

## Draft Early Implementation Project List

The following table provides a non-exhaustive list of Non-flow Measures that may potentially be credited under Early Implementation, pending testing and refinement of the Non-flow Measure Accounting description provided above.

Tributary	Project	Description	Instream Rearing (acres)	Spawning Maintain (acres)	New Spawning (acres)	Floodplain (acres)	Tidal (acres)	Fish Food Production	Fish Passage	Predation Hotspot Removed (acres)	Stranding Area Removed (acres)	Large Wood Clusters (# Added)	Boulder Clusters (# Added)	Est. Completion Date
American River	American River salmonid habitat improvement at upper river bend	Excavating material from the floodplain to create side channel habitat for juvenile rearing. The excavated material would be sorted and placed into the river to improve substrate conditions for spawning at and downstream of the site.	0.5	2	2	2.5	0	0	0	0	0	25	0	Done
American River	American River salmonid habitat restoration - Ancil Hoffman	Restore juvenile Chinook salmon and steelhead rearing habitat and enhance natural channel processes. Add spawning and rearing habitat.	1.0	2.0	2.0	2.5	0	^	^	0	0.25	20	0	Done
American River	American River salmonid habitat restoration - Lower Sailor Bar	Restore juvenile Chinook salmon and steelhead rearing habitat and enhance natural channel processes. Add spawning and rearing habitat.	1.6	3.0	5.0	1.0	0	^	^	0	0	70	0	Done
American River	American River salmonid habitat restoration - Sailor Bar	Restore juvenile Chinook salmon and steelhead rearing habitat and enhance natural channel processes. Add spawning and rearing habitat.	2.0	1.5	2.0	1.0	0	^	^	0	0	0	0	Done
American River	American River Spawning and Rearing Habitat - Sacramento Bar	Restoration and enhancement of spawning and rearing habitat for anadromous fish in the Lower American River at Sacramento Bar, primarily through gravel addition and/or floodplain or side channel excavation.	0.027	0	15.5	5	0	^	^	0	0	0	0	Done

American River	American River spawning and rearing habitat	Restore juvenile Chinook salmon and steelhead rearing habitat and enhance natural channel processes. Add spawning and rearing habitat.	1	1.5	2	3	0	^	^	0	0	50	12	Done
American River	American River Spawning and Rearing Habitat - Nimbus Basin	Spawning/rearing habitat combination project. Maintenance of previously enhanced site that experiences heavy spawning activity - due to location in upper river. Included in completed programmatic permitting effort.	3.44	1.46	^	1.46	0	^	^	^	^	^	^	Done
Antelope Creek	Antelope Creek Fish Screen Project	Eliminate fish mortality due to diversions of water from CVP rivers in the Central Valley. 100 CFS diversion/pump replacement/screen installation.	5	0	0	0	0	0	0	0.75	^	0	0	Done
Battle Creek	Battle Creek winter run chinook reintroduction and Battle Creek Colemn Weir passage project	Design and construction of the infrastructure (monitoring, trapping, holding, and sampling) for the Battle Creek (BC) winter-run "jump-start".	5.28	0	0	0	0	^	^	^	^	^	^	Done
Battle Creek	North Fork Battle Creek Natural Barrier Removal	North Fork Battle Creek Natural Barrier Removal.	9.7	0	0	0	0	0	^	0	0	0	0	Done
Butte Creek	Butte Creek Diversion 55 Fish Screen Project	Eliminate fish mortality due to diversions of water from CVP rivers in the Central Valley. 7 CFS diversion/pump replacement/screen installation.	0.35	0	0	0	0	0	^	0.25	^	0	0	Done
Clear Creek	Clear Creek Gravel Augmentations	Annual gravel augmentations into Clear Creek to provide spawning habitat for anadromous salmonids, and to promote geomorphic processes that create habitat for all in-river fish life history stages. The project can also utilize boulder clusters and large wood placements. This project should continue in perpetuity, as Whiskeytown Dam cuts off sediment supply and alters geomorph process.	0.25	13.2	0	0.25	0	^	^	0	0	14	8	Done

