



**National Park Service
U.S. Department of the Interior**

**Golden Gate National Recreation Area
Regions 8, 9, 10 and 12**

**FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY DAM REMOVAL AND
LOWER VALLEY RESTORATION PROJECT**

Recommended:

DAVID SMITH

Digitally signed by DAVID SMITH
Date: 2023.03.22 11:23:03 -07'00'

David Smith
Superintendent, Golden Gate National Recreation Area

Date

Approved:

A handwritten signature in cursive script that reads "Frank Lands". To the right of the signature is a small, stylized version of the National Park Service arrowhead logo.

FRANK LANDS

2023.03.30 15:07:09 -10'00'

Frank Lands
Regional Director, Interior Regions 8, 9, 10 and 12, National Park Service

Date

1. Introduction

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine environmental impacts associated with the Proposed Action to remove an earthen dam and restore the natural channel, wetland, riparian, and coastal functions within the Tennessee Valley watershed. The Project is needed to eliminate a safety hazard to visitors at the beach downstream of the dam.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference below.

2. Selected Alternative and Rationale for the Decision

Based on the analysis presented in the EA, NPS selected the Proposed Action using the Choosing-by-Advantages alternative selection process. The selected alternative is described in the EA (pages 10-27). The selected alternative consists of removing the existing manmade earthen dam leaving a 3-foot-high berm to remain at the location of the existing embankment. Material taken from the embankment will be reused to reduce head-cutting and restore wetland functions downstream of the dam, create floodplain terrace habitat surrounding the existing pond upstream of the dam, and repair the eroded trail adjacent to the dam. Log-grade control structures will be installed within the stream, upstream of the remnant berm, to transition the stream channel gradient and disperse flows across the floodplain. Three new California red-legged frog (CRLF) ponds will be constructed to replace the breeding and rearing habitat at the existing pond behind the dam. Areas disturbed by construction will be revegetated with native plant species.

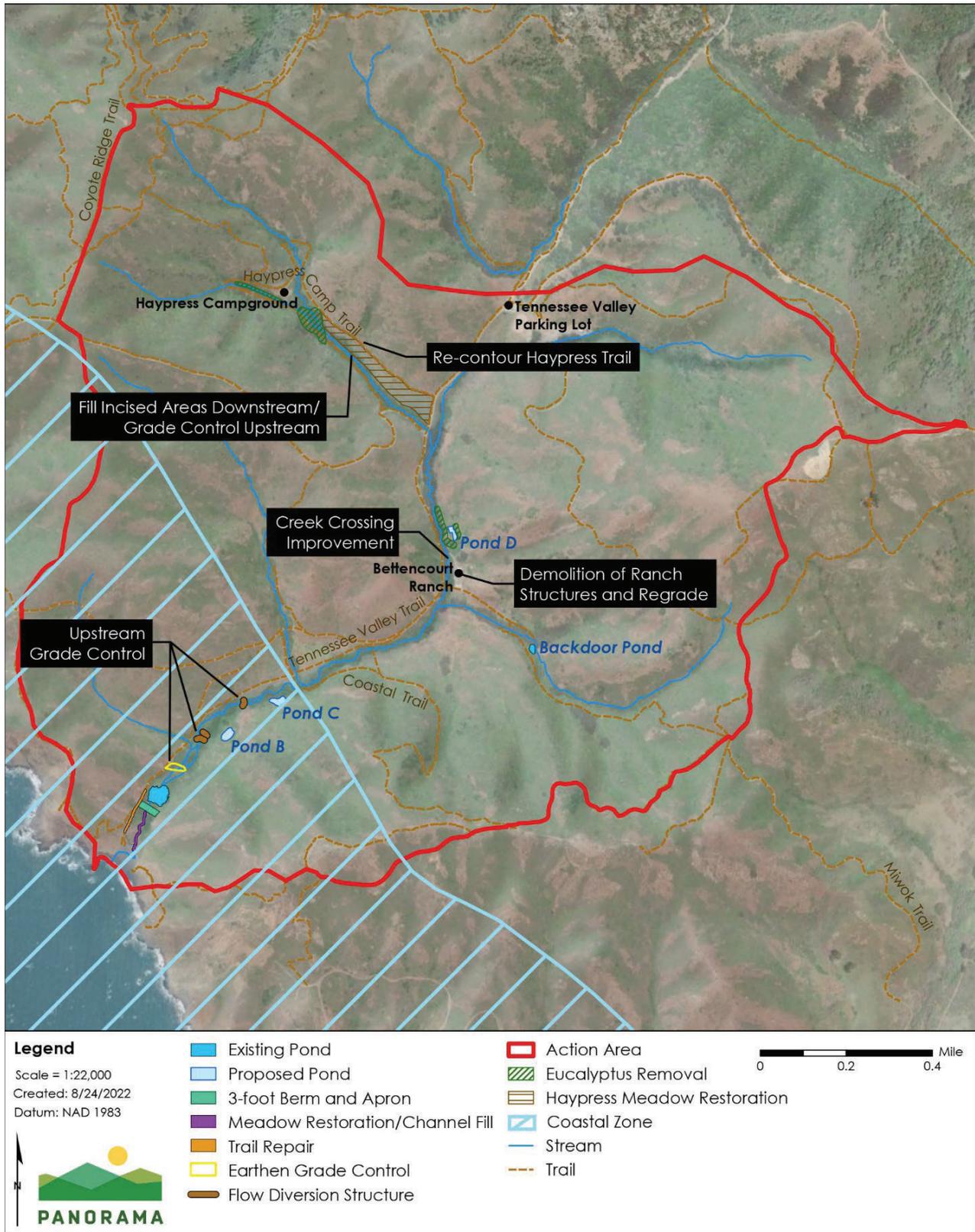
Along the Haypress tributary, fill from new ponds will be placed to reduce incision to improve wet meadow functions, and excess soils from the dam will be used to recontour the Haypress Trail to better shed runoff. Derelict structures at the Bettencourt Ranch area will also be demolished and removed. The Project will be phased over three years. The Project will implement several resource protection measures to minimize the degree and/or severity of adverse effects on water resources and quality, wetlands, floodplains, threatened and endangered species, vegetation, wildlife, historic resources, visitor use and experience, hazardous materials, geology and soils, air quality, visual resources, and soundscape.

Rationale

The Proposed Action as defined in the EA was selected because the Proposed Action is the most reasonable, has the most advantages, and is the most cost-effective to achieve the purpose and need and best meet the goals and objectives of the project, which include removing the existing dam for safety purposes and to restore the natural channel, wetland, riparian, and coastal functions within lower Tennessee Valley. The Proposed Action minimizes impacts to the CRLF and also allows for the best transitional approach at the site to prevent other channel incisions while new vegetation is established.

Figure 1. Project area within Golden Gate National Recreation Area

Source: EA, page 11



The No Action Alternative would not remove the dam and the existing safety hazard, and risk of dam failure would remain.

3. Mitigation Measures

The selected alternative incorporates by reference the best management practices (BMPs) included in Appendix A. The BMPs will guide implementation of the Project and reduce environmental impacts. No mitigation measures are proposed in addition to the BMPs for the selected alternative.

4. Public Involvement/Agency Consultation

Draft EA Public Review

Public review of the Draft EA was initiated on October 18, 2022, in accordance with NPS guidance under NEPA, and the public comment period ran through November 17, 2022. Public notices of the comment period were distributed by a press release on the park website and an electronic (via email) news release to various stakeholders, agencies, and media groups. Fifteen comments were submitted to the NPS through the PEPC website. NPS responses to the comments received and errata to the EA are enclosed in Appendix B. All comments received are incorporated into the Project record.

U.S. Fish and Wildlife Service

A Biological Assessment was submitted to USFWS on May 23, 2022, starting the formal consultation process under Section 7 of the Endangered Species Act. NPS received a Biological Opinion (BO) from the USFWS on December 19, 2022. The BO documented USFWS concurrence with the NPS determinations that the Project “may affect” but is “not likely to adversely affect” the tidewater goby and “may affect” and is “likely to adversely affect” the CRLF. The BO granted incidental take of CRLF.

U.S. Army Corps of Engineers

Informal consultation with the U.S. Army Corps of Engineers (USACE) determined that the Project is anticipated to be permitted under a Nationwide Permit 53 for removal of low-head dams and Nationwide Permit 27 for aquatic habitat restoration, enhancement, and establishment.

California State Historic Preservation Office and the Federated Indians of Graton Rancheria

As required by Section 106 of the National Historic Preservation Act, the park consulted with the California State Historic Preservation Officer (SHPO) and Federated Indians of Graton Rancheria to assess the effect of the Project on historic properties. The Section 106 consultation process was conducted separately from, but concurrently with, the NEPA process. On October 25, 2022, SHPO provided a letter of concurrence with the NPS’s findings of no adverse effect on historic properties due to proposed dam removal activities. In 2007, the SHPO concurred with the determination that the Bettencourt Ranch structures are ineligible for listing in the National Register of Historic Places.

5. Finding of No Significant Impact

The EA contains a comprehensive evaluation of the existing conditions and environmental consequences (direct, indirect, and cumulative) of implementing the Project as required by NEPA. The Project will not result in significant adverse impacts to the environment as discussed in the EA and summarized below.

5.1 Potentially Affected Environment

The affected environment includes the lower Tennessee Valley Watershed and the Haypress Campground and meadow area as well as the Bettencourt Area in the upper watershed (as show in EA Figure 1, pg. 3). The affected environment includes the existing dam and safety risk presented by the dam. The affected environment also includes the existing pond behind the dam as well as scour and erosion along the creek downstream of the dam and along the Haypress tributary.

5.2. Degree of Effects of the Action

The NPS considered the following actual or potential Project effects in evaluating the degree of effects (40 CFR 1501.3(b)(2)) for the selected alternative.

Beneficial and Adverse, Short-term and Long-term Effects of the Selected Alternative

No significant impacts to resources were identified that require analysis in an environmental impact statement (EIS). Whether taken individually or as a whole, the impacts of the selected alternative, including direct, indirect and cumulative effects, do not reach the level of a significant effect because most adverse impacts associated with implementation will be minimal or temporary, lasting only as long as actions are being executed. The selected alternative will result in substantial long-term beneficial impacts. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified.

