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Planning for a Game Changer: Role of Floodplains in Salmon Recovery

Floodplains Reimagined

December 8, 2021

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Outline

Central Valley salmon status

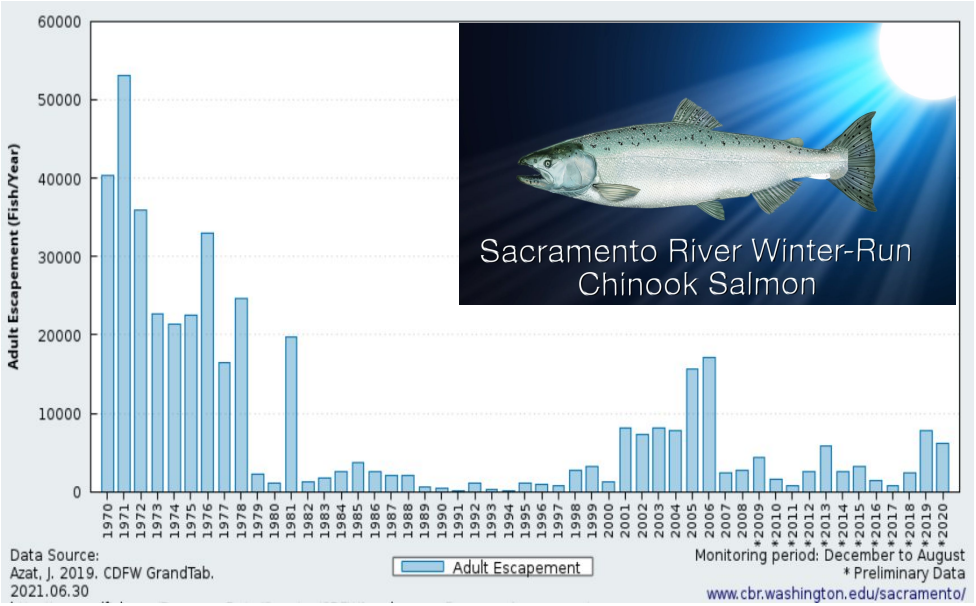
Landscape scale stressors

Floodplain science (Ted Sommer's lessons)

Range of management projects

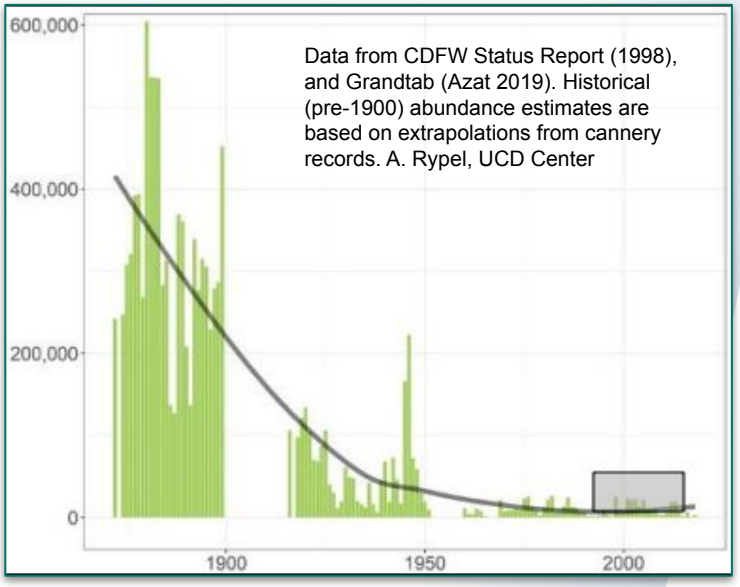
Central Valley Salmon Status

Winter-run



Winter-run	2010 Status Review	2016 Status Review	2021 Status Review
Extinction Risk	Low	Moderate	High

