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Managing Water in the West

Shasta Dam Fish Passage Evaluation – RPA Action V

Near Term Actions
June 2017

U.S. Department of the Interior
Bureau of Reclamation

Agenda

- Introduction and Meeting Guidelines
- Overview, Objectives, and Purpose
- Project Background
- Environmental Compliance
- Public and Stakeholder Engagement
- Action V Near-term Activities
- Pilot Plan Studies
- ESA 10(j) Experimental Population
- Cultural Resources
- Schedule and Next Steps

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Overview

- In 2009, NMFS issued a BO on the Long-Term Operation of the CVP and SWP
- The BO includes RPA actions that would allow the CVP and SWP to operate the projects in compliance with the ESA
- RPA Action V includes an evaluation of the potential reintroduction of Federally-listed Chinook salmon and steelhead to historical habitats

Overview Continued

- Action V is separated into near-term and long-term actions
- The near-term of Action V is to increase the geographic distribution and abundance of listed fish
- The near-term actions of Action V includes development of a Shasta Fish Passage Pilot Plan and associated Pilot Studies to determine the feasibility of reintroducing winter-run Chinook salmon above Shasta Dam to historical habitats
- This EIS is an effort to analyze and disclose impacts associated with implementing the Shasta Fish Passage Pilot Plan – Pilot Studies

EIS Pilot Studies Purpose and Need

NEED

- **Construction of Keswick and Shasta dams limited winter-run Chinook salmon to the mainstem downstream of the dams and has resulted in the decline of coldwater habitat below the dams.**
- **Projections of further incidences of temperature related impacts and reduction of coldwater habitat is expected to further exacerbate the imperiled status of winter-run and spring-run Chinook salmon.**

PURPOSE

- **Evaluate the feasibility of establishing self-sustaining populations of listed anadromous fish above Shasta Lake to make a well-informed decision about initiating a long-term fish passage program**

Meeting Purpose

- Gather information to support the preparation of an EIS on the implementation of Pilot Studies
- Obtain suggestions on the scope of alternatives and issues to be addressed in the EIS
- Identify important issues raised by the public related to the development and implementation of the proposed action

Environmental Compliance

- Habitat Assessment – 2014
  - Description of habitat availability and conditions
- Draft Pilot Implementation Plan - 2016
  - Framework and guide for evaluating potential reintroduction
- Draft Preliminary EA - 2017
  - Analysis of three alternatives
    - No Action
    - reintroduction in McCloud River and Sacramento River at the same time
    - reintroduction in those locations in different years
- Preparation of an EIS on implementing Pilot Studies included in the Draft Pilot Plan- 2017
  - Initial EA analysis conducted indicated uncertainties associated with the resources analyzed

Background

- Public and Stakeholder Engagement
- Action V Near-term Activities
- Pilot Plan Studies

Participating Agencies

- Bureau of Reclamation
- National Marine Fisheries Service
- CA Department of Water Resources
- CA Department of Fish and Wildlife
- Fish and Wildlife Service
- CA State Water Board
- US Forest Service
- US Geological Survey

Public and Stakeholder Engagement

- Public Meetings
- Stakeholder Questionnaire
- Project Update Webinars
- Habitat Assessment Webinar
- McCloud River CRMP
- Siskiyou Co. Board of Supervisors
- CalTrout Water Talk
- Local timber managers
- Winnemem Wintu
- Sweetbriar Cabin Owners
- California Board of Forestry
- Fishing Groups

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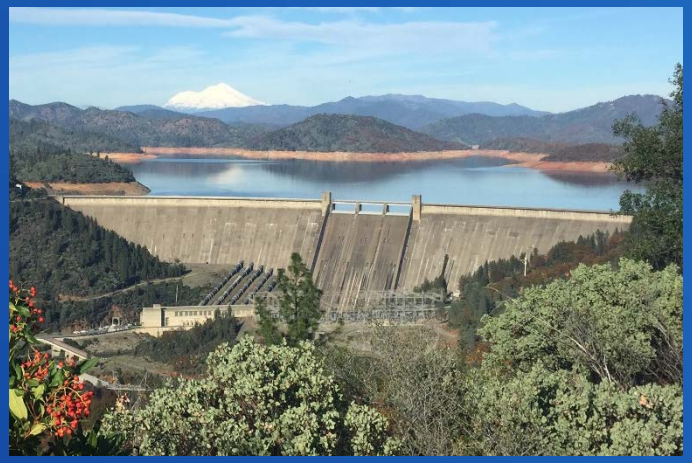
Near-term Pilot Fish Passage (Action V)

