Supplemental Environmental Assessment No. 10

Isabella Lake Dam Safety Modification Project
End of Emergency Deviation
Kern County, California

September 2022

Lead Agency:
U.S. Army Corps of Engineers
South Pacific Division
Sacramento District

Cooperating Agency:
U.S. Department of Agriculture, Forest Service
Sequoia National Forest

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Acronyms and Abbreviations

CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
DSM	Dam Safety Modification Project
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
HTRW	Hazardous, Toxic, and Radiological Waste
Isabella Dams	Isabella Lake Main Dam, Spillway and Auxiliary Dam
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NEPA	National Environmental Quality Act
NHPA	National Historic Preservation Act
PA	Programmatic Agreement
SEA	Supplemental Environmental Assessment
SHPO	California State Historic Preservation Officer
SR	State Route
USACE	U.S. Army Corps of Engineers
USFS	U.S. Department of Agriculture, Forest Service
USFWS	U.S. Fish and Wildlife Service

SUMMARY OF CHANGES TO DRAFT DOCUMENT

The following changes were made to the draft supplemental environmental assessment. A description of the location in the document is followed by a brief explanation of the change.

- Title Page. The word "Draft" was removed from the title, the number "10" was added based on recent internal policy advice on naming supplemental documents, and the date was changed from May 2022 to August 2022.
- Page iii. Added the word "Supplemental" to the definition of the abbreviation SEA. Omission of this word was an error.
- Page 11. Corrected minor typo to clarify language flow with references to the North and South Forks of the Kern River.
- Made minor updates throughout the document to remove references to the draft Supplemental Environmental Assessment to reflect that this is the final Supplemental Environmental Assessment.
- Changed all occurrences of the word "Corps" to "USACE" when referencing to the U.S. Army Corps of Engineers, Sacramento District based on Engineer Pamphlet No. 360-1-36.
- Updated language in Sections 6.0 and 7.0 to reflect that this is the final document. This mostly consisted of deleting the word "Draft" before SEA and changing verb tense.

1.0 Purpose and Need for Action

1.1 Proposed Action

Pursuant to the National Environmental Policy Act of 1969 (NEPA), as amended, this Supplemental Environmental Assessment (SEA) discusses and discloses beneficial or adverse potential effects that would result from ending the Interim Risk Reduction Measures (IRRM) that were put in place to restrict the reservoir elevation at Isabella Lake to 2585.5 feet[1] above mean sea level until the Isabella Lake Dam Safety Modification Project (DSMP) is complete. This is a deviation of 20 feet below the normal gross pool elevation of 2605.5 feet (2609.26 feet NAVD 88). During normal operations, the gross pool elevation is reached when the water level in the reservoir is at the crest of the service spillway and generally represents the elevation where all flood storage in the reservoir is filled. The U.S. Army Corps of Engineers, Sacramento District (USACE) is the lead agency and the U.S. Department of Agriculture, Forest Service (USFS) is the cooperating agency on this action for the purposes of NEPA.

1.2 Location of the Project Area

Isabella Lake is situated approximately 35 miles northeast of Bakersfield in Kern County, California, along California State Road (SR) 178, one mile upstream of the town of Lake Isabella (Figure 1). Water from the Kern River is retained by Isabella Lake Main Dam and Auxiliary Dam (Isabella Dams) to form Isabella Lake in the southernmost part of the Sequoia National Forest.

1.3 Background and Need for Action

In 2005, USACE determined through an agency screening-level risk assessment process that the Isabella Dams and service spillway posed unacceptable risk to life and public safety. Based on the risk assessment, the Isabella Dams and service spillway received a risk classification described as “urgent and compelling (unsafe),” and “critically near failure” or “extremely high risk.” However, failure is not believed to be imminent. As part of the IRRM, USACE initiated an emergency deviation in September 2006 from the 1978 Reservoir Regulation Manual (Water Control Plan) for Isabella Dams and Lake to operate the project and maintain the reservoir elevation at or below 2,585.5 feet IPD (2589.26 feet NAVD 88) and a capacity of 361,250 acre-feet. The purpose of this emergency deviation was to lower the lake level to a safe elevation and capacity based on the results of USACE seismic investigations.

USACE assessed the environmental consequences of extending the emergency deviation annually from March 20, 2007, to September 30, 2015, in an environmental assessment (EA) that was completed in April 2008 (USACE 2008). The 2008 EA also acknowledged that the deviation could extend beyond 2015 until completion of the Isabella Lake DSMP. The EA concluded that deviating from the Water Control Plan to restrict Isabella Lake levels at or below 2,585.5 feet (2589.26 feet NAVD 88) in elevation between March and September for the years

[1] This elevation is in the Isabella Project Datum (IPD), which is 3.76 feet less than the North American Vertical Datum of 1988 (NAVD 88). IPD is used in this document due to its prevalence in prior related documents. For additional clarity, the corresponding elevation in NAVD 88 will be provided as well.

2007 through 2015 would not have any significant effect on cultural resources or riparian vegetation found within the lake's perimeter or in the downstream areas of the Kern River below the dam. The deviation could result in minimal effects to recreation, socioeconomics (for example, local businesses that are seasonally dependent on some of the revenues provided by recreational users), air quality, water quality, and fisheries as lower lake levels make access more difficult for boaters and other recreational users, water temperatures warm up, dissolved oxygen levels decrease, and exposed reservoir bottoms dry out and are blown around by winds. These effects were not expected to be significant since they would typically mirror what normally has been occurring at the lake on an annual basis during dryer years since 1978.

USACE completed a Dam Safety Modification Report in October 2012 that recommended remediation measures to reduce the public safety and property damage risks posed by floods, earthquakes, and seepage at the Isabella Dams. USACE prepared a Draft Environmental Impact Statement (DEIS) in March 2012 (2012a) and published a Final Environmental Impact Statement (FEIS) in October 2012 for the proposed remediation of the Isabella Dams (2012b). The FEIS describes the anticipated direct, indirect, and cumulative impacts expected to occur because of the remediation, including impacts to existing Federal, state, local and privately owned infrastructure in the Isabella Dams vicinity (USACE 2012b).

Prior to implementation of the dam safety deviation that started in September 2006, the Isabella Dams and Lake were under a separate deviation as a requirement of the terms and conditions of the 2000 U.S. Fish and Wildlife Service (USFWS) biological opinion (BO) and 2005 amendment (file no. 1-1-99-F-0216 and 1-1-05-F-0067, respectively) for the Long-term Operation of Isabella Dam and Reservoir issued in accordance with Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 – 1599). This deviation restricted lake levels from rising above 2584 feet IPD (2587.76 feet NAVD 88) from March l through September 30 until USACE implemented mitigation measures, mainly the restoration and protection through conservation easement of 1,100 acres of habitat along the South Fork Kern River. This deviation was in place from June 2000 until it was ended in March 2005 by the USFWS upon request of USACE. Thus, except for summer 2005 and most of summer 2006, Isabella Lake has been under a deviation for the past 22 years. Operating under a deviation has been the norm and, therefore, this SEA assesses the environmental consequences of ending the IRRM deviation.

This SEA fulfills the commitment to continue NEPA assessment of the potential effects of the Isabella Lake DSMP. Due to project complexity and unresolved design issues, the 2012 FEIS identified the need for supplemental NEPA assessments to address subsequent design refinements. As with other supplemental NEPA assessment needs identified in Section 1.4 of the FEIS, this SEA is tiered to the DESI and FEIS. Information and assessments that have not changed since the 2012 FEIS analysis will not be restated in this SEA. Although the April 2008 EA did assess the consequences of the deviation, it did not assess the consequences of ending the deviation or acknowledge that the IRRM deviation was following a separate deviation put in place to protect species under the ESA (USACE 2008).

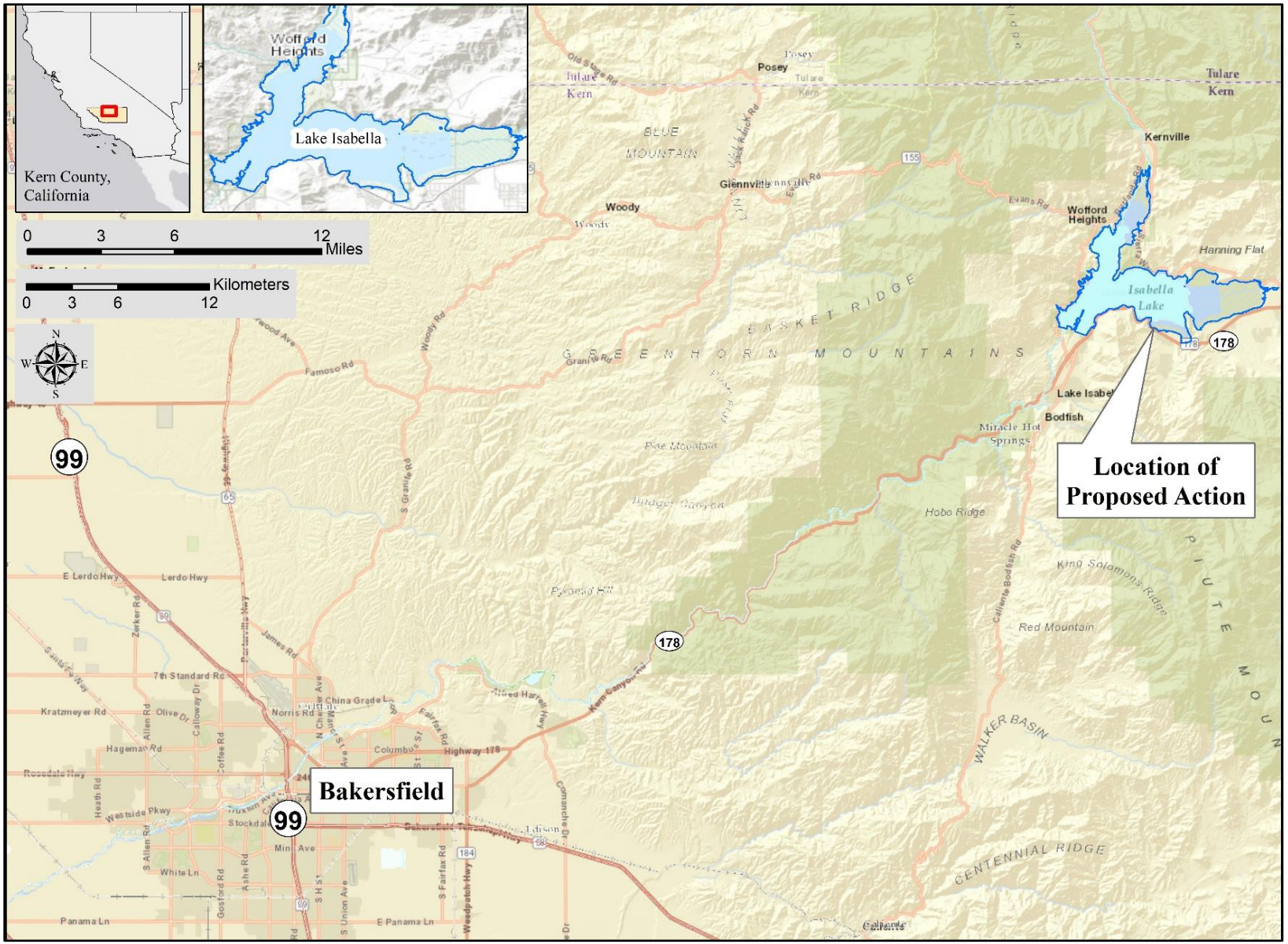

Figure 1. Location of Isabella Lake and the proposed action.