Public Safety

The selected alternative will remove the dam, which will eliminate the hazard posed by the structure. The selected alternative will have a long-term direct beneficial impact to public safety and will not adversely affect public safety.

Water Resources and Quality

The selected alternative has the potential to increase sediment loads to the creek during and immediately following construction. A Stormwater Pollution Prevention Plan and BMPs will be in place to reduce and/or minimize adverse impacts to water resources and quality during construction. In the long term, Project features will restore a more natural stream-channel flow pattern, reduce existing downstream incision, and prevent further erosion, which will have a long-term beneficial effect on water resources and quality.

Wetlands

Construction of the selected alternative will temporarily impact wetlands during construction of temporary access roads and new CRLF breeding ponds. The Project grade-control features and fill of the scoured channel and incised channel segments will increase groundwater levels downstream of the dam and within the Haypress meadow, which will create long-term benefits to wetlands. The Project will result in the permanent increase of 0.88 acre of vegetated wetlands. All temporarily disturbed wetland areas will be revegetated with native species following construction. A Wetland Statement of Findings is not needed for the selected alternative because the Project will result in a net creation of wetlands and will improve wetland functions.

Floodplains

The selected alternative will result in enhanced floodplain storage and promote sheet flow across the floodplain to reduce peak flow rates. Construction-related activities may adversely affect the floodplain and surface-water quality as a result of increased sediment movement into surface water during the three-year, seasonally staggered construction period; however, BMPs will be implemented to minimize the effects. No structures are proposed within the floodplain. Upon completion of the Project, the permanent floodplain will be restored to a more natural state, which will result in a long-term beneficial impact. The topic of impacts to floodplains was considered per NPS Director's Order (DO) 77-2. A Floodplain Statement of Findings is not required under DO 77-2 because the selected alternative will not adversely impact human life, capital investments, or natural floodplain values.

Threatened and Endangered Species

Construction of the selected alternative will entail temporary adverse impacts to CRLF due to loss of CRLF habitat and relocation of CRLF individuals and egg masses prior to dewatering of the pond. Removal of the dam will result in reduced CRLF habitat in the short term. The selected alternative will create three new CRLF breeding ponds, which will be supported by varied water sources. The separate breeding ponds throughout the watershed will increase the long-term sustainability and viability of habitat for CRLF in the watershed. While the selected alternative will result in adverse impacts to CRLF during construction, the Project will have a net benefit to CRLF by creating sustainable and dispersed habitat.

Vegetation

Construction of the selected alternative will require removal of native riparian vegetation along temporary access routes and within new CRLF habitat areas. All vegetation removed, including non-native eucalyptus trees, will be replaced with native vegetation. NPS will provide long-term monitoring and management of invasive species in the restored habitat areas. There will be a long-term beneficial impact on vegetation due to the increase in native vegetation communities as a result of the restoration actions.

Wildlife

Local wildlife including birds, otters, and other native wildlife species will be temporarily displaced during Project construction but are likely to use suitable nearby habitat and return to the restored habitats post-construction. NPS will implement BMPs that include avoidance of nesting season and otter breeding season to minimize impacts on native wildlife. The selected alternative will result in a long-term beneficial impact to wildlife due to the overall improvement to native habitats as a result of the habitat restoration activities included in the Proposed Action.

Fisheries

The selected alternative will have a temporary adverse impact on fisheries as a result of construction dewatering of the pond and stream downstream of the dam, which contain non-native fish. Post construction, fish species are expected to return to the restored stream habitat within the lower watershed. The selected alternative will result in a long-term beneficial impact on fisheries because the habitat restoration activities will improve fish habitat.

Historic Properties

Implementing the selected alternative will not affect historic properties. The selected alternative will not result in the loss or destruction of significant scientific, cultural, or historical resources.

Visitor Use and Experience

Visitors will experience short-term impacts due to temporary trail closures and noise during construction. The selected alternative will eliminate the need for periodic trail closures between the dam and the beach during and after high-flow events by removing the dam hazard. The selected alternative will also repair trail conditions at the dam and at Haypress meadow. The removed safety hazard and trail repairs will provide long-term benefits to visitor use and experience.

Hazardous Materials

The selected alternative will require earthwork in areas containing low levels of remnant pesticides and metals. The remnant pesticides and metals in sediments below the existing pond, as analyzed in a sediment transport model, will still meet the Regional Water Quality Control Board beneficial reuse standards. Implementation of the selected alternative will result in negligible adverse impacts due to the transport and deposition of sediment containing low levels of contaminants while sediment dynamics are stabilizing. Due to the low risk of contaminants in sediments that are likely to become mobilized during and post-construction, the impact from hazardous materials on the environment will be minor.

Geology and Soils

Construction activities involve excavation, vegetation, and soil disturbance, which increase the potential for sediment transport and fugitive dust. BMPs will be implemented during construction for sediment and fugitive dust control to reduce and/or minimize local impacts on soils. Removal of the

existing, unstable dam and installation of an apron at the remnant berm will stabilize the stream channel and will provide a long-term benefit to the geologic stability of the area.

Transportation

Construction of the selected alternative will have a negligible impact on the local road network during hauling of material to and from the construction area. The selected alternative will not impact the transportation system after construction is complete.

Air Quality

The selected alternative will result in short-term, minor adverse impacts on air quality due to use of heavy equipment and generation of fugitive dust. BMPs will be implemented to minimize creation of fugitive dust. The habitat creation and dam removal will not cause a long-term impact on air quality.

Visual Resources

Removal of the existing pond will change the visual conditions in the Project area. However, the proposed restoration activities will result in a long-term beneficial effect on visual resources as the watershed is returned to a more natural landscape and visual experience.

Soundscape

Temporary heavy construction equipment activity will result in short-term, minor, adverse impacts to the soundscape within Tennessee Valley. No long-term impacts to the soundscape will occur as the restored habitats will not produce noise.

Degree to Which the Selected Alternative Affects Public Health and Safety

There will be no significant adverse impacts on public health or public safety. The selected alternative will have a long-term direct beneficial impact to public health and safety by removing the hazard posed by the dam. During construction, the trail will be intermittently closed for visitor safety due to construction equipment use.

Effects That Would Violate Federal, State, Tribal, or Local Law Protecting the Environment

Implementation of the selected alternative will not violate any federal, state, Tribal, or local environmental protection law.

6. Conclusion

As described above, the selected alternative does not constitute an action meeting the criteria that normally requires preparation of an EIS. This finding is based on consideration of CEQ criteria for significance (40 CFR 1501.3 (b)) regarding the potentially affected environment and degrees of effects of the impacts described in the EA.

Based on the foregoing, it has been determined that an EIS is not required for the Project and, thus, will not be prepared.

Appendix A

Best Management Practices

Best Management Practices

BMP Number	Description	Responsible Party	Timing
General			
GENERAL-1	<p>A training session would be required for all contractors, partners, or any NPS staff engaged in activities in or near T&E habitat. At this training, construction workers and supervisors would be informed about the Endangered Species Act and listed species in the project area, sensitivity of park resources, and of National Park standard values, regulations, and appropriate housekeeping practices. Training sessions will include identification of NPS/partner staff resource contacts; special-status wildlife, in the work area; markings for the limit line of disturbance; thresholds that would trigger a change in implementation techniques or require a halt in project implementation; prohibitions on feeding resident wildlife; and proper disposal of food waste and garbage to discourage feeding by wildlife, including corvids (scavengers, such as ravens), which may increase predation on native wildlife. Upon completion of training, employees or contracting crews will sign a form stating that they attended the training and understand all the avoidance and protection measures. Documentation of the training will be kept on file and available upon request. As needed, the training would be provided in the language of the contractor crews.</p>	Contractor and NPS	Training prior to construction; maintain records throughout construction.
GENERAL-2	<p>Equipment and material staging areas would be located in existing disturbed areas within the construction limits to the extent possible. Construction access routes and staging areas will be limited and clearly marked prior to the beginning of ground disturbing activities. No disturbance would occur beyond these limits. All protection measures would be clearly stated in the construction specifications and workers would be instructed to avoid conducting activities beyond the construction zone (including storage of equipment, materials, soil, etc.). Field workers would be shown exclusion zones to avoid.</p>	Contractor	During construction
GENERAL-3	<p>Other requirements for a contractor on site are as follows:</p> <ul style="list-style-type: none"> A. The contractor will be required to keep all waste and contaminants contained and remove them daily from the work site. B. All on- and off-road vehicles, equipment, and tools must be power washed to remove soil and plant fragments before entering GGNRA property to avoid spreading pathogens or exotic/invasive species. Equipment must be cleaned if moving from a work zone with aquatic invasive species. 	Contractor	During construction

BMP Number	Description	Responsible Party	Timing
	<p>C. Vehicle and equipment washing can occur on site only as needed to prevent the spread of sediment, pathogens, or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, hay wattles or bales, and silt screens).</p> <p>D. All boots, equipment, and tools must be disinfected using a 10% bleach solution, 70% isopropyl alcohol, or other NPS-approved disinfectant method prior to entering the site, as well as between work areas, to prevent pathogen spread.</p> <p>E. Vehicles, equipment, and tools may be inspected by GGNRA upon arrival and vehicles/equipment/tools determined to not be clean will be prohibited from accessing the site or continuing operations.</p> <p>F. Contractors would use quiet or noise-dampening technologies for equipment and implement measures to reduce noise to the extent feasible.</p> <p>G. No construction activities will occur at night to minimize impacts on wildlife that are most active during these times, such as the California red-legged frog.</p>		
GENERAL-4	Sourcing rock and soil materials: All soil and rock type materials will be certified weed free and sourced through quarries approved by GGNRA.	Contractor	During construction
GENERAL-5	All tools, equipment, barricades, signs, and surplus materials will be removed from the project area upon completion of the proposed project.	Contractor	During construction
Biological Resources			
BIO-1	A qualified biological monitor will be required to ensure that project actions conform to restrictions developed for species protection.	Contractor and NPS	During construction
BIO-2	A permitted biologist is defined as a person who holds a valid Sec 10 permit for surveys for a particular listed species. A biological monitor is a biologist approved by the Park's Natural Resource Division who has demonstrated abilities to conduct surveys for this species. A trained observer is defined as a person who may not have a biology background but who has attended recent field and office trainings	Contractor and NPS	During construction

