

2025

Agenda Item: 10  
Meeting Date: March 27,  
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# Delta Research Awards and Delta Science Fellows



Delta  
Science  
Program

DELTA STEWARDSHIP COUNCIL

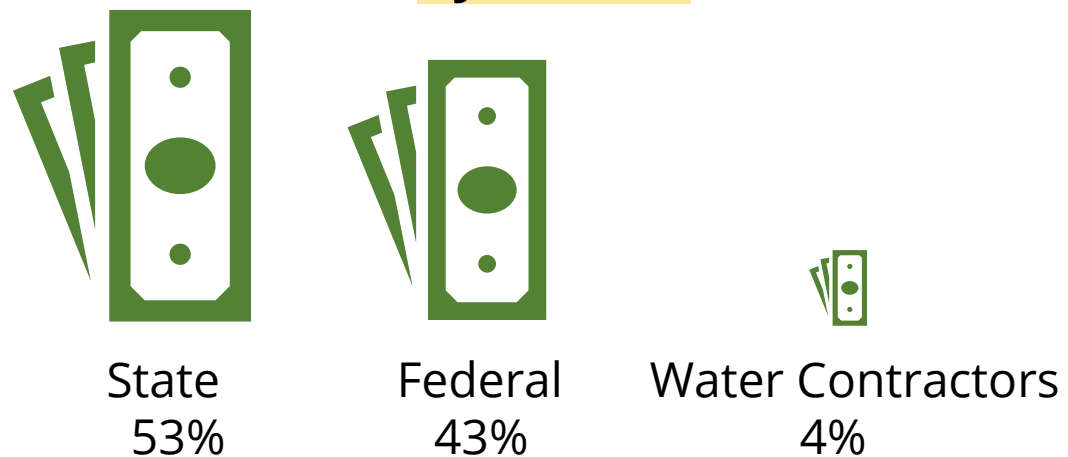
# BACKGROUND



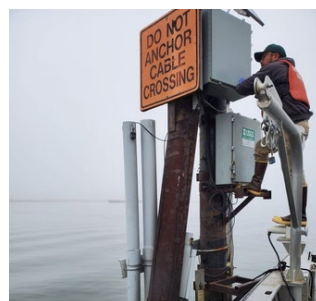
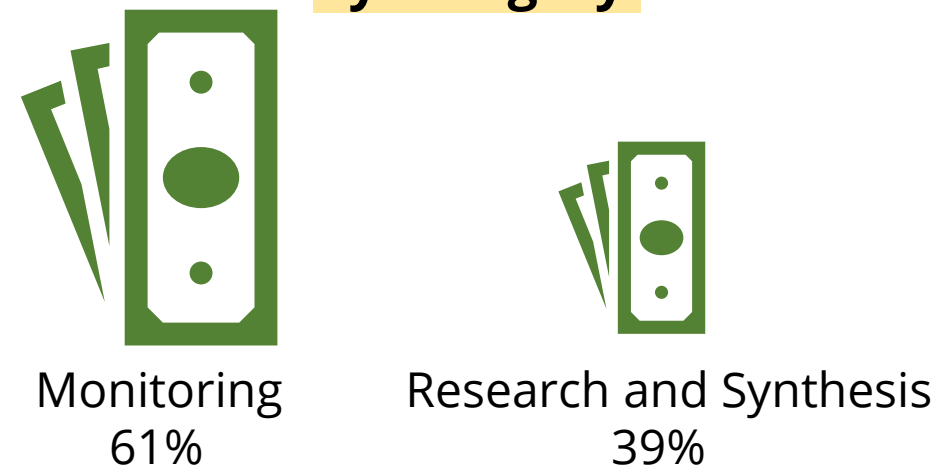
# Funding Science in the Delta

