



DELTA STEWARDSHIP COUNCIL

FY 2018-2019 Delta Crosscut Budget Report

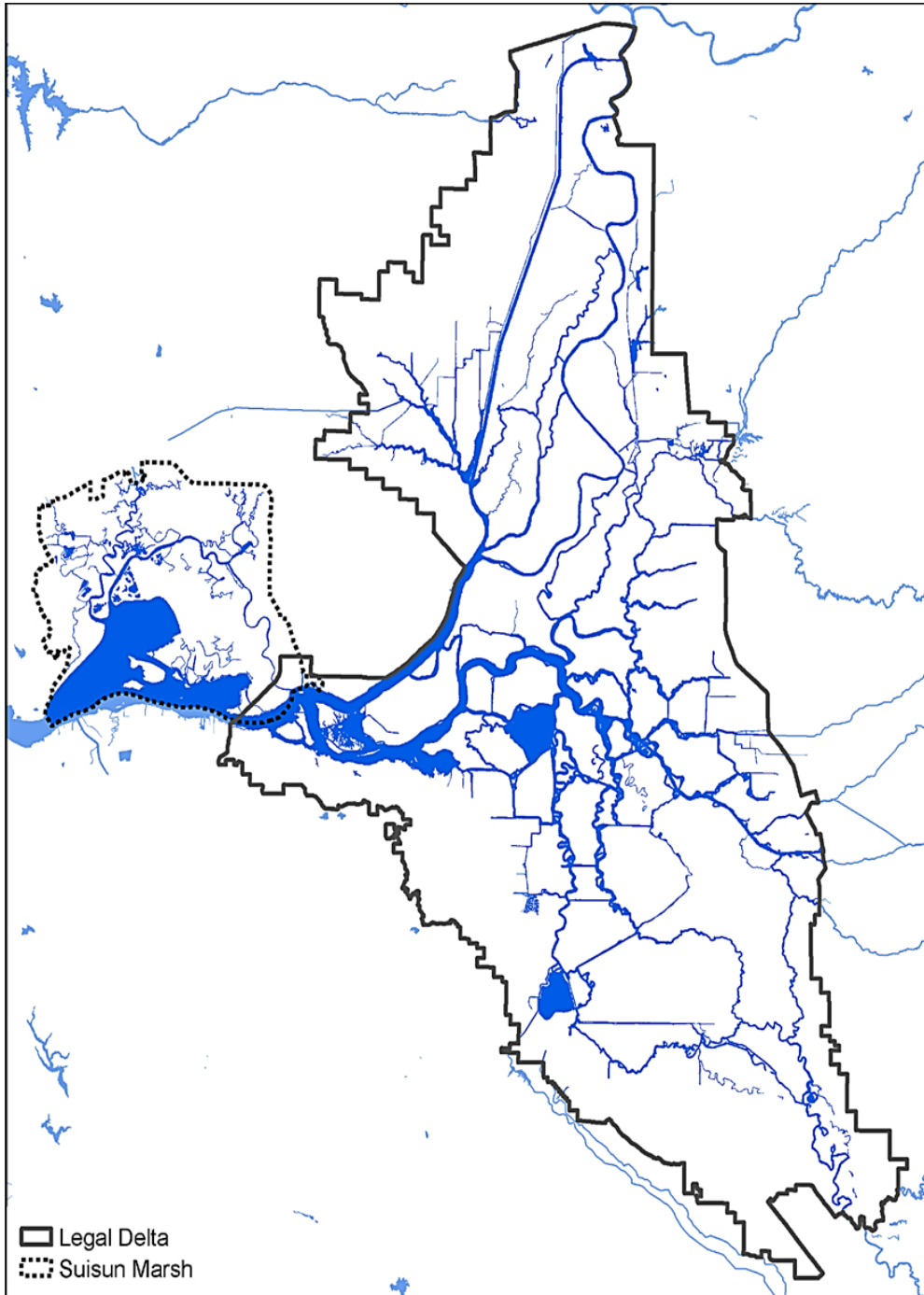
Building an Effective Delta Science Enterprise





PHOTO CREDIT:
Photos throughout this report are courtesy of the California Department of Water Resources.

