, if
12 use levels and patterns change appreciably, the park may need to initiate additional
13 monitoring of new indicators to ensure that desired conditions are protected. This
14 iterative learning and refining process is the strength of the NPS user-capacity
15 management program, in that it can be adapted and improved as knowledge grows.

Table 1: Alcatraz Island: User Capacity Indicators, Standards, Monitoring Strategies, and Management Strategies

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
TOPIC: VISITOR CAUSED BIRD DISTURBANCE				
Number of incidents of visitor disturbance to Brandt's Cormorants that result in impacts to individual birds during nesting season	Evolved Cultural Landscape	No more than "X" major/moderate/minor island-based visitor induced disturbances to Brandt's Cormorants during nesting season Under Development - <i>Possibly different standards for the north vs. south end of the Island within this zone.</i>	Continue monitoring per PRBO protocol	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Increase in staff patrols • Increase signage • Increase fencing, barricades, visual barriers, vegetative buffers • Restrict access to ranger/docent led only • Restrict visitor access to targeted areas • Relocate visitor activities • Alter gull management areas
Number of incidents of visitor disturbance to Brandt's Cormorants that result in subcolony abandonment	Evolved Cultural Landscape	No more than "X" island-based visitor-induced disturbances to Brandt's Cormorants that result in subcolony abandonment Under Development - <i>Possibly different standards for the north vs. south end of the Island within this zone.</i>	Continue monitoring per PRBO protocol	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Increase in staff patrols • Increase signage • Increase fencing, barricades, visual barriers, vegetative buffers • Restrict access to ranger/docent led only • Restrict visitor access to targeted areas • Relocate visitor activities • Alter gull management areas •
Number of incidents of visitor disturbance to Brandt's	Sensitive Resource Zone (after marine-	No more than "X" major/moderate/minor water-based visitor induced disturbances to	Continue monitoring per PRBO protocol	<ul style="list-style-type: none"> • Boat patrols in collaboration with other agencies • Targeted outreach to user groups • Increased signage visible from water

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Cormorants that result in impacts to individual birds during nesting season	protected area is designated)	Brandt's Cormorants during nesting season Under Development		<ul style="list-style-type: none"> Collaborate with the Seabird Colony Protection Project for coordinated outreach, education, enforcement
Number of incidents of visitor disturbance to Brandt's Cormorants that result in subcolony abandonment	Sensitive Resource Zone (after marine-protected area is designated)	No more than "X" water-based visitor-induced disturbances to Brandt's Cormorants that result in subcolony abandonment Under Development	Continue monitoring per PRBO protocol	<ul style="list-style-type: none"> Boat patrols in collaboration with other agencies Targeted outreach to user groups Increased signage visible from water Collaborate with the Seabird Colony Protection Project for coordinated outreach, education, enforcement
TOPIC: VANDALISM OF CULTURAL RESOURCES				
Number of incidents of graffiti/vandalism	Historic Immersion Zone (cellhouse tour route, areas open to public)	<p>No more than 1 minor incident* per month</p> <p>No major incidents**</p> <p>* Minor Incident: Small, easily repairable damage (ex: new ink/paint graffiti over paintable surface)</p> <p>** Major Incident: Irreparable damage resulting in major resource loss and significant recovery cost (ex: new graffiti over historic graffiti)</p>	On-going monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	<ul style="list-style-type: none"> Increase in visitor education on low impact practices and park regulations Increase staff presence Increase monitoring Temporarily close area while undergoing conservation treatment Close problem area, except under supervision

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Topic: Visitor Caused Disturbance to Cultural Resources				
Number of trampled/removed plants in restored gardens	All zones with restored gardens	No more than a 20% loss/major disturbance to the plants in areas that are open to the public	On-going monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Increase fences and barriers • Increase staff presence • Regulate or restrict access • Increase monitoring
Disturbance of rock walls, brickwork, exposed cultural resources	All zones	No more than a 5% loss/major disturbance of the feature (rock wall, brickwork, exposed cultural resources)	On-going monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Increase fences or barriers • Increase staff presence • Regulate or restrict access • Increase monitoring
Disturbance/loss of ground cover on known archeological sites	All unpaved areas	No trampling on known archeological sites, as evidenced by footprints and compaction of soil compared to similar and immediately adjacent soils	On-going monitoring as part of regularly scheduled staff and volunteer patrols and collection of visitor comments. More rigorous comparison of existing conditions to the baseline on a periodic basis.	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Create or widen existing paths • Install temporary or permanent signs • Increase fences/barriers
Topic: Visitor Caused Wear on Cultural Resources				
Number of incidents regarding wear, tear, or damage on cultural resources from special events	Historic Immersion Zone (cellhouse, VIP tours, SPUG)	No more than 2 minor incidents per event No major incidents	Continue existing assessment protocols of conditions after each special event.	<ul style="list-style-type: none"> • Revise Standard Operating Procedure for VIPs/SPUG events • Increase in visitor education on low impact practices and park regulations • Increase staffing ratio • Increase physical barriers • Restrict or reduce access

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Topic: Crowding and Congestion				
People at one time (PAOT) on Michigan Avenue	Historic Immersion Zone	No more than 90* people at one time on Michigan Avenue *Standard will be evaluated upon completion of summer 2009 data collection effort	Periodic photo monitoring and/or observations and visitor surveys	<ul style="list-style-type: none"> • Adjust flow of visitors (for example: timed audio tickets, reconfiguration of tour flow, dockside programming schedule, etc.) • Adjust boat ticket distribution (for example: more in the AM or PM) • Reduce the number of visitors to the island • Increase monitoring to determine and readjust to standard
Number of times a vessel departs Alcatraz leaving visitors in line for more than 15 minutes	Evolved Cultural Landscape Zone	No more than 2 times per month or 12 times annually, excluding emergencies	Continue existing monitoring and documentation of wait times and visitor comments regarding ferry access	<ul style="list-style-type: none"> • Increase education on the timing of ferries • Add more boats and/or higher capacity boats • Adjust programming (for example: close facilities early, cancel programs at certain times, etc.) • Limit the number of island visitors (limit tickets sold)

Table 2: Muir Woods National Monument: User Capacity Indicators, Standards, Monitoring Strategies, and Management Strategies

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Topic: Visitor-Created Informal Trails				
<p>Increase in the number of informal trails and change in the condition class of existing informal trails in the redwood forest*</p> <p>*Problem analysis would be needed to isolate visitor-caused impacts</p>	<p>Interpretive Corridor Zone – surrounding Redwood Creek</p> <p>Sensitive Resources Zone – the upper slopes</p> <p>Natural Zone – western end of the Monument at Mount Tamalpais State Park</p>	<p>No increase in the number of informal trails, and no increase in the condition class* of existing informal trails from the previously monitored baseline. No Class III trails.</p> <p>* Trail Condition Classification System: <i>Adapted from descriptive system by Jeff Marion, USGS</i></p> <p>Class I Trail is barely visible. Minimal disturbance of organic litter or vegetation. Very little bare soil is evident along the tread.</p> <p>Class II Trail is obvious. Organic litter is disturbed or diminished in places. Slight loss or damage to vegetation. Bare soil is evident along the center of the tread.</p>	<p>Periodic assessments would be conducted inside the monument boundaries and possibly beyond if they are critical to forest health, e.g. areas in Mount Tamalpais State Park adjacent to Redwood Creek. Assessments would take place at the point where the informal trail begins; where it departs from an existing authorized trail.</p>	<ul style="list-style-type: none"> • Formal review of possible causes (including determining whether the informal trail is visitor use or animal related) and to determine most appropriate management response • Increase in visitor education on low impact practices and park regulations • Place border logs or other barriers along formal trails at the junction with informal trails • Restore informal trails by decompacting soils and moving organic debris onto the visible portion of the informal trails to hide them (for Class II and III trails, natural topography would be restored prior to any addition of organic matter/litter) • Add formal trail trailhead signs explaining the problem and asking visitors to remain on formal trails • Enhance marking of the official trail and/or improve adjacent designated trails

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
		<p>Class III Serious erosion is obvious. Nearly complete loss of organic litter and/or vegetative cover. Bare soil is widespread in a widening tread.</p>		<ul style="list-style-type: none"> • Formalize the informal trails, possibly on new alignment, to accommodate visitor interest • Install temporary or permanent signs • Consider more substantial restoration work (after all foot traffic has been removed from the informal trail) • Increase enforcement or presence of rangers or volunteers • Area closures • Reduce use levels
TOPIC: IMPACTS TO SOUNDSCAPE FROM HUMAN NOISE				
<p>Sound pressure level</p> <p>Percent time human sounds are audible</p>	<p>Interpretive Corridor Zone</p>	<p>Daytime (0700-1900) L50 dBA: 34 (note: L50 is the sound level that is exceeded 50% of the time)</p> <p>% time human sounds audible: 45%</p>	<p>Monitoring would be conducted on a periodic basis using digital recordings and/or on-site listening protocol as appropriate</p>	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Designate more quiet zones and days • Redistribute visitor flow and/or reduce use levels • Increased education for organized groups • Change in the regulations of organized groups (e.g., group size limits)

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Difference between Lnat and existing ambient L50	Natural and Sensitive Resources Zones	Difference between Lnat and existing ambient (L50) is 2 dBA or less during the daytime (0700-1900)	Monitoring would be conducted on a periodic basis using digital recordings and/or on-site listening protocol as appropriate	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Designate more quiet zones and days • Redistribute visitor flow and/or reduce use levels
TOPIC: VISITOR DAMAGE TO THE TREES				
Evidence of visible wear or loss of bark on specific trees.	All zones	Under Development	Under Development	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Increase fencing and barriers • Relocate and/or redesign trails • Temporary or permanent closure of areas • Reduce use levels
TOPIC: INVASIVE PLANT SPECIES				
<p>Number of priority invasive plant species detections*</p> <p>Extent of invasive plant cover*</p> <p>*Problem analysis would be needed to isolate visitor-caused impacts.</p>	All zones	<p>No increase in the number of new priority invasive plant species*</p> <p>No increase in the % cover*</p>	Continue monitoring per the Inventory and Monitoring Program	<ul style="list-style-type: none"> • Increase in visitor education on low impact practices and park regulations • Require the cleaning of gear that is capable of transferring plant material • Temporarily or permanently close areas • Reduce use levels • Removal of invasives and restoration of disturbed areas

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
Topic: Crowding and Congestion				
People within a person's view	Interpretive Corridor Zone	Under Development	Under Development	<ul style="list-style-type: none"> • Encourage voluntary redistribution of use • Change the timing and amount of shuttle access • Redistribute visitor flow and/or reduce use levels
People within a person's view	Natural Zone	Under Development	Under Development	<ul style="list-style-type: none"> • Encourage voluntary redistribution of use • Change the timing and amount of shuttle access • Redistribute visitor flow and/or reduce use levels
People within a person's view	Sensitive Resources Zone	Under Development	Under Development	<ul style="list-style-type: none"> • Encourage voluntary redistribution of use • Change the timing and amount of shuttle access • Redistribute visitor flow and/or reduce use levels

Indicator	Assigned Zone/Area	Standard	Monitoring Strategy	Potential Management Strategies
<p>Approximate arrival experience time (from arrival* to entrance fee purchase)</p> <p>*Arrival for auto visitors begins when vehicles turn off Muir Woods Road and into a parking lot at the Monument</p> <p>*Arrival for shuttle visitors begins when the shuttle bus pulls into the designated bus loading/unloading zone at the monument</p>	<p>Diverse Opportunities Zone</p>	<p>Maximum arrival time 20-30 minutes per individual or group</p>	<p>Regular observations of the arrival experience time would be conducted. This indicator and standard will be further tested and adjusted as part of implementation planning for increased shuttle access and the redesigned entrance to the monument.</p>	<ul style="list-style-type: none"> • Encourage voluntary redistribution of use • Redesign the arrival experience • Institutionalize Intelligent Transportation Systems with Caltrans • Increase efficiencies at fee station • Improve shuttle service

User Capacity Workshop for Everglades National Park GMP
June 10-12, 2009
Meeting Summary

Workshop Purpose:

Develop a long term strategy for managing user capacity in Everglades National Park to be included in the general management plan (GMP). To achieve this purpose, the workshop will seek to accomplish the following:

- Understand the purpose/significance of Everglades National Park and the draft set of desired conditions (management zones) for natural and cultural resources and visitor experiences, and the application of the management zones by GMP alternative.
- Understand the existing state of knowledge related to visitor influences on resource conditions, visitor use levels and patterns, and visitor expectations and preferences.
- Identify the critical elements of desired visitor experiences and resource conditions that may serve as user capacity indicators.
- Prioritize the range of potential user capacity indicators for inclusion in the general management plan.
- Develop standards for each priority user capacity indicator.
- Identify a tool kit of management strategies that could be applied for each priority user capacity indicator.

SUMMARY OF MEETING PROCESS:

See also detailed agenda (attachment #1) and list of workshop participants (attachment #2)

The workshop included a diversity of participants from Everglades National Park and the Denver Service Center. The workshop began on Wednesday, June 10th. To kick-off the meeting, Superintendent Dan Kimball shared his hopes for the user capacity effort: to keep it as simple as possible, to capitalize on existing Inventory and Monitoring and other park-specific monitoring efforts, and to overlap with ecosystem restoration efforts. He stressed the importance of thinking about the realities and efficiencies of accomplishing long-term monitoring to ensure that we focus on the most important “vital signs” related to visitor use.

The group then went through the process of reviewing and considering baseline information on resources, visitor experiences and visitor use trends at the park. This included a presentation and group discussion. The participants also reviewed the guidance being developed as part of the GMP including the park’s purpose and significance, and desired conditions by alternative (these are important directives in the user capacity process). The discussion ended with identification of potential influences/impacts of concern based on baseline information and desired conditions/alternatives being considered in the GMP, as well as existing monitoring efforts. The results of this discussion are included as *attachment #3*.

On Thursday, June 11th, workshop participants worked in small groups (natural and cultural resources and visitor experience) to identify the natural and cultural resource and visitor experience related indicator topics that seem to be important for the park based on the previous day’s discussions. Each small group then identified which of these potential indicator topics are

most relevant to addressing user capacity concerns in the park. The prioritization was based on the following criteria:

- Level of importance for protecting the purpose, significance, fundamental resources and values and associated desired conditions
- Measures an impact to a vulnerable resource or value
- Clarity of connection between human use and impact of concern
- Related to an existing monitoring effort

The list of small group results on potential and priority user capacity indicators are included as **attachment #4**. All workshop participants then reviewed the outcomes of the small group deliberations and further considered which user capacity indicators were a priority for inclusion in the GMP for the park. The participants also considered the feasibility of each indicator and how well the indicator would provide useful management information on the amount, location, timing and/or behavior of visitor use. The list of prioritized indicators for the GMP is below.

On Friday, June 12th, the workshop participants were then split into groups according to the prioritized indicators and worked on developing the specific measure for each prioritized indicator, assignments to zones, recommendations on standards and related management strategies. A summary of the progress made by each indicator group is below. *Those rows marked with a green cell in the left hand column are indicators that the park is already committed to monitoring in some form.*

The next steps for the user capacity process are to: (1) finalize the indicators and assignments by management zone (2) revise/confirm the recommended standards, and (3) finalize the management toolbox for each indicator. The assignments to continue this work are also below (see column: Point of Contact/To-Do).

During the discussions on the user capacity indicators and standards, a number of related and important issues were raised that need to be addressed either in the GMP or through other park decision-making efforts. The notes from these discussions are in **attachment #5**.

WORKSHOP RESULTS:

Prioritized User Capacity Indicator Topics for the GMP:

- Use conflicts between motorized and non-motorized vessels
- Encounters between visitors along the wilderness waterway and trails
- Crowding and use conflicts at Shark Valley
- Crowding at launch facilities
- Ability of visitors to understand and appreciate the significance of the park
- Wildlife disturbance
- Impacts to seagrass from motorized use
- Off-trail travel by airboats
- Disturbance to archeological sites, cultural sites and sensitive resource areas

Summary of Work on Potential Indicator Measures, Assigned Zone, Recommended Standard and Management Strategies:

	Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
Visitor Experience						
1.	<i>Number of written and/or verbal complaints regarding motorized vessels vs. non-motorized vessels on park waters</i>	Use conflicts and crowding between different user groups	Boat Access, Pole/Troll, Backcountry	No more than 2 per month, or 10 per year	<ul style="list-style-type: none"> • Education to encourage use at off-peak times • Education on park regulations and user group etiquette • Increased interactions with park staff and/or law enforcement • Changes in use regulations • Further separation of use types • Limitations on use levels 	<p>BOB</p> <ol style="list-style-type: none"> 1. Review existing data regarding complaints to validate/revise standard. 2. Review and revise management strategies as needed.
2.	<p><i>Number of vessel groups encountered per day (6 hours) on the wilderness waterway more than 10 miles from park marinas and boat ramps</i></p> <p>-OR-</p> <p><i>Number of vessel groups observed per hour from stationary sample points on the wilderness waterway more than 10 miles from park marinas and boat ramps</i></p>	Crowding along the wilderness waterway	Boat Access and Backcountry (as applied to the wilderness waterway)	<p>No more than X number of vessel groups encountered per day, for 90% of the days during peak season</p> <p>-OR-</p> <p>No more than 3 vessel groups observed per hour from stationary sample points, for 90% of the time</p>	<ul style="list-style-type: none"> • Continue permitting system for overnight use to these areas of the park • Greater efforts towards public education to encourage voluntary redistribution of use to off-peak times or to lesser used areas • New access points or routes to better distribute use • Limitations on use levels 	<p>BOB with consultation of LE</p> <ol style="list-style-type: none"> 1. Further evaluate the merit of keeping this indicator in consultation with LE staff. 2. If the indicator is maintained, determine the best measure for monitoring it long-term and what might be an appropriate standard. Review previous study on encounter rates for the wilderness waterway (see Fred). 3. Review and revise recommended management strategies as needed.

	Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
3.	<i>Number of groups encountered per day (6 hours) more than one mile from trailheads along designated backcountry hiking trails</i>	Crowding in the land-based wilderness areas of the park	Backcountry (as applied to land areas)	No more than 4 groups encountered per day (6 hours) along designated backcountry hiking trails, for at least 95% of the days during the peak use season	<ul style="list-style-type: none"> • Greater efforts towards public education to encourage voluntary redistribution of use to off-peak times or to lesser used areas • New trail opportunities to better distribute use • Limitations on use levels 	BOB 1. Review and revise the indicator, standard and management strategies as needed.
4.	<i>Headways between shuttles at Shark Valley</i> <i>Number of people per shuttle at Shark Valley</i> <i>Number of shuttles stopped at one location along the tram loop road at Shark Valley</i>	Use conflicts and crowding	Shark Valley	No less than ½ hour headway between shuttles No more than 60 people per shuttle No more than 2 shuttles stopped at one location along the tram loop road	<ul style="list-style-type: none"> • Continue existing management strategies for the shuttle system in partnership with the commercial services operator • Education to encourage use at off-peak times 	FRED, RICK and MARIA 1. Review commercial services contract to determine what existing guidelines have been included. 2. Consider whether codifying some or all of these shuttle management parameters per the GMP would be beneficial and/or practical. If so, review and revise the indicators, standards and management strategies as needed.
5.	<i>Number of times the Shark Valley tram stops for bicycle groups per trip on the loop road</i>	Use conflicts, crowding, and interruptions to scenic viewing and educational opportunities	Shark Valley	No more than 6 times per tram trip, for 95% of the trips	<ul style="list-style-type: none"> • Education to encourage use at off-peak times • Education on park regulations and trail etiquette • Provide alternate recreational opportunities and direct visitors to 	MARIA 1. Talk with the tram drivers to evaluate the reasonableness of this standard.

	Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
					those locations <ul style="list-style-type: none"> • Spatial or temporal restrictions by use type • Reconfiguration of shuttle system 	2. Review and revise management strategies as needed.
6.	<i>People at one time at Shark Valley</i>	Use conflicts, crowding, visitor safety, and wildlife disturbance	Shark Valley	No more than 350-500 people at one time within the Shark Valley area (includes people on the loop road, waiting for a tram, in the parking/restroom area)	<ul style="list-style-type: none"> • Education to encourage use at off-peak times • Provide real-time information regarding parking and access opportunities • Provide alternate recreational opportunities and direct visitors to those locations • Regulation and enforcement of informal/overflow parking • Change the timing of park operations • Spatial or temporal restrictions by use type • Reconfiguration of shuttle system 	MARIA <ol style="list-style-type: none"> 1. Further consider/evaluate whether a “people at one time” indicator and standard are useful to the long-term management of Shark Valley. 2. If this indicator is to be moved forward in the GMP, need to further evaluate an appropriate standard based on existing tram and park use statistics as well as the size of the current parking infrastructure. 3. Review and revise management strategies as needed.
7.	<i>Wait time to launch or load a boat/airboat/canoe/kayak</i>	Ease of access to park resources, crowding and congestion	Frontcountry	No more than a 15 minute wait to load or unload watercraft during peak use times, for at least 90% of visitors	<ul style="list-style-type: none"> • Greater efforts towards public education to encourage voluntary redistribution of use to off-peak times or to lesser used areas • Real time information about ramp usage • Additional staffing to aid 	BOB with consultation w/Jason <ol style="list-style-type: none"> 1. Further evaluate the merit of keeping this indicator in consultation with LE staff. 2. If the indicator is maintained,

Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
				facilitation of boat launching and loading <ul style="list-style-type: none"> • Redesign/configuration of launch ramp facilities • Further separation by vessel type • Regulation of the number of vessels at the park entrance station 	review and revise the indicator, standard and management strategies as needed.
8.	<i>Percent of park visitors that understand and appreciate the significance of Everglades National Park</i>	Visitor understanding and appreciation	All zones At least 86% of park visitors understand and appreciate the significance of Everglades National Park* * Standard from the park's strategic plan	<ul style="list-style-type: none"> • Additional signage and other on-site information • Additional educational programming • Additional staffing to increase visitor contacts for the purposes of education and interpretation • Additional pre-trip planning information 	FRED 1. Further evaluate the merit of keeping this indicator and standard. 2. If kept, review and revise management strategies as needed.
Resource Related					
9.	<i>Number of times per hour birds are flushed from the roost or nesting colony</i>	Disturbance to key bird species such as wading birds	All zones excluding Developed and Special Protection	No more than 2 times per day <ul style="list-style-type: none"> • Education about low impact practices and park regulations • Add signage • Apply Pole-Troll zone • Close area around roost • Implement slower speed zone near roost • Seasonal closures in targeted areas • Prohibit motors in targeted areas 	SONNY 1. Review and revise the indicator, standard and management strategies as needed.
10.	<i>Density of prop scars (m/m²) in Florida Bay</i>	Intactness/health of seagrass	Boat Access	0.0125m/m ² -0.025m/m ² (this is a reminder that a <ul style="list-style-type: none"> • Education about low impact practices and park regulations (voluntary programs and/or 	DAVE H. 1. Determine the best measure

	Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
				density standard is likely to fall within this range)	mandatory) <ul style="list-style-type: none"> • Increase law enforcement • Apply Pole-Troll zone (bank by bank?) • Active seagrass restoration • Close areas or banks 	for the indicator (e.g., density, total length, total number, percent scarred). If density is chosen, can the density be used as part of a classification system (e.g., high, med, low) to facilitate communication of the indicator and standard. 2. Based on the best measure, recommend a possible standard. 3. Review and revise the list of management strategies. 4. Determine if this indicator and standard can be combined with the indicator and standard from the pole-troll zone or whether they need to be kept separate.
11.	<i>Density of prop scars (m/m²) in Florida Bay</i>	Intactness/health of seagrass	Pole-Troll	0.0125m/m ² -0.025m/m ² (this is a reminder that a density standard is likely to fall within this range)	<ul style="list-style-type: none"> • Education about low impact practices and park regulations (voluntary programs and/or mandatory) • Increase law enforcement • Prohibit motors • Close area (by bank?) • Active seagrass restoration 	DAVE H. 1. See above
12.	<i>New undesignated airboat trails</i>	Non-compliance with park regulations, soil and	Frontcountry and Backcountry	Zero tolerance for new undesignated	<ul style="list-style-type: none"> • Education about low impact practices and park regulations 	RICK and FRED

	Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies	Point of Contact/ To-Do
		vegetation disturbance, and wildlife disturbance		airboat trails* *Assumes park policy is airboats must stay on designated trails	<ul style="list-style-type: none"> • Better marking/delineation of existing trails • Increased enforcement • Signage 	1. Review and revise the indicator, standard and management strategies as needed.
13.	<i>Detectable human-caused disturbance to archeological sites, cultural sites, other closed sensitive areas</i>	Integrity of archeological sites, cultural sites and other sensitive sites	All zones	No tolerance for human-caused disturbances	<ul style="list-style-type: none"> • Education about low impact practices and park regulations • Restrict visitor activity to designated trails • Signage and/or barriers • Increase law enforcement • Additional area closures 	MELISSA MEMORY 1. Review and revise the indicator, standard and management strategies as needed

Note: After further discussions on Friday, June 12th, the following indicators were removed from further consideration for the purposes of the GMP, in order to focus on the highest priority indicators. As discussions on the above indicators continue, there may be additional refinements to the number of indicators that are proposed for the GMP. Those indicators that are not moved forward for the GMP may be useful for consideration in a future planning effort.

- *Number of written and/or verbal complaints regarding motorized vehicles vs. bicycles on main park road*
- *Wait time at the park entrance station*

Attachment #1 Workshop Agenda

Wednesday, June 10: 8:30am to 4:30pm, Krome Center, 1st Floor Training Room

- Welcome, meeting purpose, schedule and introductions
- Presentation on user capacity process in GMPs
- Presentation on current status of the alternatives and zones for the GMP
- Discussion on key visitor use issues and visitor use related proposals in the GMP; includes discussion on current resource and social conditions and existing information
- Identify potential visitor use influences/impacts of concern based on baseline information and proposed desired conditions

Thursday, June 11: 8:30am to 4:30pm, Krome Center, 1st Floor Training Room

- Brainstorm relevant user capacity resource indicators related to desired conditions and known/expected visitor use impacts
- Brainstorm relevant user capacity social indicators related to desired conditions and known/expected visitor use impacts
- Prioritize potential user capacity indicator topics
- Evaluate the feasibility of prioritized indicator topics
- Begin small group discussions on specific measures for the prioritized indicators, assignments to zones, and identification of potential standards and management strategies

Friday, June 12: 8:30am to 12:00pm, Krome Center, 1st Floor Training Room

- Continue small group discussions on specific measures for the prioritized indicators, assignments to zones, and identification of potential standards and management strategies
- Discuss next steps, homework assignments and schedule

**Attachment #2
Meeting Participants**

Everglades National Park

Christiana Admiral, Pine Island Interpreter
 Sonny Bass, Wildlife Biologist
 Bonnie Foist, Chief Ranger
 Dave Hallac, Chief, Biology Branch
 Fred Herling, Senior Park Planner
 Dan Kimball, Superintendent
 Dave King, Florida Bay District Ranger
 Bridget Litten, Florida Bay Outreach Specialist
 Rick Roberts, Northeast District Ranger
 Allen Scott, Chief of Interpretation
 Bob Showler, Flamingo District Interpreter
 Maria Thompson, Shark Valley Interpreter
 Keith Whisenant, Deputy Superintendent

Denver Service Center

Miki Stuebe, Planner/Project Manager
 Kerri Cahill, Planner

Attendance

Name	Wednesday	Thursday	Friday morning
Christiana Admiral	X		
Sonny Bass	X	X	
Bonnie Foist	X		X (report out only)
Fred Herling	X	X	X
Dan Kimball	X (introduction only)		X (report out only)
Dave King	X	X	X
Bridget Litten	X	X	X
Rick Roberts	X	X	X
Bob Showler	X	X	X
Allen Scott		X	
Maria Thompson	X (afternoon only)	X	
Keith Whisenant	X		X (report out only)
Kerri Cahill	X	X	X
Miki Stuebe	X	X	X

Attachment #3
Summary of Visitor Use Issues and Existing Monitoring Efforts

Existing or Potential Visitor Use Issues:

- Conflicts between motorized and non-motorized users
- Crowding at the boat ramps, visitor centers, and at overlooks
- Crowding and conflicts associated with camping activities
- Crowding, use conflicts and safety incidents at Shark Valley
- Inability to find parking in high use areas (Shark Valley, boat ramps)
- Encounter rates on trails and /or along the wilderness waterway
- Incidents of depreciative behavior
- Visitor created noise
- Violation of speed limits
- Prop scarring of seagrass
- Disturbance to wildlife and roadkill
- Overfishing/harvesting
- Violation of idle speed or closed areas
- Visitors going outside of marked channels
- Water quality impacts
- Information trails, impacts to designated trails
- Expansion of campsites, user-created campsites, damage to trees
- Illegal/informal parking
- Shoreline erosion
- Invasive species
- Impact to archeological sites
- Impacts to shell mounds
- Conflicts with ethnographic resources
- Trash, litter
- Human waste (along certain trails and in East Everglades)
- Conflict between communal and non-communal use at hammocks in the East Everglades
- Vulture-people conflict
- Disregarding common etiquette on the water (e.g. on flats)
- Impacts associated with scientific research activities (impacts to natural quiet,
- Port-o-Let overflow at chickees and other remote areas
- Traditional cultural activities such as frogging, hunting, fishing, camping—both historic practices and practices by people from other cultures
- Currently not many opportunities for non-motorized in Florida Bay (access, overnight options)
- Visitor complaints about poorly maintained facilities (e.g., trails and buildings)
- Shark Valley used as cycling training area (high speeds, safety)
- Winter visitors don't have a voice—there is a lot of emphasis on boating; boaters have a voice

Existing Monitoring Efforts:

- Visitor center counts
- Education program counts
- Concessionaire counts
- Water quality monitoring
- Seagrass scarring assessment
- Boat use assessment
- Noise monitoring (infrequent)
- Periodic visitor surveys
- Numbers of birds on the Florida keys
- Creel census (marine sportfish “catch”)
- Bicycle count at entrance station
- Vehicle counts
- Wetland and upland vegetation
- Amount of use at Shark Valley
- Boat groundings in the vicinity of the Florida Keys
- Law enforcement violations and warnings (law enforcement database)
- Visitor complaints (especially as it relates to campground management)
- Requests for special use permits (for group events, etc.)
- Visitor use surveys

Attachment #4
Small Group Results on Potential and Priority User Capacity Indicators

VISITOR EXPERIENCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the visitor experience group

Potential Indicator	Potential Measure/Specific Impact of Concern
Ability to gain access to overnight accommodations	
Conflicts between motorized and non-motorized users/commercial and non-commercial users	
Litter and dumping	
Facility condition	
Ability to gain a wilderness experience	Encounters with other groups
Ability to gain access to attraction points	
Noise impacts	
Crowding along trails	
Ability to gain and understand important messages about the park	Ability to grant requests for interpretive tours How many people are turned away

NATURAL RESOURCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the natural resource group

Potential Indicator	Potential Measure/Specific Impact of Concern
Impacts on benthic (bottom) marine resources	Amount of prop scarring (number, length, density)
	Total number of prop scars (branching off marked channels)
	Widening and depth of marked and unmarked channels and number of new channels
	Creel (fish) survey
	Incidence of vessel groundings
	Mortality of marine life (sea turtles, manatees, dolphins, etc) from visitor use
	Sediment suspension (turbidity) near channels
Wildlife disturbance	Incidence of flushing roosting/nesting birds (key groups: wood storks, snail kites, wading birds) by boats, airboats, (and research aircraft?)
	Decline in wildlife populations
	Road kill
Vegetation and soil disturbance (hammocks, keys, sawgrass)	Social trails: number/length/density/widening of social trails (foot traffic, airboats, bicycles?)
	Number of fire rings

CULTURAL RESOURCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the cultural resource group

Potential Indicator	Potential Measure/Specific Impact of Concern
Archeological site and shell mound impacts	Integrity/obvious damage to arch sites
	Size/extent of mounds and other archeological sites

Attachment #5
Other Ideas or Concerns to Be Addressed

Parking Lot Thoughts/Ideas

- The interpretive staff is currently developing the park's Long Range Interpretive Plan. A key element will be setting priorities.
- Visitors who come during the winter don't have a voice. Only the locals have a voice.
- We need to be careful about how to "fix" Shark Valley. If we add parking, we will only make the problems there more intense.
- There was lots of discussion about restroom and food service availability along the main park road, and whether there is too far a gap between restrooms that limits the ability of visitors to linger and explore opportunities along that road.
- Facility condition at the park is at an all-time low. There was tremendous concern expressed about this during the three day workshop.
- Currently the only way to make a backcountry permit to stay at a backcountry chickee is to go to the ranger station or visitor center; it's not possible to make an advance reservation via the web for a chickee.

Things for the Planning Team to Consider for the GMP:

- Keep some sort of speed zone (e.g., idle speed or slow speed) as part of the GMP? Currently idle speed zones are designated via the superintendent's compendium. (One option would be to use speed zones as an overlay zone for areas that are known to need speed zones)
- Staffing requirements for the various alternatives—how to estimate this (part of GMP cost estimates)?
- Talk with Fred about the possibility of dropping back the level of specificity regarding designated channels.
- Key decision point for the GMP: Whether commercial airboat tours will continue with some level within the park
 - Keith suggested that we get a solicitor's opinion about whether we are legally required to continue to allow commercial airboat use. Fred said the law directly addresses private use, but legal direction about commercial use is much less clear.
- Should additional visitor services (e.g., restrooms) be provided along the main park road as part of the GMP?
- Should additional wildlife viewing opportunities, like the Anhinga trail, be provided, especially in the vicinity of Flamingo?

FEASIBILITY WORKSHEET
User Capacity Indicators

Criteria for Feasibility Evaluation of Indicators	YES	NO
Based on experience, will the indicator provide useful information for management purposes?		
Is it easily and efficiently monitored? If not, is it worth the effort?		
Are we willing to manage it if standards are exceeded?		
Can it be measured reliably with some training?		

Draft Adaptive Management Strategy – GGNRA dog management plan/EIS - 11.24.09

Suzie – can you put this into a table to make more easily readable/editable? May want one table per strategy, with each letter (a)(b), etc. as a column. Background info might come up front. Note that the GMP DFCs are different per strategy.

Introduction:

- Relationship between GMP desired future conditions, 2002 Federal Panel report, dog plan risk criteria, goals and objectives of dog plan, and strategies. (Michael)

1) Strategy 1 – Species (fauna)

a. Background

i. GMP DFCs:

1. Diverse Opportunities Zone

- a. Coastal ecosystems: aquatic and terrestrial wildlife: Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible and wildlife watching opportunities would be available. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks
- b. T & E species and their habitat: T&E species and designated critical habitats would be functional and managed to support species requirements.