- In FY 22-23, Delta science expenditures totaled **\$143 million**

## By source:



## By category:



# The Delta Science Program's (DSP) Role in Funding Science

## Why we fund research:

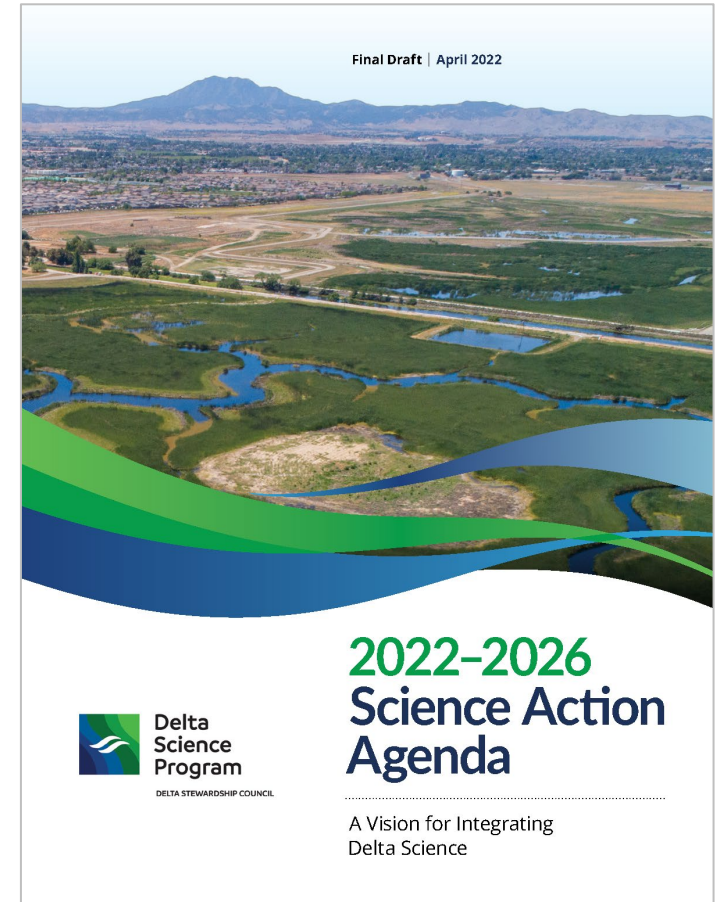
- The DSP's mission is to provide the best possible science to inform water and environmental decision-making in the Delta...by funding research

## What we fund:

- **Science Action Agenda (SAA)** identifies management-relevant research priorities
- DSP targets the **"gaps and the glue"**

## How we fund:

- Main funding mechanism: competitive solicitation
- **Partnerships** are key



**The SAA is developed *by* the community, *for* the community, and facilitated by DSP**

# SUCCESSSES



# Spotlight on Funding Successes...



**“Operation Baseline”  
for EchoWater WWTP project  
(2016)**

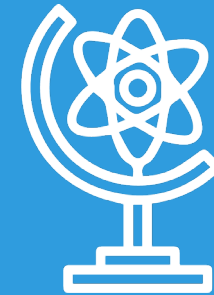
**Los Angeles Times**  
Something was killing baby salmon. Scientists traced it to  
a food-web mystery



A tray at the Livingston National Fish Hatchery near Shasta Dam contains offspring of endangered female winter-run Sacramento River chinook

