

Climate Action Plan Phase III: DWR Climate Change Adaptation Plan

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Presentation to the California Water Commission

May 19, 2021

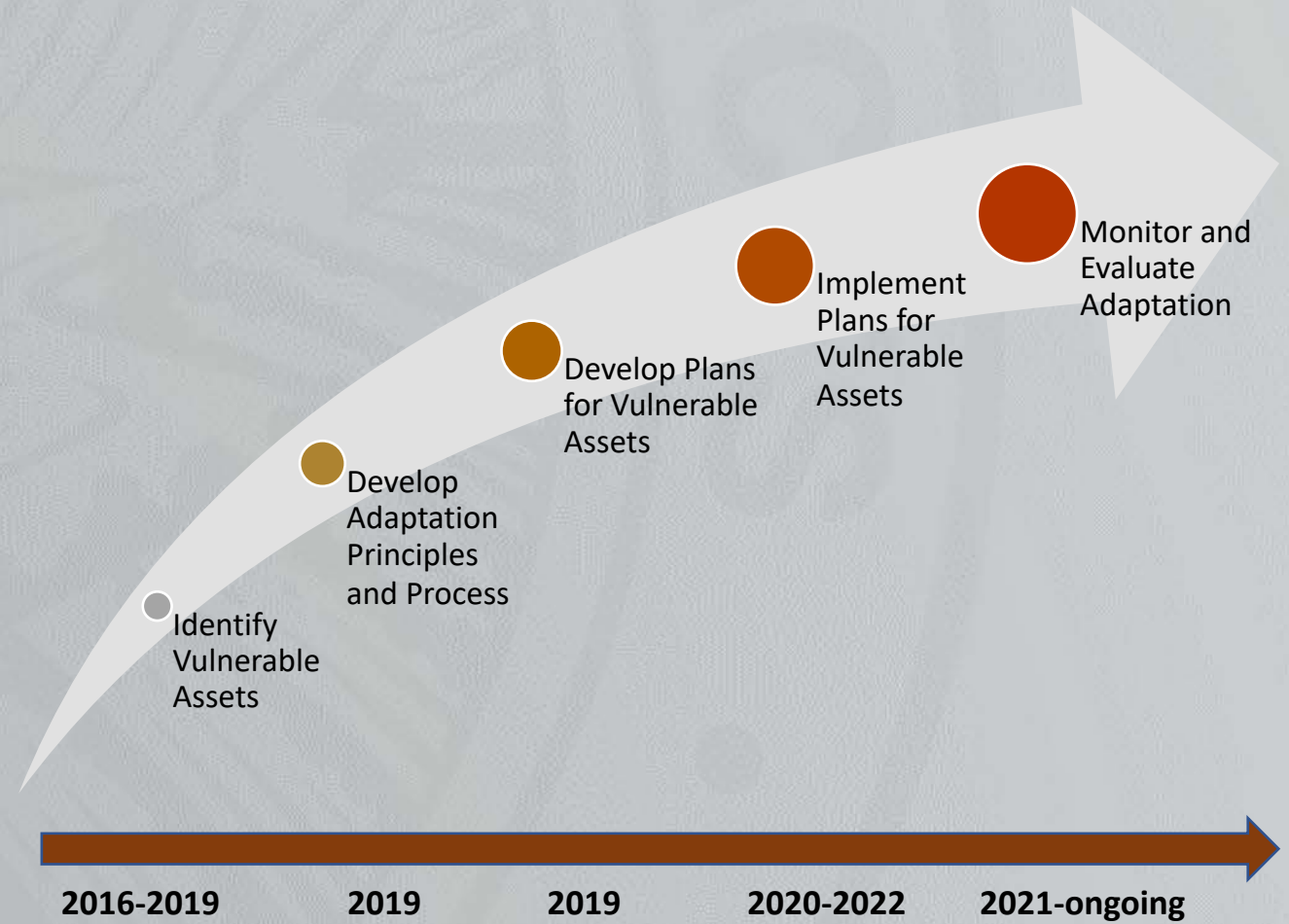


DWR's Comprehensive Response to Climate Change

- **Climate Action Plan (CAP)**
 - *Phase I:* GHG Mitigation Plan
 - *Phase II:* Consistent, high quality climate change analysis across all DWR programs
 - *Phase III:* Vulnerability Assessment and **Adaptation Plan**

