



Overview of Metropolitan's Bay-Delta Science Program

Bay-Delta Committee
Item 6c
June 22, 2021

Overview

- Relevance of Science to Metropolitan's Supply Reliability
- Priorities
- Science Program Approach
- Science Investigation Priorities
- Moving forward

Importance of Metropolitan's Bay-Delta Science Program

- Supports water quality, supply reliability, and ecosystem restoration
- Science drives policies/regulations
- Proactive science
 - Protects the environment
 - Drives better decisions
 - Fosters effective regulations
- Informs Management Decisions and Project Operations
 - Reduces scientific uncertainty to improve Delta ecosystem and increase water supply reliability

Key Agencies

- Department of Water Resources
- State Water Resources Control Board
- California Department of Fish and Wildlife
- U.S. Bureau of Reclamation
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers

Metropolitan's Bay-Delta Science Involvement

Science and Environment Activities

Metropolitan active participant in CALFED

Collaborative Science Projects to address key science gaps

Metropolitan investment in restoration and non-flow stressors

Collaborative Science Program initiated 2013

Science Commitments BiOp/ITP

1990

1995

2000

2005

2010

2015

2020

2021

Winter Run Salmon and Delta Smelt Listings

Bay Delta Accord 1994

SWRCB WQCP Update

CALFED Bay-Delta Program

USFWS BiOp 2008

NMFS BiOp 2009

USFWS and NMFS BiOp 2019

SWRCB WQCP Update Phase II

CDFW Incidental Take Permit 2020

Bay-Delta Decision Processes

Peer Reviewed Science Publications Funded by Metropolitan



Science Investigation Priorities

- What is the **effectiveness of management actions** implemented to improve habitat conditions and food availability for listed fish species?
- What are the **impacts of different stressors** on aquatic species in the Delta and their role in species decline?
- What are the **habitat needs** for the listed fish species?
- What **technologies** are needed to enhance our ability to monitor and study listed fish species?



Scientific Expertise



Collaboration



Participation



Funding

Metropolitan's
Science
Program
Approach

Scientific Expertise

- Metropolitan in-house expertise
 - Salmon
 - Delta smelt/longfin smelt
 - Stressor effects
 - Biological modeling
 - Water system and Delta operations modeling
- Consultants
- University researchers
- Science research centers

Collaboration Strengthens Science Understanding

- Provide needed expertise to address specific science questions
- Engage outside expertise to learn from other systems
- Pursue grant funding with partners to leverage Metropolitan's science investment