- **Habitat Assessment**
  - Completed August 2014
- **Biological Productivity**
- **Technical Feasibility of Pilot Juvenile Collectors**
  - Head of Reservoir
  - In-River
- **Feasibility Determination**



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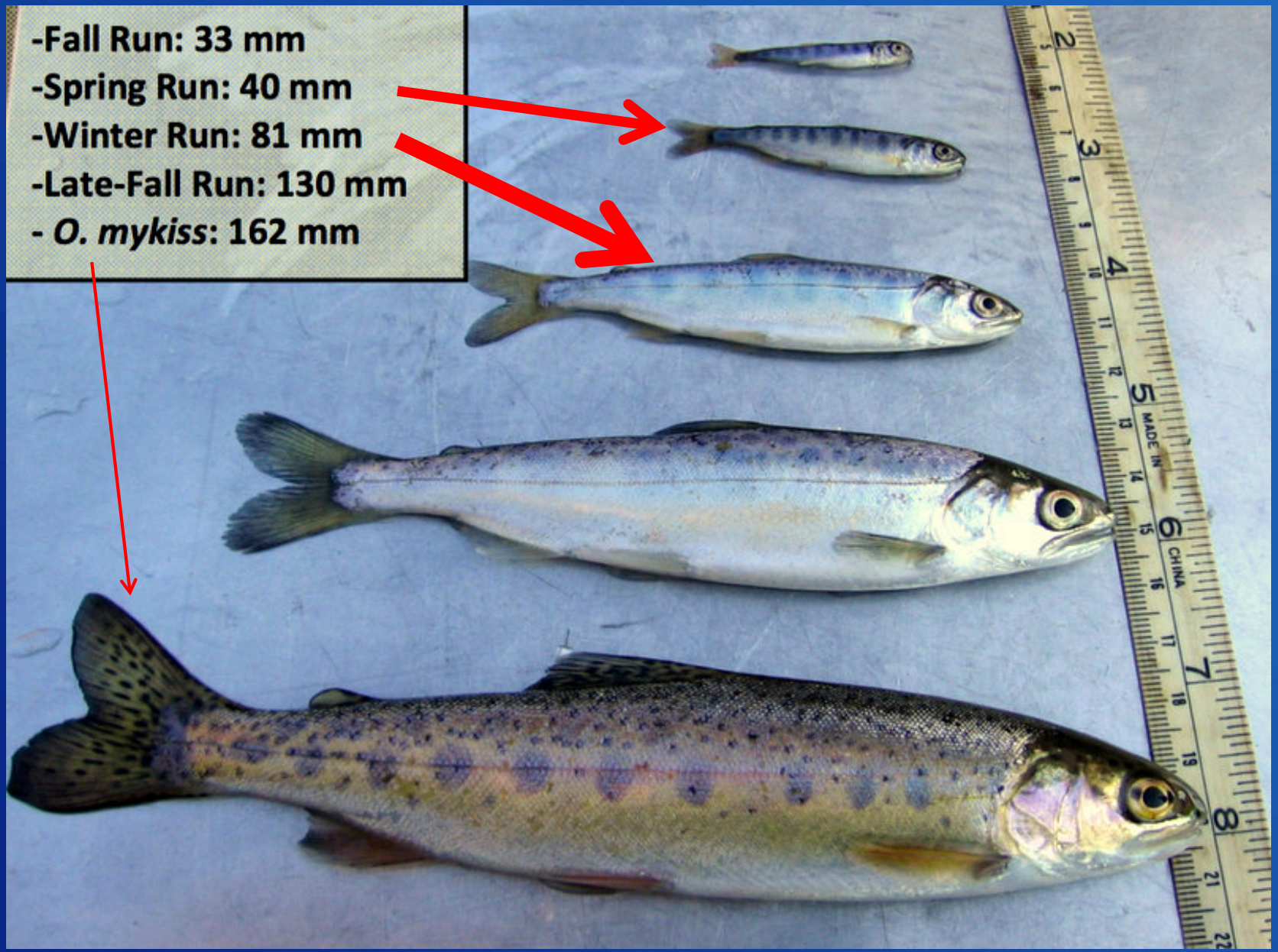

