

**FINDING OF NO SIGNIFICANT IMPACT**  
**EASKOOT CREEK RESTORATION AT STINSON BEACH**

National Park Service, U.S. Department of the Interior  
Golden Gate National Recreation Area

**INTRODUCTION**

This Finding of No Significant Impact (FONSI) is presented by the Golden Gate National Recreation Area (GGNRA), a unit of the National Park Service, for the Easkoot Creek Restoration Project. The FONSI, along with the Easkoot Creek Restoration at Stinson Beach Environmental Assessment (EA), and the Errata sheets comprise the full and complete record of environmental impact analysis. The FONSI and mitigation measures are specific to work to be completed for the 900 ft of Easkoot Creek within the project area. The attached Errata sheets contain changes to the document as a result of the public comment period; none of the comments resulted in major changes to the alternatives, mitigations, or other key sections of the EA.

**PURPOSE OF ACTION**

Easkoot Creek is located in Marin County, California, about 22 miles north of San Francisco. Easkoot Creek is a small perennial stream flowing into Bolinas Lagoon through Stinson Beach, draining a watershed of 1,062 acres. The supporting tributaries of Bolinas Lagoon provide habitat for the Central California Coast steelhead trout (*Oncorhynchus mykiss*) and the Coho salmon (*Oncorhynchus kisutch*); both listed as a federally threatened species. The GGNRA, California State Parks, and private landowners manage lands adjacent to the stream. Much of the upper watershed is in public ownership while the lowest reach flows through mostly private lands.

The purpose of this action is to address two important limiting factors for salmonid fish production: 1) the absence of pool habitats with associated large woody debris and 2) lack of natural riparian habitat. This project, in conjunction with other restoration efforts upstream and downstream of the GGNRA lands, is proposed to yield long-term beneficial effects on the steelhead trout and coho salmon habitat of Easkoot Creek.

**NEED FOR ACTION**

Easkoot Creek supports remnant, but dwindling populations of steelhead trout and has at least one-year class coho. The need for restoration is due to the decline of quality rearing habitat within the watershed. The absence of deep pools, instream and overhanging materials for cover, native riparian vegetation and sufficient in-stream flows limit the value of lower Easkoot Creek as juvenile salmonid rearing habitat. One of the primary factors contributing to the listing of steelhead and coho as threatened species is the loss of habitat complexity in streams. In particular, the loss results from reduction in number and depth of deep pools from sedimentation and removal of pool-forming structures such as boulders and large wood.

**ALTERNATIVES EVALUATION**

From the scoping process, the following objectives were developed and used to assess preliminary alternatives.

Objective 1: Rehabilitate the existing creek ecosystem to the greatest extent possible given present day physical constraints.

- Retain and enhance important existing qualities of the site;
- Develop sustainable scour pools;
- Restore appropriate riparian vegetation and cover; and

- Increase instream cover for aquatic life.

Objective 2: Create a creek ecosystem that functions naturally with minimal maintenance.

- Improve floodplain functionality;
- Widen the riparian corridor; and
- Capitalize on opportunities to restore remnant riparian and wetland habitats.

Objective 3: Improve habitat quality and expand habitat area for native plants and animals over existing conditions within the project area.

- Expand the native riparian and wetland communities to allow viable biological processes to occur; and
- Remove non-native vegetation.

Objective 4: Maintain public access to the Stinson Beach facility and result in no impact to the recreational resources of Stinson Beach.

- No net loss of parking spaces; and
- Minimize impacts during construction activities.
- Maintain bus access and turnaround.

Objective 5: Involve local landowners, community organizations, and resource agencies in the planning and implementation of restoration/rehabilitation actions.

Objective 6: Design rehabilitation/restoration actions that do not increase flooding risk or property damage.

GGNRA established the following criteria to evaluate the success of project actions for meeting the objectives.

- The amount of stream and riparian habitat available for aquatic life would be of higher quality and greater, in area, than pre-project conditions (assessed using wetted area cross-sections and profiles).
- Extent the measurements of the late summer-fall mean biomass of various juvenile steelhead age groups would be greater than pre-project conditions.
- Extent the alternative minimizes long-term “in-channel” maintenance actions.

Six restoration design options, in addition to the selected and no-action alternative, were evaluated based on recommendations by the public, regulatory agencies, and NPS staff. These options included restoration designs that utilized strictly wood structures, expansion of the project area, renovation of existing bridge crossings, augmentation of streamflow, and removal and restoration of entrance road facilities. These options were considered but not carried forward as alternatives for full analysis in the EA based on their inability to meet project objectives, issues and concerns raised by the public and regulatory agencies, and the criteria used to evaluate the success of the project.

## **SELECTED ALTERNATIVE**

The Selected Alternative in the Environmental Assessment includes the following actions.

### **1. Instream Design**

To address factors limiting natural fish production, actions would be taken to establish gentle meanders, a low flow channel, and connected floodplain. Rock and wood weirs would be installed and orientation and spacing would be used to guide flows into alternating banks. Revetment structures composed of logs, boulders, and rootwads would be placed at the outside of these meander bends to establish self-maintaining lateral scour pools at these locations. The revetment structures would be used to create

needed cover for juvenile salmonids. Up to five revetments and sixteen weir structures would be installed within the project area.

