

Environmental Assessment

Issuance of a Special Use Permit for Increased Flows
on Properties in the Yolo Bypass with Steve
Thompson North Central Wildlife Management Area
Easements

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Executive Summary

This environmental assessment, or EA, evaluates one action alternative and a no action alternative. The proposed action would include the issuance of a short-term special use permit to the California Department of Water Resources by the U.S. Fish and Wildlife Service (Service) to allow for increased flows on properties in the Yolo Bypass where the Service has conservation easements. The increased flows are for the purpose of implementing the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project (Big Notch Project or Project). Under the no action alternative, the short-term special use permit would not be issued. The Proposed Action is needed since the Big Notch Project operations have the potential for affecting waterfowl habitat protected by the Service's easement interest.

This EA examines the potential environmental impacts associated with the proposed action and complies with the National Environmental Policy Act, NEPA, in accordance with the Council on Environmental Quality NEPA regulations (40 Code of Federal Regulations, or CFR, 1500-1508), the Department of the Interior NEPA regulations (43 CFR 46; 516 Department Manual, or DM, 8), U.S. Fish and Wildlife Service policies (550 Service manual, or FW, 3) and other relevant regulations and requirements. NEPA requires examination of the effects of proposed actions on the natural and human environment.

The following resources were analyzed in the EA: habitat and vegetation, fish and wildlife species, geology and soils, air quality and climate change, water resources, cultural and historic properties, socioeconomics, environmental justice, public health and safety, land use, and refuge resources. Several other resources were initially considered by the U.S. Fish and Wildlife Service but were ultimately dismissed from further analysis because neither the proposed action nor its alternatives would have the potential to result in measurable adverse impacts to these resources.

Chapter 1: Introduction

1.1 Background

National Wildlife Refuges are guided by the mission and goals of the National Wildlife Refuge System, the purposes of an individual refuge, federal laws and executive orders, U.S. Fish and Wildlife Service policy and international treaties. Relevant guidance includes but is not limited to the National Wildlife Refuge Administration Act 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 United States Code [U.S.C.] 668dd et seq.), the Refuge Recreation Act of 1962 and selected portions of the Code of Federal Regulations and the Fish and Wildlife Service manual.

The mission of the National Wildlife Refuge System, as outlined by the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd), is:

“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The National Wildlife Refuge System Administration Act (Administration Act), as amended, directs the Secretary of the Department of the Interior to ensure that the mission of the refuge system and purposes of individual refuges are carried out (16 U.S.C. 668dd(5)(a)(3)(A-M)). The Administration Act also requires that the Service “...not initiate or permit a new use of a national wildlife refuge or expand, renew, or extend an existing use of a national wildlife refuge, unless the Refuge Manager has determined that the use is a compatible use.” (50 CFR 26.41). A “compatible use” is defined as “...a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose(s) of the refuge.” (16 U.S. Code § 668ee(1)).

The Steve Thompson North Central Wildlife Management Area (WMA) was established in 1991 under the following acquisition authorities and associated purposes:

“...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”
16 U.S.C. 715d (Migratory Bird Conservation Act of 1929)

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...” 16 U.S.C. 742f(a)(4) “... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...” 16 U.S.C. 742f(b) (1) (Fish and Wildlife Act of 1956)

“...the conservation of wetlands in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions...” 16 U.S.C. 3921 (Emergency Wetland Resources Act of 1986)

“...protection, restoration, and management of wetland ecosystems...” 16 U.S.C. 4401-4412 (North American Wetlands Conservation Act of 1989)

The Bureau of Reclamation (Reclamation), in partnership with the California Department of Water Resources (DWR), is implementing the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project (Big Notch Project or Project) to increase the availability of floodplain fisheries rearing habitat for juvenile salmonids, as well as to reduce migratory delays and loss of fish at Fremont Weir and other structures in the Yolo Bypass. The purpose of the Big Notch Project is to mitigate the effects of the State Water Project (SWP) and Central Valley Project (CVP) on State and Federally listed fishes. The Project was designed to meet the objectives in the National Marine Fisheries Service's 2009 Biological Opinion (2009 NMFS BO) Reasonable and Prudent Alternative (RPA) Actions I.6.1 and I.7. The 2009 NMFS BO was replaced by the 2019 Biological Opinion on Long Term Operation of the CVP and the SWP issued by NMFS on October 21, 2019 (2019 NMFS BO). Reclamation included the Big Notch Project as part of its proposed action for that consultation. The Big Notch Project is also required under Section 9.2.2 of the Incidental Take Permit for Long-Term Operation of the SWP in the Sacramento-San Joaquin Delta (2081-2019-066-00) (2020 LTO ITP), issued March 31, 2020, by the California Department of Fish and Wildlife (CDFW). In 2019, Reclamation and DWR completed the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project Environmental Impact Statement and Environmental Impact Report (2019 YBSHRFP EIS/EIR), which analyzed the operation and construction components of the Big Notch Project. This environmental assessment is tiered from the 2019 YBSHRFP EIS/EIR.

On February 27, 2024, and following CEQA guidelines, DWR issued Addendum #2 which sets forth environmental analysis of the proposed removal of the cutoff walls and ARC 1 bridge from the project description analyzed in the 2019 EIS/EIR. The conclusion of the Addendum #2 review is that, based on the information presented in Section 2.3, Environmental Checklist for Supplemental Environmental Impact Analysis, no conditions triggering a subsequent EIR are present. As such, an addendum is appropriate. Though it has been publicly available since February 2024, DWR received no comments on Addendum 2.