➤ Sacramento-San Joaquin Delta Planning Area Map



The geographic boundary for the Delta Crosscut Budget is the legal Delta and Suisun Marsh. This is the area referred to as the Sacramento-San Joaquin Delta or simply, “the Delta” throughout the report. Source: DSC 2018a (image modified for accessibility).

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> Foreword



State and federal agencies, state water contractors, and academic institutions fund and implement science programs and activities across the Sacramento-San Joaquin Delta. Together, these activities and organizations constitute the Delta science enterprise¹. Despite the importance of science to regional management and resource protection, a comprehensive understanding of funding and how activities are prioritized has remained elusive.

In 2018, the Delta Science Funding and Governance Initiative (Initiative) was launched with the support of the Delta Plan Interagency Implementation Committee (DPIIC) to coordinate an examination of funding within the Delta science enterprise. The Initiative was coordinated by the Delta Stewardship Council and included representatives from federal and state agencies and environmental and water user stakeholders. In April 2019, the Initiative issued a white paper, *Funding Science to Meet Tomorrow's Challenges*, with 7 findings and 10 recommendations that focused on understanding the sources of science funding, improving the tracking of that funding, and ultimately, increasing the efficacy of funding. A subsequent [implementation report](#) with refined recommendations was released in November 2019 and identified three priority near-term actions as foundational to building long-term and sustainable science funding for the Delta:

- *Improve efficiency*: Implement common accounting and reporting protocols and coordinate critical review of science funding in the Delta;
- *Prioritize*: Identify and prioritize key management questions for water resilience and science investments as part of updating the multi-agency Science Action Agenda for 2022-2027 in the Delta; and
- *Look forward*: Conduct a workshop to assess the evolving science needs in the Delta in a rapidly changing environment and develop a science needs assessment based on workshop proceedings.

This report addresses the first priority action, focused on improving efficiency and standardization. The inaugural Delta Crosscut Budget Report for fiscal year (FY) 2018-2019 represents DPIIC's first attempt to establish and implement a process for collecting data related to Delta science funding. This effort is intended to encompass all of the Delta science enterprise and represents contributions from many DPIIC agencies.

DPIIC intends to collect and report this information annually, making improvements and adapting the process as needed. In early 2021, the participating agencies will be asked to report their FY 2019-2020 expenditures on science in the Delta with the intention of presenting the next Delta Crosscut Budget to DPIIC by mid-2021.

With the collection and reporting of multiple years of science expenditures, the information

¹ Science enterprise – the collection of science programs and activities that exist to serve managers and stakeholders in a regional system.



can be analyzed and used to guide long-term science funding and to help in the formulation of policy recommendations. With just one year of reporting — and taking into account the likelihood of both state and federal budget cuts due to COVID-19 impacts, it is premature to make any funding or policy recommendations at this time. This report can be viewed as an initial data point informing our effort to make science funding more effective.

The Delta Stewardship Council believes in the importance of the Initiative as part of the state and federal agencies' partnership to achieve the coequal goals of a more reliable water supply and protection, restoration, and enhancement of the Delta ecosystem. We were pleased to spearhead the collection, analysis, and reporting of this information.

We look forward to continuing efforts with DPIIC leaders to annually report this information in a transparent and useable way as we work together to build a more effective Delta science enterprise.

Susan Tatayon,
Delta Stewardship Council and DPIIC Chair

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> Delta Crosscut Budget Results

This Delta Crosscut Budget Report provides a summary of state, federal, and local investments in science activities in the Delta during the state fiscal year July 2018 - June 2019 (FY 2018-2019). Eight agencies (see box below for agencies and associated acronyms) reported their funding activities (as described on page 4) for this fiscal year.