**Vitamin deficiency in  
winter-run Chinook Salmon  
(2020)**

# THE AWARDS



# Funding Programs & Processes

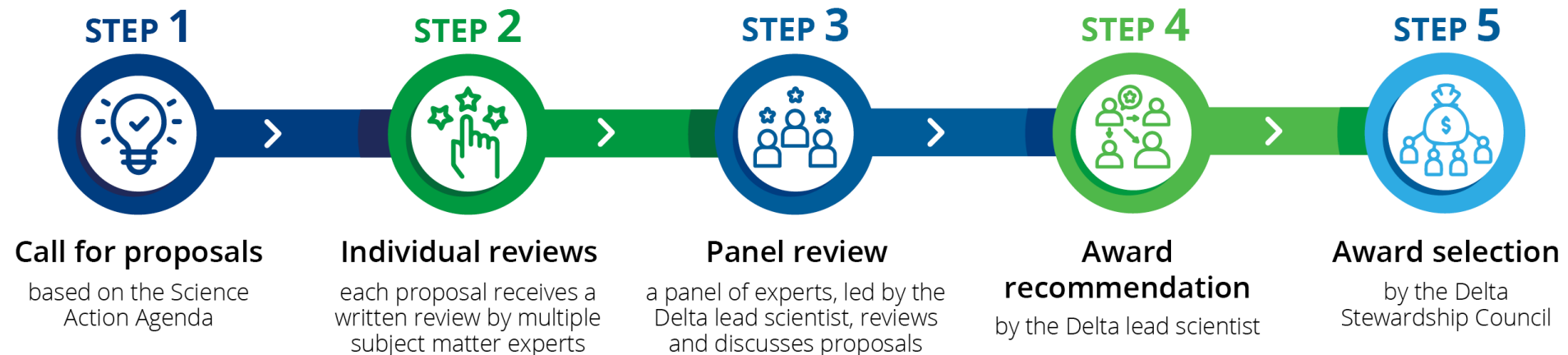
## Delta Research Awards

- **Demand:** 66 apps (requesting \$60M)
- **Awarding:** 10 projects (\$7.8M)

## Delta Science Fellows

- **Demand:** 23 apps (requesting \$4.4M)
- **Awarding:** 6 projects (\$1M)