USFWS Photo

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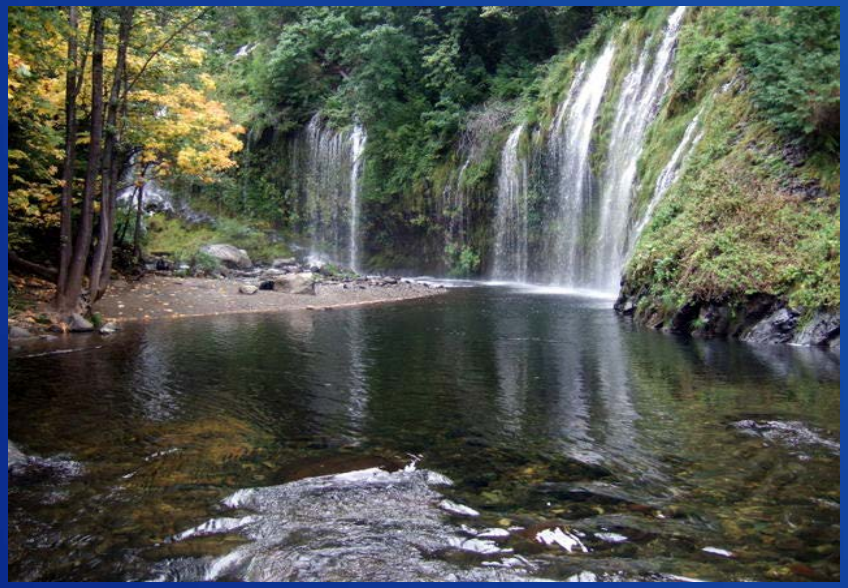
Springs provide year round cold water needed by salmon



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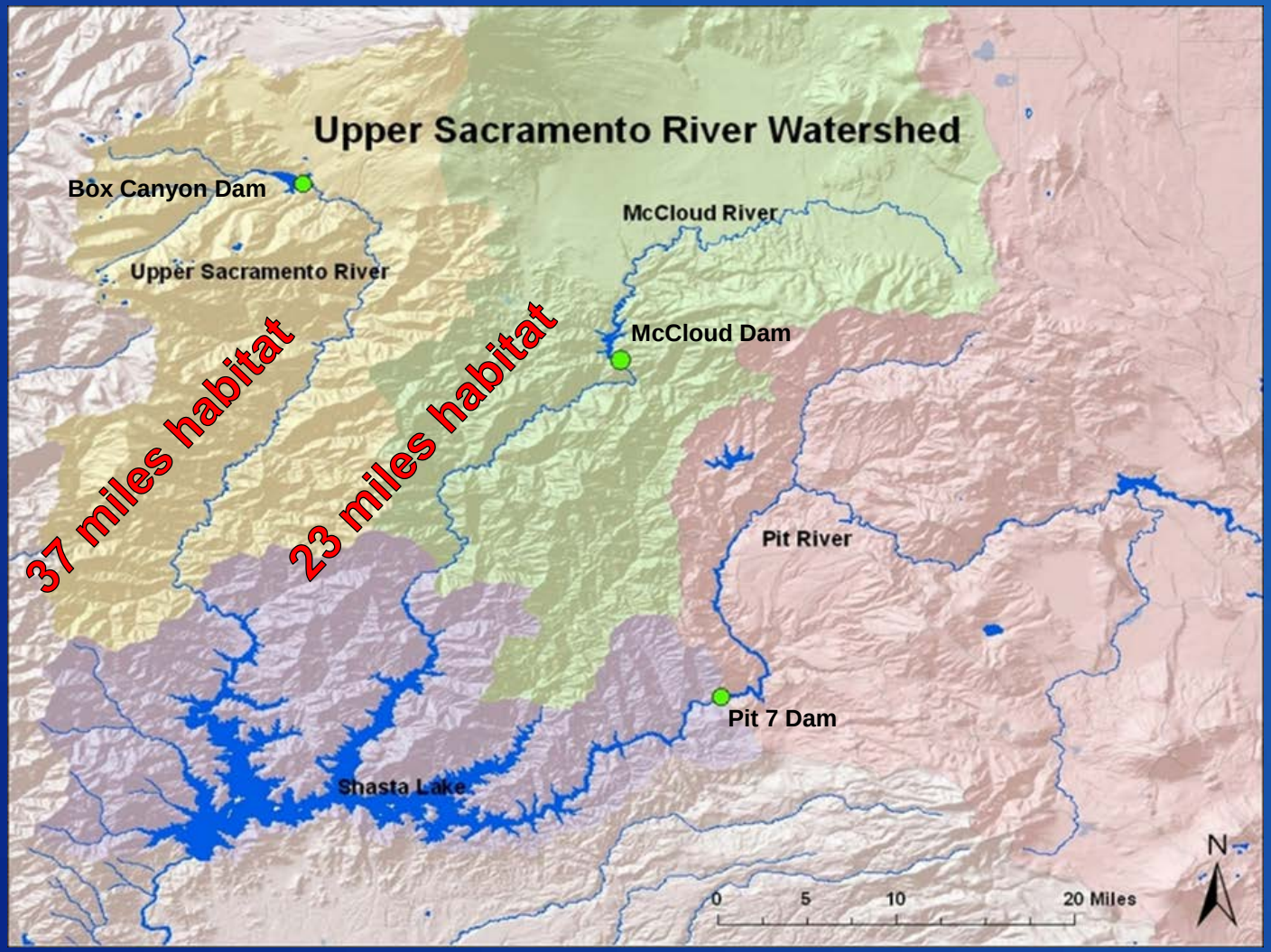
Upper Sacramento River Watershed