Funding Agencies	
Council	> Delta Stewardship Council
DFW	> California Department of Fish and Wildlife
DWR	> California Department of Water Resources
NMFS	> National Marine Fisheries Service
Reclamation	> US Bureau of Reclamation
SWC	> State Water Contractors
SWRCB	> State Water Resources Control Board
USFWS	> US Fish and Wildlife Service



Agencies reported their funding for the following categories² of science activities (project category):



- **Core Monitoring:** Monitoring that provides information on a seasonal and daily basis to inform specific decisions, such as operations for water supply and fish species protective actions. Core monitoring is conducted almost entirely for regulatory compliance.
- **Status and Trends Monitoring:** Monitoring that contributes to long-term datasets used to compare environmental conditions (e.g., species populations, water quality) over time. This information improves system understanding and can be applicable to a variety of management decisions rather than a specific action. Like core monitoring, status and trends monitoring are also primarily required for regulatory compliance.
 - **Synthesis:** The combining of diverse information from multiple sources into one concept, model, finding, or report. Synthesis can take many forms from (1) analyzing and integrating data across multiple datasets to (2) summarizing findings across a range of sources to help support decision-making. Synthesis can be tied to regulatory compliance or non-regulatory activities.
- **Targeted Foundational Research:** Science activities that provide the knowledge and context to inform long-term management and policymaking, while also identifying and understanding emerging issues, so that natural resource managers can be better prepared for future challenges. This research is not typically linked to regulatory requirements.
- **Targeted Immediate Research:** Science activities that aim to answer current management questions by providing evidence to support or refute hypotheses. This research is not typically linked to regulatory requirements.

The following funding analysis and reporting focuses on science activity categories, total expenditures, and

funding sources. The funding template included other metrics, but those were omitted from the report's analysis because reporting in those categories was inconsistent across agencies; partial information on those metrics is available within separate appendices to this report.

² The white paper, *Funding Science to Meet Tomorrow's Challenges*, provided these standardized definitions for categories of science activities. Expenditure for habitat restoration or staff are not included as part of the science activities captured in the reporting. The categories were approved at the April 2019 DPIIC meeting.

Table 1. Total Science Funding Expenditures (in millions of dollars) across Project Categories by State and Federal Agencies and the State Water Contractors. †

Total Expenditures (Millions \$)	State	Federal	State Water Contractors	TOTAL
Core Monitoring	28.5	8.5	-	37.1
Status and Trend Monitoring	5.4	4.6	-	10.0
Synthesis	3.3	7.4	0.1	10.9
Targeted Foundational Research	9.5	5.6	1.2	16.3
Targeted Immediate Research	4.0	10.9	0.2	15.1
Data Not Available	-	-	0.2	0.2
TOTAL	50.7	37.1	1.6	89.4

† Table 1 does not include costs associated with habitat projects. Additionally, all amounts are rounded to the nearest hundred thousand.

Table 1 (above) provides an overview of the total expenditures in science funding across the different categories of science activities (described on page 4) in FY 2018-2019. The table and Figure 1 (below) group the four state agencies' and three federal agencies' funding into "state" and "federal" contributions, respectively, and report the State Water Contractors (SWC), a non-profit association, separately. State agencies contributed 57 percent of all Delta science funding, \$50.7 million, just over half of which funded core monitoring activities. Federal agencies contributed 41 percent of total science funding, \$37.1 million, 29 percent of which funded targeted immediate research. The SWC contributed \$1.6 million, 75 percent of which funded targeted foundational research. Total expenditures across all funding organization types and project categories come to \$89.4 million.

Figure 1. Total FY 2018-2019 Expenditures by State Agencies, Federal Agencies, and State Water Contractors