BMP Number	Description	Responsible Party	Timing
	provided by the Park's Natural Resource Division or similar to identify the listed species, associated habitats, and construction techniques to avoid impacts to that species.		
BIO-3	The biological monitor will have either a Sec10(a)(1)(A) permit for the listed species or experience in the identification and behavior of special-status plant and wildlife species that could be affected, habitat assessment experience, and knowledge of the avoidance measures of the consultation. This would be documented by GGNRA natural resource specialists. The biological monitor(s) or trained observer(s) will keep a copy of the required avoidance measures and project plans in their possession when onsite. The biological monitor or trained observer would have authority to stop work if necessary to protect biological resources and listed species. The biological monitor or trained observer will complete a daily log summarizing activities and environmental compliance.	Contractor and NPS	During construction
BIO-4	Prior to construction activities within 1 mile of California red-legged frog breeding habitats, access routes and all other areas to be disturbed by restoration activities will be surveyed for the presence of the California red-legged frog. Any feature that provides cover and moist ground conditions would be searched by a trained observer immediately prior to construction to determine presence of CRLF. These efforts will include preconstruction night surveys to capture adult red-legged frogs, pre-construction trapping for tadpoles, and preconstruction daytime surveys for any newly transformed metamorphs. These preconstruction surveys will be conducted within 48 hours of the beginning of ground disturbance and will be planned with a "one step ahead" approach relative to construction activities. All rodent burrows, leaf litter deeper than 2 inches, or other obvious refugia will be surveyed for the presence of the species. Frogs observed in these areas will be relocated per CRLF-4.	Contractor and NPS	During construction
BIO-5	NPS will continue to conduct watershed-wide annual winter breeding surveys counting the number of active breeding sites and egg masses both between construction years and post-construction, per the GGNRA CRLF Management Plan.	NPS	Post-construction
BIO-6	<ul style="list-style-type: none"> A. All resource protection measures will be clearly stated in the construction specifications, and workers will be instructed to avoid conducting activities outside the project area. B. Construction zones outside of existing disturbed areas will be delineated with flagging, and all surface disturbances confined to the construction zone. 	NPS and Contractor	Prior to construction and during construction

BMP Number	Description	Responsible Party	Timing
BIO-7	The contractor will be required to keep all waste and contaminants contained and remove them daily from the work site. Wildlife-proof trash receptacles will be used. Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the CRLF. A litter control program will be instituted at each project site. All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers will be removed from the project site at the end of each working day.	Contractor	During construction
BIO-8	<p>The following measures will be implemented to minimize potential adverse effects to non-federally listed nesting birds.</p> <ul style="list-style-type: none"> A. To the extent feasible, tree and other vegetation removal would occur outside the nesting season. B. If vegetation clearing or ground disturbing activities commence between March 1 and July 31, a qualified biologist will conduct a survey for nesting birds within 5 days prior to starting work. If a lapse in project-related work of 1 week or longer occurs, another focused survey will be conducted before project work can be initiated. Surveys will cover a minimum of a 1/4-mile radius around the construction area. C. If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 300 feet for non-listed raptors and 100 feet for non-listed passerines. A qualified biologist may identify an alternative buffer based on a site-specific evaluation. Work will not commence within the buffer until fledglings are fully mobile and no longer reliant upon the nest or parental care for survival. 	Contractor and NPS	During construction
BIO-9	NPS would monitor the pond for river otters and, if breeding is detected in a year when construction is planned at the pond, methods would be identified to avoid or minimize impacts. Methods to avoid or minimize impacts on river otter would include monitoring for river otter breeding and seasonal timing of construction activities to allow river otter pups to become mobile before starting construction.	NPS	Prior to construction
BIO-10	Prior to commencement of ground disturbing activities, a qualified botanist will perform surveys for special-status and locally rare plant species within areas that could potentially be disturbed by the Proposed Action. If special-status or locally rare plants are detected within the construction zone or within a 50-foot radius of the construction zone, NPS will adjust the construction footprint or establish an exclusion area to avoid impacts to the plants. Locations of special-status plant populations will be	NPS	Prior to construction

BMP Number	Description	Responsible Party	Timing
	clearly identified in the field by staking, flagging, or fencing prior to the commencement of activities that may cause disturbance. If avoidance is not feasible, NPS will implement measures to minimize the impact on the species. Minimization measures will be evaluated on a case-by-case basis for local rarity and extent of impacts. Minimization measures may include transplanting perennial species, seed collection and dispersal for annual species, and other conservation strategies that will protect the viability of the local population.		
BIO-11	NPS will prepare a detailed plant protection plan based on specific areas potentially impacted by any proposed actions. NPS will thoroughly review areas of likely impact in advance and identify either any sensitive species or native species that will be protected or invasive species that will be controlled. Based on the potential impact and the species, a plan will be made to either (a) avoid the area if necessary to the presence of a sensitive species; (b) salvage plants if they are salvageable; (c) trim branches/leaves if the plants will easily resprout, (d) cover with plywood or other protective materials, or (e) other types of activities. Salvaged plants will be removed either immediately before impact or possibly up to 1 month in advance. They will be stored in area where there will be an easy water source (i.e.: such as the former nursery area) and replanted either immediately after work is completed in a specific zone or during the typical winter planting period.	NPS	Prior to construction
BIO-12	All areas where vegetation is disturbed by project work will be restored following project work with native plants salvaged onsite or propagated in the park nurseries. Revegetation actions would include the removal of invasive plants.	Contractor and NPS	Prior to construction, during construction, and post-construction
BIO-13	NPS will identify invasive plants within the work and access route areas prior to project implementation. Existing topsoil will also be evaluated for invasive, nonnative plant infestations. A qualified vegetation ecologist or botanist will plan treatments to prevent the spread of invasive species, and implementation of these treatments will be under the supervision of a qualified vegetation ecologist or botanist. The location of invasive species and the treatment plan will be documented in a plant protection plan. The final treatment prior to project implementation will occur close to initiation of project work. Topsoil heavily infested with invasive, nonnative plants will be removed. Non-infested topsoil will be salvaged, stored according to soil conservation guidelines, and replaced once construction is complete. Post-project monitoring and treatment for invasive plant species is expected to	NPS	Prior to construction and post-construction

BMP Number	Description	Responsible Party	Timing
	be on-going, with treatments at least 2 to 3 times per year for at least two to three years after construction or longer, as long as funding is available.		
California Red-legged Frog			
CRLF-1	All construction actions within 1-mile of breeding habitat would be conducted during the non-breeding season (April to October). Revegetation activities would be conducted during late fall and winter months.	NPS	Prior to construction and during construction
CRLF-2	Prior to expected start of construction, NPS will notify USFWS about the status of CRLF breeding activity for the year and proposed relocation activities within the watershed and possible transfers to Mountain Lake.	NPS	Prior to construction
CRLF-3	For vegetation clearing within 1 mile of California red-legged frog breeding habitats, when the site presents wet ground conditions, vegetation is dense, and ground is not visible, the vegetation will be hand-cleared to prevent take of frogs prior to entrance of heavy equipment into the area and to prevent occupation during construction. To avoid direct injury to California red-legged frogs, vegetation would be cut horizontally and removed to a height (approx. 12-16 inches) that allows for visual inspection of the ground to avoid direct injury to these animals. Trained observers must use a hard rake or similar hand tool to clear the ground for inspection. Powered hedge trimmers would be used in lieu of other power cutters or unless conditions are not suitable. Once the ground is visible, a visual survey will be conducted by either biological monitor or permitted biologist. Cover features (e.g., downed wood) would be inspected for animals and temporarily removed prior to any ground disturbance activities. Once the monitor determines the area is clear, the equipment will be allowed to enter the area.	NPS and Contractor	Prior to construction, during construction, and post-construction
CRLF-4	During heavy equipment work around the existing pond and downstream of the dam, trained observers will be present during construction activities to inspect for possible presence of CRLF.	NPS and Contractor	During construction
CRLF-5	If a California red-legged frog is observed, activities in the direct vicinity shall cease and the biological monitor or permitted biologist notified. To the extent possible, contact with the California red-legged frog will be avoided and the observed frog will be allowed to leave the site without intervention. If allowing the California red-legged frog to remain in the vicinity would cause injury or harm to the individual, the biological monitor or permitted biologist would capture and release the individual frog	NPS and Contractor	During construction

BMP Number	Description	Responsible Party	Timing
	outside the construction area in similar habitat where it was found. The biological monitor or permitted biologist will complete a log summarizing the activity including collection and translocation locations.		
CRLF-6	For vegetation clearing occurring within 100 meters of red legged frog aquatic breeding habitat, debris bags will be kept upright, and any piled vegetation and debris bags will be inspected before vegetative material is disposed of.	NPS and Contractor	During construction
CRLF-7	To prevent inadvertent entrapment of California red-legged frog during construction, steep-walled holes or trenches more than 2 feet deep will be covered at the close of each working day by plywood or similar materials. If this is infeasible, one or more escape ramps will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.	NPS and Contractor	During construction
CRLF-8	To prevent entrapment/entanglement of animals in erosion control products, only natural fiber, loose weave, non-welded, movable jointed netting, burlap or non-binded materials (e.g., rice straw) shall be used for erosion control or other purposes. These limitations will be communicated to contractors and designers.	NPS and Contractor	During construction
CRLF-9	Any on-site materials left overnight will be inspected prior to use unless those materials have been outfitted with barriers and elevated above the ground. Areas under parked equipment will be inspected each morning before equipment is turned on.	NPS and Contractor	During construction
CRLF-10	Prior to herbicide application, any feature that provides cover and moist ground conditions within 100m of California red-legged frog breeding site would be searched by a trained observer immediately prior to disturbance to determine presence of CRLF. If conditions dictate, the Park may require a Biological Monitor as the trained observer.	NPS	Post-construction
Dewatering			
DW-1	Dewatering of the pond shall be initiated as late as possible in the summer while still allowing a reasonable period to complete construction activities before the start of the rainy season in late fall.	NPS and Contractor	During construction