1.4 Authority

The preliminary study for a flood reduction and water supply project on the Kern River was authorized by the Flood Control Act of 1936, Public Law 74-738, June 22, 1936. Construction of Isabella Dam and Lake was authorized by the Flood Control Act of 1944, Public Law 78-534, Chapter 665, Section 10, page 901.

1.5 Decision Needed

The Sacramento District Commander must decide in the Final SEA whether the proposed action alternative qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether a supplemental environmental impact statement must be prepared due to potentially significant environmental impacts.

1.6 Prior NEPA Documents

This SEA tiers to the 2012 FEIS (USACE 2012b) for the Isabella Lake DSMP. The 2012 DEIS (USACE 2012a) provides a primary source for detailed environmental assessment. The FEIS is focused on preferred alternatives and subsequent changes to the DEIS analyses. Additional SEAs tiered to the FEIS are as follows:

- SEA 1 – Phase I Real Estate Acquisition and Relocation 2014
- SEA 2 – Phase II Real Estate Acquisition and Relocation 2015
- SEA 3 – USDA Forest Service Administration and Recreation Facilities Relocation 2016
- SEA 4 – Borel Canal Easement Acquisition 2016
- SEA 5 – Dams and Spillway Design Refinements 2016
- SEA 6 – French Gulch State Route 155 Improvements 2017
- SEA 7 – Temporary Water Control Manual Deviation 2017
- SEA 8 – Permanent Relocation of the U.S. Forest Service Visitor Center 2021
- SEA 9 – Fay Ranch Road East Vegetation Mitigation, TBD

These NEPA documents with decision documents are available online at: http://www.spk.usace.army.mil/Missions/Civil-Works/Isabella-Dam/

Copies of the Isabella Lake DSMP FEIS and other NEPA documents may also be obtained by contacting the Sacramento District Public Affairs Office, 1325 J Street, Sacramento, CA 95814. Phone (916) 557-5101; email: isabella@usace.army.mil.

1.0 ALTERNATIVES

Plan formulation results were discussed in detail in the 2008 EA and 2012 DEIS (USACE 2008; 2012a). The 2008 EA considered several alternatives, including seepage berms coupled with relief wells, toe drains, and a flood warning system. These were eliminated from further study because (1) they failed to adequately reduce flood risk or (2) required disposal of groundwater that was not feasible (USACE 2008). The 2012 DEIS evaluated a no action and five

action alternatives (USACE 2012a). The 2012 FEIS and subsequent SEAs further refined the preferred alternative. The following two sections describe the alternatives for this SEA.

2.0 No Action

NEPA requires the Federal lead agency (USACE) to analyze a "no action" alternative that describes the future conditions that would reasonably be expected to exist in the absence of the proposed action and serves as the environmental baseline against which the adverse and beneficial effects of the action alternatives are evaluated. In this SEA, under the no action alternative, USACE would indefinitely continue the IRRM–restricting the gross pool at Isabella Lake to 2585.5 feet (2589.26 feet NAVD 88) above mean sea level during the period from March 20 to September 30–after the Isabella Lake DSMP is complete. Occasionally, during severe flood events, lake levels would rise above the restricted pool, but Isabella Lake Operations would release water as quickly and safely as possible to bring lake levels back below the restricted pool elevation. In essence, the no action alternative would keep the proposed action from the 2008 EA and make it permanent. In addition, since this SEA is tiered to the 2012 FEIS and the subsequent SEAs (numbers 1 through 9), the no action includes the cumulative proposed action described in those documents. The physical construction for the Isabella DSMP is nearing completion and should be entirely complete this calendar year.

2.1 Proposed Action

Under the proposed action alternative, USACE would end the IRRM/emergency deviation once the Isabella Lake DSMP is complete and appropriate testing shows that the Isabella Dams can safely hold water up to the gross pool elevation of 2605.5 feet (2609.26 feet NAVD 88; see Figures 2 and 3), a process that could take a couple years. Lake levels would fluctuate according to precipitation patterns and runoff, as well as reservoir operations in accordance with the Isabella Lake Regulation Manual, dated May 1953, revised January 1978 (USACE 1978), and other agreements and decisions to achieve the following objectives to:

- restrict flows in downstream channels of the Kern River and its distributaries to non-damaging rates;
- eliminate or minimize flood flows from the Kern River into Tulare Lakebed; and
- provide the maximum practicable amount of storage space for conservation water without impairing the flood reduction functions.

The lake would operate in a fashion like it did prior to implementation of the IRRM/emergency deviation, except for changes in operations under severe flooding events due to the modifications to the Isabella Dams from the Isabella DSMP. These modifications to the Isabella Dams and their effects were described in the 2012 DEIS, FEIS, and subsequent SEAs as listed above in Section 1.6, and would not change rate, duration, or timing of how lake levels would rise to the gross pool elevation (2605.5 feet IPD, 2609.26 feet NAVD 88). For the purposes of effects analyses, the proposed action area is comprised of all areas between the restricted pool and gross pool elevation (Figure 2).

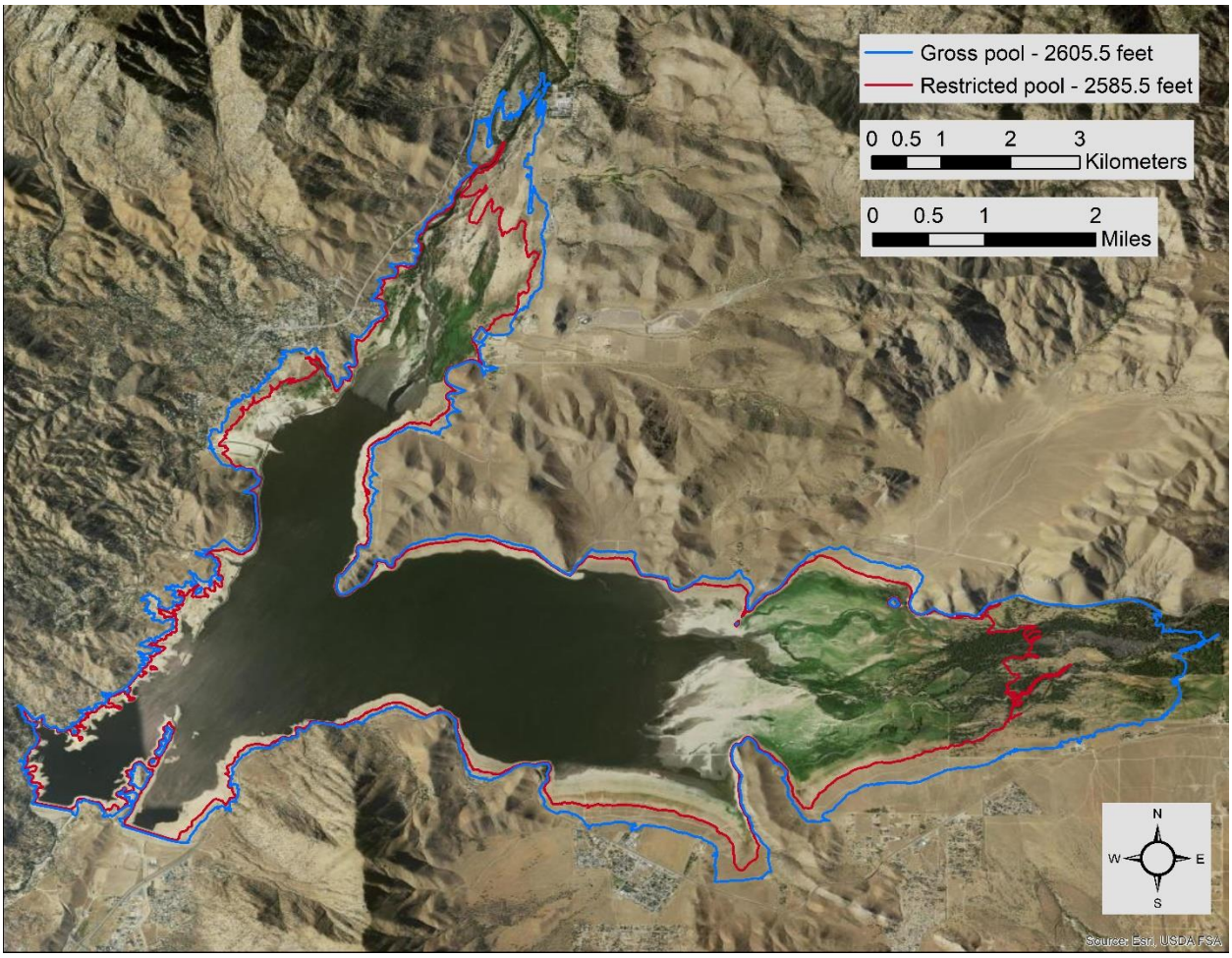

Figure 2. The proposed action would end the emergency deviation restricting the reservoir pool (red line) and allow lake levels to rise to the gross pool elevation (blue line) based on natural inflows from the watershed and dam operations.