Clear Creek	Clear Creek phase 3B	Complete Phase 3B floodplain restoration actions that were left undone at time of Phase 3a construction due to state bond crisis. 3b is the final component of Phase 3a. The main focus of 3b is to revegetate barren floodplains and remove legacy irrigation materials. Project will be complete in Spring 2024.	0	0	0	7.5	0	^	^	0	0	0	0	2023
Clear Creek	Clear Creek Phase 3C	Improve stream channel, floodplain, and associated habitats to provide increased spawning and rearing habitat for salmonids. The main focus of the project was to return the creek to its historic alignment and plug a 1950s era man-made ditch. The construction portion of the project was completed in 2021. Revegetation efforts will be complete in 2023.	17.5	0.0	0	1.0	0	^	^	0	0	100	0	Done
Delta	Prospect Island	Tidal restoration project. Benefits to Delta and longfin smelt spawning & rearing habitat; and salmonid rearing habitat (acreage reduction possible due to BiOps).	^	^	^	^	^	1540	^	^	^	^	^	2026
Delta	Tides End	Floodplain, tidal restoration, and farmland food production project. Benefits to Delta and longfin smelt spawning & rearing habitat; and salmonid rearing habitat.	^	^	^	140	670	2100	^	^	^	^	^	2027
Feather River	Garden Highway Mutal Water Co. Fish Screen Project	Eliminate fish mortality due to diversions of water from CVP rivers in the Central Valley. 112 CFS diversion/pump replacement/screen installation.	5.6	^	^	^	0	^	^	1	^	^	^	Done
Feather River	Feather River Salmonid Spawning Habitat Improvement	The placement, sorting, and harvesting of gravel and cobble (1/4"-5") to restore spawning habitat in the Feather River.	^	^	4.5	^	0	0	^	^	^	^	^	Done

Feather River	Sunset Pumps	Remove a fish passage barrier to improve upstream passage for salmonids and green sturgeon. Install fish protective screens at existing diversions to reduce mortality of migrating juvenile salmonids.	^	^	^	0	0	0	Yes	^	^	0	0	2026
Feather River	Star Bend Setback Levee	Provide optimal habitat for floodplain rearing and reduce stranding during high flow events.	^	^	^	50	0	^	^	^	^	^	^	^
Feather River	Nelson Slough Floodplain Restoration	The project could increase floodplain habitat available to Feather, Yuba, and Bear River salmonids by 3,000 to 5,000 acres. Additional floodplain inundation resulting from this project could provide rearing benefits to Sacramento River origin juvenile winter and spring-run Chinook salmon, juvenile Butte Creek spring-run Chinook salmon in the Sutter Bypass as well as to Feather River basin spring-run Chinook salmon.	^	^	^	3000	0	^	^	^	^	^	^	^
Mokelumne River	Gravel Enhancement Maintenance	Provide maintenance gravel annually to existing restored 1 mile reach on the Lower Mokelumne River. Maintains habitat suitability in enhanced spawning areas.	^	0.87	^	^	^	0	0	0	0	^	^	Done
Mokelumne River	Screen High Priority Diversions	Prioritize riparian pumps for screening based on timing of operation and size of fish passing. Screen highest priority pumps. Improve survival of juveniles.	1.71	^	^	^	^	0	5	^	^	^	^	^
Mokelumne River	Creation of Floodplain Habitats	Design and build floodplain habitat to maximize rearing capacity in a 2 or 3 year recurrence cycle. Improves instream growth and improve outmigrant survival.	^	^	^	28.67	^	^	^	^	^	^	^	Done

Mokelumne River	Lower Mokelumne River Salmonid Spawning and Rearing Habitat Improvement	The excavation and recontouring of the lower Mokelumne River stream bank to provide seasonal floodplain habitats for juvenile salmonid rearing and to sort and harvest gravel and cobble (1/4" - 5") from the excavated materials, which will be used to improve or expand nearby spawning habitats.	1.21	0.3	0.3	0.8	^	^	^	0	0	0	0	Done
Putah	Expansion of Available Spawning Habitat	Creation of 62,000 sqft of spawning habitat in Lower Putah Creek through gravel scarification (loosening of existing gravels) and new spawning side channels in conjunction with other floodplain habitat improvements at two project sites. This project is intended to double available salmonid spawning habitat in Lower Putah Creek.	^	^	1.4	^	^	^	^	^	^	^	^	2024
Sacramento River	Meridian Farms Pump Replacement	Eliminate fish mortality due to diversions of water from CVP rivers in the Central Valley. 135 CFS Pump Replacement & Fish Screen Project.	6.8	0	0	0	0	^	^	3.0	0	0	0	2024
Sacramento River	Natural and artificial rearing structures in the Upper Sacramento River	Projects add natural and/or artificial rearing structures, including large woody structures, in the Upper Sacramento River within the first 10 river miles downstream of Redding.	0.4	0	0	0	0	^	^	0	0	40	0	Done
Sacramento River	Restore rearing and spawning side channels in the upper sacramento river	Restoring side-channels to provide juvenile rearing habitat for salmon and steelhead in the Upper Sacramento River (Keswick Dam to Red Bluff).	1.3	0	0	0	0	^	^	1	0	10	0	Done
Sacramento River	Sacramento River - East Sand Slough restoration	Improves juvenile rearing habitat at East Sand Slough side channel on the Sacramento River in Red Bluff.	5	0	0	5	0	^	^	0	5	300	0	Done

