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Accelerating Restoration in the Sacramento - San Joaquin Delta and the Suisun Marsh

Progress and Next Steps to Cut Green Tape



PREPARED BY SUSTAINABLE CONSERVATION
In Collaboration with The Nature Conservancy



Sustainable Conservation

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Executive Summary

California is a leader in aspirational climate goals, and in the Sacramento-San Joaquin Delta, some of those aspirations are now specific, legally established targets. The state's [Nature-Based Solutions Climate Targets](#), developed under Assembly Bill 1757 (2022, C. Garcia), call for rewetting 50,000 acres of subsided Delta peat soils by 2045, part of a broader Delta Plan goal to restore 60,000–80,000 acres of habitat by 2050. Home to over 600,000 people across its 738,000 acres, the Delta is essential to California's agricultural engine. Not only is the majority of the Delta used for agriculture like alfalfa, rice, tomatoes, and wine grapes, but water in the Delta further supports California's \$50 billion agricultural industry by being a water source for more than 1,800 agricultural users. At the same time, the Delta faces local and global risks: the drainage of Delta peat soils releases up to 1.2 million metric tons of carbon annually, and the resulting subsidence threatens the levees that protect local communities, millions of acres of agriculture, and a portion of the water supply for more than 27 million Californians. Restoration is among the most direct tools the state has to reverse these effects. Whether the targets are met on time, however, comes down to how quickly and cost-effectively projects reach implementation.

Restoration in the Delta is uniquely difficult to permit. Projects must satisfy numerous agencies, accommodate the needs of sensitive species, and navigate the Delta's unique balance of interests: residents, ecosystems, agriculture, statewide infrastructure, and water. Over the last decade, California has built [restoration-specific permitting tools](#) designed to ease this burden. [The statewide Cutting Green Tape \(CGT\) initiative](#) served as a major catalyst for existing efforts by NGOs and some agencies, helping institutionalize a new model with dedicated staff for restoration permitting and delivering meaningful time and cost savings for restoration projects. This paper examines how well those tools are working in the Delta, where they fall short, and what more is needed to accelerate restoration at the pace and scale the state's climate and habitat goals require.

Findings

Drawing on surveys and interviews with 27 organizations involved in Delta restoration, the analysis finds that restoration-specific pathways deliver real, measurable benefits when used as designed: nearly two-thirds of project proponents reported time savings and more than half reported cost savings, with individual projects saving as much as 12 to 16 months and potentially millions of dollars. The evidence that these tools can work is clear.

The findings that follow examine why these benefits are not yet the norm in the Delta. They fall into three broad groups: tools that exist but are applied inconsistently, constraints that are genuinely difficult to resolve, and the local trust and coordination that no permit can deliver on its own.

1. Inconsistent use and implementation of restoration-specific permitting tools.

A central issue is the uneven application of existing restoration tools. Survey respondents noted inadequate staff training, staff turnover, perceived risk, and ambiguity within agencies about when newer tools like the CEQA Statutory Exemption for Restoration Projects (SERP) and Restoration Management Permit (RMP) apply. The result is that projects that do qualify for restoration-specific pathways sometimes are subject to traditional permitting, and those that do use restoration-specific pathways can still take as long and cost as much as if they had gone the traditional route due to additive requirements or inconsistent application. Applicants pointed to a need for established systems of institutional learning that incorporate lessons learned, which can consolidate what has worked across completed projects so agencies can scale the practices rather than relying on knowledge that leaves with departing staff. Restoration-focused teams like CDFW's CGT team and the NOAA Restoration Center were widely valued for exactly this reason, but equivalent teams do not exist at every permitting agency, leaving proponents without a consistent point of technical support across the full set of approvals a project requires. Risk aversion by agency staff and the need to get more expedient decisions on complex policy questions from agency leadership are also factors.

- 2. Not all agencies have adequate restoration-specific pathways.** Because a project needs approval from every agency involved, one agency without a restoration pathway can stall implementation and erase efficiency gained elsewhere. For example, the Central Valley Flood Protection Board (Flood Board), which, as the non-federal sponsor, typically must receive Section 408 permission before issuing their encroachment permit, faces review demands and reported staff shortages. The Flood Board is currently undertaking a rulemaking process to better align regulations with restoration, and that process is expected to conclude in 2027. In Suisun Marsh, the San Francisco Bay Conservation and Development Commission (BCDC) has some streamlined processes for small projects; however, most restoration projects have to undertake the more involved process to obtain a "major

permit.” BCDC is also actively analyzing and developing approaches for a programmatic restoration permit to expedite project approval.

- 3. Addressing unique species-related permitting challenges in the Delta.** Avoiding and minimizing impacts to special-status species is an important part of responsible habitat restoration; however, in some Delta and Suisun settings, fully addressing those impacts at the individual project level can be exceptionally difficult or costly, even where the project is expected to provide substantial overall ecological benefits. This can create conflicts between natural resource objectives and varied agency application of regulations that can result in delayed permits, difficulties in demonstrating net benefit to biodiversity, and uncertain mitigation requirements that may be hard to satisfy given limited suitable land and willing landowners. Another complicating factor is that restoring wetlands on reclaimed agricultural land is central to addressing subsidence and carbon emissions, but those lands are foraging habitat for birds like the CESA-listed Swainson’s hawk and mitigation may be required for conversion of those lands. In addition to convening a broader interagency working group, DWR’s in-progress Regional Conservation Investment Strategy offers a potential route to address some of these conflicts at a landscape scale rather than project by project.
- 4. Challenges for permitting and implementing mitigation projects.** Mitigation projects sometimes struggle to demonstrate eligibility for restoration-specific permitting processes. The RMP requires projects to have a substantial net benefit above a baseline that includes required mitigation activities, and because the permit took effect in January 2025, neither CDFW nor applicants have extensive experience applying it to mitigation projects. Habitat requirements tied to Delta Levees Program funding add another layer, with AB 360’s net long-term habitat improvement standard interpreted by some respondents as excessive and difficult to reconcile with restoration permitting tools. Marketplace constraints are another issue, with scarce available credits for species like giant garter snake where the demand is high, and finding land to create mitigation banks is getting harder.
- 5. High costs of project implementation, monitoring, and lack of sufficient funding.** One-third of project proponents named cost as one of the major challenges of planning, permitting, and implementing restoration in the Delta and Suisun Marsh, with species mitigation, biological monitoring, and lengthy competitive grant cycles all contributing. The Delta Conservancy estimates a \$2

billion need (\$1 billion for restoration and \$1 billion for levee work) against which recent Proposition 4 allocations of \$29 million to the Conservancy and \$150 million to DWR fall well short. General obligation bonds, the primary vehicle for this work, can cost the state close to double the principal. Few grants cover long-term operations and maintenance, and while agencies want longer-term monitoring to quantify restoration's benefits Delta-wide, applicants view monitoring beyond demonstrating their own project's success as cost-prohibitive without an alternative funding source.

6. Coordination with local interests and land use planning. Delta governance reflects a shared priority around agricultural protection across DWR, CDFW, the Delta Stewardship Council, the Delta Protection Commission, and the counties, and restoration proponents must engage with all of it. Taking land out of production may reduce county tax revenue, impact agricultural jobs, and strain reclamation districts funded by assessments on farmed land, with additional landowner concerns about seepage, flooding, invasive species, and crop damage from increased wildlife. Subsidence and flooding will require some land to come out of production or be replaced with alternative practices. Options like growing rice and other forms of paludiculture or the rewetting of subsided peat while keeping land in production and generating revenue for levee maintenance offer a partial answer, as exemplified by the Staten Island and Webb Tract whole-island demonstration projects. Early engagement remains the most reliable indicator of durable projects, yet consideration of the Good Neighbor Checklist used for engaging local interests was documented in only about one-quarter of relevant Delta Plan certifications since 2023, and local frameworks like the Delta Protection Commission's LURMP require updating to meet the pace of restoration and climate change now underway.

7. Conduct early, often, and meaningful Tribal engagement and consultation. Restoration projects can offer Tribes opportunities for cultural resource protection and revitalization, access to gather culturally important plants, and potentially greater co-management of Delta lands. These opportunities are best realized when engagement begins in early planning and, where feasible, before land is acquired. Metropolitan Water District's Webb Tract project showcases what that can look like: an Ecocultural Working Group co-led by Tribal culture bearers, where participants were paid for time and travel, and were able to propose a design change that enabled protection of cultural resources produced.

- 8. Anticipated difficulties finding a federal nexus for Section 7 Endangered Species Act (ESA) compliance.** Following *Sackett v. EPA*, fewer projects will require a Clean Water Act 404 permit from the Army Corps, which historically served as the gateway to interagency consultation under Section 7 of the federal Endangered Species Act. Without it, projects not receiving federal funding or significant federal involvement will require proponents to pursue compliance through Section 10, a substantially longer and more complex process. Thirty-eight percent of survey respondents expect the changed WOTUS definition to negatively affect their projects, and most have no alternative plan for establishing a federal nexus. Without one, the efficient and much less expensive USFWS Statewide Restoration Programmatic Consultation cannot be used, regardless of how well it fits the project.

Recommendations

Across these findings, several cross-cutting priorities emerge. The full set of recommendations, with the relevant responsible agencies, appears in the [Recommendations Table](#).

- **1.1, 4.1, and 7.1** Agency leaders actively implement the [Secretarial Memo on Institutionalizing Cutting Green Tape Improvements](#) to guide and support staff to consistently and effectively use restoration-specific permitting tools (e.g., RMP, SRGO, etc.), including for mitigation projects.
- **1.3** State agencies develop an agency-wide training program for regional management and staff at state agencies to support comprehensive and consistent implementation of restoration-specific permitting tools.
- **2.1** through **2.4** fill the gaps for agencies to either develop or renew restoration-specific permitting processes, and to establish consistent processes with expedited approval timelines and staffing to meet the timelines.
- **3.1** CNRA, in collaboration with DSC and Delta Conservancy, convene agencies to resolve conflicts to enable restoration in the Delta, while also protecting special-status species, supporting climate resilience, and maintaining viable agriculture. (The Delta Plan Interagency Implementation Committee Restoration Subcommittee could be a potential existing forum for these convenings.)

The effort should identify specific actions to address habitat conversion, mitigation, work windows, monitoring, and other species-related challenges and provide guidance on

geographic priority areas for restoration in the Delta. Swainson's hawk and garter snake are priority species to discuss. Include input from CDFW, USFWS, the California Air Resources Board, California Tribes, and local interests (e.g., Delta Protection Commission, Delta Conservancy, Delta Counties Coalition, Delta Stewardship Council, California Department of Water Resources). This planning effort should consider neighboring Habitat Conservation Plans/Natural Community Conservation Plans (HCPs/NCCPs) in San Joaquin, Sacramento, Yolo, Solano, and Contra Costa Counties, and Nature-Based Solutions Climate Targets for the Delta and whether this planning effort could be advanced through DWR's development of a Regional Conservation Investment Strategy (RCIS) for their Delta Levees Program.

- **5.1** Agency leadership, California Governor, and State Legislature create steady funding for Delta restoration through the general fund, Greenhouse Gas Reduction Fund, and additional funding sources to ensure necessary funding to meet the Delta Plan restoration targets.
- **7.1** Agency leadership actively implement the [Secretarial Memo on Institutionalizing Cutting Green Tape Improvements](#) related to upholding early, often, and meaningful Tribal consultation as outlined in the [CNRA Tribal Consultation Policy](#) and the [CalEPA Tribal Consultation Policy](#).

Abbreviations

Army Corps	U.S. Army Corps of Engineers
BCDC	San Francisco Bay Conservation & Development Commission
BRRIT	Bay Restoration Regulatory Integration Team
CalEPA	California Environmental Protection Agency
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CGT	Cutting Green Tape
CNRA	California Natural Resources Agency
Delta	Sacramento-San Joaquin Delta
Delta Levees Program	Delta Levees Special Flood Control Projects Program
DCC	Delta Counties Coalition
DSC	Delta Stewardship Council
DPC	Delta Protection Commission
DPS	Distinct Population Segment
DWR	California Department of Water Resources
EIR	Environmental Impact Report (for CEQA)
ESA	Federal Endangered Species Act
Flood Board	Central Valley Flood Protection Board
IRT	Interagency Review Team
LURMP	Land Use and Resource Management Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Notice of Applicability
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service

PBO	Programmatic Biological Opinion
PEIR	Program Environmental Impact Report (for CEQA)
RCD	Resource Conservation District
RCIS	Regional Conservation Investment Strategy
RMP	Restoration Management Permit
Regional Water Board	Regional Water Quality Control Board
SERP	Statutory Exemption for Restoration Projects
SHPO	State Historic Preservation Office
SHRP	General Order for Small Habitat Restoration Projects
SRGO	Statewide Restoration General Order
Subventions Program	Delta Levees Maintenance Subventions Program
Summit	2 nd Interagency Summit on Advancing Restoration
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
Water Boards	State Water Resources Control Board and Regional Water Quality Control Boards
WOTUS	Waters of the United States

Background

White Paper Objectives

This white paper seeks to answer a crucial question: **What more can be done to accelerate progress toward restoration and climate targets in the Delta and Suisun Marsh?**

By investigating regulatory processes and other elements of achieving restoration, this paper identifies key factors influencing the ability to implement restoration and offers actionable steps to improve regulatory processes and other systems.

The Sacramento-San Joaquin Delta



An aerial view of Webb Tract, a 5,500-acre island in the Sacramento-San Joaquin River Delta in Contra Costa County. Credit: Ken James / DWR.

The Sacramento-San Joaquin Delta (Delta) is one of California's most distinctive cultural and environmental regions. It is a major source of freshwater for the state, a highly productive agricultural area, and one of 25 biodiversity hotspots of global importance for the conservation of species (Delta Stewardship Council, 2022). Located at the confluence of the Sacramento and San Joaquin Rivers, the Delta spans roughly 738,000 acres, is home to 600,000 people, and threads more than 1,100 miles of waterways (Delta Conservancy, n.d.), (Austin, 2015). One of the largest estuaries on the West Coast of the Americas, this hotspot supports over 750 species of plants and wildlife, the Central Valley's anadromous

fish species, and migratory birds on the Pacific Flyway (Delta Conservancy, n.d.), (Delta Stewardship Council, 2022). Any effort to work here, whether for ecosystems, residents, or agriculture, must reconcile the Delta's many and often competing interests.

