



Subcommittee on Imported Water

Delta Smelt Propagation and Research Update

Item 3a

April 28, 2026

Presented by: Shawn Acuña, Ph. D.

Item 3a
Delta Smelt
Propagation
and Research
Update

Subject

Delta Smelt Propagation and Research
Update

Purpose

Provide update on the latest results
from our smelt cultivation experiments

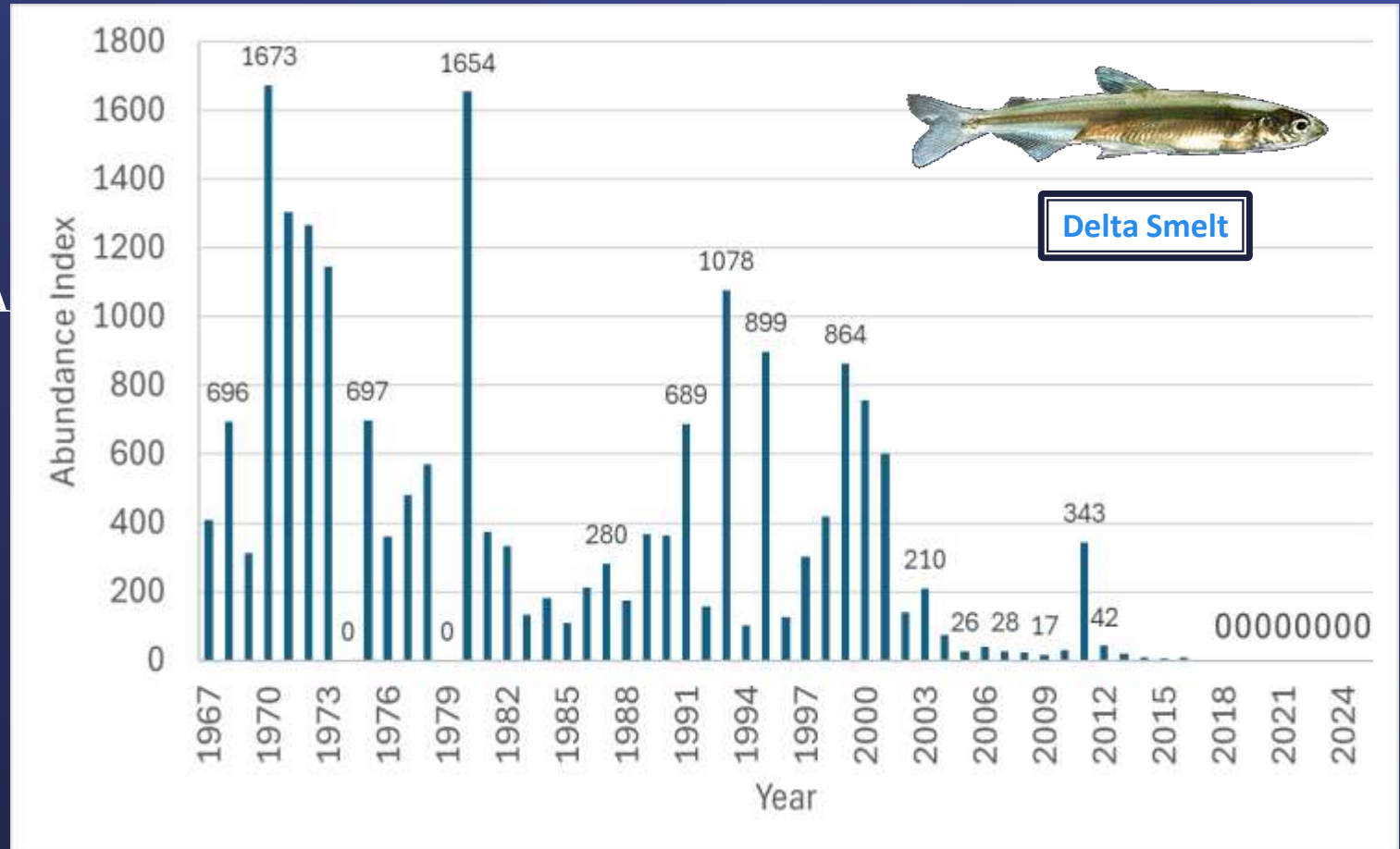
AGENDA

- Delta Smelt Nexus to Metropolitan
- Metropolitan Coordinated Activities
- Next Steps

