



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

**Channel Islands National Park
Regions 8,9,10, and 12**

**FINDING OF NO SIGNIFICANT IMPACT
Channel Islands National Park Fire Management Plan**

Recommended:

February 17, 2023

Ethan McKinley
Superintendent, Channel Islands National Park

Date

Approved:

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

Date

1. INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA), the National Park Service (NPS) prepared an environmental assessment (EA) to examine alternative actions and environmental impacts associated with the proposed updated fire management plan (FMP) for Channel Islands National Park (hereafter Channel Islands NP or Park). The purpose of an updated FMP is to allow the Park to use mechanical treatments, prescribed pile burning of vegetation debris, and defensible space work to reduce hazard fuels and meet resource objectives. The proposed action is needed to reduce threats to human life and property and to protect natural and cultural resources from wildfire. In addition, the current FMP does not adequately reflect updated fire management techniques, strategies, and fire management terminology.

The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the *2022 Channel Islands National Park Fire Management Plan 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, the National Park Service selected Alternative B—Proposed Action (preferred alternative). Alternative B is described in detail in Chapter 2 of the EA (pages 9–11) and is summarized below. The selected alternative will enhance the Park’s ability to reduce hazard fuels, maintain defensible space to protect infrastructure, promote native vegetation recovery, and protect natural and cultural resources with the use of fire and fuels management activities. Channel Islands NP will continue to use mechanical treatments to reduce hazard fuels, create defensible space, and promote native vegetation recovery, including removing selected non-native eucalyptus groves. The use of tracked and wheeled equipment will only be used off roads under conditions that minimize the disturbance of soils and vegetation, provide for recovery of native species, and include other protections for adjacent natural, cultural, and visitor resources under an approved fuels treatment plan approved by the Superintendent. Vegetative debris generated from mechanical treatments will be chipped whenever possible, and remaining debris arranged into piles to dry and then burned. In order to increase the efficiency of eucalyptus removal, logs generated from mechanical treatments may also be cut up on the ground before transporting to preapproved locations (e.g., barren beach) where they will be cut into smaller pieces for burning in an air curtain burner.

Prescribed pile burning will be used to dispose of approximately 85 existing vegetative debris piles from past park maintenance work and eucalyptus cutting treatments. Vegetation debris piles must be disposed of to prevent a risk from cumulative hazardous fuels which may impact natural and cultural resources. All disturbed and pile burn areas will be rehabilitated to promote native vegetation recovery, once the project is completed. The NPS will continue to maintain additional burn pile areas on Santa Cruz and Santa Rosa islands where vegetative debris will be periodically burned as debris accumulates from park maintenance, defensible space, and routine tree pruning and landscape work projects in the years ahead. Pile burns will be utilized repeatedly in these identified sites to minimize impacts on the landscape, and thus the sites will not be rehabilitated.

Defensible space work may include removing, trimming, mowing, or pruning accumulated dead or live fuels that may be easily ignited and hauling them away from infrastructure or protected

resource areas. Defensible space may be created using wheeled or tracked equipment (e.g., mowers, masticators, tractors), handheld motorized equipment (e.g., brush cutters, chain saws, trimmers) or hand tools. Typically, the defensible space is more actively cleared near the structure (0–50 feet), while certain vegetation may be retained further from the structure. Most Channel Islands NP structures already have defensible space in place, but it requires periodic maintenance as vegetation regrows.

Rationale

Alternative B is the selected alternative because it best meets Channel Islands NP’s fire management objectives to:

1. Prioritize protection of firefighters, staff, and the public in all fire management activities.
2. Suppress wildfires, regardless of ignition source, to protect the public, private property, island infrastructure, and natural and cultural resources of the park.
3. Manage wildland fires in concert with federal, state, and local air quality regulations.
4. Facilitate reciprocal fire management activities through the development and maintenance of cooperative agreements and working relationships with pertinent fire management entities.
5. Reduce wildfire hazard around developed areas and areas adjacent to cultural and historic sites.
6. Utilize the fire management program to help manage island vegetation in accordance with park and resource management objectives.
7. Educate staff and the public about the scope and effect of wildland fire management, including fuels management, resource protection, fire prevention, hazard/risk assessment, mitigation and rehabilitation, and fire’s role in ecosystem management.
8. Continue research into uses of fire to help control non-native plant species and restoration of island ecosystems.

3. MITIGATION MEASURES

The selected alternative incorporates the mitigation measures listed after the analysis of each impact topic in the Affected Environment and Environmental Consequences Chapter on pages 17–58 of the EA. Those mitigation measures are listed below in Appendix C. The selected alternative also includes best management practices under the Alternatives Chapter of the EA (pages 12–13).

4. Other Alternatives Considered

In addition to the selected alternative, the EA analyzed one other alternative and its impacts on the environment—the No Action Alternative—under Chapter 2 (pages 7–8) and is summarized below.

Alternative A: No-action Alternative

Wildfire management at Channel Islands NP would be limited to wildfire suppression activities allowed under NPS Wildland Fire Management: Reference Manual 18 (RM-18), and the Interagency Standards for Fire and Fire Aviation Operations (Red Book), which summarize the

actions allowed under federal fire management policy. The 2006 FMP for Channel Islands NP and associated fuels/vegetation management activities were authorized under the Healthy Forest Initiative Categorical Exclusion which can no longer be utilized in 9th Circuit Court states, including California. Wildfire management activities would be restricted to wildfire suppression using appropriate strategies and tactics. Prevention and preparedness would not occur except what is allowed under routine maintenance activities, such as mowing for landscape and park visitation usage, cutting, and pruning of hazard trees along roadsides and in visitor use areas, and removal of fallen trees and debris in developed areas or on trails. The generated debris would be left in piles to decompose over long periods creating concentrations of hazard fuels.

No fire related fuels management activities would be implemented, leading to increased buildup of hazardous fuels, even in developed areas. Burning of piles would not be allowed, so disposal of the vegetative debris would be problematic as piles would be present for long periods until they decomposed. Scattering would spread the fire prone debris over larger areas. Both options would present areas of increased hazardous fuels for decades. For these reasons, Alternative A was not selected as it would not meet the purpose and need described in the park's fire management objectives or provide an updated FMP.

Actions Considered but Dismissed

During the planning process, the NPS considered and dismissed the alternative elements below because they would have too great of an environmental impact on the native plant communities on Channel Island NP. These are described in detail in Chapter 2 of the EA (page 11).

Widespread broadcast burning—Widespread broadcast burning means to implement human ignited prescribed fires on a large or landscape scale. Broadcast burning for resource objectives was mentioned in the 2006 Channel Islands NP FMP but was later discontinued because broadcast prescribed burns implemented on Santa Cruz Island were shown to negatively impact native plant species recovering from past grazing, and the burns promoted invasive, non-native, more flammable grasses. This action may be desirable and achievable in future updates of the Fire Management Plan, pending recovery of native species, advancement of traditional ecological knowledge, and clear objectives that support tribal co-stewardship.

Managing wildfires for resource objectives (such as allowing fires to burn to “return fire to the ecosystem”)—Management of wildfires for resource objectives is not desirable as many of the native plant communities on the Channel Islands are not fire dependent for reproduction and growth, and wildfires have not been shown to be a frequent natural disturbance. Resource managers and scientists consider the remaining native island vegetation to be recovering from over a hundred years of over-grazing, and wildfires would set-back this recovery process and promote non-native vegetation.

5. PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

The NPS completed public scoping from March 18 to April 17, 2022 and held a virtual public scoping meeting on Microsoft Teams platform on April 5, 2022. A PowerPoint presentation was presented at the meeting. In addition, a public scoping brochure, frequently asked questions, and a Story Map were developed to provide more background and overview of the current and proposed fire and fuel management activities. There were two comments received during the public scoping period. Both comments supported the proposed fire management activities and updated completing an updated FMP. Commenters suggested further clarification and additions to the preliminary proposed action, as well as mitigation measures to minimize impacts to

cultural and natural resources from hazard fuel reduction and fuel management. These comments were integrated into the EA.

The EA was available for public review and comment from October 5 to November 5, 2022. The NPS held a virtual public comment meeting on the Microsoft Teams platform on October 12, 2022. The purpose of the public review period was to present information and seek public input in the discretionary decision-making process. Seven comments (one was a duplicate submittal) were received on the EA. The comments were related to the following environmental issue areas: cultural resources, air quality, water resources, and special status species. Overall, comments expressed support for the revised and updated FMP. In addition, commenters requested more information about fire management practices for the proposed disposal of vegetative debris piles, impacts to threatened and endangered species populations, and NPS air quality analysis methods.

Federally Recognized and Traditionally Associated American Indian Consultation

The NPS initiated formal consultation with regular consulting parties, the Barbareño/Ventureño Band of Mission Indians, and the federally recognized Santa Ynez Band of Chumash Indians, via letter on January 27, 2022, and invited interest and participation from other local tribal entities. The NPS requested information from the tribes to determine if historic properties of cultural and religious significance and/or other resources of concern are in the project area and if the tribe wanted to be involved in the EA development and compliance process. In addition, the NPS met with the Santa Ynez Band of Chumash Indians through their designated consulting body, the Elders' Council, and the board of the Barbareño/Ventureño Band of Mission Indians to review the objectives, proposed alternatives, mitigating measures and best practices. The Channel Islands NP tribal liaison and Mediterranean Coast Network Fire Management Officer met with the Santa Ynez Band on March 15, 2022, and subsequently the Barbareño/Ventureño Band on April 20, 2022. The NPS provided both groups with the preliminary environmental assessment for review and comment on July 29, 2022. Neither group expressed comments or concerns about the proposed plan. In addition, NPS also provided notification and outreach to other potentially interested Native American groups during the public scoping and EA comment period.

Agency Consultation

California Office of Historic Preservation

The NPS initiated consultation with the State Historic Preservation Officer (SHPO) at the California Office of Historic Preservation (OHP) via letter on January 5, 2022. The purpose of the letter was to notify the OHP that the NPS was beginning the process to prepare an updated and revised FMP for Channel Islands NP. The NPS also provided an electronic copy of the EA to the OHP via certified mail. In the accompanying letter, the park stated that it does not anticipate adverse effect to historic properties from the general actions outlined in the FMP. However, the NPS recognized that the programmatic nature of the FMP is not a suitably specific undertaking to make an informed decision on the effects of specific individual projects. Therefore, as the National Park Service moves forward towards carrying out fire and fuel management activities at the project level, more detailed proposals will be developed and subjected to section 106 review in accordance with the NPS Nationwide Programmatic Agreement (2008) or as outlined in the implementing regulations (36 Code of Federal Regulations (CFR) 800.1(c)).

United States Fish and Wildlife Service

The NPS initiated informal consultation with the U.S. Fish and Wildlife Service (USFWS) concurrently with the release of the EA in October 2022. The NPS provided an electronic copy

to the USFWS for review and comment. A list of threatened and endangered species for the proposed action was acquired from the USFWS Information for Planning and Consultation tool (IPaC) on June 24, 2022 (Project Code: 2022-0057751) and a determination of effects for the species carried forward for analysis is included in Chapter 3 (pages 38–44) of the EA and is summarized below in Chapter 7 of this FONSI. The NPS discussed the EA with the USFWS via phone call and they agreed with the park's analysis for the Monarch butterfly, a candidate species. If the Monarch butterfly becomes listed, then the Park would complete additional consultation with the USFWS on the butterfly. As the National Park Service moves forward towards carrying out specific fire and fuel management projects, more detailed proposals will be developed and subjected to section 7 review and the USFWS will be consulted as needed.

U.S. Navy

The U.S. Navy which owns San Miguel Island and a facility on Santa Cruz Island was consulted during the public comment period. They provided comments on the EA that have been addressed in Appendix A and the draft FMP. Many of their comments concerned wildfire suppression activities, which are allowed under National Fire Policy. Comments were also integrated into the draft FMP as appropriate.

6. FINDING OF NO SIGNIFICANT IMPACT

As described in the EA, the selected alternative has the potential for adverse impacts on air quality, vegetation, soils, water resources, wildlife, special status species, cultural resources (including archeological resources and cultural landscapes), visitor use and experience, and public health and safety; however, no potential for significant adverse impacts were identified.

Air Quality—Fire and fuel management activities may temporarily affect local air quality, including visibility, as a result of prescribed pile burning of vegetative debris. The amount and duration of smoke impacts will be expected to be limited by conducting burning only during atmospheric conditions that are conducive to good smoke dispersion and by limiting the number of piles burned at one time. In addition, following best management practices (pages 12–13) and coordinating and following the permit process required by the Santa Barbara County Air Pollution Control District will minimize impacts to air quality. However, the selected alternative will reduce concentrated hazardous fuel areas created by vegetation debris piles, which will help in the control of future wildfires. The decrease in concentrated fuel loads will decrease the potential for intense and severe burning and may reduce the scale of wildfires, reducing emissions locally and regionally and resulting in beneficial impacts to air quality. Mechanical treatments and defensible space work will have temporary localized impacts to air quality until the work is completed.

Soils—Prescribed burning of vegetation debris piles will impact soils in the immediate burn area, primarily as a result of removing protective surface vegetation and litter and organic matter in the soil beneath a pile. Pile burning will result in deeper soil heating and localized impacts. Mechanical treatments (e.g., defensible space, fuel reduction, non-native eucalyptus grove removal on Santa Cruz Island) will disturb soils from eucalyptus tree removal and the use of tracked and wheeled equipment. Mechanical equipment used to move eucalyptus trees and associated debris may impact soils in localized areas due to increased water and wind erosion in steeper slope areas by removing vegetation. Soil impacts will largely be limited to specific localized areas on Santa Cruz Island where eucalyptus removal and pile burning will occur. Implementing appropriate best management practices (See Best Management Practices Section, pages 12–13) such as using mechanical equipment only when soils are not saturated and using existing trails or roads, when possible, will help to reduce potential impacts to soils.

Following treatments, soil remediation measures will be implemented on the disturbed ground and burn areas, such as planting or seeding areas, to promote native plant growth, which will help stabilize and protect soils in treatment areas.

Vegetation—Most vegetation communities in Channel Islands NP have not evolved with fire as a major influence. Prescribed burning of debris piles will be expected to have a negligible impact on native vegetation because the pile burn will be contained, pile burn scars will be small in scale, best management practices and mitigation measures will be implemented, and the use of an air curtain burner on Santa Cruz Island in lieu of creating and burning additional vegetation piles may avoid creating as many burn piles. Ash generated from burning debris piles may be up to a foot in depth and alkaline in nature for large piles, which will prevent most native plants from immediately growing post fire. Following prescribed pile burning, soil and native plant remediation measures will be implemented on the disturbed ground and burn areas to promote native plant growth and reduce potential for weed invasion or expansion. In addition, removal of some eucalyptus groves on Santa Cruz Island will reduce potential fuel hazards by removing the dense, flammable litter layer underneath the groves. The selected alternative will reduce concentrated local hazard fuel loads and provide an opportunity for native vegetation recovery in treated areas.