The NEPA lead agencies, Reclamation and USFWS, consider Addendum #2 to be the equivalent of a NEPA Supplemental Information Report for the 2019 EIS/R analysis. The information presented in the Addendum along with the analysis in the 2019 YBSHRFP EIS/EIR informed our tiered analysis in this EA.

DWR is the lead agency for acquiring the requisite flowage easements on properties within the Yolo Bypass that would experience additional flows resulting from the operation of the Big Notch Project. Construction of the Big Notch headworks structure was completed in the fall of 2024.

Within the Yolo Bypass, approximately two thirds of the managed wetlands are privately owned and managed as duck hunting clubs (Ducks Unlimited, 2017). USFWS holds conservation easements on 16 properties totaling approximately 4,603 acres that are managed as part of the Steve Thompson North Central Valley WMA. The USFWS purchased these conservation easements for the management of migratory birds. These lands are private, but the management of these properties as duck hunting clubs meets the USFWS's objective of providing habitat for migratory birds.

The operation of the Big Notch Project would contribute to the fulfillment of the National Wildlife Refuge System mission. It would directly benefit ESA-listed anadromous fish species which are a trust resource for USFWS and thus contribute to fulfilling the conservation, management and restoration mission of the refuge system. In addition, implementation of the project is a component of the Proposed Action associated with the Endangered Species Act compliance for the Long-Term Operations of the Central Valley Project and State Water Project. The Central Valley Project is the primary water supply for

several national wildlife refuges in the Central Valley and maintenance of this water supply is essential for the long-term sustainability of these refuges.

The FWS is aware of the November 12, 2024, decision in *Marin Audubon Society v. Federal Aviation Administration*, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, the FWS has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500– 1508, in addition to the Department of the Interior's procedures/regulations implementing NEPA at 43 C.F.R. Part 46, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

1.2 Proposed Action

The USFWS is proposing to issue a 5-year special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for operation of the Big Notch Project. The terms and conditions of the special use permit would include the stipulations listed in the compatibility determinations¹ covering the Proposed Action. The Special Use Permit will include a requirement to monitor and assess the impacts of the increased duration and frequency of flooding in order to develop prospective actions that would avoid and minimize impacts of long-term Big Notch Project operations on Service easement interests.

1.3 Purpose and Need for Action

The purpose of the Proposed Action is to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements. The increased flows would be implemented under a proposed DWR flowage easement (for an additional 6,000 cubic feet per second of flow from November 1 through March 15 of each year) to facilitate operation of the Big Notch Project in the Yolo Bypass. The need for the Proposed Action is due to the potential for increased flows to affect waterfowl habitat protected by the Service's conservation easements. Per 50 CFR 25.44, "We require permits for use of easement areas administered by us where proposed activities may affect the property interest acquired by the United States."

Chapter 2: Involvement, Coordination and Consultation

2.1 Public Involvement

The draft environmental assessment was made available for public review and comment for 30 days from July 25 to August 24, 2024. The comment period was further extended until September 1, 2024. Members of the public were notified of the availability of the draft documents which were posted on the Steve Thompson North Central Valley WMA website at: <https://www.fws.gov/refuge/steve-thompson-north-central-valley-wildlife-management-area>. Comments were submitted in writing via email to fw8plancomments@fws.gov. Attachment E includes responses to the substantive comments included in the four comment letters received during the public review period.

¹ A compatibility determination is a written determination signed and dated by the refuge manager and Assistant Regional Director of Refuges signifying that a proposed or existing use of a national wildlife refuge is a compatible use or is not a compatible use.

2.2 State Coordination

In order to implement the Big Notch Project, DWR must acquire the associated requisite flowage easements on properties within the Yolo Bypass that would experience additional flows from the operation of the Big Notch Project. As part of that process, DWR has noticed all federal, state, local, and private interests potentially affected by Big Notch Project operations and compensation has been offered to all affected real property interests. Noticing included meetings, written correspondences, invitation to formal hearings, and, as part of the process for USFWS, request for appropriate analysis of compatibility use. In particular, DWR requested that USFWS evaluate the conservation easements managed as part of the Steve Thompson North Central Valley WMA. DWR coordinated with USFWS to provide a TUFLOW hydraulic model and data analysis specific to Big Notch Project operations within the Yolo Bypass, including the Proposed Action area. The provided information was coordinated through USFWS in support of the Proposed Action and the associated compatibility determinations. DWR and USFWS coordinated monthly to ensure the development of the comprehensive and accurate analysis needed to support the USFWS process.

DWR requested that USFWS make a compatibility determination regarding proposed increased flows over conservation easement areas in which the United States holds an interest prior to DWR's issuance of Orders of Possession, which would grant DWR the right and authority to condemn partial interests in those properties necessary to acquire flowage easements to accommodate Big Notch Project flows.

2.3 Tribal Coordination

As part of the Big Notch Project's EIS efforts, Reclamation as the lead federal agency coordinated with six tribes on the construction and operation of the Big Notch Project. The draft Environmental Assessment was shared with those same tribes, along with an offer of further coordination. No response was received from the tribes.

Chapter 3: Alternatives

3.1 Decision Framework

The Regional Director of the U.S Fish and Wildlife Service Region 8 would make two decisions based on this environmental assessment once the review process is complete. He would: (1) select an alternative for the refuge, and (2) determine if the selected alternative is a major federal action that would significantly affect the quality of the human environment, and therefore, require the preparation of an environmental impact statement.