## Funding Process

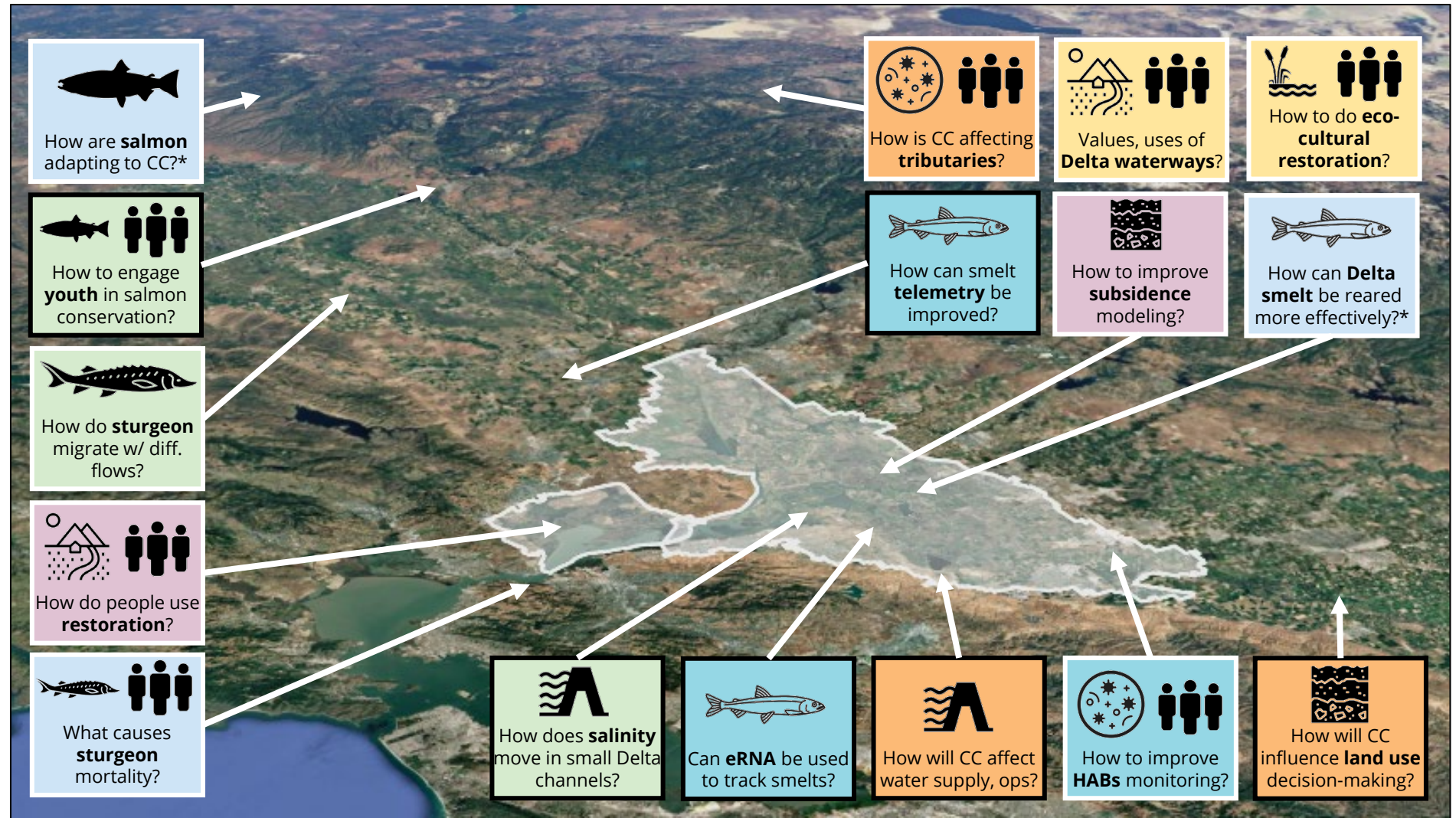




# The Awards

## Science Action Agenda MANAGEMENT NEEDS

1. Improve large-scale research and watershed data integration
2. Advance modeling, monitoring, and response tools
3. Approaches for managing Delta as a social-ecological system
4. Understand social dynamics for effective management
5. Enhance approaches to ecosystem health and native species recovery
6. Address climate uncertainties and adaptation strategies



\*Funded by State Water Contractors

# Award Snapshots



## RESTORATION

Eco-cultural tule burning for effective, equitable management

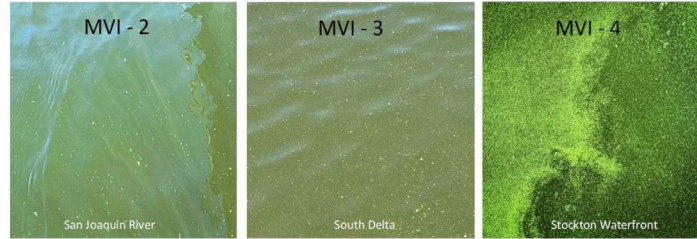
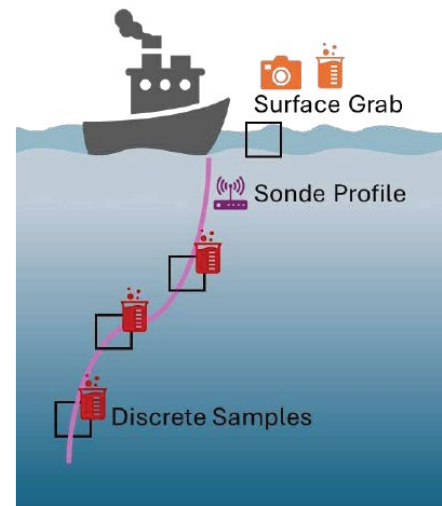


Figure 2. *Microcystis* colony morphologies and potential MVI rankings. Photographs by Ellen Preece.



## WATER QUALITY

Improving harmful algal bloom monitoring



## FISH

Tracking fish presence using environmental RNA

# Award Deliverables

## For decision-makers:

- Policy briefs (e.g., sturgeon)
- Dashboard (e.g., Delta headwaters)
- Enhanced EcoAtlas Project Tracker tool (e.g., tule)
- Reports (e.g., floodplains)



## For the public:

- Public workshops, seminars
- Community science (e.g., sturgeon)
- Web applications (e.g., HABs)

## For scientists:

- Scientific publications (all)
- Toolkits (e.g., eRNA; acoustic tags)

