

June 2024

Delta Adapts: Draft Adaptation Plan Overview



Delta
Stewardship
Council

A CALIFORNIA STATE AGENCY

CALIFORNIA'S Sacramento- San Joaquin Delta



Located inland from the San Francisco Bay at the convergence of the Sacramento and San Joaquin Rivers



Spans five counties in Northern California: Contra Costa, Sacramento, San Joaquin, Solano, and Yolo



Supplies a portion of the drinking water for 27+ million Californians



Contributes billions in agricultural products toward the State's economy, the fourth-largest in the world



Provides 750+ plant and animal species with critical habitat along its thousands of miles of meandering waterways



Home to 627,000+ people spread across rural agricultural, legacy, and urban communities



California's first National Heritage Area, as designated by the U.S. Congress



SUMMER 2021



Flooding



Extreme Heat

Vulnerability Assessment Findings



Drought



Wildfire

- More flooding
- Climate change will impact Delta residents disproportionately
- Less reliable Delta water exports
- Periodic decreases in water quality for in-Delta users
- Increased loss and stress on ecosystems
- Decreased agricultural yields



Partner Input



SUMMER 2024



Water Supply
Reliability



Ecosystem
Restoration

Adaptation Plan



Agriculture



Flooding

- Adaptation strategies
- Responsible entities
- Funding and financing
- Governance best practices

Equity in Adaptation

- Representational justice
- Prioritize adaptation investments in communities most socially vulnerable to climate impacts
- Culturally appropriate risk communication and education campaigns





FLOOD RISK REDUCTION

**DELTA
ADAPTS**



Focus Area

Vulnerabilities

Climate-induced hydrologic variability and sea level rise are expected to **intensify flooding** across the entire Delta region

The Delta's **1,100 miles of levees** are designed to operate under historical conditions that did not consider climate change, which will stress the whole system

Strategies

Develop climate-informed understanding Delta flood dynamics

Strengthen and upgrade Delta levee system

Restore ecosystems for flood mitigation

Improve emergency preparedness and risk communication

Manage and expand upstream water storage capability

Use adaptive urban planning and farming practices to reduce risk

Example Actions

- ▶ Integrate climate change into risk assessment models (FL-1-1)
- ▶ Integrate climate risks and equity into the Delta Levees Investment Strategy (FL-2-2)
- ▶ Monitor and evaluate the effectiveness of multi-benefit projects for flood risk reduction (FL-3-2)
- ▶ Raise awareness about the availability and importance of flood insurance (FL-4-6)
- ▶ Use excess floodwater to recharge underground aquifers (FL-9-2)
- ▶ Limit development in flood-prone areas (FL-7-4)



ECOSYSTEM

DELTA ADAPTS



Focus Area

Vulnerabilities

Land development leaves little room for **habitats and species** to migrate

Heat, sea level rise, and climate extremes impact **ecosystem health and biodiversity**

Strategies

Improve capacity of ecosystems to adapt and thrive

Build capacity and partnerships for ecosystem resilience

Protect ecosystems by halting and reversing subsidence

Enhance urban ecosystem health

Example Actions

- ▶ Work with Tribes and Tribal communities to interweave Traditional Knowledge (ECO-1-1)
- ▶ Prioritize multi-benefit projects (ECO-1-4)
- ▶ Prepare program-level environmental documentation to accelerate pace and scale of restoration (ECO-3-1)
- ▶ Prioritize and incentivize land use types that halt or reverse subsidence (ECO-2-1)
- ▶ Increase urban tree canopy cover and other green spaces in areas that have the least (ECO-4-2)



AGRICULTURE

DELTA ADAPTS *Focus Area*



Vulnerabilities

Heat, drought, flooding, reduced chill hours, sea level rise, and decreased water quality can all decreased **crop yield and quality**

The above vulnerabilities and market forces impact the **economic stability of industry**

Subsidence, saline soils, and land use changes impact **land viability for agriculture**

Strategies

Equitable food system

Climate-smart farming

Diversification of revenue on agricultural land

Strategic land retirement

Example Actions

- ▶ Improve and expand irrigation efficiency practices (AG-1-1)
- ▶ Support and retain labor and workforce development in agriculture (AG-2-1)
- ▶ Support and fund environmental credits (AG-3-3)
- ▶ Allow for flooding, wetting for subsidence-halting or reversal, or conversion to managed wetland on marginal farm land (AG-4-1)