Steps of Adaptation

- Vulnerability: What DWR assets and resources are vulnerable to climate change?
- Principles and Structure
- Initial Plans
- Implementation
- Monitor and Evaluate
- Revisit vulnerabilities of assets and resources



Vulnerability Assessment Climate Hazards Examined

- Wildfire
- Extreme Heat
- Sea Level Rise
- Long-term Persistent Hydrologic Changes
- Short-Term Extreme Hydrologic Changes
- Habitat and Ecosystem Services Impacts

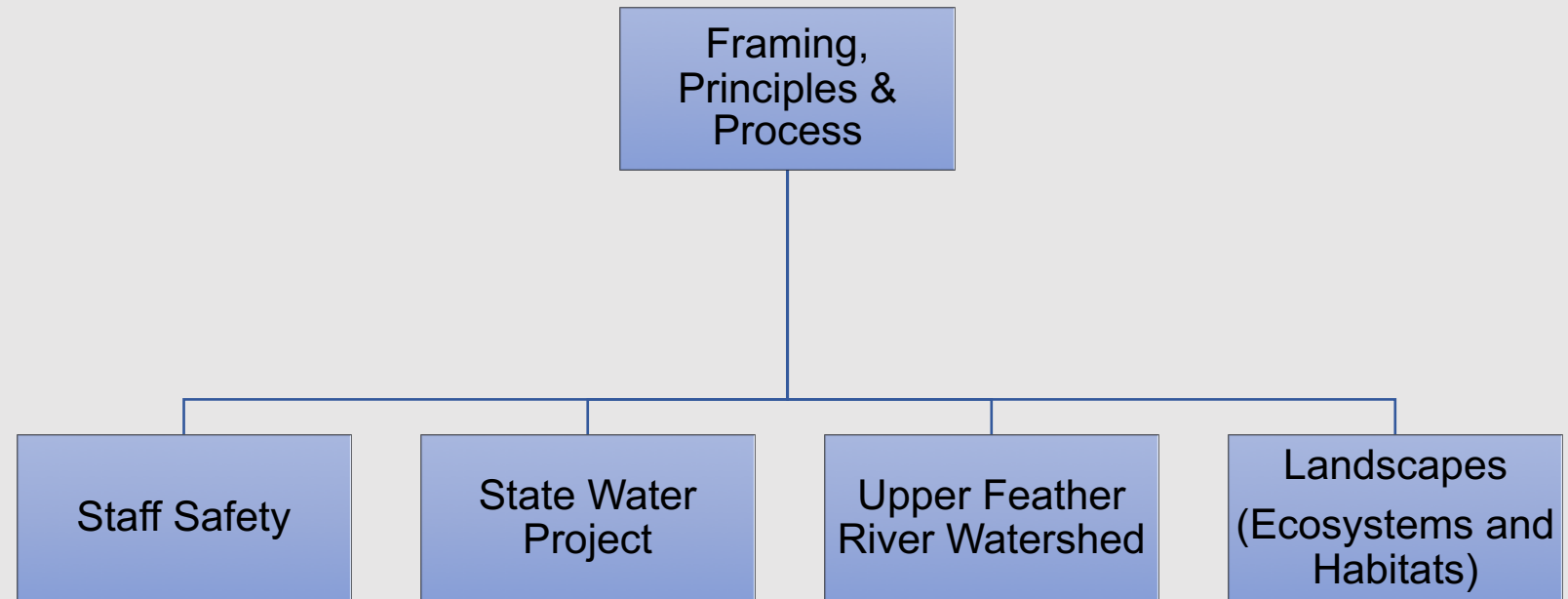
DWR Adaptation Plan Priority Focus Areas

- Staff Safety
- State Water Project
- Upper Feather River Watershed
- Landscapes (Ecosystems and Habitats)



Structure of the DWR Adaptation Plan

Each priority focus area has its own plan, timeline, and participants



SWP Climate Action Coordinator

- Coordinate and advise on SWP activities and improve communication and collaboration across SWP/DWR programs
- Advance climate change resiliency planning and implementation on SWP projects