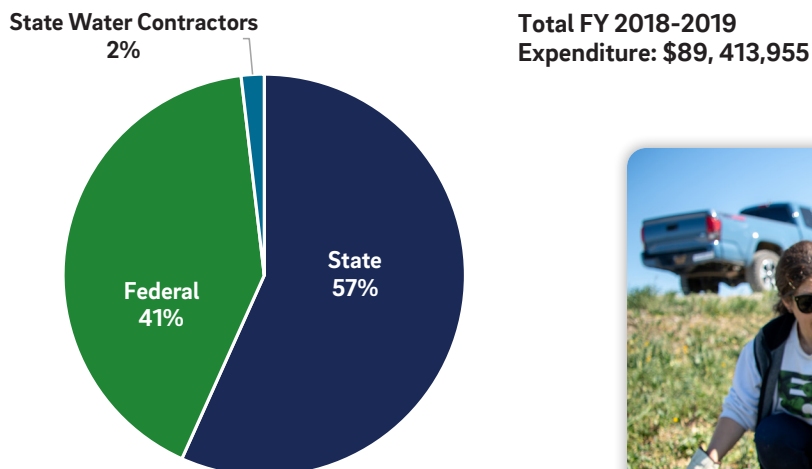
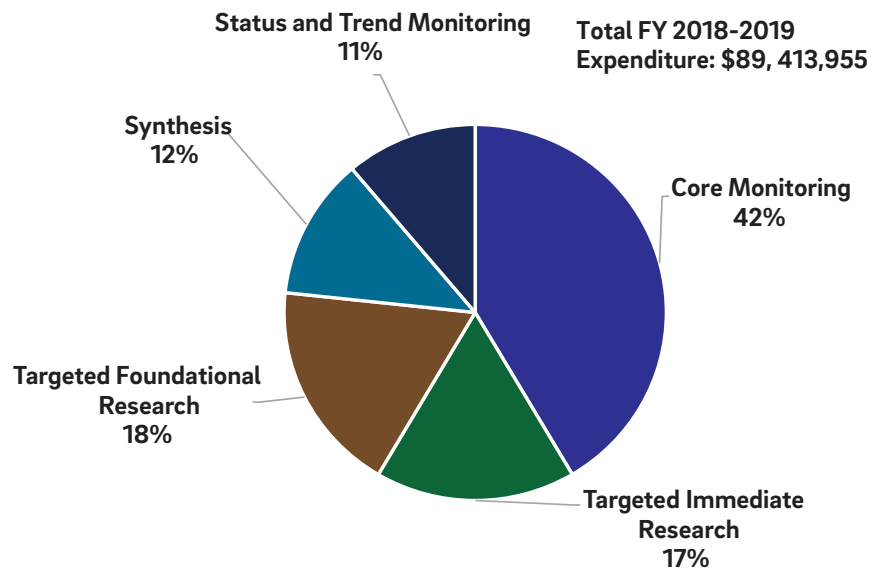
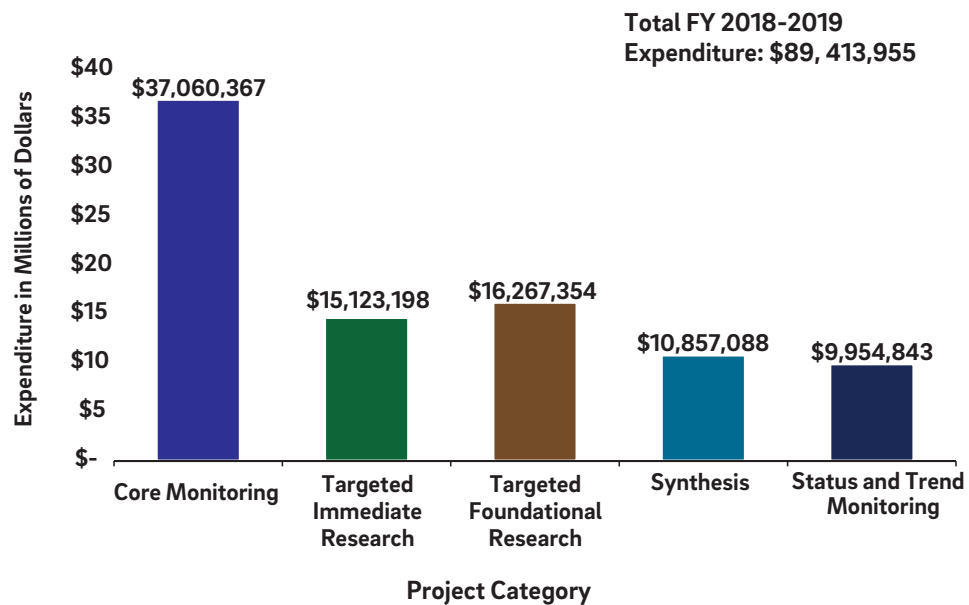


Figure 2. Total FY 2018-2019 Expenditures by Project Category*



Figures 2 and 3 illustrate that Core Monitoring comprises 42 percent of all FY 2018-2019 expenditures averaged across funding agencies. Targeted Immediate Research and Targeted Foundational Research are each just below 20 percent of total expenditures. Synthesis and Status Trend Monitoring each make up about 10 percent of total expenditures.