# THE PEOPLE



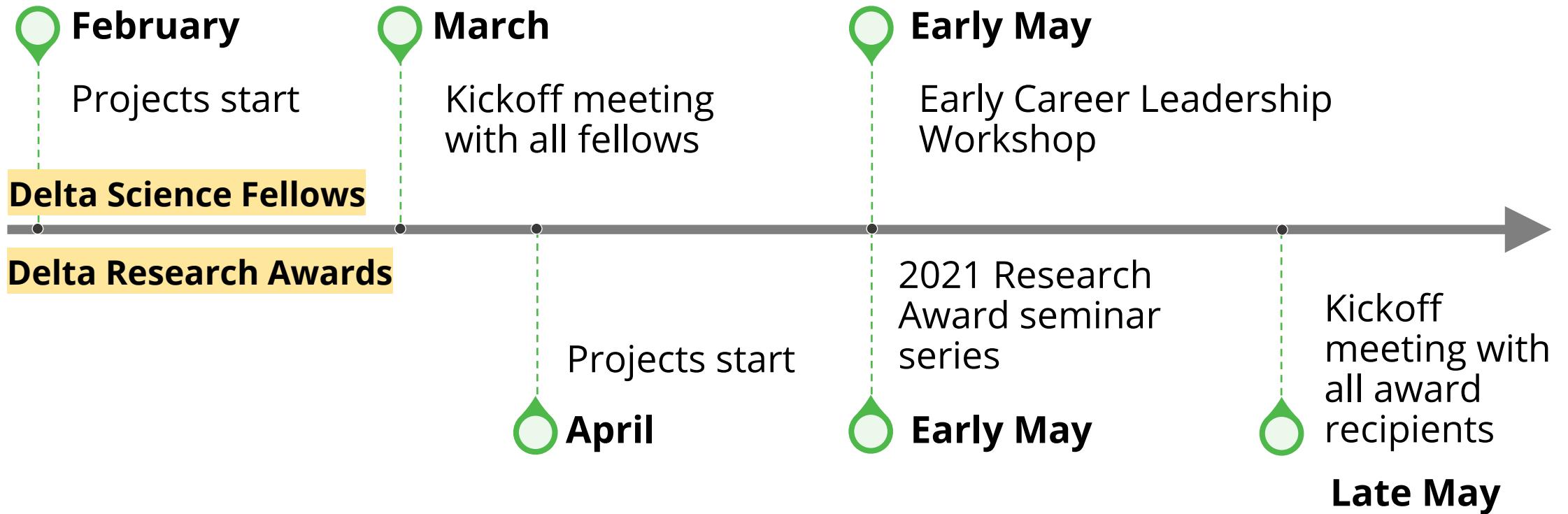
# The People Behind the Work... All 76 of Them!