3.2 Alternatives

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to operate the Big Notch Project. Big Notch Project operations would not occur, preventing increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA. The Yolo Bypass would continue to be inundated from the westside tributaries and overtopping events at Fremont and Sacramento weirs. Juvenile fish would enter the bypass with overtopping flood flows from Fremont and Sacramento weirs, and the fish would benefit from the rearing opportunities in the Yolo Bypass. Additional flow and fish would not pass through Fremont Weir when the Sacramento River elevation is

below Fremont Weir or Sacramento Weir. Increased availability of floodplain fisheries rearing habitat for juvenile fish and adult fish migration opportunities resulting from Big Notch Project operations in the Yolo Bypass would also not occur.

Alternative A - [Issuance of a short-term special use permit] - Preferred Alternative

Under the Proposed Action, Alternative A, USFWS would issue a special use permit with a term of a maximum of five years to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements. The increased flows would be implemented under a proposed DWR flowage easement to facilitate operation of the Big Notch Project. DWR proposes to begin operation of the Project in 2025 and continue annually based on hydrological conditions. Gate operations that will increase flows, up to 6,000 cubic feet per second (cfs), could begin each year on November 1 depending on river conditions. Gate operations could continue through March 15 of each year, based on hydrologic conditions. The gates may remain partially open after March 15 to provide adult fish passage.

USFWS recognizes the potential impacts of this amount of increased flooding over the long term on hunt club infrastructure and operations and is committed to working with DWR, Reclamation, and easement landowners to assess those impacts and develop measures to support continued operations of the clubs. The 5-year maximum term of the special use permit will allow USFWS to evaluate how the Big Notch Project operations increase the duration and frequency of flooding on easements, as well as plan and design measures to support continued operations on the clubs for long term operations.

USFWS has determined to limit the term of the special –use permit to 5 years to analyze more fully the impacts of the increased flooding frequency and thus support continued operations on the easement lands. To accomplish this, USFWS is entering into and implementing an agreement with Reclamation for up to \$18 million, subject to available appropriations, to analyze impacts and develop actions to avoid and minimize impacts from the increased flooding frequency and duration due to operation of the Big Notch Project on USFWS easement interests over the long term. The USFWS also acknowledges that landowners will receive from DWR payments for the flowage easements. In addition, the USFWS will continue to work collaboratively with landowners that have USFWS Easements and the Yolo Wildlife Area, to create and implement a holistic approach to maintain migratory bird habitat within the Yolo Bypass on CDFW lands and USFWS easement properties. The implementation of this holistic approach will ensure the USFWS interests in these properties would continue to occur while maximizing, to the extent practicable, landowners' use of the properties.

Alternatives Eliminated from Detailed Analysis

Limiting Project Operations

One comment on the draft compatibility determinations suggested that the USFWS should limit Project operations during the 5-year term of the special use permit, such as requiring DWR to operate the Project at less than 6,000 cfs or cease operations prior to March 15, or both. The USFWS believes that limiting Project operations would hamper DWR and Reclamation's ability to meet their obligations under the Endangered Species Act for the Long-Term Operations of the Central Valley Project and State Water Project (NMFS 2009). As a result, this alternative was not considered further.

Chapter 4: Affected Environment and Environmental Consequences

This section is organized by affected resource categories. Each affected resource presents both (1) the existing environmental and socioeconomic baseline in the action area and (2) the effects and impacts of the alternatives on each resource. Effects and impacts from the proposed action or alternatives are changes to the human environment, whether adverse or beneficial, that are reasonably foreseeable (40 CFR 1508.1(g)). The impact analysis directly follows the affected environment description for a resource and is organized by alternative.

The impact analysis will evaluate a variety of criteria, as defined below, to describe the context and intensity of impacts on affected resources. The Council on Environmental Quality does not require the use of these terms; however, they are commonly used in NEPA documents and will be referenced in the subsequent sections.

Impact analysis criteria and terminology:

- Adverse effects: negative or detrimental effect to the resource (40 CFR 1501.3)
- Beneficial effects: positive effect to the resource (40 CFR 1501.3)
- Cumulative effects: effects on the environment resulting from the incremental effects of the action when added to other past, present and reasonably foreseeable actions regardless of what agency (e.g., federal or non-federal) or person undertakes the action (40 CFR 1508.1(i)(3))
- Direct effects: caused by the action and occur at the same time and place (40 CFR 1508.1(i)(1))
- Indirect effects: caused by the action and are later in time or farther in distance but are still reasonably foreseeable (40 CFR 1508.1(i)(2))
- Irreversible: unable to be undone or altered
- Irrecoverable: unable to regain, recover or repair
- Major: effects are significant, readily detectable and would cause a substantive decline or increase in the resource
- Minor: effects would be detectable but small, and of little consequence and would not affect the population or resource on a large scale
- Moderate: effects are negligible, readily detectable and may have some temporary effects on the population or resources on a large scale but would not cause a substantive decline or increase in the resource
- Negligible: resource is slightly affected but the impact is so minimal that effects are not detectable or may not be observable
- No effect: resource would not be affected and there are no impacts
- Short-term effects: occurring in or relating to a relatively short period of time
- Long-term effects: occurring in or relating to a relatively long period of time
- Unavoidable: unable to be prevented or ignored; inevitable

Impacts that are speculative (i.e., there is a remote possibility that the impact would occur, but no meaningful information exists on which to base a prediction) or indefinite will not be included in the analysis of this environmental assessment (43 CFR 46.30). If a resource is not expected to be affected, a brief justification will be provided as to why it was dismissed.