Water—The selected alternative will have temporary localized adverse impacts as well as beneficial impacts to water quality. Prescribed pile burns will be expected to have a negligible impact on water quality because not all pile burns will be burned at once with about 30 piles burned annually, and best management practices will be implemented, thus, reducing the amount of disturbed bare soil areas that may increase sediment transportation to adjacent waterbodies. Mechanical treatments may impact soils in localized areas resulting in increased erosion and sediment transportation to adjacent waterbodies from vegetation removal. Implementing appropriate best management practices (See Best Management Practices Section, pages 12–13) such as using mechanical equipment when soils are not saturated and using existing trails or roads, when possible, will help to reduce potential impacts to soils that may indirectly impact water quality from increased sedimentation rates. Under the selected alternative, impacts to water resources will be localized and site-specific, lasting until revegetation of groundcover occurs.

Wildlife—The selected alternative will have beneficial, long-term impacts to wildlife and wildlife habitat due to increased habitat quality. Prescribed pile burning, mechanical treatments, and defensible space work are expected to have negligible adverse impacts to wildlife because impacts will be localized, and site-specific and best management practices and mitigation measures will be implemented. Prescribed pile burning and mechanical treatments will improve wildlife habitat over the long-term by helping to restore native plant communities in treated areas. Adverse impacts to individual wildlife species will be offset by mitigation measures, such as avoiding sensitive breeding seasons. Furthermore, the selected alternative will avoid adverse impacts to the island spotted skunk and Townsend's big-eared bat, species of special concern in California, through implementation of mitigation measures (See Wildlife Mitigation Measure, WILD-5 and WILD-6, pages 37–38). The short-term adverse impacts will be offset by the long-term beneficial impacts associated with reducing local hazard fuel loads and restoring native wildlife habitat in treated areas (e.g., increasing stream flows, forage, and cover availability).

Special Status Species—The National Park Service determined the selected alternative will avoid adverse impacts to the Monarch butterfly, a federal candidate species, through implementation of avoidance measures and best management practices. There are no known wintering colonies on the Channel Islands NP but there may be scattered individuals during winter migration using eucalyptus groves as a resting place for stopovers. Removal of some eucalyptus groves on Santa Cruz Island will not be expected to impact over wintering

populations of monarch butterflies because remaining eucalyptus groves and native vegetation areas will be left uncut and will provide alternative suitable habitat. In addition, the NPS will follow mitigation measures for the Monarch butterfly, SS-2 (page). As discussed in Section 5, Agency Consultation, the U.S. Fish and Wildlife Service (USFWS) agreed with the analysis for the Monarch butterfly, a candidate species. Channel Islands NP will continue to coordinate with the USFWS and state resource agencies for special status species. If the Monarch butterfly becomes listed, then the Park will consult with the USFWS on the butterfly.

Cultural Resources—The selected alternative may result in adverse effects to archeological sites from ground-disturbing mechanical treatments, which may damage undocumented archeological resources. Ground disturbance may change the context in which an archeological resource is found, making it vulnerable to impacts such as erosion. In addition, mechanical-related ground disturbance may expose, disturb, or damage materials immediately below the surface with vehicle use or compaction. The selected alternative will also have beneficial effects by increasing the degree of protection for selected cultural resources by reducing the potential for damaging effects from wildfire. To avoid these effects, Channel Islands NP staff will conduct cultural surveys and Tribal consultation to identify cultural resources in advance of choosing locations for eucalyptus grove removal, piling vegetation debris, log staging areas, and potential helicopter operations to ensure avoidance of any visible cultural sites or artifacts in the treatment areas. Best management practices and mitigation measures (Appendix C) will be implemented during fire and fuel management activities to prevent or minimize the potential for adverse impacts. Furthermore, impacts on cultural resources from prescribed pile burning, mechanical treatments, and defensible space work are expected to be negligible because unanticipated discoveries during proposed activities will result in work ceasing in the area and a qualified NPS cultural resource specialist will assess conditions and recommend a course of action in consultation with the California State Historic Preservation Officer.

Visitor Use and Experience—The selected alternative will have adverse and beneficial impacts to visitor use and experience. There may be temporary public closures to recreational sites and visitor facilities within treatment areas, and smoke from prescribed pile burns may cause smoke and associated odors. The beneficial impacts of reducing local hazard fuels and enhancing the protection and maintenance of natural and cultural landscapes outweighs the temporary adverse impacts. Over time, the selected alternative will reduce the potential for longer temporary closures and disruption to visitors and increase the perpetuation of native vegetation communities, restoration of wetlands and riparian areas, which may enhance wildlife viewing opportunities and experiencing the unique ecosystems found on Channel Islands.

Public Health and Safety—The selected alternative will have both adverse and beneficial impacts on public health and safety. Fire and fuel management activities may temporarily affect local air quality, including visibility, as a result of prescribed pile burning of vegetative debris. Pile burning, mechanical treatments, and defensible space work will involve pre-planning and be implemented under defined conditions promoting better health and safety protections and precautions compared to wildfire suppression activities. The NPS Mediterranean Coast Network fire staff and cooperators will conduct planned fuel management activities on the islands, helping to ensure fuel and fire treatments are conducted safely. The addition of fuel and fire treatments will reduce the number of resource values and infrastructure assets considered to be at risk from wildfire, thus decreasing the complexity and hazard level to firefighters and the public in those areas during an intense wildfire. Pile burning will reduce concentrated hazardous fuel loads that may reduce potential wildfire risk for the treated area. Mechanical treatments will reduce safety hazards by removing hazard trees in campgrounds and other visitor use areas. Defensible space work around infrastructure may provide emergency safety zones for park staff

and visitors in the event of a fast-moving wildfire by creating a safe space and reducing wildfire risk to structures.

There will be no significant impacts on public health, public safety, or unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection law.

7. CONCLUSION

As described above, the selected alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The selected alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

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

Appendix A: Response to Public Concerns and Errata Indicating Text Changes to EA

The Channel Islands NP Fire Management Plan EA was made available for public review during a 30-day period from October 5 to November 5, 2022. Seven correspondences (one duplicate submission) were received and documented on the NPS Planning, Environment, and Public Comment (PEPC) website. The U.S. Navy was consulted during the public comment period, and provided comments on the EA. The following section includes the NPS responses to issues that were raised by commenters on the EA and identified as a substantive comment or needing clarification. The majority of comments received are not substantive under NEPA, meaning they did not provide new information, identify a different way to meet the need, point to a specific flaw in the analysis, suggest alternate methodologies, make factual corrections, or identify a different source of credible research that would require edits to the EA. Commenters provided suggestions for other methods to dispose of vegetative debris, such as composting and burying and biochar, and comments about wildfire suppression tactics (i.e., using foams and retardants). Because these comments (i.e., non-substantive under NEPA) do not address the proposed action's environmental effects or the adequacy or accuracy of the environmental analysis, no changes were made to the EA in response to these comments.

Proposed Action

One commenter suggested composting or burying vegetative debris could be considered viable options for the management of the vegetation piles.

NPS Response: Burying the large volume of vegetative debris generated on the islands would repeatedly involve a large amount of significant ground disturbance that would have adverse environmental impacts to lands, soils, native vegetation, subsurface water flow, visual resources, cultural resources, wildlife and endangered species.

Composting this large volume of vegetative debris would also require large surface acreages to be set aside for industrial scale composting facilities as a permanent facility on the islands. The compost would eventually have to be transported to areas where it could be used, and many of these areas are inaccessible to vehicles. Both of these suggestions were considered but were determined to be in direct conflict with the purposes of the National Park.

