

National Fish and
Wildlife Foundation
Sacramento District CA
In-Lieu Fee Program



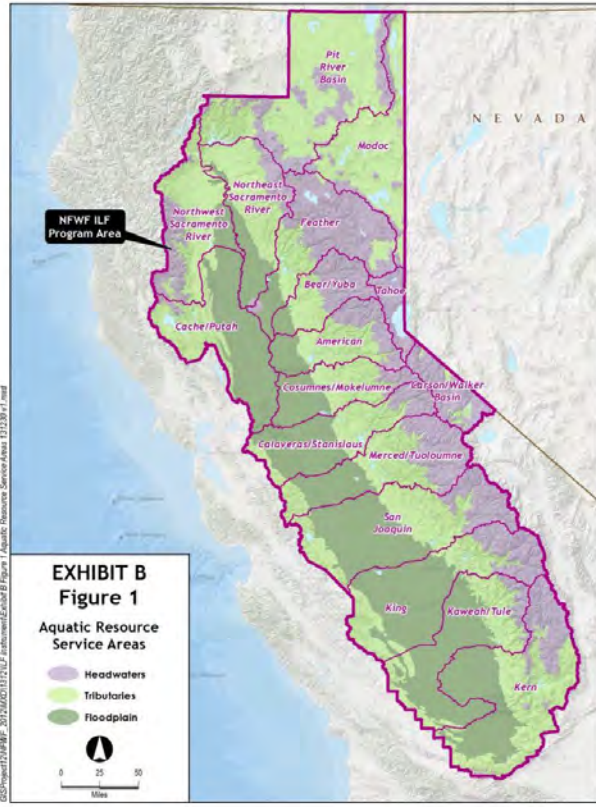
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NFWF

ILF Program Overview

- The National Fish and Wildlife Foundation (NFWF) is a congressionally chartered nonprofit organization
- NFWF is Program Sponsor of the Sacramento District California In-Lieu Fee Program
- ILF Program implements aquatic resource restoration projects to offset permitted impacts to aquatic resources

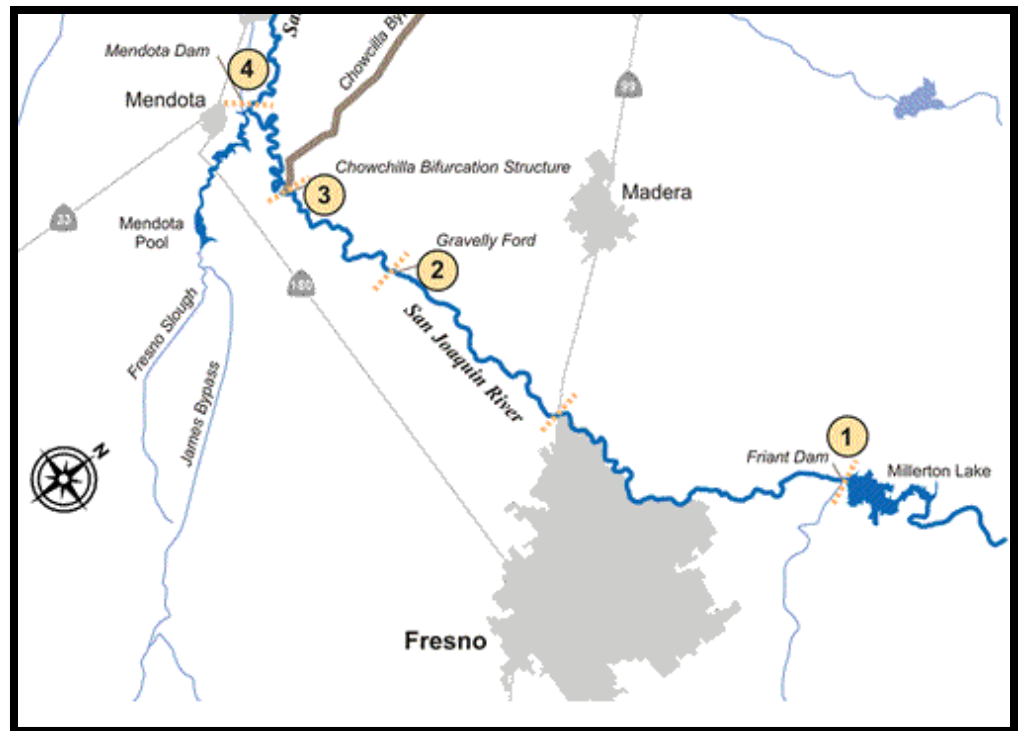


HOW DOES THE ILF PROGRAM OPERATE?