4.1 Resources Eliminated for Detailed Analysis

The following resources either do not exist within the project area, or would not be affected or only negligibly affected by the Proposed Action:

- **Mineral Resources:** The primary mineral resources in Yolo County are mined aggregate and natural gas (County of Yolo 2009). There are no designated mineral resource zones in, or near, the Proposed Action area. Natural gas fields do exist within some areas of the Yolo Bypass, but the Proposed Action would not affect the gas fields and would not result in the loss of availability of this mineral resource.
- **Visual Resources:** The Proposed Action will have no effect on scenic resources or public views.
- **Soundscape:** The Proposed Action will not increase ambient noise levels within the Proposed Action area above the current levels nor impact the soundscape of the Proposed Action area.

4.2 General Description of Affected Environment Applicable to All Affected Resources

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. General descriptions of the Proposed Action area, affected environment, and environmental consequences are described in the 2019 Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project Environmental Impact Statement and Environmental Impact Report (2019 YBSHRFP EIS/EIR) (Chapters 4 through 22.) and are incorporated by reference. General descriptions of the affected environment are also included in the 2019 Butte Sink, Willow Creek-Lurline, and North Central Valley Wildlife Management Areas Final Comprehensive Conservation Plan and Environmental Assessment (2019 CCP/EA) (Chapter 3) and are incorporated by reference.

The conservation easements on properties within the Yolo Bypass were acquired by USFWS with the knowledge that there will be periods of time these properties would be impacted by flood flows within the bypass. The Yolo Bypass, as part of the Sacramento River Flood Control Project authorized through the Flood Control Act of 1960, manages the flooding in the Sacramento Valley.

4.3 Natural Resources

Habitat and Vegetation: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on the habitat and vegetation communities in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 9.1) and are incorporated by reference.

Habitat and Vegetation: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increased frequency or duration of flows onto the Steve Thompson North Central Valley WMA easements. Therefore, there would be no impacts to habitat and vegetation resources as a result of increased frequency and duration of flows. Section 9.3 of the 2019 YBSHRFP EIS/EIR provides more details on

effects on vegetation in the absence of increased frequency and duration of flows and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Project operations would increase the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA easements. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Section 9.3 of the EIS/EIR discusses habitat and vegetation impacts resulting from increased frequency and duration of flows and are incorporated by reference.

Fish and Wildlife Species including Special Status Species: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on the fish and wildlife species in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 9.1 and 8.1) and are incorporated by reference.

Fish and Wildlife Species including Special Status Species: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA would not occur. Increased availability of floodplain fisheries rearing habitat for juvenile fish and adult fish migration opportunities resulting from increased flows in the Yolo Bypass would also not occur. Increased duration and frequency of flows impacting migratory bird and terrestrial habitat and species would not occur. Sections 8.3 and 9.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on fish and wildlife in the absence of increased frequency and duration of flows and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA would be increased. The overarching Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Sections 9.1 and 8.1 discuss fish and wildlife, including special status species, and are incorporated by reference.

Operation of the Big Notch Project could result in direct effects on waterfowl that use the privately managed wetland units subject to USFWS easements. Wetland units that receive flooding from Big Notch Project operations at depths greater than six inches above desired management levels (approximately 12 inches) would likely temporarily preclude dabbling ducks from foraging and reduce the value of these areas to wintering waterfowl (Taft *et al.* 2002; Baschuk *et al.* 2011). However, this impact is considered minor and short term, given that flooding at or above these depths is already relatively common in the Yolo Bypass (see the Water Resources section below). Furthermore, except for

very wet years, flooding is expected to result in only minor changes to the carrying capacity of migratory birds in the Yolo Bypass and food resources would still be available within the Yolo Basin beyond the areas flooded (Ducks Unlimited 2017).

Due to the increased duration and frequency of flows, the Proposed Action alternative has the potential to impact wetland management actions conducted by private land managers within the Proposed Action area. Wetland management actions focused on the timing and depth of water, combined with mechanical disturbance, create conditions which produce the annual plant seeds and invertebrates that waterfowl favor (Fredrickson and Taylor 1982; Euliss and Harris 1987; Baldassarre and Bolen 2006). These management actions are expensive and time-intensive, there are also additional costs associated with maintaining the water management infrastructure required for seasonal wetlands. Private land managers are typically willing to pay these annual costs due to the benefits they provide waterfowl and related hunt opportunities, yet these actions also benefit other wetland-dependent wildlife species, including listed species such as the greater sandhill crane (*Antigone canadensis*), and giant garter snake (*Thamnophis gigas*) (Gilmer et al. 1982; Gildo et al. 2002; DiGaudio et al. 2015).

These hunt clubs are located the Yolo Bypass and have repeatedly shown resilience; none have ceased operating during past periods of increased flooding (see Figure 1). The incremental increase in the frequency and duration of flooding may further stress hunt club operations. If waterfowl use declines, hunt opportunities decline, and infrastructure costs increase due to the Proposed Action in the Yolo Bypass, hunt club owners may determine that the costs of club operation and maintenance outweigh the benefits and shut down operations. This may be more likely if the flooding impacts occur multiple years in a row. If a hunt club discontinues operations, the wetland wildlife values protected by the Service's easement interest would be diminished. Without incentive for private landowners to manage and flood seasonal wetlands on USFWS Conservation Easement lands, migratory bird habitat quality and availability in the Yolo Basin would suffer. This loss of habitat value could affect the waterfowl food supply and carrying capacity within the Yolo Basin, as calculated within the Central Valley Joint Venture Implementation Plan (2006). Such a loss would materially detract from the purposes the WMA was established for and could impact waterfowl species, giant garter snake, and other listed species within the Proposed Action area through habitat loss. However, this outcome could be avoided by limiting term of the special use permit to a maximum of 5 years. During that time, FWS proposes to work with DWR, Reclamation, and landowners to address impacts and improve conditions for the operation of hunt clubs.