Priorities for DWR's Adaptation Plan

- Staff Safety
- State Water Project
- Upper Feather River Watershed
- Landscapes (Ecosystems and Habitats)



Staff Safety

Staff Safety – Extreme Heat and Flood

Vulnerability:

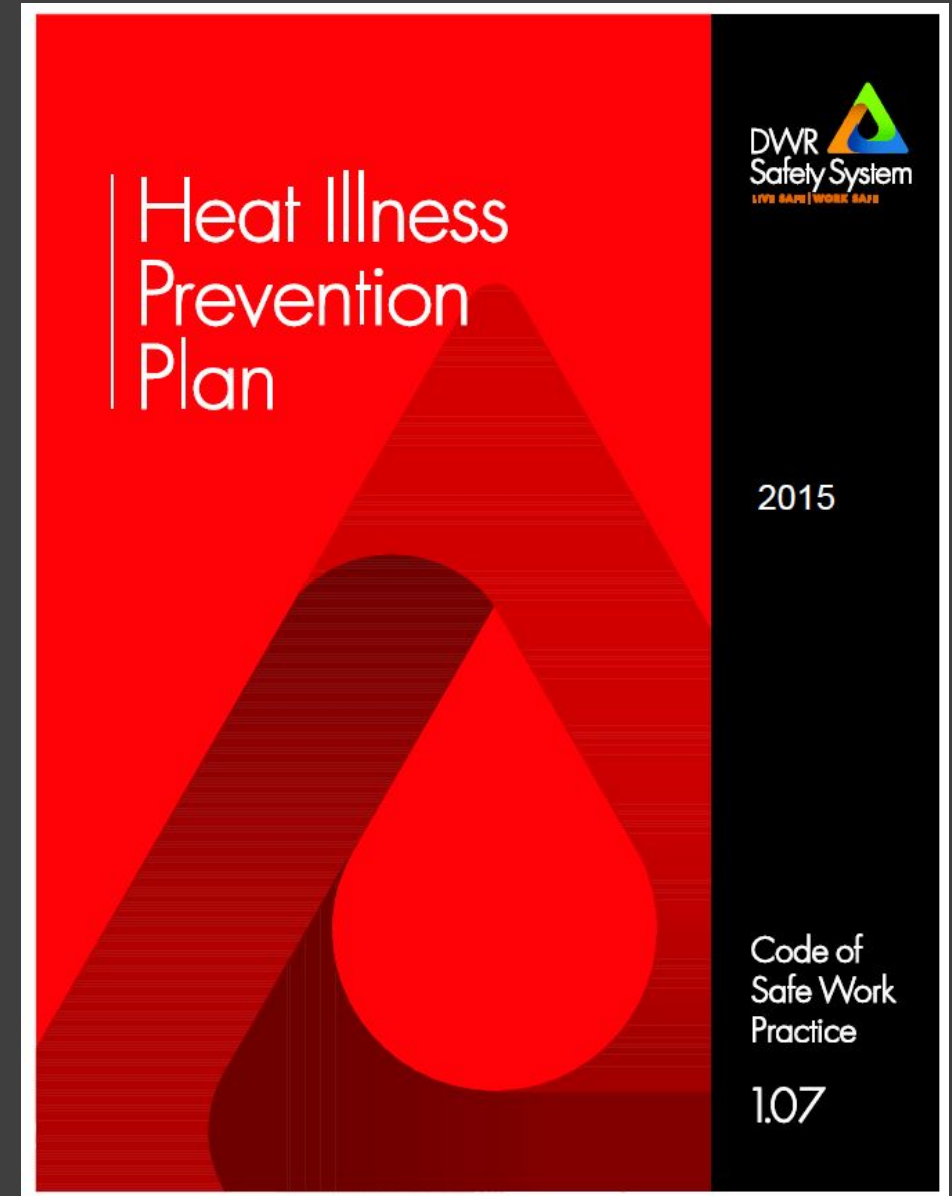
- Delays in work completion
- Increased costs
- Injury and illness

Adaptive Capacity:

- HIPP and schedule shifting
- Quantify potential budget impacts

Next Steps:

- Coordinate with the DWR Safety Office and Flood Division



The background of the slide features a large, faint watermark of the California State Seal. The seal is circular and contains a grizzly bear standing on a rock, holding a bow in its right paw and an arrow pointing downward in its left. The words "EUREKA" and "1850" are visible at the top of the seal, and "CALIFORNIA" is written vertically on the right side. The text "State Water Project" is centered in the lower half of the image.