This balance has been made harder by how much the Delta has transformed. The Delta was once a vast and thriving marshland, with rivers flowing through 400,000 acres of tidal wetlands connected to thousands of acres of nontidal wetlands and riparian forests (Delta Conservancy, n.d.), (Delta Stewardship Council, 2022). Over the last two hundred years, approximately 95% of the Delta's native ecosystem has been lost (Delta Stewardship Council, 2022). Levee construction transformed the landscape, and draining and converting wetlands for development and agriculture have left behind a fragile, extensive levee system (Deverel, Dore, & Schmutte, 2020), (Mount, Hanak, & Gartrell, 2022). In some areas, the land has subsided 10 to 25 feet below sea level (Ingebritsen, Ikehara, Galloway, & Jones, 2000).

Today, the majority of land in the Delta is used to grow crops, including alfalfa, almonds, asparagus, corn, processing tomatoes, rice, safflower, wheat, winter cereals, and wine grapes. Water from the Delta also supports California's \$50 billion agricultural industry, with more than 1,800 agricultural users that draw water from the Delta (Delta Stewardship Council, 2022).

The Delta's transformed landscape poses an active and growing risk for the state's water, wildlife, and communities. Changes to the Delta's flow and channels have altered its salinity, seasonal flow, and sediment regimes, further threatening native species. Sea level rise combined with widespread land subsidence increasingly makes the Delta vulnerable to flooding by putting pressure on its levees (Delta Stewardship Council, 2022). Delta soils are historically rich in peat from decaying marsh vegetation (Ingebritsen, Ikehara, Galloway, & Jones, 2000), but the drainage and disruption of these soils have caused the peat to oxidize, releasing up to 1.2 million metric tons of carbon annually. This oxidation contributes to the Delta being responsible for 21% of the state's non-animal farming emissions, despite producing only 6% of the state's non-animal farming output (Deverel, Dore, & Schmutte, 2020). The subsidence of these soils compounds the Delta's risks by threatening the levees and a portion of the water supply of over 27 million Californians and over 3 million acres of agriculture in the San Joaquin Valley (Delta Conservancy, n.d.). The Delta poses risks to water, communities, and the global climate—and restoration, at the scale the problem demands, is the state's most direct way to address them.

The Delta's Climate Goals and Why Restoration is Urgent



A drone view of the Whale's Mouth Subsidence Reversal and Carbon Sequestration Project on Sherman Island in the Sacramento-San Joaquin River Delta in Sacramento County. The project, part of DWR's West Delta Program under the Delta Resiliency Branch, was completed in 2015. Photo taken July 2025. Credit: Xavier Mascareñas / DWR.

Restoration is one of the available tools to address the challenges in the Delta. For example, rewetting peat soils through restoration to managed wetlands or rice cultivation can help mitigate subsidence and turn a carbon source back into a carbon sink (Deverel, Dore, & Schmutte, 2020). Restored Delta wetlands reduce the greenhouse gas emissions driven by peat oxidation while helping California meet its climate goals. Effective January 2026, under a new Delta Conservancy protocol, carbon credits have been generated from wetland restoration led by the California Department of Water Resources (DWR). The sale of carbon credits could potentially fund long-term management of these sites, but the value of these credits is currently uncertain because they have not been sold yet (Maven's Notebook, 2026).

The case for Delta restoration is not just aspirational; it is written into California law and policy with specific acreage targets on specific timelines. The Sacramento-San Joaquin Delta Reform Act of 2009 established the Delta Plan, a comprehensive plan for managing the Delta. The Delta Plan's foundation is built on coequal goals: to provide a more reliable water supply and to protect, restore, and enhance the overall Delta ecosystem. The Delta Reform Act also recognizes that the Delta is an ever-changing place, stating that the

coequal goals should be achieved in a manner that protects and enhances the Delta as an evolving place (Maven's Notebook, 2024).

The Delta Plan's central restoration goal is to restore 60,000-80,000 acres of habitat by 2050. This includes restoring more than 30,000 acres of new tidal wetland, 13,000 acres of new oak woodland and upland ecosystems, 20,000 acres of upland and lowland river floodplain habitat, and 16,000 acres of willow and riparian vegetation communities. An additional goal of the Plan is to implement **subsidence-reversal projects on 30,000 acres** within the Delta and Suisun Marsh by 2030 (Delta Stewardship Council, 2022). From 2014 to 2025, more than 15,000 acres of ecosystem restoration projects were completed and an additional 16,000 acres are in progress or planning phases—about 39% of the 2050 target (Delta Stewardship Council, 2026).

These targets are reinforced by a broader wave of state climate commitments. Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) set a statewide target of carbon neutrality and an 85% reduction in anthropogenic greenhouse gas emissions by 2045. In addition, Assembly Bill 1757 (C. Garcia, Chapter 341, Statutes of 2022) set targets for carbon sequestration and carbon neutrality over the next two decades. AB 1757 developed Nature-Based Solutions Climate Targets, including the conservation, restoration, and protection of 12,200 acres of wetlands and seagrass by 2030, 12,200 additional acres by 2038, and 12,200 additional acres by 2045 (CNRA, 2024). There is also a specific goal to **rewet 50,000 acres of subsided Delta lands by 2045** described in Appendix 1 – Methodology of California's Nature-Based Solutions Climate Targets (CNRA, 2024).

These climate targets are in addition to the state's broader commitments to address biodiversity loss and climate change. Governor Newsom committed the State to conserve at least 30% of California's land and coastal waters by 2030 ([Pathways to 30x30](#)) and to increase the pace and scale of restoration by streamlining the State's process to approve these projects—the commitment that became the [Cutting Green Tape](#) initiative. Together with strategies like the [California Salmon Strategy](#), California's [Natural and Working Lands Climate Smart Strategy](#) (CNRA, 2022), and [California's Water Resilience Portfolio](#) (DWR), these initiatives reflect a shared recognition that proactive, well-resourced restoration is far more effective than reactive responses to climate-related ecological disasters, and that efficient permitting is essential to delivering restoration at the pace and scale California needs.

Unique Restoration Considerations in the Delta

Special-Status Species

The Delta provides habitat for numerous species that are afforded special protections by state and/or federal law. See [Appendix B](#) for more details on which species study participants say are commonly encountered. Projects are required to avoid and minimize temporary and long-term impacts to these species throughout project design, implementation, and maintenance. Restoration projects in the Delta are especially complex since each sensitive species has its own unique habitat needs that must be balanced with the overall ecological restoration goals of the project.

The state-threatened Swainson's hawk, for example, requires open grassland or agricultural land to hunt for food in proximity to nesting trees. The federally threatened valley elderberry long-horned beetle relies exclusively on elderberry plants during its life cycle, which typically grow near waterways. The federal and state-threatened giant garter snake is a highly aquatic snake found in wetlands, marshes, and rice fields that overwinters in underground burrows and in or near levees that are adjacent to wetlands and waterways.

Other species requiring aquatic habitats include the federally threatened California red-legged frog, the western pond turtle (proposed for federal listing as threatened), and the California tiger salamander (state and federally threatened). The saltier environment of Suisun Marsh is also home to the salt marsh harvest mouse, which is state and federally endangered, and a state fully protected species. The mouse requires pickleweed, found in salt marshes, to survive. Because each species carries its own requirements, projects must simultaneously avoid and minimize impacts to several of them across design, implementation, and maintenance. In addition to animals, rare or listed plants may also have to be considered during project design and implementation; however, they were not as routinely cited by project proponents as greatly impacting project timelines and design.

Restoration Demand Shaped by Mitigation for Habitat and Species

About 50% of the restoration permitting demand in the Delta comes from projects undertaken to meet mitigation requirements, whether through individual permittee



*Swainson's hawk, juvenile. Roseville, CA.
Credit: [Linda Hall](#).*

responsible mitigation or via mitigation banks (Chapple, et al., 2025). These projects are especially important because they help to address impacts from projects that have already been completed but in which mitigation has not yet been implemented, or for many of the state's planned infrastructure, energy, transportation, and water supply projects that are either ongoing or will be implemented in the foreseeable future.

There is a particular need for mitigation sites to restore habitat of special-status species. The sites can be difficult to find and even harder to permit, and the demand is great. Project implementers can also buy credits in pre-established mitigation banks, which are built in advance of impacts occurring and often have high-quality, established habitat for unique species or natural systems.

Many of the newer restoration-specific permitting tools allow for restoration projects that are also mitigation, with the intent of ensuring these projects move forward in a more efficient and timely manner. That so much Delta "restoration" is in fact compliance-driven shapes both how it is ultimately permitted and how it is received locally, a dynamic that recurs throughout this paper.

Regulatory Requirements for Restoration in the Delta

There are additional regulatory requirements in place in the Delta and Suisun Marsh to help achieve the goals of various land use, flood protection, and environmental laws and plans. Regional agencies that affect permitting in the Delta include, but are not limited to, the [Delta Stewardship Council](#), [Delta Protection Commission](#), and the Central Valley Flood Protection Board.

In addition, DWR oversees the Delta Levees Maintenance Subventions Program and the Delta Levees Special Flood Control Projects Program, which provide funding for levee maintenance and have requirements to ensure net long-term habitat improvement, as determined by CDFW's Habitat Conservation Planning Branch. The requirement for net long-term habitat improvement adds another regulatory layer during CDFW's permitting process for restoration projects that mitigate for the loss of habitat from levee maintenance.

While not a regulatory entity, the Delta Counties Coalition also weighs in on projects' potential impacts to local communities. Permitting pathways typically encountered during restoration projects, as reported by project proponent survey respondents, have been included in a table in [Appendix A](#).

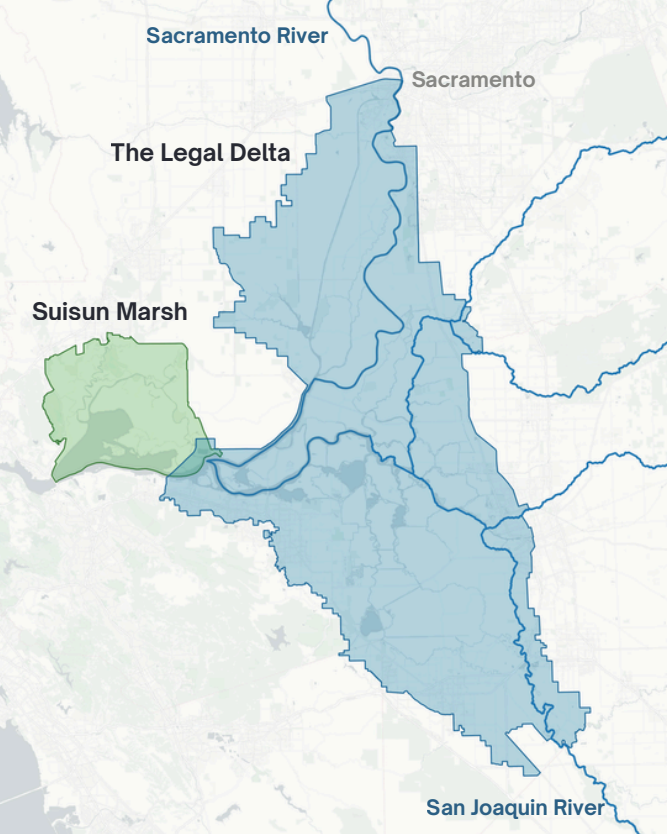
Although not necessarily unique to the Delta, projects also require significant coordination with the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service

(USFWS), and the National Marine Fisheries Service (NMFS) because of the numerous special-status species within the Delta. Authorization is also often required from the State Water Resources Control Board and Regional Water Quality Control Boards (Water Boards) and U.S. Army Corps of Engineers (Army Corps), which collectively regulate activities within wetlands, floodplains, and waterways.

Additionally, existing infrastructure including levees, roads, and utilities like power lines and pipelines can add to the complexity of planning and permitting restoration projects. Existing infrastructure cannot always be moved and may need to be restored around. Working with entities including the Army Corps (Section 408 permission to alter a Corps levee), California Department of Transportation for roads, Pacific Gas and Electric for power lines and electrical easements, and local water districts for water management infrastructure may involve costly, lengthy processes and negotiations. Some restoration project proponents report that utility agencies have not responded to inquiries about power lines and electrical easements, which brings more uncertainty to the process and may increase how long the project design takes.

Permitting for Restoration in the Suisun Marsh

Projects in Suisun Marsh also must follow the regulatory requirements of the San Francisco Bay Conservation and Development Commission (BCDC), since Suisun Marsh is part of the San Francisco Bay estuary. The Suisun Marsh Resource Conservation District (RCD) is an implementing agency of the 30-year [Suisun Marsh Habitat Management, Preservation, and Restoration Plan](#) Final Environmental Impact Statement/Final Environmental Impact Report, which supports environmental permitting for the ongoing operation and management of existing diked managed wetlands and supports the programmatic tidal restoration of diked wetlands. The Army Corps issued [Regional General Permit 3](#) for the Suisun Marsh Managed Wetlands Operations and Maintenance Project for operations and maintenance work in the Primary Management Area of the Suisun Marsh. USFWS and NMFS issued Biological Opinions for Army Corps Regional General Permit 3 and a Letter of Permission for maintenance activities in the Suisun Marsh to address federally listed species impacts. Suisun Marsh RCD has more information about these permits on their [website](#) and provides landowners with technical support and assistance in the permitting process for wetland habitat management. According to survey respondents, having these programmatic permits has helped expedite projects and improve environmental permitting efficiency to some degree, but improvements could be made.