Geology and Soils: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on geology and soils in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 12.1) and are incorporated by reference.

Geology and Soils: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA would not occur. Flow specific impacts, such as increased sedimentation deposit, would not occur. Section 12.3 of the 2019 YBSHRFP

EIS/EIR provides more details on effects on geology and soils in the absence of the overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Project operations would increase the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Section 12.3 discusses geology and soil impacts and are incorporated by reference.

Air Quality and Climate Change: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on air quality and climate change in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 18.1) and are incorporated by reference.

Air Quality and Climate Change: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Section 18.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on air quality and climate change in the absence of the overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Section 18.3 discusses air quality and climate change impacts and are incorporated by reference.

Water Resources: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. The Yolo Bypass, as part of the Sacramento River Flood Control Project authorized through the Flood Control Act of 1960, manages the historic flooding in the Sacramento Valley. The Bypass currently is designed to receive up to 343,000 cfs or approximately 85 percent of maximum Sacramento River flow and experiences at least some flooding during 7 out of 10 years, as described in the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project (YBHRFPP) EIS/EIR Section 2.1.5.1. Currently, the Yolo Bypass begins to flood when the stage of the Sacramento River exceeds 32 feet at the Fremont Weir. Figure 1 shows when Fremont Weir overtopping events have occurred during the past 28 water years (1996-2024). Additional Details on water resources in the Proposed Action area are described in the 2019 YBHRFP EIS/EIR (Sections 5.1, 6.1, and 7.1) and are incorporated by reference.

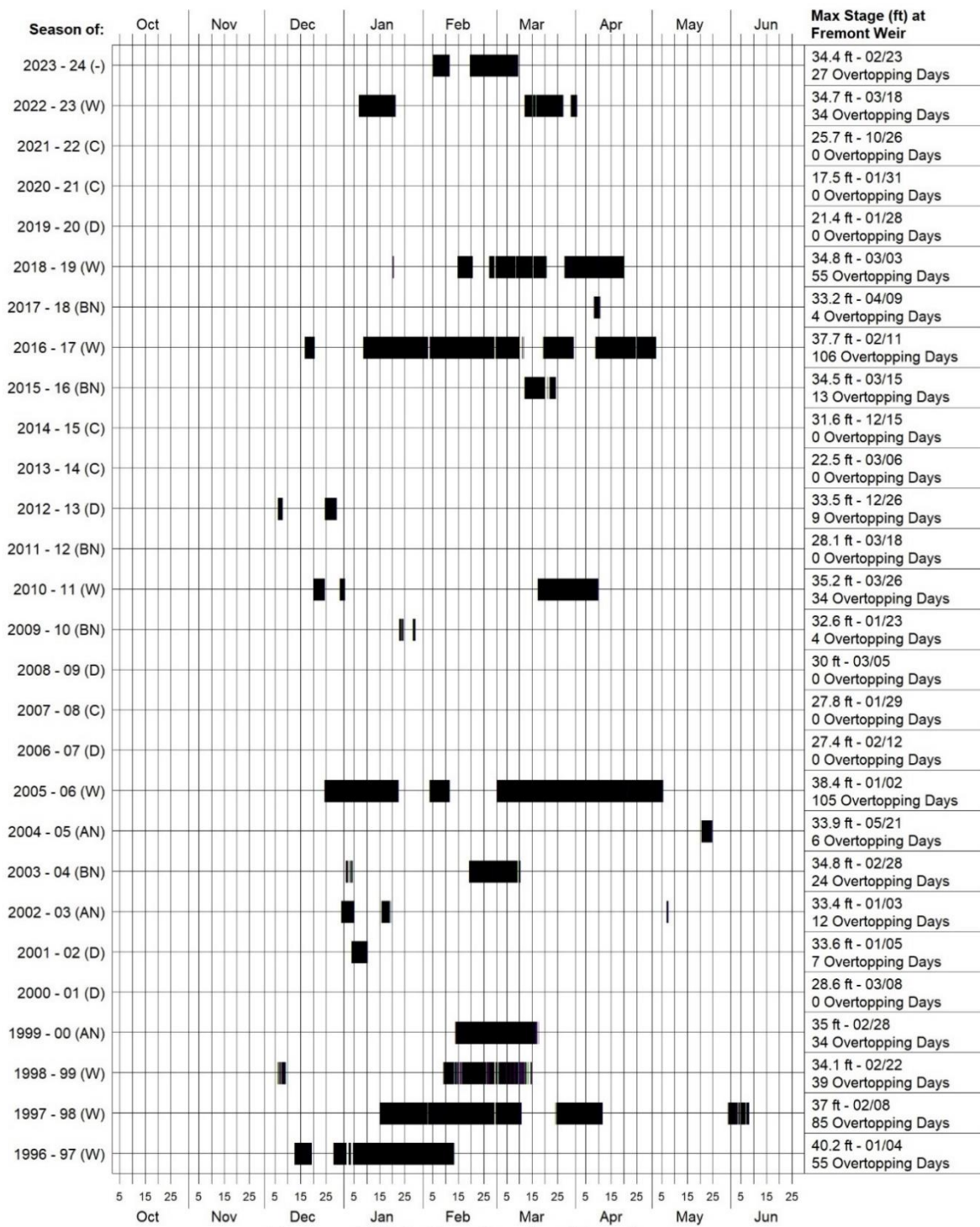
Water Resources: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increase in frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Water supply, quality, and groundwater resources would remain the same as existing conditions. Sections 4.3, 5.3, 6.3, and 7.3 of the 2019 YBHRFP EIS/EIR provide more details on effects on water resources in the absence of the overarching Big Notch Project implementation and are incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. Big Notch Project operations are analyzed in the 2019 YBHRFP EIS/EIR, covering the Proposed Action area. Sections 5.3, 6.3, and 7.3 describe water resources impacts and are incorporated by reference.