One commenter suggested using a model that creates biochar to benefit ongoing revegetation and soil erosion control efforts.

NPS Response: Producing biochar would be applicable to the proposed use of an air curtain burner, which is being considered, but has not been determined if practical or affordable. Air curtain burners would have to burn at lower heats to produce biochar, which would use more oxygen to burn vegetative debris. This would increase the volume of and lengthen the time period of air curtain burning and smoke emissions. This would conflict with the fire management goal to minimize degradation of air quality when burning the vegetative debris.

In addition, the biochar would eventually need to be transported to the areas where it could be used, many of which are in remote areas inaccessible to vehicles. As mentioned in the EA, whether pile burning or air curtain burning is used, there will be a substantial amount of ash and (minor biochar) generated in both processes, and the

park resource management staff will determine if it can be used to supplement soil remediation or native plant recovery processes in more accessible areas.

American Indian Consultation

One commenter expressed concern about the Native American tribe consultation completed for this planning effort.

NPS Response: The American Indian Consultation information is included in Section 5 above. Additional frequent and regular consultation with these tribes is ongoing. Channel Islands National Park recognizes and respects the ancient and historical ties of these Native Americans to the park islands and will continue to communicate and coordinate with them on fire management activities and continue to develop and maintain Tribal relationships.

Air Quality

One commenter noted that the ambient air quality standards, or thresholds in the EA, are 35.5 and 155 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ and PM_{10} , respectively, and the rating convention of "poor" or "fair" is used rather than if the concentrations are in attainment of the standards or in exceedance of.

NPS Response: The air quality ratings are based on the NPS Air Quality Analysis Methods. Particulate matter condition categories (*Poor*, *Fair*, *Good*) are assigned by comparing current air quality values ($\text{PM}_{2.5}$ annual, $\text{PM}_{2.5}$ 24-hour, and PM_{10} 24-hour) to the NPS-ARD benchmarks. Benchmarks for specific measures of air quality have been established using regulatory standards and best available scientific knowledge. For particulate matter, the $\text{PM}_{2.5}$ primary standard is 12 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annually (3-year average of weighted annual mean) and 35 $\mu\text{g}/\text{m}^3$ for 24-hours (3-year average of the 98th percentile of 24-hour concentrations). The primary and secondary NAAQS for PM_{10} is 150 $\mu\text{g}/\text{m}^3$ for 24-hours (not to be exceeded more than once per year over 3 years).

The U.S. Environmental Protection Agency air quality index breakpoints were used to develop benchmarks. Overall PM condition is *Poor* if the 98th percentile 24-hour $\text{PM}_{2.5}$ concentration is $\geq 35.5 \mu\text{g}/\text{m}^3$, weighted annual mean 24-hour $\text{PM}_{2.5}$ concentration is $\geq 12.5 \mu\text{g}/\text{m}^3$, or 2nd maximum 24-hour PM_{10} concentration is $\geq 155 \mu\text{g}/\text{m}^3$. Additional information can be found online at <https://www.nps.gov/articles/air-analysis-methods-latest.htm>.

Water Resources

One commenter expressed concerns about using foams and retardants for suppressing wildfires and impacts to water resources.

NPS Response: As discussed in the EA (page23), foams and retardants that could be used by helicopter or fixed winged aircraft to suppress wildfires could temporarily alter the water quality of surface waters if misapplied or mishandled (i.e., a drop too close or in a stream). These fire suppression chemical agents contain detergents, dyes, or fertilizer type chemicals that may temporarily change the water quality. The degree of impact would depend on the amount of foam or retardant dropped into or near the water body, the size of the water body, and the flow/recharge volume. Superintendent approval will be required for the use of retardant or foam. Mitigation measures will limit the use, type, and proximity to water bodies (no use within 300 feet of surface waters) making potential impacts to water quality minimal (best management practices and mitigation measures in the EA, pages 12–13). It is important to recognize that foams using PFAS will not be utilized in the park.

The foam that helicopters could use in wildland fires is detergent based. Seawater is expected to be the main helicopter delivery extinguishing agent used on island wildfires, and its use is also limited in the park due to potential negative impacts on rare native plant populations and limited natural fresh waters. As discussed in the EA (page 23), firefighters utilizing seawater for helicopter drops or in pump/hose systems would avoid using near to seeps, arroyos, wells, streams, and wetlands to prevent salinity damage.

Special Status Species

One commenter asked for clarification on why other special status species were dismissed from further analysis.

NPS Response: As discussed on page 38 of the EA, fifteen of the seventeen special status species (both federal and state listed species) are unlikely to be impacted by the proposed action. The proposed action includes prescribed pile burning on Santa Cruz and Santa Rosa islands, mechanical treatments to reduce or remove eucalyptus groves on Santa Cruz Island and to a lesser extent on Santa Rosa Island, and defensible space work around existing infrastructure and cultural sites on all five park islands. This work will not occur within suitable habitat areas for the 14 special status plant species or the short-tailed albatross. Furthermore, the short-tailed albatross is an occasional migrant in Channel Islands NP and will not be expected to be found in the proposed fuels treatment areas. The Monarch butterfly, federal candidate species, and Island fox, state threatened species, were carried forward for analysis in the EA (pages 40–43).

One commenter expressed concerns about prescribed pile burning during Monarch butterfly use of the island as a rest stop.

NPS Response: As stated in the EA (page 42), eucalyptus trees and groves to be cut and prescribed pile burning in the winter adjacent to groves will be surveyed by park staff or firefighters trained to identify Monarchs. If butterflies are present, they will be “shooed” away from the cutting or pile burning area before work began and will be expected to find resting places on other suitable trees in the area. There will be no impacts to the Monarch butterfly overwintering populations from prescribed pile burning or mechanical treatments on Santa Cruz Island, as there will be other eucalyptus groves and native vegetation remaining that could provide suitable resting stopover and overwintering habitat.

One commenter asked if fire management activities will help protect the range and further support delisting of Island Bedstraw and Santa Cruz Island Dudleya.

NPS Response: As stated in the EA (page 29), removal of some non-native eucalyptus groves on Santa Cruz Island would be expected to help restore native plant communities (e.g., oak woodland, wetlands, riparian areas) by increasing water, nutrient, and light available to native plant species. However, there are no eucalyptus groves to be removed or vegetative piles to be burned near Santa Cruz Island dudleya sites. Santa Cruz Island dudleya is found only at Fraser Point, Forney’s Cove and adjacent flats, and on the slopes above Forney’s Cove on the west end of Santa Cruz Island, within private land owned by The Nature Conservancy (USFWS 2022a¹). Island bedstraw is found on Santa Cruz and San Miguel islands, mainly along cliff and bluff faces and expanding onto terraces above (USFWS 2022b²). On Santa Cruz Island, most occupied sites are on private land owned by The Nature Conservancy with the eastern most site, Chinese Harbor, on NPS owned lands. There are no eucalyptus groves to be removed or

¹ USFWS 2002a Santa Cruz Island Dudleya (*Dudleya nesiotica*) Special Status Species Assessment.

² USFWS 2002b Island Bedstraw (*Galium buxifolium*) Special Status Species Assessment.

vegetative piles to be burned near Santa Cruz Island dudleya or island bedstraw. Furthermore, defensible space work would remove small areas of selected vegetation (i.e., fuel reduction and 50-to-200-foot buffer for defensible space) not entire plant communities. Vegetation within and adjacent to the defensible space zone around buildings are or have been disturbed in the past by landscaping, infrastructure development, public visitation and use, and daily staff activities which have contributed to existing defensible space. Since the fire and fuels management activities would not occur near occupied areas for the Santa Cruz Island dudleya or island bedstraw, these species were not carried forward for further discussion in the EA.