ILF Program Need and Opportunity

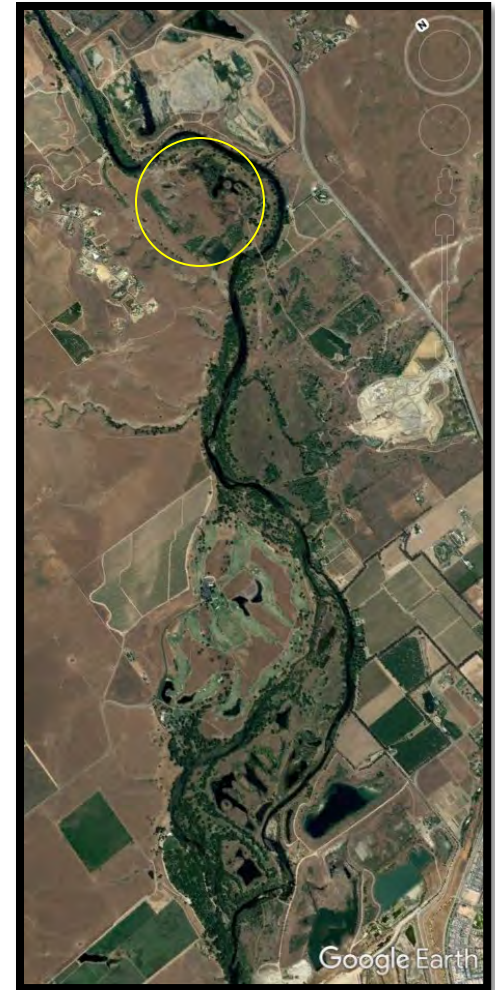
- NFWF has been looking for potential project on the San Joaquin River to offset permitted impacts to aquatic resources in the San Joaquin River and Kings River watersheds, including impacts to anadromous fish
- Goal is to re-establish (restore) at least 50 acres of floodplain and/or wetland habitat
- NFWF has identified Reach 1A as a priority area for a potential restoration project