Prepared by: cbec eco engineering, a Verdantas company. Overtopping days based on flow from FRE Water Data Library gage.
 Water Year Type Index was obtained from the California Data Exchange Center based on Water Year Index calculated from Million acre-ft per Water Year.
 Vertical Datum: NAVD88 - stage before 10/1/2016 was shifted down by 1.45 ft due to shift in gage datum.

Figure 1. Fremont Weir Overtopping Events, 1996-2024. Official Year Classifications based on May 1 Runoff Forecasts are indicated by: W – Wet, AN – Above Normal, BN - Below Normal, D – Dry, C – Critically Dry.

4.4 Cultural and Historic Resources

Cultural and Historic Properties: Affected Environment

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Title 54 U.S.C. 300101 et seq., formerly and commonly known as the National Historic Preservation Act (NHPA) is the primary legislation for Federal historic preservation. Section 106 of the NHPA (54 U.S.C. 306108) requires Federal agencies to take into consideration the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation an opportunity to comment. Historic properties are those cultural resources that are listed on or eligible for inclusion in the National Register of Historic Places (National Register). The implementing regulations at 36 CFR Part 800 for Section 106 describe the process that the Federal agency takes to identify historic properties within the area of potential effects and to assess the effects that the proposed undertaking will have on those historic properties, through consultations with the State Historic Preservation Officer, Indian tribes, and other identified consulting and interested parties.

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on cultural resources in the Proposed Action area are described in the 2019 CCP/EA (Section 15) and are incorporated by reference.

Cultural and Historic Properties: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increase in frequency and duration of flows onto the Steve Thompson North Central Valley. Conditions related to cultural and historic properties would remain the same as existing conditions and there would be no impacts to cultural and historic properties. Section 10.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on cultural and historic properties in the absence of Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Project operations would increase the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR. Section 10.3 describes cultural resources impacts and is incorporated by reference. Reclamation and DWR determined that the area of potential effects for cultural and historic properties for the Big Notch Project did not include any of the properties that have Steve Thompson North Central Valley WMA easements. In other words, implementation of the Project had no effects on cultural or historic properties in these easement areas. Consistent with Reclamation and DWR's determination (Bureau of Reclamation, 2023), the Service has determined that issuance of a special use permit and subsequent increases in flood frequency and duration would have no effect on cultural or historic properties on Steve Thompson North Central Valley WMA easements.

4.5 Socioeconomics

Local and Regional Economies: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on local and regional economics in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 16.1) and the 2019 CCP/EA (Section 16) and are incorporated by reference. Though the USFWS lacks specific data on the contributions of the Yolo Bypass hunt clubs to the regional economy, a land use and economics study prepared for the Grasslands Ecological Area (GEA) may provide insight on the topic (Weissman and Strong 2001). That study estimated that the 110,000 acres of private wetlands in the GEA contributed \$40.9 million in direct and indirect sales and 798 jobs to the region. Though differences between the GEA and the Yolo Bypass exist, it is reasonable to assume that the GEA estimates can provide a basis for estimating the economic contributions of the hunt clubs with easements in the Yolo Bypass. Adjusting the estimates for inflation and scaling the per-acre GEA wetland economic contributions to the 4,603 acres of hunt clubs with USFWS easements in the Yolo Bypass yields an annual direct and indirect economic contribution of \$3.1 million and 33.4 jobs.

Local and Regional Economies: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increase in frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Conditions related to local and regional economics would remain the same as existing conditions and there would be no impacts to local and regional economies. Section 16.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on local and regional economies in the absence of the overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. The increased frequency and duration of flows are anticipated to impact economics associated with local duck clubs located in the Proposed Action area. For example, wetland units that receive flooding from Big Notch Project operations at depths greater than six inches above desired management levels (approximately 12 inches) would likely preclude dabbling ducks from foraging and reduce the value of these areas to wintering waterfowl (Taft et al. 2002; Baschuk et al. 2011) and reduce hunting opportunities. Increased inundation would also lead to impacts on waterfowl hunting infrastructure, as well as access to properties via local roads and berms. Further information on Big Notch Project operational impacts specific to the conservation easements can be found in Attachment D (Ducks Unlimited Impact Analysis). Big Notch Project operations are also analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Section 16.3 describe local and regional economic resources impacts and are incorporated by reference.