2. Natural Zone

- a. Native wildlife communities and ecosystem processes would be preserved and promoted to the greatest extent possible. Exotic invasive animals would be managed with the goal of eradication in the park.
 - b. T&E species and designated critical habitats would be functional and proactively managed to support species requirements, including recovery actions. Natural habitat conditions and processes would be re-established.
- ii. 2002 Federal Panel Report to GGNRA on dogwalking: the panel concluded that off-leash dog walking in GGNRA may be appropriate in selected locations where resource impacts can be adequately mitigated and public safety incidents and public use conflicts can be appropriately managed.
 - iii. Risk criteria, developed from a description of the species/habitat applied to NPS management policies, and other law and policy mandates. Risk criteria essentially state that habitat and species will be kept free of disturbance from dogs.
 - iv. Relevant goals and objectives of dog plan:

1. Minimize conflicts related to dog use by providing a variety of safe, high quality, visitor use experiences, including areas where dogs are allowed.
2. Maximize dog walker compliance with clear, enforceable parameters in order to improve park operations and use of staff resources in managing dog walking.
3. Protect sensitive species and their habitat—including federal and state-listed, unique, or rare species—from the detrimental effects associated with dog use.
4. Ensure a safe and healthy working environment for park staff.
5. Protect native wildlife and their habitat from detrimental effects of dog use, including harassment or disturbance by dogs.
6. Minimize degradation of soil and water resources by dog use.
7. Build community support for the plan to maximize management of dogwalking use.
8. Create and implement an enforceable commercial dog walking policy, where allowed by law (would require a legislative amendment).
9. Provide adaptability and flexibility so that information gathered from monitoring can be used in future decision making based on estimated outcomes, including in new park areas.
10. Preserve opportunities for future natural and cultural resource restoration and enhancement.

b. Assigned zone: on-leash areas and ROLAs

c. What does it evaluate? Citable disturbances to wildlife under 36 CFR 2.2(a) and 2.15(a)(4) & (5)

i. 2.2(a): The following are prohibited:

1. The taking of wildlife, except by authorized hunting and trapping activities conducted in accordance with paragraph (b) of this section.
2. The feeding, touching, teasing, frightening or intentional disturbing of wildlife nesting, breeding or other activities.
3. Possessing unlawfully taken wildlife or portions thereof.

ii. 2.15(a)(4): Allowing a pet to make noise that is unreasonable considering location, time of day or night, impact on park users, and other relevant factors, or that frightens wildlife by barking, howling, or making other noise.

iii. 2.15(a)(5): Failing to comply with pet excrement disposal conditions which may be established by the superintendent.

iv. Could also be a violation of the special regulation.

d. Trigger (indicator): (Note, the trigger must not exceed moderate impacts for species – if it hits moderate, AMS kicks in to bring it back to minor). See examples of Lava Beds and Everglades.

- i. Suzie - cite moderate impact threshold(s) here for wildlife. AMS kicks in to bring it back to minor if hits moderate.
- ii. Reference LE stats here on wildlife harassment – Suzie, can you plug these stats in once you receive from Marybeth?
- iii. Examples of triggers:
 - 1. No more than X number of 36 CFR 2.4(a) or 2.15(a)(4)-(5) citations per Y period of time.
 - a. This should change per area. Some areas are more sensitive than other areas. Could base it on 2 GMP zones.
 - 2. Monitoring strategy that allows for no more than X per Y period of time. See for example Boulder Dog Monitoring protocols. Suzie – can you flesh out a monitoring protocol here? See the Boulder Monitoring strategy for an example – shouldn't be that detailed though. Need costs.
 - 3. Use CFR for just sensitive species?
 - 4. Triggers per area?
- e. Remedy (management strategies): ****Note, remedy must be clear, transparent and enforceable. Impacts analysis addresses noncompliance by assuming that adaptive mgmt. measures will keep impacts below moderate level.*
 - i. Toolbox:
 - 1. Enforcement of regulations (e.g., patrols, notifications, citations)
 - 2. If citation spike in an area, non-LE monitoring strategy could kick in.
 - 3. Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups).
 - 4. Dog-group self-enforcement. Examples: _____.
 - 5. Regulation (increase the level of restriction for dog use in the area) such as time of day or day of week restrictions.
 - 6. Limit to numbers of dogs (how to reach a number, and how to enforce a numerical limit?).
 - a. Board with tags?
 - 7. Closures
 - ii. When/how does remedy become increasingly stringent? Up to park discretion to pick any remedy as appropriate, or is there an increase in stringency over time?
 - 1. Ex: If trigger reached X number of times after enforcement of current regs, move to step 2 (education); if after education trigger is reached X number of times, move to step 3 (dog group self-enforcement), etc.
- f. Personnel/approach to enforce remedy:
 - i. LE if citations only as trigger.
 - ii. If observations/park monitoring
 - 1. Timeline for monitoring:

2. Personnel for monitoring:

2) Strategy 2 – Social conflict

a. Background

i. GMP DFCs:

1. Diverse Opportunities zone: People would have the opportunity to participate in a range of recreational, interpretive, and educational opportunities supported by a variety of visitor services.
 2. Natural zone: Visitors would have the opportunity to be immersed in a natural environment and could seek out areas where they could experience natural sounds, tranquility, closeness to nature, and a sense of remoteness and self-reliance. Visitor use would be controlled to ensure that activities and their intensities are compatible with protecting resource integrity.
- ii. 2002 Federal Panel Report to GGNRA on dogwalking: the panel concluded that off-leash dog walking in GGNRA may be appropriate in selected locations where resource impacts can be adequately mitigated and public safety incidents and public use conflicts can be appropriately managed.
- iii. Risk criteria, developed from a description of the species/habitat applied to NPS management policies, and other law and policy mandates. Risk criteria essentially state that habitat and species will be kept free of disturbance from dogs.
- iv. Relevant goals and objectives of dog plan (see above)

b. Assigned zone: on-leash areas and ROLAs

c. What does it evaluate? Negative physical interactions with dogs.

- i. How to define? Physical contact with aggression?
- ii. Documented physical injury?
- iii. Dog poop? Evaluate using transects?
- iv. Incidents? (this is a broad LE definition for bites, physical negative interactions, etc. that have been called in or for which a citation was issued).
- v. Citations? (not as broad as incidents category)
- vi. Could also be a violation of the special regulation.

d. Trigger (indicator): (Note, the trigger must not exceed moderate impacts for species – if it hits moderate, AMS kicks in to bring it back to minor).

- i. Suzie - cite moderate impact threshold(s) here for visitor experience. AMS kicks in to bring it back to minor if hits moderate.
- ii. Reference LE stats here on social conflict – Suzie, can you plug these stats in once you receive from Marybeth?
- iii. Examples of triggers:

1. No more than X number of X per Y period of time.
 2. Monitoring strategy that allows for no more than X per Y period of time. See for example Boulder Dog Monitoring protocols. **Suzie – can you flesh out a monitoring protocol here? See the Boulder Monitoring strategy for an example – shouldn't be that detailed though.** Need costs.
- e. Remedy (management strategies): ****Note, remedy must be clear, transparent and enforceable. Impacts analysis addresses noncompliance by assuming that adaptive mgmt. measures will keep impacts below moderate level.*
- i. Toolbox:
 1. Enforcement of regulations (e.g., patrols, notifications, citations)
 2. **If citation spike in an area, non-LE monitoring strategy could kick in.**
 3. Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups).
 4. Dog-group self-enforcement. Examples: _____.
 5. Regulation (increase the level of restriction for dog use in the area) such as time of day or day of week restrictions. Could also limit commercial dogwalkers through SUPs as a first restriction.
 6. Limit to numbers of dogs (how to reach a number, and how to enforce a numerical limit?). **This would require a monitoring program to come up with a baseline number.**
 - a. Board with tags?
 7. Closures
 - ii. When/how does remedy become increasingly stringent? Up to park discretion to pick any remedy as appropriate, or is there an increase in stringency over time?
 1. Ex: If trigger reached X number of times after enforcement of current regs, move to step 2 (education); if after education trigger is reached X number of times, move to step 3 (dog group self-enforcement), etc.
- f. Personnel/approach to enforce remedy:
- i. LE if citations only as trigger.
 - ii. If observations/park monitoring
 1. Timeline for monitoring:
 2. Personnel for monitoring:

3) Strategy 3 – Vegetation

a. Background

i. GMP DFCs:

1. Diverse Opportunities zone

- a. Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest

extent possible. Species that can withstand and support intense visitor use may be desired in developed areas or areas that receive high levels of trampling. Exotic invasive plants could be present, but would be suppressed and actively managed in the park. T & E species and their habitat: T&E species and designated critical habitats would be functional and managed to support species requirements.

2. Natural zone

- a. Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible with the goal of conserving native biodiversity. Exotic invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.
 - ii. 2002 Federal Panel Report to GGNRA on dogwalking: the panel concluded that off-leash dog walking in GGNRA may be appropriate in selected locations where resource impacts can be adequately mitigated and public safety incidents and public use conflicts can be appropriately managed.
 - iii. Risk criteria, developed from a description of the species/habitat applied to NPS management policies, and other law and policy mandates. Risk criteria essentially state that habitat and species will be kept free of disturbance from dogs.
 - iv. Relevant goals and objectives of dog plan (see above)
- b. Assigned zone: specific on-leash areas and ROLAs
- c. What does it evaluate? Vegetation monitoring: Coastal shrub habitat vegetation would be monitored in park areas where dogs are allowed (on-leash and off-leash) and compared to control vegetation sites that are known to be rarely visited or closed to visitors. Monitoring of vegetation would focus on destruction or deterioration of plants and habitat, especially inside protected areas. **Could also be a violation of the special regulation.**
- d. Trigger (indicator): (Note, the trigger must not exceed moderate impacts for species – if it hits moderate, AMS kicks in to bring it back to minor).
- i. **Suzie - cite moderate impact threshold(s) here for vegetation.** AMS kicks in to bring it back to minor if hits moderate.
 - ii. Examples of triggers:
 1. **Need to develop – Suzie?**
 - a. Are impacts to vegetation spreading beyond off-leash areas? (would monitor for impacts both inside and outside, but impacts to outside areas would be a primary trigger. This is an example of campsite monitoring – close campsites once impacts exceed campsite prism).

2. Need costs.

- e. Remedy (management strategies): ****Note, remedy must be clear, transparent and enforceable. Impacts analysis addresses noncompliance by assuming that adaptive mgmt. measures will keep impacts below moderate level.*
- i. Toolbox:
 - 1. Enforcement of regulations (e.g., patrols, notifications, citations)
 - 2. Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups).
 - 3. Dog-group self-enforcement. Examples: _____.
 - 4. Regulation (increase the level of restriction for dog use in the area) such as time of day or day of week restrictions.
 - 5. Limit to numbers of dogs (how to reach a number, and how to enforce a numerical limit?).
 - a. Board with tags?
 - 6. Closures
 - ii. When/how does remedy become increasingly stringent? Up to park discretion to pick any remedy as appropriate, or is there an increase in stringency over time?
 - 1. Ex: If trigger reached X number of times after enforcement of current regs, move to step 2 (education); if after education trigger is reached X number of times, move to step 3 (dog group self-enforcement), etc.
- f. Personnel/approach to enforce remedy:
- i. Monitoring
 - 1. Timeline for monitoring:
 - 2. Personnel for monitoring:
 - 3. Equipment for monitoring:

DIVERSE OPPORTUNITIES ZONE

This area would provide a range of natural, historic, or developed settings, and would be able to accommodate a large variety of visitor opportunities. Significant park resources would be preserved while different levels of visitor use would be accommodated. People would have a wide range of educational, interpretive, and outdoor recreation opportunities to enjoy and appreciate the park's resources.

NATURAL RESOURCES

Natural resources provide distinct visitor opportunities and experiences through a range of park settings. The natural elements of these park settings would help define and locate visitor opportunities and would be the backdrop for interpretation, visitor use/activities, and services.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when required to protect human health and safety. To the greatest extent possible, infrastructure would be designed or relocated to avoid geologic resources and hazards, as well as paleontological resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.

Water Resources Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be re-established while incorporating visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes would be avoided or minimized

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible.

Species that can withstand and support intense visitor use may be desired in developed areas or areas that receive high levels of trampling. Exotic invasive plants could be present, but would be suppressed and actively managed in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible and wildlife watching opportunities would be available. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and managed to support species requirements.

CULTURAL RESOURCES

Cultural resources would provide distinct visitor opportunities and experiences through a range of park settings. The cultural elements of these park settings would be the backdrop for interpretation, visitor use and activities, and other visitor services.

Historic Structures Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be managed to preserve their physical attributes and their use when that use contributes to their historical significance. Elements may be adapted to accommodate visitor use or education, or park and partner administration, while preserving those features that convey historical, cultural, or architectural values.

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples' use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

People would have the opportunity to participate in a range of recreational, interpretive, and educational opportunities supported by a variety of visitor services.

Types of Activities The following recreational activities could occur here:

Beach activities such as informal beach sports, walking, swimming, picnicking and surf fishing

Marine activities such as fishing, scuba diving, boating, crabbing, kayaking/canoeing, surfing, sightseeing

Land-related activities such as developed camping, overnight lodging, picnicking, biking, hiking, walking, running, horseback riding, hang gliding, sightseeing, bird and wildlife viewing

Other kinds of activities: exploring historic sites and structures, participating in interpretive programs, participating in stewardship programs, nature study, photography, artistic endeavors

In addition, special and organized events such as family events, community celebrations, and foot races could be allowed when appropriate but measures would be taken to mitigate impacts to resources and other visitors during these events.

Interpretation/ Education/ Orientation Visitors would gain an understanding about the significance of the park's natural (including marine), scenic and historic resources and the potential threats to those resources. Further, visitors would have diverse recreational and educational opportunities in close proximity to the urban area.

A high level of visitor orientation and interpretive services would be available in this zone.

Presentation of interpretive themes would occur through a broad array of visitor interpretive opportunities.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources would be an integral part of the visitor experience of this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. In some areas, the soundscape would be affected by development. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.

Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide adequate illumination for visibility and visitor expectation while minimizing light pollution.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills would be generally unimportant to most visitors in this zone. Visitors of all levels of physical ability would enjoy this zone.

The time commitment needed to experience this zone would vary from a very short period of time to several hours, possibly including overnight stays.

Use Levels/ Density/ Encounters High levels of use in centralized activity nodes would be expected, leading to the likelihood of high rates of encounters among visitors. Groups of many sizes would be accommodated.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development could include a diversity of facilities to support visitor use, mixed with open space and natural settings.

Type/Character of Visitor Access Access opportunities would be a dominant aspect of the zone, with multiple transportation modes that are highly interconnected to allow for user-defined access to and within the zone.

Vehicular and non-vehicular access would be provided to and throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive: visitor centers/contact stations, amphitheaters, interpretive kiosks

Recreational: designated trails, designated activity areas, boardwalks, picnic facilities, boat docks, designated non-motorized boat launch sites, fishing platforms, temporary boat tie-ups, horse stables, designated camping areas

Support: overnight lodging facilities, retail/rental/food outlets, large event gathering areas, restroom facilities, parking areas, transportation facilities (multi-modal hubs, bike paths, roads)

Commercial Services and Nonprofit Programming Commercial services such as equipment rentals, guides, food and beverage, recreation, equestrian, overnight accommodations, educational and retail may be available.

Nonprofit programming in the areas of environment, education, interpretation, community, and the arts may be available.

SCENIC CORRIDOR ZONE

This area would be a scenic trail, road, or marine corridor that provides for sightseeing and related recreational opportunities. Resources could be modified in this zone to highlight and enhance the natural, cultural, and scenic values, as well as to provide for a safe tour route.

NATURAL RESOURCES

Visitor opportunities and park operations would be managed to maintain and restore natural resource integrity.

Natural resources would be managed to provide viewing opportunities that allow visitors to see high quality natural resources and their inherent scenic qualities.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when human health and safety are threatened. To the greatest extent possible, infrastructure would be designed or relocated to avoid geologic resources and hazards, as well as paleontological resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.

Water Resources Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be re-established while incorporating visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes would be avoided or minimized.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible.

Vegetation—focused on sites lacking native habitat value—could be modified in this zone to accommodate and enhance scenic views. Intact native habitat loss

would be mitigated through restoration actions to result in no net loss. Species that can withstand and support high levels of visitor use and trampling may be desired. Exotic invasive plants could be present, but would be suppressed and actively managed in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks in high use areas.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and managed to support species requirements

CULTURAL RESOURCES

The scenic qualities of cultural resources or designated cultural landscapes would be managed to preserve their visual and historic characteristics.

Historic Structures Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be managed to preserve their physical attributes and their use when that use contributes to their historical significance. Elements may be adapted to accommodate visitor use/education or park and partner administration while preserving those features that convey historical, cultural, or architectural values.

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples’ use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the

programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Corridors would incorporate reference to archeological sites in the vicinity, and may be developed around archeological properties as long as those properties remain protected from detrimental treatment. Information derived from them would be used to enhance recreational and educational opportunities on developed natural and cultural corridors.

Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to take a scenic tour through the corridor with multiple opportunities to stop along the route for sightseeing, wildlife viewing, picnicking, or interpretive or educational information.

Types of Activities The following recreational activities could occur here:

Beach activities such as informal beach sports, walking, swimming, picnicking, and surf fishing

Marine activities such as fishing, scuba diving, boating, crabbing, kayaking/canoeing, surfing, sightseeing

Land-related activities such as developed camping, overnight lodging, picnicking, biking, hiking, walking, running, horseback riding, hang gliding, sightseeing, bird and wildlife viewing

Other kinds of activities such as exploring historic sites and structures, participating in interpretive programs, participating in stewardship programs, nature study, photography, artistic endeavors

In addition, special and organized events such as family events and community celebrations may be allowed, but group sizes may be limited. Measures may be taken to mitigate impacts to resources and other visitors during these events.

Interpretation/ Education/ Orientation A high level of visitor orientation and interpretive services would be available in this zone.

Presentation of interpretive themes would occur through a broad array of visitor interpretive opportunities.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources would be an integral part of the visitor experience of this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate. In areas away from roads, there could be frequent and prolonged noise-free intervals.

Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide minimal visibility and light pollution would be minimized. Only essential lights would be installed, and would be operational only when needed. Nocturnal lightscapes would be preserved and restored to the extent possible.

Skills, Risk, Time Required Opportunities for challenge, risk, and testing of outdoor skills would be available within this zone. Visitors of all levels of physical ability would be able to enjoy many of the areas within this zone. The time commitment needed to experience this zone would vary from a very short period to several hours, possibly including overnight stays.