BMP Number	Description	Responsible Party	Timing
DW-2	Pump intakes shall be completely screened with wire mesh not larger than five millimeters to prevent aquatic wildlife from entering the pump system. Some redundancy in screening systems will be built into the intake system.	NPS and Contractor	During construction
DW-3	A biomonitor would be present to capture and relocate aquatic life, including western pond turtle and fish species, prior to dewatering. The biomonitor will observe the pump intake daily to relocate any species that could be drawn into the screen or the pump.	NPS	Prior to construction
DW-4	If reasonable methods can be identified to limit dewatering while still achieving construction actions, then they shall be used.	NPS and Contractor	During construction
DW-5	Discharge will employ methods to minimize downstream turbidity in the channel. These may include the use of de-siltation devices at the terminal end of the discharge pipe such as temporary settling basins, the use of sandbags or plastic to disperse outflow, sediment filter sacks, or the use of a coffer dam to prevent infiltration in undesirable locations.	NPS and Contractor	During construction
DW-6	If an auxiliary fuel tank is needed for the dewatering pump, NPS will work with the contractor to identify a suitable location and identify site-specific BMPs.	NPS and Contractor	During construction
Water Quality			
WATER-1	<p>SWPPPs and erosion control BMPs will be developed and implemented to minimize any wind- or water- related erosion and will be in compliance with the requirements of USACE. NPS will include provisions in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. Protective measures will include, at a minimum, those listed below.</p> <ul style="list-style-type: none"> A. No discharge of pollutants from vehicle or equipment cleaning will be allowed into any storm drains or water courses. B. Concrete waste and water from curing operations will be collected in washouts and will be disposed of and not allowed into water courses. 	NPS and Contractor	During construction

BMP Number	Description	Responsible Party	Timing
	C. Erosion control measures will be implemented that provide for soil stability and prevent movement of soils during rain events (i.e., silt fences and tarps).		
WATER-2	No heavy equipment will operate in a live stream.		
Visitor Use			
VIS-1	A Visitor Use Access and Safety Plan would be developed and include public notification and signage to effectively communicate construction closures and limitations.	NPS	Prior to construction
VIS-2	Prior to mobilizing equipment to the site, a traffic management plan shall be prepared to identify specific methods to maintain safe pedestrian, bicycle, equestrian, etc. use on the main visitor trail during periods of truck and/or equipment use. The plan shall define areas for safe turn out and utilize methods such as temporarily segregating the trail between truck and visitor use travel lanes, guidance for drivers to give visitors the right-of-way, and flaggers or workers who walk adjacent to a vehicle to help visitors move to one side. The plan should define methods for minimizing effects on visitors such as encouraging the contractor vehicles to arrive as early as feasible. All vehicle use shall follow a strict speed limit (5 to 10 mph). The plan shall include specific locations and language for signage to inform pedestrians of safety measures to follow and when construction vehicles will use the main trail. The plan will include consideration of the work schedule in relation to holidays, which are busier trail use times.	NPS	Prior to construction
VIS-3	A firm closure shall be placed at any visitor trail where construction staging or activity is conducted to prevent visitor access into the work zone at any time of day. Clear signage will be posted to notify visitors of planned and current activities and closures. Additionally, NPS will post alerts on the GGNRA website and social media outlets to notify the public of current activities and closures.	NPS	Prior to trail closures
VIS-4	NPS will remove the Haypress Campground from the on-line camping reservation system (www.recreation.gov) at least three months before any construction activities are planned at the campground area to avoid having to cancel any reservations.	NPS	Three months prior to construction
Hazardous Materials			

BMP Number	Description	Responsible Party	Timing
HAZ-1	No equipment servicing will be done in the channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps and generators).	NPS and Contractor	During construction
HAZ-2	Spill kits will be maintained on site at all times during construction operations and/or staging or fueling of equipment.	NPS and Contractor	During construction
HAZ-3	If necessary, all servicing of equipment done at the job site will be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills. Designated areas will not directly connect to the ground, surface water, or the storm drain system. The service area will be clearly designated with berms, sandbags, or other barriers. Secondary containment, such as a drain pan, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers and properly recycled or disposed of offsite.	NPS and Contractor	During construction
HAZ-4	No large fuel storage containers will be allowed. Fuel will be delivered to the site only in pick-up trucks designed for fuel hauling, but it will not be otherwise stored on site. Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from water courses, except at established commercial gas stations or established vehicle maintenance facilities.	NPS and Contractor	During construction
Air Quality			
AIR-1	<p>Dust abatement measures include:</p> <ul style="list-style-type: none"> A. Water all active construction areas with exposed soil surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads that have not been stabilized with soil binder, mulch, gravel, vegetation or other cover) sufficiently to prevent dust from becoming airborne. B. All trucks transporting soil, sand, or other loose material offsite shall be covered. C. Vehicle speeds on unpaved areas shall be limited to 15 miles per hour. 	Contractor	During construction
AIR-2	Idling time of equipment when not in use will be avoided and low emission producing equipment will be used when feasible.	Contractor	During construction

BMP Number	Description	Responsible Party	Timing
Noise			
NOISE-1	<p>The following will be implemented to minimize disturbance from construction noise:</p> <ul style="list-style-type: none"> A. Contractors will ensure that power equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) are equipped with original manufacturer’s sound-control devices. No equipment will be operated with an unmuffled exhaust. B. Except when required for safety or to ensure the integrity of a proposed project component, no work will be conducted on weekends or holidays. The hours specified in the Marin County noise ordinance will be adhered to as general guidance: general construction will be limited to the hours of 7 a.m. to 6 p.m. on Monday through Friday and 9 a.m. to 5 p.m. on Saturdays; loud noise generating equipment operation will be limited to 8 a.m. to 5 p.m. on Monday through Friday. C. Construction equipment will be properly maintained to minimize noise. 	Contractor	During construction
Soils			
SOIL-1	Minimize disturbance to vegetation and soils.	NPS and Contractor	During construction
SOIL-2	Place protective mats, if necessary, on the haul route to disperse the load.	NPS and Contractor	During construction
SOIL-3	Evaluate compaction both before and after work and de-compact using hand methods, if needed. Aerate any ground surface temporarily disturbed during construction and replant with native vegetation to reduce compaction and prevent erosion.	NPS and Contractor	During construction
Cultural Resources			

BMP Number	Description	Responsible Party	Timing
CR-1	In the event that potentially significant archaeological materials are encountered during Project-related ground disturbing activities, all work should be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. Should additional actions be proposed outside the currently defined APE that have the potential for additional subsurface disturbance, further cultural resource management may be required.	NPS and Contractor	During construction
CR-2	In the unlikely event that human remains are discovered during construction activities, all work will stop within 50 feet of the discovery, and the NPS archeologist will be contacted immediately. Furthermore, as required by law, the requirements of California Health and Human Safety Code Section 7050.5 will be followed and the Marin County coroner will be notified. If the human remains are determined to be of Native American origin, NPS will follow the provisions outlined in the Native American Graves Protection and Repatriation Act (1990).	NPS and Contractor	During construction
Wetlands			
WET-1	<p>Pre-construction Preparation</p> <p>a) The boundaries of construction areas will be clearly flagged and/or signed in advance of construction.</p> <p>b) Trees or shrubs overhanging or encroaching on access roads will be trimmed back to allow vehicles to pass by without going off the road.</p> <p>c) All material stockpiling and staging areas will be located within project right of ways in non-sensitive areas, or at designated disturbed/developed areas outside of design construction zones.</p>	NPS and Contractor	Prior to and during construction
WET-2	<p>Transportation and Access</p> <p>a) Access to the project area will be restricted to existing access roads and routes identified in the project description and construction documents.</p> <p>b) Vehicle and equipment refueling, and lubrication will only be permitted in designated disturbed developed areas where accidental spills can be immediately contained. No refueling or maintenance will be conducted in the creek or immediately adjacent to the creek.</p>	Contractor	During construction

BMP Number	Description	Responsible Party	Timing
	c) All vehicles will carry a suitable fire extinguisher and other protective and preventative gear as required by NPS.		
WET-3	Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.	NPS and Contractor	During construction
WET-4	<p>Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semi-permeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. The material must be stabilized with straw bales, filter cloth, or other appropriate means to prevent reentry into the waterway or wetland.</p> <p>Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.</p> <p>Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community. Salvaged topsoil should not be piled taller than 2 feet high and 3 feet wide, and piles should be windrowed to retain viability of the microorganisms.</p>	NPS and Contractor	During construction

Appendix B

Errata and Responses to Comments

ERRATA

TENNESSEE VALLEY DAM REMOVAL AND LOWER VALLEY RESTORATION PROJECT

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

March 2023

This errata addresses minor text changes and revisions to the Environmental Assessment (EA) for the Tennessee Valley Dam Removal and Lower Valley Restoration Project. The EA was circulated for public comment from October 18, 2022 to November 17, 2022. The Page and section references provided indicate where in the original EA changes are made. Modifications to the EA text are provided in Part 1, followed by responses to comments in Part 2.

The corrections in this errata sheet do not increase the degree of adverse impact described in the EA or change the analysis or conclusions of the EA nor do they change the determination that the project would not have significant impacts.

PART 1: Text Modifications

Changes to the EA text reflect modifications made in response to public and agency comment. Inserted changes to the EA are underlined, deleted text is shown as being struck through, and existing text to remain is in italics.

Page 9, Section 1.5.15, ¶1

The Tennessee Valley Dam Removal and Lower Valley Restoration Project is consistent with the GGNRA General Management Plan (~~GMP~~NPS; 2014).

Page 9, Section 1.5.15, ¶1

Natural resources would be managed to preserve resource integrity while providing for various types of visitor experience, and impacted areas would be restored to the greatest extent possible (National Park Service 2014~~5~~).

Page 16, Section 2.1.2, ¶1

The CRLF breeding pond site selection approach is described in the Feasibility Study and Alternatives Analysis (Kamman, 2020~~19~~).

Page 18, Section 2.1.3, ¶1

The channel incision has been ~~exasperated~~ exacerbated by discharge through a culvert in the dam.