WATER SUPPLY RELIABILITY

DELTA ADAPTS



Focus Area

Vulnerabilities

Water supply will likely decrease while demand increases due to heat, more variable precipitation, decreased snowpack, and sea level rise

Drought and salinity intrusion will harm **water quality**

Extreme weather could damage the network of **water conveyance** infrastructure and levees that protect water from salinity intrusion

Strategies

Reduce reliance on the Delta through conservation local water supply development

Increase storage of surface and groundwater supplies

Modify reservoir operations

Modify water quality standards

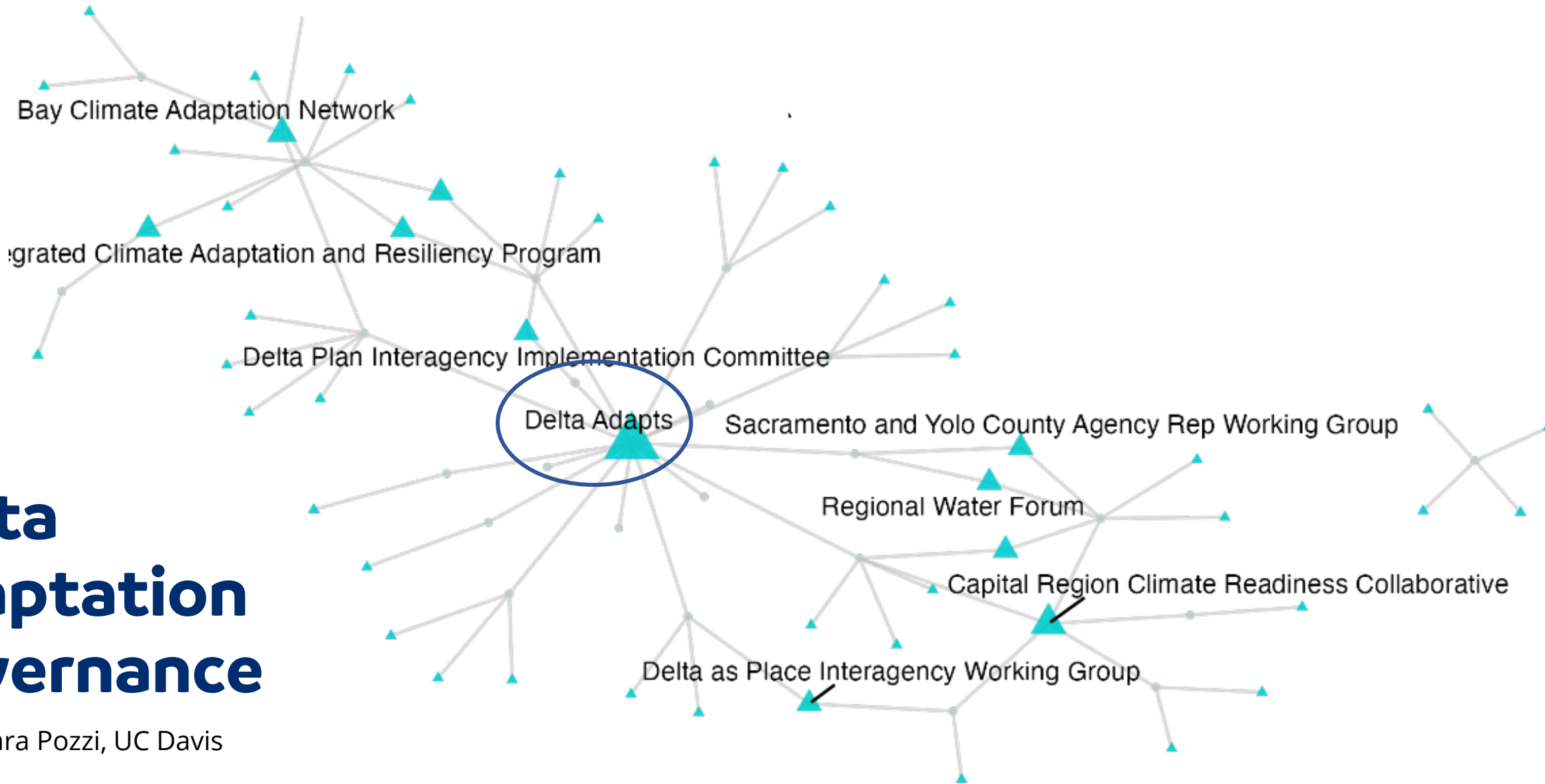
Modify water infrastructure

Example Actions

- ▶ Pilot projects promoting urban and agricultural water conservation (WSR-1-2)
- ▶ Invest in flood-managed aquifer recharge (WSR-2-4)
- ▶ Improve water supply and demand forecasting models for decision-making (WSR-4-1 through WSR-4-5)
- ▶ Develop comprehensive monitoring programs to detect HABs (WSR-5-7)
- ▶ Improve Delta levees (WSR-3-1)