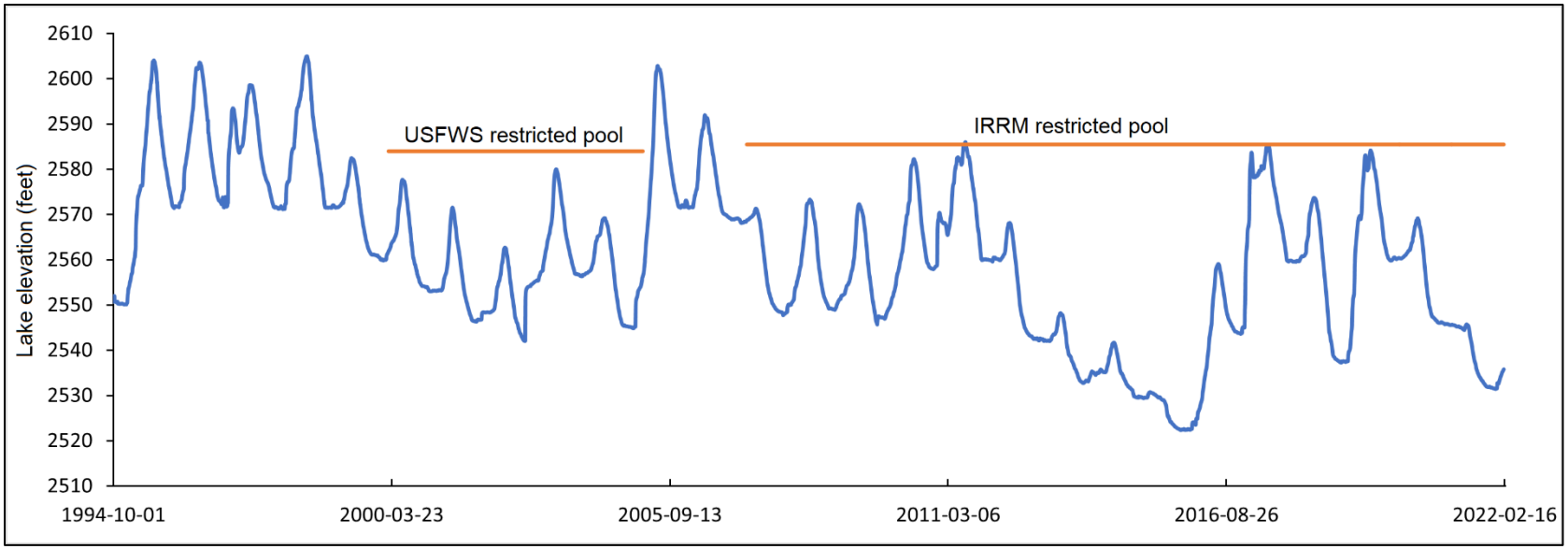

Figure 3. Hydrograph of lake elevation in feet (IPD; add 3.76 feet for NAVD 88) from 1994 to 2022. Under the proposed action, the IRRM restricted pool (aka emergency deviation) would end, and lake levels would be allowed to rise to the gross pool elevation; USFWS imposed deviation is shown for historical context.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the effects of the proposed alternative on the area's environmental resources. Section 3.1 discusses those resources that were not evaluated in detail. Sections 3.2 through 3.5 describe the environmental resources evaluated in detail, including the existing conditions, the no action alternative, and the effects of the proposed alternative. The proposed measures to avoid, reduce, minimize, mitigate, or compensate for any potential significant effects are included as well. In determining effects, the consequences of the proposed alternatives are compared to the consequence of taking no action. Any potential impacts are identified either as direct or indirect, then effects are assessed for significance based on significance criteria. The significance criteria used in this document are based on factual or scientific information and data, and regulatory standards of Federal and state agencies.

3.0 Environmental Resources Not Evaluated in Detail

Certain resources were eliminated from further analysis in this SEA because they were addressed adequately in the Isabella Lake DSMP DEIS and FEIS, or they would not result in any new or substantially larger significant direct and indirect effects, including short-and long-term effects, than were initially evaluated in the Isabella Lake DSMP DEIS. Select resources are discussed below to add to the overall understanding of the proposed action and project area.

3.0.1 Hazardous and Toxic Waste

The hazardous, toxic, and radiological waste (HTRW) section of the DEIS (Section 3.9.1) sufficiently characterizes the regulatory setting for this resource. USACE conducted environmental site assessments in the area during October and November 2010 (DEIS Section 3.9.2). The environmental site assessments also addressed HTRW on USFS property surrounding the lake that could be affected by the proposed project. The proposed action does not present significant new circumstances or information regarding the nature and scope of effects to HTRW that would change the analysis presented in the 2012 FEIS.

3.0.2 Geology, Soils, and Seismology

The Geology, Soils, and Seismicity section of the DEIS (Section 3.4) and FEIS (Section 3.2) sufficiently characterizes the regulatory setting and affected environment for this resource. There have been no additional revisions, studies, or new data relevant to the discussion of the affected environment. The proposed action would have no additional effects on geology, soils, and seismicity beyond those already analyzed in the DEIS, FEIS, and subsequent SEAs.

3.0.3 Aesthetics and Visual Resources

The visual aesthetics sections of the DEIS (Section 3.13) and FEIS (Section 3.11) adequately characterized the regulatory setting and the general visual resources of the area surrounding the proposed alternative. There have been no additional revisions, studies or new data generated that are relevant to the discussion of the affected environment.

It is possible that the proposed alternative could generate new vegetative growth in the immediate area, which could enhance the aesthetic value; however, a fine layer of sediment could be deposited along the perimeter of the lake as well, which could take away from the aesthetic value. These two actions would be minor, infrequent, and unnoticeable to most visitors. It is unlikely (less than 20% chance each year) that these effects would occur in the project area, given the historic infrequency of such necessary climatic conditions; therefore, it is deemed that the effects of the proposed alternative to aesthetic and visual resources would be less than significant.

3.0.4 Air Quality

The Air Quality section of the DEIS (Section 3.5), FEIS (Section 3.3) and the Regulatory section in the Air Quality analysis (Appendix F of the FEIS) sufficiently characterize the regulatory setting and the general affected environment for the Isabella DSMP. The proposed action would have no additional effects on air quality beyond those already analyzed in the DEIS, FEIS, and subsequent SEAs.

3.0.5 Cultural Resources

The 2008 EA (USACE 2008) concluded that deviating from the Water Control Plan (*i.e.* Water Control Manual [WCM]) to restrict Isabella Lake levels at or below 2,585.5 feet IPD (2589.26 feet NAVD 88) in elevation between March and September for the years 2007 through 2015 would not have any significant effect on cultural resources or riparian vegetation found within the lake's perimeter or in the downstream areas of the Kern River below the dam. This determination was made, in part, based on a finding under Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108), that the emergency deviation would have no potential to cause effects on historic properties pursuant to 36 CFR 800.3(a)(1). USACE has determined that the proposed elimination of the emergency deviation and the return to operations under the existing WCM within the current gross reservoir pool likewise would result in no significant effect on cultural resources and requires no further Section 106 analysis.

3.0.6 Land Use

The Land Use section of the DEIS (Section 3.11) sufficiently characterized the regulatory setting for this resource. An alternative would be considered to have a significant effect on land use if it would result in incompatible land uses with existing and planned land uses in the area, or if it were inconsistent with land use designations or goals, policy or regulation, or produce a permanent conversion of prime and unique farmlands to other land uses. No farmland or timberland lie within the proposed alternative areas and the proposed action is compatible with existing and planned land uses. The proposed action would have no additional effects on land use beyond those already analyzed in the DEIS, FEIS, and subsequent SEAs.

3.0.7 Socioeconomics and Environmental Justice

Section 3.15 of the DEIS characterized the regulatory setting for this resource. The proposed project is located in Kern County, which has a population of 909,235 (U.S. Census 2020). This

area has a higher percentage of white and Hispanic or Latino populations, but a lower percentage of Asian populations when compared to the state's average (U.S. Census 2020). The proposed action is not based on demographics of the community and would not have a disproportionally adverse effect on these populations. In addition, indices for environmental hazards for the area are lower than the state average (USEPA 2021). As a result, the effects of the proposed action on socioeconomics and environmental justice would be less than significant

3.0.8 Noise and Vibration

The Noise and Vibration section for the DEIS (Section 3.8) sufficiently characterizes the regulatory setting for this resource. The Kern River Valley Specific Plan Noise Element establishes specific goals, policies, and implementation measures for noise within the project area, which includes Isabella Lake and vicinity. The proposed action would have no additional effects on noise and vibration beyond those already analyzed in the DEIS, FEIS, and subsequent SEAs.

3.0.9 Traffic and Circulation

The Traffic and Circulation section of the DEIS (Section 3.7) and the FEIS (Section 3.5) sufficiently characterizes the regulatory setting for this resource. The proposed action would have no additional effects on traffic and circulation beyond those already analyzed in the DEIS, FEIS, and subsequent SEAs.

3.1 Vegetation and Wildlife

The Biological Resources section of the DEIS (Section 3.10) and FEIS (Section 3.8) sufficiently characterizes the general affected environment for this resource, including descriptions of vegetation and habitat found within the proposed action area. Further details specific to the proposed action area are provided in the 2008 EA (USACE 2008). A final Fish and Wildlife Coordination Act Report (Appendix C of the FEIS) provided the U.S. Fish and Wildlife Service (USFWS) recommendations and vegetation compensation needs for wildlife habitats affected by construction of features associated with the Isabella Lake DSMP.

3.1.1 Affected Environment

Isabella Lake is in the California Floristic Province (Hickman and Jepson 1993), which is the largest and most significant geographic unit in California (Hickman and Jepson 1993). Riparian woodlands are common in the proposed project area upstream of Isabella Lake along the North and South Fork Kern Rivers. The term riparian refers to streamside habitats which are characterized in the dry West by cottonwood and willow trees. The riparian woodland cover type is dominated by Goodding's willow (*Salix gooddingii*), Fremont cottonwood (*Populus fremontii*), and red willow (*S. laevigata*). Also common in some areas are Pacific willow (*S. lasiandra*), yellow willow (*S. lutea*), narrowleaf willow (*S. exigua*), shining willow (*S. lucida* ssp.), boxelder (*Acer negundo*), California buckeye (*Aesculus californica*), and white alder (*Alnus rhombifolia*) (Sawyer et al. 2009). Black elderberry (*Sambucus nigra*) is also found in this vegetation type. Tree canopy height can be up to 80 feet and is open to continuous (Sawyer et al. 2009). Common

shrubs in the riparian woodlands include mule-fat (*Baccharis salicifolia*), coyote brush (*B. pilularis*), and redosier dogwood (*Cornus sericea*), which also form an open to continuous cover (Sawyer et al. 2009). The herbaceous layer is variable and is often dominated by primary colonizers such as rough cocklebur (*Xanthium strumarium*), stinging nettle (*Urtica dioica*), goosegrass (*Elusine indica*), common rush (*Juncus effusus*), common knotweed (*Polygonum lapathifolium*), common plantain (*Plantago major*), and cress (*Cardamine* sp.) (Sawyer et al. 2009). Other plant communities in the proposed action area include sagebrush-scrub upland (*Ericameria nauseosa*) and valley grasslands (*Bromus rubens-Schismus*). General cover types in the proposed project area are illustrated in Figure 4. Numerous non-native and invasive plant species are also found in the project area.