Figure 3. Total FY 2018-2019 Expenditures by Project Category*



* Due to absence of data on project category, \$151,000 (<1%) of total expenditures are not represented in Figures 2 and 3.

Figure 4. Total FY 2018-2019 Expenditures by Funding Agency

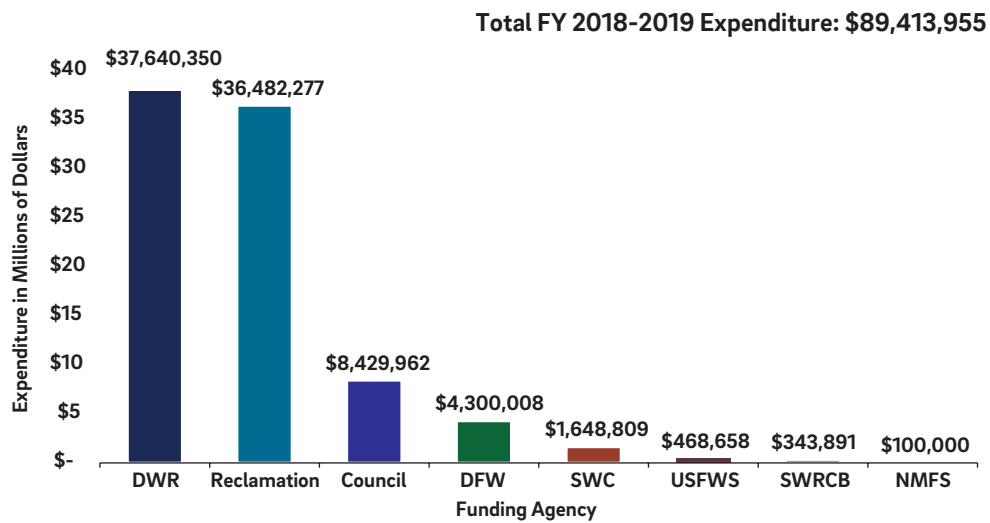
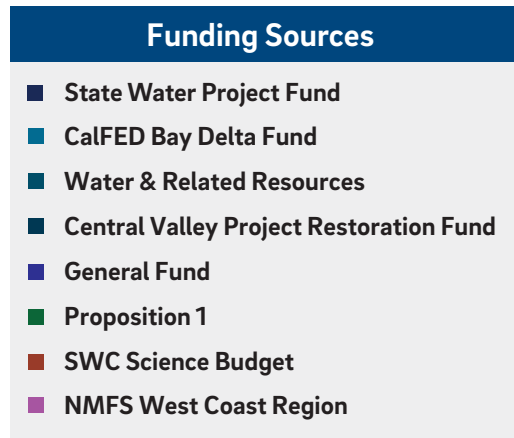


Figure 4 illustrates that DWR and Reclamation have the highest single-agency expenditures for FY 2018-2019. The Council, DFW, and SWC have the next highest expenditures. USFWS, SWRCB, and NMFS all have expenditures of less than a million dollars.



Figure 5. Total FY 2018-2019 Expenditures by Funding Agency and Funding Source



**Total FY 2018-2019
Expenditure: \$89, 413,955**

Figure 5 identifies the source of the funds used by each funding agency for science expenditures in fiscal year 2018-2019. At right is the legend for the funding sources. As seen in Table 2, each funding agency is contributing funds from a single funding source with with exception of Reclamation, which divides its expenditures amongst three funding sources.