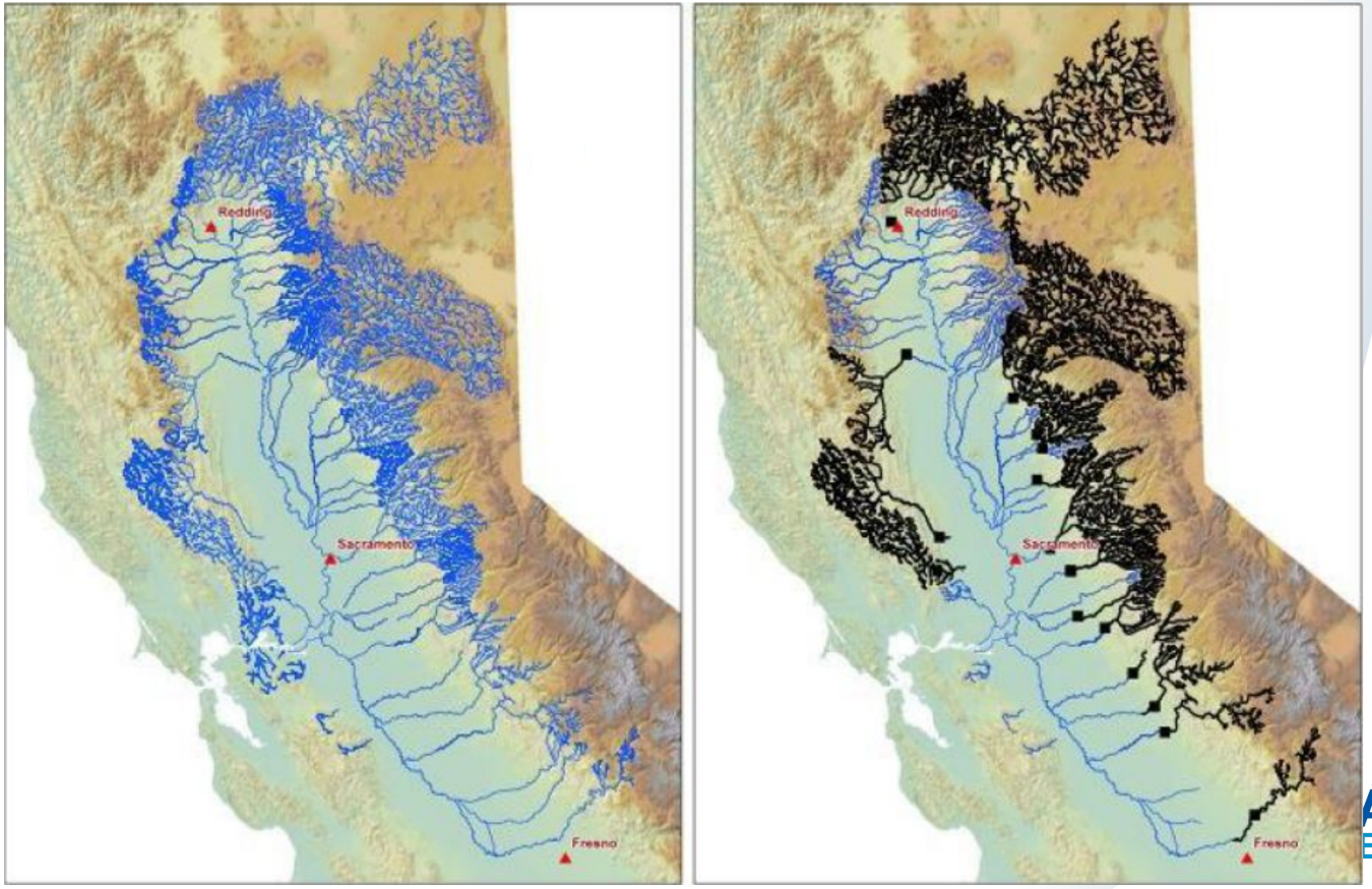
Spring-run



	2010	2015	2020
Mill Creek	High	Moderate	High
Deer Creek	High	Moderate	High
Butte Creek	Low	Low	Low
Battle Creek	High	Moderate	High
Clear Creek	High	Moderate	High
Feather River H	High	High	High