DELTA SMELT NEXUS TO METROPOLITAN

DELTA SMELT POPULATION DECLINE

- Smelt Population Since 1990's
- Listed Under State/Federal ESA
- Impacts to SWP Operations
 - Water Costs (\$)
 - Current Conservation Hatchery Limitations



REGULATORY REQUIREMENT FOR THE PROJECTS

- Permit Conditions (ESA/CESA)
- Production Goal: 500K Delta Smelt by 2030
- Increased Abundance Benefits
 - Enhances regulatory flexibility
 - Improves water supply reliability



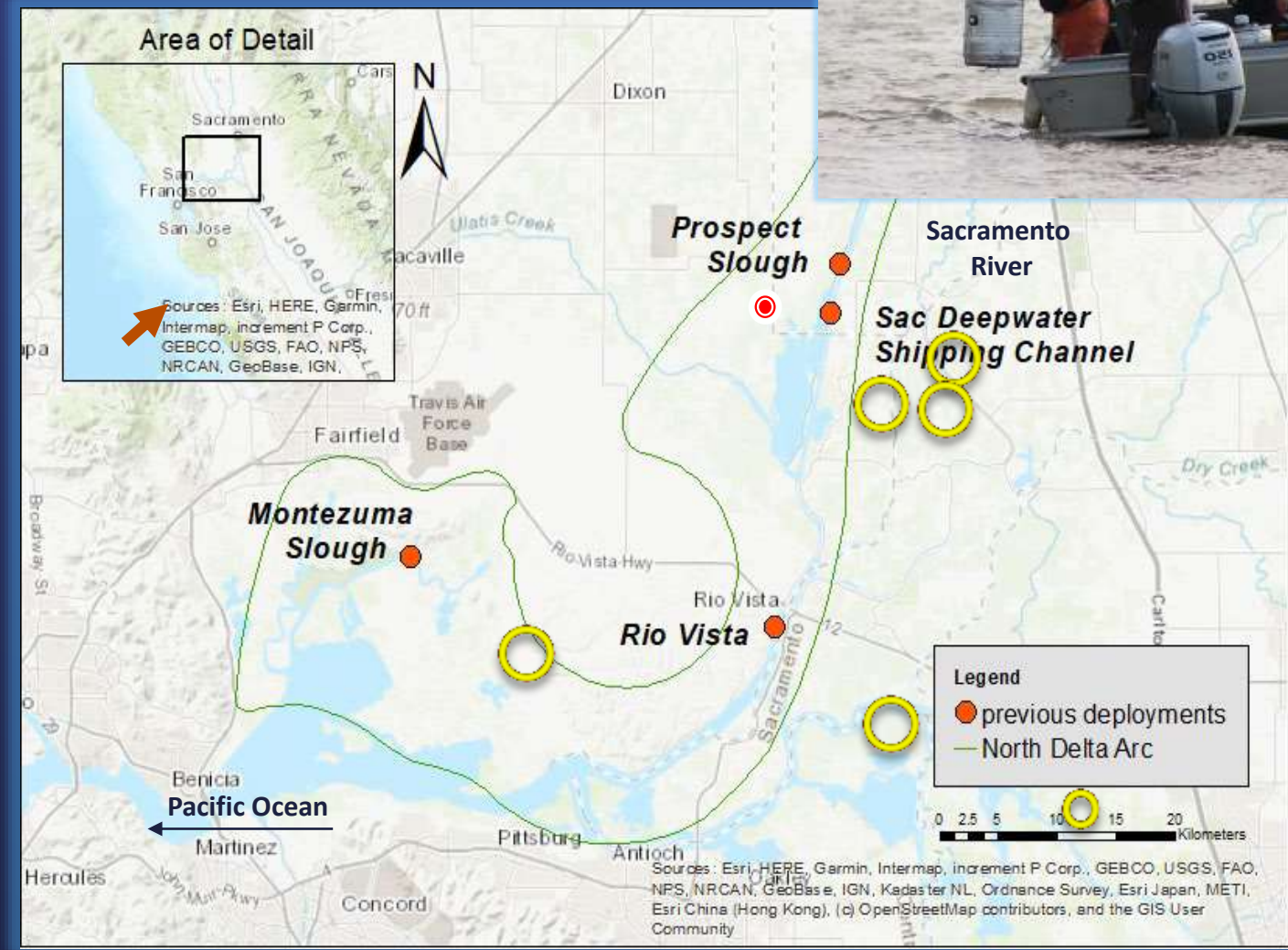
REGULATORY REQUIREMENT FOR THE PROJECTS

- Delta Smelt hatchery is at/near capacity at ~160k
- Expansion is necessary to meet the 500K by 2030. 3-4x the size and cost
- Metropolitan and Partners
 - Working parallel with State and Fed
 - Develop cost efficient culture methods

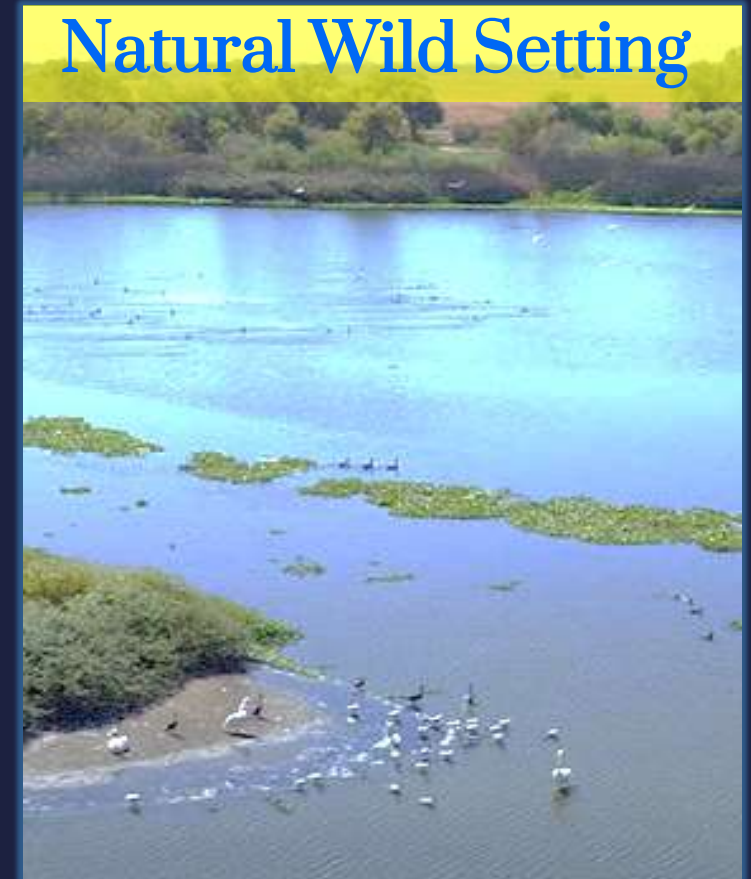
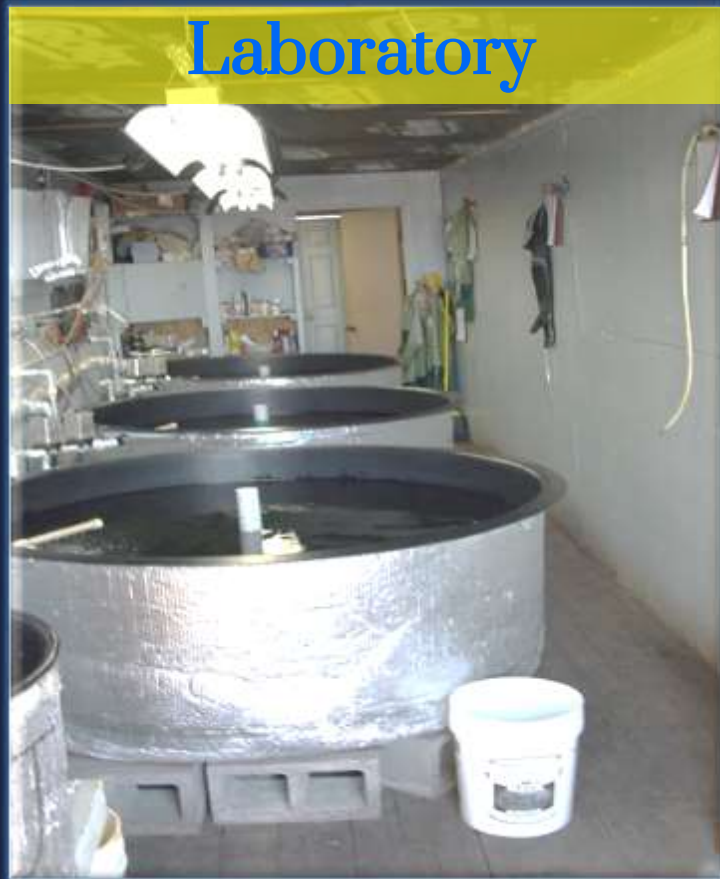