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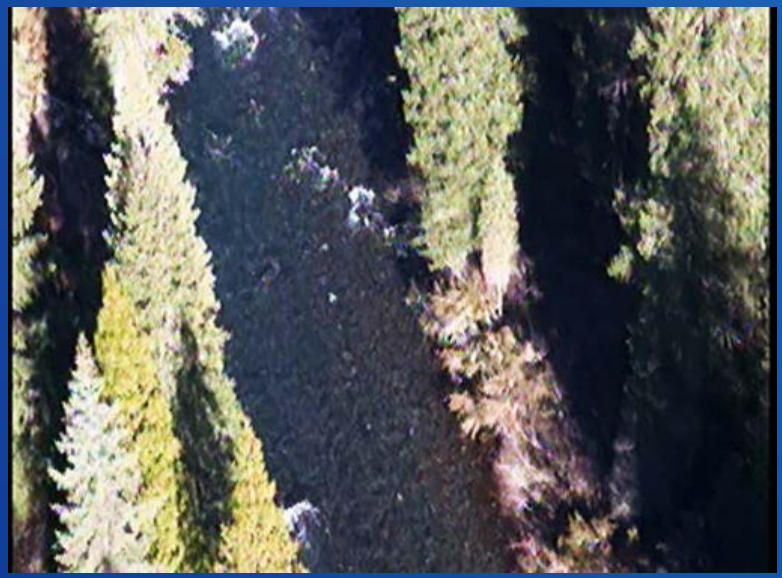
Habitat Assessment

- Inform locations to focus initial pilot studies
- **Estimated**
  - Spawner Capacity
  - Rearing Habitat Quality



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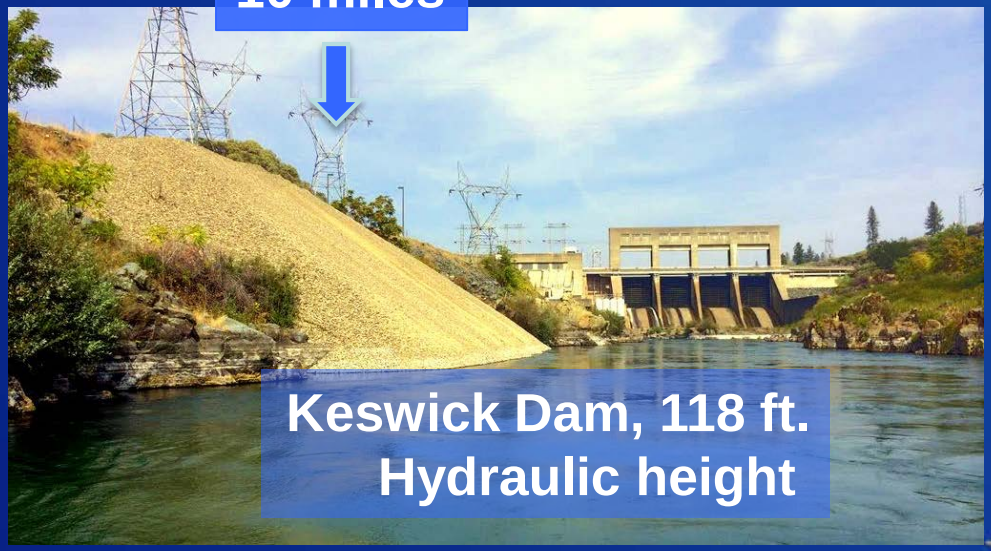
10 miles