CV Salmon Landscape Scale Stressors

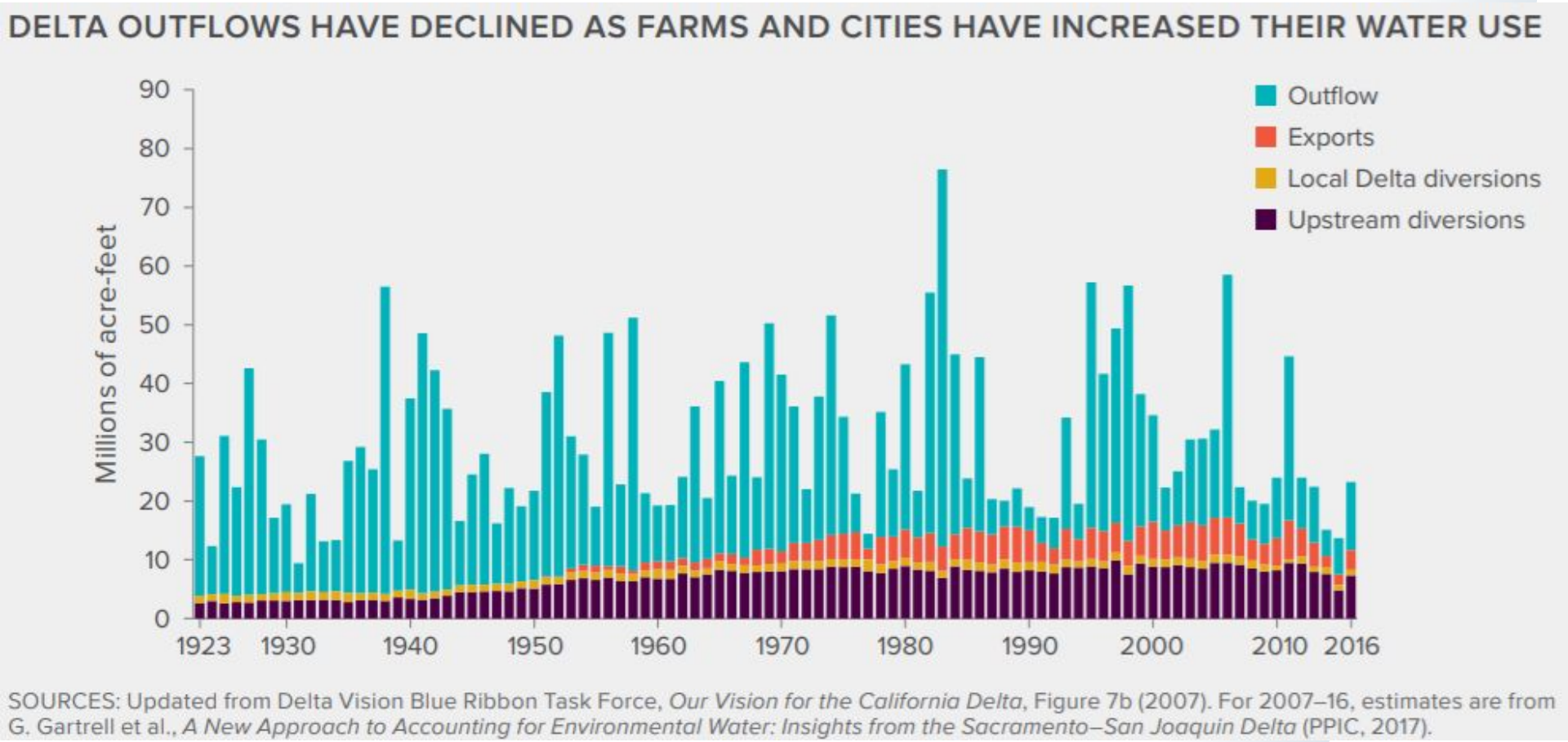
Spawning habitat loss: 90% (Cummins et al. 2008)



CV Salmon Landscape Scale Stressors

Water diversions: January-June flows reduced by 56%

(SWRCB&Cal EPA 2017)