Accelerating Restoration in the Sacramento-San Joaquin Delta and the Suisun Marsh

RESTORATION GOAL

60–
80,000
ACRES

THE DELTA PLAN

Total habitat restoration across the Legal Delta and Suisun Marsh—including tidal wetlands, nontidal wetlands, riparian habitat, and floodplain habitat

Target Year: 2050

2026 update

19% complete (+ 20% in progress)

CARBON NEUTRALITY GOAL

50,000
ACRES

RE-WET PEAT SOILS IN THE DELTA

Re-wetting deeply subsided peat soils in the Delta can reduce carbon emissions and subsidence. The lands can be managed as non-tidal wetlands or for rice cultivation.

Target Year: 2045

35

regulatory requirements a restoration project *may* need to navigate

Each project must obtain permits, approvals, and agreements across federal, state, and local agencies before breaking ground. This regulatory complexity is a major barrier to meeting California's restoration and climate commitments.

POSSIBLE REGULATORY REQUIREMENTS

From project proponents surveys

Not all requirements apply to every project – applicability depends on project activities, location, and scope.

FEDERAL

9

Endangered Species Act (USFWS)

Endangered Species Act (NMFS)

National Environmental Policy Act

Clean Water Act
Sec. 404 (Army Corps)

River and Harbors Act
Sec. 408 (Army Corps)

National Historic Preservation
Act Sec. 106 (SHPO)

Clean Air Act (AQMD)

U.S. Coast Guard, Advance
Approval Notification

U.S. Bureau of Reclamation –
Facility Relocation Agreement

RMP

qualifying projects may seek coverage under a single CDFW Restoration Management Permit

STATEWIDE

13

CA Environmental Quality Act (CEQA)

CA Endangered Species Act (CDFW) RMP

Fish and Game Sec. 1600 Lake &
Streambed Alteration (CDFW) RMP

Common Species/Species of
Special Concern and Scientific
Collecting Permit (CDFW) RMP

Fully Protected Species (CDFW) RMP

Native Plant Protection Act (CDFW) RMP

Clean Water Act Section 401 Water
Quality Certification (Water Boards)

Clean Water Act Sec. 402
NPDES (Water Boards)

Porter-Cologne Water
Quality Act (Water Boards)

AB 360: Delta Levees Program
(DWR/CDFW)

Conservation easements

Farmland designations

Williamson Act

LOCAL

13

Certification of Consistency with the Delta
Plan (Delta Stewardship Council)

Local air district air quality laws

CalTrans Encroachment Permit

Central Valley Flood Protection Board
Encroachment Permit

Flowage Easement (for mitigation banks),
Central Valley Flood Protection Board

Land Use and Resource Management Plan
(Delta Protection Commission)

Grading Permit (City/County)

Conditional Use Permit (City/County)

Zoning (City/County)

Underground pipeline access/right
of way, utility relocation agreement (utility
companies)

SF Bay Conservation and Development
Commission (BCDC) permit Suisun Marsh only

HCPs/NCCPs (Eastern Contra Costa
County, Yolo County)

Central Contra Costa County Sanitary
District Discharge Permit

The Case for Efficient Restoration Permitting

The systems meant to deliver protection of California's natural resources were not, for the most part, built with restoration in mind. Landmark laws like the Clean Water Act and the Endangered Species Act have been integral to reducing human impacts on the environment, but they were designed to regulate industrial and development activity to limit harm, not to enable proactive projects intended to benefit native habitats and species. As a result, restoration projects are routinely subject to the same permitting processes as the development they are meant to counteract, sometimes facing additional mitigation requirements despite their ecological purpose. In addition, restoration projects often require overlapping approvals under state and federal law, which can result in duplication of effort and sometimes conflicting conditions. For a landscape as jurisdictionally dense as the Delta, this mismatch is a structural barrier to meeting goals the state has already committed to.

California has recognized this and responded. Over the past several years, the state and its partners have [developed programmatic permits, restoration-specific regulatory pathways](#), and dedicated agency offices and programs designed specifically to accelerate restoration. These new tools help to align agency review processes, standardize protection measures, reduce duplicative analysis, and improve permitting predictability for restoration proponents.

A key result of this effort is the [Cutting Green Tape \(CGT\) initiative](#). Launched following Governor Newsom's 2020 Nature-Based Solutions Executive Order (N-82-20) and led by the California Natural Resources Agency (CNRA), CGT has been a landmark effort to catalyze change statewide. CGT is the result of decades of work from organizations like the California Landscape Stewardship Network, alongside state and federal partners, to scale regional pathways into statewide practices. That work continues to gain institutional backing: in February 2026, CNRA Secretary Wade Crowfoot and California Environmental Protection Agency (CalEPA) Secretary Yana Garcia issued a [Secretarial Memorandum directing agencies to institutionalize CGT](#) improvements as permanent standard practice across all regions and programs for State agencies under their umbrellas.

When these tools are used, the results are compelling. CDFW's improved permitting processes have supported enhancement of approximately 320,000 acres of habitat and the reconnection of roughly 8.5 million acres (CNRA, 2026). Federal agencies also have restoration-specific permitting pathways, including [Army Corps Nationwide Permit 27](#) for Aquatic Habitat Restoration, Enhancement, and Establishment Activities and [Regional General Permit 16](#) for Aquatic Habitat Restoration and Enhancement Activities (Sacramento

Corps District). In addition, both [USFWS](#) and [NMFS](#) have issued Programmatic Biological Opinions for Endangered Species Act, Section 7 Consultations. These restoration-specific pathways reduce project costs, streamline regulatory review, and accelerate project timelines (CNRA, 2026).

These gains matter because California’s restoration targets are ambitious, legally grounded, and urgent—and they cannot be met without efficient, scalable permitting systems backed by state and federal support. But the existence of effective tools is not the same as the efficacy of these tools. The question is no longer whether restoration-specific permitting can work; the evidence shows it can. The question now is whether it works reliably, where needed, and for the full range of projects the state’s goals require.



Sandhill cranes congregate at Staten Island in the Sacramento-San Joaquin River Delta, in San Joaquin County, California. Credit: Nick Shockey / DWR.

Methods

Our analysis focused on interviewing or surveying individuals who are involved in projects in the [Sacramento-San Joaquin Delta and Suisun Marsh](#) (see **Figure 1**) (Delta Stewardship Council, n.d.). The Delta Stewardship Council's [online Delta Atlas](#) shows the boundaries of the Legal Delta and Suisun Marsh, county boundaries, and more (Delta Stewardship Council, n.d.).

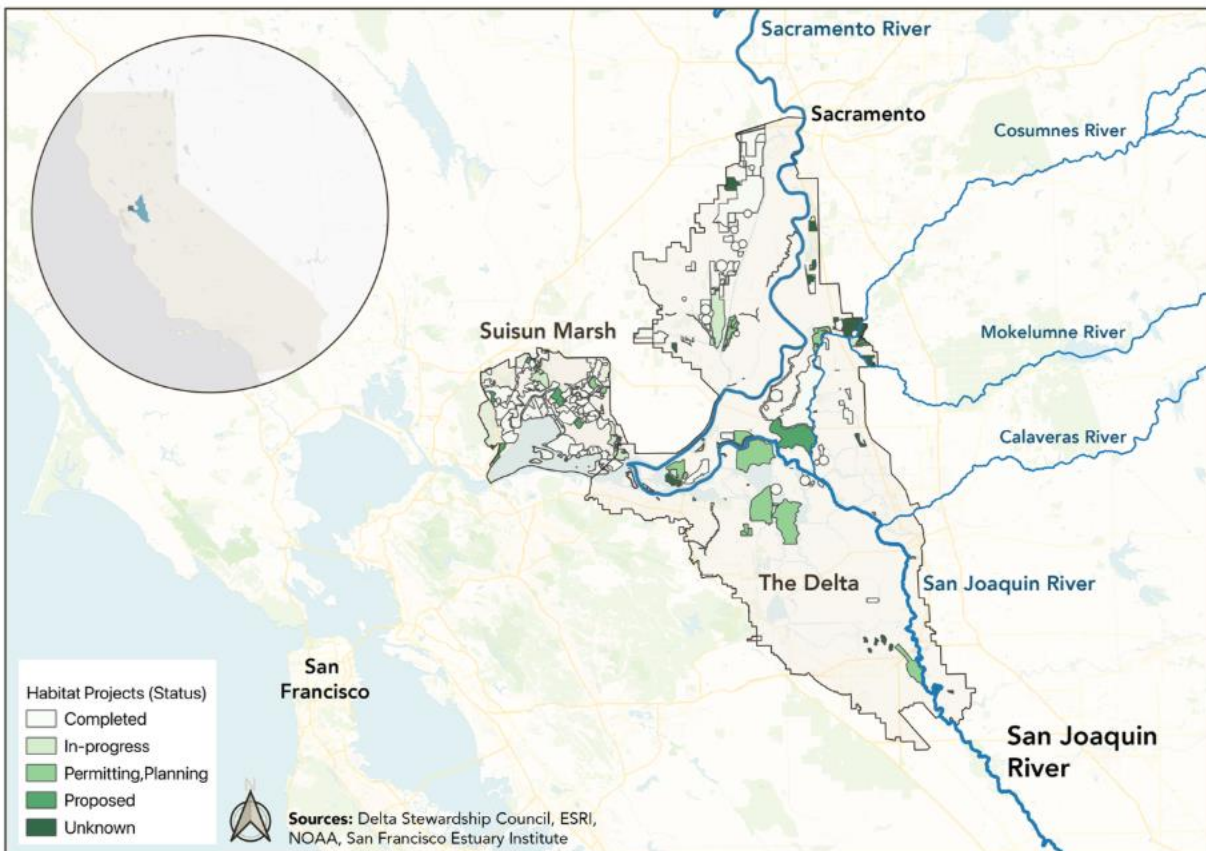


Figure 1. Map of the boundaries of the legal Sacramento-San Joaquin Delta and the Suisun Marsh.

Data Collection

In total, we engaged with 27 organizations representing different perspectives including nonprofits, Resource Conservation Districts, environmental consulting firms, reclamation districts, water districts, regulatory agency staff, a California Native American Tribe, agencies that fund and implement restoration projects, and local governments. For a list of organizations that study participants are affiliated with, see the [Acknowledgments](#) section below.

An online survey was sent to project proponents, consultants, and Delta restoration and enhancement project funders starting on December 22, 2025. Responses were received from December 29, 2025, through January 27, 2026. An online survey was sent to regulatory agency staff starting on January 20, 2026, with some participating in an interview instead of a survey. Interview questions for Tribal representatives, local interests, and species experts were written after reviewing project proponent and agency survey responses. Interviews were conducted through April 27, 2026, with some agencies, local interests, two species experts, and one Tribal member. One species expert responded to questions via email.

Sustainable Conservation's list of study participants was obtained from the following sources, specific to the Delta and Suisun Marsh:

- Projects and presenters at the Delta Restoration Forum (Delta Stewardship Council, 2025)
- Names of project proponents, consultants, and agency staff in Water Board SRGO Notices of Applicability (NOAs)
- Entities contacted during the California Environmental Quality Act (CEQA) Statutory Exemption for Restoration Projects (SERP) process and those that submitted letters of support for The Nature Conservancy's project on Staten Island
- Recommendations from survey recipients for others to contact
- Recommendations from agencies and NGOs involved in restoration
- Online research about people and entities that work in, and projects that have been implemented or are being planned in, the Delta or Suisun Marsh

Some of the agency perspectives included in the findings come from the 2nd Interagency Summit on Advancing Restoration (Summit), held over two days in March 2026 with staff from CDFW and the State and Regional Water Boards, to celebrate progress made since the 1st Interagency Summit in 2023, discuss what could use improvement, and share their needs, recommendations, and ideas to advance restoration with agency leadership. Sustainable Conservation's Accelerating Restoration program staff were on the facilitation team for the Summit and contributed to the [Summary Report](#). Although the Delta is generally a more complex place to permit restoration projects, the Report shows that some areas for permitting improvement in the Delta also exist in other parts of the state.

Findings and Recommendations

Survey data, interviews, and subsequent research revealed several key themes about restoration permitting in the Delta. Taken together, they tell a consistent story: where restoration-specific permitting tools exist and are used as designed, they deliver real benefits; however, those benefits depend on consistent application, and gaps remain. The findings below examine why those benefits are not yet the norm. They fall into three broad groups: the first concerns tools that already exist but are applied inconsistently or incompletely; these gaps are closable through implementation and coordination. The second concerns constraints that are genuinely harder to resolve: the biological realities of working around sensitive species, the shifting federal legal landscape, and the costs these impose. The third concerns something no permit can deliver on its own: the local and Tribal trust that land management requires. Recommendations are embedded within each finding.

Restoration-Specific Tools Can Deliver Real Benefits When Used as Designed

Survey and interview responses indicate that, when used effectively and as designed, restoration-specific permitting tools can provide meaningful efficiencies for both project proponents and agency staff. The clearest evidence comes from proponents' own reported outcomes: nearly two-thirds (63%) reported that restoration-specific permitting pathways, such as CDFW's CGT tools, resulted in time savings, and more than half (56%) reported cost savings during the permitting process. More than half also reported that these tools positively changed how agency staff engage on projects—a signal of the culture shift the CGT Initiative is intended to support. Agency staff surveyed similarly reported that restoration-specific permitting pathways reduced review time and resulted in authorizations being issued sooner than through standard permitting processes.

Interagency coordination improvements were also noted. Respondents cited the value of programmatic permits, coordinated permit conditions between agencies, dedicated agency staff with restoration experience, pre-application meetings, and standing monthly meetings held by the Army Corps with staff from different agencies, which all help set expectations and reduce the number of review cycles and back-and-forth exchanges.

One project proponent noted that using SERP on a single project saved an estimated 12 to 16 months and potentially millions of dollars in agricultural resources mitigation costs. These savings were significant enough that, without them, their grant-funded project may not have moved forward at all. A state agency respondent reported that SERP saved at least one year on a wetland restoration project and over a year on another. One respondent who worked with the CGT team said the collaborative nature of the team and the use of CGT permitting tools saved significant time and money.