The diversity of habitats around Isabella Lake attracts a variety of wildlife species, including many residents and abundant migrants. The extensive riparian areas found in the deltas of the North and South Forks of the Kern Rivers are the most substantial habitat for wildlife found in the vicinity of Isabella Lake. These areas have mature riparian woodlands growing in braided stream channels intermixed with pools and wetlands. In particular, the South Fork Wildlife Area has been identified as one of the largest intact patches of riparian habitat remaining in California. It is estimated that over 300 species of birds use this area, with most being neotropical migrants that nest and forage during summer and overwinter in Central and South America (Audubon 2011).

Floodplain habitats serve as important rearing grounds for fish (Moyle 2002) during flood events. Flooded trees and shrubs, whether alive or dead, provide protective cover (Moyle 2002) and are important to juvenile survival in fishes (Sommer et al. 2001).

Common birds include passerines (perching birds) such as flycatchers, warblers, kinglets, chickadees (*Poecile* spp.), thrushes, jays, blackbirds, sparrows, finches, towhees, wrens, nuthatches, and swallows. Other common birds are hummingbirds, woodpeckers, water birds, waders, and various raptors (Audubon 2011). Wildlife species common in this area include mammals such as foxes (*Vulpes* spp.), coyote (*Canis latrans*), bobcat (*Lynx rufus*), striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale gracilis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), bats, and woodrats (*Neotoma* spp.). Reptiles and amphibians that are relatively common include the Pacific chorus frog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), bullfrog (*Lithobates catesbeianus*), and valley garter snake (*Thamnophis sirtalis fitchi*) (Audubon 2011). Many invertebrates are also common in this area and provide the dietary basis for the high densities seen in some wildlife species.

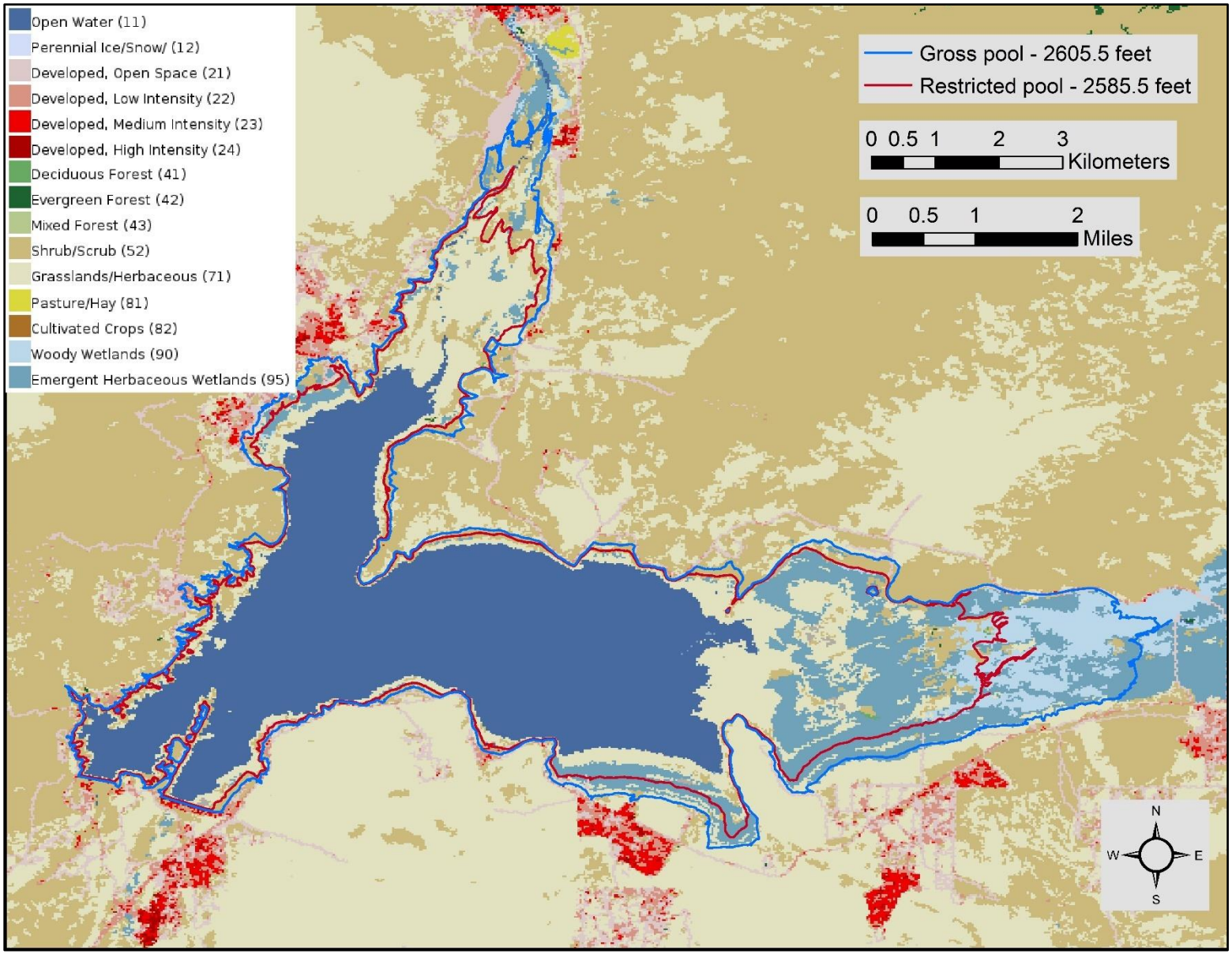

Figure 4. Landcover classification from the National Land Cover Database (2016) for Isabella Lake and surrounding area.

Much of the upland habitat around Isabella Lake hosts species adapted to arid environments. Common reptiles include side-blotched lizard (*Uta stansburiana*), southern alligator lizard (*Elgaria multicarinata*), western fence lizard (*Sceloporus occidentalis*), California kingsnake (*Lampropeltis californiae*), Pacific gopher snake (*Pituophis catenifer catenifer*), and Northern Pacific rattlesnake (*Crotalus oreganus*) (Audubon 2011). Common upland bird species include California quail (*Callipepla californica*), scrub jay (*Aphelocoma* spp.), goldfinches (*Spinus* spp.), wrentit (*Chamaea fasciata*), and acorn woodpecker (*Melanerpes formicivorus*). Mammals that are expected to be in the area surrounding Isabella Lake include pocket gophers (*Thomomys* spp.), mice (*Peromyscus* spp.), tree and ground squirrels (*Ostospermophilus* spp.), mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), and a diversity of bats. Isabella Lake and the Kern River host a variety of waterfowl, including migratory and resident waterfowl such as American coot (*Fulica americana*), grebes, cormorants (*Phalacrocorax* spp.), gulls, and waders (Audubon 2011).

Based on analyses of aerial photographs from 1995 to 2021, fluctuations in reservoir levels above the restricted pool elevation (2585.5 feet IPD; 2589.26 feet NAVD 88) do not seem to negatively affect willows growing between the restricted pool and the gross pool (2605.5 feet IPD; 2609.26 feet NAVD 88). No willow dieback occurred after the highwater events of However, large scale climate conditions (*e.g.*, drought) seem to have a negative impact on willows. The 2006–2010 and 2011–2017 droughts caused die-back of willows across approximately 20 acres along the South Fork Kern River based on aerial imagery analyses of tree canopy cover change between 2008 and 2014. 71 additional acres of willows died between 2013 and 2016, also presumably from drought. The Cove Fire occurred in May 2011 and burned approximately 140 acres within the proposed action area.

3.1.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on vegetation and wildlife if it would permanently remove or disturb sensitive native communities, or significantly reduce the amount of native vegetation and wildlife habitat in the project area.

No Action. Under the no action alternative, the IRRM would indefinitely remain intact as part of the Isabella Lake DSMP, thus lake levels would be kept below the restricted gross pool. Restricting the reservoir levels could negatively affect some riparian habitat by reducing periodic flooding, which provides moisture needed for survival and growth of trees and shrubs as expressed in the USFWS 2000 BO. Fish species that rear or spawn in the periodically flooded areas would be negatively affected. In contrast, other wildlife that could be harmed by the periodic flooding would benefit from the restricted pool becoming permanent. For example, some bird nests in low-lying willows would not experience flooding from the lake. It is difficult to quantify net effects due to the variations of impacts from the no action across vegetation and wildlife.

Proposed Action Alternative. Under the proposed action alternative, USACE would end the IRRM once the Isabella Lake DSMP is complete and appropriate testing shows that the Isabella Dams can safely hold water up to the gross pool. Lake levels would fluctuate according to precipitation patterns and runoff, as well as reservoir operations in accordance with the Water

Control Plan. Based on past hydrology data for the lake, there is approximately a 20% chance each year that water levels would rise above the restricted pool. During such years, some riparian vegetation (*e.g.*, willows and cockleburs) and fish species would benefit from the higher lake levels, while other species (such as birds with low nests) could be harmed. Most of the time, there would be no effect to vegetation and wildlife. Therefore, since the proposed action would not permanently remove or disturb sensitive native communities, or significantly reduce the amount of native vegetation and wildlife habitat in the project area, affects to fish and wildlife species would be less than significant.

3.2 Federal Special Status Species

The Biological Resources sections of the DEIS (Section 3.10) and FEIS (Section 3.8) characterize the general regulatory setting and existing conditions for this resource. The Isabella Lake DSMP was found to be in full compliance with the ESA, and the 2012 USFWS BO was included in Appendix C of the FEIS (USFWS 2012). In 2016, USACE requested and received concurrence that the Isabella DSMP may affect but is not likely to adversely affect the Federally listed western distinct population segment (DPS) of the yellow-billed cuckoo (*Coccyzus americanus*) and its proposed critical habitat (Appendix A). Additionally, routine operations of the reservoir were addressed in the 2000 BO and 2005 amendment (file no. 1-1-99-F-0216 and 1-1-05-F-0067, respectively; attached as Appendix B), which acknowledged potential negative effects of lake operations on species protected under the ESA. As mitigation for these effects, USACE acquired, restored, and protected more than 1,100 acres of land along the South Fork Kern River, including the lands that are currently managed as the South Fork Wildlife Area. The USFWS further acknowledge in their letter dated January 15, 2008, in response to USACE' request for concurrence on the DSMP emergency deviation, that:

> "The actions proposed and addressed in our previous biological opinions were anticipated to mimic historical operations without restrictions. This gives the operators flexibility to manage water levels within broad deviations" (Appendix C)

The proposed action ending the emergency deviation would not affect critical habitat or Federal special status species in a way not previously considered in the existing BOs. However, there have been several changes to the regulatory setting for this resource since release of the FEIS, which are described below. The affected environment has been updated with focus on the areas affected by the proposed action described in this SEA. An updated list of threatened, endangered, proposed, and candidate species for the proposed action area was requested from the USFWS on March 02, 2022, and is included in Appendix D of this document. The Project Code for the updated list is 2022-0014554.