## 2. Excavation

The current channel would be excavated at key points within the channel and along the east bank and be filled at certain points along the west bank to create a more sinuous channel. Excavation would also provide for placement of wood and rock structures. Excavation of approximately 512 cubic yards (CY) of soil would occur, 313 CY would be used for fill within jurisdictional areas, including 150 CY for a flood control berm adjacent to Highway 1 and 163 CY for channel modifications. 50 CY would be used for fill outside of jurisdictional areas, approximately 10 cubic yards would be used to reinforce an existing flood control berm on the north side of the parking lot, and approximately 139 CY would be removed from the site. If the remaining unused fill materials are determined to be appropriate for reuse in other areas of the GGNRA, they would be left in an appropriate temporary storage area within the GGNRA for later use as needed. Excavated fill materials determined to exceed applicable criteria for reuse at the GGNRA would be transported to an appropriate off-site disposal location. Most of the removed soil containing the weed seed bank would be buried within the project area. These sites would include the base of the new flood berm and recontoured riparian banks. Up to 200 CY of rock would be brought in to construct instream structures.

Grading and excavation would be conducted using an excavator. To protect existing habitats and facilities grading would be limited to the areas identified on Figure 5 in the EA. The excavated materials, if dry, would be placed in trucks for transport and disposal. If excavated material were wet, the material would be de-watered prior to transport. The de-watering area would be contained by a berm or otherwise managed to prevent discharge of decant water. Materials would be allowed to dry for approximately one to three weeks, depending on weather conditions. Materials would be periodically turned to allow for more efficient drying. After de-watering, excavated fill would be transported in trucks for disposal.

## 3. Riparian Vegetation

Plant ecologists with the Golden Gate National Parks Conservancy and GGNRA developed the native-plant community restoration plan that includes revegetation of native plants being conducted in phases. After the initial planting, supplemental plantings would be required if at least 50% cover along stream bank was not achieved after one year and 80% cover in five years. Revegetated areas would be monitored on a semiannual basis for the first five years to document the percent cover and success of revegetation efforts and plant community composition. Monitoring would continue for three years after replacement plantings.

Plant community types were selected based on existing habitat types within the project area. Species composition for each plant community has been developed using analysis of remnant native vegetation around Easkoot Creek and lists of native plant species likely to occur in the area (NPS 2000). Plantings in riparian woodland areas would include Arroyo and yellow willow (*Salix lasiolepis* and *S. lucida* ssp. *lasiandra*) and red alder (*Alnus rubra*). Plants would be propagated from local GGNRA sources to prevent contamination of the existing native plant gene pool.

An integrated weed removal strategy would be used to control invasive species. Hand removal techniques (ivy), brush cutters (Himalayan blackberry), and chain saws would be combined. Eradication of persistent weeds such as Cape ivy would be conducted in accordance with removal specifications used successfully for other projects throughout the GGNRA. In heavily infested areas several inches of topsoil may be removed to eliminate the exotic plant seedbed. Exotic weed removal in wetland areas would follow appropriate agency guidelines for the protection of surface waters and wildlife. Removals of

invasive species located within existing riparian and wetland habitats would take place from mid-August through February, outside the bird-breeding season.

Logs and root wads for in-stream actions would be obtained from trees within GGNRA's Stinson Beach facilities. Up to twenty-five trees would be used for this purpose, mostly non-native Monterey cypress and Myoprum. Tree removal would occur outside of the bird-breeding season. Areas targeted for tree removal, including the South Parking lot and the Central Parking lot near the visitor center, would be temporarily closed for public use with signage and temporary fencing until removal work is completed. Tree limbs would likely be mulched and used on-site.

After tree removal, native landscaping materials would be planted in disturbed areas. The planting palette for the tree removal area would include California box elder (*Acer negundo*), California buckeye (*Aesculus californica*), wax myrtle (*Myrica californica*), coast live oak (*Quercus agrifolia*), willow (*Salix* sp.) and bay laurel (*Umbellularia californica*). Limited watering may be used to establish the plantings in the first year.

#### 4. Easements

An encroachment permit from Caltrans will not be required. The footprint of the proposed action will not extend into the Caltrans right of way for Highway 1. Upstream of the car bridge, a section of stream adjacent to the Shakespeare-at-Stinson and U.S. Postal Service buildings are on private lands and contain a County road right-of-way. Permission for work has been obtained from private landowners to conduct work in these areas.

#### 5. Utilities

The location of known utilities has been identified. Utilities, specifically PG&E and PacBell lines, are located just outside the area of excavation and adjacent to the entrance kiosk, also located outside the project area.

#### 6. Visitor Service / Parking

The footprint of the northern parking area would be slightly reduced to allow widening the riparian habitat by approximately 6 feet. This action would not result in a net loss of parking spaces because the parking area will be re-striped. The action would not create additional traffic congestion and would meet minimum requirements for safety. Retaining the turnaround would prevent additional traffic congestion from buses circulating through the parking areas.

### **MODIFICATIONS TO THE SELECTED ALTERNATIVE**

The following modification was made to the selected alternative as a result of agency consultation and public comment. These changes will not result in new impacts beyond those discussed in the EA.

#### 1. Modification of outside berm to prevent potential flood impacts to downstream neighbor.

In July and August 2003, GGNRA staff met with an adjacent homeowner on two occasions at the site (August 12 and 20, 2003) and held additional telephone conversations related to the potential for the project to add to the occasional flooding that occurs in the parking area of the homeowner's lot. The GGNRA addressed concerns regarding potential increased ground saturation by describing flood analyses that indicates the infrequent nature and duration of overbank flooding. In addition, an interior drain for the berm was proposed and will be added to the project to ensure quick drainage of floodplain area after peak flow events. Also an exterior drain for the berm was proposed and will be added to the project that will convey drainage that may be channeled along the berm away from the homeowner's lot and into the creek.