Projects in the Delta that Received a SERP Concurrence:

- [Knightsen Wetland Restoration Project](#), Contra Costa County, 2023
- [Staten Island Wetland Restoration and Carbon Farming for Habitat, Climate, and Communities](#), San Joaquin County, 2023
- [Webb Tract Wetland Restoration Project](#), Contra Costa County, 2025
- [Sherman Island Wetland Restoration Project Phase III](#), Sacramento County, 2026

These benefits, however, are not guaranteed, as discussed below in [Inconsistent Use and Implementation of Restoration-Specific Permitting Tools](#).

These experiences suggest that the benefits of restoration-specific permitting tools depend not only on their availability, but also on their consistent and intended application. Ensuring these tools are applied consistently and fully across agencies and programs, while addressing the gaps where efficient pathways do not yet exist, is the subject of the findings that follow.



Aerial view looking west above Potato Slough, Venice Island left, Boudin Island right, and in the center is a section of the San Joaquin River and Webb Tract. Credit: DWR.

1. Inconsistent Use and Implementation of Restoration-Specific Permitting Tools

A key issue noted by study participants is the inconsistent use and implementation of available permitting tools. Many tools are available for restoration, yet inadequate training on permitting pathways, staff turnover, perceived risk, and unique conditions in the Delta may lead staff to rely on traditional permitting approaches, even when more efficient pathways could be applied. As a result, restoration projects can be subject to the same permitting processes as development projects, limiting opportunities to move projects forward more efficiently even where there are clear ecological benefits.

Moreover, ambiguity around how to interpret the applicability of newer restoration-specific permitting tools like SERP, RMP, and the SRGO can offer more discretion, but also lead to challenges when their applicability is inconsistently understood and interpreted within agencies (California Landscape Stewardship Network, 2026).

Need for More Consistent Education

Applicants surveyed noted inconsistent staff training, compounded by staff turnover (discussed more below), and the need for more training overall that incorporates lessons learned and feedback mechanisms to improve processes over time. Without clear, timely guidance and established systems for institutional learning, efficient permitting tools are not being applied consistently or effectively. At the 2nd Interagency Summit, staff discussed how changing roles and having new staff create a need for ongoing training and onboarding, as well as finding ways to establish institutional knowledge. Agencies need to invest more in robust onboarding, and new staff need training beyond just understanding the permitting tools. They need to know how to navigate partners and relationships and have discussions with their managers about risk, priorities, and agency mandates. There is an opportunity to develop learning systems that consolidate key findings, lessons learned, and effective approaches from completed projects to scale up what's working and reassess what is not (California Landscape Stewardship Network, 2026).

Lack of Agency Staff and Staff Turnover

Several study participants mentioned permitting challenges related to agency staffing and a growing recognition of the support provided by agencies with restoration-focused teams like the CGT team and NOAA Restoration Center.

One survey respondent said that while having dedicated CGT staff at CDFW is helpful, other permitting agencies lack dedicated staff who are focused on advancing restoration projects and available to answer questions, provide technical support, and process permits. This

can make it difficult to navigate the various compliance requirements, even when they are designed for restoration.

One project proponent survey respondent remarked that not having enough staff to process permits at the Central Valley Flood Protection Board (Flood Board) leads to a backlog of permit applications. This lack of staff capacity can also hold up the Army Corps Section 408 permitting, since the 408 approval is received as part of the Flood Board encroachment permitting package.

Staff turnover at state and federal agencies makes permitting a challenge because losing experienced staff without comprehensive, ongoing training on permitting tools for new staff leaves a major gap in institutional and technical knowledge and makes it harder to navigate streamlined permitting processes. Significant staffing changes force applicants to spend time rebuilding relationships with staff and catching them up on previous agreements, and sometimes they have to start at square one with their projects. There has also been more uncertainty at the federal level since 2025, with furloughs, position cuts, early retirements, and an overall decrease in agency budgets.

Risk Aversion in Restoration Project Permitting

Permitting outcomes can depend heavily on individual staff decisions. Respondents noted that staff may be hesitant or not feel empowered to make decisions that could be questioned, leading to delays or inaction. As one respondent put it, “Regulatory action still comes down to certain persons making decisions. These persons are not always supported to make a quick/efficient decision and so it comes down to them making a decision that they ‘won’t get in trouble for,’ so no action is the most common outcome.”

A broader culture of risk aversion also limits the use of efficient permitting tools and the type of restoration that can be done. Applicants noted that agency staff may default to traditional approaches due to concerns about potential litigation or perceived regulatory scrutiny, even when more efficient pathways are available.

Risk management was also one of the key themes that emerged from the 2nd Interagency Summit. The summary report includes that “Staff may feel hesitant to move forward when a multi-benefit project doesn’t neatly fit a permitting pathway. There is a need to establish agency-wide understanding that these projects are eligible for streamlined pathways, as well as a need for building better decision-making processes in these situations” (California Landscape Stewardship Network, 2026). Reflecting similar sentiments shared by project proponents above, a need identified by staff at the Summit was consistent and timely support from “agency leadership and legal teams when a project deemed beneficial by

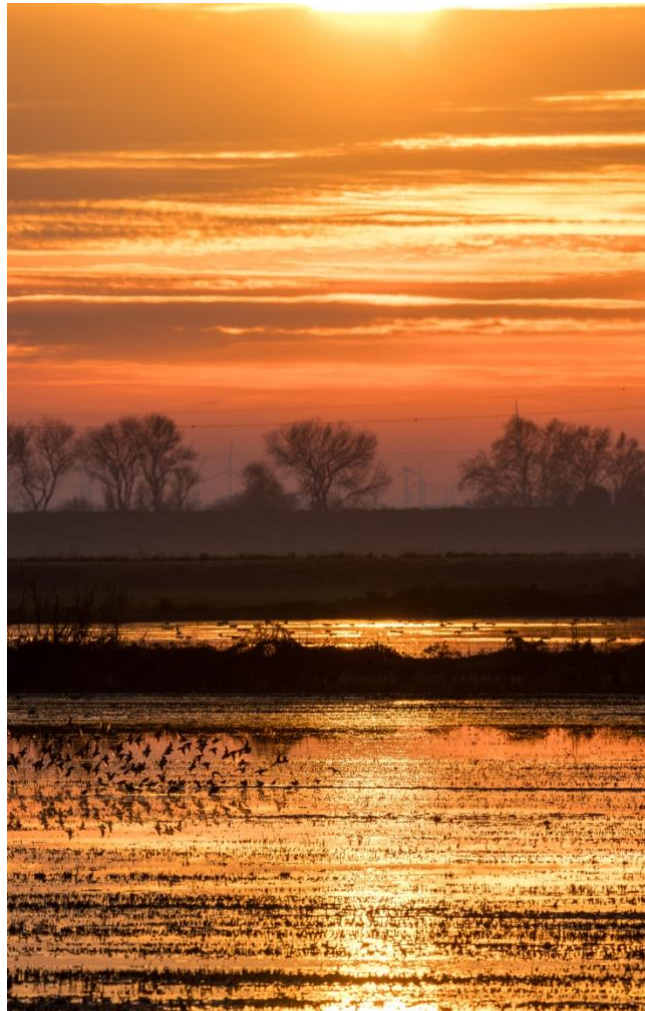
staff becomes controversial or risky” (California Landscape Stewardship Network, 2026). Regarding the SERP, a “refrain heard throughout the Summit was that CDFW staff see SERP as underutilized because of perceived risk with applying this CEQA exemption pathway” and that better guidance from leadership on when using SERP is acceptable could help, in addition to other improvements including more training for staff and applicants (California Landscape Stewardship Network, 2026).

Complications of Working in the Delta and Suisun Marsh Limit the Efficiency of CDFW CGT Tools

As noted above, sometimes restoration-specific pathways do not save as much time and money as hoped when used for projects in the Delta. One respondent who works on projects across the state noted that, despite experiencing some time and cost savings from using these pathways, “Delta projects are subject to much more time-consuming scrutiny even with streamlined permitting vehicles than elsewhere in the state.” Another respondent stated that despite using a Cutting Green Tape pathway, the same analysis and expensive mitigation were required, and felt that, “They just make you do different things. The amount of work ends up being the same, or close.”

Some project proponents mentioned that even if a project is CEQA exempt through SERP, they must comply with additional requirements that can extend the permitting process to

demonstrate a good faith effort to be aligned with the Delta Plan. For example, CDFW requests that Delta projects seeking SERP concurrence conduct outreach consistent with the Delta Plan’s [Good Neighbor Checklist](#). In addition, the Delta Stewardship Council



Sandhill cranes congregate at Staten Island in the Sacramento-San Joaquin River Delta. Credit: Nick Shockey / DWR.

requires that projects exempted from CEQA through SERP must be presented to the Council to confirm that no unusual circumstances would result in the project being a covered action under the Delta Plan and requiring a Certification of Consistency. For one project using the SERP, the information requested by CDFW related to outreach changed during the process, adding more time to the pre-application process. This issue has since been resolved by CDFW proactively providing this information to applicants and adding an extra 30 minutes to pre-application meetings for projects in the Delta.

One project proponent reported that SERP did not save time or money as compared to doing an Initial Study/Mitigated Negative Declaration (IS/MND) because of the lack of a defined timeline and changes to information requested described above. They also found that determining how to offset impacts to Swainson's hawk habitat as part of the SERP process was not resolved any quicker as compared to the standard CEQA process (see also, [Addressing Unique Species-Related Permitting Challenges in the Delta](#), below).

Complications arise in the Delta when upland foraging habitat, usually agricultural land, is converted to wetland to rewet subsided peatlands and enhance habitat for wetland-dependent species. This causes concerns about the loss of foraging habitat for the Swainson's hawk (*Buteo swainsoni*), a threatened species under the California Endangered Species Act (CESA). One of the requirements for a project to receive a SERP concurrence from CDFW is that the project "Results in long-term net benefits to climate resiliency, biodiversity, and sensitive species recovery," including for the Swainson's hawk as a CESA-listed species.

Respondents also noted differences in approach between the CGT team and CDFW's regional Habitat Conservation Planning Branch staff, which is not a "restoration-focused" review team. Some reported that the permitting approaches and outcomes often depend on the individual staff or team involved. Staff from this Branch review a variety of project types and are often still involved in the process of using CGT pathways for restoration as they have expertise on the many different species CDFW is charged with managing and protecting. Buy-in from Branch staff is also needed to get a SERP concurrence, and that additional negotiation has sometimes taken up to nine months. This topic is discussed further in [Addressing Unique Species-Related Permitting Challenges in the Delta](#) below.

As one respondent noted, for projects that could be deemed controversial, "it feels risky to rely on SERP and hope that CDFW will sign off." Respondents indicated that this inconsistency creates confusion for applicants, reduces regulatory certainty, and can undermine the time and cost savings these tools are intended to provide.

These challenges become even more pronounced when multiple agency approvals are required. Respondents observed that efficiency gained through one agency's process is often offset when another agency continues to follow a traditional permitting approach, as discussed in the next finding, [2. Not All Agencies Have Adequate Restoration-Specific Pathways](#).

Inconsistent Use of Restoration-Specific Permitting Pathways by the Bay Restoration Regulatory Integration Team (BRRIT) - Suisun Marsh

The [Bay Restoration Regulatory Integration Team \(BRRIT\)](#) is an interagency team that coordinates permitting and regulatory review for habitat restoration projects in the San Francisco Bay and Suisun Marsh region.

Sustainable Conservation's previous discussions with applicants and project proponents in the Bay Area have shown that while the BRRIT has improved interagency coordination in the San Francisco Bay and Suisun Marsh, there is inconsistency as to how member agencies utilize and apply efficient permitting mechanisms for restoration. In some previous conversations with applicants, we heard that the BRRIT creates an extra step and often a lengthier process without creating more efficiency or cost savings. A project proponent surveyed for this study noted a positive experience working with BRRIT, despite BCDC permitting process delays.

Recommendations

1.1 Agency leaders actively implement the [Secretarial Memo on Institutionalizing Cutting Green Tape Improvements](#) to guide and support staff in the consistent and effective use of restoration-specific permitting tools (e.g., RMP, SRGO, etc.), including for mitigation projects.

1.2 State leadership prioritize and secure funding for dedicated restoration permitting staff to meet state species recovery and habitat restoration goals.

1.3 State agencies develop an agency-wide training program for regional management and staff at state agencies to support comprehensive and consistent implementation of restoration-specific permitting tools.

1.4 All regulatory agency leaders implement an expedited internal decision-making process that enables regional staff to quickly resolve questions and policy issues and avoid permitting delays.

1.5 San Francisco Bay Restoration Authority in collaboration with BRRIT agencies establish expedited timelines and maximize consistent and effective use of efficient restoration permitting tools for BRRIT-reviewed projects.

2. Not All Agencies Have Adequate Restoration-Specific Pathways

Despite significant progress on permit streamlining, several agencies do not have restoration-specific permitting tools. Because a project needs approval from every agency involved, any agency without a restoration-specific pathway can delay project implementation.

Army Corps Section 408

The Army Corps Section 408 permission is triggered when a project plans to modify an Army Corps levee, waterways, etc. The Army Corps has a relatively new [statewide programmatic process for Section 408](#) compliance (i.e., Regional Categorical Permission) that includes environmental restoration projects (Army Corps, 2026). Although the time savings from this process have been demonstrated, this pathway is limited to projects with a footprint of 500 acres or less, and those who previously used a similar process noted that the time savings were not as significant as they had hoped. They also remarked that the State Historic Preservation Office (SHPO) approval, along with other Army Corps internal review requirements, slows down approval under the programmatic process.

Central Valley Flood Protection Board

The Central Valley Flood Protection Board (Flood Board) encroachment permit often requires the Flood Board to first receive an Army Corps Section 408 permission before it can issue an encroachment permit. This is due to the Flood Board serving as the “non-federal sponsor” for Section 408. These two approval processes create lengthier project permitting timelines due to engineering review, interagency coordination, and, for one project, a lack of staff at the Flood Board.