3.2.1 Affected Environment

There have been several changes to the regulator setting and the affected environment since the FEIS was completed in 2012, which have not been captured in the subsequent SEAs, or the updated 2016 BO. The USFWS listed the Southern Sierra Nevada DPS of fisher (*Pekania pennanti*) as endangered on June 15, 2020 (85 FR 29532). The monarch butterfly (*Danaus plexippus*) became a candidate for listing under the ESA on December 17, 2020 (85 FR 81813).

Final critical habitat for the Western DPS yellow-billed cuckoo was designated on April 21, 2021 (86 FR 20798). The USFWS proposed listing the South Sierra DPS of foothill yellow-legged frog (*Rana boylii*) as endangered on December 28, 2021 (86 FR 73914). Foothill yellow-legged frog was not on the March 02, 2022, species list from the USFWS, but it is described in detail below due to its proposed listing status. Alkali mariposa lily (*Calochortus striatus*) was not on the list either but is also described in detail due to its USFS special status. Finally, California condor (*Gymnogyps californianus*), California red-legged frog (*Rana draytonii*), and delta smelt (*Hypomesus transpacificus*) are not discussed in detail because they do not occur within the proposed action area or there is not appropriate habitat.

Fisher. The USFWS listed the Southern Sierra Nevada DPS of fisher as endangered on June 15, 2020 (85 FR 29532). Fishers are regarded as habitat specialists in the western United States (Buskirk and Powell 1994), occurring only at mid to lower elevations in mature conifer and mixed conifer/hardwood forests characterized by dense canopies and abundant large trees, snags, and logs (Powell and Zielinski 1994).

The key aspects of fisher habitat are best expressed in forest stands with late-successional characteristics. Fishers use habitat with high canopy closure, large trees and snags, large woody debris, large hardwoods, multiple canopy layers, and avoid areas lacking overhead canopy cover (USFWS 2004). Fishers also occupy and reproduce in some managed forest landscapes and forest stands not classified as late-successional that provide some of the habitat elements important to fisher, such as relatively large trees, high canopy closure, large legacy trees, and large woody debris, in second-growth forest stands (Klug 1997; Simpson Resource Company 2003). According to the California Natural Diversity Database (CNDDB), the closest fisher occurrence to the proposed action area is seven miles away in a wooded canyon along Bodfish Creek from tracks spotted in 1955 (CDFW 2022).

Least Bell's Vireo. The least Bell's vireo was listed as a Federally endangered species on May 2, 1986 (51 FR 16474). The final critical habitat designated in 1994 encompasses approximately 36,000 acres at ten localities in portions of Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties in southern California. The least Bell's vireo is a small gray migratory songbird whose historical range extended from Baja California, Mexico, to the northern Sacramento Valley of California, and from the California coastal ranges east to Death Valley. Riparian habitat losses and increases in brown-headed cowbird populations starting in the 1930s eventually caused the vireo to become essentially extinct north of the Transverse Ranges of southern California (Grinnell and Miller 1944; Gaines 1974; Goldwasser et al. 1980; Garrett and Dunn 1981; USFWS 1986). Although still absent from major portions of its historical range, the vireo has responded well to conservation management actions. In a 5-year status review, USFWS (2006) determined that the number of occupied vireo territories had increased ten-fold (291 to 2,968) since the 1986 listing.

The least Bell's vireo is one of four recognized subspecies of Bell's vireo in the United States (AOU 1957). Least Bell's vireos are obligate riparian breeders, nesting along stream courses typically dominated by willows (*Salix* spp.), cottonwoods (*Populus* spp.), oaks (*Quercus* spp.), and/or mule fat (*Baccharis salicifolia*). In California, this subspecies is strongly associated with riparian stands with dense understory vegetation between about 2 and 10 feet above the ground

(Brown 1993; Kus 2002). Vireos occur in disproportionately high frequencies in the wider sections (greater than 250m) of the riparian relative to site availability (RECON 1989).

Vireos spend the winter in southern Baja California, Mexico, and arrive on breeding grounds in California in March or April (USFWS 1998; Kus 2002). Grinnell and Miller (1944) reported later arrival (early April) for historic northern California populations. The key structural components of suitable breeding habitat are a dense layer of vegetation within 3-6 ft of the ground and a canopy layer (USFWS 1994; Kus 2002). Nesting least Bell's vireos prefer early and mid-successional riparian habitats that contain low, dense, shrubby vegetation. Nests are typically built of leaves, bark, willow catkins, and spider webs in a fork of a tree or shrub within 3 feet of the ground (Franzreb 1989). A clutch of three to four eggs is incubated by both parents for 14 days, and nestlings leave the nest at about 12-14 days, after which time they are cared for by the parents for another 2 weeks or more. Vireos may make multiple nesting attempts after nest failure but typically produce no more than one successful clutch during a season (Franzreb 1989). Most vireos leave the breeding grounds for Mexico by late September or earlier (Franzreb 1989).

A pair of least Bell's vireo were observed nesting in young willows below the restricted pool in 2014, 2015, and 2016 (CNDDB 2022). These two occurrences were more than one mile west of the restricted pool in areas with higher potential for inundation. One other occurrence was above the gross pool, closer to Sierra Way (CNDDB 2022). Periodic inundation, particularly in the South Fork Wildlife Area, is thought to be necessary for the regeneration of Goodding's willow and long-term maintenance of the riparian forest in general (USFWS 2012b). These characteristics function to maintain diverse species composition and forest structure essential for Federally listed species, such as southwestern willow flycatcher and least Bell's vireo (USFWS 2012b).

Southwestern Willow Flycatcher. On January 03, 2013, USFWS designated revised critical habitat for the southwestern willow flycatcher under the ESA (USFWS 2013b). The revised critical habitat designation for the Kern Management Unit includes a 14.6-mile portion of the South Fork Kern River (including the upper 0.6-mile portion of Isabella Lake) and a one-mile segment of Canebrake Creek in Kern County, California. Along this segment of the South Fork Kern River, two pieces of private land that were woven within this critical habitat–the privately owned and operated Hafenfeld Ranch (0.2 miles of stream on the south side of the river) and Audubon California's Sprague Ranch (2.5 mile of stream on the north side of the river)–are excluded from the final designation. Approximately, 1,700 acres of designated critical habitat falls within the proposed action area (Figure 5). The critical habitat area mainly receives water from runoff and indirect flows via surrounding ranch and farming practices as well as the South Fork Kern River tributary (USACE 2008).

The USFWS also recognized in the 2000 BO that "periodic flooding of the wildlife area could be necessary to maintain dense stands of riparian vegetation." The Corp's own study on this subject concluded that "periodic inundation of the South Fork Wildlife Area and areas west of Patterson Lane is necessary for the regeneration of black willow and long-term maintenance of the riparian forest with diverse riparian vegetation types and canopy structures suitable for southwestern willow flycatchers and least Bell's vireos (2003).

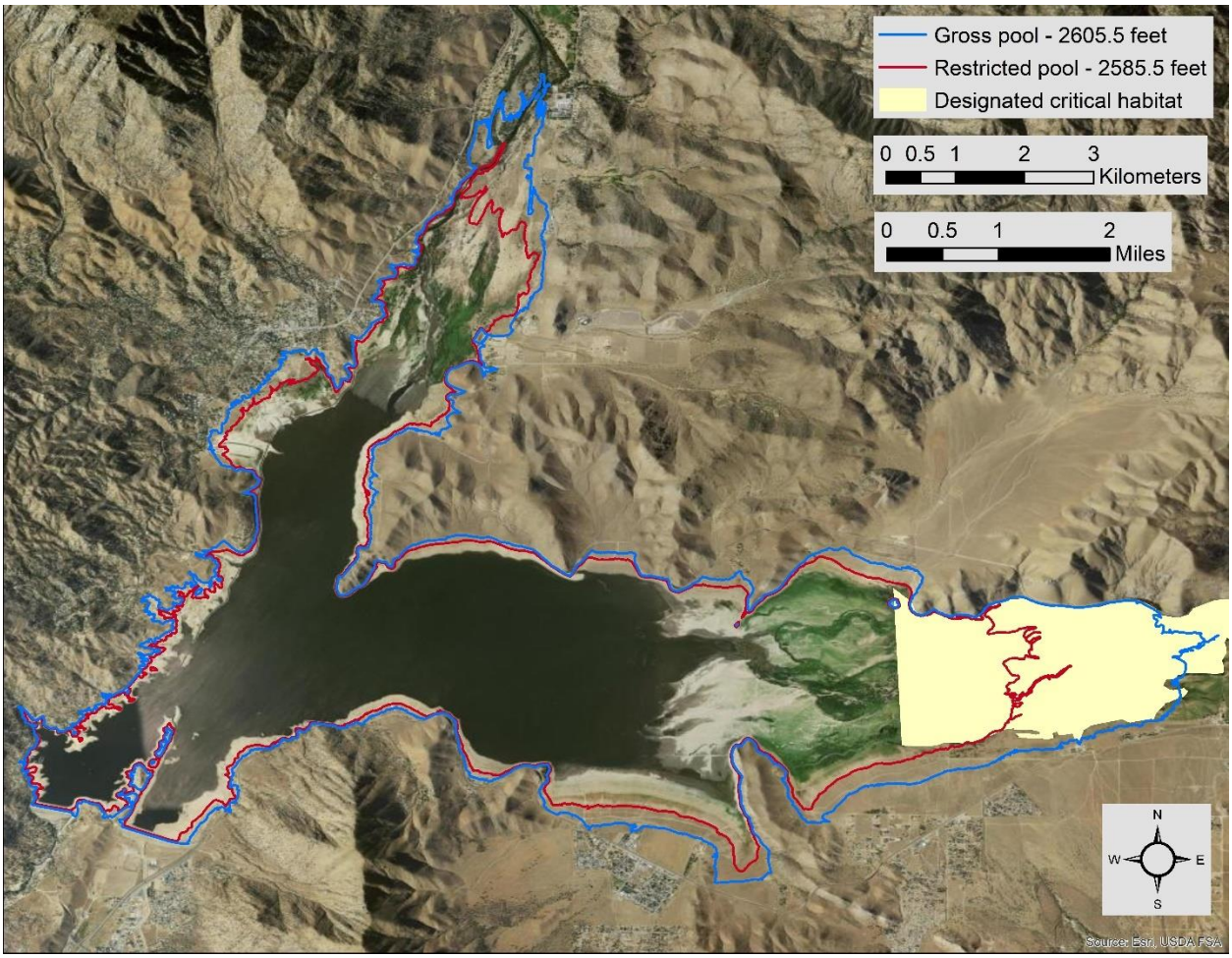

Figure 5. Designated critical habitat (yellow) for southwestern willow flycatcher with the proposed action area.