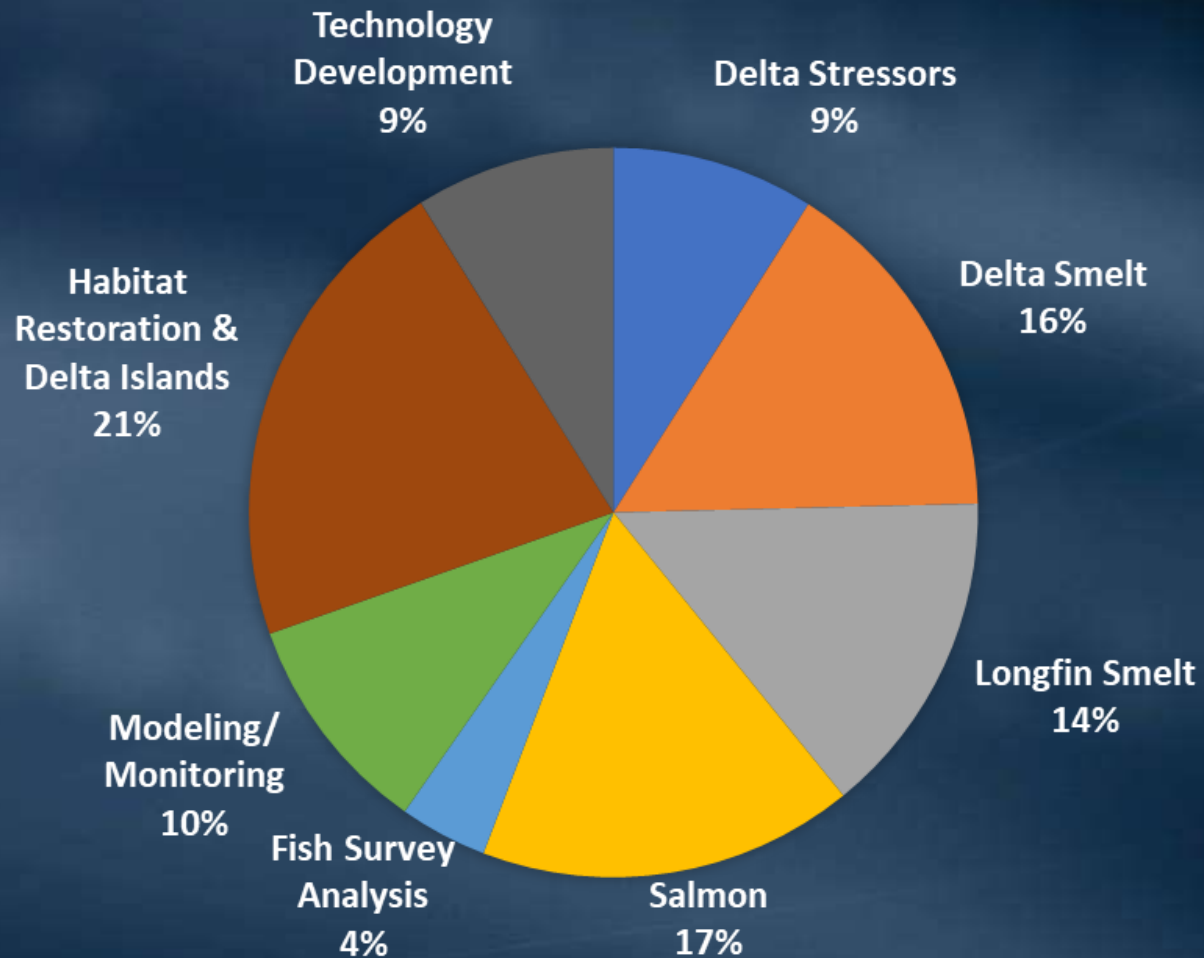


How Metropolitan Participates in the Delta Science Community



Funding Science Investigations

BAY-DELTA SCIENCE PRIORITIES

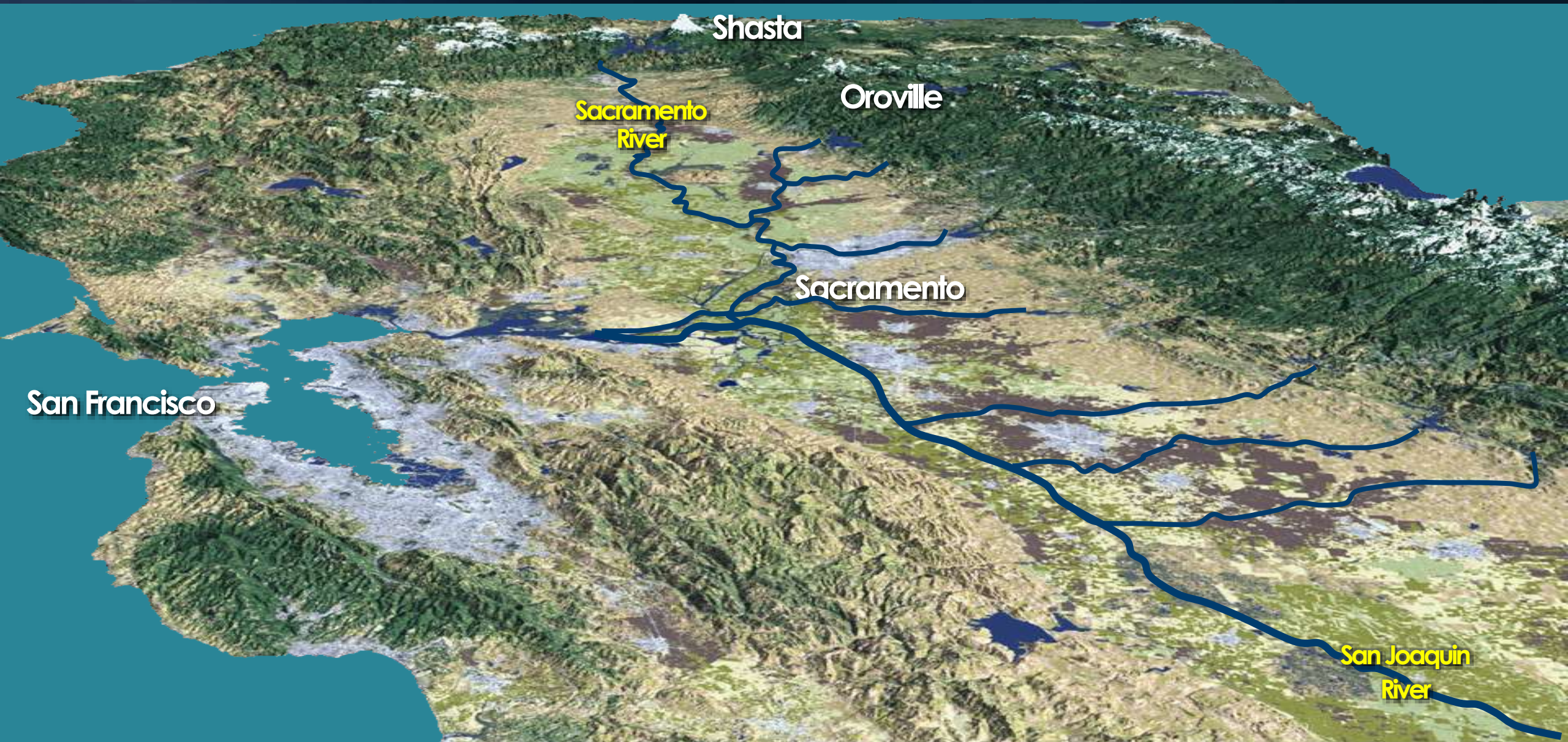


Metropolitan Science Funding

Average ~\$1.5 million annually
for the last five years

Science Investigation Priorities

Sacramento/San Joaquin Bay-Delta Watershed



Science Investigation Priorities



Effectiveness of
Management Actions



Delta
Stressors



Habitat Needs for
Listed Species



Innovation and New
Technology

Moving Forward

- Significant science commitment in BiOp/ITP
- Collaborations to address priority science questions
- Drought studies
- Technology development
- Climate change