Page 22, Section 2.1.5

Table Error! Use the Home tab to apply 0 to the text that you want to appear here.-1 Proposed Eucalyptus Tree Removals

Location	Number of trees per diameter at breast height (DBH) proposed for removal						Primary purpose
	<1 ft.	1–2 ft.	2–3 ft.	1–3 ft.	>3 ft.	Total	
<i>Pond D – Bettencourt -</i>	1	—	—	9	10	20	<i>Reduce shade on new pond</i>
<i>Pond D – Bettencourt (other)</i>	1	—	—	2	3	6	<i>Reduce shade on pond</i>
	2	—	—	2	2	6	<i>Other eucalyptus in vicinity; do not shade pond, but removal would complete removal of non-natives in this reach</i>
<i>Grove 1 along Haypress drainage near Haypress Campground (upstream end)</i>	24	—	—	47	18	89	<i>Provide eucalyptus logs for downstream grade control structures in the mainstem channel and possibly Haypress channel. Secondary benefit: allows channel to be re-established with native willow growth.</i>
<i>Grove 2 along Haypress drainage downstream of Haypress Campground</i>	89	—	—	33	3	125	<i>Provide eucalyptus logs for downstream grade-control structures in the mainstem channel and possibly Haypress channel. Secondary benefit: allows channel to be re-established with native willow growth.</i>
<i>Back Door Pond</i>	24	9	7	—	10	50	<i>Reduce shade on Backdoor Pond, to be used temporarily to relocate CRLF tadpoles during construction. If new ponds are already constructed and suitable for relocation, this action may not need to be conducted.</i>
TOTAL	141	9	7	93	46	284 296	
^a Source: NPS Onsite Survey							

Page 37, Section 3.3.3, Affected Environment, ¶2

The first took place in 2015, covering 26.7 acres of the lower Tennessee Valley from the beach to the Coastal Trail footbridge (Denn, Ryan, & Ward, 2015).

Page 37, Section 3.3.3, Affected Environment, ¶2

Another field investigation was performed in 2021 for 0.35 acre in the Bettencourt area (Denn, Ryan, & Ward, ~~Delineation of Potential Jurisdictional Wetlands and Other Waters, Bettencourt Area, Tennessee Valley, 2021~~), and the last was in 2022 for approximately 14.8 acres in the Haypress area and meadow (Panorama Environmental, 2022).

Page 37, Section 3.3.3, Affected Environment, ¶3

Most of the wetlands within the Project area are palustrine (Denn, Ryan, & Ward, 2015).

Page 42, Section 3.3.5, Affected Environment, ¶3

CRLF is the largest native frog found within GGNRA. All life stages are known to occur in the Tennessee Valley watershed (National Park Service, 2022b).

Page 47, Section 3.3.6, Affected Environment, ¶1

*Grasslands include non-native species such as velvet grass (*Holcus lanatus*), oatgrass (*Avena barbata*), ripgut brome (*Bromus diandrus*), and tall fescue (*Festuca arundinacea*) (Denn, Ryan, & Ward, 2015).*

Page 47, Section 3.3.6, Affected Environment, ¶2

The valley bottoms are largely occupied by riparian and freshwater wetland communities (Denn, Ryan, & Ward, 2015).

Page 47, Section 3.3.6, Affected Environment, ¶4

*Other species commonly found in wetland areas such as water parsley (*Oenanthe sarmentosa*), lady fern (*Athyrium filix-femin*), field horsetail (*Equisetum arvense*), California bee plant (*Scrophularia californica*), and cow parsnip (*Heracleum maximum*) are also present. The wetland-to-upland transition area is often dominated by spreading rush (*Juncus patens*) and tall fescue (*Festuca arundinacea*) (Denn, Ryan, & Ward, 2015).*

Page 47, Section 3.3.6, Affected Environment, ¶4

*The wetland-to-upland transition area is often dominated by spreading rush (*Juncus patens*) and tall fescue (*Festuca arundinacea*) (Denn, Ryan, & Ward, 2015).*

Page 47, Section 3.3.6, Affected Environment, ¶5

At the pond, vegetation communities reflect the consistently saturated conditions at and near the surface (Denn, Ryan, & Ward, 2015).

Page 50, Section 3.3.6, Proposed Action, ¶1

A total of ~~284~~ 296 eucalyptus trees are proposed for removal as part of the Proposed Action (Table 2).

Page 51, Section 3.3.7, *Affected Environment*, ¶3

Of these, 26 species were considered special-status species that are listed by federal or State agencies or are locally rare enough to deserve special consideration, including the federally listed threatened CRLF, which is discussed in Section 3.3.5 Threatened and Endangered Species (Avocet Research Associates, LLC, 2020)(Kamman, 2020).

Page 54, Section 3.3.7, *Affected Environment*, ¶2

*River otters (*Lontra canadensis*), a furbearing mammal, have been observed using the pond behind the existing dam. Typically, no more than a single otter at a time has been spotted near the dam. However, there was an occurrence of otter breeding at the site in 2014 where two otter pups were observed, and otter pups were observed in the pond again in 2022, as well as the riparian area below the dam and the nearshore marine area. As of publication of this EA, the River Otter Ecology Project has documented two groups of otters within Tennessee Valley. One single otter and a group of two adults with two pups that had likely recently moved into the watershed. Further observation is needed to determine if the new group will stay in Tennessee Valley or is transient. River otters are potentially using and moving between the 19 acres of freshwater and riparian wetland habitats within the project area. The CRLF mitigation ponds may enhance river otter habitat within the project area. River otters are capable of traveling over land between wetland areas and do not require a surface water connection to access habitat areas. Food sources for the river otter are present in wetland habitats of Tennessee Valley. In addition, river otter are likely to forage in the nearshore marine area of the cove, transporting nutrients from the ocean into the upland areas.*

Page 54, Section 3.3.7, *Affected Environment*, ¶3

*The pond and stream also provide a fresh water source for resident non-avian wildlife, including aquatic gartersnake (*Thamnophis atratus*), California slender salamander (*Batrachoseps attenuatus*), California newt (*Taricha torosa*), Pacific chorus frog (*Pseudacris regilla*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), and possibly mountain lion (*Puma concolor*) (Avocet Research Associates, LLC, 2020)(Kamman, 2020).*

Page 55, Section 3.3.7, *Proposed Action*, ¶2

The construction displacement of river otters would be a short-term impact. River otters are likely to establish temporary new patterns of habitat use, likely in wetlands and riparian vegetation cover, outside and away from active construction. The construction displacement of river otters would be a short-term impact.

Page 56, Section 3.3.7, *Proposed Action Conclusion*, ¶1

In the long term, minor-to-moderate beneficial direct and indirect impacts to wildlife would be anticipated due to overall ecological watershed health improvements and added riparian and

floodplain habitat connectivity; however, minor adverse impacts to river otters would occur due to loss of the existing pond habitat at the dam.

Page 56, Section 3.3.8, *Affected Environment*, ¶1

*The perennial streams in Tennessee Valley may include resident fish species such as threespine stickleback (*Gasterosteus aculeatus*) and prickly sculpin (*Cottus asper*) (NPS, 2014⁵).*

Page 56, Section 3.3.8, *Affected Environment*, ¶1

Past fisheries surveys by the ~~(National Park Service, 2022)~~ NPS have identified non-native fish such as mosquitofish present in the pond and downstream (NPS, 2015).

Page 59, Section 3.3.10, *Affected Environment*, ¶1

According to NPS Visitor Use Statistics (which uses an automated vehicle counter), the average number of visitors per year over the last 3 years is approximately 390,000 (National Park Service, 2022^c)

Page 60, Section 3.3.10, *Affected Environment*, ¶4

GGNRA staff reported that in 2021 the trail was closed once for 13 days and once for 3 days (National Park Service, 2022^a).

References

Kamman, R. (2020¹⁹). Memorandum: Tennessee Valley Dam Modification FS: CRLF Breeding Pond Mitigation Site Summary: Internal Review.

Kamman, R. (2020). Tennessee Valley Dam Modification Project Feasibility Study and Alternatives Analysis.

~~Kleinfelder. (2022). Supplemental Site Inspection Report.~~

National Park Service. (2006). Management Policies. Retrieved from https://www.nps.gov/subjects/policy/upload/MP_2006.pdf

National Park Service. (2006). Soundscape Management Policy 4.9—Natural Sounds. Retrieved June 2022, from https://www.nps.gov/subjects/sound/soundscape-management-policy_4_9.htm

National Park Service. (2014⁵). Golden Gate National Recreation Area Muir Woods National Monument Final General Management Plan/Environmental Impact Statement.

National Park Service. (2022^a). 2021 Trail Closure Log.

National Park Service. (2022, ~~May 20~~^b). Biological Assessment Tennessee Valley Dam Removal and Lower Valley Restoration Project.

National Park Service. (2022, ~~August 17~~^c). Vehicle Count Data - Internal Access Only. 2022.

NOAA, N. O. (2022⁰⁵, ~~May~~). Coastal Zone Management Act. Retrieved from <https://coast.noaa.gov/czm/act/>

Denn, M., Ryan, A., & Ward, K. (2015). *Delineation of Potential Jurisdictional Wetlands and Other Waters, Lower Tennessee Valley Wetland Mapping Project. Golden Gate National Recreation Area. Marin County, CA.*

Appendix A, Best Management Practices

<i>BMP Number</i>	<i>Description</i>	<i>Responsible Party</i>	<i>Timing</i>
<i>BIO-9</i>	NPS would monitor the pond for river otters and, if breeding is detected in a year when construction is planned at the pond, methods would be identified to avoid or minimize impacts. Methods to avoid or minimize impacts on river otter could <u>would include excluding river otters from the work area and timing activities to allow river otters to vacate the work area prior to construction</u> <u>monitoring for river otter breeding and seasonal timing of construction activities to allow river otter pups to become mobile before starting construction.</u>	<i>NPS</i>	<i>Prior to construction</i>
<i>DW-3</i>	A biomonitor would be present to capture and relocate aquatic life, including <u>western pond turtle and fish species</u> , prior to dewatering. The biomonitor will observe the pump intake daily to relocate any species that could be drawn into the screen or the pump.		
<i><u>VIS-2</u></i>	<u>Prior to mobilizing equipment to the site, a traffic management plan shall be prepared to identify specific methods to maintain safe pedestrian, bicycle, equestrian, etc. use on the main visitor trail during periods of truck and/or equipment use. The plan shall define areas for safe turn out and utilize methods such as temporarily segregating the trail between truck and visitor use travel lanes, guidance for drivers to give visitors the right-of-way, and flaggers or workers who walk adjacent to a vehicle to help visitors move to one side. The plan should define methods for minimizing effects on visitors such as encouraging the contractor vehicles to arrive as early as feasible. All vehicle use shall follow a strict speed limit (5 to 10 mph). The plan shall include specific locations and language for signage to inform pedestrians of safety measures to follow and when construction vehicles will use the main trail. The plan will include consideration of the work schedule in</u>	<i><u>NPS</u></i>	<i><u>Prior to construction</u></i>

	<u>relation to holidays, which are busier trail use times.</u>		
<u>VIS-3</u>	<u>A firm closure shall be placed at any visitor trail where construction staging or activity is conducted to prevent visitor access into the work zone at any time of day. Clear signage will be posted to notify visitors of planned and current activities and closures. Additionally, NPS will post alerts on the GGNRA website and social media outlets to notify the public of current activities and closures.</u>	<u>NPS</u>	<u>Prior to trail closures</u>
<u>VIS-4</u>	<u>NPS will remove the Haypress Campground from the on-line camping reservation system (www.recreation.gov) at least three months before any construction activities are planned at the campground area to avoid having to cancel any reservations.</u>	<u>NPS</u>	<u>Three months prior to construction</u>

PART 2: Responses to Comments

In total, 15 public comments were received during the public review comment period of the EA with none being received outside of the public comment period. Commentors included multiple unaffiliated individuals and representatives of the Marin Audubon Society, Marin Conservation League, Miwok Stables Center for Preservation and Public Programs, River Otter Ecology Group, and Designing Accessible Communities.