Quantifying the impact of the flooding on use of hunt clubs and associated revenue is difficult due to the lack of data. However, we do not expect substantial impacts during the term of the special use permit because clubs have shown resilience during past periods of more frequent flooding under current conditions. For example, water years 1996 through 1999 were all classified as wet years (DWR N.D.). The Yolo Bypass flooded between 1 and 3 months during each of these water years but hunt clubs continued to operate. With implementation of the Big Notch Project, flooding in the wetland units with USFWS easements that exceeds 6 inches above management targets would increase by an annual average of 10.9 days from a current baseline average of 33 days for north area easements, 5.9 days over the current baseline average of 22.9 days for central area easements, and 3.2 days over the baseline average of 15.0 days for south area easements. While it is unlikely that hunt clubs would stop operating during the term of the special use permit, the USFWS recognizes that these flood events could increase hunt club operation costs and decrease hunt opportunities. The timing when flooding occurs is important in terms of impacts on hunt opportunity, since landowners perceive some periods of the hunt season more valuable than others (see Figure C in the Ducks Unlimited report). In addition, the opening weekend of the waterfowl hunt season would normally not be affected since the waterfowl hunt season typically starts in late October and flooding from the operation of the Big Notch Project would not start until November 1st.

The USFWS has determined to limit the term of the special-use permit to 5 years so that it can analyze more fully the impacts of the increased frequency and duration of flows and thus minimize impacts to local duck clubs from flows from Big Notch Project operations. Depending on the actual level of flooding experienced in the Yolo Bypass during the next 5 years, some increased costs and reduced revenue for hunting clubs are anticipated. These increased costs and reduced revenue are expected to be at least partially offset by payments landowners receive from DWR for the flowage easements. As a result, no more than minor impacts on the local and regional economy are anticipated.

Environmental Justice: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on environmental justice resources in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 22.1) and are incorporated by reference.

Environmental Justice: Environmental Consequences

No Action Alternative

Executive Order 12898 directs federal agencies to address disproportionately high and adverse human health and environmental effects on minority and low-income populations. Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increase in frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Conditions related to environmental justice would remain the same as existing conditions and there would be no environmental justice-related effects. Section 22.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on environmental justice in the absence of Big Notch Project implementation and is incorporated by reference.

Alternative A

Executive Order 12898 directs federal agencies to address disproportionately high and adverse human health and environmental effects on minority and low-income populations. The Proposed Action does not involve activities that will cause dislocation, changes in employment, drought, or disease, or disproportionately impact economically disadvantaged or minority populations. Therefore, there will be no Environmental Justice-related effects.

Public Health and Safety: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on environmental justice resources in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 19.1) and are incorporated by reference.

Public Health and Safety: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Public health and safety resources would remain the same as existing conditions. Section 19.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on public health and safety in the absence of the overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Section 19.3 describe public health and safety resource impacts and are incorporated by reference.

Land use: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on land use resources in the Proposed Action area are described in the 2019 YBSHRFP EIS/EIR (Section 11.1) and the 2019 CCP/EA (Section 16) are incorporated by reference.

Land use: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increased frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Land use resources would remain the same as existing conditions. Section 11.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on land use in the absence of the overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. Big Notch Project operations are analyzed in the 2019 YBSHRFP EIS/EIR, covering the Proposed Action area. Sections 11. and 8.1 discuss land use resources and are incorporated by reference.

Due to the anticipated increased duration and frequency of flows, the Proposed Action alternative has the potential to impact wetland management actions conducted by private land managers within the Proposed Action area. Wetland management actions focused on the timing and depth of water, combined with mechanical disturbance create conditions which produce the annual plant seeds and invertebrates that waterfowl favor (Fredrickson and Taylor 1982; Euliss and Harris 1987; Baldassarre and Bolen 2006). These management actions are expensive and time-intensive, there are also additional costs associated with maintaining the water management infrastructure required for seasonal wetlands. Private land managers are typically willing to pay these annual costs due to the benefits they provide waterfowl and related hunt opportunities, yet these actions also benefit other wetland dependent wildlife species, including listed species such as the greater sandhill crane (*Antigone canadensis*), and giant garter snake (*Thamnophis gigas*) (Gilmer et al. 1982; Gildo et al. 2002; DiGaudio et al. 2015).

If waterfowl use declines, hunt opportunities decline, and infrastructure costs increase due to the Proposed Action in the Yolo Bypass, hunt club owners may determine that the costs of club operation and maintenance outweigh the benefits and shut down operations. The increased costs and reduced revenue are expected to be at least partially offset by payments landowners receive from DWR for flowage easements. In addition, by limiting the term of the special use permit to a maximum of 5 years, the accumulation of potential flooding impacts on hunt clubs with easements will be limited, preventing land use change impacts. Finally, the USFWS conservation easements place restrictions on habitat alterations that would prevent most land use changes from occurring.

4.6 Refuge Resources

Recreation: Affected Environment

The Proposed Action area includes conservation easements located within the Yolo Bypass, as managed by the Steve Thompson North Central Valley WMA. Details on recreation resources in the Proposed Action area are described in the 2019 CCP/EA (Sections 8, 9, and 10) and are incorporated by reference.

Recreation: Environmental Consequences

No Action Alternative

Under the No Action Alternative, USFWS would not issue a short-term special use permit to DWR to allow for increased flows on properties in the Yolo Bypass in which the Service has easement interests from operation of the Big Notch Project. Under the No Action Alternative, there would be no increase in frequency and duration of flows onto the Steve Thompson North Central Valley WMA. Conditions related to refuge resources would remain the same as existing conditions and there would be no impacts. Section 9.3 of the 2019 YBSHRFP EIS/EIR provides more details on effects on recreation in the absence of overarching Big Notch Project implementation and is incorporated by reference.