Use Levels/ Density/ Encounters Moderate to high use levels would be expected along scenic corridors, leading to the likelihood of moderate to high rates of encounters between visitors, particularly at activity nodes such as overlooks, day-use areas, and waysides. Groups would be accommodated, but group sizes could be limited based on facility capacities and/or experiential objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development may include road and trail corridors and associated day-use facilities that support and direct visitor use, mixed with open space, cultural landscapes, or natural settings.

Type/Character of Visitor Access Access opportunities would be the defining elements of the visitor experience in this zone and would be interconnected and designed to encourage use of multiple modes during a tour.

Vehicular and non-vehicular access would be provided to and throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive: visitor contact stations, interpretive kiosks, small gathering places for interpretive programs

Recreational: designated trails, designated activity areas, boardwalks, picnic facilities, boat docks, designated non-motorized boat launch sites, fishing platforms, temporary boat tie-ups, horse stables, designated camping areas

Support: overnight lodging facilities, retail/rental/food outlets, restroom facilities, parking areas, transportation facilities (multi-modal hubs, bike paths, roads)

Commercial Services and Nonprofit Programming Commercial services such as equipment rentals, guides, and limited food and beverage may be available. Limited nonprofit programming in the area of environment, education, and interpretation may also be available.

EVOLVED CULTURAL LANDSCAPE ZONE

This area would reflect its significant historic, archeological, agricultural, architectural, and related landscape features while being adaptively reused for contemporary park and partner uses. Contributing exterior or interior historic elements would be preserved and interpreted, while the sites and structures that compose the landscape would be available for adaptive reuse. The historic scene could contribute to visitor interpretation and exploration of the historic values and events yet provide for other types of visitor opportunities. Working landscapes could be an aspect of this zone.

NATURAL RESOURCES

Natural resource integrity would be maintained and restored while the area would provide for visitor opportunities and park operations.

Natural resources are often an integral component of cultural landscapes and would be managed to highlight the cultural resources and their associated values and characteristics. Natural resource objectives would be pursued in collaboration with, and where they complement, cultural resource objectives.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when action is required to protect human health and safety and to protect important cultural resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.

Water Resources Natural hydrologic systems and processes would be left unimpeded, unless some alteration was required to protect cultural resources. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be re-established while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes would be avoided or minimized.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible, while cultural landscape values would be supported. Nonnative species (contributing) could be desired and maintained to provide vegetation communities and patterns that support cultural landscape values and/or to tolerate high levels of visitor use. These areas would be managed to minimize potential impacts to adjacent native vegetation. Non-contributing exotic invasive plants could be present, but would be suppressed and actively managed with the goal of eradication in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife and wildlife habitat would be preserved to the greatest extent possible while the integrity of cultural landscapes would be maintained. Consequently, wildlife habitat may appear more “groomed” in this zone to meet cultural landscape preservation goals. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks in high use areas.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and proactively managed to support species requirements. Listed species and their habitats would be restored where such action is compatible with cultural landscape objectives.

CULTURAL RESOURCES

Cultural resources would be preserved by managing for adaptive reuse. Historic values and characteristics would be preserved for interpretation and enjoyment.

Historic Structures Historic structures would undergo preservation treatments ranging from stabilization to restoration, based on whether they are fundamental park resources, their national register significance, condition, and interpretive value.

Cultural Landscapes Cultural landscapes would be rehabilitated to make possible an efficient contemporary use of the landscape through alterations and additions while preserving those features that convey historical, cultural, or architectural values.

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service

would continue to recognize the past and present existence of peoples in the region and the traces of those peoples' use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to explore designated portions of historic landscapes and structures while participating in contemporary activities.

Types of Activities The following recreational activities could occur here:

Beach activities such as informal beach sports, walking, swimming, picnicking and surf fishing

Marine activities such as fishing, scuba diving, boating, crabbing, kayaking/canoeing, surfing, sightseeing

Land related activities such as overnight lodging, picnicking, biking, hiking, walking, running, horseback riding, sightseeing, bird and wildlife viewing

Other kinds of activities such as exploring historic sites and structures, participating in interpretive programs, participating in stewardship programs, nature study, photography, artistic endeavors

In addition, special and organized events such as family events and community celebrations may be allowed, but group sizes may be limited. Measures may be taken to mitigate impacts to resources and other visitors during these events.

Interpretation/ Education/ Orientation Visitors would gain an understanding and appreciation of the significance of the park's historic and cultural resources and the strategy of adaptive reuse to sustain the preservation of historic structures.

A moderate to high level of visitor orientation and interpretive services would be available in this zone.

Presentation of interpretive themes would occur through a broad array of visitor interpretive opportunities.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources may be available and would enhance the visitor experience in this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. The soundscape would be affected by the developed landscape. During times of low visitation, including nighttime and off-peak times,

the natural soundscape could predominate, with occasional noise-free intervals.

Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution. Nocturnal lightscapes would be preserved and restored to the extent possible.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills would be generally unimportant to most visitors in this zone. Visitors of all levels of physical ability would be able to enjoy most areas of this zone. The time commitment needed to experience this zone would vary from a very short period to a few hours, possibly including overnight stays.

Use Levels/ Density/ Encounters Moderate use levels would be expected around focused activity nodes, leading to the likelihood of moderate encounters between visitors and park/partner staff. Group sizes could be limited based on facility capacities and/or experiential objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development may include a blend of historic and modern structures to support visitor use and services.

Type/Character of Visitor Access Access opportunities would be complementary to the historic setting and consist of multiple transportation modes that are interconnected to provide user-defined access and to connect points of interest to facilitate storytelling related to cultural resources.

Vehicular and non-vehicular access would be provided to and throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive facilities such as visitor contact stations, interpretive kiosks, small gathering places for interpretive programs

Recreational facilities such as designated trails, designated activity areas, picnic

facilities, boat docks, designated non-motorized boat launch sites, temporary boat tie-ups

Support facilities such as overnight lodging facilities, retail/rental/food outlets, restroom facilities, parking areas, transportation facilities (multi-modal hubs, bike paths, roads)

Commercial Services and Nonprofit Programming Commercial services such as equipment rentals, guides, food and beverage, recreation, equestrian, overnight accommodations, educational and retail may be available.

Nonprofit programming in the areas of environment, education, community, and the arts may be available.

HISTORIC IMMERSION ZONE

These areas would include sites, structures, and cultural landscapes that are evocative of their period of significance. Selected exteriors and designated portions of interior spaces would be managed to protect their historic values and attributes. Visitors would have opportunities to explore history first hand by experiencing cultural resources and exploring past stories and events.

NATURAL RESOURCES

Natural resource integrity would be maintained and restored while visitor opportunities and park operations would be provided for.

The natural elements of cultural resources and designated cultural landscapes would be managed to highlight the cultural resources and their associated values and characteristics. Natural resource objectives would be pursued in collaboration with, and where they complement, cultural resource objectives.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when action is required to protect human health and safety and to protect important cultural resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.

Water Resources Natural hydrologic systems and processes would be left unimpeded, unless some alteration was required to protect cultural resources. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be re-established while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from visitor use impacts.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible, while cultural resource values would be supported. Nonnative species could be maintained in order to provide vegetation communities and patterns that contribute to cultural resource values and/or are tolerate to high levels of visitor use. These areas would be managed to minimize potential impacts to adjacent native vegetation. Exotic invasive plants that do not contribute to cultural resource values could be present, but would be suppressed and actively managed with the goal of eradication in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife and wildlife habitat would be preserved to the greatest extent possible while cultural resource values would be maintained. Consequently, wildlife habitat may appear more “groomed” in this zone to meet cultural resource goals. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and managed to support species requirements.

CULTURAL RESOURCES

Cultural sites, structures, and landscapes would be preserved to reflect their period of significance, allowing people to experience these resources first-hand to learn about their associated stories and events.

Historic Structures Historic structures would be rehabilitated or restored to their period of significance, based on whether they are fundamental park resources, their national register significance, condition, and interpretive value.

Cultural Landscapes Cultural landscapes would be rehabilitated to make possible an efficient contemporary use of the landscape through alterations and additions while preserving those features that convey its historical, cultural, or architectural values.

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples' use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to be immersed in a historic setting. Visitors could experience the sights, sounds, and activities that are evocative of the site's period of significance.

Types of Activities The following recreational activities could occur here:

Beach activities such as guided or self-guided interpretive walks, tours or participating in historic interpretive programs

Marine activities such as guided or self-guided boat/kayaking trips or scuba diving tours relevant to historic interpretive programs

Land related activities such as guided and self-guided walks, hikes, tours, experiential learning (may include overnight stays) or historic study

Other kinds of activities such as exploring historic sites and structures, participating in interpretive programs, participating in stewardship programs, photography, artistic endeavors

In addition, special and organized events such as family events and community celebrations may be allowed, but group sizes may be limited. Measures may be taken to mitigate impacts to resources and other visitors during these events.

Interpretation/ Education/ Orientation Through immersion in the cultural setting, visitors would gain an understanding of the significance of the park's historic and cultural resources and the long-standing physical and spiritual connection of people to these lands.

A high level of visitor orientation and interpretive services would be available in this zone.

Presentation of interpretive themes would occur through a broad array of visitor interpretive opportunities.

Scenic Views Outstanding views of iconic cultural resources would be an integral part of the visitor experience of this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. Historically appropriate sounds would also enhance the experience of this zone. The soundscape would be affected by the developed landscape. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate, with occasional noise-free intervals.

Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution. Nocturnal lightscapes would be preserved and restored to the extent possible while achieving historic preservation goals, such as re-creating historic lighting from the period of significance.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills would be generally unimportant to most visitors in this zone. Visitors of all levels of physical ability would be able to enjoy most areas within this zone. The time commitment needed to experience this zone would typically be an hour or more, possibly including overnight stays in support of experiential learning.

Use Levels/ Density/ Encounters Moderate use levels would be expected around focused activity nodes, leading to the likelihood of moderate encounters between visitors and park/partner staff. Group sizes could be limited based on facility capacities and/or experiential objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development would include historic resources and may include nonhistoric visitor facilities if they can be blended into the historic fabric of the site.

Type/Character of Visitor Access Access opportunities would be complementary to the historic setting and would consist of a highly orchestrated system of managed links and nodes that connect points of interest and facilitate storytelling related to cultural resources.

Vehicular and non-vehicular access would be provided to and throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive facilities such as interpretive kiosks, small gathering places for interpretive programs

Recreational facilities such as designated trails, picnic tables, boat docks/designated boat put-ins, temporary boat tie-ups

Support facilities such as restroom facilities, parking areas, transportation facilities (multi-modal hubs, bike paths, roads)

Commercial Services and Nonprofit Programming Commercial services such as guides, limited food and beverage, and limited retail may be available Nonprofit programming in the areas of education and interpretation may be available.

INTERPRETIVE CORRIDOR ZONE

This area would retain its natural characteristics and would be preserved and interpreted through a variety of means. This area would have a moderate to high number of visitors along well-defined and highly managed trails. Visitor use would be managed to preserve important resources and their associated values and could include controlled and managed access.

NATURAL RESOURCES

Natural resource integrity will be maintained and restored while visitor opportunities and park operations would be provided for.

Geologic Resources Natural geologic processes would be left unimpeded except when action is required to protect human health and safety. To the greatest extent possible, infrastructure would be designed or relocated to avoid geologic resources and hazards, as well as paleontological resources. Impacted areas would be restored to the greatest extent possible. Geologic and paleontological features and resources would be protected from visitor use impacts.

Water Resources Natural hydrologic systems and processes would be left unimpeded to the extent feasible, unless some alteration was required to protect cultural resources and/or accommodate important visitor use objectives. Impacted areas would be restored to the greatest extent possible. Hydrologic systems and processes would be re-established while incorporating cultural resource and visitor use objectives. Potential impacts from visitor use, including erosion, surface and groundwater contamination, and alteration of natural processes would be avoided or minimized.

Marine Environment Not Applicable

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible with the goal of conserving native biodiversity. Exotic invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife and wildlife habitat would be protected from visitor use impacts to the greatest extent possible. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native

communities or are associated with human health risks in high use areas.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and managed to support species requirements.

CULTURAL RESOURCES

Cultural resources would be preserved by managing for adaptive reuse. Historic values and characteristics would be preserved for interpretation and enjoyment.

Historic Structures Based on their condition, national register significance, and suitability for recreational, visitor use/educational, or operational/administrative purposes, historic structures would be rehabilitated, stabilized, allowed to deteriorate naturally, or removed if they become unsafe. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be rehabilitated in a manner that allows for natural resource objectives, in order to preserve their significant features based on the level of historical documentation available and their national register significance.

Ethnographic Resources Not applicable

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements.

Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to be immersed in a natural environment and participate in a variety of interpretive and educational opportunities to gain an in-depth understanding of park resources. Opportunities to experience natural sounds and closeness to nature would be important aspects of a visit to this area. Visitor use would be controlled to ensure that activities and their intensities are compatible with protecting resource integrity.

Types of Activities Not applicable

Interpretation/ Education/ Orientation Through the opportunity to experience the natural and cultural resources of the area, visitors would gain an understanding and appreciation of the significance of the park's natural and cultural resources and the potential threats to those resources.

A moderate to high level of interpretive and education services would be available in this zone.

Presentation of interpretive themes would occur through a broad array of visitor interpretive opportunities.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources may be available if unobstructed views occur naturally. If available, views would enhance the visitor experience in this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. The natural soundscape would often be mixed with sounds from human activity and visitor use. During times of low visitation, including nighttime and off-peak times, the natural soundscape could predominate. In areas away from roads there could be frequent and prolonged noise-free intervals.

Dark night skies and natural lightscapes would enhance the visitor experience in this zone. Outdoor lighting would provide minimal visibility and light pollution would be minimized. Only essential lights would be installed, and would be operational only when needed. Nocturnal lightscapes would be preserved and restored to the extent possible.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills would be generally unimportant to most visitors in this zone. Visitors of all levels of physical ability would be able to enjoy many of the areas within this zone. The time commitment needed to experience this zone would vary from a short period of time to several hours.

Use Levels/ Density/ Encounters Moderate to high use levels would be expected along scenic corridors, leading to the likelihood of moderate to high rates of encounters between visitors. Groups would be accommodated, but group sizes could be limited based on facility capacities and/or experiential objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development would be minimal to moderate and would be aimed at facilities that provide access, public safety, and resource protection, and interpretation/ education (e.g., trails, restrooms, boardwalks, fencing, interpretive gathering areas)

Type/Character of Visitor Access Access opportunities would be subordinate to the natural setting and may be highly managed (i.e., restrictions on access) to protect resources and desired visitor experiences, as necessary.

Only NPS administrative and emergency vehicular access would be permitted; non-vehicular access would be the primary mode of transportation throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive facilities such as trailhead kiosks, small gathering places for interpretive/education programs, waysides

Recreational facilities such as designated trails, boardwalks

Support facilities such as trailhead restroom facilities, limited parking areas

Commercial Services and Nonprofit Programming No commercial services would occur in this zone. Nonprofit programming in the areas of education and interpretation may be available.

NATURAL ZONE

These areas would retain their natural, wild characteristics. They would be managed to preserve natural resources and maintain resource integrity while accommodating low to moderate levels of visitor use. Visitors would have opportunities to directly experience and understand the natural resources in these areas. Visitor use would be managed to preserve important resources and their associated values and could include controlled and managed access. External threats to resources would be aggressively addressed.

NATURAL RESOURCES

Natural resource integrity would be maintained by preserving and restoring natural resources and their processes, systems, and values.

Rare and exceptional natural resources, processes, systems, and values would be preserved and enhanced.

Natural functions and processes would be re-established in human-disturbed areas of the park to improve and maintain the resource integrity of the park.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when action is required to protect human health and safety. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved and paleontological resources would be undisturbed.

Water Resources Natural hydrologic systems and processes would be left unimpeded. Impacted areas would be restored to the greatest extent possible. Dynamic, sustainable hydrologic systems and processes that support the diverse native life unique to the region would be re-established.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Protection of marine areas that support the conservation of native species and biodiversity would be maximized.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible with the goal of conserving

native biodiversity. Exotic invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife communities and ecosystem processes would be preserved and promoted to the greatest extent possible. Exotic invasive animals would be managed with the goal of eradication in the park.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and proactively managed to support species requirements, including recovery actions. Natural habitat conditions and processes would be re-established.

CULTURAL RESOURCES

Cultural resource objectives would be pursued in collaboration with, and where they complement, natural resource objectives. These cultural resources would be stabilized and preserved to maintain their integrity. (MAY NEED TO BE MODIFIED)

Historic Structures Based on their condition, national register significance, safety considerations, and suitability as elements of the primitive visitor experience, historic structures would be stabilized, become “discovery sites” that are allowed to deteriorate naturally, or be removed. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be allowed to gradually revert to a more natural state, except where significant landscape resources can be preserved without compromise to natural resource values. (MAY NEED TO BE MODIFIED)

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples’ use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to be immersed in a natural environment and could seek out areas where they could experience natural sounds, tranquility, closeness to nature, and a sense of remoteness and self-reliance. Visitor use would be controlled to ensure that activities and their intensities are compatible with protecting resource integrity.

Types of Activities The following recreational activities could occur here:

Beach activities such as walking, swimming, and surf fishing

Marine activities such as fishing, scuba diving, crabbing, kayaking/canoeing

surfing, sightseeing

Land related activities such as primitive camping, hiking, walking, biking, horseback riding, sightseeing, bird and wildlife viewing

Other kinds of activities such as exploring historic sites and structures, nature study, photography, artistic endeavors, participating in stewardship programs

In addition, a limited number of special and organized events could be permitted, but events would be highly regulated and monitored to mitigate impacts to resources and other visitors during these events.