## **NO ACTION**

The No-Action Alternative is a continuation of existing conditions at lower Easkoot Creek within GGNRA. The No-Action Alternative does not subject Easkoot Creek to impacts related to construction activity but does not address the current degraded habitat conditions. Under the No Action Alternative, the habitat within that area of Easkoot Creek would continue to be of low value and would not improve over time. Under the No-Action Alternative, limited on-going restoration of riparian habitat and native plant revegetation would occur in the area. Future actions in the lower Easkoot Creek project area would be limited to continuing maintenance and management of existing resources and facilities in the condition that currently exists at Easkoot Creek.

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The selected alternative is the environmentally preferred alternative. The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (sec. 101 (b)). This includes alternatives that:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

Analysis indicates that the Preferred Alternative is the environmentally preferred alternative because it restores habitat for federally threatened species, fulfilling the responsibilities of trustees of the environment and preserving important natural aspects of our national heritage.

## **SCOPING**

With community efforts dating back to 1992, GGNRA has sought to obtain input from GGNRA staff, the public, including the community of Stinson Beach, government and regulatory agencies, and environmental organizations relating to the Easkoot Creek Restoration project. Public comments focused on three principal areas of potential effects included natural resources, flooding downstream of the creek, and the effects on visitor use. GGNRA staff discussed the project and environmental concerns with local citizens and environmental groups. During scoping, the need for permitting and consultation was also identified.

- In 1993, an ad hoc Easkoot Creek Advisory Committee was formed by the Stinson Beach Village Association and funded the development of a restoration plan to harmonize flood control with fishery, scenic, educational, and cultural values. The plan also included the first fisheries assessment along Easkoot Creek (Rich, A.A., May 1992, Feasibility study to rehabilitate the fishery resources of Easkoot Creek, Marin County. This is an unpublished document prepared for the Environmental Action Committee of West Marin.)
- Streamatrix, a local, environmental non-profit organization, initiated and completed a project in 1998 to improve adult fish passage for Easkoot Creek. In April 1999, members of the GGNRA Marin Advisory Committee, Streamatrix, and the GGNRA visited with the Stinson Beach Village Association. During the

meeting parties reviewed the recently completed fish passage structure and the GGNRA presented a conceptual proposal for creek restoration to the group.

- The GGNRA met with Trout Unlimited (local chapter) and Tomales Bay Association regarding the proposed restoration project. These groups wrote a letter of support for the project in 1999.
- During July 1999 the GGNRA went door-to-door to a portion of residents along lower Easkoot Creek to present a conceptual proposal and measures to protect riparian and creek habitat.
- In September 1999, the GGNRA led a site visit to discuss conceptual proposal and scoping elements with Streamatrix and GGNRA staff. Also during September, 1999 the GGNRA presented the Easkoot Creek project at the Marin Advisory Commission meeting
- In January 2000, the GGNRA conducted a riparian restoration training program for the local community. This meeting described appropriate restoration activities along creeks and also introduced the proposed restoration project to the residents who attended. GGNRA continues to work on a public outreach program to encourage minimal maintenance of riparian habitats within private property along Easkoot and other local creeks.
- On May 4, 2002, the GGNRA shared the conceptual alternative with the Stinson Beach Village Association (SBVA) regarding the Easkoot Creek project. Meeting participants identified flooding as an issue. GGNRA staff noted that project designers assessed the design of proposed elements on flooding and the analysis indicated no change from existing conditions. Also noted was that the project would be monitored after major rain events to check for debris and the deposition of sediment. Comments were made with regard to integrating educational activities into the project and it was recommended that the GGNRA involve local schools (both public and private) in the project.
- On January 21, 2003 a public scoping meeting was held at the Stinson Beach Community Center. Meeting participants questioned how the actions will not result in flooding down stream and GGNRA explained that analysis had been completed that shows that this project would not result in an increase or decrease in flooding.
- The environmental assessment was made available for public review and comment during a 30-day period beginning on June 30, 2003 and ending August 3, 2003. Public notice of the EA was provided to individuals, organizations, and agencies through the scoping process, notification on the GGNRA website, mailing of the EA (75), and noticing the project on the mailed agenda for the July GGNRA Public Meetings (over 1,300). The EA was sent to local libraries including Marin City Library, Marin Civic Center Library, Corte Madera Library, and the Point Reyes Library.
- On July 15, 2003 GGNRA hosted a public meeting to receive comments on the EA. Comments from agencies, organizations and individuals were received on the project. Written Comments on the EA were received from seven individuals, agencies, and groups. A discussion of the comments and responses are included in the Errata attached to this FONSI.

## **SUMMARY OF AGENCY CONSULTATION**

### **Consultation with the National Marine Fisheries Service (NMFS)**

The NPS, as the lead federal agency, determined that the project may affect listed fish species and initiated formal consultation with the NMFS. The formal Section 7 evaluation addressed steelhead (*Oncorhynchus mykiss*), coho salmon (*O. kisutch*) and their designated critical habitat. A letter requesting initiation of formal consultation and an attached biological assessment were provided to NMFS on November 16, 2001. NMFS issued a biological opinion for the project on April 23, 2003 and concluded that the proposed stream enhancement project is not likely to jeopardize the continued existence of the threatened Central California Coast steelhead and Central California Coast coho salmon nor is it likely to adversely modify Central California Coast coho salmon critical habitat. Incidental take statement for Central California Coast steelhead and coho accompanies the biological opinion.

### **Consultation with the U.S. Fish and Wildlife Service (USFWS)**

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On September 19, 2001, the GGNRA received concurrence from the USFWS that proposed activities to improve habitat for steelhead trout and coho salmon as well as improve the floodplain function would not likely adversely affect the California red-legged frog or adversely modify or destroy critical habitat.