Sacramento River	Sacramento River improve spawning habitat above temperature control points	Includes Gravel Injection at Keswick Dam and instream gravel placement at downstream locations to the temperature control point.	0	5	0	0	0	0	^	^	0	0	0	0	Done
Sacramento River	Sacramento River Salmonid Habitat Improvement - Keswick to Red Bluff	Implements the top priority habitat improvements along the Sacramento River between Keswick and Red Bluff.	^	^	^	^	0	0	^	^	^	^	^	^	2025
Sacramento River	South Cypress (Nur Pon)	Reconnected and expanded off channel rearing habitat by excavating a channel between existing ponds, sorted excavated material, and placed the excavated material in the river. Included two channel crossings for City of Redding's public recreation area at the site.	5.2	0	1.0	0	0	0	^	^	2.9	0	40	0	Done
Sacramento River	Anderson River Park Phase I	Created first of three perennial channels in Anderson River Park for juvenile rearing.	1.5	0	0.5	1.0	0	0	^	^	6.0	0	60	0	Done
Sacramento River	Anderson River Park Phase II & III	Created second and third of three new channels for juvenile rearing at Anderson River Park. Stockpiled gravel in mainstem Sacramento River for high flows to distribute.	2.9	0	0.5	1.0	0	0	^	^	0	0	140	0	Done
Sacramento River	East Sand Slough	Created two mile long side channel at East Sand Slough in Red Bluff within the footprint of the old Lake Red Bluff left dry with permanent opening of Red Bluff Diversion Dam gates.	7.1	0	0	0	0	0	^	^	1.0	0	400	0	Done
Sacramento River	Rio Vista	Excavated a historic side channel to create perennial rearing habitat and added sorted gravel to the mainstem to provide spawning habitat.	2.0	0	0.25	0	0	0	^	^	0	0	15	0	Done
Sacramento River	Sacramento River Salmonid Habitat Restoration at Reading/Rancheria Island	Sacramento River Habitat Restoration at Reading and Rancheria Islands.	8	0	0.2	8	0	0	^	^	12	0	150	0	Done
Sacramento River	Sacramento River Salmonid Spawning and Rearing Habitat Restoration	Charter included multiple spawning and rearing habitat projects between Keswick and	3	3	0	0	0	0	^	^	1	1	50	0	Done

		Red Bluff. Projects listed individually.												
Sacramento River	Sacramento River Tributaries Non-Natal Rearing Evaluation and Restoration	Confirm current non-natal use and existing/potential habitat in tributaries along upper Sac River. Identify access issues. Plan and implement restoration on tributaries.	^	^	^	^	0	^	^	^	^	^	^	2025
Sacramento River	NOFO Middle Creek Gravel (JH)	The objective of this project is to restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	^	15	^	^	0	^	^	^	^	^	^	2023
Sacramento River	NOFO Redding Riffle Gravel (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	^	^	3	^	0	^	^	^	^	^	^	2023
Sacramento River	NOFO Tobiason Island (JH) (Michieils Island)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	4	^	1	0	^	^	^	0	^	80	^	2023
Sacramento River	NOFO Rockwad Phase I (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	1	^	0	0	^	^	^	0	^	0	25	2023
Sacramento River	NOFO Rockwad Phase II (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	0.5	^	0	0	^	^	^	0	^	0	20	2023
Sacramento River	NOFO Kapusta Island Side Channel (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	2.8	^	1	0	0	^	^	0	^	40	^	2023
Sacramento River	NOFO Kapusta 1B Side Channel and Gravel (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	1.5	0	0.25	1	0	^	^	^	^	130	^	Done