# NEXT STEPS



# Next Steps & Engagement Opportunities

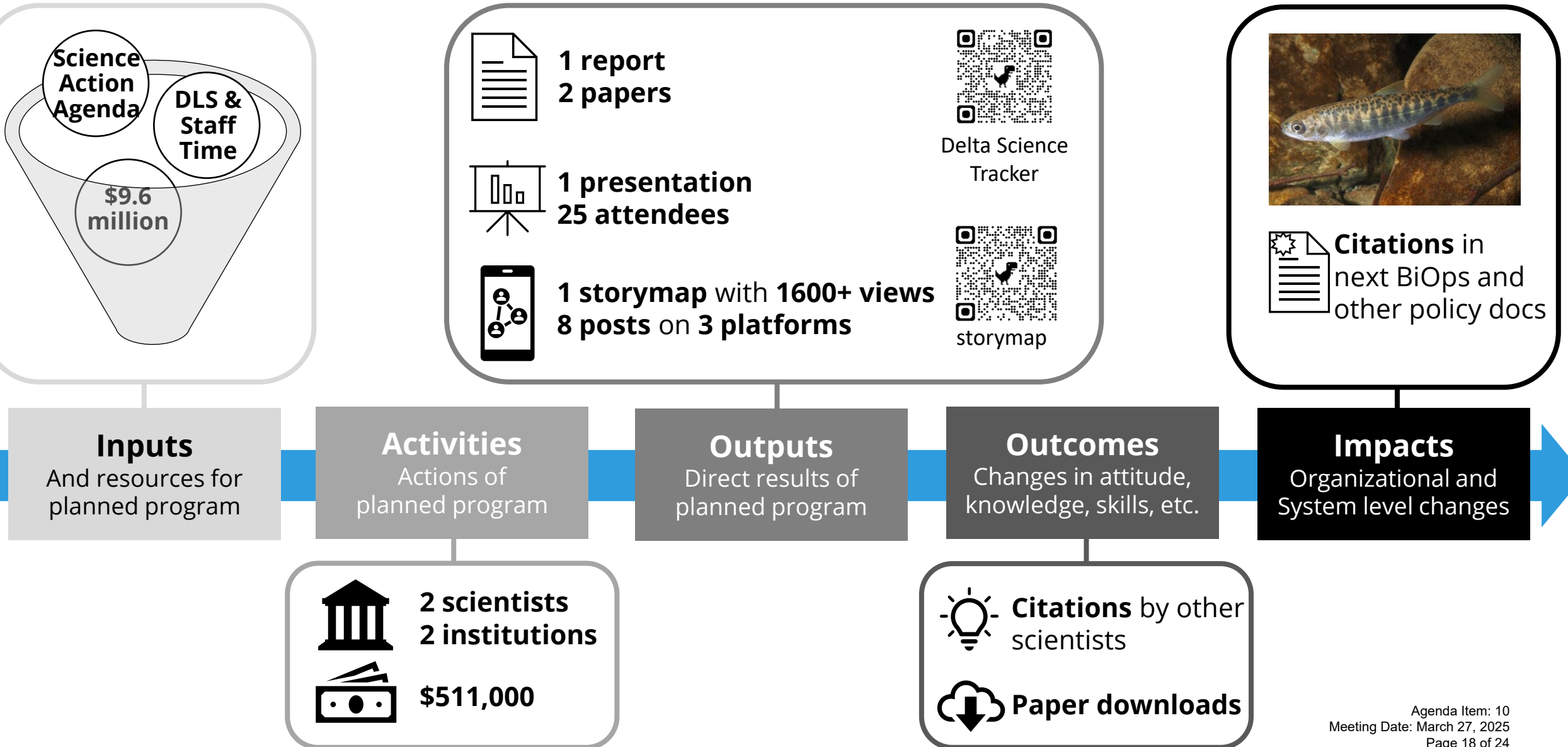


**THANK YOU!**



# Extra Slides

# Defining Success: Evaluating Impact of DSP Funded Research

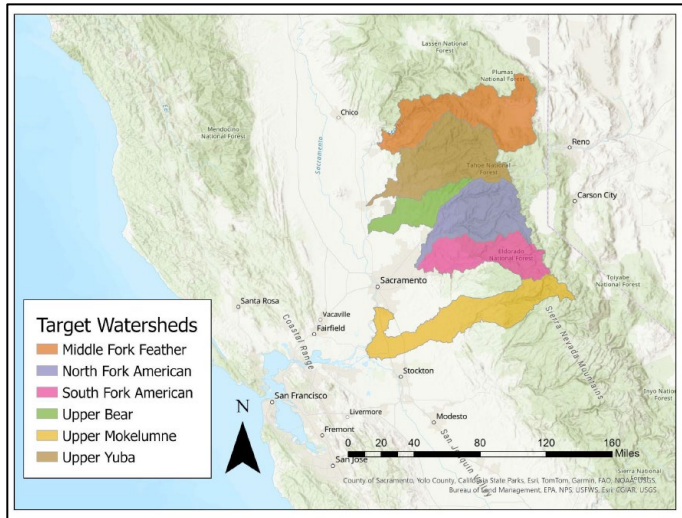


## Management Need 1

Improve coordination and integration of large-scale experiments, data collection, and evaluation across regions and institutions



**3 projects** integrate data from across the landscape to better understand large-scale changes in **water quality, water supply and land use**.



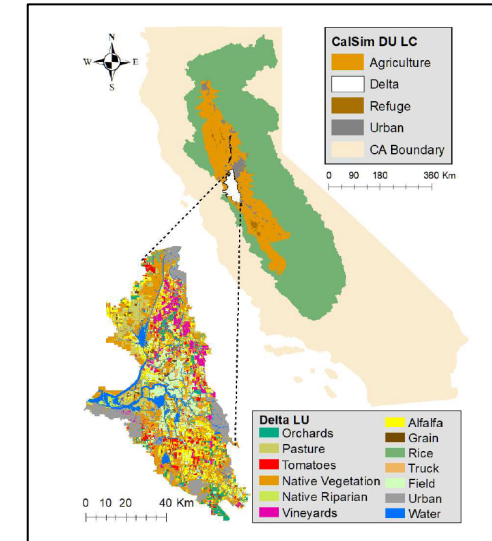
**Jeff Lauder, Sierra Streams Institute** will integrate monitoring data across a series of tributaries and indigenous knowledge, to build a holistic vision of watershed resilience

**Support:** NID, YRCL, WCCA, Nevada City Rancheria Nisenan Tribe, CHIRP



**Nihar Chhatiawala, Pardee RAND,** will develop coupled climate and water management models to evaluate vulnerabilities of water supply