### **California Coastal Commission**

The GGNRA submitted a request for concurrence that this project is consistent with the Coastal Zone Management Act (Letter from Mai-Liis Bartling, Acting Superintendent to Mark Delaplaine, California Coastal Commission, dated May 1, 2003). The Commission approved Consistency Determination prepared by staff on June 13, 2003 (CD-40-03).

### **United States Army Corps of Engineers**

NPS policies require protection of water quality consistent with the Clean Water Act. Section 404 of this act authorizes the US Army Corps of Engineers to prohibit or regulate, through a permit process, discharge of dredged or fill material into U.S. waters, including wetlands. Temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or de-watering of construction sites require a Nationwide Permit No. 33. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must be of materials, and placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if it is determined by the District Engineer that it will not cause more than minimal adverse effects on aquatic resources.

On October 31, 2001 the GGNRA sent a letter to the USACE requesting the issuance of Section 404 Nationwide Permits 27 and 33 for the activities at Easkoot Creek. A Section 404 permit is required since project area includes jurisdictional waters of the U.S. in Easkoot Creek. On June 18, 2003, the USACE issued an authorization under Nationwide permits 27 and 33 pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344) (File Number 26606N).

### **Regional Water Quality Control Board (RWQCB)**

The NPS submitted an application for Water Quality Certification and/or Waiver of Waste Discharge Requirements to the San Francisco Bay Region, Regional Water Quality Control Board. GGNRA staff met with the Regional Board and staff regarding the scope of the project and applicable regulatory compliance. On August 28, 2003, the Regional Water Quality Control Board issued a standard water quality certification for the project.

### **State Historic Preservation Officer**

In June 1992, the NPS, SHPO, and the Advisory Council on Historic Preservation (ACHP) entered into a programmatic agreement (PA) regarding the operation and maintenance activities within the GGNRA. The proposed work in this project falls under this existing PA. On January 23, 2003, the project received certification for compliance with the NHPA through the Preservation Assessment (5X) Form (Certification No: GOGA-3-013)

## **PUBLIC REVIEW**

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- August 21, 2003 GGNRA held a meeting with concerned individuals and agencies that commented on the EA, including representatives of the Stinson Beach Village Association, Stinson Beach Water District, the Regional Water Quality Control Board, the Sierra Club, and individuals representing fishery conservation interests. Comments raised by attendees related to clarification of the flooding assessment, potential increased sediment transport impacting Bolinas Lagoon, long-term maintenance of the project, clarification of the separate planning process for the Stinson Beach restrooms, and the need for better overall communication between the GGNRA and local agencies. Responses to these comments are discussed in the Errata attached to this FONSI.

## **WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Adverse impacts from the selected alternative may include:

- Minor to moderate, short-term adverse effects of construction on water quality, wetlands, and biological resources including threatened fish species and riparian birds.
- Minor short-term adverse impacts to the visitor experience and aesthetic resources would result from construction, including traffic, temporary parking restrictions, and access to Stinson Beach.
- Minor short-term adverse impacts to air quality and noise during construction.

Beneficial impacts of the selected alternative may include:

- The selected alternative would have moderate to major beneficial effects to habitat for special status fish species.
- The selected alternative would result in moderate long-term beneficial effects on the stream channel, riparian resources, native vegetation, and wetland resources at the site.
- The selected alternative would have a minor beneficial impact to visitor experience and recreation, especially for uses such as bird watching.

### **Degree of effect on Public Health or Safety**

After release of the EA, the Stinson Beach Water District commented in a meeting that flooding downstream of the project area could impact leach fields near the creek. Residents had also communicated their concerns regarding flooding downstream of the project area on the phone to Park



staff. The design report (Zembsch 2003) indicates that the restoration actions will not increase flooding downstream of the project area above current levels. An independent technical review of the original flooding assessment was conducted after the release of the EA (Kamman Hydrology and Engineering 2003a) in response to public comment. The technical review indicated that the determination reached in the design document of no increase in flooding by project actions required further justification (Kamman Hydrology and Engineering 2003a). As a result, the input variables for the HEC-RAS flood model (which predicts water surface elevations) were reanalyzed by the Project Engineer (Mountain West Engineering and Environmental Services 2003). The Project Engineer concluded that the potential for increased flooding (100-yr event) is unlikely given the results of the new model analysis. Kamman Hydrology and Engineering reviewed this new model analysis and concurred with the finding (Kamman Hydrology and Engineering 2003b). This conclusion is consistent with the findings of the original model that were reported in the design document (Zembsch 2003) and EA.

**Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas**

The Easkoot Creek watershed is largely undeveloped and protected as state and federal parkland and county water district open space. It is used by special status species including coho salmon and steelhead. Consultation with NMFS concluded that the selected alternative is not likely to jeopardize the continued existence of the threatened Central California Coast steelhead and threatened Central California Coast coho salmon, nor is it likely to adversely modify Central California Coast coho salmon critical habitat. Consultation with USFWS concluded that the selected alternative and the measures proposed are not likely to adversely affect the red-legged frog or its critical habitat. Wetlands within the project area were mapped using the Cowardin classification system (Cowardin et al, 1979) and procedures established by the U.S. Army Corps of Engineers. Project actions will result in grading and filling of 0.62 acres of Cowardin wetlands. Restoration actions will result in a net gain of 0.07 acres of Cowardin wetlands. The value of existing and restored wetlands would be increased through the removal of non-native vegetation.