Hanak et al. 2018

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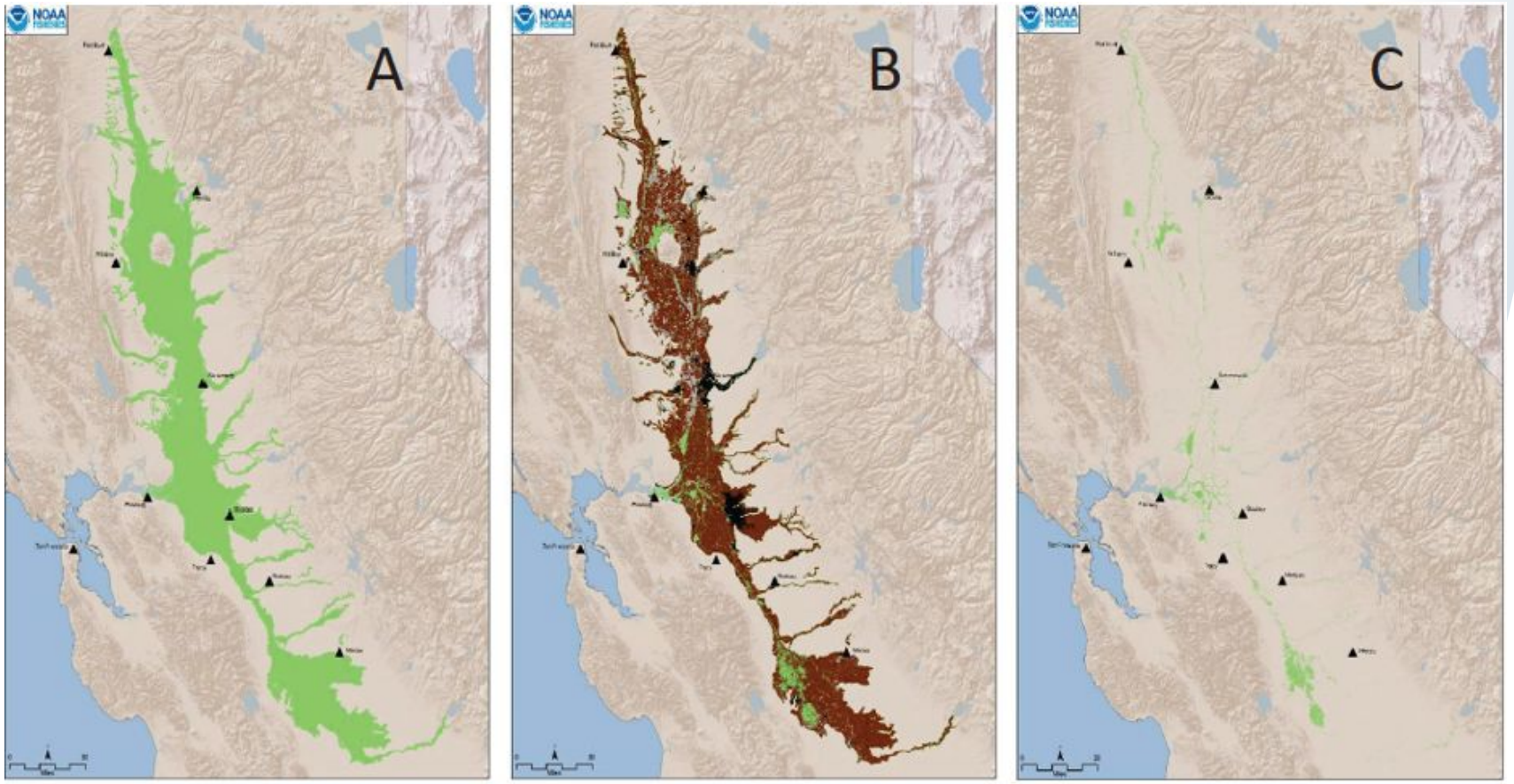
CV Salmon Landscape Scale Stressors

Floodplain rearing habitat loss: 93% (Herbold et al. 2018)