Sacramento River	NOFO Keswick Gravel (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	0	18.7	0	0	0	0	^	^	0	0	0	0	Done
Sacramento River	NOFO Market Street Gravel - 2019 (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	0	3	0	0	0	0	^	^	0	0	0	0	Done
Sacramento River	NOFO Market Street Gravel - 2023 (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	5	6	0	0	0	0	^	^	0	0	0	0	2023
Sacramento River	NOFO Shea Side Channel (JH)	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	2.5	0	1.7	0	^	^	^	0	0	40	0	0	Done
Sacramento River	American Basin fish Screen Project Phase 2 Riverside Diversion	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	2.3	^	^	^	^	^	^	1	^	^	^	^	2023
Sacramento River	American Basin Fish Screen Project - Phase 4, Elkhorn Diversion	Restore, maintain, and improve Chinook Salmon and steelhead habitats and thereby improve the status of the species in California.	3	^	^	^	^	^	^	1	^	^	^	^	2025
Sacramento River	Willow Bend	Modify a side channel to provide access to 3,400 ft. of seasonally inundated habitat and remove a stranding hazard. (~4.7 acres)	^	^	^	4.7	0	^	^	^	^	^	^	^	^
Sacramento River	Fish Food Pilot Program	Program to determine optimal process to grow fish food on the dry side of the levees and transport it to migrating juvenile salmon in the river. Improves food accessibility for migrating juvenile salmon. This is an ongoing program that will continue to enroll new acreage.	^	^	^	^	0	15,000	^	^	^	^	^	^	^



Sacramento River	Sutter Bypass Weir 1	Improve adult passage for upstream migration, and out-migrating juveniles to access Sutter Bypass. Includes a new Lower Butte/Sutter Bypass Water Management Plan.	0	0	0	^	0	^	1	^	^	^	^	2024
Stanislaus River	Goodwin Dam Gravel (22,700 tons)	Added spawning gravel in Goodwin Canyon at the Float Tube Pool and Cable Crossing.	0.25	1.26	0	0	0	^	^	0	0	0	0	Done
Stanislaus River	Knights Ferry -- Lancaster Road	Restore at least 1.7 acres of floodplain and 500 ft of side channel habitat on private property adjacent to the Stanislaus River.	0.4	0	0	0	0	^	^	0	0	0	0	Done
Stanislaus River	Stanislaus Knights Ferry Floodplain Restoration Project- Rodden Road	Restore functional seasonally inundated floodplain and side channel habitat at the USACE Knights Ferry Recreation Area to increase juvenile rearing habitat.	0	0	0	190	0	^	^	0	0	0	0	Done
Stanislaus River	Stanislaus River at Kerr Park	The project will restore seasonal inundation to approximately 10 acres of floodplain habitat located at Kerr Park (rm 43), with additional in-channel enhancement.	^	7	^	21	0	^	^	^	^	^	^	2024
Stanislaus River	Stanislaus River Juvenile Rearing - Rodden Road	Ongoing project to implement both in- and off-channel restoration designed to provide additional rearing habitat for juvenile salmon and steelhead in the Stanislaus River in collaboration with private landowners across the river from the City of Oakdale.	4.9	^	4.9	^	0	^	^	^	^	^	^	Done
Stanislaus River	Stanislaus Gravel Project	Spawning gravel placement below Goodwin Dam for the maintenance of spawning habitat.	25	0	25	0	0	^	^	0	0	0	0	2024
Yuba River	Yuba Daguerre/Hallwood/Yuba R Juvenile Salmonid Rearing Habitat Restoration	Side Channel and Floodplain Restoration.	17.6	0	0	71.4	0	^	^	0	0	0	0	Done
Yuba River	Yuba River Narrows Restoration	Yuba River Narrows Restoration Project.	7	0	2	0	0	^	^	0	0	0	0	Done

Yuba River	Hallwood Project (Phase 2 to 4)	Creation and enhancement of 68 acres of juvenile floodplain rearing habitat and 3.3 miles of seasonal channels, alcoves, and swales. Improves natural river morphology and increases floodplain habitat, riparian habitat, instream cover, and habitat complexity, diversity and availability over a broad range of flows.	^	^	^	68	0	^	^	^	^	^	^	2024
Yuba River	Hallwood Project (Phase 4 of 4)	Remove Middle Training Wall (400,000 cubic yards of sediment) and enhancing 21 acres of floodplain and seasonally inundated side channel habitat.	^	^	^	21	0	^	^	^	^	^	^	2024
Yuba River	Long Bar Salmonid Habitat Restoration	42.8 total acres: creation of seasonally or perennially inundated side channels (5.9 acres), backwaters (2.4 acres), flood runner channels (1.9 acres), and backwater channel (5.4 acres), and lowering of floodplain elevations (27.2 acres) to support juvenile salmonid rearing habitat.	^	^	^	40.9	0	^	^	^	^	^	^	Done
Yuba River	Upper Rose Bar Habitat Restoration Project	The project footprint is approximately 40 acres, and will provide approximately 5 acres of salmon spawning habitat. The project also includes placement of large wood, and other measures that provide refugia and suitable rearing habitat for juvenile salmonids, resulting in approximately 1.2 acres of juvenile Chinook salmon instream rearing habitat.	^	^	5	1.2	0	^	^	^	^	^	^	2024

^Information is forthcoming.