Minor Edits to the Environmental Assessment

This section includes minor revisions to the EA in response to comments received during the public review period. The page numbers referenced in the following section are in reference to the October 2022 Channel Islands NP Fire Management Plan EA. These revisions do not change the selected alternative actions that were identified and analyzed and do not lead to any significant changes in the environmental assessment analysis or determinations made. These errata should be attached to the original EA to form the complete record of the environmental assessment analysis and conservation planning completed for the project.

Corrections and revisions to the draft EA are listed below. Revisions were made to clarify the text or provide additional information that had unintentionally been omitted from the EA prior to it being published. The topic heading, page number, and original text is included below with corrections in bold.

No Action, Page 7: These objectives include, but are not limited to firefighter and public safety, minimizing costs commensurate with values at risk, and protecting values-at-risk (e.g., structures, private property, cultural sites, threatened and endangered species habitat, **National defense infrastructure**).

No Action, Page 8: Use of hand tools such as shovels, pulaskis, flappers, pruners.

No Action, Page 8: ~~Indirect and~~ **Direct and indirect** attack methods....

Proposed Action, Page 9: Corrected misspellings: manged to **managed**; maintenace to **maintenance**; mechancial to **mechanical**; supended to **suspended**; and wildfires changed to **wildfires**.

Need for Action, Page 3: Over the past century, the annual average temperature of Channel Islands NP area has increased ~~annually~~ by $1.8 \pm 0.4^\circ\text{F}$ (Gonzales 2020).

Objective 2, Page 4: Suppress wildfires, regardless of ignition source, to protect the public, private property, island infrastructure, and natural and cultural resources of the ~~park islands~~, **including private inholding lands**.

Wildfire Suppression BMPs, Page 12: **Naval Command Ventura County will immediately be notified of any wildfires discovered on SMI, or any fires that may pose a threat to the Navy facility on Santa Cruz Island. The TNC will be notified of any wildfires ignited on or threatening their lands on Santa Cruz Island.**

Fuel Treatment BMPs, Page 13: **If new fuel treatments are planned for San Miguel Island, UXO specialists will ensure UXO risks are mitigated before any ground or vegetation disturbance occurs.**

Air Quality, No Action, Page 15: Changed CHIS to **Channel Islands NP**

Air Quality, Page 15: ...22.7 ~~microns~~ **micrograms/m³**, and PM₁₀, concentration was 162 ~~microns~~**ug/m³** (NPS 2020). The PM_{2.5} concentration is moving towards poor (35.5 ~~microns~~**micrograms/m³** threshold), and PM₁₀ concentration is rated as poor (155 ~~microns~~**micrograms/m³** threshold for poor).

Air Quality, Page 15: The annual mean particulate matter (PM) concentration remained unchanged **from 2011 to 2020** but **the 98th percentile 24-hour** PM_{2.5} concentration was 22.7 micrograms/m³, and **the 2nd maximum 24-hour** PM₁₀, concentration was 162 micrograms/m³ (NPS 2020).**.....Channel Islands NP is not classified as non-attainment for either PM_{2.5} or PM₁₀.**

Air Quality, Page 17: from outside sources- and with increased reduction of....

Air Quality, Mitigation Measures, Page 17:

AIR-2 Burn piles would only include vegetation; no trash, garbage, metal, carcasses, marine debris, roofing, glass, insulation, hazardous materials, **UXOs**, construction materials, plastic or petrochemical products, or other materials not allowed by air regulatory agencies. Piles may include lumber that has not been treated and does not include paint, stain, oils, creosote, glues, plastics, laminates, tar paper or other human made additives, (APCD regulations). **Burnable paper coverings designed to keep the piles dry and help minimize emissions may be utilized. Piles may be ignited by drip torches or other similar firefighting equipment.**

Vegetation, Affected Environment, Page 26: The coastal bluff, chaparral coastal sage scrub, and mixed woodland plant communities support the most endemic plant taxa on the islands (NPS 2019). **Special status plant species are discussed below under the Special Status Species Section.**

Vegetation, Alternative B, Page 29: Following prescribed pile burning, soil and native plant remediation measures would be implemented on the disturbed ground and burn areas to promote native plant growth and reduce potential for weed invasion or expansion. **See Mitigation Measure for Biosecurity procedure, BIO-2, in mitigation measures below.**

Special Status Species, Affected Environment, Page 38: A list of threatened and endangered species for the proposed action was acquired from the **U.S. Fish and Wildlife Service** (USFWS) Information for Planning and Consultation tool (IPaC) on June 24, 2022 (Project Code: 2022-0057751).

Special Status Species, Impact Analysis, Page 41: Based on the analysis under Alternative A, wildfire suppression actions may ~~affect but is not likely to~~ adversely affect the Monarch butterfly, **a federal candidate species.**

Special Status Species, Impact Analysis, Page 44: Alternative B ~~may affect but is not likely to adversely affect~~ **will avoid adverse impacts to** the Monarch butterfly, **a federal candidate species**, ~~because suitable habitat could be improved through the proposed actions, and through implementation of avoidance measures and best practices mitigation measures would be implemented to avoid adverse impacts resulting from fuel and prescribed pile burn treatments.~~

Archeological Sites and Historic Structures, Affected Environment, Page 44: Historic sites representing occupation by Spanish, Anglo-Americans, and various immigrants dominate the historic period. In the mid-1800s until the late 20th century, the islands saw use from various ranching, fishing, hunting, navigation, military, maritime and other purposes. **Most of the islands saw installation of navigation devices beginning in the early 20th century and use by the military before, during, and after WWII.**

Public Health and Safety, Affected Environment, Page 56: **San Miguel Island (SMI) poses a special Unexploded Ordnance (UXO) safety risk to firefighters who could be assigned to suppress a wildfire or do fuels management work related to defensible space protection of infrastructure. Most defensible space work has been done on SMI; if additional defensible space vegetation cutting is needed in the future, the park would involve UXO experts in the planning and implementation of those activities to ensure safety of all involved. Wildfire suppression strategies and tactics would prioritize air tanker or helicopter drops of water or retardant, or letting fires burn to natural barriers. Firefighter actions would likely be limited to working in developed (cleared) areas to protect structures using conventional fire tools and available fire equipment. All firefighters and fuels management staff would receive detailed safety briefings and sign UXO risk forms before engaging in any work on SMI.**

Public Health and Safety, Cumulative Impacts, Page 58: As with Alternative A, ~~Actions~~**actions** outside the park that could have an impact on public health and safety include continued wildfire activity on the mainland of California.

Public Health and Safety, Mitigation Measures, Page 58:

SAFE-5 When fire aviation aircraft are activated to Channel Islands NP, the NPS will ensure that procedures are in place to coordinate with naval aviation operation centers to avoid airspace conflicts.

SAFE-6 San Miguel Island poses an Unexploded Ordnance (UXO) risk to firefighters on the ground. Park and fire managers will utilize wildfire suppression strategies and tactics that avoid and minimize the UXO risk. Direct attack by fire aviation assets (i.e., dropping retardant and water) is the preferred strategy (see Appendix D6 and Land Use Control & Implementation Plan, San Miguel and Prince Island, Channel Islands NP and Naval Base Ventura.

Attachment B: Non-impairment Determination

What is Impairment?

National Park Service's *Management Policies, 2006* requires analysis of potential effects to determine whether or not actions will impair park resources. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values.