CV Salmon Landscape Scale Stressors

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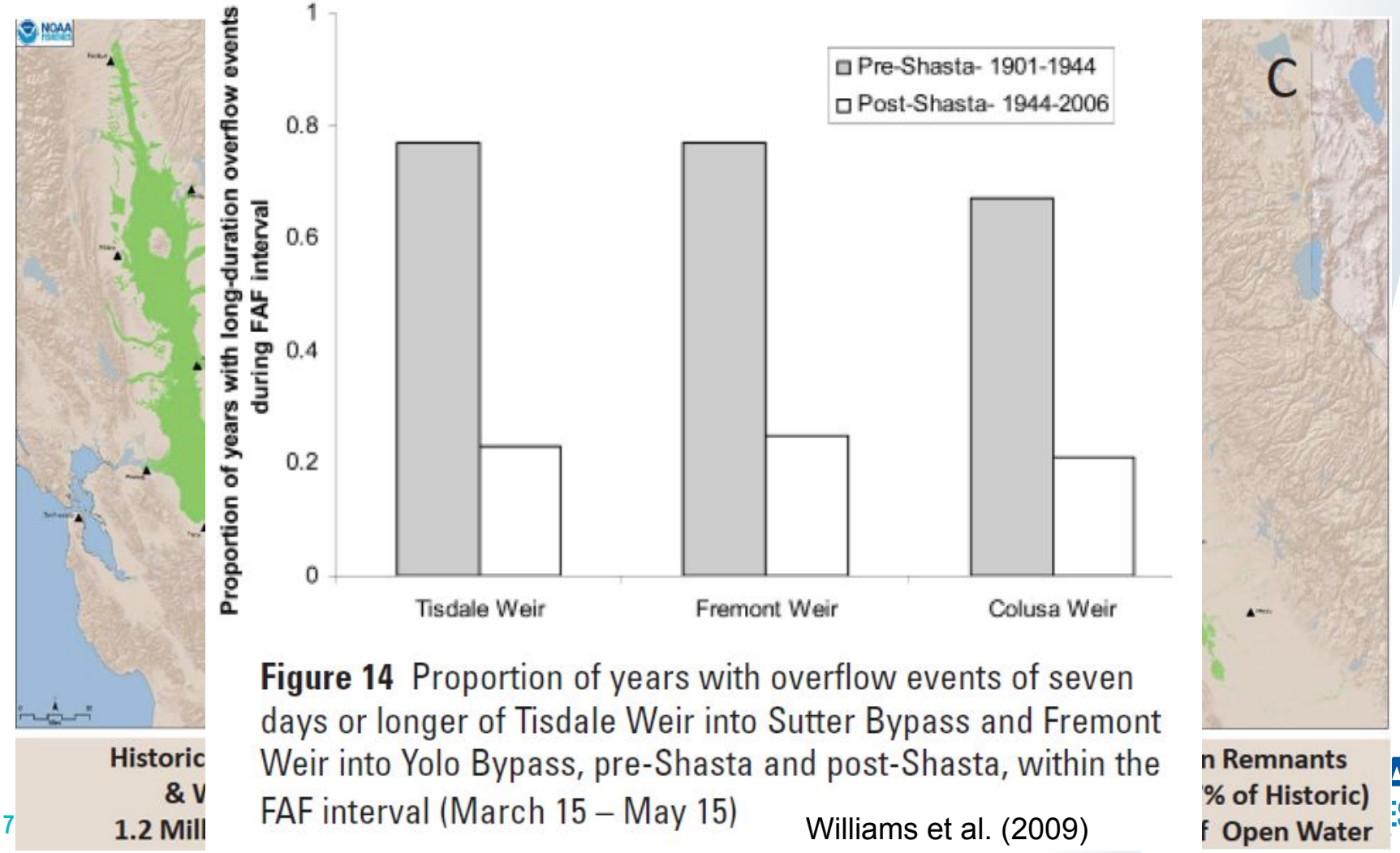
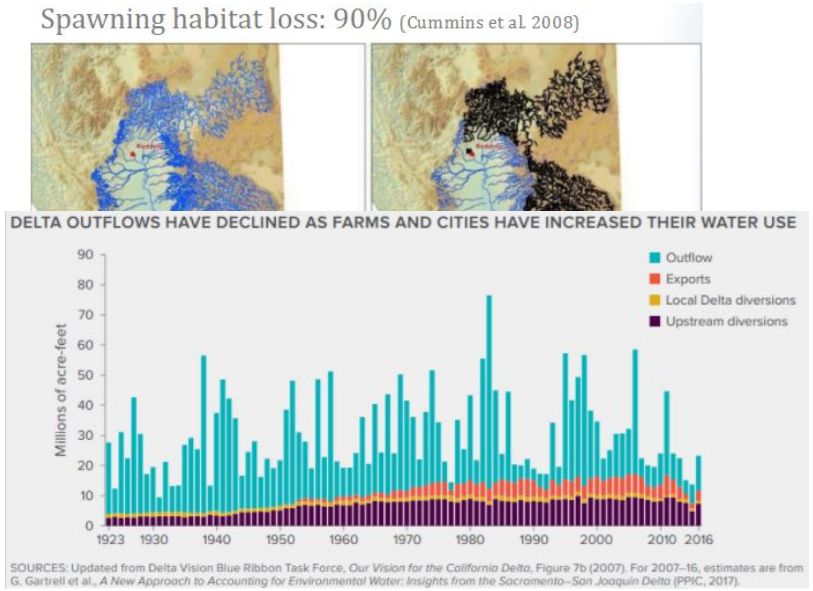
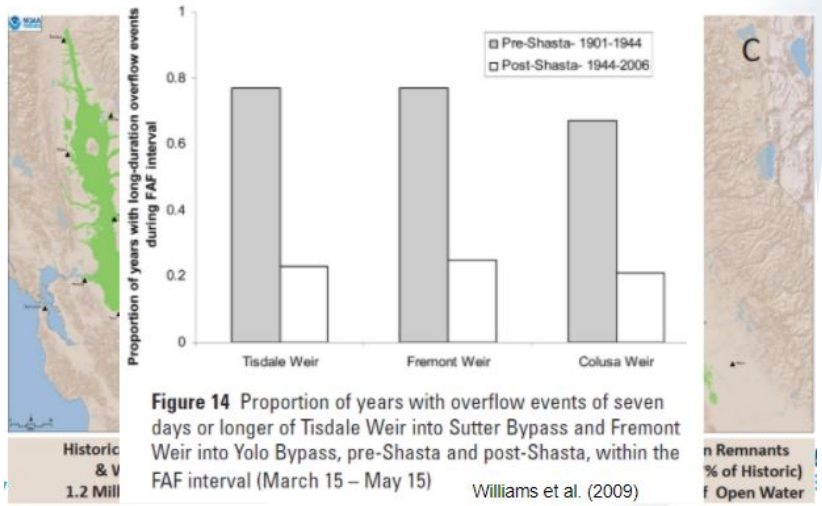