Interpretation/ Education/ Orientation Through opportunities to experience a wild setting and explore these natural areas, visitors would gain an understanding and appreciation of the significance of the park's natural resources (including marine) and the potential threats to those resources.

A low to moderate level of guided/ unguided interpretive services would be available in this zone.

Presentation of interpretive themes would most often occur outside or at the entry to this zone through printed media and information kiosks; some guided programs would occur within the zone.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources may be available if unobstructed views occur naturally. If available, views would enhance the visitor experience of this zone.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) The natural soundscape would be intact in this zone and would be an important part of the visitor experience. Natural sounds would occasionally be mixed with sounds from human activity and visitor use. Noise disturbance of wildlife would be minimal in this zone.
Dark night skies and natural lightscapes would be integral to the visitor experience in this zone. Nocturnal lightscapes would be preserved and restored. Only essential lights would be installed, and would be operational only when needed. Outdoor lighting would provide minimal visibility and light pollution would be minimized. This zone would provide an opportunity to demonstrate

environmental leadership and to educate the public about light pollution.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills are generally important to most visitors accessing this zone. There would be limited universal access opportunities. Time commitment to experience this area would typically be an hour or more.

Use Levels/ Density/ Encounters Low to moderate use levels would be expected in this zone, with moderate use levels often found at entry points or points of interest. A moderate rate of encounters with other visitors and park staff would be expected, but opportunities for solitude might be found in certain areas if a visitor seeks it. Group sizes could be limited to protect experiential and resource protection objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development would be minimal and would be aimed at facilities that provide access, public safety and resource protection (e.g., trails, restrooms, and fencing).

Type/Character of Visitor Access Access opportunities would be subordinate to the natural setting and may be highly managed (i.e., restrictions on access) to protect resources and desired visitor experiences, as necessary.

Vehicular access may be permitted to major destinations and access points, but non-vehicular access would be the primary mode of transportation throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive facilities such as trailhead kiosks

Recreational facilities such as designated trails, designated primitive campsites, rustic huts for overnight accommodations, designated non-motorized boat launch sites,

Support facilities such as trailhead restroom facilities, limited parking areas and access roads (focused on the periphery of the zone to the extent possible).

Commercial Services and Nonprofit Programming Commercial services such as limited guided activities may be available. Nonprofit programming in the areas of environment and education may be available.

SENSITIVE RESOURCES ZONE

These areas would consist of fundamental natural resources that are very sensitive to a variety of impacts, and would receive the highest level of protection. The natural resources would be managed to preserve their fundamental values while being monitored and possibly studied for scientific investigation. Access to these areas would be highly controlled—these areas could be subject to possible closures and restricted access. External threats to resources would be aggressively addressed.

NATURAL RESOURCES

Rare and exceptional natural resources, processes, systems, and values would be preserved and enhanced.

Natural functions and processes would be re-established in human-disturbed areas of the park to improve and maintain the resource integrity of the park.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded except when action is required to protect human health and safety. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved and paleontological resources would be undisturbed.

Water Resources Natural hydrologic systems and processes would be left unimpeded. Impacted areas would be restored to the greatest extent possible, unless specifically managing for sensitive cultural resources. Dynamic, sustainable hydrologic systems and processes that support the diverse native life unique to the region would be re-established.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Protection of marine areas that support the conservation of native species and biodiversity would be maximized, unless the marine areas are specifically managing for sensitive cultural resources.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible with the goal of conserving

native biodiversity. Exotic invasive plants could be present, but would be contained and actively managed with the goal of eradication in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife communities and ecosystem processes would be preserved and promoted to the greatest extent possible. Exotic invasive animals would be managed with the goal of eradication in the park.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and proactively managed to support species requirements, including recovery actions.

CULTURAL RESOURCES

Cultural resource objectives would be pursued in collaboration with, and where they complement, natural resource objectives. These cultural resources would be stabilized and preserved to maintain their integrity. (MAY NEED TO BE MODIFIED)

Historic Structures Based on their condition, national register significance, safety considerations, and suitability as elements of the primitive visitor experience, historic structures would be stabilized, become “discovery sites” that are allowed to deteriorate naturally, or be removed. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be allowed to gradually revert to a more natural state, except where significant landscape resources can be preserved without compromise to natural resource values. (MAY NEED TO BE MODIFIED)

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples’ use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity to experience and understand the fundamental resources in the zone. In particular, visitors would be able to understand and value the sensitive nature of these resources. Visitor use would be highly controlled and managed to ensure that activities and their intensities are compatible with protecting resource integrity.

Types of Activities The following recreational activities could occur here:

Beach activities such as walking, guided tours

Marine activities such as kayaking/canoeing, sightseeing, guided tours

Land related activities such as hiking, walking, sightseeing, bird and wildlife viewing, guided tours

Other kinds of activities such as guided trips through historic sites and structures and participation in stewardship programs

No special and organized events would be permitted.

Interpretation/ Education/ Orientation Visitors would gain an understanding and appreciation of the significance of the park's sensitive resources (including marine resources) and the potential threats to those resources.

A low to moderate level of guided/ unguided interpretive services would be available in this zone.

Presentation of interpretive themes would most often occur outside or at the entry to this zone through printed media and information kiosks, with some guided programs within the zone.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources may be available if unobstructed views occur naturally.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) The natural soundscape would be intact in this zone and would be an integral part of the visitor experience. Natural sounds would occasionally be mixed with sounds from human activity and visitor use. Noise disturbance of wildlife would be minimal in this zone.

Dark night skies and natural lightscapes would be integral to the visitor experience in this zone. Nocturnal lightscapes would be preserved and restored. No permanent outdoor lighting would be allowed except as needed for emergency response, critical natural resource goals, or emergency communications.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills may be important to visiting this zone. Universal access opportunities would be unlikely. The time commitment needed to experience this zone would typically be a few hours.

Use Levels/ Density/ Encounters Low to moderate use levels would be expected in these areas. At entry points or

points of interest, moderate encounters between visitors would be expected. As visitors travel away from these areas, there would be increased opportunities for a low number of encounters with other visitors and park staff. Group sizes could be limited to promote resource protection objectives.

LEVELS OF DEVELOPMENT & MANAGEMENT

There would be minimal, if any, development except for some visitor facilities such as trails to allow for the concentration and direction of visitor use and the protection of resources.

Type/Character of Visitor Access Access opportunities would be highly managed (i.e., permitted access, area closures) to protect sensitive resources

Vehicular access may be permitted to major access points, but non-vehicular access would be the primary mode of transportation throughout the zone.

Types of Facilities The following types of facilities could be provided:

Interpretive facilities such as trailhead kiosks

Recreational facilities such as designated trails

Support facilities such as trailhead restroom facilities, limited parking areas and access roads (focused on the periphery of the zone to the extent possible)

Commercial Services and Nonprofit Programming No visitor support services or nonprofit programming would be expected in this zone.

PARK OPERATIONS ZONE

These areas would primarily support developed and secured facilities for operations and maintenance functions of the park and its partners. This zone would be managed to provide operation facilities that are safe, secured, and appropriate for uses required for park management. Access to these areas for visitors would be controlled and limited to purposes of orientation, organized meetings, and access to park administration.

NATURAL RESOURCES

Natural resources would be managed to accommodate operational uses/activities and to facilitate sustainable park maintenance operations.

The intrusion of park maintenance and operations activities on the surrounding park setting would be minimized through planning, design, screening, and noise reduction efforts. No park development actions would be taken that would preclude future natural resource protection or restoration.

Geologic Resources Natural geologic processes, including natural physical shoreline processes, would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Unique geologic features would be preserved and paleontological resources would be protected while meeting operational needs. Avoidance and mitigation would be used to minimize impacts to geologic and paleontological resources. Where impacts are unavoidable, paleontological resources would, if necessary, be collected and properly cared for.

Water Resources Natural hydrologic systems and processes would be left unimpeded to the greatest extent possible. Previously impacted areas would be restored to the greatest extent possible. Potential impacts from park operations, including erosion, surface and groundwater contamination, and alteration of natural processes, would be avoided or minimized.

Marine Environment The natural physical processes of marine and coastal areas would be left unimpeded to the extent possible. Impacted areas would be restored to the greatest extent possible. Marine resources would be protected from impacts from park operations.

Coastal Ecosystems: Vegetation Native vegetation (including aquatic vegetation) and vegetation communities would be preserved to the greatest extent possible. Impacts from park operations on these areas and on adjacent vegetation would be minimized. Species that can withstand and support operational uses may be desired. Exotic invasive plants could be present, but would be suppressed and actively managed in the park.

Coastal Ecosystems: Aquatic and Terrestrial Wildlife Native wildlife communities would be protected to the greatest extent possible. Exotic invasive animals would be managed to the extent feasible, with emphasis on species that have inordinate impacts on native communities or are associated with human health risks.

Threatened & Endangered (T&E) Species and their Habitat T&E species and designated critical habitats would be functional and managed to support species requirements

CULTURAL RESOURCES

Cultural resources could be preserved by adaptive reuse for the purposes of park operations and administration.

Historic Structures Most historic structures would be rehabilitated to serve aforementioned functions. Historic structures not suited to rehabilitation for adaptive use would be stabilized or, depending on condition, be removed. See “Part 7: Mitigative Measures” for more information on the treatment of structures listed in or eligible for listing in the national register.

Cultural Landscapes Cultural landscapes would be rehabilitated to make possible an efficient contemporary use of the landscape through alterations and additions while preserving those features that convey its historical, cultural, or architectural values.

Ethnographic Resources Access for traditional activities would be preserved. The National Park Service would continue to recognize the past and present existence of peoples in the region and the traces of those peoples’ use of resources as an important part of the cultural environment to be preserved and interpreted. The Park Service would consult with associated American Indian tribes to develop and accomplish the programs of the park in a way that respects the beliefs, traditions, and other

cultural values of the American Indian tribes who have ancestral ties to the park lands.

Archeological Resources Archeological resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Archeological resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Submerged Cultural Resources Submerged cultural resources would remain in situ and undisturbed, unless removal of artifacts or intervention into cultural material is justified by preservation treatment, protection, research, interpretation, or development requirements. Submerged cultural resources would be preserved in a stable condition to prevent degradation and loss of research values or in situ exhibit potential. Significant archeological and other scientific data threatened with loss from the effects of natural processes, human activities, preservation treatments, park operations, and development activities would be recovered, recorded, or otherwise preserved.

Museum Collections Museum collections (prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens) would be acquired, accessioned, cataloged, preserved, protected, and made available for access and use according to NPS standards and guidelines.

VISITOR EXPERIENCE

Visitors would have the opportunity for limited and controlled access to these areas for purposes of orientation, organized meetings, and access to park administration.

Types of Activities The following recreational activities could occur here:
Activities could include stewardship activities.
No special and organized events would be permitted.

Interpretation/ Education/ Orientation Visitors would gain an understanding of opportunities in the park. A minimal to moderate level of visitor orientation would be available depending on the site. Presentation of interpretive themes would not be emphasized in this zone.

Scenic Views Outstanding views of iconic natural, cultural, and scenic resources may be available if unobstructed views occur naturally.

Natural Sounds (Soundscapes) and Dark Night Skies (Lightscapes) Natural sounds would be audible and would enhance the visitor experience in this zone. Natural sounds would be mixed with sounds from human activity, visitor use, and park operations. During those times when activity associated with park operations is low, the natural soundscape could predominate, with occasional noise-free intervals.

Dark night skies would be preserved to the greatest extent possible while operational needs and uses are accommodated. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution. This zone would provide an opportunity to demonstrate environmental leadership and educate the public about light pollution.

Skills, Risk, Time Required Challenge, risk, and testing of outdoor skills would be unimportant to visitors in this zone. Visitors of all levels of physical ability would have some access to this zone depending on the site. The time commitment needed to experience this zone would vary from a very short period of time to several hours.

Use Levels/ Density/ Encounters Low use levels would be expected since this area is intended for staff and visitors on official business. Encounters with other visitors would be low, but encounters with park staff would be high.

LEVELS OF DEVELOPMENT & MANAGEMENT

Development patterns would include a diversity of facilities to support visitor services and park administration mixed with open space and maintained natural settings.

Type/Character of Visitor Access Access opportunities would be limited and controlled for purposes of orientation, organized meetings, and access to park administration.

Vehicular and non-vehicular access would be provided to administrative facilities. Trails would not likely be found in the zone, but pedestrian sidewalks and crosswalks would be appropriate in this zone.

Types of Facilities The following types of facilities could be provided:

administrative offices, maintenance and storage facilities, parking, pedestrian walkways, waste water and utility management facilities, and other operational needs

Commercial Services and Nonprofit Programming No visitor support services or nonprofit programming would be expected in this zone.

INDICATORS, STANDARDS AND MANAGEMENT STRATEGIES WORKSHEET

Indicator Topic: _____

Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies
<p>EXAMPLE:</p> <p><i>Number of informal trails leaving 1/2 mile of designated trail</i></p>	<p><i>Depending on context:</i></p> <p><i>Vegetation trampling, soil compaction, spread of invasives, habitat fragmentation, contact with sensitive resources</i></p>	<p><i>Diverse Opportunities for Visitors</i></p>	<p><i>No more than 2 informal trails leaving 1/2 mile of designated trail</i></p>	<ul style="list-style-type: none"> • <i>Improve delineation of designated trails</i> • <i>Education on low impact practices</i> • <i>Construct borders along trails (natural or man-made)</i> • <i>Regulate and enforce restrictions on off-trail travel</i>
<p><i>Number of informal trails leaving 1/2 mile of designated trail</i></p>	<p><i>Same as above</i></p>	<p><i>Primitive</i></p>	<p><i>No more than 1 informal trail leaving 1/2 mile of designated trail</i></p>	<ul style="list-style-type: none"> • <i>Improve delineation of designated trails</i> • <i>Education on low impact practices</i> • <i>Regulate and enforce restrictions on off-trail travel</i>

Potential Indicator Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Management Strategies

User Capacity Workshop for the Lava Beds National Monument GMP
January 6-8, 2009
Meeting Summary

Workshop Purpose:

Develop a long term strategy for managing user capacity in Lava Beds National Monument to be included in the general management plan (GMP). To achieve this purpose, participants in the workshop sought to accomplish the following:

- Understand the purpose/significance of LABE and the draft set of desired conditions (management zones) for natural and cultural resources and visitor experiences, and the application of the management zones by GMP alternative.
- Understand the existing state of knowledge related to visitor influences on resource conditions, visitor use levels and patterns, and visitor expectations and preferences.
- Identify the critical elements of desired visitor experiences and resource conditions that may serve as user capacity indicators.
- Prioritize the range of potential user capacity indicators for inclusion in the general management plan.
- Develop standards for each priority user capacity indicator.
- Identify a tool kit of management strategies that could be applied for each priority user capacity indicator.

SUMMARY OF MEETING PROCESS:

See also detailed agenda (attachment #1) and list of workshop participants (attachment #2)

The workshop included a diversity of participants from Lava Beds National Monument, the Pacific West Regional Office and the Denver Service Center. The workshop began on Tuesday, January 6th, with review and consideration of baseline information on resources, visitor experiences and visitor use trends at the monument. This included a presentation, group discussion, and a tour of the monument. The participants also reviewed the guidance being developed as part of the GMP including the park's purpose and significance, and desired conditions by alternative (these are important directives in the user capacity process). The discussion ended with identification of potential influences/impacts of concern based on baseline information and desired conditions/alternatives being considered in the GMP, as well as existing monitoring efforts. The results of this discussion are included as **attachment #3**.

On Wednesday, January 7th, workshop participants worked in small groups (natural and cultural resources and visitor experience) to identify the natural and cultural resource and visitor experience related indicator topics (e.g., visible condition of cave features, damage to rock art) that seem to be important for the monument based on the previous day's discussions. Each small group then identified which of these potential indicator topics are most relevant to addressing user capacity concerns in the monument. The prioritization was based on the following criteria:

- Level of importance for protecting the purpose, significance, fundamental resources and values and associated desired conditions

- Measures an impact to a vulnerable resource or value
- Clarity of connection between human use and impact of concern
- Related to an existing monitoring effort

The list of small group results on potential and priority user capacity indicators are included as ***attachment #4***. On Thursday, January 8th, all workshop participants reviewed the outcomes of the small group deliberations and further considered which user capacity indicators were a priority for inclusion in the GMP for the monument. The participants also considered the feasibility of each indicator and how well the indicator would provide useful management information on the amount, location, timing and/or behavior of visitor use. The list of prioritized indicators for the GMP is below.

The workshop participants were then split into groups according to the prioritized indicators and worked on developing the specific measure for each prioritized indicator, assignments to zones, recommendations on standards and related management strategies. A summary of the progress made by each indicator group is below.

The next steps for the user capacity process are to: (1) finalize the indicators and assignments by management zone (2) confirm the recommended standards, and (3) finalize the management toolbox for each indicator. The assignments to continue this work are also below.