**Degree to which effects on the quality of the human environment are likely to be highly controversial**

The project generated interest during the public comment period related to the potential flooding impacts to downstream residents. An adjacent landowner raised concerns about the project increasing the groundwater level and subsequently rendering a portion of the property unbuildable. GGNRA staff have worked with the landowner and proposed a solution that includes a change to the selected alternative. In addition, comments were raised relating to clarification of the flooding assessment, potential increased sediment transport impacting Bolinas Lagoon, long-term maintenance of the project, clarification of the separate planning process for the Stinson Beach restrooms, and the need for better overall communication between the GGNRA and local agencies. GGNRA held additional meeting with representatives of the Water District, Village Association, and interested individuals to address these concerns and reach resolution.

**Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks**

Flooding was identified as a concern and addressed in the design documents, concluding that it would not present an impact. However, flooding is unpredictable in nature is a potential impact of this project. The GGNRA has taken reasonable measures in design and post project monitoring and remedial measures (Mitigation Measure WQ-12) to reduce the risk and ensure that this project does not increase the risk of loss of property or life over existing conditions.

**Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration**

Lessons learned from recent projects on Redwood Creek have informed this project, including the handling of fish, placement of in stream logs, and community involvement. This project will inform the future creek restoration projects in the GGNRA and possibly in the NPS. Creek Restoration projects have the potential for effects that can be major. However, this is an adaptive process and does not represent a decision in principal nor establish precedence concerning creek restoration.

**Whether the action is related to other actions with individually insignificant but cumulatively significant impacts**

The EA considered the cumulative impacts of the selected alternative with several past, present or reasonably foreseeable future projects and the analysis indicated that cumulative impacts would be beneficial and result in improved habitat in conjunction with other proposed projects.

**Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

The selected alternative would have negligible impacts to historic and archaeological resources. The Selected Alternative has been reviewed and certified for compliance with the NHPA through the GGNRA Programmatic Agreement with the State Historic Preservation Office. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR 800.5, *Assessment of Adverse Effects*), the NPS concludes that implementation of the selected alternative would not impair park resources or values related to historic or archaeological resources.

**Degree to which the action may adversely affect an endangered or threatened species or its critical habitat**

The selected alternative would have moderate short-term adverse effects to listed fish species. Because the selected alternative involves handling of listed fish species, it is considered likely to adversely affect, but not likely to jeopardize the continued existence of these fish species or adversely modify designated critical habitat. Habitat will be modified to improve special status fish species survival in the long-term.

**Whether the action threatens a violation of Federal, state, or local environmental protection law**

Implementation of the selected alternative would violate no federal, state, or local environmental protection laws.

**NO IMPAIRMENT OF PARK RESOURCES**

The fundamental purpose of the National Park Service, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. Impairment is defined as an impact that, in the professional judgement of the responsible park manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources and values (NPS Management Policies 2001). The National Park Service has determined that implementation of the selected alternative and mitigation measures will not constitute an impairment to Golden Gate National Recreation Area's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Easkoot Creek Restoration at Stinson Beach Environmental Assessment, the mitigation measures, agency consultations, considerations of the public comments received, relevant scientific studies, and the professional judgement of the decision-maker guided by the direction in NPS Management Policies 2001.

## **MITIGATION MEASURES**

The following mitigation measures are included as part of the Selected Alternative and will be completed by GGNRA staff.

MITIGATION MEASURES INCLUDED AS PART OF THE SELECTED ALTERNATIVE

Topic	Mitigation Number/ Responsible Party	Mitigation
<b>HYDROLOGIC, GEOMORPHIC, WATER QUALITY, AND GEOLOGIC RESOURCES</b>		
Flow Diversion	Mitigation Measure WQ-1/ GGNRA (Aquatic ecologist) & contractor	If flowing water is present, flow will be diverted around the work areas. Standing water, however, may remain in the work areas due to the high water table at the sites. See Mitigation Measure Bio-6
Erosion and Sediment Control	Mitigation Measure WQ-2 GGNRA (Aquatic ecologist) & contractor	In-water work would cease on or before October 31. Work on the banks would cease on or before November 15.
Erosion and Sediment Control	Mitigation Measure WQ-3 GGNRA (Aquatic ecologist) & contractor	The number of equipment access points to the channel will be minimized to reduce the effects of equipment access of channel banks.
Erosion and Sediment Control	Mitigation Measure WQ-4 GGNRA (Aquatic ecologist) & contractor	Erosion control materials, such as mulch, jute netting, and/or native plant materials, will be placed on disturbed creek banks. Fiber rolls or silt fences would be installed above bankfull elevation to prevent detached soils from reaching the creek. Erosion control would be in place November 15. These materials would be monitored and maintained during the rainy season to ensure effectiveness.
Erosion and Sediment Control	Mitigation Measure WQ-5 GGNRA (Aquatic ecologist) & contractor	Stockpiles of excavated sediment would be at least 100 feet from the creek and will be contained using silt fences, sand bags, straw bales, and/or other appropriate sediment catchment devices. Stockpiles will be covered during the rainy season.
Erosion and Sediment Control	Mitigation Measure WQ-6 GGNRA (Aquatic ecologist) & contractor	To prevent construction debris from entering the creek, appropriate best management practices set forth in the California Storm Water Best Management Practice Handbooks will be employed.
Erosion and Sediment Control	Mitigation Measure WQ-7 GGNRA (Aquatic ecologist) & contractor	In upland work areas, barriers such as fiber rolls, gravel/sandbags, and silt fences will be placed between the construction area and the creek to prevent construction debris or surface runoff from entering the creek.
Erosion, Sediment, and Pollution Control	Mitigation Measure WQ-8 GGNRA (Aquatic ecologist) & contractor	Potential contaminants and erodible materials stockpiled within 100 feet of the creek will be covered with tarps during construction, and potential pollutants (e.g., fuels, etc.) will be stored with proper containment and outside of areas where contact with stormwater runoff or creek waters could occur.
Erosion and Sediment Control	Mitigation Measure WQ-9 GGNRA (Aquatic ecologist) & contractor	Water pollution and sedimentation prevention measures will be used during construction. Erosion control measures to prevent detachment and transport of soil will be used.