Western Yellow-Billed Cuckoo. On October 03, 2013, USFWS formally proposed to list and protect the Western DPS of the yellow-billed cuckoo as a Federally threatened species under the ESA (USFWS 2013a). On October 03, 2014, the proposed rule became effective and the USFWS finalized the for listing the yellow-billed cuckoo but not its critical habitat (USFWS 2014). Yellow-billed cuckoos are recognized as state endangered in California.

On August 05, 2014, the USFWS announced a proposal to designate critical habitat for the western DPS of the yellow-billed cuckoo under the ESA. The proposed critical habitat proximity to Isabella Lake is similar to that designated for the southwestern willow flycatcher. The public comment period for this proposed rule was reopened on November 12, 2014, and closed on January 12, 2015. Comments and information received from concerned Federal and state agencies, the scientific community, and other interested parties regarding the proposed critical habitat designation were considered by USFWS, who then designated critical habitat for the Western DPS yellow-billed cuckoo on April 21, 2021.

The earliest spring arrival date for the cuckoo in California is April 23 (Laymon et al. 1997). While there are regularly a few arrivals in May, although not every year, most breeding pairs arrive from June to early July (Laymon and Halterman 1989) when reservoir levels in Isabella Lake are at their peak. Nesting habitat classified for the yellow-billed cuckoo is in dense lowland riparian forest characterized by a dense subcanopy or shrub layer (regeneration canopy trees, willows, or other riparian shrubs) within 333 feet of water. Overstory in these habitats may be either large, gallery-forming trees, 33 to 90 feet tall, or developing trees, 10 to 33 feet tall, usually cottonwoods (USFWS 1982). Riparian habitat is critical for breeding, wintering, migration stopovers, and as corridors for juvenile dispersal. Territory size at the South Fork Kern River ranges from eight to 100 acres (Laymon and Halterman 1985, 1987).

The peak of the breeding season for the cuckoo at the South Fork Kem River is in the first half of July, though nests have been started as early as June and as late as early August (Laymon et al. 1997). The period of incubation to the point when nestlings leave the nest is typically 16 to 20 days, and while typically only one brood is raised per year (Laymon et al. 1997) at the South Fork Kem River, in years of abundant food resources, two and even three broods have been successfully fledged (Laymon et al. 1997). While nests are almost always placed in willows, cottonwoods are extremely important for foraging. They are considered a riparian obligate species, especially in large tracts dominated by cottonwood and willow stands. The humid shady environment creates a microclimate that protects the nesting birds, eggs, and fledglings from the dry heat of late summer in the western U.S. (USFWS 1982).

The yellow-billed cuckoo nests almost exclusively in patches of contiguous riparian habitat covering 50 acres or more (Hughes 1999), and although the Isabella DSMP supports riparian vegetation at a much smaller scale, it is located within the South Fork Kern River which contains large expanses of riparian habitat. According to the CNDDB, 43 yellow-billed cuckoos were detected in 2014 (latest year that data were available) within the South Fork Wildlife Area and the Audubon's Kern River Preserve (2022). Three nests were also observed during the same survey season. It was noted that this was 50% less than in 2012, possibly due to the drought conditions (CNDDB 2022).

Foothill Yellow-legged Frog. The USFWS proposed listing the South Sierra DPS of foothill yellow-legged frog as endangered under the ESA on December 28, 2021 (86 FR 73914). Adult foothill yellow-legged frogs are moderate sized (1.5 to 3.3 inches snout-urostyle) with a dorsal (back) colors often resembling those of the ground, with variations including blackish, dark brown, reddish brown, gray, olive-like, or greenish with varying amounts and strengths of spots and speckles. Some individuals may possess a light spot within a dark area on the upper eyelid. Ventral (underbelly) coloration is typically whitish to yellowish, with a gradient towards yellow at the posterior end of the body and hind limbs. The throat and anterior surface of the femurs often display the most mottling (Ashton 1997; Leonard et al. 1993; Stebbins 2003; USFWS 2016).

Foothill yellow-legged frogs are stream-associated and historically occurred in foothill and mountain streams from northern Baja California to southern Oregon west of the Sierra-Cascade crest, from sea level to approximately 1830 m (6000 ft) elevation (Stebbins 2003). The current distribution of foothill yellow-legged frogs in the Sierra Nevada is largely upstream of reservoirs

in systems that have a substantial length of stream network that still lies within their elevational range. The South Sierra DPS extends from the South Fork American River sub-basin to the transition zone between the Sierra Nevada and the Tehachapi Mountains that border the south end of the California Central Valley (Hayes et al. 2016; Lind et al. 2016).

Threats with significant impacts to foothill yellow-legged frogs include altered stream hydrology and flow regimes associated with dams, surface water diversions, and channel modifications and their impact on the species and its habitat; predation and resource competition from nonnative species, such as American bullfrogs (*Lithobates catesbeianus*), native and nonnative fish, and nonnative crayfish species (*Pacifastacus* spp.) (Olson and Davis 2009; Hayes *et al.* 2016). Bullfrogs affect foothill yellow-legged frog populations in several ways because they are simultaneously competitors, predators, and disease vectors, and they impact life stages from tadpoles to adults (USFWS 2021).

CNDD lists the foothill yellow-legged frog as extirpated from Kern County with a majority of the occurrences last encountered before 1960 (CDFW 2022). Jennings lists the last occurrence of the species in the county as extirpated in the early 1970s (1996).

Alkali Mariposa Lily. Alkali mariposa lily is a small perennial herb that arises from an underground bulb and flowers in the spring, roughly from April to June. It occurs from 2,000 to 3,700 feet elevation and prefers springs and wet alkaline meadows. It is considered a facultative wetland (FACW) species according to U.S. Department of Agriculture PLANTS database (2021). FACW plant species usually occur in wetlands (estimated probability 67% to 99%), but occasionally are found in non-wetlands.

Alkali mariposa lily is listed as a USFS species of conservation concern (2016). NatureServe ranks this species as a state rare plant (rank of 1B.2), indicating it is imperiled in California though not yet listed. Additional global and state rankings of G3 and S3, respectively, indicate it is a plant of vulnerable status (NatureServe 2021). It occurs on the north slope of the San Bernardino and San Gabriel Mountains in Los Angeles and San Bernardino counties. This plant also occurs in the vicinity of Isabella Lake, the base of the Piutes, the South Fork of the Kern River, and low elevations of the Scodies (USFS 2002; CDFW 2022). This species also occurs in Nevada in one county (USFS 2002). The South Fork Kern River subpopulation of alkali mariposa lily was last documented in 1982 (CDFW 2022) and occurs in a meadow with an elevation above the gross pool and is therefore outside of the proposed action area.

3.2.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on special status species if it would result in the unauthorized take of a Federally or state-listed threatened or endangered species; adversely affect designated critical habitat, including degradation of its habitat to the degree of jeopardizing the continued existence of the species or critical habitat; substantially affect any other special status species; or if it affected a population of a non-listed species to the point where it became listed or a candidate for listing.

No Action. Under the no action alternative, the current IRRM would continue indefinitely–restricting the gross pool at Isabella Lake to 2585.5 feet (2589.26 feet NAVD 88) above mean sea level during the period from March 20 to September 30–after the Isabella Lake DSMP is complete. Occasionally, during severe flood events, lake levels would temporarily rise above the restricted pool, but Isabella Lake Operations would release water as quickly and safely as possible to bring lake levels back below the restricted pool elevation.

As noted in the 2008 EA, long-term restrictions on lake levels could degrade habitat for both southwestern willow flycatchers and least Bell's Vireos. However, these affects have already been accounted for by the USFWS in the 2000 BO (USFWS 2008). Thus, the no action would not have additional effects on these two species beyond what has already been consulted on. In their letter dated January 15, 2008, the USFWS concluded that effects of the IRRM on Federally protected species would not exceed those covered under the existing BOs (Appendix B).

Proposed Action. Under the proposed action alternative, USACE would end the IRRM once the Isabella Lake DSMP is complete and appropriate testing shows that the Isabella Dams can safely hold water up to the gross pool. Lake levels would fluctuate according to precipitation patterns and runoff, as well as reservoir operations in accordance with the Water Control Plan. The proposed action reverts lake operations back to normal, with either no effect to Federal special status species or effects that were already covered by previous BOs and mitigation commitments (see Table 1). Therefore, the proposed action would have no additional effect beyond those already consulted on under Section 7 of the ESA and thus effects to Federal special status species would be less than significant.

The 2000 USFWS Biological Opinion concluded that routine lake operations are not likely to jeopardize the continued existence of the affected Federal special status bird species because of the mitigation measures undertaking by USACE to restore and preserve 1,100 acres of riparian habitat (Appendix B). In 2012 and 2016, the USFWS concluded that the Isabella DSMP may affect, but is not likely to adversely affect the Federal special status bird species impacted by the project because of the mitigation measures undertaking by USACE for the Isabella DSMP (see USFWS 2012 and Appendix A for the USFWS 2016 concurrence letter). According to the 2000 USFWS Biological Opinion, USACE would need to reinitiate consultation only if water levels rose above 2,600 feet (2603.76 feet NAVD 88) elevation for the seventh year out of the last 10 years. Such an occurrence would trigger reinitiation of consultation. Lake levels have not risen above 2,585.5 feet elevation in the last 10 years due to the emergency deviation and drought.

Table 1. Federal special status species effects determinations.