WORKSHOP RESULTS:

Prioritized User Capacity Indicator Topics for the GMP:

- Incidences of disturbance or vandalism to cultural resources and geologic resources
- Change in sensitive wildlife species
- Area of damage to rock art
- Increase in use in the monument's backcountry
- Visible condition of cave features and floors
- Responsiveness to education and interpretive requests
- Incidences of complaints regarding use conflicts

Assignments for Finalizing User Capacity Work:

Task to Be Completed:	Assigned Lead:
Topic: Incidences of disturbance/vandalism to geologic and cultural resources	
Evaluate data for 2007 and other years regarding violations and warnings for cultural and geologic resources	Terry
Further review the proposed management strategies	Terry
Topic: Change in sensitive wildlife species	
Review existing warnings and violations data to confirm that the standard is appropriate	Shane/Terry
Further review the proposed management strategies	Shane
Topic: Visible conditions of cave features and floors	
Follow up with Dale Pate regarding appropriate indicator and standards for all cave classes	Shane/Jason
Further review and develop proposed management strategies	Shane/Jason
Topic: Area of damage to rock art	
Check with Kirstie on recommended indicators, standard and management strategies, including checking on whether the depth of petroglyphs should be evaluated	Cortney
Topic: Increase in use in the backcountry	
Review wilderness management plan to identify any additional strategies, etc.	Dave L.
Topic: Responsiveness to education and interpretive requests	
Need to find factual data to demonstrate what constitutes an inadequate level of service and write up the supporting rationale. Explore separating demand between particular site-specific programs (e.g. Fern Cave, campground). Examine how GMP proposals such as off-site interpretation should be included.	Kale/Terry
Topic: Incidences of complaints regarding use conflicts	
Examine whether standard of use conflicts should be reduced. Examine the value of keeping both the weekly and annual standards. Examine whether the scope should be narrowed to specific contexts, i.e. caves and/or campground.	Terry

Summary of Work on Potential Indicator Measures, Assigned Zone, Recommended Standard and Management Strategies:

Potential Indicator Measures	Assigned Zone	Recommended Standard	Potential Management Strategies
Topic: Incidences of disturbance or vandalism to cultural resources and geologic resources			
Number of incidents resulting in a criminal violation and warnings connected to cultural resources	Parkwide	No incidents resulting in criminal violations, and no more than four warnings, connected to cultural resources per year	<ul style="list-style-type: none"> • Close areas to off-trail travel • Increase enforcement patrols and activities • Increase education on low impact practices and the sensitivity of resources, could include increase in personal contacts • Increase in inventory and monitoring efforts • Increase in restoration and/or rehabilitation efforts • Change site management techniques (e.g., fences, borders, barriers, sensors and monitoring devices) • Area or time closures
Number of incidents resulting in a criminal violation and warnings connected to geologic resources	Parkwide	No incidents resulting in criminal violations, and no more than four warnings, connected to geologic resources per year	<ul style="list-style-type: none"> • Close areas to off-trail travel • Increase enforcement patrols and activities • Increase education on low impact practices and the sensitivity of resources, could include increase in personal contacts • Increase in inventory and monitoring efforts • Increase in restoration and/or rehabilitation efforts • Change site management techniques (e.g., fences, borders, barriers, sensors and monitoring devices) • Area or time closures
Topic: Change in sensitive wildlife species			
# of individuals for the resident hibernaculum population of the Townsend Big Eared Bat*	Parkwide	At least 400 individuals of Townsend Big Eared Bats hibernating in the	<ul style="list-style-type: none"> • Seasonal cave closures • Increased education regarding low impact practices, park regulations and the sensitivity of resources • Increased law enforcement

Potential Indicator Measures	Assigned Zone	Recommended Standard	Potential Management Strategies
* Problem analysis would be needed to isolate visitor-caused impacts.		winter	<ul style="list-style-type: none"> • Site management techniques (e.g., sensors, barricades, fencing, signage, gating)
Number of incidents resulting in a criminal violation and warnings connected to bat colonies per year	Parkwide	No incidents resulting in criminal violations, and no more than four warnings, connected to bat colonies per year	<ul style="list-style-type: none"> • Seasonal cave closures • Increased education regarding low impact practices, park regulations and the sensitivity of resources • Increased law enforcement • Site management techniques (e.g., sensors, barricades, fencing, signage, gating)
Topic: Area of damage to rock art			
Percent area of rock art (petroglyphs, pictographs, historic graffiti) lost resulting from human actions (not environmental factors) from the existing baselines	Parkwide	No more than a 5% area lost from the existing baselines resulting from human actions	<ul style="list-style-type: none"> • Increased education regarding low impact practices, park regulations and the sensitivity of resources • Site management (e.g., alternative fencing, gating, sensors) • Increased formal monitoring of rock art condition and visitor use patterns • Increased law enforcement • Guided only access • Area closures
Topic: Increase in use in the backcountry			
Annual increase in backcountry use (measured from a minimum of ¼ mile from trailheads)	Backcountry	An annual increase of 50% over the baseline	<ul style="list-style-type: none"> • Increase in monitoring and study of visitor use patterns and resulting conditions • Increase in education regarding low impact practices, park regulations and the sensitivity of resources • Increase in information regarding trail options • Increase in monitoring and allocation of volunteer and staff use

Potential Indicator Measures	Assigned Zone	Recommended Standard	Potential Management Strategies
			<ul style="list-style-type: none"> • Increase in roving patrols
Topic: Visible condition of cave features and floors			
Percent of plots within a cave with a percent area of cave features affected by human use impacts	Parkwide	Class 1: Class 2: Class 3: Class 4: Managed according to individual cave management plan	<ul style="list-style-type: none"> • Others...
Percent of plots within a cave with a percent area of cave floors affected by foreign materials		Class 1: Over 50% of plots in a cave with no more than 15% area affected Class 2: Class 3: Class 4: Managed according to individual cave management plan	<ul style="list-style-type: none"> • Increased clean-up efforts • Increase in education regarding low impact practices, park regulations and the sensitivity of resources • Evaluate and modify retail offerings • Others....
Topic: Responsiveness to education and interpretive requests			
Annual ratio of formal interpretive programs offered to visitor center visits	Developed, Frontcountry	1 program to 175 visitor center door counts	<ul style="list-style-type: none"> • Directing visitors to other opportunities/seasons • Improve staffing availability • Formal collection and analysis of program requests • Analysis of monthly stats from previous year to improve program scheduling
Annual percentage of requests fulfilled for educational programs and loans of educational materials related to park interpretive themes	Developed, Frontcountry, Off-site	>80%	<ul style="list-style-type: none"> • Formal analysis of educational program requests • Increase staffing or volunteer capacity • Teacher training to provide park programs • Provide more materials for teacher-directed programming • Analysis of monthly statistics from previous year to

Potential Indicator Measures	Assigned Zone	Recommended Standard	Potential Management Strategies
			improve program scheduling
Topic: Incidences of complaints regarding use conflicts			
Number of visitor use conflicts recorded in the case incident system	Parkwide	No more than 10 use conflicts of any one type per week and more than a 100% increase annually of any one type	<ul style="list-style-type: none"> • Increased education regarding low impact practices and park regulations • Formal analysis and management of groups or activities (including restrictions on group size or number, conflict studies, site-specific capacity studies – including specific caves) • Contact local user groups • Avoid conflicts by planning times and locations of ranger-led programs

Attachment #1 Workshop Agenda

Agenda (9:00am – 4:30pm each day):

Tuesday, January 6

- Welcome, meeting purpose, schedule and introductions
- Site tour and discussion of key visitor use sites and issues
- Presentation on user capacity process in GMPs
- Discussion on existing visitor use conditions and information
- Discussion on visitor use related proposals in the GMP
- Discussion on existing monitoring efforts
- Identify potential visitor use influences/impacts of concern based on baseline information and proposed desired conditions

Wednesday, January 7

- Brainstorm relevant user capacity resource indicators related to desired conditions and known/expected visitor use impacts
- Brainstorm relevant user capacity social indicators related to desired conditions and known/expected visitor use impacts
- Prioritize potential user capacity indicator topics
- Evaluate the feasibility of prioritized indicator topics
- Begin small group discussions on specific measures for the prioritized indicators, assignments to zones, and identification of potential standards and management strategies

Thursday, January 8

- Continue small group discussions on specific measures for the prioritized indicators, assignments to zones, and identification of potential standards and management strategies

**Attachment #2
Meeting Participants**

Lava Beds National Monument

Dave Kruse, Superintendent
Dave Larson, Chief of Resources
Terry Harris, Chief Park Ranger
Kale Bowling, Lead Interpreter
Angela Sutton, Interpretive Ranger/Education Coordinator
Shane Fryer, Physical Scientist
Jason Mateljak, Geographer

Pacific West Regional Office

Brad Phillips, Planner
Cortney Cain, Historical Landscape Architect
Barbara Butler, Planner (by phone)
Martha Crusius, Planner (by phone)

Denver Service Center

Kerri Cahill, Planner
Sarah Bodo, Planner (by phone)

Attachment #3
Summary of Visitor Use Issues and Existing Monitoring Efforts

Existing or Potential Visitor Use Issues:

- Graffiti, vandalism, damage to cave features
- Removal of cave features
- Human waste in caves, especially along cave loop
- Trampling of macroinvertebrates
- Disturbance to nesting animals
- Disturbance to bat colonies
- Change in temperature within caves given number of people in a group
- Accumulation of lint, hair, food and other litter within caves – yearly clean-up efforts, particular concern regarding the cumulative impacts
- Visitors going to unauthorized areas of the caves
- Visitors going to sensitive, vulnerable areas in caves, leaving established trails (especially in cave loop)
- Lack of visitor understanding of sensitivity of cave resources
- Litter, vandalism and wear on volcanic features
- Social trails (vegetation trampling, soil compaction, accessing sensitive areas) – much of it is long-term historical use
- Previous long term overuse of the campground
- Noise impacts
- Technology leading to decentralization of sensitive resource information
- Boundary incursions of ORVs
- Evidence of climbing in caves
- Off-leash dogs
- Vegetation trampling at campground
- Increased use in backcountry caves

- Possible cultural issues with increased use at Petroglyph Point
- Impacts to the religious significance of Fern Cave
- Graffiti and vandalism to rock art
- Chemical deterioration of rock art from human contact
- Looting, vandalism, disturbance of archeological and cultural landscape sites/features (need to particularly consider change in vegetation cover at Captain Jack’s Stronghold given recent fire)
- Public understanding and value of the sensitive nature of rock art and features
- Surface collection of archeological features

- Off-leash dogs at campground
- More activities, trail miles, opportunities, etc. could lead to more safety incidences
- Potential for use conflicts – inappropriate behavior (e.g., noise, smoking, littering), different types of uses – can lead to visitor complaints
- Crowding that detracts from the cave setting

- People per viewscape or encounters on trails that detracts from the cultural landscape and/or interpretive experience
- Use conflicts associated with organized groups – need to ensure groups don't overlap in caves and VC, may need to consider an ultimate capacity for school groups/educational programming
- Crowding at the visitor center, especially with school groups
- Inability to effectively convey safety and LNT messages to all visitors

Existing Monitoring Efforts:

- Remote surveillance
- Photo monitoring in caves
- Landscape photo monitoring
- Breakage studies
- Vital Signs monitoring protocol being developed (important to convey outcome of user capacity indicators and standards discussion to I&M network staff for review and consideration)
- Annual clean-ups
- Intensive bat monitoring (caves, Petroglyph Point)
- Impact inventories of the caves – litter, loads, impact maps
- Trail registers
- Cave counters
- Bald Eagle monitoring
- Garbage collection, recycling, utility use, etc.
- Visitor comment forms
- Visitor complaints
- Law enforcement incident reporting
- Visitor center counts
- Interpretive programming and education statistics
- Counts of personal contacts
- Vehicle counts
- Camping use counts
- Sensors/alarms on cultural sites
- LCS – every 4-6 years
- Volunteer inventories
- Note: Planning to initiate a trail counters program throughout the monument

Attachment #4
Small Group Results on Potential and Priority User Capacity Indicators

VISITOR EXPERIENCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the visitor experience group

Potential Indicator	Potential Measure/Specific Impact of Concern
Conflicts between types of users	Complaints
Knowledge of key cave safety and resource protection messages	
Responsiveness to education requests (demand exceeds supply)	Staffing levels & materials
Responsiveness to requests for additional interpretive tours	By season and time of day
Contact levels with park staff on north end of the park	
Incidences of visitor assists (response to)	
General degradation/damage/litter to park resources and development (including rock art and caves)	
Incidences of wildlife violations	
People at one time in specific areas	Number of people at Captain Jack's Stronghold, Visitor Center, caves (esp. Mushpot?), developed areas/facilities. Noise, crowding, and ability to receive desired/necessary info/interp.
Rude/uninformed behavior	Noise in campground, noise in caves, other behaviors in caves
SAR and EMS incidents	
Amount of rock art damaged	Visitor complaints regarding rock art damage, photo monitoring of rock art damage
Damage to cave features and surface geologic features	Visitor complaints, observation
Speeding on park roadways	
Incidences of domestic animal violations	
Responsiveness to collect oral histories	
Responsiveness to requests for oral histories	
Availability of non-personal media	
Availability for community events	
Conflicts between organized and non-organized groups	
Intentional illegal behavior impacting resources and visitor experience	

Encounter rates of other groups in moderate, difficult, and unidentified caves (class 2 & 3)	
Conflicts between RV, tent, and groups	Noise, behaviors, viewshed obstruction, number of groups
People at one time in specific areas (caves)	
Responsiveness to education and interpretive tour requests and general contact with staff	
Complaints and/or incident reportings regarding use conflicts	
Ability to disseminate necessary information at VC	Ratio of contacts to VC counts
Encounter rates on trails – backcountry/wilderness	

NATURAL RESOURCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the natural resource group

Potential Indicator	Potential Measure/Specific Impact of Concern
Decline/change/absence of wildlife populations	
Number of incidents of disturbance that impact individual animal	
Number of incidents of disturbance that result in nest/roost abandonment	
Incidences of feeding wildlife	
Number of wildlife demonstrating attraction behavior	
Incidences of off-leash pets	
Number of road kills	
Decline/loss of rare plant species	
Total area (or presence/absence) of invasive species	
Size/condition of campsites	
Total area of vegetation and lichen loss/disturbance	
Number of sites/severity of human caused erosion	
Number/density of user created campsites	
Number/density/length of user created trails	
Incidences of visitors accessing sensitive areas (caves)	
Incidences of inappropriate behaviors (caves)	
Changes in species diversity and density (caves)	
Number, total length, and width of social trails (caves)	
Total area of visitor disturbance (caves)	
Incidences of inappropriate locational markings on online information sources (i.e. Google Earth)	
Volume of litter/lint/detritus in caves	
Frequency of vandalism incidents (graffiti, litter, damage) on geologic resources and facilities	
Changes in temperature in ice caves	
Presence of rare flora/fauna in caves	
Total area of "micides" (bacteria)	

disturbance in caves	
Changes in historic trail alignment, width, and materials in caves	
Presence of human waste in caves	
Number of informal negative contacts to correct damaging behavior in caves	
Increase in class 2 and class 3 backcountry cave use	
Visible condition of speleogens or speleothems (wear/breakage)	
Incidences of fossil/bone material theft in caves	
Duration of noise-free intervals	
Incidences of inappropriate behaviors (noise/soundscapes)	
Visible condition of volcanic features (wear/breakage)	
Number of incidents of disturbance, vandalism and social trail creation	
Number of observations of climbing/scrambling on volcanic features	

CULTURAL RESOURCE GROUP

Indicators highlighted in grey were selected as a priority indicator by the cultural resource group

Potential Indicator	Potential Measure/Specific Impact of Concern
Incidences of visitors accessing unauthorized areas (rock art)	
Incidences of inappropriate behaviors (rock art)	
Total area of damage (rock art)	
Number/condition of social trails near rock art	
Number of reports from cultural groups regarding quality of experience	
Visible condition/damage of rock art	
Amount of loss of rock art by erosion	
Incidences of loss/damage to museum collections	
Incidences of inappropriate locational markings on online info sources	
Number of incidences of disturbance or vandalism to cultural resources	
Loss of artifacts (looting)	
Evidence of wear on cultural structures	
Incidences of visitors accessing unauthorized/sensitive areas	
Evidence of structural integrity of cultural structures and fortifications	
Incidences of inappropriate behaviors	

PRIORITIZATION WORKSHEET
User Capacity Indicators

Write the visitor use impact/potential indicator in the left hand column of the matrix. Use the following criteria and ranking guide to create an overall score for each item. Those items with the highest overall score should be the highest priorities for potential user capacity indicators.

A. Level of importance for protecting purpose/significance and desired resource conditions and visitor experiences:

- High = 3 points
- Medium = 2 points
- Low = 1 point

B. Measures an impact to a highly vulnerable resource/value:

- High = 3 points
- Medium = 2 points
- Low = 1 point

C. Clarity of connection between visitor use (levels, timing, location, and/or behavior) and impact:

- High = 3 points
- Medium = 2 points
- Low = 1 point

D. Related to an existing monitoring effort:

- Yes = 1 point
- No = 0 point

Impact/Potential Indicator	Criteria for Prioritizing Potential Indicator Topics				OVERALL SCORE
	A. Importance	B. Vulnerability	C. Connection	D. Existing	

Golden Gate National Recreation Area Dog Management Plan / EIS

GGNRA Site	Alternative A: No Action (represents 36CFR 2.15, 1979 Pet Policy, and 2008 GOGA Compendium)	Alternative B: NPS Leash Regulation (represents 36 CFR 2.15 and revised GOGA Compendium)	Alternative C: Emphasis on Multiple Use – balanced by county.	Alternative D: Most Restrictive based on Resource Protection/Visitor Safety	Alternative E: Most Dogwalking Access/Most Management Intensive (contains all elements of Negotiated Rulemaking Committee Consensus)
Crissy Wildlife Protection Area	<p>Voice control except for seasonal leash restriction.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of voice control and seasonal leash restrictions 	<p>No dogs with the exception of service dogs.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs 	<p>Same as B</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Provide educational programs for visitors in lieu of enforcement. Educational programs may include park rules and regulations and information on sensitive wildlife and other protected resources. Site management using a barrier at east end of WPA on path to Central Beach. 	<p>Same as B</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Provide educational programs for visitors in lieu of enforcement. Educational programs may include park rules and regulations and information on sensitive wildlife and other protected resources. Site management using a barrier at east end of WPA on path to Central Beach. 	<p>No dogs with the exception of service dogs from July 1 to May 15 (plover overwintering season). On leash May 16 through June 30.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of seasonal leash restrictions. Provide educational programs for visitors including park rules and regulations and information on sensitive wildlife and other protected resources. Site management using a barrier at east end of WPA on path to Central Beach.