Delta Adaptation Governance

Credit: Tara Pozzi, UC Davis



Governance recommendations

- Procedural justice: incorporate best practices for participatory governance
- Adopt adaptive management framework
- Explore inroads for the application of Traditional Knowledge in Delta science and decision-making



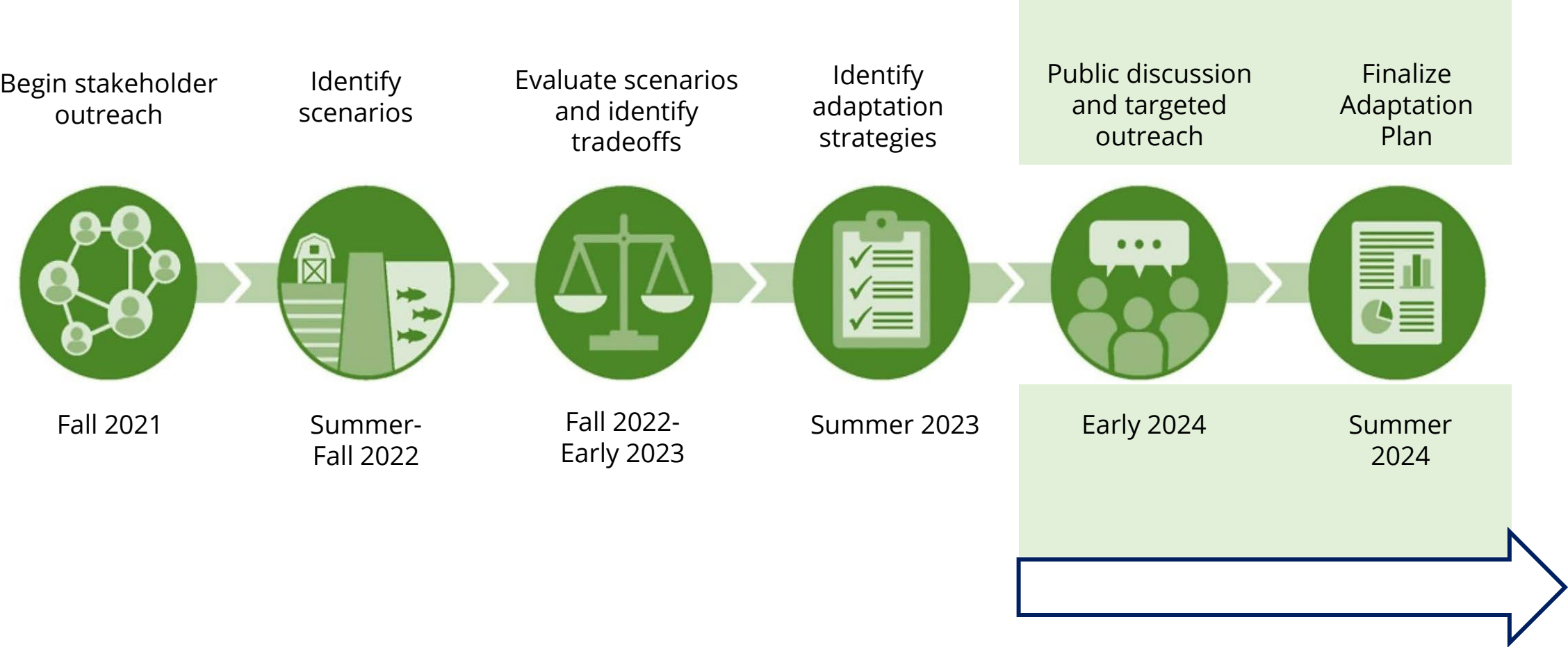
Council's Role

- Advance representational justice in adaptation
- Create regionwide communication strategies on risk, restoration benefits, adaptation options
- Help fill research gaps through Delta Science Program
- Embrace other ways of knowing and Traditional Knowledge
- Work through DPIIC to create a regional funding strategy for adaptation
- Advance adaptation through Council's covered action authority



Photo: The Council's Tribal Listening Session 2023

Next Steps



QUESTIONS AND DISCUSSION

Thank you

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