However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a park, that discretion is limited by the statutory requirement that the National Park Service must leave park 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 National Park Service manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of these resources or values. An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact will be more likely to constitute an impairment when there is a major or severe adverse effect upon a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- Key to the natural or cultural integrity of the park; or
- Identified as a goal in the park's general management plan or other relevant NPS planning documents.

An impact will be less likely to constitute an impairment if it is an unavoidable result of an action necessary to pursue or restore the integrity of park resources or values and it cannot be further mitigated.

The park resources and values that are subject to the no-impairment standard include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and
- any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the

park. The NPS's threshold for considering whether there could be an impairment is based on whether an action will have major (or significant) effects.

How is an Impairment Determination Made?

Section 1.4.7 of *NPS Management Policies* (2006) states:

In making a determination of whether there will be an impairment, an NPS decision-maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969 (NEPA); consultations required under Section 106 of the National Historic Preservation Act; relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision.

NPS Management Policies (2006) further defines “professional judgment” as:

A decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision-maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities relative to the decision.

Non-impairment Determination for the Selected Alternative

This determination on non-impairment has been prepared for the selected alternative described in the Finding of No Significant Impact and in the Fire Management Plan Environmental Assessment (Chapter 2, pages 7–11). Impairment findings are not necessary for visitor use and experience and public health and safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair park resources.

Air Quality. The selected alternative will have temporary, localized, adverse impacts to air quality from smoke emissions of prescribed pile burning. Impacts will be minimized by following best management practices (see best management section, pages 12–13) and coordinating and following the permit process required by the Santa Barbara County Air Pollution Control District, who serve as the regulatory entity for reducing unwanted impacts from pile burning activities. The amount and duration of smoke impacts will be expected to be limited by conducting burning only during atmospheric conditions that are conducive to good smoke dispersion, by limiting the number of piles burned at one time. However, the selected alternative will reduce concentrated hazardous fuel loads within treated areas, decreasing the potential for future intense or severe wildfires. Reducing larger amounts of hazard fuels will likely lead to lower and less intense wildfire emissions, which will have a local and regional beneficial impact to air quality. Mechanical treatments and defensible space work will cause temporary localized impacts to air quality until the work is completed. Therefore, the selected alternative will not result in impairment of air quality in Channel Islands NP.

Soils. Prescribed burning of vegetation debris piles will impact soils in the immediate burn area, primarily as a result of removing protective surface vegetation and litter and organic matter in the soil beneath a pile. Following a prescribed pile burn, wind erosion may temporarily increase due to exposure to wind shear velocities from the removal of vegetation and plant litter. The impacts to soils will depend on duration and intensity of burning materials and the soil and fuel moisture content at the time of burning. Overall, prescribed burning of debris piles will not be expected to damage soil characteristics on Santa Cruz Island due to the small footprint

associated with debris pile sizes (i.e., 50 feet by 50 feet), not all pile burns will be burned at once with about 30 piles annually, and the use of an air curtain burner on Santa Cruz Island in lieu of piling some vegetation debris. Mechanical treatments may impact soils in localized areas due to increased water and wind erosion in steeper slope areas by removing eucalyptus trees and associated debris. Wheeled or tracked equipment used for mechanical treatments may cause rutting or compaction of soils. However, implementing appropriate best management practices (See Best Management Practices Section, pages 12–13) such as using mechanical equipment only when soils are not saturated and using existing trails or roads, when possible, will help to reduce potential impacts to soils. In addition, soil remediation measures will be implemented on the disturbed ground and burn areas, such as planting or seeding areas, to promote native plant growth, which will help stabilize and protect soils in treatment areas. Therefore, the selected alternative will not result in impairment of soils in Channel Islands NP.

Vegetation. Impacts from prescribed burning of vegetation debris piles may result in the loss of vegetation, seeds, and roots remaining under the piles and in a small zone around each pile. The zone of damage around an individual burn pile will vary according to several factors related to how hot the pile burns, wind direction, and if the fire creeps around in the ground fuels adjacent to the pile. However, prescribed burning of debris piles will be expected to have a negligible impact on native vegetation because the pile burn will be contained, pile burn scars will be small in scale, best management practices and mitigation measures will be implemented, and the use of an air curtain burner on Santa Cruz Island in lieu of creating and burning additional vegetation piles may avoid creating as many burn piles. Following prescribed pile burning, soil and native plant remediation measures will be implemented on the disturbed ground and burn areas to promote native plant growth and reduce potential for weed invasion or expansion. In addition, removal of some eucalyptus groves on Santa Cruz Island will reduce potential fuel hazards by removing the dense, flammable litter layer underneath the groves. Overall, the selected alternative will have long-term, beneficial impacts to vegetation communities by reducing concentrated local hazard fuel loads and provide an opportunity for native vegetation recovery in treated areas. Therefore, the selected alternative will not result in impairment of vegetation resources in Channel Islands NP.

Water. Implementation of the selected alternative will have temporary localized adverse impacts as well as beneficial impacts to water quality. Prescribed pile burns will be expected to have a negligible impact on water quality because not all pile burns will be burned at once with about 30 piles burned annually, and best management practices will be implemented, thus, reducing the amount of disturbed bare soil areas that may increase sediment transportation to adjacent waterbodies. Mechanical treatments may impact soils in localized areas resulting in increased erosion and sediment transportation to adjacent waterbodies from vegetation removal. Implementing appropriate best management practices (See Best Management Practices Section, pages 12–13) such as using mechanical equipment when soils are not saturated and using existing trails or roads, when possible, will help to reduce potential impacts to soils that may indirectly impact water quality from increased sedimentation rates. Under the selected alternative, impacts to water resources will be localized and site-specific, lasting until revegetation of groundcover occurs. Therefore, the selected alternative will not result in impairment of water resources because any adverse impacts will be temporary.

Wildlife. Under the selected alternative, wildlife species will be temporarily displaced and/or stressed within and near project areas due to noise, smoke, and human presence. Impacts to wildlife, including the island spotted skunk and Townsend's big-eared bat (species of special concern in California), will be localized and site-specific and best management practices and mitigation measures (See Mitigation Measures, pages 37–38) will be implemented to offset adverse impacts, such as avoiding sensitive breeding seasons. The short-term adverse impacts

will be offset by the long-term beneficial impacts associated with reducing local hazard fuel loads and restoring native wildlife habitat in treated areas (e.g., increasing stream flows, forage, and cover availability). In the long-term, fire and fuel management treatments will improve wildlife habitat by helping to restore native plant communities in treated areas and associated wildlife. Therefore, the selected alternative will not result in impairment of wildlife in Channel Islands NP because wildlife habitat quality will be improved.

Special Status Species. Overall, the selected alternative will avoid adverse effects on island foxes and monarch butterflies from prescribed pile burning, mechanical treatments, and defensible space work because impacts from treatments will be localized and site-specific, with displacement lasting until treatments are completed. The selected alternative will also have beneficial impacts on special status species by helping to restore native plant communities in treated areas, thus improving special status species habitat. The National Park Service determined the selected alternative will avoid adverse impacts to the Monarch butterfly, a federal candidate species, through implementation of avoidance measures and best practices. There are no known wintering colonies on the Channel Islands NP but there may be scattered individuals during winter migration using eucalyptus groves as a resting place for stopovers. Removal of some eucalyptus groves on Santa Cruz Island will not be expected to impact over wintering populations of monarch butterflies because remaining eucalyptus groves and native vegetation areas will be left uncut and will provide alternative suitable habitat. In addition, the NPS will follow mitigation measures for the Monarch butterfly, SS-2 (page 43). As discussed in Section 5, Agency Consultation, the U.S. Fish and Wildlife Service (USFWS) agreed with the analysis for the Monarch butterfly, a candidate species. Channel Islands NP will continue to coordinate with the USFWS and state resource agencies for special status species. If the Monarch butterfly becomes listed, then the Park will consult with the USFWS on the butterfly. Because adverse effects will be limited to individuals by implementing mitigation measures and will not result in the loss of habitat or populations of species, and the selected alternative will improve habitat for affected species there will be no impairment to special status species.