**Support:** SWRCB



**Abhinav Sharma, UC Santa Cruz,** is using agent-based modeling to forecast land use changes in the Central Valley

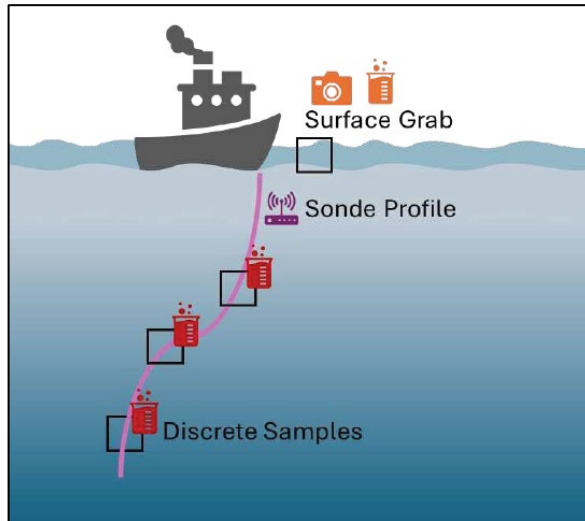
**Support:** UC Merced

## Management Need 2

Enhance monitoring and model interoperability, integration, and forecasting

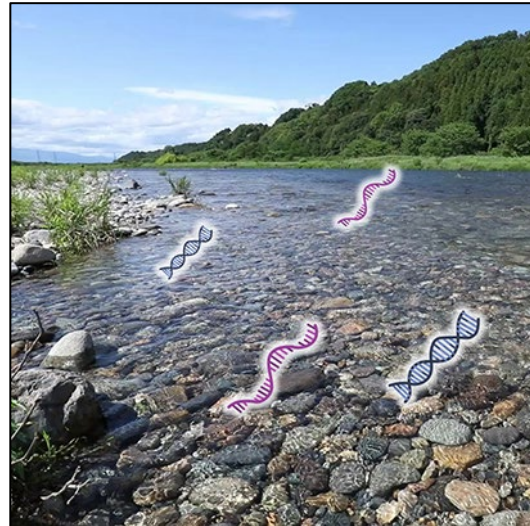


**3 projects** address needs for more efficient and non-invasive monitoring of **water quality** and **fishes**



**Dr Holly Bowers, Coastal Conservation and Research**, is optimizing monitoring technologies for early detection and mitigation of HABs

**Support:** SWB, DWR, RTD, Shingle Springs Band of Miwok Indians, SFEI



**Shahinur Islam, UC Davis**, is developing non-invasive eRNA tools to detect smelt presence, health, and stress responses under environmental changes.

**Support:** DWR



**Sebastian Gonzales, UC Davis**, is testing the feasibility of acoustic telemetry for tracking Longfin Smelt in the wild.

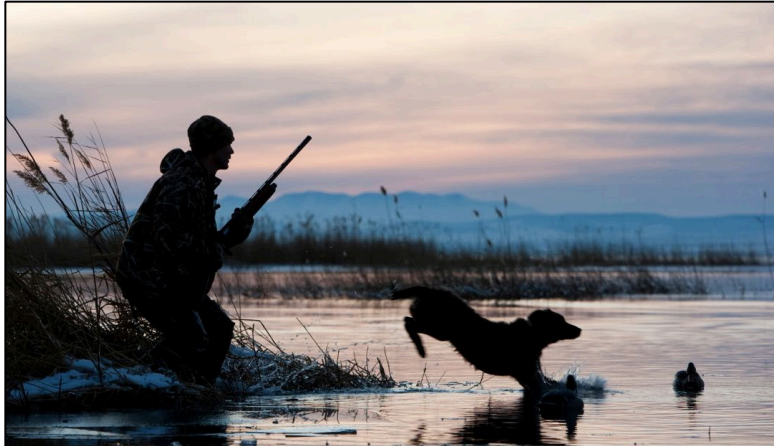
**Support:** ICF

## Management Need 3

Expand multi-benefit approaches to managing the Delta as a social-ecological system



**2 projects** address needs to understand the costs and benefits of **restoration to people**, and of **subsidence reversal**