Figure 14 Proportion of years with overflow events of seven days or longer of Tisdale Weir into Sutter Bypass and Fremont Weir into Yolo Bypass, pre-Shasta and post-Shasta, within the FAF interval (March 15 – May 15)

Williams et al. (2009)

Recovery potential





Social harmony

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Floodplain Science

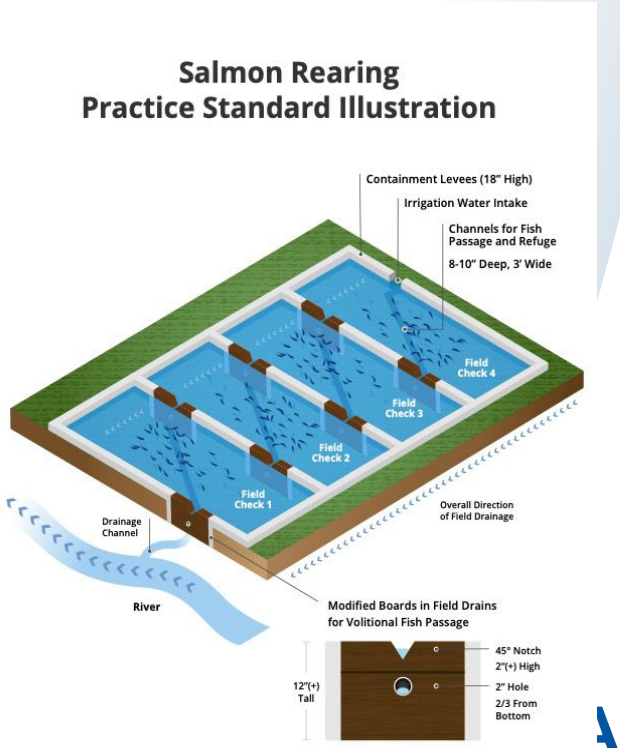
Ted's Lessons from Yolo Bypass Research

1. Salmon Grow Much Faster in Floodplain Habitat
2. Salmon Survival Can Be Quite Good
3. Hydrology Drives the Fish Response
4. Stranding Rates Are Low, Except At Engineered Structures
5. Floodplains Support Life History Diversity
6. Floodplains Also Represent Major Adult Migration Corridors

Management Projects

California Ricelands Pilot Salmon Project

- CA Rice Commission/UC Davis/NRCS/NMFS partnership
- Development of interim practice standard for rice fields