Source: San Joaquin River Restoration Program

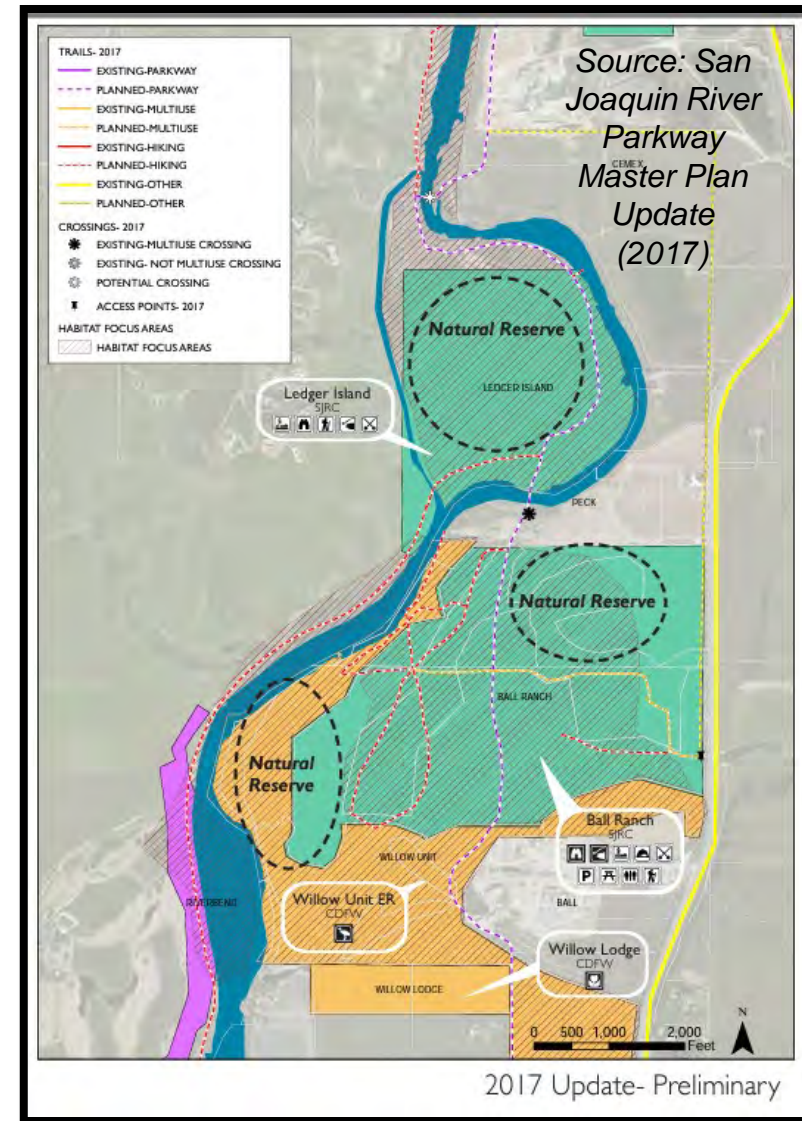
San Joaquin River Reach 1A Overview

- 1.5-year flows have been reduced up to 96% from pre-dam levels, severely reducing the extent of functional floodplain (McBain & Trush, Inc. 2002)
- Reach 1A is the only reach that provides spawning gravels for anadromous salmonids and is a critical reach for efforts to restore anadromous salmonid production on the San Joaquin River (McBain & Trush, Inc. 2002)
- Reach 1A has been heavily impacted by aggregate mining and over 1,360 acres of floodplain have been converted to gravel pits, resulting in a loss of spawning and rearing habitat for salmonids (McBain & Trush, Inc. 2002)
- Isolating/filling abandoned floodplain gravel pits connected to the San Joaquin River is a priority restoration action to reduce predation of outmigrating salmon by exotic warmwater species inhabiting the pits (Kondolf et al. 2008) as well as to reduce stranding



Ledger Island Site Overview

- Site was historically a high terrace with high flow side channels
- Gravel extraction has substantially lowered portions of the site and large portions of the site flood during “wet” years, approximately once every 5 years on average
- In normal and dry years, site is disconnected from the San Joaquin River and supports a mix of mostly upland habitats with some perennially ponded gravel pits and associated wetland riparian vegetation
- In wet years, floodwaters are trapped in low-lying depressions (i.e., gravel pits) and evaporate over time, rather than draining back to the river as flows recede, which could contribute to stranding