To help improve permitting for restoration projects, the Flood Board is currently undertaking a rulemaking process to update their regulations in Title 23, Division 1 of the California Code of Regulations. The Flood Board will also be updating their procedures and flowage easement requirements to better align with the needs of restoration projects. Prior to this study, Sustainable Conservation has received feedback that the information requested by the Flood Board for an encroachment permit or flowage easement could be more clearly communicated in advance of application submittal, either through application

forms, information on their website, or other locations (personal communication, April 29, 2025). These improvements are being done in close collaboration with project proponents and are expected to be completed in 2027.

Delta Stewardship Council

The Delta Stewardship Council's Delta Plan Certification of Consistency process is not restoration-specific and can create additional regulatory uncertainty for restoration projects in the Delta and Suisun Marsh. In general, actions considered a 'project' under CEQA must go through this process. Project proponent survey respondents say that this Certification process can cause costly project delays due to the potential for the public or another agency to appeal the Council's decision on consistency or other challenges and mistrust from the public during the Certification process itself. The resolution of an appeal to a Certification of Consistency can take several months, potentially delaying implementation depending on the complexity of the project. This is particularly true when the project proponent is a state agency that is perceived by the public as not to be trusted to operate in a manner consistent with the Delta Plan.



A drone view of an Aqua Dam being removed at Chipps Island Tidal Habitat Restoration Project implemented by DWR. This project will restore tidal hydrology to Chipps Island, converting previously managed wetlands to benefit native fish and wildlife species in the Sacramento-San Joaquin Delta, near Pittsburg, California. Photo taken October 2025. Credit: Andrew Nixon / DWR.

San Francisco Bay Conservation and Development Commission (BCDC) - Suisun Marsh

Suisun Marsh is directly connected to the Delta and is considered part of the San Francisco Bay estuary. Given the unique geographic location and ecology of Suisun Marsh, it has some agency processes, permits, and jurisdictions separate from the Delta. In Suisun Marsh and Suisun Bay, BCDC has regulatory authority over shoreline development, fill, public access, and certain restoration activities, creating a unique permitting framework. Overall, the multi-faceted regulatory purview of BCDC has been known to be broad, complex, and time-consuming.

BCDC does not yet have comprehensive restoration-specific permitting processes. Obtaining a “major permit” is the most involved permitting process and is the typical route restoration projects take for approval (San Francisco Bay Conservation and Development Commission, 2026). The agency has a programmatic permit (i.e., Regionwide Permit 3) for some simple, routine restoration projects outside of sensitive areas (defined on a case-by-case basis). BCDC has another simplified permitting process (the administrative permit process) that allows for some efficiencies, like not having to go before the Commission for approval. However, the administrative permit process is only available to restoration projects 20,000 square feet or less (approximately half an acre) and that involve no more than 10,000 cubic yards of dredging, making the process quite limited in the scope and scale of restoration projects that can use it (California Code of Regulations, 2025).

Despite the regionwide and administrative permit processes, project proponents surveyed indicated that getting BCDC approval remains challenging and time consuming. In addition, meeting BCDC requirements around public access might not always align with the protection of sensitive habitat created by a restoration project. There also is overlap in regulatory review/jurisdiction between the Water Board and BCDC in relation to placement of dredge and fill material, so conflicts can occur and additional coordination between agencies is required. Reducing permitting complexity to facilitate reuse of sediment from one part of the bay for restoration in another part of the bay has also been identified as a long-standing unresolved issue.

BCDC previously considered raising the size limits of restoration projects that can be covered under an administrative permit and is also looking at improving or creating new regionwide permits and improving their procedures for processing restoration project permits (est. 2026). Simultaneously, the agency is actively investigating options to create a programmatic permit for restoration and otherwise improve their review and approval processes.



An aerial view of the Chipps Island Tidal Habitat Restoration Project, implemented by DWR. This project will restore tidal hydrology to Chipps Island, converting previously managed wetlands to benefit native fish and wildlife species in the Sacramento-San Joaquin Delta, near Pittsburg. Credit: Andrew Nixon / DWR.

Recommendations

2.1 Flood Board complete its work with project proponents to update its regulations and processes for restoration projects, consistent with other agencies' efficient restoration permitting pathways. Flood Board provide clear guidance materials to improve understanding and implementation of new regulations and processes.

2.2 Flood Board explore delegating the Corps' Section 408 authority to itself for restoration projects seeking an encroachment permit and the additional staff capacity needed to handle delegated authorities.

2.3 Agencies developing or renewing restoration permitting pathways establish consistent, expedited approval timelines and sufficient staffing to meet expedited timelines.

2.4 BCDC develop an efficient permitting process that covers large-scale restoration projects, consistent with other agencies' restoration permitting authorizations.

3. Addressing Unique Species-Related Permitting Challenges in the Delta

A key finding is that species-related permitting and project design requirements can be inflexible and substantially increase the cost, complexity, and timeline of restoration projects implemented in the Delta and Suisun Marsh. Most restoration projects in these areas, regardless of scale, must address the needs of different sensitive species in the short term (e.g., protection measures during construction) and long term (e.g., habitat needs).

Habitat Type Conversion

In the late 1800s, many of the historic wetlands in the Delta were drained and surrounded by levees so they could be converted to agricultural uses. Today, these Delta islands consist of agricultural grasslands that Swainson's hawk and other bird species use as foraging habitat. Restoring wetlands on these reclaimed agricultural lands is critical to meeting statewide restoration goals—addressing subsidence, reducing risk of levee failure and potential water quality impacts, reducing greenhouse gas emissions, and sequestering carbon—but these efforts also impact habitat for the Swainson's hawk, which is a 'threatened' species under CESA.



Swainson's hawk on the Valdés Peninsula, Argentina. The Swainson's hawk migrates through the west of the Americas, from North America to Argentina where they winter. Credit: [Nick Athanas / Flickr](#).

Survey results show that projects seeking to enhance existing habitat are often more straightforward to plan and permit than those that convert one habitat type to another. However, projects that restore and convert upland and agricultural areas to wetland areas can provide greater progress towards the state's restoration goals for the Delta, even if they are more complex and costly.

This conflict in natural resource policies has resulted in delayed permit issuances and requirements to demonstrate net benefits to special-status species, including Swainson's hawk, often resulting in the need to offset habitat impacts. These delays and offset requirements increase project requirements and can substantially hinder restoration. Furthermore, requirements to offset habitat loss could result in the need for offsite mitigation which can be challenging to find because there are not always suitable locations, mitigation bank credits, or willing landowners. The costs of off-site mitigation are also substantial because they typically involve purchasing land or an easement and maintaining that land for the benefit of sensitive species. There is also a balance to strike between creating new habitat, such as restoring wetlands that provide significant benefits for climate resilience, biodiversity, and the Delta ecosystem as a whole, and avoiding impacts to upland species and habitats.

A New Landscape-Scale Planning Effort

To proactively resolve mitigation-related challenges associated with the Delta Levees Program's mandate for net long-term habitat improvement, DWR is currently sponsoring the development of a [Regional Conservation Investment Strategy \(RCIS\)](#) plan for the Delta. The Delta RCIS will be used to prioritize areas for mitigating impacts to habitat from work funded by the Delta Levees Program. Although an RCIS is similar to a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), obtaining mitigation credit under an RCIS is done under a separate Mitigation Credit Agreement process.

The Delta [RCIS](#) is in the early stages of development and is informed by a steering committee of local interests, environmental groups, agency staff, and others. For more information on the Delta Levees Program and restoration projects, see [Mitigation Requirements Tied to Delta Levees Funding Add Complications to Restoration Permitting](#), below.

Limited Work Windows and Time to Implement Projects Each Year

Other sensitive species that project proponents said routinely influence project design, implementation, timelines, and cost include the giant garter snake, burrowing owl, valley elderberry longhorn beetle, California tiger salamander, salt marsh harvest mouse (in Suisun Marsh), Delta smelt, California red-legged frog, and others. Since each of these species may have different times of the year when they are most vulnerable to disturbance

(e.g., as is sometimes the case with nesting birds and giant garter snake), to avoid and minimize impacts, sometimes there are only a few months a year when construction activity can be completed. These short “work windows” can result in construction stretching



Suisun Marsh aster. Photo taken in Tilden Regional Park, near Berkeley, CA. Credit: [John Rusk / Flickr](#)

over multiple years. This means construction equipment is mobilized multiple times, biological monitors must be hired over multiple seasons, and surveys may need to be conducted multiple times. This all leads to delays in project completion and increased costs as labor, materials, and other costs generally rise over time due to inflation, as well as a longer disturbance period for sensitive species in the work area.

Monitoring and Other Costs

In addition to the challenges around limited work windows, the costs to survey for, avoid, and deploy biological monitors during construction can be high. Monitoring for giant garter snake during construction is also a significant project cost. Requirements to conduct vegetation management by hand can also increase labor costs and timelines. Maintenance of restoration sites is complicated by the presence of special-status species. One survey respondent shared the long list of special-status species that affect the timing and methods for invasive plant management on state-owned lands and how the potential presence of these species (not all confirmed) on one site limits the timing at which they are able to work and requires extra surveys, which increases costs and causes delays. Not allowing for burning of invasive weeds due to the potential presence of giant garter snake also adds to overall project costs and complexity.

Recommendation

3.1 CNRA, in collaboration with DSC and Delta Conservancy, convene agencies to resolve conflicts to enable restoration in the Delta, while also protecting special-status species, supporting climate resilience, and maintaining viable agriculture. (*The Delta Plan Interagency*

Implementation Committee Restoration Subcommittee could be a potential existing forum for these convenings.)

The effort should identify specific actions to address habitat conversion, mitigation, work windows, monitoring, and other species-related challenges and provide guidance on geographic priority areas for restoration in the Delta. Swainson's hawk and garter snake are priority species to discuss. Include input from CDFW, USFWS, the California Air Resources Board, California Tribes, and local interests (e.g., Delta Protection Commission, Delta Conservancy, Delta Counties Coalition, Delta Stewardship Council, California Department of Water Resources). This planning effort should consider neighboring Habitat Conservation Plans/Natural Community Conservation Plans (HCPs/NCCPs) in San Joaquin, Sacramento, Yolo, Solano, and Contra Costa Counties, and Nature-Based Solutions Climate Targets for the Delta. This effort should include specific actions to address species conflicts and provide guidance on geographic priority areas. CNRA should explore whether this planning effort could be advanced through the development of a Regional Conservation Investment Strategy (RCIS) for DWR's Delta Levees Program.

4. Challenges for Permitting and Implementing Mitigation Projects

Mitigation Projects Face Challenges Demonstrating Eligibility for Restoration-Specific Processes

Compared to earlier pathways that excluded mitigation projects, newer restoration-specific pathways like the SRGO, SERP, RMP, and USFWS PBO were designed so that eligible mitigation projects could use them. Project proponents surveyed responded that although state and federal agency staff with experience working on restoration projects have been helpful in working through how to apply restoration-specific tools to mitigation banks, they still “continue to face challenges in demonstrating how mitigation banks can appropriately use some of these streamlined processes.” They argue that “while the habitat created on a mitigation bank may ultimately generate credits to offset impacts elsewhere,” these large-scale restoration actions “often deliver broader, landscape-scale ecological gains that are as a whole greater than what individual permittee-responsible mitigation projects can achieve.” Limiting the use of restoration-specific pathways delays implementation of projects that are critical to meeting regulatory obligations and advancing species recovery at scale.

For example, mitigation or other non-voluntary projects can be eligible for an RMP but must demonstrate that the project “would result in a substantial net benefit” to native fish,

wildlife, plants, or their habitat, or any combination thereof, “above baseline conditions.” The “baseline conditions” include any “fish, wildlife, plant, or habitat restoration activities required to satisfy avoidance, minimization, or mitigation requirements....and those activities shall not count toward the substantial net benefit.” The RMP went into effect in January 2025, so CDFW and applicants do not have a lot of experience using it for mitigation projects and determining eligibility for those types of projects. It can be a challenge for applicants to explain what their mitigation obligation is to be able to calculate substantial net benefit, and having clear numbers is required so CDFW can analyze whether a project qualifies. As shared during the 2nd Interagency Summit, “Staff reported excitement around the use of this relatively new permit and requested additional training so that they can use it more. In particular, there is confusion about which projects can qualify and also how to apply it to mitigation projects” (California Landscape Stewardship Network, 2026).



A drone image shows DWR's Twitchell Island Wetland Enhancement and Restoration Project as plant installation wraps up in February 2026. The work is creating 50+ acres of wetland habitat enhancement and about 80 acres of riparian forest and scrub-shrub habitat on one of the largest islands in the Sacramento-San Joaquin River Delta. Credit: Xavier Mascareñas / DWR

Local Perspectives Play a Significant Role in How Mitigation Projects are Received

State agency staff noted that restoration tied to projects addressing local needs, such as housing or regional conservation planning, is often viewed more favorably than restoration implemented to meet state or federal regulatory requirements or driven by outside investors (like mitigation bankers). Projects in the Delta that are perceived as externally driven can face greater resistance, particularly where there are concerns about land use change or local economic impacts (i.e., loss of agricultural production), issues the Delta Protection Commission is particularly concerned about.

Local agencies emphasized that incorporating even modest benefits for surrounding communities can improve project acceptance. Benefits such as flood risk reduction, agricultural compatibility, or public access can help build support. However, project proponents, particularly those implementing mitigation to meet federal biological opinion requirements, do not always view these elements as within their scope of mitigation responsibility. This creates a disconnect between regulatory-driven restoration and local priorities.

Finally, local governments expressed concern that the concentration of mitigation projects in certain areas can create uneven local impacts. In places such as the Cache Slough complex, where a large share of federally required mitigation has been located, local economies may experience more concerns about tradeoffs associated with land use conversion. Without a clearer approach to distributing projects or incorporating local benefits, these patterns can slow permitting and reduce local support. [Local interests and land use planning](#) are further discussed [below](#).