Shasta Temperature Control Device

Keswick Trap

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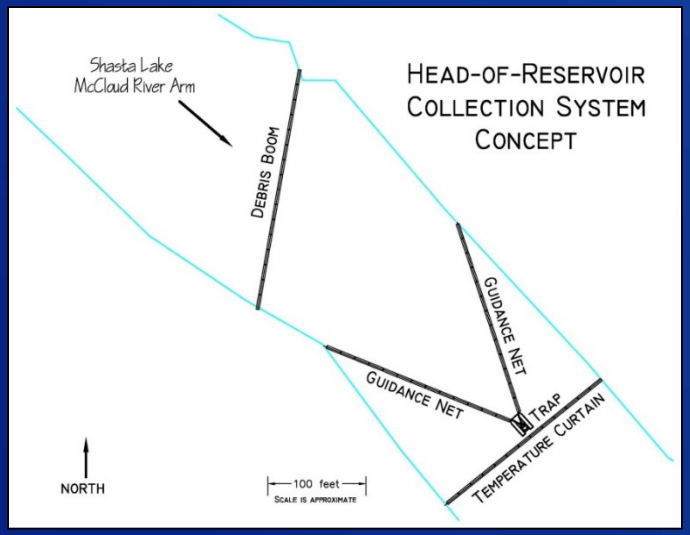
Pilot Plan - Year 1: Fry/Juveniles



Key questions focused on:

- Migration within lake
- Survival rates
- Juvenile collection efficiency
- Collection location and method
- Transport method/release location
- Timing of migration
- Size and distribution (growth rates)
- Differences in productivity between the tributaries
- Competition/predation with trout

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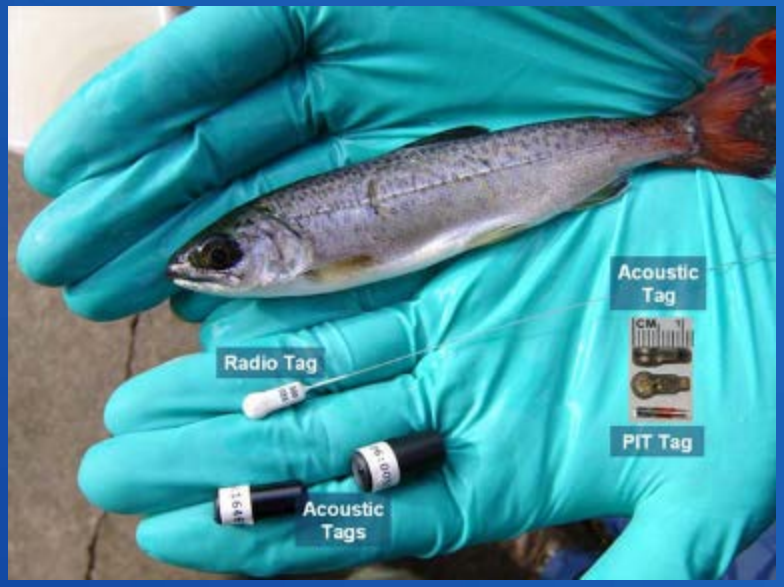

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Year 2: Fry/Juveniles and Instream/ Streamside Egg Incubation

Questions from Year 1 plus:

- Survival of swim-up fry to emigrant reaching lake
- Method for egg transplant
- Location for egg incubation/planting

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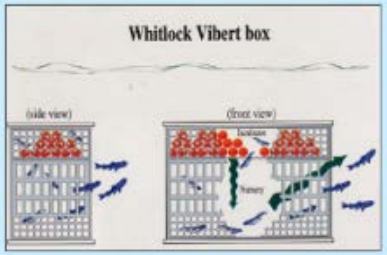
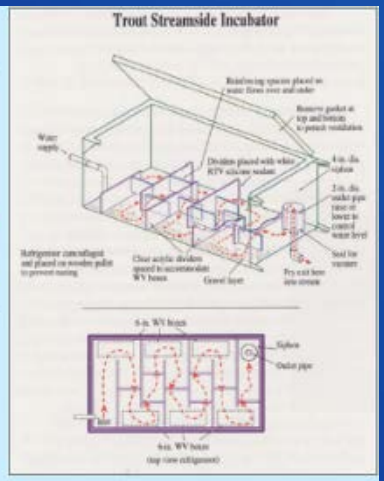
Egg Introduction