Alternative A

Under the Proposed Action Alternative, USFWS would issue a short-term special use permit to DWR to allow increased flows on properties in the Yolo Bypass where the Service has conservation easements for the operation of the Big Notch Project. Under the Proposed Action Alternative, there would be an increase in the frequency and duration of flooding onto the Steve Thompson North Central Valley WMA, compared to the No Action Alternative. The increased frequency and duration of flows are anticipated to impact recreation and access in the Proposed Action area, especially for people interested in waterfowl hunting. For example, wetland units that receive flooding from Big Notch Project operations at depths greater than six inches above desired management levels (approximately 12 inches) would likely preclude dabbling ducks from foraging and reduce the value of these areas to wintering waterfowl (Taft et al. 2002; Baschuk et al. 2011). Increased inundation would also lead to impacts on waterfowl hunting infrastructure, as well as reducing access to properties via local roads and berms impacting local use and revenue for associated duck clubs. By limiting the term of the special use permit to a maximum of 5 years, the accumulation of potential flooding impacts on hunt clubs with easements will be limited, minimizing impacts on recreation. Further information on Big Notch Project operational impacts specific to the conservation easements can be found in Attachment D.

4.7 Cumulative Impacts

Per CEQ regulations for implementing the procedural provisions of NEPA, a cumulative impact is defined as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.(i)(3)). The following projects and plans have been identified as having the potential to affect the same resources as the proposed project. They include flood management projects affecting the Sacramento River and the Yolo Bypass that could result in adverse or beneficial effects similar to those of the proposed project. Reasonably foreseeable projects include:

Lower Elkhorn Basin Levee Setback Project (LEBLS) Environmental Impact Statement

LEBLS is located within the Lower Elkhorn Basin immediately north of the Sacramento Bypass and east of the Yolo Bypass and includes levee setbacks to widen portions of the Yolo and Sacramento Bypasses to increase conveyance capacity and reduce flood risk. A Record of Decision (ROD) was signed by USACE on May 7, 2020. USACE and DWR completed the appropriate permits for LEBLS including consultations under ESA and Section 106. Construction on LEBLS began in the summer of 2020.

LEBLS will contribute to improved public safety by reducing river levels (stages) in the Sacramento River and increasing the capacity of the Yolo and Sacramento bypasses near the urban communities of Sacramento and West Sacramento, as well as Woodland, Clarksburg, and rural communities. LEBLS will also provide system resiliency and opportunities to improve ecosystem functions, such as increasing inundated floodplain habitat for fish rearing. The project consists of approximately seven miles of setback levees in the Lower Elkhorn Basin along the east side of the Yolo Bypass, and the north side of the Sacramento Bypass. The project would remove all or portions of the existing levees that would be set back, remove portions of local reclamation district cross levees, and improve or relocate related infrastructure.

American River Common Features General Reevaluation Report; Sacramento Bypass Widening Project

The American River Common Features Project (ARCFP) was authorized by the Watershed Resources Development Act of 1996 to increase flood protection for the city of Sacramento. USACE prepared a final EIS/EIR for the General Reevaluation Report's (GRR's) project alternatives in December 2015. The GRR covered a substantially larger geographic area than just the Sacramento Bypass. Regardless, only a subset of the GRR's potentially significant impacts bear on the Proposed Project. The Sacramento Bypass Widening Project and the Proposed Project are compatible, as the goal of the Sacramento Bypass Widening Project is to increase flood protection, and the Proposed Action would remove a water impoundment structure that will increase water conveyance through the Tule Canal. Additionally, the Sacramento Bypass Widening Project has a fish passage component to increase fish passage back into the Sacramento River.

Lower Cache Creek Flood Risk Reduction Project and the Woodland Flood Risk Reduction Project

The Lower Cache Creek Flood Risk Reduction Project will include a combination of one or more flood control measures, including a setback levee along Cache Creek, stream channel improvements, a north Woodland floodway, and a northern bypass into the Colusa Drain. USACE completed a feasibility report associated with this proposed flood-risk reduction project in 2021. In addition, the City of Woodland is partnering with DWR through its Urban Flood Risk Reduction program to identify and implement a State/City flood-risk reduction project that complies with the State Bill 5 requirement that urban communities have 200-year flood protection. The Woodland Flood Risk Reduction Project released a Notice of Completion for CEQA in 2020.

Sites Reservoir Project

The Sites Reservoir Project involves the construction of off-stream surface storage north of the Delta for enhanced water management flexibility in the Sacramento Valley, increased California water supply reliability, and storage and operational benefits for programs to enhance water supply reliability, both locally and State-wide, benefit Delta water quality, and improve ecosystems. Secondary objectives for the project are to: 1) allow for flexible hydropower generation to support integration of renewable energy sources, 2) develop additional recreation opportunities, and 3) provide incremental flood damage reduction opportunities (Sites Project Authority and Reclamation 2017). A Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was released for public review on August 14, 2017. A revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement was released for public review in November 2021 (REIR/SEIS). A Final Environmental Impact Report/Final Environmental Impact Statement was released in November 2023.

There is a potential for adverse impacts associated with implementation of the Proposed Action, such as loss of hunt quality days and impacts to local duck clubs. These impacts would be minimized by limiting the term of the special use permit to a maximum of 5 years. Therefore, implementation of the Proposed Action is not expected to result in significant cumulative impacts, in combination with other projects, within or outside the Proposed Action area.

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