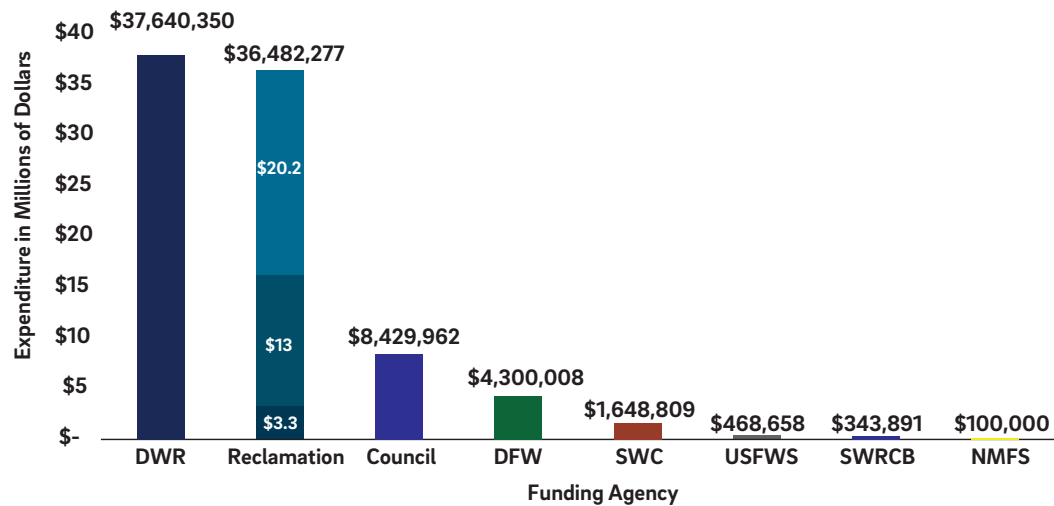


Table 2. Funding Source by Agency

Table 2 provides an overview of the funding sources utilized for science expenditures during FY 2018-2019 and which agencies accessed each one.

Agency	Funding Source
<i>CA Department of Water Resources</i>	➤ State Water Project Fund
<i>U.S. Bureau of Reclamation</i>	➤ CalFed Bay Delta Fund ➤ Water & Related Resources ➤ Central Valley Project Restoration Fund
<i>Delta Stewardship Council</i>	➤ General Fund
<i>CA Department of Fish and Wildlife</i>	➤ Proposition 1
<i>State Water Contractors</i>	➤ State Water Contractors Science Budget
<i>State Water Resource Control Board</i>	➤ General Fund
<i>National Marine Fisheries Service</i>	➤ NMFS West Coast Region

Figure 6. US Bureau of Reclamation FY 2018-2019 Expenditure by Funding Source

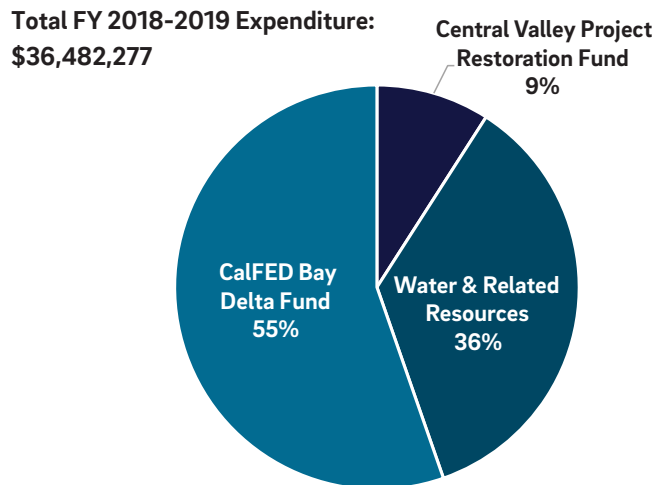
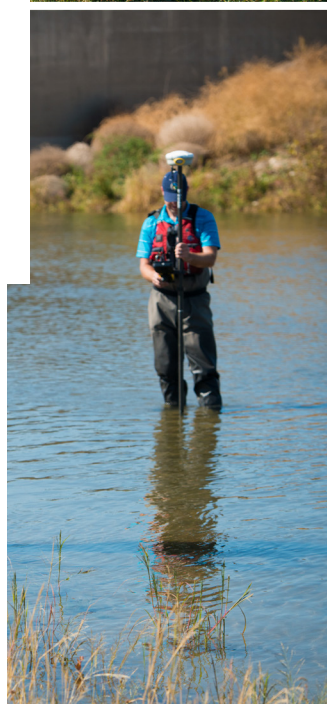