Eggs are placed in top of the Whitlock-Vibert boxes



Schematic of the Fridge Streamside Incubator

Eggs are placed in the top compartment

Boxes with eggs are placed within the frige's 'channels'

Brian Ashton photo

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Year 3: Fry/Juveniles, Instream/ Streamside Egg Incubation, and Adults

Questions from Y1 and Y2 plus:

- Prespawn mortality rates
- Release location
- Juveniles reaching lake per adult female
- Sufficient holding and spawning habitat
- Distribution of holding and spawning adults

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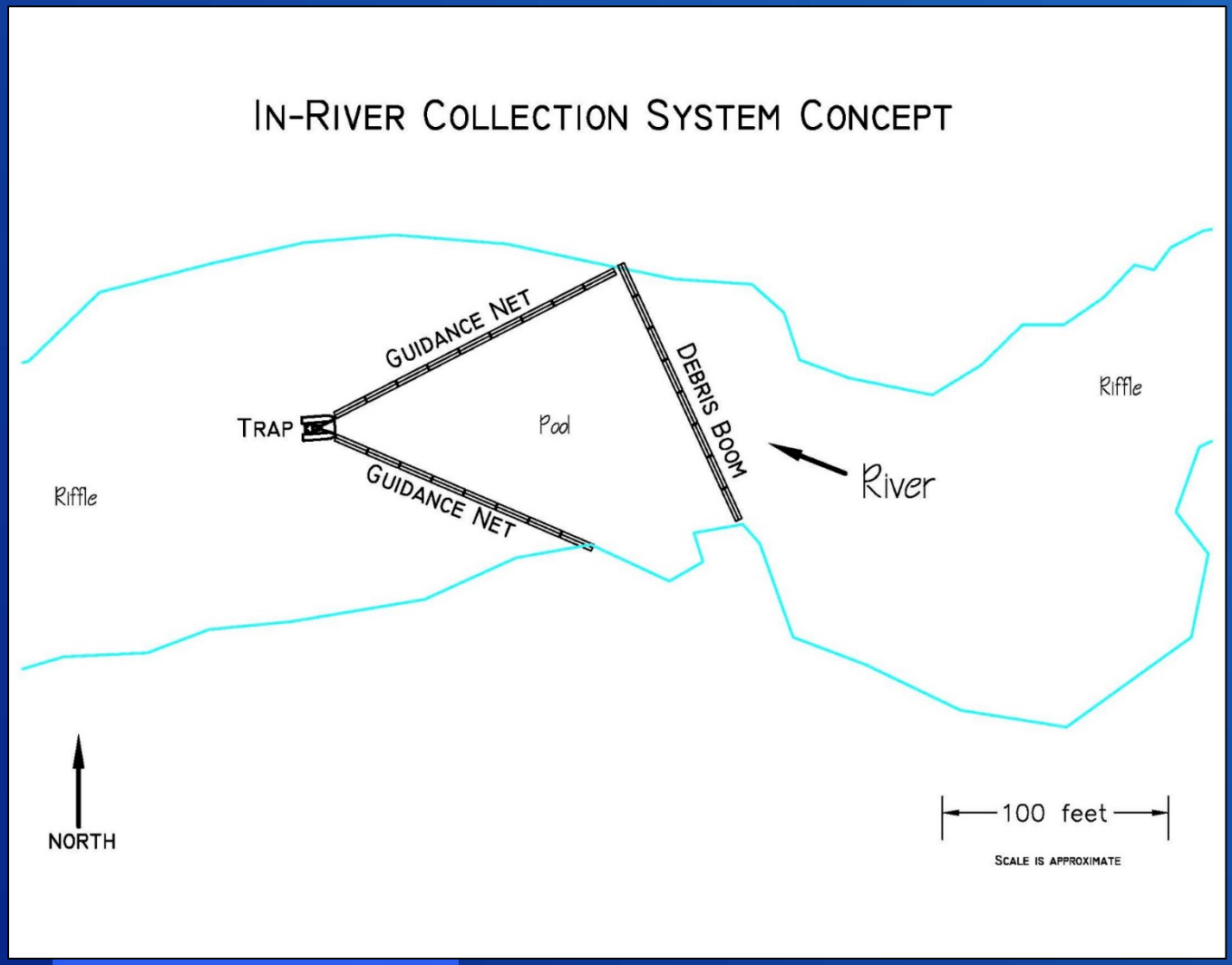
In-River Juvenile Collection System