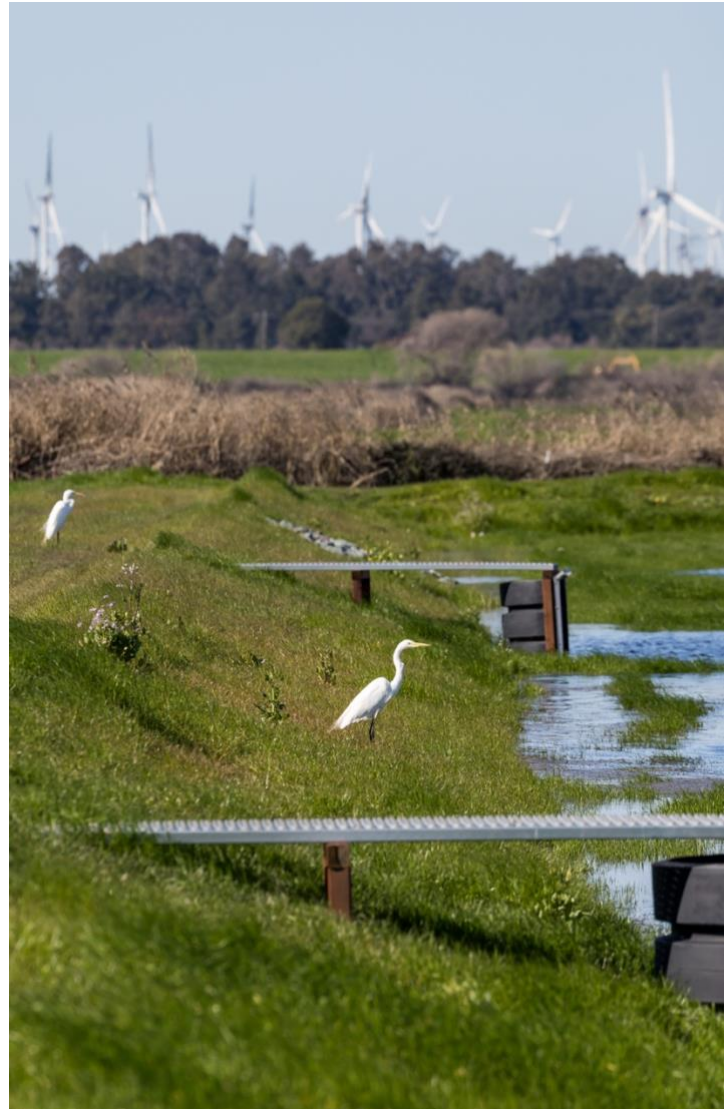
Mitigation Requirements Tied to Delta Levees Funding Add Complications to Restoration Permitting

Restoration projects funded by DWR to mitigate for habitat loss from levee maintenance have additional regulatory requirements that can complicate permitting and the use of restoration-specific pathways.

DWR oversees two programs that fund levee maintenance in the Delta. The [Delta Levees Maintenance Subventions Program](#) (Subventions Program) is a cost-share program that provides funding to local levee maintaining agencies and reclamation districts. CA Water Code § 12987 requires “no net long-term loss of habitat through impact avoidance, minimization, and/or mitigation” (DWR, 2016). The [Delta Levees Special Flood Control Projects Program](#) (Delta Levees Program) works closely with the Subventions Program and is a grant program utilized by Levee Maintaining Agencies, Reclamation Districts, and other

government agencies responsible for levees in the Delta and parts of Suisun Marsh (DWR, 2026), (Delta Stewardship Council, 2024). Under California Water Code § 12314, “the Program must fully mitigate the habitat impacts of each Project it funds and ensure that the Program results in net long-term habitat improvements in the Delta” (DWR, 2014).

Mitigating for the loss of habitat can be achieved by constructing new habitat and protecting it with a conservation easement, or by using habitat credits from an existing habitat area or mitigation bank. In 2012, DWR established the [Bulk Credit Program](#) to provide offsite mitigation credits for Reclamation Districts participating in the Delta Levees Program (DWR, n.d.). Because of continued demand for mitigation credits, DWR planned and implemented the [Twitchell Island Wetland Enhancement and Restoration Project](#), for which plant installation wrapped up in February 2026. Approximately 80 acres of riparian habitat were created to serve as mitigation for projects that participate in the Delta Levees Program, and the ~40 acres of wetland habitat restored will not be used to offset any future Delta Levees Project levee maintenance impacts. This is how the project results in the “net increase in aquatic or riparian resource area functions and/or services” that is required for eligibility for the [SRGO](#), which the project used for 401 Water Quality Certification and Waste Discharge Requirements (SWRCB, 2024).



Egrets seen at DWR's Twitchell Island Wetland Enhancement and Restoration Project. By 2028, it's expected that a fully functional wetland will be in place. Credit: Xavier Mascareñas / DWR.

CDFW's Habitat Conservation Planning Branch is involved in permitting projects funded by the Subventions Program and Delta Levees Program and does surveys each year to make

sure that reclamation districts participating in the program are not causing a net loss of riparian habitat over time. That branch of CDFW is also responsible for permitting habitat projects funded by the Delta Levees Program that are also held to the same “net long-term habitat improvement” standard from AB 360 for riparian forest, scrub-shrub, shaded riverine aquatic, and freshwater marsh. This requirement from AB 360 adds an extra regulatory layer to these projects and means that mitigation could be required by CDFW for the loss of any of those habitats from a restoration project. This extra layer of regulation can make using the RMP for a Delta Levees Program-funded project more complicated and more uncertain for project proponents.

The majority of project proponents surveyed say they have worked on permitting for projects that have received Delta Levees Program funding. One survey respondent has worked with the State and CDFW (Delta Levees Section) to establish conservation easements on State property for mitigation projects. Other survey respondents have identified coordination with CDFW Delta Levees and resolving Delta Levees Program mitigation obligations as a challenge. How CDFW staff interpret AB 360 and the mitigation they require has been perceived as excessive. Projects permitted to help the Delta Levees Program meet its mandate for net long-term habitat improvement before CGT began have not yet been able to incorporate CGT pathways like the RMP.

There is an interest in developing other sources of funding for Delta levee maintenance as funding for the Delta Levees Program is running out. Other funding sources authorized by the Legislature may have a different requirement than the “net long-term habitat improvement” mandate of the Delta Levees Program and may alleviate some of these challenges of managing mitigation obligations with CDFW and the permitting challenges for restoration projects that survey respondents identified.

Constraints in the Mitigation Marketplace Further Complicate Implementation

Project implementers surveyed said that for some species, such as giant garter snake, there are currently few or no available mitigation credits in the Sacramento Valley but a strong need to create the habitat/credits. At the same time, mitigation banks are facing increasing difficulty meeting performance standards as species populations decline, making it harder to generate and sell credits. These challenges create bottlenecks for implementing restoration necessary to mitigate project impacts and highlight the importance of implementing mitigation earlier so ecological benefits are not delayed.

Recommendations

4.1 Agency leaders actively implement the [Secretarial Memo on Institutionalizing Cutting Green Tape Improvements](#) to guide and support staff in the consistent and effective use of restoration-specific permitting tools (e.g., RMP, SRGO, etc.), **including for mitigation projects**. (This recommendation is the same as Recommendation 1.1 under [Inconsistent Use and Implementation of Restoration-Specific Permitting Tools](#))

4.2 CNRA and CalEPA facilitate state and federal agency coordination to expedite creation of advance mitigation to meet restoration needs in the Delta, either through existing interagency forums or through creation of a new forum. *(Existing forums include the Banking Agency Management Team, Project Delivery Team, Interagency Review Teams, and other advance mitigation working groups.)*

4.3 CDFW leadership establish a process for early coordination between Cutting Green Tape and DWR's Delta Levees Special Projects Program staff on the use of efficient permitting tools and to ensure consistent project requirements.

4.4 The California Legislature, Administration, and agency leadership advance alternative funding for Delta levee maintenance and rehabilitation that aligns regulatory requirements with Cutting Green Tape tools and incentivizes nature-based solutions.

5. High Costs of Project Implementation, Monitoring, and Lack of Sufficient Funding

High costs and the lack of sufficient funding for projects were cited in the survey as significant barriers to restoration in the Delta. One-third of project proponent survey responses mentioned cost as one of the major challenges with planning, permitting, and implementing a restoration project in the Delta or Suisun Marsh. Navigating the funding system and project-related expenses cause additional challenges. The competitive grant process, listed by an RCD survey respondent as a cost-related barrier, causes strain, as the grant processes can be lengthy and intensive.

Project proponents and agency staff surveyed agreed that mitigating impacts to special-status species during restoration can add substantially greater expense. Biological monitoring and surveys can further add cost and time and require significant staff capacity. If multiple species are on a restoration site, expenses rise even further. Funding for long-term operations and maintenance for restoration projects is a unique challenge as well, as few grants or funding streams provide funding for this need.

Not only are these projects expensive, but current funding sources are insufficient to meet the demand. For example, the Delta Conservancy has indicated a \$2 billion need for funding in the Delta, with \$1 billion for restoration and another \$1 billion for levee work. A significant amount of climate and restoration work is funded by general obligation bonds like Proposition 4. Recent Proposition 4 funding allocated \$29 million to the Delta Conservancy and \$150 million to DWR for projects that improve existing levees to increase flood protection and improve climate resiliency (Delta Stewardship Council, 2025). General obligation bonds are passed through a majority vote, with bond interest paid over time through the general fund (Ellison, 2024). Proposition 4 is estimated to cost the state \$400 million annually for the next 40 years to repay the bond and pay back the interest (Legislative Analyst's Office, 2024). Funding large restoration and climate projects with general obligation bonds can be a useful fiscal mechanism as the cost is significant. These bonds do, however, often cost the State nearly double the principal cost for the bond. While this funding is helpful, there is a significant need for a more consistent, steady funding source for restoration in the Delta and Suisun Marsh (Bardeen, 2026).

Adjacent to the call from applicants for additional general project implementation funding and long-term operations and maintenance funding, there is also a desire from agencies to see more long-term monitoring in the Delta. Agencies often look to applicants to take this on; however, monitoring beyond the need to demonstrate an individual project's success can be seen as punitive and cost-prohibitive. One Delta state agency mentioned the need for longer-term monitoring to quantify and confirm the impacts of restoration in the Delta. While this is desirable, applicants have expressed the need for agencies to come up with alternative funding and programs to create up-to-date, long-term data on the impacts of restoration in the Delta.



DWR contractor, Stillwater Sciences relocates native Suisun Marsh aster at the Tidal Habitat Restoration Project on Prospect Island in Solano County. Restoration work includes clearing vegetation and debris, excavating tidal channels, and levee breaches. Credit: Nick Shockey / DWR

Recommendations

5.1 Agency leadership, California Governor, and State Legislature establish stable funding for Delta restoration through the general fund, Greenhouse Gas Reduction Fund, or other sources sufficient to meet the Delta Plan restoration targets.

5.2 Agencies develop and fund a long-term monitoring program to evaluate Delta health using alternative funding sources, such as a mitigation fund from development activities.

5.3 CNRA, in coordination with DWR and other Delta agencies, develop a strategy to leverage public funding with private funding for the long-term management and maintenance of restoration sites, including through carbon markets.

6. Coordination with Local Interests and Land Use Planning

Several state and local entities play roles that directly support agricultural interests in the Delta. DWR administers the Delta Levees Program, supporting levee maintenance and

flood protection for agricultural lands, while CDFW oversees the net habitat improvement requirements and species protection components of the Program. The Delta Stewardship Council advances the coequal goals of the Delta Plan, balancing ecosystem restoration with water supply reliability. The Delta Protection Commission focuses more directly on preserving the Delta's agricultural economy, cultural heritage, and working landscapes. At the local level, Delta counties retain primary land use authority and are collectively represented by the Delta Counties Coalition, which advocates for local control, agricultural preservation, and the economic interests of Delta communities (see Figure 1). Together, this governance structure reflects a shared priority around agricultural protection balanced with flood management, habitat regulation, water supply, land use, and broader Delta policy goals. It also reflects the challenge restoration project proponents face in engaging the agencies and local interests that are part of the Delta's governance system.

Balancing Restoration with Agricultural Viability

While habitat restoration is broadly recognized as necessary by most agencies engaged in the Delta, the conversion of agricultural land raises complex economic, cultural, and practical concerns for local communities. Not all Delta farmland is equally sustainable over the long term, particularly in areas experiencing significant land subsidence and sea level rise that requires ongoing pumping and infrastructure investments to maintain. Even in areas facing long-term constraints, the loss of agricultural land is not viewed as straightforward. Agriculture remains central to the Delta's identity, economy, and community fabric, and decisions about land conversion are closely tied to long-standing land use patterns and local stability.

A consistent theme across Delta agencies and local government was the economic impact of taking land out of production for wetland restoration. Interviewees described how restoration can reduce local tax revenues, eliminate agricultural jobs, and strain reclamation districts that depend on assessments tied to actively farmed lands. As discussed above in [*Challenges for Permitting and Implementing Mitigation Projects*](#), local interests noted that the concentration of several restoration projects driven by federal Biological Opinion mitigation requirements around Cache Slough has had a disproportionate effect on the local agricultural economy. These concerns are compounded when projects do not generate replacement revenue or account for new risks of concern to nearby landowners, including seepage of water from newly created wetlands onto their property, flooding, invasive species, or crop damage from increased wildlife activity.