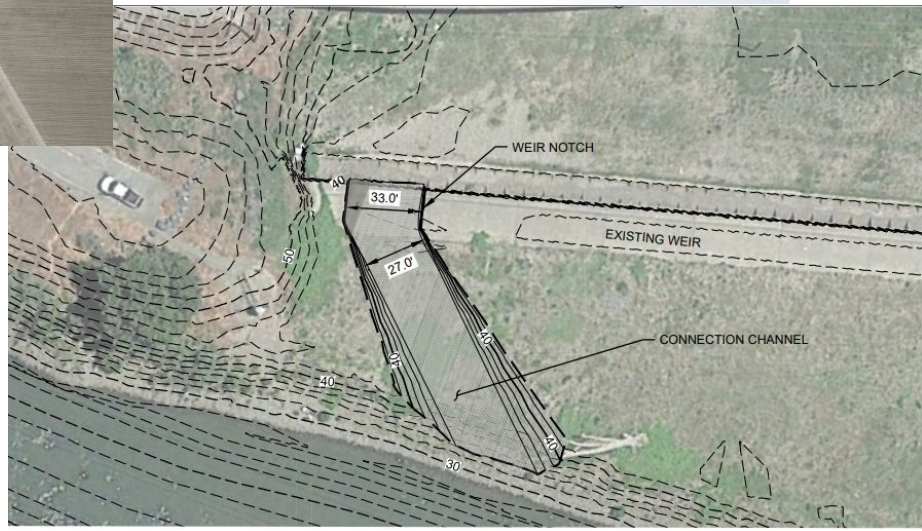
Management Projects

Dos Rios Project

- Site at confluence of Sacramento River, Butte Creek and Feather River
- 1,500 acres of reactivated floodplain habitat for multiple benefits
- Proposed easement and operating agreement to allow farming and increase inundation from Oct 1 - March 15th

Management Projects

Tisdale Weir Rehabilitation and Fish Passage Project (DWR)



Management Projects

Tisdale Bypass Juvenile Passage and Habitat Project (USFWS, DWR, CDFW)

- Central Valley Project Improvement Act

- Reducing or eliminating opportunities for fish to be stranded in the stilling basin and throughout Tisdale bypass

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Management Projects

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Management Projects

Tisdale/Sutter Bypass Multibenefit Planning (RD 1500 and DWR)

- Objective: Scope and develop technical and feasibility-level analyses for potential multi-benefit concepts and management actions in the Tisdale and Sutter Bypasses.