Golden Gate National Recreation Area Dog Management Plan / EIS

GGNRA Site	Alternative A: No Action (represents 36CFR 2.15, 1979 Pet Policy, and 2008 GOGA Compendium)	Alternative B: NPS Leash Regulation (represents 36 CFR 2.15 and revised GOGA Compendium)	Alternative C: Emphasis on Multiple Use – balanced by county.	Alternative D: Most Restrictive based on Resource Protection/Visitor Safety	Alternative E: Most Dogwalking Access/Most Management Intensive (contains all elements of Negotiated Rulemaking Committee Consensus)
Crissy Field (excluding fenced tidal marsh/dune areas/Wildlife Protection Area)	PROMENADE (East Beach to the Warming Hut): voice control <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	PROMENADE (East Beach to the Warming Hut): on leash <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	PROMENADE (East Beach to the Warming Hut): Same as B. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	PROMENADE (East Beach to the Warming Hut): Same as B <i>Rationale:</i> <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations Site management using gates or signs at beach access paths 	PROMENADE (East Beach to the Warming Hut): Same as B <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations
	AIRFIELD: voice control. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	AIRFIELD: on leash. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	AIRFIELD: ROLA; no fencing. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA 	AIRFIELD: ROLA only on western portion of airfield delineated at its eastern boundary by existing, easternmost n/s path. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA 	AIRFIELD: ROLA; no fencing. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA
	EAST AND CENTRAL BEACHES: voice control <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	EAST AND CENTRAL BEACHES: on leash <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	EAST BEACH: no dogs with the exception of service dogs. CENTRAL BEACH: ROLA <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA 	EAST BEACH: no dogs with the exception of service dogs. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs CENTRAL BEACH: no dogs with the exception of service dogs	EAST BEACH: on leash. CENTRAL BEACH: ROLA <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA

Golden Gate National Recreation Area Dog Management Plan / EIS

GGNRA Site	Alternative A: No Action (represents 36CFR 2.15, 1979 Pet Policy, and 2008 GOGA Compendium)	Alternative B: NPS Leash Regulation (represents 36 CFR 2.15 and revised GOGA Compendium)	Alternative C: Emphasis on Multiple Use – balanced by county.	Alternative D: Most Restrictive based on Resource Protection/Visitor Safety	Alternative E: Most Dogwalking Access/Most Management Intensive (contains all elements of Negotiated Rulemaking Committee Consensus)
				<p><i>Management Action:</i></p> <ul style="list-style-type: none"> • Enforcement of “no dog” policy with exception of service dogs • Site management using structures or buffers on beach to delineate areas. 	

Golden Gate National Recreation Area Dog Management Plan / EIS

GGNRA Site	Alternative A: No Action (represents 36CFR 2.15, 1979 Pet Policy, and 2008 GOGA Compendium)	Alternative B: NPS Leash Regulation (represents 36 CFR 2.15 and revised GOGA Compendium)	Alternative C: Emphasis on Multiple Use – balanced by county.	Alternative D: Most Restrictive based on Resource Protection/Visitor Safety	Alternative E: Most Dogwalking Access/Most Management Intensive (contains all elements of Negotiated Rulemaking Committee Consensus)
	<p>PARKING AND PICNIC AREAS: on leash.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>On leash:</p> <ul style="list-style-type: none"> Parking and picnic areas. grassy areas and paths in area between East Beach and Mason Street multi-use trail along Mason Street. <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>On leash:</p> <ul style="list-style-type: none"> Parking and picnic areas grassy areas and paths in area between East Beach and Mason Street multi-use trail along Mason Street. <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>On leash:</p> <ul style="list-style-type: none"> Parking and picnic areas except - no dogs with the exception of service dogs in West Bluff picnic area. grassy areas and paths in area between East Beach and Mason Street multi-use trail along Mason Street. <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations Enforcement of “no dog” policy with exception of service dogs in W. Bluff picnic area 	<p>On leash:</p> <ul style="list-style-type: none"> Parking and picnic areas. grassy areas and paths in area between East Beach and Mason Street multi-use trail along Mason Street. <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations
	<p>MARSH AND DUNES: no dogs</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy Site management using signage 	<p>MARSH, INCLUDING INLET WATERS - AND DUNES: no dogs</p> <p><i>Management Action:</i></p> <p>Enforcement of “no dog” policy</p> <ul style="list-style-type: none"> Site management 	<p>MARSH, INCLUDING INLET WATERS - AND DUNES: no dogs</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy Site management using signage 	<p>MARSH, INCLUDING INLET WATERS - AND DUNES: no dogs</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy Site management using 	<p>MARSH, INCLUDING INLET WATERS - AND DUNES: no dogs</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy Site management using

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	prohibiting visitors	using signage prohibiting visitors	prohibiting visitors	signage prohibiting visitors	signage prohibiting visitors
<p>Ocean Beach Snowy Plover Protection Area (Stairwell #21 to Sloat Blvd.)</p> <p><u>Non-NPS Off Leash Options:</u> City of SF – Golden Gate Park; 2 areas in central section of park.</p>	<p>Voice control except for seasonal leash restriction.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of voice control and seasonal leash restrictions 	<p>On leash all year.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>No dogs with the exception of service dogs on beach.</p> <p>Adjacent trail along Great Highway: on leash</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs Enforcement of leash regulations on trail adjacent to Great Highway. Provide educational programs for visitors including park rules and regulations and information on sensitive wildlife and other protected resources. Site management using structural barrier, buffer, 	<p>No dogs with the exception of service dogs on beach.</p> <p>Adjacent trail along Great Highway: on leash</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs Enforcement of leash regulations on trail adjacent to Great Highway. Provide educational programs for visitors including park rules and regulations and information on sensitive wildlife and other protected resources. Site management using structural barrier, buffer, and/or signage. 	<p>On leash July 1 to May 15; ROLA thereafter (May 16 to June 30).</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of seasonal leash restrictions Site Management using signage to delineate sensitive areas.

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			and/or signage.		
Ocean Beach <ul style="list-style-type: none"> North of Stairwell #21 	North of Stairwell 21: Voice control. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	North of Stairwell 21: On leash. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	North of Stairwell 21: ROLA year round. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA 	North of Stairwell 21: On leash year round. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	North of Stairwell 21: ROLA year round. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of public safety in ROLA
<ul style="list-style-type: none"> South of Sloat Blvd. <p><u>Non-NPS Off Leash Options:</u> City of SF – Golden Gate Park; 2 areas in central section of park.</p>	South of Sloat: Voice control. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	South of Sloat: On leash <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations 	South of Sloat: No dogs with the exception of service dogs. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs 	South of Sloat: no dogs with the exception of service dogs. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of service dogs 	South of Sloat: on leash <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of leash regulations
Fort Funston (excluding areas closed by fence or signs)	ENTIRE BEACH: Voice control. <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of voice control regulations 	ENTIRE BEACH: On leash except for seasonal (April 1 – August 15) closure of strip of beach at the foot of northernmost bluffs to protect Bank	NORTH BEACH: No dogs with the exception of service dogs from beach access trail north to OB; <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of “no 	NORTH BEACH: No dogs with the exception of service dogs from beach access trail north to OB; <i>Management Action:</i> <ul style="list-style-type: none"> Enforcement of “no dog” policy with exception of 	NORTH BEACH: On leash from beach access trail north to OB except for seasonal (April 1 – August 15) closure of strip of beach at the foot of northernmost bluffs to protect Bank Swallows

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		<p>Swallows.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of seasonal leash restrictions. 	<p>dog” policy with exception of service dogs</p> <p>SOUTH BEACH: ROLA from beach access trail to sand ladder at s. end of FOFU beach</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of public safety in ROLA 	<p>service dogs</p> <p>SOUTH BEACH: On leash south from beach access trail to sand ladder at s. end of FOFU beach</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of seasonal leash restrictions <p>SOUTH BEACH: ROLA south from beach access trail to sand ladder at s. end of FOFU beach</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of public safety in ROLA
	<p>SOUTH OF MAIN PARKING LOT: Voice control.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of voice control regulations 	<p>SOUTH OF MAIN PARKING LOT: On leash on all trails not closed to dogs.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>SOUTH OF MAIN PARKING LOT: on leash on sand ladder and Handicap Trail, all other areas, no dogs with the exception of service dogs.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations on sand ladder and Handicap Trail Enforcement of “no dog” policy with exception of service dogs in all other areas 	<p>SOUTH OF MAIN PARKING LOT: Same as C</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations on sand ladder and Handicap Trail Enforcement of “no dog” policy with exception of service dogs in all other areas 	<p>SOUTH OF MAIN PARKING LOT: Same as C</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations on sand ladder and Handicap Trail Enforcement of “no dog” policy with exception of service dogs in all other areas

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	<p>NORTH OF MAIN PARKING LOT:</p> <p>Voice control</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of voice control regulations I 	<p>NORTH OF MAIN PARKING LOT:</p> <p>On leash.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>NORTH OF MAIN PARKING LOT:</p> <ul style="list-style-type: none"> ROLA between (and not including) Chip Trail, Sunset Trail, and parking lot. Habitat (no dog) corridor between John Muir Drive to a boundary just west of Equestrian trail. On leash on all trails except Sunset, Battery Davis and Equestrian Trail which are closed to dogs, with the exception of service dogs. No off trail dogwalking. No dogs on cliff face. <p><i>Rationale:</i></p> <ul style="list-style-type: none"> Provides dog and no dog experience. 	<p>NORTH OF MAIN PARKING LOT:</p> <ul style="list-style-type: none"> Create a ROLA north of the water fountain in the disturbed areas, possibly with fencing. All trails on leash except no dogs, with the exception of service dogs, on northern end of Coastal Trail (from where pavement ends to north end of site) and Equestrian trail. Battery Davis – dogs on leash designated trails only; no visitor or dog off trail travel. Habitat (no dog) corridor between John Muir Drive to west edge of Equestrian trail. No dogs on cliff face. No off trail dogwalking. <p><i>Rationale:</i></p> <ul style="list-style-type: none"> Provides dog and no dog experience. Provides safety for dogs 	<p>NORTH OF MAIN PARKING LOT:</p> <p>Create N/S corridors for on leash, ROLA and no dog use:</p> <ul style="list-style-type: none"> Habitat (no dog) corridor between John Muir Drive to a boundary just west of Equestrian trail. ROLA corridor between Chip Trail and western boundary of Habitat corridor. ROLA includes Chip Trail to junction with Sunset Trail. North of that point, the west boundary of the ROLA is just east of paved trail. ROLA ends where Coastal Trail is bounded by fenced areas on both sides. On leash corridor between cliffs and western edge of Chip Trail, then on leash on trails to northern boundary of FOFU. Battery Davis – dogs on leash on designated trails only; no visitor or dog off trail travel.

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			<ul style="list-style-type: none"> Provides safety for dogs and owner re: cliff face. Provides protection for restored areas Provides protection for Battery Davis <p>ADDITION: Barriers or fencing to separate uses and to separate ROLA from cliff edge.</p>	<p>and owner re: cliff face.</p> <ul style="list-style-type: none"> Provides protection for restored areas Provides protection for Battery Davis <p>ADDITION: barriers or fencing to separate uses and to separate ROLA from cliff edge.</p>	<ul style="list-style-type: none"> No dogs on cliff face. <p>Rationale:</p> <ul style="list-style-type: none"> Provides maximum dog experience as well as no dog experience. Provides safety for dogs and owner re: cliff face. Provides protection for restored areas Provides protection for Battery Davis <p>ADDITION: barriers or fencing to separate uses and to separate ROLA from cliff edge.</p>
	<p>ALL TRAILS: Voice control.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of voice control regulations 	<p>ALL TRAILS: On leash.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of leash regulations 	<p>ALL TRAILS: On leash except Equestrian Trail, Sunset Trail and Battery Davis Trail which are closed to dogs, with the exception of service dogs,</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy on Equestrian Trail, 	<p>ALL TRAILS: on leash except: Equestrian Trail which is closed to dogs with the exception of service dogs.</p> <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy on Equestrian Trail, with exception of service dogs. Enforcement of leash regulations on all other 	<p>ALL TRAILS: on leash except:</p> <ul style="list-style-type: none"> No dogs with the exception of service dogs on Equestrian trails ROLA includes Chip Trail to junction with Sunset Trail <p><i>Management Action:</i></p> <ul style="list-style-type: none"> Enforcement of “no dog” policy on Equestrian Trail, with exception of service dogs.

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			<p>Sunset Trail, and Battery Davis Trail, with exception of service dogs.</p> <ul style="list-style-type: none"> • Enforcement of leash regulations on all other trails. • Site management including fencing along any on leash trails going through habitat corridor. 	<p>trails.</p> <ul style="list-style-type: none"> • Site management using signage and fencing or other barriers to separate voice control areas from other users. 	<ul style="list-style-type: none"> • Enforcement of leash regulations on all other trails, with the exception of ROLA areas. • Site management using signage and fencing or other barriers to separate voice control areas from other users.

**GGNRA DOG MANAGEMENT PLAN
ADAPTIVE MANAGEMENT STRATEGIES
PRELIMINARY DRAFT**

PURPOSE

Adaptive Management is a tool developed to address uncertainties associated with proposed actions. In this instance, NPS is considering a new rule for dog management within Golden Gate National Recreation Area. The intent is to protect resources while allowing an accepted practice where it does not cause unacceptable impacts to park resources. The purpose of the Adaptive Management Strategies is to identify resources where exact impacts are unknown or difficult to assess accurately, to identify the desired condition for these resources, to describe potential monitoring techniques, and to change management strategies to meet desired conditions for specific resources as necessary.

PROBLEM STATEMENT AND DESIRED CONDITIONS

Resource/Location	Problem Statement	Desired Condition
Snowy Plovers at Chrissy Field and Ocean Beach	Dogs off leash, and dogs on leash with walkers intruding into areas used by wintering and non-breeding Western Snowy Plovers cause disturbance to resting and feeding Western Snowy Plovers by chasing or otherwise causing birds to flee. The repeated energy loss can result in birds of poor physical condition which affects ability to survive and breed. Localities of concern are primarily at Crissy Field and Ocean Beach Units of GGNRA but other sand beaches and dune areas of GGNRA could have disturbance issues on occasion.	Western Snowy plovers protection areas would provide suitable habitat for non-breeding birds from May 16 to June 30 every year. This type of disturbance would be minimized in identified protection areas.
Bank Swallows at Fort Funston	Dogs off leash intruding into areas used by nesting Bank Swallow cause disturbance by chasing or otherwise causing birds to flee away from their nesting colony, interrupting feeding of young, etc. There is a second source of disturbance from visitors trying to climb the sand cliffs from the beach. The repeated energy loss affects ability to successfully rear young, and compromises the health of adults resulting in the inability to breed successfully. Health and condition would also impact the entire colony's ability to migrate to their winter range.	Disturbance of bank swallows caused by dogs and visitors at the sand cliffs at Fort Funston, and other areas important for bank swallows should they be identified, would be kept to minimal levels to protect the bank swallow colony.
Mission Blue Butterfly/Coastal Shrub Habitat at Fort Funston	Dogs off leash, and dogs on leash with walkers intruding into areas of intact coastal shrub habitat, in areas off designated trails. Off trail activity degrades and fragments the habitat, trampling plants and denuding vegetated areas.	Off trail areas would be protected from human activity to allow the coastal shrub habitat to flourish and to protect habitat for Mission blue butterfly.
Visitor Experience at San Francisco area park units	Conflicts between dogs walked off leash and other visitors can be particularly intense along the beach areas of the park, as this area attracts large numbers of visitors, both with and without dogs, on weekends and during the summer or on warm days. Because the GGNRA manages much of the	GGNRA provides a range of natural, historic, and developed settings and is able to accommodate a large variety of visitor experiences. Visitors would be able to enjoy their experience at GGNRA without

	<p>publicly accessible San Francisco Bay and ocean coastal lands in the region, park personnel have stated that the increased numbers of visitors and resulting conflicts among them are of great concern.</p> <p>Walkers, hikers, joggers, bikers, horseback riders, wildlife watchers, and those seeking a quiet and natural experience are all potentially disturbed by running, barking dogs—particularly by those that chase or harass people or wildlife. Dogs can also indirectly affect visitors by leaving waste on beaches, on trails, or near the park’s aquatic resources. Although signs indicate that owners are responsible for removing pet waste, this rule is not always followed. Dog waste can have an adverse impact on visitors, resources, and the safety of park staff tasked with cleaning up after irresponsible owners.</p>	<p>being negatively affected by the activity of other visitors’ dogs.</p>
<p>Public Health and Safety at San Francisco area park units</p>	<p>Injuries to visitors from dogs jumping on them, chasing them, or harassing them, or biting them are a serious concern as are injuries to rangers who rescue dogs or dog owners. In the year 2000, for example, 15 dogs and two dog owners were rescued from the cliffs at Fort Funston (NPS 2001c). Two ranger injuries were reported in the course of these rescues. If dogs had been leashed, these rescues would not have been needed.</p> <p>Visitors have reported being jumped on and knocked down by unrestrained dogs. Park police have received reports from visitors of dogs knocking down visitors resulting in physical injury (scrapes, broken ankle, etc). The park has had complaints from people who are so frightened of off-leash</p>	<p>Visitors to GGNRA and park staff would have a safe experience and not experience bodily injury as a result of an encounter with dogs.</p> <p>The health of visitors and staff would not be affected by dog feces in park areas.</p>

	<p>dogs that they avoid visiting the park entirely or visit only when least likely to encounter dogs. Even dogs on leashes can be frightening to some people, such as joggers or other dog walkers, when dogs bark or strain at the leash.</p> <p>With the number of dogs in the park, dog feces left behind is an unpleasant experience and a potential health hazard.</p>	
<p>Cultural Resources at Fort Funston</p>	<p>Need to determine with park if we should monitor earthworks at Ft Funston</p>	

MONITORING

Monitoring is intended to test the success and efficacy of management actions implemented by the Dog Management Plan. Monitoring would be targeted to assess the effects of the preferred alternative on the specific resources identified above, to assess if desired conditions are maintained under the preferred alternative. The specific objectives of monitoring are to

1. reduce the uncertainty of current conditions by gathering additional data where data are lacking
2. develop and refine protocols for collecting data that are cost effective, efficient, and explicitly linked to management actions
3. develop thresholds/criteria for data evaluation that will facilitate the adaptive management process

Monitoring Protocols and Activities

Detailed monitoring protocols would be developed to ensure accurate, valid data. Monitoring would begin as soon as a monitoring protocol is developed.