Aerial view of organic rice harvesting at Tide's End Restoration Project, which integrates agriculture and conservation through the management of marshes, seasonal wetlands, tidal marshes, and farming in Yolo County. Credit: Ken James / DWR

There are ways, however, that restoration can continue to support the local economy. For example, one way to rewet subsided peat soil is to convert fields to rice or another form of paludiculture. In addition, converting from growing one crop to another (e.g., corn to rice) does not trigger permitting or CEQA, as state funding for crop conversion is exempt. Growing rice builds soil and sequesters some carbon while the fields are flooded and is a way to maintain agricultural activity and pay for levee maintenance while significantly reducing soil carbon loss (Hart, 2024). There are startup costs, including leveling fields, building berms, and installing water control structures. The Delta Conservancy's Rice Incentive Program currently has funding from the Proposition 4 Climate Bond and Nature-Based Solutions General Fund, with the goal to fund rice conversion projects on deeply subsided areas in the Delta with highly organic soils (Delta Conservancy, 2026)

The Nature Conservancy's Staten Island Wetland Restoration and Carbon Farming for Habitat, Climate, and Communities Project and Metropolitan Water District's Webb Tract Restoration Project are the first "whole island demonstration projects" for rewetting peat

soil, and on both, part of the island will be in rice farming, and some will be managed wetlands. Growing rice is a potential income source to pay for ongoing maintenance of these sites. For both projects, their SERP concurrences and SRGO NOAs include just the activities for wetland restoration, as those are the activities that trigger CEQA compliance and permitting.

Using both strategies for rewetting peat on islands can make these projects more appealing to local agencies, counties, and communities and address concerns about restoration projects. The carbon farming component of the project relates to the carbon stored by the wetlands. As discussed in [*The Delta's Climate Goals and Why Restoration is Urgent*](#) above, carbon markets are a potential way for these sites to generate revenue for the landowner through the sale of carbon credits. In addition, if carbon farming is considered agriculture, and thus maintains a farming element on the land, counties could avoid losing property tax revenue from conversion to a conservation or restoration use.

Engagement and Planning

Another major theme emphasized by Delta agencies is the importance of early and meaningful engagement with local landowners, counties, and reclamation districts. Respondents emphasized that successful projects are those that incorporate local input at the conceptual stage, address potential impacts proactively, and build trust through transparent communication.

The Good Neighbor Checklist was identified as an important but inconsistently applied tool. One agency observed that out of dozens of projects reviewed, only a small number included documentation of Good Neighbor practices. Data from the Delta Stewardship Council on Delta Plan Performance Measures supports this observation, noting that since 2023, ~23% (3 projects out of 13 total filed) of the Delta Plan covered action certifications that included ecosystem protection, enhancement, or restoration used the Good Neighbor Checklist (Delta Stewardship Council, 2026). Additionally, four projects that used the SERP pathway included the checklist, which is consistent with CDFW's request that lead agencies seeking a SERP concurrence conduct outreach consistent with the Good Neighbor Checklist. At the same time, some checklist elements are considered infeasible by project implementers, limiting restoration opportunities. Even so, agencies emphasized the importance of making a good faith effort to engage affected landowners, particularly those with adjoining properties, and to follow the checklist more consistently.

One agency suggested a need for more comprehensive, landscape-level planning that integrates restoration goals with the realities of an evolving Delta, including the continued role of agriculture. While plans exist for updates, current land use frameworks, such as the

Delta Protection Commission's Land Use and Resource Management Plan (LURMP), are outdated, internally inconsistent in some areas, and do not fully account for climate adaptation, subsidence, or the scale of restoration now being pursued. At the same time, state-driven restoration targets may not always reflect local perspectives on appropriate pace or scale, underscoring the need for better alignment between statewide objectives and community priorities. To help educate the community on restoration projects and encourage wildlife-friendly practices, the Delta Stewardship Council and Delta Conservancy regularly host in-person Delta Restoration Forums, where community members can meet restoration practitioners and learn about existing and upcoming projects and funding opportunities.

Finally, local interviewees raised questions about whether existing regulatory processes, including expedited pathways, are effectively serving Delta communities. Some expressed concern that some new CEQA processes may reduce opportunities for early engagement, leaving adjacent landowners insufficiently informed about potential impacts. State agency and local representative interviews called for stronger and more direct outreach with farmers and local communities. As one respondent noted, this may be as simple and effective as "sitting down at their kitchen table" to explain projects, understand concerns, and build relationships. There was also a suggestion for clearer pathways for farmers who wish to participate in or adapt to restoration efforts. Limited capacity at Delta agencies further constrains meaningful review and coordination, in general.

Taken together, these findings underscore that the success of habitat restoration in the Delta is closely tied not only to ecological outcomes, but also to how well projects account for and support the agricultural communities that have long defined the region.

Recommendations

6.1 Delta Protection Commission update their plan (LURMP) to address climate change adaptation and restoration needs and reduce conflicts that can occur with their land use mandate.

6.2 CDFA facilitate a forum in coordination with Delta agencies and local and agricultural interests to advance agricultural practices that can adapt to climate change and land subsidence (e.g., paludiculture, rice farming, etc.).

6.3 Local agencies recognize 'carbon farming' as an agricultural land use in future general plan updates.

Also see Recommendation 3.1 in [Addressing Unique Species-Related Permitting Challenges in the Delta](#) section above for a recommendation involving local interests.

7. Conduct Early, Often, and Meaningful Tribal Engagement and Consultation

Regarding [Tribal Engagement](#), the Delta Stewardship Council adopted a [Tribal Consultation Policy](#) in 2015, held a [Tribal Listening Session](#) in April 2023 and another in April 2025, and adopted the Tribal and environmental justice issue paper and its recommendations (Delta Stewardship Council, n.d.), (Delta Stewardship Council, 2015), (Madueño & Chapin, 2023), (The Delta Stewardship Council, 2025). This [information sheet](#) presents recommendations from the issue paper, grouped into both general recommendations and recommendations for the Delta Stewardship Council (Delta Stewardship Council). In summer 2026, the Delta Stewardship Council hosted the [Interweaving Traditional Knowledge Roundtable Series](#), a series exploring Traditional Knowledge, Tribal history, and collaborative approaches to stewardship in California's Sacramento-San Joaquin Delta and its watershed (Delta Stewardship Council, n.d.) (Delta Stewardship Council, n.d.).



Pilot-scale burn on Twitchell Island, led by California State University, Chico professor and Plains Miwok cultural practitioner Don Hankins. The burn integrated traditional ecological knowledge with modern wetland management. Photo on the left taken March 11, 2026; photo on the right taken June 9, 2026. Credit: Xavier Mascareñas / DWR

CDFW's SERP has been used for four projects in the Delta, including the Metropolitan Water District of Southern California's (MWD) Webb Tract Wetland Restoration Project. CDFW's web page about the SERP says, "CDFW encourages and supports lead agency efforts to meet and confer with local advocacy groups, neighbors, affected public agencies, elected officials, and California Native American Tribes prior to submitting a SERP request to CDFW"

(CDFW, n.d.). All SERP concurrences are available on CDFW's website, and each concurrence document includes a section on Tribal engagement (CDFW, 2026).

As one example of how to do Tribal engagement when using the SERP, MWD paid people for their travel and time to participate in an Ecocultural Working Group, co-led by California Valley Miwok Tribe culture bearer (and Director of Tribal Engagement at River Partners) Austin Stevenot, and Plains Miwok cultural practitioner (and professor of geography and planning at CSU Chico) Don Hankins (Meadows, 2025).

An entity like the Ecocultural Working Group can be helpful for conducting early and meaningful engagement with Tribes in a region like the Delta that has many Tribes with an interest in the area. When engaging with Tribes, it is helpful to have someone with restoration implementation experience who can highlight key details about things like ground disturbance and the planting palette from long, complex documents and project specs. The Ecocultural Working Group requested a change to the project design to avoid a cultural resource, and the change was implemented. Even with funding for time and travel, assisting Tribal members to participate may still be challenging because it requires taking time off from work for in-person meetings. Offering to meet remotely can help make it easier for people to participate.

Using traditional knowledge and practices including cultural burning to steward wetlands can potentially increase the carbon they store long-term. This is being tested on Twitchell Island, where a culturally informed prescribed burn was conducted and where scientists with the University of California, Berkeley and California State University, East Bay are collecting soil cores before and after burns in burned and unburned areas (DWR, 2026).

Involving Tribes in restoration projects is a shared opportunity for cultural revitalization and should be done in the beginning stages of planning a project, and where feasible, before land is acquired. Restoration projects are an important opportunity for Tribes to gain access for gathering culturally important plants and potentially for more co-management of lands in the Delta.

Recommendation

7.1 Agency leadership actively implement the [Secretarial Memo Institutionalizing Cutting Green Tape Improvements](#) related to upholding early, often, and meaningful Tribal consultation as outlined in the [CNRA Tribal Consultation Policy](#) and the [CalEPA Tribal Consultation Policy](#).

8. Anticipated Difficulties Finding a Federal Nexus for Section 7 Endangered Species Act (ESA) Compliance

The U.S. Supreme Court's decision on *Sackett v. EPA* (2023), provided a framework for significantly reducing what can be considered Waters of the United States (WOTUS). This decision also reduces access to the federal Endangered Species Act (ESA) Section 7 interagency consultation pathways restoration projects use to proceed expediently. With a reduction in WOTUS comes a decreased need for Clean Water Act 404 permits from the Army Corps – the typical gateway to the Section 7 process. Projects might instead need to seek ESA compliance under the substantially longer and more complex Section 10 process, which can delay a project for years and add significant additional expense.

The federally listed species most addressed in ESA consultations for projects in the Delta are giant garter snake, Delta smelt, valley elderberry longhorn beetle, salt marsh harvest mouse, California tiger salamander, and California red-legged frog. Although the USFWS has a statewide programmatic restoration consultation that provides environmental protections and efficient authorization for incidental take of these species or their habitat, that programmatic consultation cannot be used without a federal nexus (e.g., federal funding, permitting, etc.) (USFWS and NMFS, 1998).

With the Sackett decision and resulting rulemaking, it is anticipated that fewer projects will be able to access the Section 7 process through an Army Corps 404 permit. While some project proponents say they will look to other federal agency actions to provide a nexus for Section 7 ESA compliance, 38% of survey respondents expect that the changes to the definition of WOTUS will negatively impact their project. Most respondents did not have an alternate plan for finding a federal nexus.

Recommendation

8.1 State funding programs include guidance to project proponents on additional federal nexus options for Section 7 consultation (e.g., federal funding, federal involvement, etc.).

Table of Recommendations

The table below lists the eight categories of recommendations, detailed actions for each category, and involved agencies or authorities. Agencies with the primary responsibility for implementation are listed in the table. Other interests may also need to be engaged to collaborate on implementation.

Abbreviations: CDFW = California Department of Fish and Wildlife, CNRA = California Natural Resources Agency, Water Boards = State Water Resources Control Board and Regional Water Quality Control Boards, Flood Board = Central Valley Flood Protection Board, Army Corps = U.S. Army Corps of Engineers, DSC = Delta Stewardship Council, DPC=Delta Protection Commission, DCC = Delta Counties Coalition, BCDC = San Francisco Bay Conservation and Development Commission.

Recommendations	Agency/Authority									
	Legislative	CDFW	Water Boards	CNRA	Flood Board	Army Corps	DSC	DPC	DCC	BCDC
1. INCONSISTENT USE AND IMPLEMENTATION OF RESTORATION-SPECIFIC PERMITTING TOOLS										
1.1 Agency leaders actively implement the Secretarial Memo on Institutionalizing Cutting Green Tape Improvements and guide and support staff in the consistent and effective use of restoration-specific permitting tools (e.g., RMP, SRGO, etc.), including for mitigation projects.		X	X	X	X					X
1.2 State leadership prioritize and secure funding for dedicated restoration permitting staff to meet state species recovery and habitat restoration goals.	X			X						
1.3 State agencies develop an agency-wide training program for regional managers and staff at state agencies to support comprehensive and consistent implementation of restoration-specific permitting tools.		X	X		X					X
1.4 All regulatory agency leaders implement an expedited internal decision-making process that enables regional staff to quickly resolve questions and policy issues and avoid permitting delays.		X	X		X		X			X
1.5 San Francisco Bay Restoration Authority in collaboration with BRRIT agencies establish expedited timelines and maximize consistent and effective use of efficient restoration permitting tools for BRRIT-reviewed projects.		X	X			X				X

2. NOT ALL AGENCIES HAVE ADEQUATE RESTORATION-SPECIFIC PATHWAYS									
2.1 Flood Board complete its work with project proponents to update its regulations and processes for restoration projects, consistent with other agencies' efficient restoration permitting pathways. Flood Board provide clear guidance materials to improve understanding and implementation of new regulations and processes.					X	X			
2.2 Flood Board explore delegating the Corps' Section 408 authority to itself for restoration projects seeking an encroachment permit and the additional staff capacity needed to handle delegated authorities.				X	X	X			
2.3 Agencies developing or renewing restoration permitting pathways establish consistent, expedited approval timelines and sufficient staffing to meet expedited timelines.	X				X				X
2.4 BCDC develop an efficient permitting process that covers large-scale restoration projects, consistent with other agencies' restoration permitting authorizations.									X
3. ADDRESSING UNIQUE SPECIES-RELATED PERMITTING CHALLENGES IN THE DELTA									
3.1 CNRA, in collaboration with DSC and Delta Conservancy, convene agencies to resolve conflicts to enable restoration in the Delta, while also protecting special-status species, supporting climate resilience, and maintaining viable agriculture. (The Delta Plan Interagency Implementation Committee Restoration Subcommittee could be a potential existing forum for these convenings.)		X	X	X	X	X	X	X	X
<i>The effort should identify specific actions to address habitat conversion, mitigation, work windows, monitoring, and other species-related challenges and provide guidance on geographic priority areas for restoration in the Delta. Swainson's hawk and garter snake are</i>									

priority species to discuss. Include input from CDFW, USFWS, the California Air Resources Board, California Tribes, and local interests (e.g., Delta Protection Commission, Delta Conservancy, Delta Counties Coalition, Delta Stewardship Council, California Department of Water Resources). This planning effort should consider neighboring Habitat Conservation Plans/Natural Community Conservation Plans (HCPs/NCCPs) in San Joaquin, Sacramento, Yolo, Solano, and Contra Costa Counties, and Nature-Based Solutions Climate Targets for the Delta. This effort should include specific actions to address species conflicts and provide guidance on geographic priority areas. CNRA should explore whether this planning effort could be advanced through the development of a Regional Conservation Investment Strategy (RCIS) for DWR's Delta Levees Program.									
4. CHALLENGES FOR PERMITTING AND IMPLEMENTING MITIGATION PROJECTS									
4.1 Agency leaders actively implement the Secretarial Memo on Institutionalizing Cutting Green Tape Improvements and guide and support staff in the consistent and effective use of restoration-specific permitting tools (e.g., RMP, SRGO, etc.), including for mitigation projects. (This recommendation is the same as Recommendation 1.1 under <i>Inconsistent Use and Implementation of Restoration-Specific Permitting Tools</i>)		X	X	X	X				X
4.2 CNRA and CalEPA facilitate state and federal agency coordination to expedite creation of advance mitigation to meet restoration needs in the Delta, either through existing interagency forums or through creation of a new forum. (Existing forums include the Banking Agency Management Team, Project Delivery Team, Interagency Review Teams, and other advance mitigation working groups.)		X	X	X	X	X			
4.3 CDFW leadership establish a process for early coordination between Cutting Green Tape and DWR's Delta Levees Special Projects Program staff on the use of efficient permitting tools and to ensure consistent project requirements.		X							