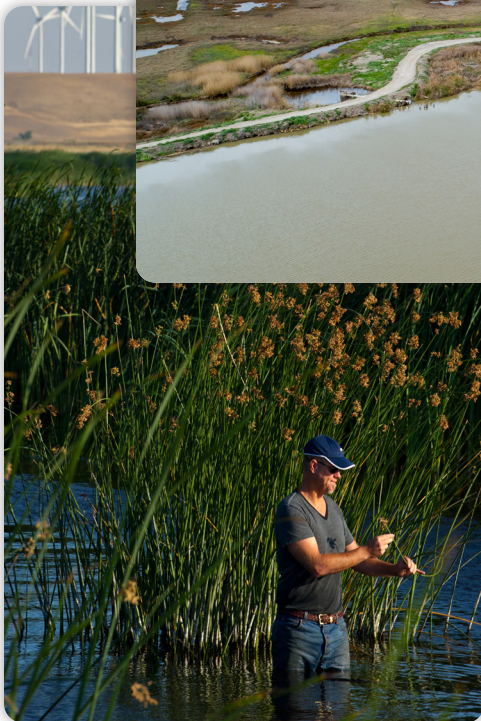
Figure 6 illustrates that over half of all Reclamation FY 2018-2019 expenditures were from the CalFED Bay Delta Fund. Water and Related Resources funding supported around one third of Reclamation expenditures. The Central Valley Project Restoration Fund was used for the remaining nine percent of USBR funding.



➤ Accounting and Reporting Protocols



The following is a summary of the common accounting and reporting protocols used by participants in the Delta Crosscut Budget. These protocols provided participants with a universal and consistent method for accounting and reporting science expenditures for the Delta. All reporting agencies agreed to use the State's fiscal year to provide a common reporting period.



DPIIC representatives from the Delta Stewardship Council, California Department of Water Resources, California Department of Fish and Wildlife, U.S. Fish and Wildlife, NOAA National Marine Fisheries Service, U.S. Geological Survey, U.S. Bureau of Reclamation (Reclamation), and state and federal water contractors collaborated on the development of these protocols.



The following common accounting and reporting protocols were developed:

1. Standard Reporting Template
2. Standard Definitions
3. List of Reporting Participants
4. Definition of Science Categories for Reporting

Standard Reporting Template

The standard reporting template includes fields for funding agencies to provide information regarding the following:

- **Project Category:** Primary, secondary categories, and sub-purposes are identified, where appropriate, for those actions that meet multiple needs.
- **Geographic Scope:** Actions are limited to those directly/mainly in the Sacramento-San Joaquin Delta/Suisun Marsh.
- **Appropriating Agency:** Actions are only reported by the agency that appropriated the funding to implement the work.
- **Timing of Expenditure:** Expenditures and obligations reported are based on the State fiscal year (July 1 to June 30).
- **Audit Codes & Regulations:** Expenditures and obligations reported are consistent, to the extent practicable, with the Code of Federal Regulations (CFR) 200 (Uniform Administrative Requirements, Cost Principles, and Audit requirements for Federal Awards).

List of Reporting Participants

DPIIC agencies and the State Water Contractors participated in the first round of reporting. Some DPIIC agencies, however, did not report because they either did not fund any science during FY 2018-2019 or were unable to provide information for this reporting period. The participating agencies for FY 2018-2019 were the Delta Stewardship Council, the California Department of Fish and Wildlife, the California Department of Water Resources, the National Marine Fisheries Service, the US Bureau of Reclamation, the State Water Contractors, and the California State Water Resources Control Board. These organizations, along with their associated acronyms used in this report, are also listed in the box on page 3.



➤ Data Collection and Quality

Process for Data Collection

Delta Stewardship Council staff worked with DPIIC representatives to collect the data. Participating agencies were asked to complete the standard reporting template. The appropriating agency - not the implementing agency - reported expenditures.

Process for Quality Accuracy and Quality Control

A finance team from the Reclamation reviewed the data, identifying—where possible— potential inaccuracies, data gaps, and potential double-counting of expenditures. Notes related to these issues are with the funding data in the separate appendices.

➤ Future Improvements

In developing this first Annual Report, the participating agencies identified several possible areas of improvements for future reports; those initial ideas are shared in the separate appendices of this report. In addition, in order to improve this Annual Report, a questionnaire will be sent to the DPIIC membership to get feedback on potential changes and additional areas of emphasis.







DELTA STEWARDSHIP COUNCIL