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation / Action Area within Designated Critical Habitat (DHC)	Factors Affecting Determination	ESA Section 7 Effects Determination
Mammals					
Fisher (*Pekania pennanti*), Southern Sierra Nevada DPS	Endangered (June 5, 2020: 85 FR 29532	USFWS	Outside proposed DCH	Fishers are regarded as habitat specialists in the western United States (Buskirk and Powell 1994), occurring only at mid to lower elevations in mature conifer and mixed conifer/hardwood forests characterized by dense canopies and abundant large trees, snags, and logs (Powell and Zielinski 1994). No suitable habitat exists within or near the project area.	No effect
Birds					
California condor (*Gymnogyps californianus*)	Endangered (March 11, 1967: 32 FR 4001)	USFWS	Outside DCH	Based on the ecological system classification for the riparian areas affected by the proposed action (USGS 2011), they do not contain a landcover type used by California condors for foraging or roosting (Hall et al. 2019). Regional grassland and shrubland vegetation growth would remain consistent with baseline conditions. Therefore, available habitat would not be diminished.	No effect
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered (May 2, 1986: 51 FR 16474)	USFWS	Outside DCH	Removing the emergency deviation returns lake operations to their normal state, which benefits least Bell's vireo by providing disturbances (in the form of inundation) that are necessary to maintain regenerating or early successional (young) willows needed for nesting. However, the same inundation could cause eggs or fledglings to die. These effects are already covered under existing BOs and have been mitigated for through the acquisition, restoration, and protection of more than 1,100 of riparian habitat.	No effect (beyond what has already been consulted on)
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered (February 27, 1995: 60 FR 10694)	USFWS	DCH (January 03, 2013: 78 FR 344 534); approximately 1,700 acres of the proposed action area occurs within the South Fork Kern River DCH	Removing the emergency deviation returns lake operations to their normal state, which benefits southwestern willow flycatchers by providing disturbances (in the form of inundation) that are necessary to maintain regenerating or young willows needed for nesting. However, the same inundation could cause eggs or fledglings to die. These effects are already covered under existing BOs and have	No effect (beyond what has already been consulted on)

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation / Action Area within Designated Critical Habitat (DHC)	Factors Affecting Determination	ESA Section 7 Effects Determination
				been mitigated for through the acquisition, restoration, and protection of more than 1,100 of riparian habitat.	
Yellow-billed cuckoo (*Coccyzus americanus*), Western DPS	Threatened (October 3, 2014: 79 FR 59991)	USFWS	Outside DCH	Removing the emergency deviation returns lake operations to their normal state, which benefits yellow-billed cuckoos by providing disturbances (in the form of inundation) that are necessary to maintain regenerating or young willows needed for nesting. However, the same inundation could cause eggs or fledglings to die. These effects are already covered under existing BOs and have been mitigated for through the acquisition, restoration, and protection of more than 1,100 of riparian habitat.	No effect (beyond what has already been consulted on)
Amphibians					
California Red-legged Frog (*Rana draytonii*)	Threatened (May 23, 1996: 61 FR 25813-25833)	USFWS	Outside DCH	Does not currently occur in Kern County nor are there any historic records of it occurring in the county (Jennings and Hayes 1985, 1994; Barry 2013). Nearest extant occurrence approximately 170 miles away (CDFW 2022).	No effect
Foothill yellow-legged frog (*Rana boylii*), South Sierra DPS	Proposed (December 28, 2021: 86 FR 73914)	USFWS	N/A	CNDD lists the foothill yellow-legged frog as extirpated from Kern County with a majority of the occurrences last encountered before 1960 (CDFW 2022). Jennings lists the last occurrence of the species in the county as extirpated in the early 1970s (1996). Regional riparian habitat would remain consistent with baseline conditions. Therefore, available habitat would not be diminished.	No effect
Fishes					
Delta smelt (*Hypomesus transpacificus*)	Threatened (March 5, 1993: 58 FR 12854-12864)	USFWS	Outside DCH	Isabella Lake and the Kern River are outside the habitat range for this species (CDFW 2022).	No effect
Insects					
Monarch butterfly *Danaus plexippus*	Candidate	USFWS	None designated	No milkweed species have been documented within the proposed action area. California (*Asclepias californica*), narrow leaf (*Asclepias fascicularis*), and desert milkweed (*Asclepias erosa*) have been	No effect

Evolutionarily Significant Unit (ESU) / Distinct Population Segment (DPS) / Other	Listing Status	Resource Agency Jurisdiction	Critical Habitat Designation / Action Area within Designated Critical Habitat (DHC)	Factors Affecting Determination	ESA Section 7 Effects Determination
				documented in nearby upland areas outside of the proposed action area (Calflora 2022). No known overwintering sites are located within or near the proposed action area (CDFW 2022). Regional nectar plant growth would remain consistent with baseline conditions. Therefore, available habitat would not be diminished.	

3.3 Water Resources and Quality

The Water Resources section of the Isabella Lake DSMP DEIS (Section 3.6.1) sufficiently characterizes the regulatory setting and affected environment for this resource. USACE regulates the discharge of dredged or fill material into all regulated waters of the U.S., including wetlands, under Section 404 of the Clean Water Act (CWA). USACE and the Environmental Protection Agency (EPA) both have responsibilities in administering this program and typically issue permits for these regulated activities. Although USACE does not issue itself permits for its own Civil Works projects, USACE regulations state that USACE must apply the guidelines and substantive requirements of Section 404 to its activities. This is done through a 404(b)(1) evaluation.

3.3.1 Affected Environment

The Tulare Lake Hydrologic Region covers approximately 10.9 million acres. This region includes all of Kings and Tulare Counties and most of Fresno and Kern Counties. Four main rivers (Kings, Kern, Tule, and Kaweah) in the watershed originate from the western flanks of the southern Sierra Nevada, and one substantial creek (Los Gatos) enters from the Coast Range. The Kern River has the largest drainage basin area but produces the second highest runoff after the Kings River. It originates in the Inyo and Sequoia National Forests and Sequoia National Park and flows southward into Isabella Lake (DWR 2009a). Isabella Lake is in the Kern River Valley basin, which is in the southern Sierra Nevada, at elevations ranging from 2,500 to 4,500 feet. The drainage area of the Kern River at Isabella Dam is 2,074 square miles (USACE 2009). The southern portion of the basin is dominated by Isabella Lake, from which the Kern River flows southwest toward Bakersfield in the San Joaquin Valley. Average annual precipitation ranges from six to 14 inches in the eastern and western portions of the basin, respectively (DWR 2009b). The two principal reaches of the Kern River are the main stem of the Kern River (North Fork) and the South Fork. The North Fork makes up about 85 percent of the total flow into Isabella Lake. Approximately 90 percent of the runoff-producing precipitation falls from November through April. Approximately two-thirds of the annual runoff occurs from April through July when snowmelt dominates the system.

Isabella Lake is roughly Y-shaped, following the two upper forks of the Kern River upstream and the Lower Kern River downstream. The lake is surrounded by several communities, including Lake Isabella, Mountain Mesa, South Lake/Longview, Weldon, Keyesville, Wofford Heights, and Kernville. The Auxiliary Dam Recreation Area alternative is located along the lake's southeastern shore. The other alternatives are located downstream of the auxiliary dam in Hot Springs Valley, which is east of the Lower Kern River. A small ridge runs between the river and the valley, roughly parallel to both. Hot Springs Valley contains the town of Lake Isabella and numerous hot springs and seeps surrounded by wetlands.

3.3.2 Environmental Consequences

Basis of Significance. A significant adverse effect on water quality would result if water quality were substantially degraded, a public water supply was contaminated, ground water resources were substantially degraded or depleted, interference occurred with ground water

recharge, or special status species or humans were exposed to substantial pollutant concentrations.

No Action. Under the no action alternative, the IRRM would indefinitely remain intact as part of the Isabella Lake DSMP, and lake levels would remain below the restricted gross pool (less than 361,250 acre-feet). Effects to water quality would be minimal since dam operation would be fair consistent with current operations, except for wet years when water additional water would be released downstream for early-season irrigation, instead of held in the reservoir for mid-to-late summer irrigation.

Proposed Action Alternative. Under the proposed action alternative, USACE would end the IRRM once the Isabella Lake DSMP is complete and appropriate testing shows that the Isabella Dams can safely hold water up to the gross pool. Lake levels would fluctuate according to precipitation patterns and runoff, as well as reservoir operations in accordance with the Water Control Plan. In years with sufficient precipitation within the watershed (approximately 20% of the time), water levels would rise above the restricted pool. This would benefit water quality by lowering temperatures in the lake due to the increased storage, which would reduce potential for harmful algal blooms within the lake. With the same frequency, water released downstream for irrigation would shift from earlier in the growing season (as in the no action) to later in the growing season. Both effects would only occur periodically. Since the proposed action would not substantially degrade water quality, water resources, or interfere with groundwater recharge; contaminate public water supply; or expose special status species or humans to substantial pollutant concentrations, the effects on water quality would be less than significant.

3.4 Recreation

The recreation section of the DEIS (Section 3.12.2) sufficiently characterizes the regulatory setting for this resource. The DEIS and FEIS assessed the potential effects of the Isabella Lake DSMP on recreation facilities and opportunities as significant to recreational use on a temporary and permanent basis.

3.4.1 Affected Environment

Isabella Lake supports a variety of recreational activities including camping, boating, swimming, kite surfing, fishing, hiking, horseback riding, and picnicking. Recreational facilities, such as campgrounds and boat launches, are operated by the USFS. There are three privately operated marinas at the lake: Dean's North Fork, French Gulch, and Kern Valley.

Recreational activities downstream of the Isabella Dams include camping, picnicking, fishing, and most notably–whitewater rafting. The Kern River is a very popular destination for amateur and professional boaters alike given its accessibility and scenic views. Whitewater boating on the north fork of the Kern River above the lake is limited to the spring runoff season (April-May); however, boaters can take advantage of an extended season (through August) downstream of the lake due to regular dam releases. In general, recreational activities at Isabella Lake do not require any specific control of releases.

Although recreation is not an authorized purpose of Isabella Lake, an agreement was made in 1963 between Kern County and the water users to maintain a minimum recreation pool of 30,000 acre-feet (USACE, 1978). This level has only occurred four times since 1954 (1954, 1955, 1960, and 1961). The peak recreation season at the lake is generally April through Labor Day weekend.

3.4.2 Environmental Consequences

Basis of Significance. An alternative would be considered to have a significant effect on recreation if it would result in the significant loss of recreational facilities, cause a substantial disruption in a recreational activity or opportunity, or substantially diminish the quality of the recreational experience.

No Action. Under the No Action Alternative (Alternative 1) the IRRM would indefinitely remain intact as part of the Isabella Lake DSMP, thus lake levels would remain under the restricted gross pool. During wet years (which occur with approximately 20% chance each year), there would be a slight increase in water releases downstream of the Isabella Dams. Depending on the magnitude of such releases, there could be benefits to white water rafting. However, if releases are too great, then there would be minor negative effects to white water rafting for a few days until release subsided.