4.4 The California Legislature, Administration, and agency leadership advance alternative funding for Delta levee maintenance and rehabilitation that aligns regulatory requirements with Cutting Green Tape tools and incentivizes nature-based solutions.	X	X		X						
5. HIGH COSTS OF PROJECT IMPLEMENTATION, MONITORING, AND LACK OF SUFFICIENT FUNDING										
5.1 Agency leadership, California Governor, and State Legislature establish stable funding for Delta restoration through the general fund, Greenhouse Gas Reduction Fund, or other sources sufficient to meet the Delta Plan restoration targets.	X						X	X		
5.2 Agencies develop and fund a long-term monitoring program to evaluate Delta health using alternative funding sources, such as a mitigation fund from development activities.		X		X			X	X	X	
5.3 CNRA, in coordination with DWR and other Delta agencies, develop a strategy to leverage public funding with private funding for the long-term management and maintenance of restoration sites, including through carbon markets.				X			X	X	X	
6. COORDINATION WITH LOCAL INTERESTS AND LAND USE PLANNING										
6.1 Delta Protection Commission update their plan (LURMP) to address climate change adaptation and restoration needs and reduce conflicts that can occur with their land use mandate.								X		
6.2 CDFA facilitate a forum in coordination with Delta agencies and local and agricultural interests to advance agricultural practices that can adapt to climate change and land subsidence (e.g., paludiculture, rice farming, etc.).							X	X	X	

6.3 Local agencies recognize ‘carbon farming’ as an agricultural land use in future general plan updates.									X
7. CONDUCT EARLY, OFTEN, AND MEANINGFUL TRIBAL ENGAGEMENT AND CONSULTATION									
7.1 Agency leadership actively implement the Secretarial Memo on Institutionalizing Cutting Green Tape Improvements related to upholding early, often, and meaningful Tribal consultation as outlined in the CNRA Tribal Consultation Policy and the CalEPA Tribal Consultation Policy .	X	X	X	X	X		X		X
8. ANTICIPATED DIFFICULTIES FINDING A FEDERAL NEXUS FOR SECTION 7 OF THE ENDANGERED SPECIES ACT (ESA) COMPLIANCE									
8.1 State funding programs include guidance to project proponents on additional federal nexus options for Section 7 consultation (e.g., federal funding, federal involvement, etc.).		X	X	X					

The Path Forward

The Delta Plan is built on two coequal goals: a more reliable water supply for California and a protected, restored, and enhanced Delta ecosystem. Restoration is essential to both. In the Delta, climate and restoration goals are backed by legally established targets on defined timelines. This includes the target to rewet 50,000 acres of subsided peat soils by 2045 and restore 60,000 to 80,000 acres of habitat by 2050. Whether these targets are met is affected by how quickly and cost-effectively projects reach implementation. The findings of this paper show that where restoration-specific permitting tools are used as designed, they work, saving proponents months of time and, in some cases, millions of dollars. And the Delta's transformed landscape, aging infrastructure, and climate risks make the demand for restoration substantial. Local communities and agriculture in the Delta face the challenges of climate change and land subsidence, which will require all parties involved to align deliberately with the goal of accelerating the pace and scale of restoration to meet the Delta's coequal goals.

One barrier is that the benefits of efficient permitting tools are not consistently realized. Restoration-specific pathways are still being socialized, and proponents report uncertainty about when agencies will allow their projects to use them. Inconsistent training, staff turnover, limited capacity, and a culture of risk aversion all contribute. These dynamics are shaped in part by potential litigation and accountability concerns from agency staff and leadership. Compounding these issues are gaps where some agencies lack restoration-specific pathways, so efficiency gained in one process is lost during another. To reconcile these inconsistencies, agency leaders can work to institutionalize the guidance and direction included in the [Secretarial Memo](#), create guidance and consistent training so that restoration-specific pathways are used consistently and effectively, and ensure that any agency developing or renewing a permitting pathway has an efficient process with expedited timelines and the staffing to meet them. Better integration and coordination across these steps and at all agencies would close the gaps that currently offset the savings the tools are meant to provide.

Some challenges cannot be permitted away. Sensitive-species obligations, the realities of converting working farmland, a shifting federal legal landscape, and a persistent funding shortfall are structural conditions that call for deliberate, coordinated solutions rather than procedural fixes. Here too the path forward is concrete: CNRA can convene an interagency group to resolve conflicts and accelerate restoration, while also protecting species, supporting climate resilience, and maintaining viable agriculture. In addition, agency leadership, the Governor, and the Legislature can establish stable, long-term funding

through the general fund, the Greenhouse Gas Reduction Fund, and other sources sufficient to meet the Delta Plan's targets. And no project, however well-permitted or well-funded, succeeds without early engagement with the local communities and Tribes who call the Delta home.

Taken together, these recommendations point toward a more proactive restoration future in the Delta—one the state has already recognized is more effective, and less costly, than reacting to climate-driven disasters after they arrive. Restoration in service of the coequal goals turns a carbon source back into a carbon sink, shores up the levees that protect millions of people and a portion of the water supply for more than 27 million Californians, and strengthens the resilience of a region central to the state's agricultural economy. Many of the tools to act proactively already exist. With commitment to use them consistently, fund them steadily, and pair them with genuine partnership on the ground, the Delta can meet its climate and habitat goals while honoring the balance of interests—residents, ecosystems, agriculture, water, and infrastructure—that makes it an evolving place worth protecting.



Aerial view of wetlands at Tide's End Restoration Project, which integrates agriculture and conservation through the management of marshes, seasonal wetlands, tidal marshes, and farming in Yolo County.
Credit: Ken James / DWR

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Appendices

Appendix A. Authorizations Typically Needed for Wetland Restoration in the Delta or Suisun Marsh

Authorization/Agency/Regulatory Requirement	Percentage of Project Proponents Who Use the Process ≥ 50% of the Time
California Environmental Quality Act (CEQA)	100%
Clean Water Act Section 401 Water Quality Certification (Water Boards)	94%
Federal Endangered Species Act (USFWS)	94%
California Endangered Species Act (CDFW)	88%
Common Species/Species of Special Concern (CDFW)	82%
California Fish and Game Code Section 1600 Lake and Streambed Alteration (CDFW)	81%
Clean Water Act Section 404 (Water Boards)	76%
Fully Protected Species (CDFW)	71%
Certification of Consistency with the Delta Plan (Delta Stewardship Council)	71%
National Historic Preservation Act Section 106 (SHPO)	65%
Porter-Cologne Water Quality Act (Water Boards)	59%
Federal Endangered Species Act (NMFS)	59%
Native Plant Protection Act/Rare Plants (CDFW)	59%
Clean Water Act Section 402 NPDES (Water Boards)	53%

Appendix A Table Footnotes:

1. Authorizations “Typically” needed means that 50% or more of survey respondents indicated that they need to get an authorization 50% or more of the time.

2. Other regulatory requirements that were less common and not listed in the table above include: National Environmental Policy Act (NEPA), Section 14 of the Rivers and Harbors Act (Section 408/Army Corps), Encroachment Permit (Central Valley Flood Protection Board), San Francisco Bay Conservation and Development Commission (BCDC) Permit, Land Use Lease or Amendment (State Lands Commission), Delta Levees Program (DWR and CDFW), Federal Clean Air Act – Air Quality Management District (AQMD), Grading Permit (City or County), Conditional Use Permit (City or County), Farmland Protection Policy Act (NRCS).

3. Project proponents were asked to indicate how frequently they needed to comply with certain regulatory requirements or authorizations. Project proponents were asked to indicate frequency on a scale from Never (0%), Rarely (less than 10%), Occasionally (30%), Sometimes (50%), Frequently (70%), Usually (90%), and Always (100%). Percentages from Sometimes to Always were summed, as were frequencies from Never to Occasionally. Total percentages from Sometimes through Always at or above 50% were labeled as “Typically Needed”. For example, for Clean Water Act Section 401 Water Quality Certification, 5.9% of project proponents indicated that they had to comply Occasionally (30% of the time), 23.5% indicated they had to comply Sometimes (50% of the time), 29.4% indicated that they had to comply Usually (90% of the time), and 41.2% indicated they had to comply Always (100% of the time). In summary, for the Section 401 Water Quality Certification - 94% of project proponents indicated that this was required more than 50% of the time, while 6% of project proponents indicated that this was required less than 50% of the time.

4. Percentages have been rounded to the nearest whole number.

Appendix B. Special-Status Species Mentioned by Study Participants as Impacting Project Design

Common Name	Scientific Name	Listing under ESA	Listing under CESA	Other Status
Mammals				
Salt Marsh Harvest Mouse	<i>Reithrodontomys raviventris</i>	Endangered	Endangered	Fully Protected
Amphibians				
California Red-Legged Frog	<i>Rana draytonii</i>	Threatened	None	
California Tiger Salamander – Central California DPS	<i>Ambystoma californiense</i>	Threatened	Threatened	
Reptiles				
Alameda Whipsnake	<i>Masticophis lateralis euryxanthus</i>	Threatened	Threatened	
Giant Garter Snake	<i>Thamnophis gigas</i>	Threatened	Threatened	
Western Pond Turtle	<i>Actinemys marmorata</i>	Candidate for Threatened	None	
Birds				
Burrowing Owl	<i>Athene cunicularia</i>	None	Candidate Endangered	

Common Name	Scientific Name	Listing under ESA	Listing under CESA	Other Status
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	None	Threatened	
Greater Sandhill Crane	<i>Antigone canadensis tabida</i>	None	Threatened	
Swainson's Hawk	<i>Buteo swainsoni</i>	None	Threatened	
Fish under USFWS Jurisdiction				
Delta Smelt	<i>Hypomesus transpacificus</i>	Threatened	Endangered	
Longfin Smelt	<i>Spirinchus thaleichthys</i>	Candidate for Threatened	Threatened	
Fish under NMFS Jurisdiction				
Chinook salmon – Central Valley spring-run ESU	<i>Oncorhynchus tshawytscha</i> pop. 11	Threatened	Threatened	
Chinook salmon - Sacramento River winter-run ESU	<i>Oncorhynchus tshawytscha</i> pop. 7	Endangered	Endangered	
Green sturgeon - Southern Distinct Population Segment (sDPS)	<i>Acipenser medirostris</i> pop. 1	Threatened	None	
Steelhead - Central Valley DPS	<i>Oncorhynchus mykiss irideus</i> pop. 11	Threatened	None	

Common Name	Scientific Name	Listing under ESA	Listing under CESA	Other Status
Insects				
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	None	
Plants				
Alkali milk-vetch	<i>Astragalus tener var. tener</i>	None	None	Rare Plant Rank 1B.2
Baker's navarretia	<i>Navarretia leucocephala ssp. bakeri</i>	None	None	Rare Plant Rank 1B.1
Bearded popcornflower	<i>Plagiobothrys hystriculus</i>	None	None	Rare Plant Rank 1B.1
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	None	Endangered	Rare Plant Rank 1B.2
Bolander's water-hemlock	<i>Cicuta maculata var. bolanderi</i>	None	None	Rare Plant Rank 2B.1
Brittlescale	<i>Atriplex depressa</i>	None	None	Rare Plant Rank 1B.2
Colusa grass	<i>Neostapfia colusana</i>	Threatened	Endangered	Rare Plant Rank 1B.1

Common Name	Scientific Name	Listing under ESA	Listing under CESA	Other Status
Delta mudwort	<i>Limosella australis</i>	None	None	Rare Plant Rank 2B.1
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	None	None	Rare Plant Rank 1B.2
Ferris' milk-vetch	<i>Astragalus tener</i> var. <i>ferrisiae</i>	None	None	Rare Plant Rank 1B.2
Heckard's pepper-grass	<i>Lepidium latipes</i> var. <i>heckardii</i>	None	None	Rare Plant Rank 1B.2
Hinds' black walnut	<i>Juglans hindsii</i>	None	None	
Hogwallow starfish	<i>Hesperervax caulescens</i>	None	None	Rare Plant Rank 4.2
Legenere	<i>Legenere limosa</i>	None	None	Rare Plant Rank 1B.1
Mason's lilaeopsis	<i>Lilaeopsis masonii</i>	None	Rare	Rare Plant Rank 1B.1
Saline clover	<i>Trifolium hydrophilum</i>	None	None	Rare Plant Rank 1B.2
Solano grass	<i>Tuctoria mucronata</i>	Endangered	Endangered	Rare Plant Rank 1B.1

Common Name	Scientific Name	Listing under ESA	Listing under CESA	Other Status
Suisun marsh aster	<i>Symphyotrichum lentum</i>	None	None	Rare Plant Rank 1B.2
Woolly rose-mallow	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	None	None	Rare Plant Rank 1B.2