Erosion and Sediment Control	Mitigation Measure WQ-10 GGNRA (Aquatic ecologist) & contractor	Temporary fills and coffer dams may be established to divert flow around areas where construction activities will occur. Materials used for coffer dams will be completely removed after construction. The fisheries biologist shall be present on site during installation and removal of sandbag coffer dams. During this time, the fisheries biologist shall estimate the downstream extent of turbidity that occurs by visual observation from the bank or dry portions of the channel bed. The fisheries biologist shall monitor the project on a daily basis for the purpose of assessing unanticipated adverse effects to salmonids and their habitat. The fishery biologist shall be empowered to halt work activity and to recommend measures for avoiding adverse effects to salmonids and their habitat.
Erosion and Sediment Control	Mitigation Measure WQ-12 GGNRA (Aquatic ecologist)	The stream will be monitored for debris and deposition of sediment after major rain events. If flood control measures are needed, a flood control maintenance plan for the site shall be prepared that specifies the amount of woody debris that can be left in the stream for fish cover after flood control maintenance activities are conducted. This report shall be submitted to NOAA Fisheries prior to flood control maintenance conducted during the summer of 2004. Native vegetation removed to facilitate heavy equipment access shall be replaced at a 3:1 ratio.
Erosion and Sediment Control	Mitigation Measure WQ-13 GGNRA (Aquatic ecologist) & contractor	During excavation activities, sediment piles left overnight on the site will be covered completely with tarps or watered to prevent airborne migration as needed to prevent windborne dust.
<b>BIOLOGICAL RESOURCES</b>		
Wildlife Resources	Mitigation Measure BIO-1 GGNRA (Wildlife ecologist)	A bird survey will be conducted within 5 days prior to construction, if necessary. If special-status bird species are observed nesting on the project site downstream of the pedestrian bridge, construction activities will be delayed until nesting is completed.
Wildlife Resources	Mitigation Measure BIO-2 GGNRA (Wildlife ecologist)	A pre-construction herpetofauna survey by a qualified biologist will be conducted in areas of excavation and filling. The biologist will search the litter layer and downed woody cover for presence of herps. If found, individuals would be translocated to undisturbed, adjacent riparian sites
Riparian/Plant Resources	Mitigation Measure BIO-3 GGNRA (Restoration botanist) & contractor	Construction activities will avoid removal of existing native trees and shrubs. In areas where removal of non-native trees and shrubs are proposed, nearstream native shrub and trees species would be replanted.
Special Status Species	Mitigation Measure BIO-4 GGNRA (Aquatic ecologist) & contractor	In-channel construction activities will occur during the low-flow period between July 1 and October 31 to avoid spawning, adult in-migration, and juvenile outmigration. Riparian and other work outside the bed and banks of the creek may occur until November 15 as long as sediment control measures are installed at the site to prevent sediment entry to the creek during late fall rains.

Special Status Species	Mitigation Measure BIO-5 GGNRA (Aquatic ecologist) & contractor	In-channel construction activities will occur during the low-flow period between July 1 and October 31 to avoid spawning, adult in-migration, and juvenile outmigration. Riparian and other work outside the bed and banks of the creek may occur until November 15 as long as sediment control measures are installed at the site to prevent sediment entry to the creek during late fall rains.
Special Status Species	Mitigation Measure BIO-6 GGNRA (Aquatic ecologist) & contractor	The action area will be dewatered and no construction equipment shall enter flowing water during instream work. Where flowing water occurs in the action area, a culvert or pipe to transport these waters through the action area shall be installed during instream work. The pipe or culvert must be appropriate to allow juvenile salmonid movement downstream.
Special Status Species	Mitigation Measure BIO-7 GGNRA (Aquatic ecologist)	The GGNRA fishery biologist shall monitor placement and removal of sandbag cofferdams used to dewater the work area or portions of it. Prior to cofferdam installation, the biologist shall capture any steelhead that may be in the area to be dewatered. Salmonids will be relocated to a suitable instream location upstream or downstream of the work space. To prevent overcrowding of off site release areas, the GGNRA may place some fish in sites where work has been completed if suitable sites upstream and downstream are unavailable. Water quality conditions in these areas (temperature, dissolved oxygen, turbidity) will be monitored to ensure similar or better sites away from the project are selected for release.
Special Status Species	Mitigation Measure BIO-8 GGNRA (Aquatic ecologist)	During and after fish relocation, fish shall not be allowed to enter the work area. Block nets or the coffer dams themselves shall be set up at the upstream and downstream extent of the relocation area to prevent immigration of salmonids during relocation and project construction. If used, block nets shall be removed once coffer dams or other dewatering materials are fully in place.
Special Status Species	Mitigation Measure BIO-9 GGNRA (Aquatic ecologist) & contractor	The GGNRA shall insure that a fishery biologist shall be on site during relocation activities. The fishery biologist shall ensure that the proper number of trained individuals are present to conduct fish relocation in a timely manner at the site. Methods for removing fish shall be those that minimize impact to salmonids. Methods for removal such as seining shall be used and exhausted prior to the use of electrofishing methods.
Special Status Species	Mitigation Measure BIO-10 GGNRA (Aquatic ecologist) & contractor	A fishery biologist shall monitor the project on a daily basis for the purpose of assessing unanticipated adverse effects to listed salmonids and habitat. The fishery biologist will be empowered to halt work activity and to recommend measures for avoiding adverse effects to steelhead and habitat.
Special Status Species	Mitigation Measure BIO-11 GGNRA (Aquatic ecologist) & contractor	Work shall cease and NOAA Fisheries shall be contacted at once if more than 15 steelhead or 10 coho salmon are killed during relocation or other project activities.
Special Status Species	Mitigation Measure BIO-12 GGNRA (Aquatic ecologist)	GGNRA shall prepare a biological monitoring report documenting project impacts to salmonids and habitat. This report shall be submitted to NOAA Fisheries no later than 2