Archeological Sites. Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended (16 USC 470 et seq.) and its implementing regulations under 36 CFR Part 800 require all federal agencies to consider effects of federal actions on historic properties, including archeological sites and resources of cultural and religious significance. Under the selected alternative, fires and fuel reduction actions may displace, disturb, expose, or damage unknown surface archeological resources. However, with avoidance of known archeological resources and implementation of mitigation measures, impacts will be minor and not adverse. The beneficial impacts will offset the adverse impacts by reducing local hazard fuel loads and as creation and maintenance of defensible space will increase protection to archeological sites and resources of cultural and religious significance, thus reducing the potential for intense wildfires and damage to archeological and other cultural resources. Therefore, the selected alternative will not result in impairment of archeological resources in Channel Islands NP because it increases the degree and range of protection to archeological resources.

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR part 800.5, *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B will generally result in no adverse effect on archeological resources. The NPS will conduct Section 106 review for each fuel management action implemented under the Proposed Action.

Cultural Landscapes. Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended (16 USC 470 et seq.) and its implementing regulations under 36 CFR Part 800 require all federal agencies to consider effects of federal actions on historic properties, including historic structures and historic districts (including cultural landscapes) eligible for or listed in the

National Register of Historic Places (NRHP). Known cultural landscapes in the area of potential effects (APE) include three cultural landscape historic districts—Anacapa Island Light Station, Santa Cruz Island Ranching Historic District, and the Santa Rosa Island Ranching Historic District. The Channel Islands NP cultural landscapes represent a rich historic past ranging from prehistoric and historic Chumash occupation to 19th/20th century ranching and agriculture operations on Santa Rosa and Santa Cruz islands, to navigation installations on Anacapa and Santa Rosa islands, and other military, navigation, fishing, and recreational developments.

Under the selected alternative, prescribed pile burning will remove some non-contributing eucalyptus groves on Santa Cruz Island, temporarily impacting the viewshed of cultural landscapes on the islands. Over time, native vegetation will regrow on the treatment areas, helping to restore native plant communities that are unique to the islands and part of the cultural landscapes. The grove treatment areas will remove part or whole eucalyptus groves that are not considered essential to the historic landscapes, while maintaining historic eucalyptus trees that contribute to the historic island-wide ranching era. The maintenance and creation of defensible space around cultural resources and adjacent historic buildings on the islands and mechanical treatments will increase the degree and range of protection to cultural landscapes and their contributing elements by further reducing hazard fuel loads, controlling non-native plant species, increasing the ability to achieve desired resource conditions, and maintain defensible space for cultural resources and natural resources and features that have cultural significance. Therefore, the selected alternative will not result in impairment of cultural landscapes in the Channel Islands NP because it increases the degree and range of protection to cultural landscapes and their contributing elements.

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR part 800.5, *Assessment of Adverse Effects*), the NPS concludes that implementation of Alternative B will generally result in no adverse effect on cultural landscapes. The NPS will conduct Section 106 review for each fuels management action implemented under the Proposed Action.

Appendix C: Mitigation Measures for the Selected Alternative

Air Quality

AIR-1 Prescribed fires will be coordinated and permitted through the Santa Barbara County Air Pollution Control District (APCD), using required smoke modeling programs, which predict direction and intensity of smoke. The Prescribed Fire Information Reporting System (PFIRS) will be utilized to facilitate statewide interagency coordination with fire and smoke managers. (2013 Channels Islands NP FMP, and CA state smoke regulations, CA Code of Regulations Title 17, Santa Barbara County APCD, Rule 401 (sec. D,1))

AIR-2 Burn piles would only include vegetation; no trash, garbage, metal, carcasses, marine debris, roofing, glass, insulation, hazardous materials, UXOs, construction materials, plastic or petrochemical products, or other materials not allowed by air regulatory agencies. Piles may include lumber that has not been treated and does not include paint, stain, oils, creosote, glues, plastics, laminates, tar paper or other human made additives, (APCD regulations). Burnable paper coverings designed to keep the piles dry and help minimize emissions may be utilized. Piles may be ignited by drip torches or other similar firefighting equipment. (Santa Barbara County APCD, Rule 312 (sec. D, 7) and Rule 401 (sec. C, 4, f))

Biosecurity (NPS Management Policies 2006 and NPS 2015 Channel Islands NP General Management Plan (GMP))

BIO-1 Tree pruning and cutting equipment must be disinfected prior to transport per Channel Islands NP procedures to prevent the introduction of the polyphagous shot hole borer; all other equipment and personal gear must be clean and free of plant material, seeds, soil, insects, and other threats.

BIO-2 The park's Biosecurity procedures on wildfires and fuels treatment projects will be coordinated/supervised by the Channel Islands NP Biosecurity Manager and/or park trained resource advisors (READ/REAFs), or other personnel trained to park standards.

BIO-3 Eucalyptus pile burn areas, where burning has been completed, will have soil and native plant remediation measures implemented on the disturbed ground and burn areas, as coordinated by park resource staff.

BIO-4 All water dropping aviation assets will adhere to interagency bucket and tank protocols. (In addition to the above authorities, Product Management System (PMS) 444 Guide to Preventing Aquatic Invasive Species Transport by Wildland Fire Operations)

BIO-5 The park will develop pre-departure processes/procedures to apply to initial attack, extended attack, and fuels treatment to prevent the spread of non-native invasive species, vegetation/seeds, diseases, fungi, and insects. All footwear, clothing, packs, tools, and equipment will be inspected and cleaned prior to being transported to the islands.

BIO-6 Larger firefighting equipment and vehicles are not expected to be utilized in island wildfires but may be contracted for fuels treatments. If needed, they must be thoroughly cleaned (pressure washed) and inspected per park protocols before going to docks for island transport. They must be free of soil, mud, dirt, seeds, leaves, other plant material, insects, spider webs, and other potentially harmful biological materials.

BIO-7 Corrugated cardboard boxes carrying firefighting or fuels treatment supplies can only be transported to the islands if the boxes are solid cardboard, are new corrugated cardboard that has not been in the field or have factory sealed corrugations. Regional or national fire cache items are usually disinfected and packed in new boxes. "Action Packers" or other tightly sealed containers are an acceptable alternative.