**Dr. Stuart Siegel, SF National Estuarine Research Reserve**, is adding new social science data to understand the way Suisun community values restoration projects

**Support:** SRCD, WRMP



**Steve Deverel, Hydrofocus**, is improving and calibrating the SUBCALC model using new data (eddy covariance, InSAR, LiDAR) to improve subsidence/emissions predictions

**Support:** SSJDC, NASA

## Management Need 4

Build and integrate knowledge on social process and behavior of Delta communities and residents to support effective and equitable management



**3 projects** increase engagement with **tribal governments** and **marginalized communities** to investigate approaches to more effective and equitable management, including **tule burning**, **functional flows** and **education programs**



**April Robinson, SFEI**, is documenting and integrating TEK into wetland restoration strategies through eco-cultural burning of tule wetlands

**Support:** The Sierra Fund, Colfax Todds Valley Consolidated Tribe, Shingle Springs



**Ted Grantham, UC Berkeley**, will integrate understanding of social-ecological uses and values of Delta waterways, using functional flows, restoration and TK

**Support:** DWR, SWRCB



**Rebecca VanArnam, UC Davis**, is studying how the Spinning Salmon Program engages youth in Delta conservation.

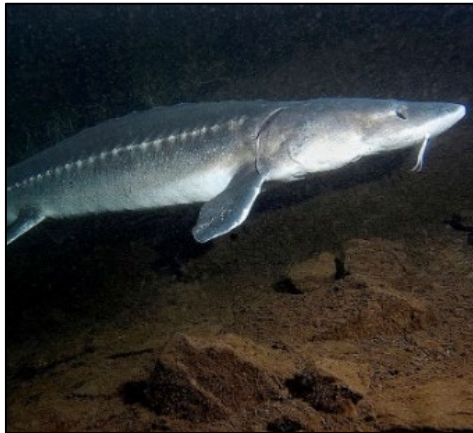
**Support:** Dixon Unified School District

## Management Need 5

Acquire new knowledge and synthesize existing knowledge of interacting stressors to support species recovery and ecosystem health



**3 projects** seek to better understand **sturgeon** mortality, ways of enhancing **Delta smelt** survival, and **Chinook salmon** adaptation to climate change and habitat loss



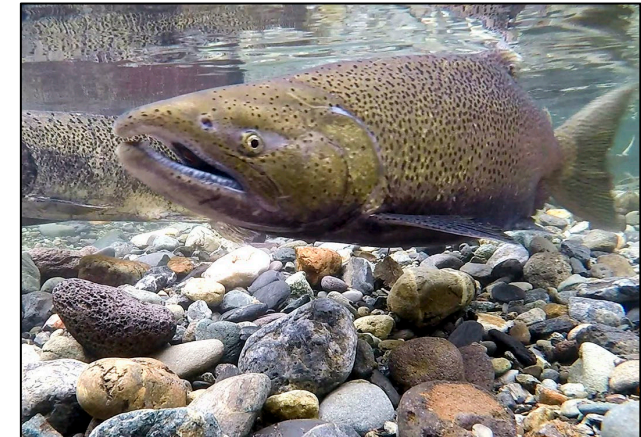
**Ben Burford** from UCSC will engage the public in reporting and analyzing sturgeon mortality through citizen science

**Support:** NOAA, CDFW



**Florian Mauduit, UC Davis**, is testing alternative rearing methods (under floating peatlands) to improve fitness and survival of Delta smelt in wild conditions.

**Support:** DWR, MWD



**Flora Cordoleani, UCSC/NOAA**, is looking at genetic traits and environmental adaptation in spring-run Chinook salmon to support conservation efforts.

**Support:** NOAA, DWR, USFWS

## Management Need 6

Assess and anticipate impacts of climate change and extreme events to support successful adaptation strategies



**2 projects** are investigating how climate change could affect sturgeon migration and salinity in the Delta



**Karrigan Bork** from UCD will develop Delta-specific models to evaluate sturgeon migration under different flow scenarios

**Support:** SF Baykeeper, RTD, CA Sportfishing Protection Alliance, Center for Biological Diversity



**Dana Myers** from UC Santa Barbara is applying high-resolution satellite imagery to “see” smaller channels and how those affect water mixing and salinity in the Delta

**Support:**