		months following the completion of the project. If flood control work occurs in 2004, a similar report shall be prepared and submitted within the time frame described above. Reporting requirements are detailed in the Biological Opinion.
Special Status Species	Mitigation Measure BIO-13 GGNRA (Aquatic ecologist) & contractor	Just prior to construction, a biological monitor familiar with identification of the red-legged frog would search the project site and adjacent areas, for the presence of red-legged frogs and other herps. Should frogs be observed, authorized take would be required to move individuals safely outside of the construction area to similar habitats. Construction activities will be temporarily suspended in the area of the observed frogs.
<b>CULTURAL RESOURCE IMPACTS</b>		
Cultural Resources	Mitigation Measure Cult-1 GGNRA (Archeologist) & contractor	If paleontological resources are encountered during construction, work in the immediate vicinity of the find will be stopped and a GGNRA archaeologist will be called to inspect the finds. The recommendations of the archaeologist with regard to on-site preservation, recovery and/or documentation of the resources will be implemented before construction recommences.
<b>UTILITIES IMPACTS</b>		
	Mitigation Measure Util-1 GGNRA (Stinson maintenance) & contractor	Prior to excavation for the stream channel and floodplain, utilities will be identified and protected from damage.
<b>VISITOR USE AND EXPERIENCE IMPACTS</b>		
Visitor Use	Mitigation Measure VUE-1 GGNRA (Stinson maintenance)	The North Parking Lot shall be re-striped to ensure that no parking spaces are lost with the installation of the buffer strip.
Visitor Use	Mitigation Measure VUE-2 GGNRA (Stinson maintenance) & contractor	To avoid potential accidents related to construction, public access to construction areas will be prevented.
Visitor Use and Experience	Mitigation Measure VUE-2 GGNRA (Aquatic ecologist)	Signs will be placed at access points to the creek to inform park visitors about project-related construction activities and direct them around the activities accordingly.
Visitor Use	Mitigation Measure VUE-4 GGNRA (Envir. Prot. Specialist)	A public meeting will be held prior to implementation of the project to discuss proposed measures to minimize construction impacts and to provide the local residents a work schedule.
<b>AIR QUALITY AND NOISE IMPACTS</b>		

Noise	Mitigation Measure AQN 1 GGNRA (Aquatic ecologist) & contractor	Construction activities will be limited to weekdays between 7 a.m. and 7 p.m.
Noise	Mitigation Measure AQN 3 GGNRA (Aquatic ecologist) & contractor	The contractor will be required to operate and maintain construction equipment to minimize noise generation. Equipment and vehicles will be kept in good repair and fitted with “manufacturer-recommended” mufflers.
Air Quality	Mitigation Measure AQN 4 GGNRA (Aquatic ecologist) & contractor	Trucks hauling soil, sand and other loose materials will be required to install covers or be required to maintain at least two feet of freeboard.
Air Quality	Mitigation Measure AQN 5 GGNRA (Aquatic ecologist) & contractor	The Contractor will be required to sweep paved surfaces at the project construction site daily with appropriate sweepers; this mitigation would be required during dust-creating operations and in locations/routes where dust would be generated as a result of project construction. Surface debris shall not be swept into the creek.
Air Quality	Mitigation Measure AQN 6 GGNRA (Aquatic ecologist) & contractor	Construction activities will cease if visible dust clouds form.
Air Quality	Mitigation Measure AQN 7 GGNRA (Aquatic ecologist) & contractor	Trucks hauling or moving soil shall not idle for more than five minutes.

Note: The GGNRA Aquatic ecologist is the Contracting Officer’s Technical Representative for this project.





## ERRATA SHEET

### Easkoot Creek Restoration at Stinson Beach

#### ERRORS AND OMISSIONS

The GGNRA was unaware of a hydrologic survey conducted by the Stinson Beach Water District in 1998. The results of the report are posted on the SBCWD website and should have been reviewed by GGNRA in preparation of the EA. A review of the hydrologic survey did not indicate that the EA was incorrect, however, the following bolded sentence has been added to the text on page 22, after the last paragraph describing the existing conditions in the creek.