Wildlife

WILD-1 Fuels project work, such as mastication, mowing, brush cutting, equipment use, pile burning, and other fuels treatment activities may be curtailed at times to minimize disturbances during wildlife breeding, pupping, nesting, or other sensitive periods. Noise restrictions may be implemented. (NPS Management Policies 2006 and NPS 2015 Channel Islands NP GMP)

WILD-2 Mechanical treatments and burning of burn piles will avoid bird breeding, nesting, and fledging season, typically February 1 to August 31, depending on location and species involved, as identified by park resource management survey and monitoring actions. (Migratory Bird Treaty Act)

WILD-3 Air operations should be avoided within 1,000 feet of observed marine mammals or sea turtles. The best practice is to fill buckets in deeper water areas relatively devoid of marine life and hazards but avoid filling in state Marine Reserves and Marine Conservation Areas. (National Oceanic and Atmospheric Association Guidelines When Viewing from Air and 15 CFR Part 922.72(a) 7)

WILD-4 Fire and fuels personnel will be reminded that feeding foxes, ravens, skunks, and other wildlife is not allowed at any time. (36 CFR 2.2 (a)(2))

WILD-5 All NPS staff and contractors working on pile burns must abide by the following for Island spotted skunks (NPS Management Policies 2006 and NPS 2015 Channel Islands NP GMP):

- Piles will be surveyed before burning to determine presence of spotted skunks.
- Existing burn piles will not be added to with mechanical equipment during the spotted skunk pupping season, but new piles may be created.
- Avoid burning piles during the breeding and pupping season (March–May). Young are typically born in April and May.
- Piles will be burned at night when skunks leave dens to forage.
- Initial firing patterns on pile burns will be utilized that allow escape routes for skunks utilizing the piles (i.e., no ring firing).

WILD-6 All NPS staff and contractors working on fuel and fire treatment projects near lower Scorpion eucalyptus grove must abide by the following for Townsend's big-eared bat (NPS Management Policies 2006 and NPS 2015 Channel Islands NP GMP):

- Avoid noise/mechanical equipment use (and burning/smoke) in the lower Scorpion eucalyptus grove area from March 1 to October 1 due to the bat's extended breeding season.
- Fire staff will prioritize defensible space work in the vicinity of the building that houses the bat colony to provide point protection from wildfires. Any work also needs to avoid the March 1 to November 1 bird breeding/nesting seasons.

WILD-7 For all fuel management activities, park and fire staff will select tools, procedures, and equipment that avoid or minimize impacts to natural resources, as well as the general undeveloped character of the park. (NPS Director's Order (DO)-18, and NPS Reference Manual (RM)-18)

Special Status Species (NPS Management Policies 2006 and NPS 2015 Channel Islands NP GMP)

- SS-1** All NPS staff and contractors working on pile burns must abide by the following for island foxes:
- Piles will be surveyed before burning to determine presence of island foxes; den use has not been observed in piles, but they may forage in pile areas.
 - Avoid mechanical equipment use and burning of piles during breeding and kit season (February 1–July 1) in occupied or potential habitat.
 - Initial firing patterns on pile burns will be utilized that allow escape routes in case any foxes are utilizing the piles (i.e., no ring firing).
- SS-2** All NPS staff and contractors working on fuel and fire treatment projects must abide by the following for Monarch butterfly:
- Monarch butterflies may rest and forage among eucalyptus trees during the winter season. If cutting of trees is to occur in the winter, trees to be cut or moved should be surveyed by park staff or firefighters trained to identify Monarchs. If butterflies are present, they should be “shooed” away from the cutting or pile burning area before work begins.
 - If a Monarch roost tree is discovered in a treatment area, it will be protected from cutting and treatment activities during overwintering season (October to February). A NPS biologist will monitor the tree and determine if it should be conserved for future use in consultation with a monarch specialist.

Cultural Resources (36 CFR Part 800, Section 106 of the National Historic Preservation Act, NPS DO-28, NPS RM-28, NPS Management Policies 2006, Executive Order 13007, and Department of Interior 512 Department Manual-5)

- CULT-1** Staff will utilize databases and tribal consultation to identify known cultural sites in advance of pile burns, or fuels treatment activities to consider avoidance and mitigation strategies. For all fuel management activities, park and fire staff will select tools, procedures, and equipment that avoid or minimize impacts to cultural resources.
- CULT-2** If new cultural resources are identified while constructing firelines or implementing other fire activities, the READ/REAFs and Chief of Cultural Resource Management will be notified immediately, and appropriate avoidance and protection measures will be taken. Ground disturbance will be stopped in the area of any discovery, protection measures implemented, and the procedures outlined in 36 *Code of Federal Regulations* Part 800 will be followed, as applicable. Associated tribes and the California State Historic Preservation Officer may need to be notified. Adequate mitigation of project impacts (in consultation with tribal entities and appropriate agencies) will occur. Adjustment of hazard fuel reduction projects will take place to avoid or limit the adverse effects on cultural resources.
- CULT-3** In collaboration with cultural resource specialists, fire staff will utilize defensive and point protection tactics to prevent damage to identified threatened and vulnerable historic, cultural, archeological, and ethnographic sites in fuels treatment areas.
- CULT-4** Tribal consultation will be coordinated by Channel Islands NP cultural resource staff during wildfires that threaten cultural resources, and during fuels treatments. Tribal representatives may be part of the monitoring support on fuels treatments, but not on wildfires unless they are currently red carded.

- CULT-5** Cultural resources will be avoided in wildfire suppression activities by onsite advice from cultural READs/REAFs if available. The Fire Management Officer will work with cultural resource specialists for access to cultural digital mapping tools (ArcGIS Online layers) to help fire managers pre-plan actions during rapidly developing initial attack wildfires when cultural staff may not be available.

Visitor Use and Experience

- PUB-1** Fire staff will ensure public notification procedures occur for all park pile burns and fuel treatments. For long duration wildfires, regular media releases will inform locals and visitors about the expected impacts of the fire, especially related to smoke, closures, and restrictions. Signs or notices may be posted at appropriate places to inform incoming visitors and recreational users of the fire situation. (National Wildfire Coordinating Group (NWCG) Standards for Prescribed Fire Planning and Implementation 2022)
- PUB-2** Fire and park staff will provide pile burn notifications in advance to The Nature Conservancy, U.S. Navy, U.S. Coast Guard, concessionaire and special use permittees, island researchers, and other partners and cooperators that may be affected and need to plan special arrangements. (NWCG Standards for Prescribed Fire Planning and Implementation 2022)

Public Health and Safety

- SAFE-1** The park will continually emphasize the safety of fire and park staff, other agency or cooperator personnel working on the islands, and the public as the highest priority in all fire management activities. Safety often drives fire-related decision making. (NPS RM-18)
- SAFE-2** If planned aviation activities will occur on the islands (such as eucalyptus log removals), park visitors will be notified in advance and kept out of the flight areas. (NWCG Standards for Helicopter Operations, PMS 510)
- SAFE-3** To prevent exposure to hazards where fire/vegetation management treatment activities are underway, visitors will be kept out of the immediate vicinity of tree trimming or falling, heavy equipment use, low-level aviation operations, pile-burning, or other high-risk activities. A Superintendent's closure order, signing, or closure personnel may be necessary in busy visitation areas or periods. (NPS Management Policies 2006)
- SAFE-4** An approved prescribed fire burn plan, as outlined in the *Interagency Prescribed Fire Planning and Implementation Procedures Guide (May 2022)*, will be written for each pile burn project area, utilizing the latest risk analysis procedures and tools. The burn plan also ensures that planning occurs for resources, safety, contingencies, and mitigations to prevent damage to park values. (NPS RM-18, Chapter 7)
- SAFE-5** When fire aviation aircraft are activated to Channel Islands NP, the NPS will ensure that procedures are in place to coordinate with naval aviation operation centers to avoid airspace conflicts. (NWCG Standards for Helicopter Operations, MOA between NPS and Navy)
- SAFE-6** San Miguel Island poses an Unexploded Ordnance (UXO) risk to firefighters on the ground. Park and fire managers will utilize wildfire suppression strategies and tactics that avoid and minimize the UXO risk. Direct attack by fire aviation assets (i.e., dropping retardant and water) is the preferred strategy (see FMP Appendix D6 and Land Use Control & Implementation Plan, San Miguel and Prince Island, Channel Islands NP, and Naval Base Ventura).