Comment 1: Since the Tennessee Valley Beach Road Trail is our main equestrian access to trails from our stable, may we request that we be notified when machinery will be using the beach road trail.

Response: In accordance with BMP VIS-1, the National Park Service (NPS) will provide notices ahead of trail closures. BMP VIS-1 states: A Visitor Use Access and Safety Plan would be developed and include public notification and signage to effectively communicate construction closures and limitations.

Comment 2: Please leave the dam and pond as they are. The pond is beautiful and is an excellent refuge for wildlife.

Response: The dam must be removed because the existing dam is a safety hazard. The project will expand wetlands and riparian areas that provide habitat for wildlife.

Comment 3a: The EA mentions that ponds could become infested with non-native parrot feather or other invasive vegetation and that manual or chemical treatments may be required to control the infestation. The EA should provide further details about a weed treatment program using approved aquatic herbicide as the chemicals should be deemed safe, specifically for use around the CRLF and their breeding habitat.

Response: An approved aquatic herbicide could be used to prevent infilling of vegetation around the new CRLF breeding ponds, if mechanical removal is not possible or likely to be successful. Any herbicide use by the NPS would be required to comply with all applicable best management practices (BMPs) from the EA and the USFWS Biological Assessment (BO) for potential impacts to CRLF. The NPS has a rigorous review and approval process for herbicide use and all herbicide use will be administered through the Golden Gate National Recreation Area (GGNRA) and regional integrated pest management (IPM) coordinators and conducted in accordance with NPS policy and with Environmental Protection Agency (EPA) and state regulations. Only herbicides or surfactants approved for aquatic use would be used to control invasive aquatic plants and only if mechanical removal is infeasible. Currently approved aquatic formulations of imazapyr and glyphosate have been rated as either slightly toxic to not acutely toxic to aquatic life. BMP CRLF-10 in the BO includes a requirement that any feature with cover and moist ground conditions within 100 meters of CRLF breeding sites would be searched by a trained observer and possibly a Biological Monitor immediately prior to application. Any vegetation control activity would be timed to avoid or minimize impacts to the egg or larval stage of CRLF. BMP CRLF-5 describes procedures to allow for relocation of CRLF to avoid any potential impacts to individual frogs as follows:

CRLF-5: If a California red-legged frog is observed, activities in the direct vicinity shall cease and the biological monitor or permitted biologist notified. To the extent possible, contact with the California red-legged frog will be avoided and the observed frog will be allowed to leave the site without intervention. If allowing the California red-legged frog to remain in the vicinity would cause injury or harm to the individual, the biological monitor or permitted biologist would capture and release the individual frog outside the construction area in similar habitat where it was found. The biological monitor or permitted biologist will complete a log summarizing the activity including collection and translocation locations.

Comment 3b: The EA states that optimal construction sequencing would construct two ponds upstream of the dam prior to removal of the dam to allow for establishment of new CRLF breeding habitat prior to dam removal. The EA should discuss the less optimal sequencing if ponds are constructed during or after removal of the dam and the benefits or consequences of doing so.

Response: It is NPS' intention to construct the two CRLF ponds prior to dam removal in order to avoid a possible year or more of potential for substantially reduced CRLF breeding. Both the NPS EA and the USFWS biological opinion (BO) state the preference to construct the two ponds before removing the dam, but construction of the two ponds in advance of the dam removal is not required in the EA or BO. If the new ponds are constructed during or after removal of the dam, then the Backdoor Pond would be enhanced and used to relocate tadpoles during dam removal. Enhancement of Backdoor Pond is included in the EA and BO as an option in case it is not feasible to construct the new CRLF ponds in advance of dam removal. Until the new CRLF ponds are constructed, there would be a temporal reduction in successful CRLF breeding in Tennessee Valley, but the remnant Tennessee Valley pond behind the 3-foot berm, should provide breeding habitat until it naturally transitions into emergent marsh habitat (possibly up to 5 years).

Comment 3c: The EA says that if dewatering is necessary, that it would be done during CRLF non-breeding season (April-October) and as late in the dry season as feasible to complete construction before late fall rains. This conflicts with the United States Fish and Wildlife Services (USFWS) website that states the CRLF lay their eggs during or shortly after large rainfall events in late winter and early spring between November through May. If the breeding season in GGNRA is considered to differentiate from the USFWS information, it should be notated in the EA.

Response: The NPS' long-term breeding survey database shows breeding occurring between the months of November and March for Tennessee Valley (NPS unpublished data, 2023). We understand that breeding CRLF in other areas and habitat types (e.g., streams) may fall outside of the breeding period for Tennessee Valley. Dewatering would occur as late in the dry season as possible to minimize impacts on CRLF. The potential range of the breeding period cited in the EA is consistent with the period of November through May recognized by the USFWS in its BO for the project.

Comment 4a: I am concerned about the declining populations of western pond turtles and the added stress to them of dwindling aquatic habitats due to water diversions and the extreme drought. The EA says that there was a survey for these turtles eight years ago in this area. However, a lot can change in eight years, including the movement of species to find new suitable habitats. I recommend that live trapping for turtles be conducted prior to dam removal. If any turtles are present and caught, they should be protected and relocated to other nearby suitable habitats. I would also support any other proactive NPS actions to help protect and restore these turtles.

Response: NPS biologists conducted multiple basking trap, baited hoop trap, and visual encounter surveys for western pond turtle in 2014 at Backdoor Pond and Tennessee Valley Pond without capture or observation of any turtles. However, pond turtles had been observed previously in the watershed in the 1990's and we are hopeful that they may still be present. BMP DW-3 requires biomonitoring and trapping and relocation of aquatic species, including native turtles to nearby suitable habitats prior to dewatering and construction activities at Tennessee Valley Pond. BMP DW-3 has been revised in Part 1 of this errata to clarify that it applies to western pond turtles.

We are very aware of the plight of western pond turtles in our park and have partnered with Sonoma State University and San Francisco Zoo and started a head start program to reintroduce them back to Rodeo Lagoon and Redwood Creek watersheds.
<https://www.parksconservancy.org/article/california-native-freshwater-turtle-returns-rodeo-valley-watershed>

Comment 4b: In addition, I hope that NPS will prevent any livestock grazing from harming the restored aquatic and riparian habitats. Livestock grazing in the West has already significantly harmed these habitats and associated special status species.

Response: No livestock grazing is allowed within Tennessee Valley.

Comment 5a: One question that have about this project is the use of self-sustaining features to minimize future maintenance. This in mentioned in the Project Goals and Objectives, and is the third bullet point on that list. I couldn't find more context in the Environmental Impact Statement (EIS), and I'm curious as to what methods are to be used to minimize future maintenance. Watershed areas are often filled with many small channels of water, and reducing the risk of the embankment collapsing is of utmost importance. In my limited experience, most newly established watersheds need regular maintenance to ensure that the habitats are being created effectively. Especially in the territory of a threatened species, I would think that conservation is high priority.

Response: Future maintenance of the project area is achieved largely by designing for and allowing a wide range of natural processes, particularly the wide range of potential flow events. For instance, the conceptual designs discussed in the EA include the use of the remnant footprint of the dam and installed log structures as grade control to reduce the potential erosive effects of high flows on unvegetated soils. The self-sustaining aspect of the new CRLF habitat is also addressed through design, with an understanding of groundwater elevations after many years of data collection. Still, NPS would routinely monitor the new CRLF habitat and, if necessary, take adaptive action.

Comment 6: There is no reason that the Tennessee Valley Trail can't be made accessible except for some person's decision that doing so is not worth the trouble!

Do your job and make this trail completely accessible all the way from the parking lot to the beach!

Response: The scope of actions in this EA do not include plans to reroute or regrade the main trail to make it accessible. This EA addresses a limited area of the main trail which has been impacted by the dam.

Comment 7: Since many lands now included in the GGNRA are no longer ranch lands, it has been necessary to remove structures such as this small dam to make them safely and enjoyably usable by park visitors. It will be good to see this project completed.

Response: Thank you for your comment. We appreciate your support.

Comment 8: Can we please remove the duck hunting dam so that indigenous salmon and steelhead fishes can return to their wonderful natural spawning procedures?

Please remove the dam in an eco - sensitive way so the salmon and steelhead can once again do their thing.

Response: The Proposed Action will restore natural hydrologic processes and also allow for more natural movement of aquatic life through the creek corridor in Tennessee Valley. It is unclear whether the creek would support native salmon such as steelhead due to the small watershed area and limited spawning and rearing habitat, but we would like to be pleasantly surprised.

Comment 9: Please construct a bike rack at the beach so we can organize and lock bikes.

Response: It is not within the scope of the dam removal project to provide bike locks or other visitor amenities. However, NPS recognizes the need and is expected to pursue solutions for this issue outside of this project.

Comment 10: We agree with the project to remove the dam in the Lower Tennessee Valley and restore it to its original habitat.

Response: Thank you for your comment and your support.

Comment 11: Please restore to the most natural and sustainable form.