Ledger Island Existing Conditions

Normal Year

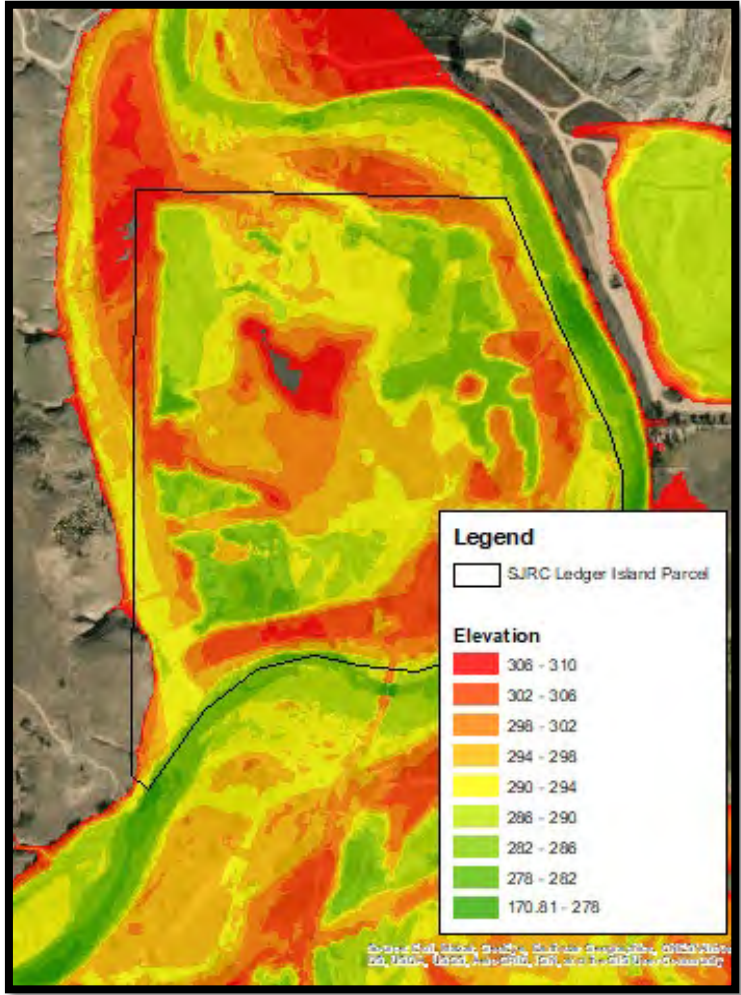


Wet Year

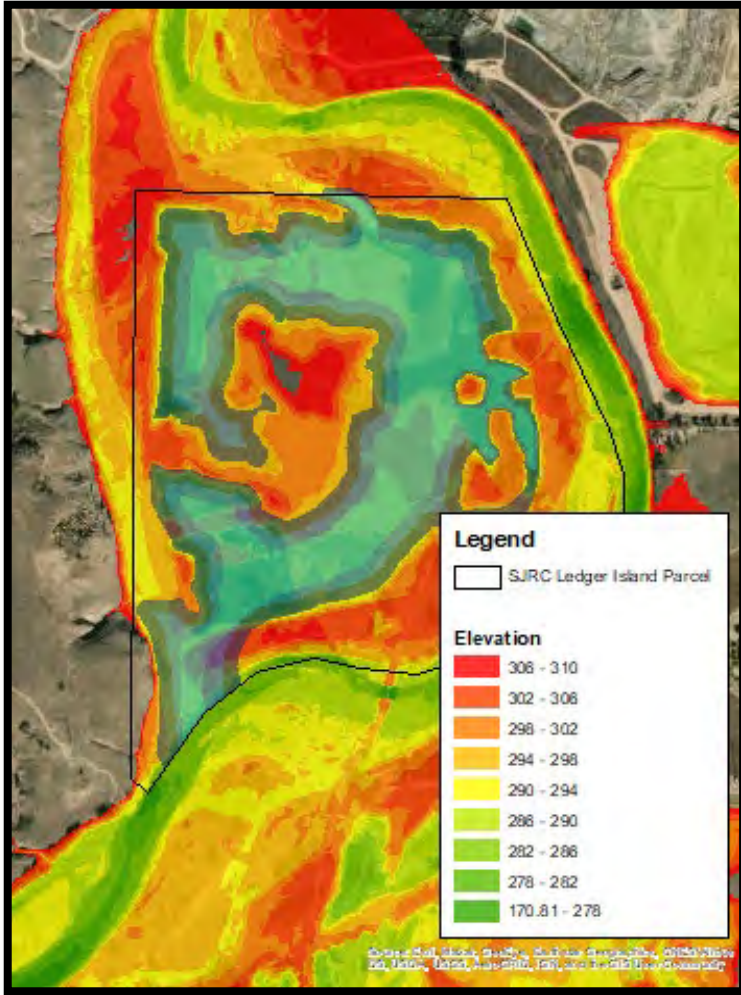


Site Topography and Potential Restoration Concept

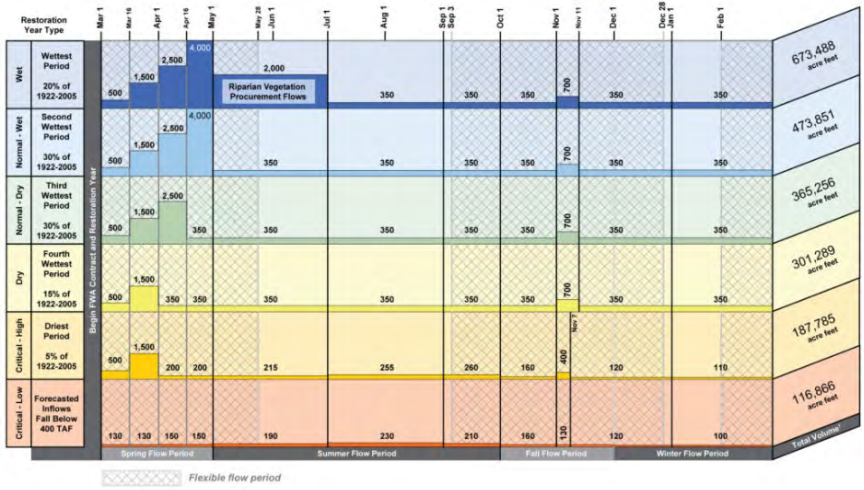
Existing Topography



Potential Restoration Concept



Potential Restoration Concept



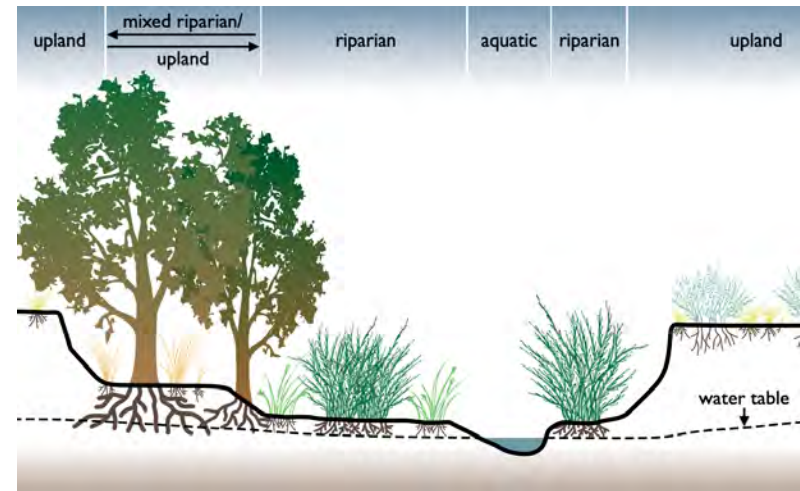
SJRC Restoration Program Flow Schedule. Image: U.S. Bureau of Reclamation.

San Joaquin River Flow (cubic feet per second)	Inundation Frequency	Inundation Duration in Normal Year
1000 cfs	95% years	46 - 107 days
1500 cfs	95% years	46 - 107 days
2500 cfs	80% years	30 days
4000 cfs	50% years	15 days



Potential Ecological and Natural Resource Benefits

- Functional Floodplain Habitat
 - Improved habitat for native riparian/wetland vegetation and wildlife
- Improved rearing habitat for juvenile salmonids
 - Off-channel habitat provides refuge from predation and high flows in main channel
 - Higher growth rates and increased survival
 - Reduced potential for stranding
- Endowment established for long-term protection and management of restored habitats