STATE'S EXISTING DELTA SMELT SUPPLEMENTATION STRATEGY

- Multiple release locations
- Fish releases by year class
 - 2021: 55,700
 - 2022: 43,900
 - 2023: 91,500
 - 2024: 125,000
 - 2025: 163,350



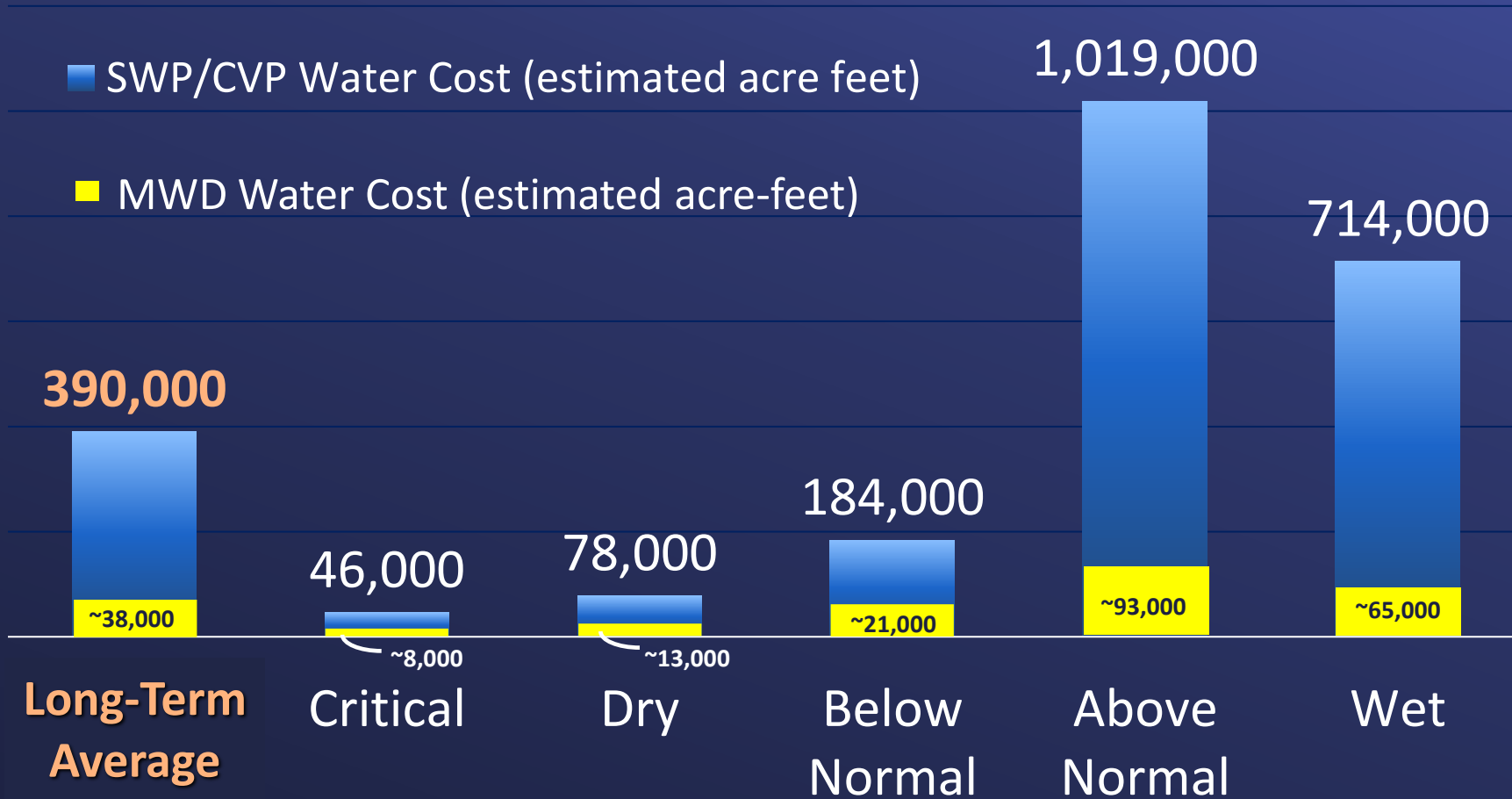
FIELD OPTIMIZATION/TRANSITION (Science Research – Fish Production)