State Water Project

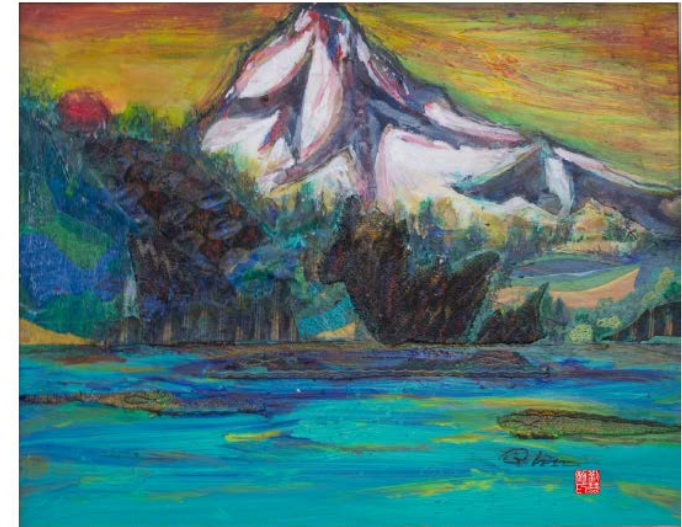
Water Supply Reliability – State Water Project

In May 2019, the Climate Change Program released a vulnerability assessment of the State Water Project to climate change using decision scaling.



Decision Scaling Evaluation of Climate Change Driven Hydrologic Risk to the State Water Project Final Report

A Collaborative Study of the Hydrosystems Research Group, University of
Massachusetts, Amherst and the California Department of Water Resources



"Snow White Mountains and Blue Watershed," Dr. Qinqin Liu, DWR Climate Change Program, 2017

May 2019

State Water Project – Adaptation Approach

Five steps approach:

1. Structuring a Collaborative Process for Vulnerability Assessment
2. Implementing a Bottom-up Vulnerability Assessment
3. Formulating Alternative Plans
4. Comparing and Recommending Plans
5. Institutionalizing the Decisions

Climate Risk Informed Decision Analysis (CRIDA)

Collaborative Water Resources
Planning for an Uncertain Future



State Water Project – Next Steps

Explore Adaptation Strategies:

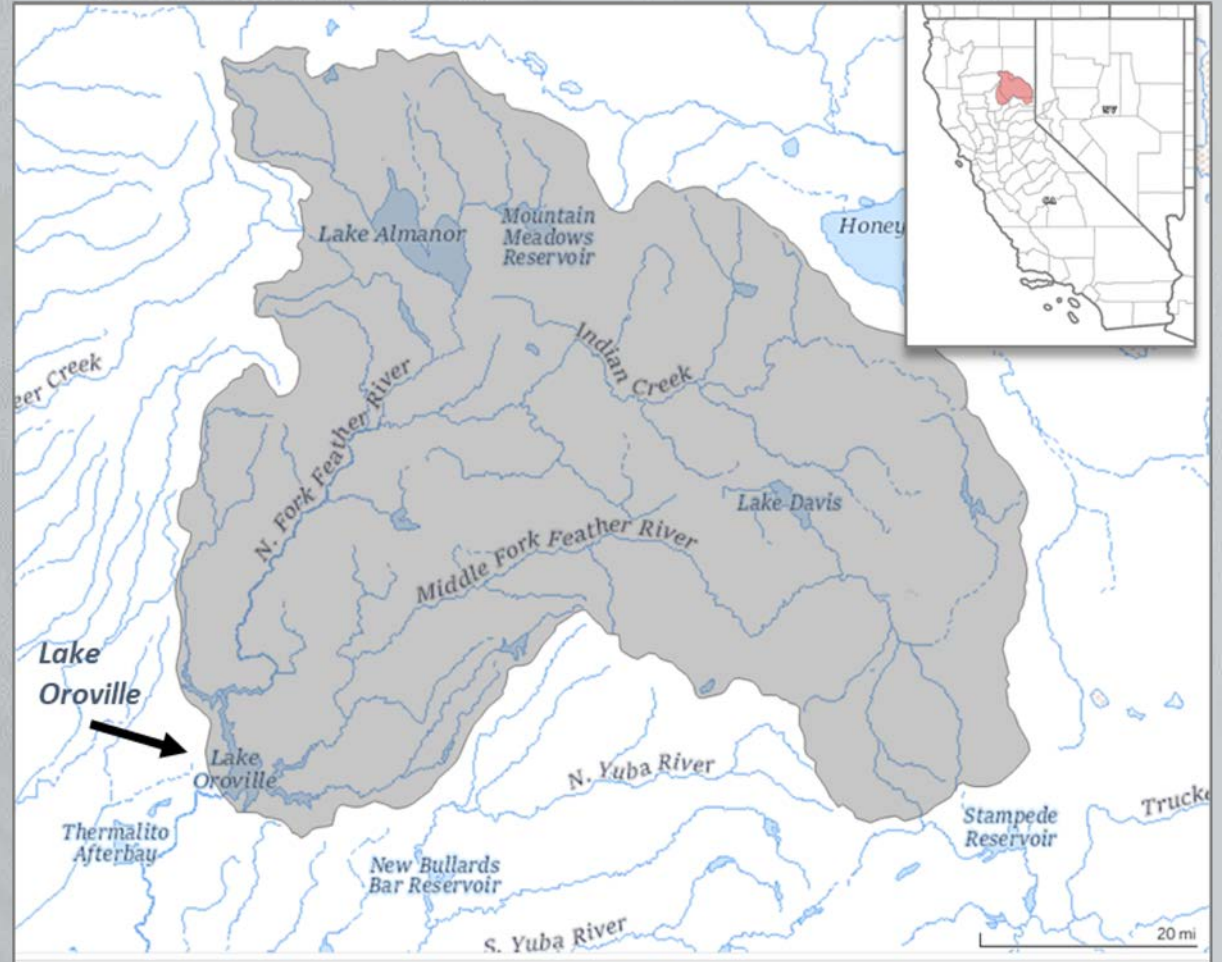
- The effect of monthly reservoir inflow forecasting ability on system operation
- Weather modification or cloud-seeding
- Incorporation of improved multi-objective upper watershed management
- Conjunctive management and groundwater recharge



Upper Feather River Watershed

Water Supply Reliability - Upper Feather River Watershed

- DWR Vulnerable Assets
 - Oroville Reservoir
 - Upper Feather River Lakes
 - Watershed Scale Change
- Vulnerability
 - Expected to change from a currently low and moderate wildfire exposure risk to moderate and high by mid-century.



Upper Feather River Watershed

Approach- Outreach to stakeholders

- Engage Upper Feather River IRWM and local watershed groups to provide information about the DWR Climate Action Plan
- Conduct interviews with stakeholders, including Tribal entities and an online web survey
- Inventory of stakeholder priorities

Stakeholder Priority Areas:



Upper Feather River Watershed

Next Steps-

- Prioritization of adaptation focus areas with stakeholders
- Identify which strategies align with DWR activities and/or priorities
- Mutual priorities will be presented to stakeholder groups for further feedback and input
- Synthesis of group input will be included in the DWR Adaptation Plan - **Pathway for approval of resource investment**



Landscapes (Ecosystems and Habitats)

Ecosystems and Habitats

Climate change is projected to negatively impact the quality of ecosystems and habitats on DWR owned and managed lands.

- Risk to restoration investments
- Environmental regulatory requirements

The Vulnerability Assessment indicated

- Climate change will exacerbate existing stressors on listed species and habitats
- Degradation may result in additional regulation
- Disruptions to key ecosystem services



Ecosystems and Habitats

Adaptive Capacity

- Existing polices, plans, and procedures

Next Steps

- Comprehensive database of DWR owned and managed lands
- Land use scenario modeling
- Collaborate with the Delta Stewardship Council on Adaptation Planning in Suisun Marsh



Thank You!