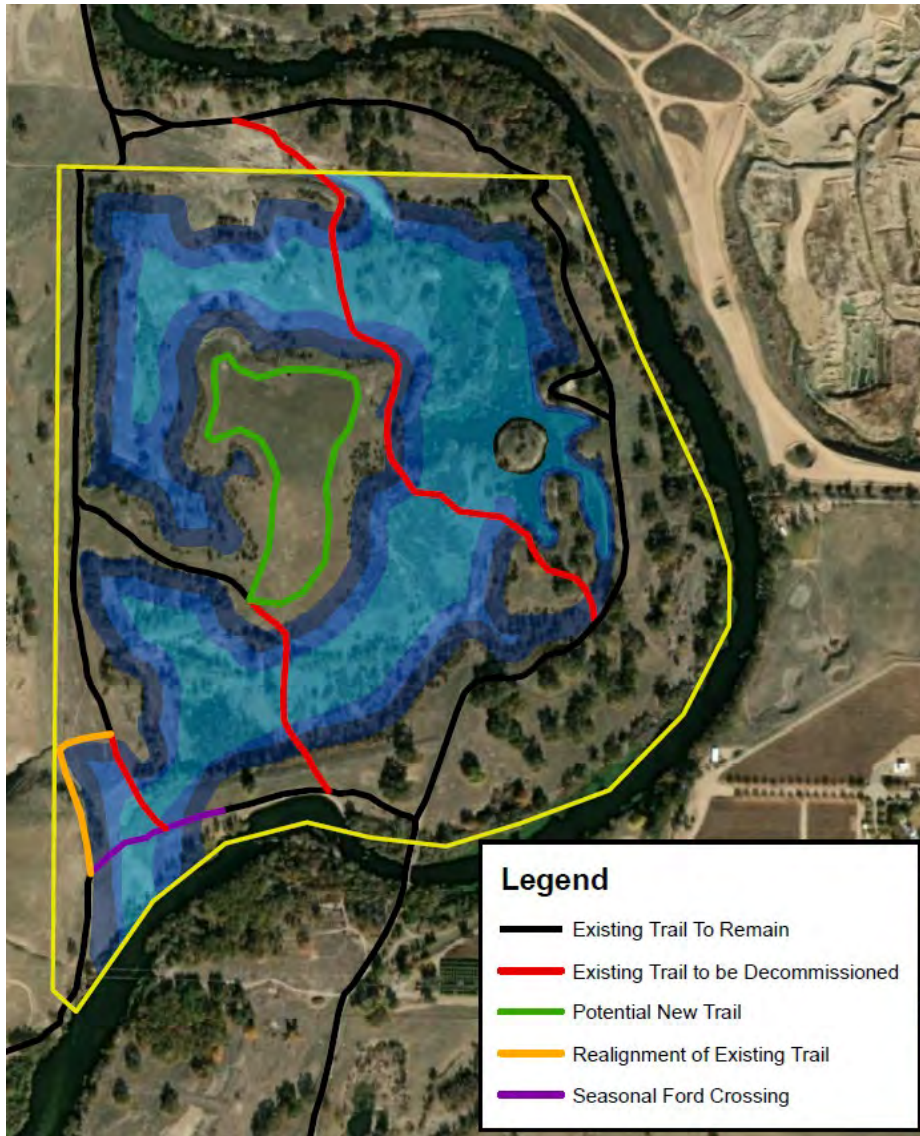


Source: U.S. Department of Agriculture



Comparison of juvenile Chinook salmon raised on a restored Cosumnes River floodplain (right) and in the river's main channel. Photo by Jeff Opperman, 2006

Potential Recreational and Educational Opportunities



- Although some trails would need to be decommissioned, the site would remain accessible for recreational use
- Access could potentially be enhanced with new seasonal ford crossing and/or new interior trail, which could provide overlook of restored wetland habitats
- Restored wetland habitats could provide educational opportunities for local communities and visitors

Potential Feasibility Issues

- Access to property is currently limited due to structurally deficient bridge
- Additional studies (e.g., hydraulic modeling and geotechnical investigation) are needed to determine feasibility of restoration and/or refine potential concept design
- Additional work is needed to estimate potential project cost and to determine if potential project could be completed within the available budget
- If potential project is feasible, implementation would necessitate temporary impacts to some existing habitats and species



Next Steps

- If site access can be resolved, complete required technical studies to further evaluate feasibility and/or refine conceptual plan
- If potential project is determined to be feasible, NFWF will meet and solicit feedback from stakeholders (e.g., community groups, tribes, SJRRP, DWR) and regulators (e.g., USACE, EPA, NMFS, State and Regional Water Boards, CDFW, etc.) to further refine design and to obtain approval to move forward with project proposal
- NFWF would then finalize design and pursue required regulatory approvals, which would include developing avoidance and minimization measures to avoid and/or reduce impacts to existing wildlife and habitats
- It would likely take 2+ years to finalize the design and obtain required permits/approvals