Below are potential monitoring activities that could be used to assess impacts of dogs on park natural resources, visitor experience, and public health and safety. Monitoring activities for visitor experience and health and safety are combined as most provide insight to impacts to each:

Western Snowy Plover/Bank Swallow

- Dog harassment of wildlife per ESA:
 - Observations of dogs flushing, chasing or killing birds or other wildlife in the park (especially in protected areas) should be reported and documented.
 - Citations resulting from disturbance or harassment of wildlife should be reported for monitoring purposes.

Visitor Experience/Public Safety and Health

- Dog Excrement: Incidents of dog-owners failing to remove excrement or general observations of excrement left in the park should be monitored and reported. Monitoring could be carried out as observations by park staff and a record of visitor complaints.
- Dogs interacting with non-guardians (jumping-on, licking, pawing, chasing, biting): Observations and reports of dogs perceived as negatively interacting with visitors other than their guardians should be monitored and reported. Additionally complaints or injuries resulting from these interactions should also be reported and documented for monitoring purposes.

- Dogs in noncompliance with park regulations: Any dogs found to be in violation of regulations will be documented and reported. This would include off-leash dogs in on-leash only areas and on-leash or off-leash dogs in no dog areas. Any citations or observations by park staff and visitor complaints should be reported and documented for monitoring purposes.

Coastal Shrub Habitat/ Mission Blue Butterfly

- Vegetation monitoring: Coastal shrub habitat vegetation should be monitored in park areas where dogs are allowed (on-leash and off-leash) and compared to control vegetation sites that are known to be rarely visited or closed to visitors. Monitoring of vegetation would focus on destruction or deterioration of plants and habitat, especially inside protected areas.

Criteria to Evaluate Data

To assess the data collected, criteria would need to be developed for each resource. These criteria must be objective, based in law or regulation where possible, and easily evaluated. Below are some examples of laws that would be used to develop criteria to assess impacts of the preferred alternative on resources. The intent is develop criteria that match the intent of the law, regulation or policy.

1. Endangered Species Act – the snowy plover is protected under the ESA. The ESA has clearly defined actions that are considered violations of the Act. Harassment and harm of protected species is not permitted under ESA. Monitoring could be conducted to assess if plovers were harassed or harmed as a result of the preferred alternative.
2. National Historic Preservation Act – requires that resources listed on or eligible for listing on the National Register not be adversely affected by proposed actions. Earthen works at many of the units are identified cultural resources. Monitoring of the earthworks would identify erosion or damage.
3. NPS Management Policies – The NPS Management Policies provide guidance for all resources, including visitor experience and public safety, and protection of resources, all of which could be suitable for development of criteria. One example is the requirement that NPS provide the same protection to state and locally protected species as that afforded to federally protected species, where practical. Monitoring could be conducted to assess if bank swallows were harassed or harmed as a result of the preferred alternative.
4. GGNRA Mission – the mission of the park is to “preserve for public use and enjoyment certain areas ...possessing outstanding natural, historic, scenic, and recreational values, and in order to provide for the maintenance of needed recreational open space necessary to urban environment and planning”.

MANAGEMENT ACTIONS

If monitoring revealed that the desired condition for a resource was not being met, a responsive management action would be initiated. Management actions could determine

that the violation was caused by natural variation and that the desired condition needed to be adjusted, or a new criterion selected to better reflect desired conditions. Actions to manage or limit impacts from dogs in GGNRA would be implemented when the desired condition was not met due to impacts associated with dogs in GGNRA. Management could include the following (this list is subject to revision):

1. Enforcement of regulations (e.g., patrols, notifications, citations)
2. Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups)
3. Site management (e.g., barriers, area closure, redirection of visitors with dogs to suitable sites)
4. Regulation (increase the level of restriction for dog use in the area)

Management actions would comply with the requirements of NEPA, NHPA and other applicable legislation.

See Table 2, Potential Management Actions by Alternative.

CALO ORV Plan adaptive management indicators

- Indicators for AMOY, turtles, piping plovers must respond to the range of events that can impact these species (i.e. storm events, predation, ORVs, etc.), and tease out, to some degree, which impacts are caused by ORVs. Where moderate impact is reached, then need to tie triggering of indicator to a management action.
 - *Minor Adverse*: Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, but would not be outside the natural range of variability. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, resting, or other factors affecting population levels. Small changes to local population numbers, population structure, and other demographic factors might occur. However, some impacts might occur during critical reproduction periods for a protected species, but would not result in injury or mortality. Sufficient habitat in the park would remain functional to maintain the viability of the species in the park.
 - *Moderate Adverse Impact*: Impacts on native species, their habitats, or the natural processes sustaining them would be detectable and could be outside the natural range of variability. Frequent responses to disturbance by some individuals could be expected, with some negative impacts to feeding, reproduction, resting or other factors affecting local population levels. Some impacts might occur during critical periods of reproduction or in key habitats in the park and result in harassment, injury, or mortality to one or more individuals. However, sufficient population numbers or habitat in the park would remain functional to maintain the viability of the species in the park.

EX: AMOY

Indicator (# of X that would reach a moderate impact)	Primary management action triggered by this indicator (i.e. predator control, increase in buffers, combination of factors, etc.) and time frame in which it will be triggered (after 1 year of data, 2 years, rolling baseline, etc.)	Secondary management action (cap stays same, is raised, or lowered), and time frame in which it will be triggered (3 years, 5 years, etc.). <i>Ex: if impacts reach long-term moderate (i.e. after 5 years), cap</i>	
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		<i>adjusted downward by 5%. If impacts are reduced to minor impacts after 5 years, cap adjusts upward</i>	
# of pairs			
# of nests			
# of nests hatched			
# of chicks fledged			
# of human disturbances related to species protection (buffer closure violations, chicks run over, etc.)			
# of ORV violations related to species protection (buffer closure violations, chicks run over, etc.)			
# of impacts from predation			
# of storm events (could be positive or negative impact)			
# of unknown events			
OTHER?			

Draft Adaptive Management Strategy – GGNRA dog management plan/EIS

INTRODUCTION

The goal of this adaptive management strategy is to maintain long-term impacts at or below minor. Short-term moderate impacts will trigger management action for Step 1. Long-term moderate impacts will trigger management action for Step 2. Initial standards and indicators are based on available data. As new data become available from monitoring, the standards and indicators may be refined to reflect the findings of the new data. The adaptive management strategy will initially last four years.

A component of the adaptive management strategies will be to document and report on the program. NPS will prepare annual reports documenting monitoring data collected and proposed implementation of remedies based on data, if applicable.

STRATEGY 1 NATURAL RESOURCES

Assigned Zone	What does it evaluate?	Examples from DEIS of short and long-term moderate impacts for veg, wildlife, and species of special status, and examples of minor impacts as a point of comparison	Indicators and Standards	Remedy (management strategies)	Personnel/ Approach to enforce remedy
On-leash areas and ROLAs and adjacent areas.	<p>Citable disturbances to wildlife under 36 CFR 2.1(a)(1)(ii), 2.2(a) and 2.15(a)(5).</p> <p>2.1 (a)(1)(ii) Possessing, injuring, destroying, digging, removing, defacing from its natural state plants or parts thereof.</p> <p>2.2(a): The following are prohibited:</p> <ol style="list-style-type: none"> 1. The taking of wildlife, except by authorized 	<i>In development now</i>	<p>STANDARD: AMS kicks in to bring impacts back to minor if impacts rise to moderate.</p> <p>INDICATORS FOR FEDERALLY LISTED SPECIES WILL DERIVE FROM THE BIOLOGICAL OPINION.</p> <p>OTHER NATURAL RESOURCES WILL HAVE DIFFERENT TRIGGERS (will use indicator species where possible)</p> <p>The Step 1 trigger would be a failure to achieve a XX% reduction (below short-term moderate) when compared to baseline in the average number of violations observed per hour over a X-month period.</p>	<p>Step 1: Where impacts rise to short-term moderate, Step 1 will be implemented.</p> <p>Focused enforcement of regulations and education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, time/use restrictions, SUP restrictions).</p> <p>Step 2 Where impacts rise to long-term moderate, Step 2 will be implemented</p> <p>On-leash areas would go to no dogs,</p>	<ol style="list-style-type: none"> 1. Park staff monitoring. 2. LE incident reports. <p>Adaptive Management Strategies: Begins 30 days after signing of the ROD.</p> <p>Personnel for monitoring: 5.5 FTE.</p> <p>Personnel for focused enforcement and LE</p>

	<p>hunting and trapping activities conducted in accordance with paragraph (b) of this section.</p> <p>2. The feeding, touching, teasing, frightening or intentional disturbing of wildlife nesting, breeding or other activities.</p> <p>3. Possessing unlawfully taken wildlife or portions thereof.</p> <p>2.15(a)(5): Failing to comply with pet excrement disposal conditions which may be established by the superintendent.</p> <p>NEW 36 CFR PART 7 SPECIAL REGULATION (NEW DOG RULE)</p>		<p>If after implementation of Step 1 remedies, there is a failure to achieve a XX% reduction (below long-term moderate) when compared to baseline in the average number of violations observed per hour over a X-month period, Step 2 remedies would be implemented. NOTE THAT AMS % REDUCTION WILL LEVEL OFF AFTER 4 YEARS, AT WHICH POINT WILL HAVE MAINTENANCE AT THE MINOR IMPACT LEVEL.</p> <p>STEP 2 WOULD NOT BE IMPLEMENTED FOR A PRE-DETERMINED PERIOD OF TIME AFTER INITIAL IMPLEMENTATION OF THE NEW RULE, LIKELY ONE YEAR.</p> <p>Monitoring strategy would be completed by park staff. Staff would monitor violations of CFR regulations including the new dog rule. Monitoring data will be reported as the number of violations observed per hour of monitoring effort.</p> <p>LE incidents reports would prioritize areas monitored. Park staff and LE would share data obtained from monitoring and incident reports.</p> <p><u>Short term:</u> After the first year of collecting baseline data is complete, a six-month period of education and enforcement will occur to implement the proposed action, during which time short-term impacts to all natural resources will occur, regardless of the alternative chosen. Therefore, short-term impacts are common to all natural resources for each of the Action Alternatives (B through E), and are described as those impacts occurring during implementation of the plan/EIS, which may be up to six months.</p> <p><u>Long term:</u> Impacts to natural resources will be long-term and are described as those persisting for the life of the plan/EIS (the next 20 years).</p> <p><u>Moderate impact threshold for wildlife:</u> Impacts on native species, their habitats,</p>	<p>ROLA would go to on-leash areas.</p>	<p>violation/incidents records management: 7 FTE</p> <p>Personnel for focused education: 2.5 FTE</p>
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STRATEGY 2 HEALTH, SAFETY AND VISITOR EXPERIENCE

Assigned Zone	What does it evaluate?	Examples from DEIS of short and long-term moderate impacts for health, safety, and visitor experience, and examples of minor impacts as a point of comparison	Indicators and Standards	Remedy (management strategies) ¹	Personnel/ Approach to enforce remedy
<p>On-leash areas and ROLAs, adjacent areas and trails</p>	<p>2.15(a)(5): Failing to comply with pet excrement disposal conditions which may be established by the superintendent.</p> <p>2.31(a)(3) – stealing, vandalizing or destroying property or real property, including dog management signs, fencing or other dog management property.</p> <p>CFR 2.34(a)(1) hazardous conditions.</p> <p>Examples of above CFR violations for which data will be collected include:</p> <ol style="list-style-type: none"> 1. Dog bites or physical injuries or dog-related fighting. 2. Hazardous conditions including pet rescue, unwanted, harassing or aggressive behavior. 3. Destruction of property related to dog management (signs, etc) and failure to comply with pet excrement disposal conditions. 	<p><i>In development now</i></p>	<p>STANDARD: AMS kicks in to bring impacts back to minor if the threshold reaches moderate.</p> <p>INDICATORS WILL BE DIFFERENT FOR BITES, INJURIES AND DOG-RELATED FIGHTING THAN FOR OTHER PARAMETERS</p> <p>The Step 1 indicator would be a failure to achieve a XX% reduction (below short-term moderate) when compared to the year’s previous baseline data in the average number of violations observed per hour over a X-month period. NOTE THAT AMS % REDUCTION WILL LEVEL OFF AFTER 4 YEARS, AT WHICH POINT WILL HAVE MAINTENANCE AT THE MINOR IMPACT LEVEL.</p> <p>If after implementation of Step 1 remedies, there is a failure to achieve a XX% reduction (below long-term moderate) when compared to baseline in the average number of violations observed per hour over a X-month period, Step 2 remedies would be implemented.</p> <p>STEP 2 WOULD NOT BE IMPLEMENTED FOR A PRE-DETERMINED PERIOD OF TIME AFTER INITIAL IMPLEMENTATION OF THE NEW RULE, LIKELY ONE YEAR.</p> <p>LE incident reports would supply adaptive management data for bites, injury and dog-related fighting; pet rescues; and destruction of property related to dog management (signs, etc).</p> <p>Monitoring by park staff would document data for hazardous conditions); compliance with the new dog rule; and, failure to comply with pet excrement disposal conditions. LE data may provide supporting documentation. This effort will be integrated with the Natural Resources monitoring effort identified in Strategy 1.</p> <p>Monitoring data will be reported as the number of violations observed per hour of monitoring effort.</p>	<p>Step 1 Where impacts rise to short-term moderate, Step 1 will be implemented.</p> <p>Focused enforcement of regulations and education (e.g., additional information and regulatory signs and exhibits, brochures and fliers, public meetings, meetings with user groups, time/use restrictions, SUP restrictions).</p> <p>Step 2 Where impacts rise to long-term moderate, Step 2 will be implemented</p> <p>On-leash areas would go to no dogs, ROLA would go to on-leash areas.</p>	<ol style="list-style-type: none"> 1. LE incidents for dog bites, physical injury or dog-related fighting. 2. Park staff monitoring. <p>Adaptive Management Strategies: Begins 30 days after signing of the ROD.</p> <p>Personnel needs – accounted for under Natural Resources Strategy.</p>

	<p>NEW 36 CFR PART 7 SPECIAL REGULATION (NEW DOG RULE)</p>		<p><u>Moderate impact threshold for health and safety:</u> Effects would be readily apparent and they would result in substantial, noticeable effects to human health and safety (both park visitors and park employees) on a local scale. Revision of park policies could be required to ensure human health and safety.</p> <p><u>Moderate impact threshold for visitor use and experience:</u> A few critical characteristics of the existing visitor experience would increase or decrease. The number of visitors engaging in a specific use would be altered resulting in a noticeable change in visitor satisfaction. Other park areas would remain available for similar visitor uses and experiences; however, some visitors participating in that use or experience might be required to pursue their choice in other available local or regional areas; or some individuals participating in that use or experience in other local or regional areas could return to or begin using the park due to the improved visitor experience.</p>		
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Pro's / Con's list for GOGA dog mgmt plan / EIS adaptive mgmt strategy

Pros of not including in plan:

- Substantially less complex, resulting in one less thing to challenge (although it's exclusion could encourage a challenge from the enviro community)
- Provides finality to dog groups and other interested parties
- Monies spent on adaptive management could be funneled to LE for dog compliance

Cons of not including in plan:

- Would not meet Jon Jarvis's directive as RD that the plan include a carrying (user) capacity strategy. Adaptive management implements this strategy.
- Key reason for adaptive management is that the baseline data on impacts from dogs is not well substantiated for some areas and impact topics, primarily because the park has conducted very little monitoring relative to dog impacts. The adaptive mgmt strategy reevaluates the baseline based on up-to-date monitoring for three key areas: wildlife, vegetation, and visitor experience/health and safety. The impacts analysis for noncompliance assumes that impacts will not go beyond a long term moderate impact because adaptive management will kick to prevent such impacts, first through additional, focused education and enforcement, and then through flipping an area to the next most restrictive dog mgmt regime (off-leash to on leash, or on leash to no dogs).
- Does not allow for flexibility, resulting in possible re-initiation of two key processes, leaving park without a remedy if noncompliance is widespread:
 - NEPA: The plan/NEPA document allows for a limited range of actions and responses. If the dog plan falls outside of what is analyzed, a new NEPA document could be required to take action
 - Rulemaking: If impacts are greater than envisioned, park may be left without a remedy to manage dogwalking short of rulemaking, unless deemed an emergency. The preamble to 1.5 made clear that its use is for normal, everyday actions, not for significant closures, alterations, or anything highly controversial. Management actions affecting dogs will almost certainly trigger 36 CFR 1.5(b) rulemaking because of the controversy involved. 1.5 requires notice and comment rulemaking in part to serve as a due process requirement, especially where criminal penalties could apply --- as would be the case for dogwalking. With adaptive mgmt in the plan and rule, the park will be able to take follow-up actions for managing dogs without revisiting rulemaking, because the rule will have specifically outlined future possible changes. Adaptive mgmt in the dog plan is broad enough to allow management discretion, but specific enough to

avoid future rulemakings. *Note that a rulemaking was required for Ocean Beach and Crissy Field WPA species closures because of the controversy.*

- Will require a contract modification for a new impacts analysis for noncompliance which could delay plan release by approximately four months and cost upwards of 30-40K. EQD will most likely not be able to absorb this cost in FY10.
- Without monitoring, park will not know where to concentrate LE and other management responses based on scientific monitoring.