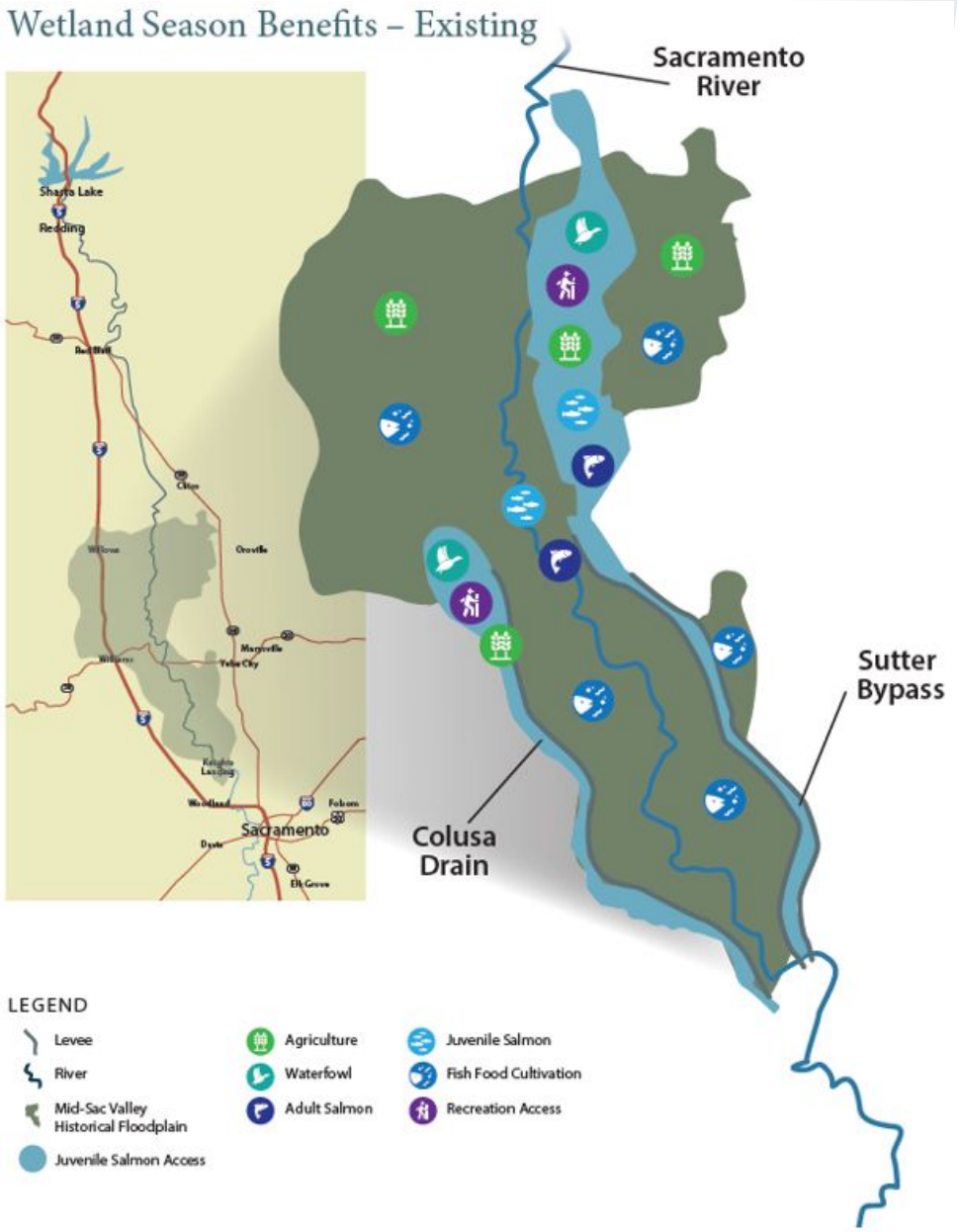
Management Projects

Floodplains Reimagined

1. A voluntary, locally-driven enterprise that serves as an hub for all floodplain related efforts in the region to ensure efficiency and promote coordinated actions.

2. Mutual respect and appreciation cultivated between stakeholders.

3. Stakeholders actively engaged to learn about each other's interests, generate options, define and measure benefits, and identify actions to achieve program objectives.



Planning for a Game Changer

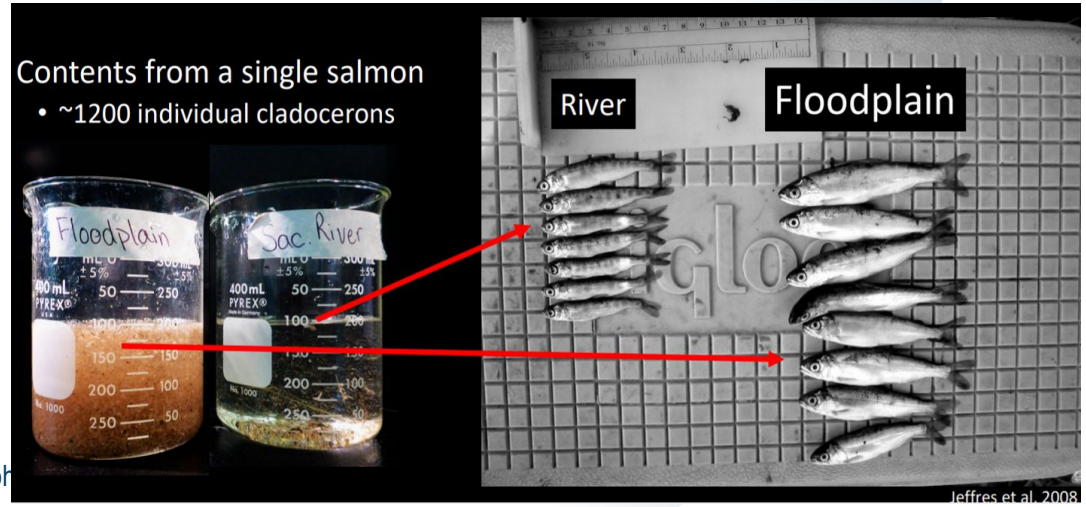
Winter-run Chinook salmon endangered for 32 years

Spring-run Chinook salmon threatened for 22 years

Extinction risk is increasing

Climate change

Need a game changer



Questions

Photo credit: John Hannon

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