Response: The intent of the NPS is to restore the site to its most natural and sustainable form. The site is likely to go through a transitional process to reach its most natural form after the abrupt removal of the dam. Sediment transport and flow will naturally transition the watershed to function in a more sustainable state.

Comment 12a: 1. We recommend that red-legged frog egg masses remain at Tennessee Valley and not be relocated to San Francisco as is suggested as a possibility. Until it is certain the population is reestablished at Tennessee Valley, recommend all remain on-site.

Response: As much as possible, we try to support regional conservation efforts including opportunities to re-introduce California red-legged frogs within GGNRA where they were found historically. Any efforts to translocate egg masses to the Presidio would be done in consultation with the U.S. Fish and Wildlife Service and the Presidio Trust as noted in the BO. We would expect that the consultation would require measures that would minimize impacts to the Tennessee Valley population.

Comment 12b: 2. We support removal of the highly invasive eucalyptus. It is not clear whether the 284-eucalyptus identified as being removed is all of the eucalyptus or whether some will remain. If some are planned to remain, how many and the reason should be stated. We recommend that all be removed unless a particular tree supports an important wildlife resource, such as monarch roost or owl nesting trees

Response: The EA allows for all of the 296 Eucalyptus (see number correction noted in response 13d; the update to the total number of eucalyptus removed does not affect the number of eucalyptus proposed for removal at any site) to be removed from the specific areas identified in the Haypress drainage and mainstem channel; however, the schedule for removal of Eucalyptus will likely differ for different stands. It is likely Eucalyptus that would be used for grade control in the mainstem of the creek and Eucalyptus that would need to be removed to prevent shading of the new CRLF pond D will be prioritized for removal. Funding is likely to limit the number of trees removed in the short term. However, in the longer term, such as after other dam-related actions are complete and as funding allows, NPS would remove all of the 296 Eucalyptus trees discussed in the EA to more fully restore the areas within the Haypress drainage. The Proposed Action analyzed in the EA does not include removal of all Eucalyptus within the Tennessee Valley watershed.

Comment 12c: 3. An analysis of groundwater including the quantities is presented. It does not address, however, whether the groundwater is sufficient to support three new ponds in different locations year-round or whether it all or some of the ponds are expected to dry-out in summer. Is it beneficial if the ponds dry-out in summer?

Response: The groundwater quantity information provided in Section 3.3.2 is summarized from monitoring results detailed in the 2020 Feasibility Study and Alternatives Analysis, which included groundwater level monitoring. The groundwater monitoring results indicate that the proposed California Red Legged Frog (CRLF) breeding ponds would be saturated year-round, with open water throughout the breeding periods NPS is proposing multiple ponds at a range of locations as an assurance of functional habitat in the event of unforeseen circumstances. It is not inconceivable that some or all CRLF ponds could go dry in some years, but groundwater data and analyses of potential changes in groundwater levels do not suggest this would be a likely condition. Still, if drying does occur during a breeding season, breeding would not occur during the dry year, but drying would not affect the existing adult population of CRLF nor would it preclude reproductive success in subsequent years.

The individual CRLF pond characteristics, including the water sources and habitat, are described in Table 1 of the EA. In summary, groundwater monitoring wells at Ponds B and C have been monitored continuously via dataloggers since 2015. Groundwater

monitoring wells at Pond D have been monitored continuously since 2019. The wells installed at Ponds B and C captured extreme drought conditions in 2015, which is helpful to design the depth of the new pond. The data collected in those conditions enhances NPS' confidence that the CRLF ponds will be inundated during breeding season based on the proposed design.

Comment 12d: 4. A revegetation plan would be prepared at a later time. This seems like a deficiency as revegetation would need to occur soon after segments of the project are completed, otherwise weeds will take over. Is it expected revegetation would take place after the entire project is finished or after each segment is completed? How will weeds that invade after revegetation be removed?

Response: Section 2.1.7, under Revegetation, the EA states that a revegetation plan would be prepared during the project's preparation of construction designs, which is prior to any construction. Revegetation would utilize native plants, potentially salvaged during construction, sourced from within the watershed, or from a local NPS nursery. Revegetation is anticipated to occur in phases in each year when construction work is conducted, to reduce the potential for non-native plant and invasive weed encroachment. The project also includes monitoring and weed control during implementation to ensure success of the created habitats.

Comment 13a: While numerous short-term impacts are noted in Chapter 3, the term "mitigation" makes only limited appearance. How will these impacts be resolved in the long-term? Appendix A, under each resource topic, lists comprehensive Best Management Practices that have been integrated as part of the Proposed Action. In every case where a potential adverse impact of the Proposed Action might occur, the impact would be minimized or avoided by incorporating BMPs into the Proposed Action. The EA-equivalent CEQA document found in Appendix B: Appendix G Environmental Checklist form, follows CEQA protocol, listing potential impacts by resource category. Measures incorporated into the project to "mitigate" impacts are referred to appropriate BMPs listed in Appendix A.

Response: The EA identified short-term impacts are related to construction-disturbing activities, but none of the identified short-term impacts will progress beyond the construction period. The short-term impacts include increased turbidity in the water, vegetation disturbance, and wildlife displacement. BMPs are appropriate measures to minimize these impacts. The project is proposed to create sustainable habitats that would have no long-term adverse effects. The proposed monitoring and adaptive management approach would promote sustainable and natural watershed function, providing many long-term benefits. No mitigation is needed for long-term impacts because there would not be any long-term adverse effect.

Comment 13b: Corrections in the EA

- In reviewing the BMPs presented in Appendix A, we found them adequate, with one exception. Three BMPs referenced in Chapter 3(3.3.10) discussion of Visitor Use and Experience are missing from Appendix A: BMPs VIS-2, 3, and 4. Please provide these missing BMPs, in that the disruption of visitor access is a short-term moderate adverse impact that would be significant without these BMPs.

Response: The NPS appreciates notification of this oversight. The BMPs have been added to Part 1 of this errata for formal inclusion in the Final EA.

VIS-3 through VIS-4 BMPs were inadvertently left out of the published Draft EA Appendix A and have been added in Part 1 of this errata for formal inclusion in the Final EA.

Comment 13c: - In Sub-chapter 2.1.3 Beneficial Reuse of Fill, first Paragraph, Line 4: Replace "exasperate" with "exacerbate."

Response: The NPS appreciates notification of this oversight, the correction has been included in Part 1 of this errata for formal inclusion in the Final EA.

Comment 13d: - Please re-check total number of eucalyptus trees to be removed in Table 2 and correct if necessary.

Response: The NPS appreciates notification of this oversight. The proposed eucalyptus tree removal count total has been corrected to 296 trees in all applicable instances as described in Part 1 of this errata for formal inclusion in the Final EA.

Comment 14a: 1. Background North American River Otters were extirpated from much of their historical range in Northern California (Schempf and White, 1977), but began to recover in the late 1980s (Bouley et al., 2015). Along with Rodeo Lagoon, the project area is the southernmost extent of known river otter range at the land-sea interface in California (CWHR, 2019).

Beginning in 2012, River Otter Ecology Project (ROEP) has monitored and documented the recovery and range expansion of the species (Bouley et al., 2015; Carroll et al., 2020), including at GGNRA. As noted in the DEA, river otters have been present within the project area since at least 2012, and from 2015 to the summer of 2022 we detected and documented only a single otter there. In September 2022 we detected and documented an additional group consisting of two adult otters and two pups. Members of the public also observed this additional group, and reported their sightings to us through our Otter Spotter web portal.

The additional river otters first detected in September likely are immigrants, from an unknown source population, and at this time it is unclear whether they are transient or are now resident in the area. Recruitment of new individuals to the area is not known to have occurred prior to this year.

Response: The NPS appreciates the work of the River Otter Ecology Project within Tennessee Valley. The provided information is helpful and will be used to better characterize the river otter population within the watershed, for this project as well as future activities. The NPS has expanded the discussion in Section 3.3.7 Wildlife, Existing conditions, to reflect the current river otter population. Please see the changes added to Part 1 of this errata for formal inclusion in the Final EA.

Comment 14b: 2. River Otter Habitat Use at Tennessee Valley

In assessing the Proposed Action's possible effects on river otters, the DEA assumes that otter habitat use is confined to the pond area, but this is not the case. In addition to various streams

and drainages, the project area contains approximately 19 acres of freshwater and riparian wetland [Figure 5, Page 37], which potentially have habitat value for otters. River otters have been observed in the wetland and marsh area downstream of the dam, and also accessing the nearshore marine area of Tennessee Cove (ROEP Otter Spotter Data).

In addition, the DEA's assertion that river otters require direct surface hydrologic connection to access habit areas is inaccurate [Page 55]. River otters can and do travel considerable distances over land (Melquist and Hornocker, 1983). Accordingly, construction of the CRLF ponds may ultimately enrich available river otter habitat.

In the project area, river otters likely consume both native and non-native resident fishes, waterbirds, and pest species such as Signal crayfish (*Pacifastacus leniusculus*) and European green crabs (*Carcinus maenas*), to the extent those species are present. They also forage in the nearshore area of the cove, and transport marine nutrients to land as a result.

At present, the only available data on river otter habitat use in the project area is focused on the pond because that is where our monitoring camera is located, and it is the habitat area most readily viewable from public vantage points. Understanding the true extent of river otter habitat use would require further study.

Response: The provided information has been used to improve the river otter habitat description in Section 3.3.7 Wildlife, Affected Environment and text is included in Part 1 of this errata for formal inclusion in the Final EA.

Comment 14c: 3. Effects of Construction Activities on Resident River Otters

River otters are tolerant of some landscape disturbance (Melquist and Hornocker, 1983), but the degree of that tolerance depends on the continued availability of important habitat elements (Gallant et al., 2009). Riparian vegetation cover is one such habitat element, and is a principal indicator of river otter habitat quality (Prenda et al., 2001; Dubuc et al., 1990).

We have conducted studies of river otter response to restoration-related construction activities at both Drakes Beach in Point Reyes National Seashore (Carroll and Isadore, 2022), and at Moorhen Marsh in Martinez, CA (Isadore and Carroll, 2017; Isadore and Carroll, 2018). In both studies, we found that river otters alter their established patterns of habitat use in order to avoid construction activities. The DEA's reference to "displacement" of otters [Page 55], therefore, is imprecise. River otters present in the project area likely would remain present, but would establish temporary new patterns of habitat use that don't include the construction area. Our Drakes Beach study suggests the importance of riparian vegetation cover in the establishment of these new patterns.