**The Stinson Beach Water District conducted a hydrologic survey in 1998, concluding that “Sampling and analysis of Seadrift Lagoon, Bolinas Lagoon, and Easkoot Creek water during this study indicated that the most significant impacts of wastewater on surface water occur in Easkoot Creek, which showed consistent high levels of fecal contamination (page 51).”**

In addition the following sentence has been added to the Impacts of the Preferred Alternative section on page 42, just before “*Hydrology and Water Resources Conclusion*”

**The preferred alternative will not impact current levels of fecal contamination in Easkoot Creek.**

#### CHANGES TO TEXT TO REFLECT MODIFICATIONS MADE IN RESPONSE TO PUBLIC AND AGENCY COMMENT

In July and August 2003, GGNRA staff met with an adjacent homeowner on two occasions at the site (August 12 and 20, 2003) and held additional telephone conversations related to the potential for the project to add to the occasional flooding that occurs in the parking area of the homeowner’s lot. The GGNRA addressed concerns regarding potential increased ground saturation by describing flood analyses that indicates the infrequent nature and duration of overbank flooding. In additional, an interior drain for the berm was proposed and will be added to the project to ensure quick drainage of floodplain area after peak flow events. Also an exterior drain for the berm was proposed and will be added to the project that will convey drainage that may be channeled along the berm away from the homeowner’s lot and into the creek. The project modification will help reduce the potential for impacts to downstream flooding.

The following bolded text is added to the Preferred Alternative discussion on page 9, fourth paragraph under excavation, last sentence.

**These sites would include the base of the new flood berm and recontoured riparian banks. Interior and exterior channels will be constructed adjacent to the berm and direct the water to the creek. The purpose of the channels is to ensure that runoff is intercepted and directed toward the creek and not toward the adjacent property owner.**

The following bolded references are added to the Literature Cited section (page 55).

**Stinson Beach County Water District, February 1998. Stinson Beach Hydrologic Survey, prepared by Questa Engineering and Todd Engineering**

**Zembsch, S. April 2003. Easkoot Creek rehabilitation plan. Golden Gate National Recreation Area, Stinson Beach, California. Unpublished document prepared for the Golden Gate National Recreation Area. 48 pp.+appendices.**

#### **SUBSTANTIVE PUBLIC COMMENTS**

This section summarizes the main issues raised in the public comment letters and provides GGNRA responses.

**Comment:** The rainfall data used in the EA indicates a mean annual precipitation of 21 inches and data collected by the Stinson Beach County Water District (SBCWD), over the past 15 years, found a mean annual precipitation on 30.2 inches. The difference could impact the stream flows throughout the year and effect the design criteria used for the project.

**Response:** The EA cites mean annual precipitation based on rainfall records from 1978-1989. The recent rainfall data collected by the District would be a complementary dataset. However, the mean annual precipitation data does not impact the results of the flooding analysis. The magnitude of the flood events (e.g., 100-yr) used in the flood assessment model is based largely on the rainfall intensity during peak flow events and drainage area.

**Comment:** The SBCWD commented that the EA did not acknowledge water quality reporting completed by the SBCWD, including a discussion of water quality.

**Response:** The GGNRA was unaware of a hydrologic survey conducted by the SBCWD in 1998. The results of the report are posted on the SBCWD website and should have been reviewed by GGNRA in preparation of the EA. A review of the hydrologic survey did not indicate that the EA was incorrect, however, the following bolded sentence has been added to the text on page 22, after the last paragraph describing the existing conditions in the creek.

**The Stinson Beach Water District conducted a hydrologic survey in 1998, concluding that “Sampling and analysis of Seadrift Lagoon, Bolinas Lagoon, and Easkoot Creek water during this study indicated that the most significant impacts of wastewater on surface water occur in Easkoot Creek, which showed consistent high levels of fecal contamination (page 51).”**

In addition the following sentence has been added to the Impacts of the Preferred Alternative section on page 42, just before “*Hydrology and Water Resources Conclusion*”

**The preferred alternative will not impact current levels of fecal contamination in Easkoot Creek.**

**Comment:** Planning for the new proposed Stinson Beach restroom needs to consider the wastewater generated and potable water use.

**Response:** During the public meetings and during review of the EA there was an impression among many in the public that the Easkoot Creek EA included NEPA compliance for the rehabilitation of the Stinson Beach restrooms. The restrooms were discussed in the cumulative impact section of the Easkoot EA and the scoping meeting for the projects were held consecutively at the same location. Clarification was required to ensure the public that the Easkoot EA and FONSI do not include compliance for the restroom project. The restroom project will have a separate environmental assessment planned for release in October 2003.

**Comment:** Flooding was identified as an issue.

**Response:** The GGNRA employed an independent third-party hydrology and engineering firm (Kamman Hydrology and Engineering) to review the hydrologic model prepared by the Project Engineer and used for the analysis in the EA. The technical review indicated that the determination reached in the design document of no increase in flooding by project actions required further justification (Kamman Hydrology and Engineering 2003a). As a result, the Project Engineer re-ran the hydrologic model (Mountain West Engineering and Environmental Services 2003). The Project Engineer concluded that the potential for increased flooding (100-yr event) is unlikely given the results of the new model analysis. Kamman Hydrology and Engineering reviewed this new model analysis and concurred with the finding (Kamman Hydrology and Engineering 2003b). This finding is consistent the findings of the original model that were reported in the design document (Zembsch 2003) and EA. The GGNRA also met with an adjacent homeowner to resolve localized flooding concerns as noted on Page 8 of this FONSI.

**Comment:** The community requested the GGNRA maintain the improvements to the channel.

**Response:** GGNRA intends to allow natural processes to proceed without interference and the Project Designers developed a self-sustaining channel design that requires little maintenance. However, GGNRA would initiate remedial activities if the project threatens adjacent or downstream properties. GGNRA will also be conducting post-project monitoring.

**Comment:** The Easkoot Creek Restoration may lead to an additional sediment load being transferred to Bolinas Lagoon, where sediment is a slowing filling the lagoon.

**Response:** It is likely that the project will reduce the fine sediment load to Bolinas Lagoon because the extended floodplain will allow finer sediments to settle out.