Proposed Action Alternative. Under the proposed action alternative, USACE would end the IRRM once the Isabella Lake DSMP is complete and appropriate testing shows that the Isabella Dams can safely hold water up to the gross pool. Lake levels would fluctuate according to precipitation patterns and runoff, as well as reservoir operations in accordance with the Water Control Plan. Compared to the no action alternative, the proposed action would have periodic minor benefits to in-lake recreation when lake levels rise above the restricted pool. There would be approximately a 20% chance that this would occur each year. Recreationists would experience a larger lake during these high-water years. This would provide more room for boaters, windsurfers, and other similar water users. The proposed action would have a less than significant effect on recreation since it would not cause a permanent loss of recreational opportunities or resources; severely restrict or eliminate access to recreational opportunities and facilities; cause a substantial disruption in a recreational use or activity; or substantially diminish the quality of the recreational experience.

4.0 CUMULATIVE EFFECTS

The Council on Environmental Quality's regulations (40 CFR 1500-1508) implement the procedural provisions of the NEPA, as amended (42 U.S. C. 4321 *et seq.*), define cumulative effects as *"effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time"* (40 CFR 1508.1(g)).

This section briefly discusses other major local, State, and Federal projects near the project area for which evaluation is required. Additional information on cumulative effects relative to

these design refinements can be found in the Isabella Lake DSMP DEIS and FEIS (USACE 2012a; 2012b). Significance of cumulative effects is determined based upon compliance with Federal mandates and specified criteria identified in this document for affected resources. The proposed action would not contribute to additional adverse cumulative effects on aesthetics and visual resources; air quality; cultural resources; hazardous, toxic and radioactive waste; geology, soils, and seismology; land use; socioeconomics and environmental justice; noise and vibration; and biological resources.

There are several planned and ongoing water resources projects–mostly focused on groundwater recharge–within the Kern River watershed, including the Palms Groundwater Recovery Project (2022), Daley Ranch Groundwater Recharge Pond Project (2021), and Kern Fan Groundwater Storage Project (2020). In addition, over two million acres of farmland is irrigated within Kern County with 20% of the water coming from the Kern River (Water Association of Kern County). These activities coupled with industrial, municipal, and residential water use have resulted in substantial changes to natural water regimes within the lower San Joaquin Valley. The proposed action is a minor component of theses action.

The proposed action would result in minor additional effects on traffic and circulation, Federal special status species, water resources and quality, and recreation. Short-term cumulative effects on traffic and recreation may occur during years with higher lake levels since more recreationists would use Isabella Lake. In-water recreation would benefit during years with higher lake levels. This could have a cumulative effect on recreation within the region by drawing more people who would pursue other recreational opportunities while in the area. Short-term cumulative effects on Federal special status species may occur during years with higher lake levels due to flooding of nests or nesting habitat. The effects on these species have already been mitigated for as described in Section 3.3. There would be short-term cumulative effects on water resources and quality since more water for agricultural irrigation would be stored within Isabella Lake as opposed to being stored as groundwater for agricultural irrigation. Such water would still be released and used for agricultural irrigation, and could also be stored as groundwater. Since all these cumulative effects would occur with a less than 20% chance each year and would be limited to the summer months, they would be less than significant.

5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Clean Air Act of 1972, as amended, 42 U.S.C. 7401, et seq. *Full Compliance*. The proposed action is not expected to violate any Federal air quality standards, exceed the EPA's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. Thus, USACE has determined that the proposed project would have no significant effects on the future air quality of the area.

Clean Water Act of 1972, as amended, 33 U.S.C. 1251, et seq. *Full Compliance*. The CWA is the primary Federal law governing water pollution. It established the basic structure for regulating discharges of pollutants into waters of the U.S. and gives the U.S. EPA the authority to implement pollution control programs, such as setting wastewater standards for industries (EPA 2002). In some states, such as California, the EPA has delegated authority for parts of the CWA to state agencies. Since the proposed action does not involve in-water work or discharge of

dredged or fill into jurisdictional wetlands and waters of the U.S, neither a Section 401 water quality certification nor a Section 404(b)(1) evaluation is required, and the proposed action is in full compliance of the CWA.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq. *Full Compliance*. In accordance with Section 7(c), on March 2, 2022, USACE obtained a list of Federally listed, proposed, and candidate species likely to occur in the project area via the USFWS Information for Planning and Consultation website. The proposed action would return reservoir operations to normal, which are already covered under two prior USFWS BOs (Appendix B). The 2008 letter of concurrence from USFWS further clarified that the prior BOs for long-term reservoir operations covered deviations and normal operation since mitigation commitments had been met by USACE (Appendix C). In addition, the DSMP has received BOs and is complying with their terms and conditions (see USFWS 2012 and Appendix A of this document). There would be no additional affects to Federal species protected under the ESA beyond those currently covered by the existing BOs.

Executive Order 11990, Protection of Wetlands. *Full Compliance*. This order directs all Federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in implementing civil works. Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds: there is no practical alternative to such construction and the proposed action includes all practical measures to minimize harm to wetlands that may result from such use. The proposed action would not destroy or degrade wetlands and is in full compliance with this Executive Order.

Executive Order 11312, Noxious Weeds. *Full Compliance.* This order directs all federal agencies to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health effects of invasive species. Prior to mobilization, all project-related vehicles and equipment will be cleaned of soils, seeds, vegetative matter, or other debris that could contain or hold non-native invasive and noxious weed seeds. During construction, vehicles and equipment will also be cleaned, as needed, as they leave or enter staging areas and work sites. As a result, the project will not be expected to introduce any invasive species into either the staging area or work sites.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Full Compliance*. This order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. Any impacts caused by construction activities would not disproportionately affect minority or low-income populations.

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. *Full Compliance*. This order directs all Federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children. There are no

schools or other facilities near the project area. The project would not have adverse or disproportionate impacts on children.

Farmland Protection Policy Act, 7 U.S.C. 4201, et seq. *Full Compliance.* This Act requires Federal agencies to consider the effects of their actions and programs on the Nation's farmlands. The proposed action will not result in any effects to prime or other important farmland.

Fish and Wildlife Coordination Act of 1958, as amended, 16 U.S.C. 661, et seq. *Partial Compliance*. The Fish and Wildlife Coordination Act requires federal agencies that construct water resource development projects to consult with USFWS, NMFS, and the applicable state fish and wildlife agency (in this case California Department of Fish and Wildlife, or CDFW) regarding the project's impacts on fish and wildlife and measures to mitigate those impacts. The USFWS and CDFW have participated in evaluating the Isabella Lake DSMP, of which this proposed action is a subset. Consultation with NMFS and USFWS has been completed for the DSMP, and correspondence regarding special status species is included in Appendix C of the 2012 FEIS. Full compliance for the Isabella Lake DSMP would be achieved when USACE completes coordination with USFWS and complies with all mitigation requirements.

Migratory Bird Treaty Act (MBTA), 15 U.S.C 701-18h. *Partial Compliance.* The proposed action could affect protected migratory bird eggs or nests when lake levels rise. This would constitute incidental take under the MBTA. A January 7, 2021, USFWS final rule limited the scope of the MBTA by eliminating incidental take. This rule was revoked on December 3, 2021, enabling the USFWS to return to implementing the MBTA as prohibiting incidental take and applying enforcement discretion, consistent with judicial precedent and long-standing agency practice prior to November 2017. However, no current process exists for entities to petition the USFWS for incidental take under the MBTA. Therefore, the USFWS published an advance notice of proposed rulemaking and notice of intent to prepare a NEPA document on October 4, 2021, to develop a proposed rule to authorize the incidental taking or killing of migratory birds (86 FR 54667). Until the USFWS develops this new system, and USACE applies for and receives incidental take for normal lake operations, any lake operations that cause take of birds protected under the MBTA would be a violation of the act. USACE Operations will need to apply for take as soon as a permit system is developed.

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, et seq. *Full Compliance.* Comments received during the public review period were incorporated into the final SEA, as appropriate. Effects from implementation of the proposed action will be less than significant. Therefore, a supplemental EIS is not necessary, and the Commander is able to sign the FONSI. Finalization of the SEA and FONSI actions provides full compliance with this act.

National Historic Preservation Act of 1966, as amended, 54 U.S.C. 300101 et seq. *Full Compliance.* USACE is complying with this Act for the Isabella DSM through the use of a PA, executed in 2012. This document confers full compliance with the Act so long as its stipulations are fulfilled. The currently proposed action involves a return to previously authorized reservoir

operations within the existing maximum reservoir pool and requires no further action under Section 106 of this Act (Title 54 U.S.C. 306108).

Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.). *Full Compliance*. This act was enacted to preserve selected rivers or sections of rivers in their free-flowing condition in order to protect the quality of river waters and to fulfill other national conservation purposes. Portions of the Kern River are designated as Wild and/or Scenic. However, the proposed alternatives would have no effect on these portions of the river.

6.0 COORDINATION AND REVIEW OF THE DRAFT SEA

A draft SEA and FONSI were circulated for 15 days to agencies, organizations, and individuals known to have a special interest in the project. Copies of the draft SEA were posted on the USACE website and hard copies were made available upon request at the USFS Interim Visitor Center near Isabella Lake. Additional hard copies were provided by mail upon request. USACE coordinated with all the appropriate federal, state, and local government agencies, including the USFWS and California State Historic Preservation Officer (SHPO).

NEPA Lead Agency - U.S. Army Corps of Engineers, Sacramento District
Cooperating Agency - U.S. Forest Service

In Coordination with:

California State Historical Preservation Office
Central Valley Regional Water Quality Control Board
Eastern Kern Air Pollution Control District
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service

A list of agencies, organizations and individuals known to have a special interest in the Isabella DSMP have been appended to this SEA (Appendix E). A public notice was distributed from the USACE Public Affairs Office indicating the availability of the draft document and where it would be located. Copies were made available online at: http://www.spk.usace.army.mil/Missions/Civil-Works/Isabella-Dam/

A public meeting specifically for the draft SEA was held on May 19, 2022. Any comments received during the comment period were addressed, as appropriate, in the Final SEA and considered by the USACE Sacramento District Commander before deciding whether to sign a FONSI or prepare a supplemental environmental impact for the proposed action.

7.0 FINDINGS

This SEA evaluated the environmental effects of the proposed action alternative. Potential adverse effects to the following resources were evaluated in detail: vegetation and wildlife,

Federal special status species, water resources and quality, and recreation. The effects from the proposed action were determined to be less than significant for all these resources.

Based on this evaluation, the proposed action alternative meets the definition of a FONSI as described in 40 Code of Federal Regulations 1508.1(l). A FONSI may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement would not be prepared. The USACE Sacramento District Commander, following public review and comment period of the draft SEA, has determined that a FONSI is appropriate.

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