Response: The NPS appreciates the detailed information. The context of displacement is in the short-term during construction at the pond. The NPS has included replacement language in Part 1 of this errata, and incorporated the River Otter Ecology Project's cited evidence that the otters would likely establish temporary new patterns of habitat outside of the construction area.

Comment 14d: 4. Best Management Practice (BMP) BIO-9

The DEA proposes to use BMP BIO-9 to avoid or minimize impacts to river otters from construction activities. The inclusion of pre-construction monitoring would be an effective measure, but the scope of the monitoring should be expanded to include areas upstream of the dam and pond. The proposal to exclude river otters from the construction area is infeasible. The proposal to “tim[e] activities to allow river otters to vacate the work area prior to construction” needs to be clarified since it is unclear whether timing refers to time of day, season, or some other parameter, and what the mechanism for allowing otters to vacate the area would be.

Response: NPS has changed BIO-9 as stated in Part 1 of this errata for formal inclusion in the Final EA.

Comment 14e: 5. Summary

As noted earlier, we support the Proposed Action Alternative and its watershed-scale approach to restoration. In our experience, river otters can adapt successfully to restoration-related construction if their habits and habitat use are accounted for in the project planning. Our primary concern is that the construction not disrupt the rearing process of any otter pups present in the project area. In that regard, a robust pre-construction monitoring program can fully identify potential impacts and possible mitigation measures.

Response: The proposed action is designed to improve the watershed over the long-term, benefiting otter habitat at a larger scale than the existing pond provides. Please see response to Comment 14d and the revised BIO-9 BMP text included in Part 1 of this errata.

Comment 15a: Riparian restoration in lower Tennessee Valley should not only include frog habitat improvement, but perhaps it should also include the possibility of helping native salmonids and Steelheads return to their historical natural environment and habitat.

Response: The proposed actions will restore natural hydrologic processes and also allow for more natural movement of aquatic life through the creek corridor. It is unclear whether the creek would support native salmon such as steelhead due to the small watershed area and limited spawning and rearing habitat, but we would like to be pleasantly surprised.

Comment 15b: Are there any native turtle amphibian animals who naturally belong to the Tennessee Valley riparian ecosystem? If so, those turtles should be considered just as important as the indigenous frogs and salmonid fishes and every other specimen of flora, fauna, and geological formation in this spectacular location.

Response: The project would allow for native aquatic species such as newts and three-spined stickleback to persist within the watershed. Please see response to Comment 4a.

Appendix C

Determination of No Impairment

DETERMINATION of NO IMPAIRMENT

TENNESSEE VALLEY DAM REMOVAL AND LOWER VALLEY RESTORATION PROJECT

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

March 2023

National Park Service (NPS) Management Policies 2006 (§1.4) requires analysis of potential effects to determine whether or not actions will impair a park's resources and values. The fundamental purpose of the national park system established by the Organic Act and reaffirmed by the General Authorities Act, as amended, mandates that NPS conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give NPS management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park, although that discretion is limited by the statutory requirement that the NPS must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values. Non-resource topics are generally not subject to impairment assessment. Whether an impact could lead to impairment depends on the particular resources that will be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact will be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact may be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. Impairment may result from visitor activities, NPS administrative activities, or activities undertaken by concessioners, contractors and others operating in the park. Impairment may also result from sources or activities outside the park.

An impairment determination is not made for all resource impact topics analyzed for the Proposed Action Alternative. An impairment determination is not made for land use, visitor use and experience, transportation and utilities, and visitor health and safety because impairment findings relate back to park resources and values. These impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

Water Resources and Quality

The Proposed Action would have short-term, local, minor adverse impacts on water resources during grading and construction activities. BMPs would be implemented during construction to protect water quality and reduce the impacts from temporary soil erosion. The proposed dam removal and installation of grade control features would restore more natural stream channel flow patterns and improve floodplain functions. Repair of the existing incision downstream of the dam and within the Haypress tributary would help to prevent new erosion and increase groundwater levels in the adjacent wetlands, which would help to sustain and increase wetland areas over the long term. Impacts would be directly beneficial over the long term as the Selected Alternative would restore a more natural hydrologic setting. Due to the long-term benefits to natural hydrologic functions and implementation of BMPs to protect water quality, the Proposed Action would not impair water resources.

Wetlands

The Proposed Action would result in a short-term, local, adverse impact to wetlands during construction and access in wetland areas. The Proposed Action would have a long-term, direct, beneficial impact to wetlands due to the creation of hydrologic conditions that would support increased wetland habitats, reduction in active channel incision at Haypress, and increased hydrologic connectivity throughout the lower watershed. The proposed fill to the channel downstream of the dam would also promote the long-term sustainability of the freshwater marsh by maintaining more freshwater in the wetland areas with increased overbank flooding of the wetlands. Due to the long-term, direct beneficial impacts to wetlands, the Proposed Action would not impair wetland resources.

Floodplains

The Proposed Action would result in long-term, direct and indirect, beneficial impacts to floodplains by restoring natural channel and floodplain processes. The Proposed Action would result in enhanced floodplain storage and promote sheet flow across the floodplain to reduce peak flow rates. The Proposed Action would also remove the current risk of flooding from dam failure. Due to the long-term restoration of natural floodplain processes, the Proposed Action would not impair floodplain resources.

Threatened or Endangered Species

The Proposed Action would result in local, short-term, minor-to-moderate, adverse impacts on California Red Legged Frog (CRLF) as a result of construction access, dewatering, and associated removal of CRLF breeding and non-breeding habitat. Conservation measures and BMPs would be implemented to reduce the adverse impacts to CRLF. The Proposed Action would result in long-term, direct and indirect, beneficial impact to CRLF both locally and regionally by increasing CRLF resiliency and long-term habitat sustainability through diversification of breeding habitat locations and water sources. Adverse impacts of the Proposed Action on CRLF are short-term and construction-related, and the temporary adverse impacts

would be offset by the long-term benefits to the species from improved habitat features. The Proposed Action is not expected to affect tidewater goby. Due to the creation of sustainable habitat for threatened and endangered species, the Proposed Action would not impair threatened or endangered species.

Vegetation

The Proposed Action would result in short-term, direct, minor, adverse impacts to vegetation during construction due to construction access and vegetation removal within the area of active construction. In the long term, the Proposed Action includes revegetation with native vegetation communities and monitoring to ensure vegetation success. The Proposed Action would result in an overall beneficial direct impact to the quality of native plant communities over the broad newly restored channel and floodplain areas and an increase in seasonal wet meadow vegetation in areas where channel incision is repaired. All vegetation removed, including non-native eucalyptus trees, would be replaced with native vegetation. Due to replacement and expansion of native vegetation in the watershed, the Proposed Action would not impair vegetation resources.

Wildlife

The short term, direct, adverse impacts to wildlife due to displacement during construction are considered minor as the construction activities are temporary and there is nearby suitable habitat for wildlife use. In addition, BMPs would be implemented during construction to reduce impacts on wildlife. Long-term minor-to-moderate beneficial direct and indirect impacts to wildlife are anticipated due to overall improvement in ecological watershed health and the additional riparian and floodplain habitat connectivity that would be created by the Proposed Action. Due to the long-term benefits in wildlife and habitat resources and implementation of BMPs to offset short-term impacts on wildlife and habitat, the Proposed Action would not impair wildlife and habitat resources.

Fisheries

The Proposed Action would result in short term, minor, direct impacts to fisheries due to construction activities and dewatering of areas that contain fish. BMPs would be implemented during construction to minimize construction impacts on fish during dewatering. Post construction, fish species would be expected to return to temporarily impacted waters with no long-term adverse impacts identified. Habitat improvement in the long-term would be a direct beneficial impact to fisheries and therefore the Proposed Action would not impair fisheries resources.

Historical Properties

The Proposed Action will not result in the impairment of cultural resources. The Proposed Action has the potential for a local impact to unanticipated discoveries of cultural resources during construction activities. Best management practices (BMPs) would be implemented to ensure impacts to any discovered cultural resources would be minor. Therefore, the Proposed Action would not impair cultural resources.

Hazardous Materials

The Proposed Action would result in short term, local, minor, adverse impacts from use of hazardous materials with heavy equipment operation during construction. BMPs would be implemented to provide for proper storage, handling, and transport of hazardous materials during construction. The Proposed Action Alternative would also require earthwork in the areas

containing low levels of remnant pesticides and metals. Post construction, the Proposed Action would result in negligible indirect adverse impacts to hazardous materials due to increased risk of downstream transport and deposition of soils containing low levels of contaminants until sediment dynamics have stabilized. Due to the low risk of contamination, the Proposed Action would not be a source of impairment due to hazardous materials.

Geology and Soils

The Proposed Action would result in short-term, minor, direct, adverse impacts to soils during grading and ground disturbance due to increased risk of erosion during earthwork activities. BMPs would be implemented to reduce impacts from temporary soil erosion. The Proposed Action would provide a long-term benefit to geologic stability by removing a dam from an area that is currently unstable. Therefore, the Proposed Action would not impair geology and soil resources.

Air Quality

The Proposed Action would result in short-term, minor, adverse impacts to air quality due to use of heavy equipment and ground-disturbing construction activities. There would be no long-term impacts to air quality due to the Proposed Action and therefore the Proposed Action would not impair air quality.

Soundscapes

There would be short-term temporary adverse impacts on the surrounding natural soundscape during construction activities. The natural soundscape would be restored after construction and the Proposed Action would not impair soundscapes.

Conclusion

The National Park Service has determined that implementation of the Proposed Action will not constitute an impairment of the resources or values of Tennessee Valley. This conclusion is based on consideration of Tennessee Valley's purpose and need, a thorough analysis of the environmental impacts described in the Tennessee Valley Dam Removal and Lower Valley Restoration Project Environmental Assessment, comments provided by the public, and the professional judgement of the decision maker guided by the direction of the 2006 NPS Management Policies.

As guided by this analysis, good science and scholarship, advice from subject matter experts and others who have relevant knowledge and experience, and the results of public involvement activities, it is the Superintendent's professional judgment that there will be no impairment of park resources and values from implementing the Proposed Action for removing the earthen dam and restoring the valley's natural hydrologic functions.