Purpose: increase fish production & improve supplemented fish survival → existing impoundments

ESTIMATED WATER SUPPLY COST

Due to Delta Smelt Regulatory Requirements



Note: Data is an estimate and relative comparison based on Long-Term modeling and Delta Smelt regulatory requirements.

METROPOLITAN COORDINATED ACTIVITIES

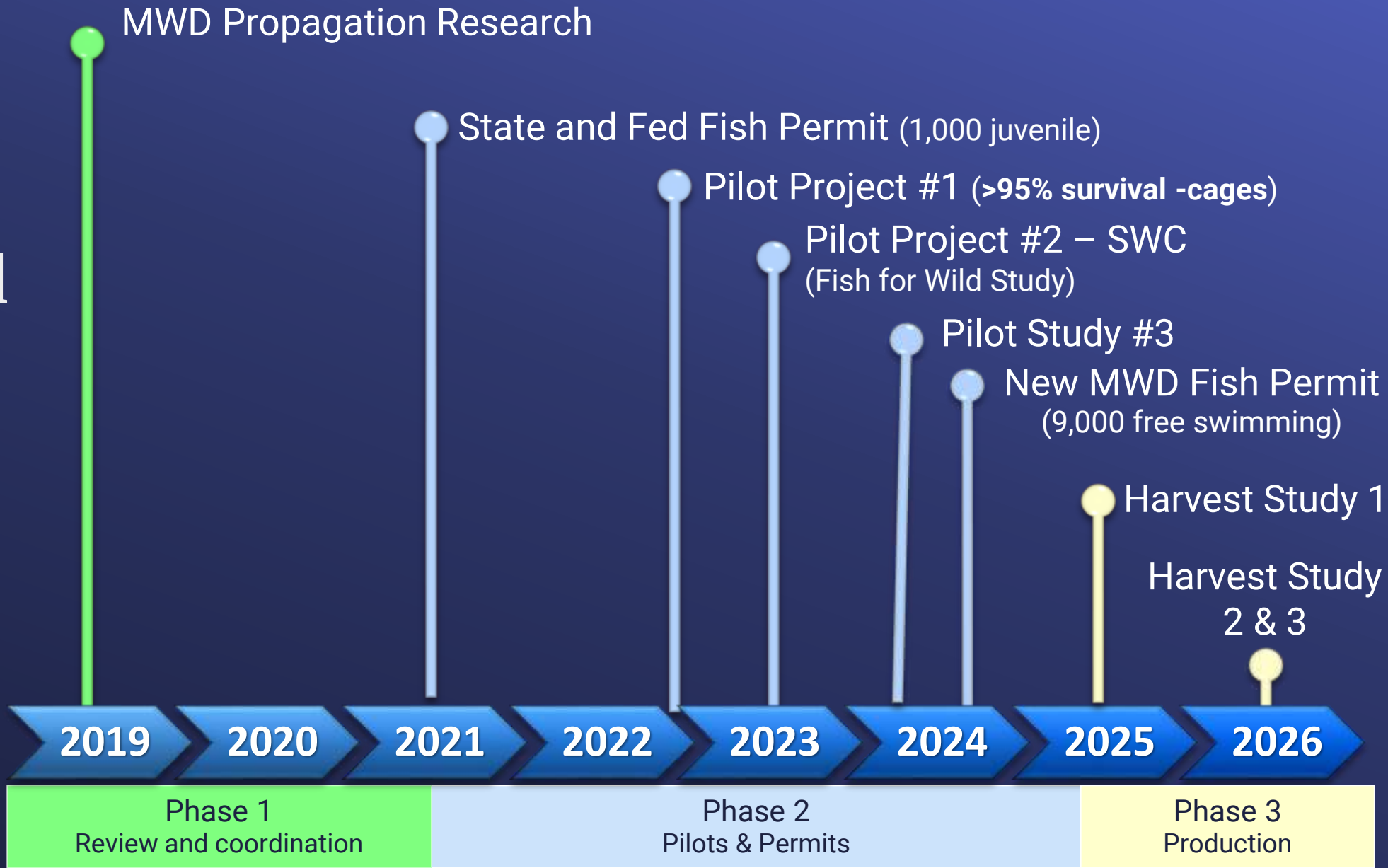
BOARD POLICIES

- Policy 1A Protect and restore aquatic species and habitats based on best available science
- Policy 3C Promote innovative and multi-benefit initiatives

Coordinated Activities Timeline



Delta Smelt



2019-24 (BiOp/ITP propagation requirements)

PARTNERSHIPS

Delta Smelt Propagation Studies



Collaborators

Shawn Acuña, Florian Mauduit, Dennis Cocherell, Nann Fangue, Richard Connon, Fred Feyrer, Melinda Baerwald, Daphne Gille, Evan Carson, Russell Ryan, Jack Cronin

METROPOLITAN'S ROLE

- Bouldin Island Ponds
 - Access
 - Habitat quality
 - CIP (future 44-acre project)
- Technical Support
- Engineering Support



STUDIES UC DAVIS



● Pilot Pond Studies

- Caged Delta Smelt
- Bouldin impoundments
- 2022 and 2023

● Fit for the Wild

- Caged Delta Smelt
- Floating wetland ponds
- 2024, 2026, and 2027

● Pond Harvest Study

- Free swimming fish
- Bouldin impoundments
- 2025 and 2026



RESULTS

- Pilot Pond Studies 2022-2023
 - Demonstrated pond culture works
 - **>95% survival**
- Pond Harvest Study 2025-2026
 - Resilient to harvest stress
 - **>90% survival after harvest**
- Pond Culture Very Promising



STUDIES IN PROGRESS

- Fit for the Wild
 - Enriched culture
 - Improve survival
- Acoustic Tag Study
 - Develop tracking device for the wild





- **Continue Ongoing Research**
 - Fish food studies
 - Habitat restoration
- **Continue Coordination with Fed/State Partners**
 - Memorandum of Understanding
 - Revenue generation opportunities
- **Develop Fish Production Concepts (Aquaculture)**
 - Approved CIP Project (Delta Smelt & Native Species Preservation Project)
 - Design, construction, implementation