Randy Beckwith, DWR

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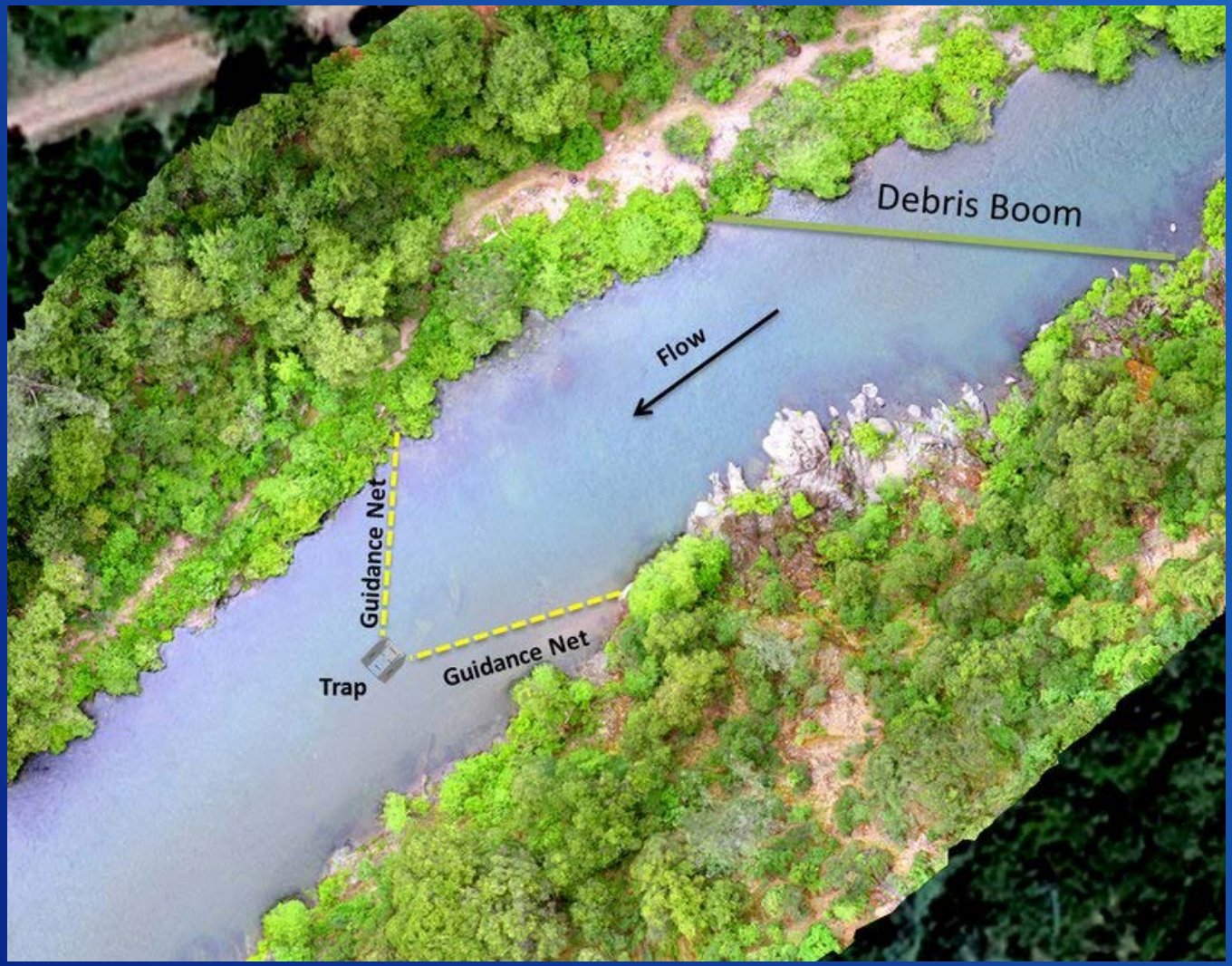
In-River Juvenile Collection System



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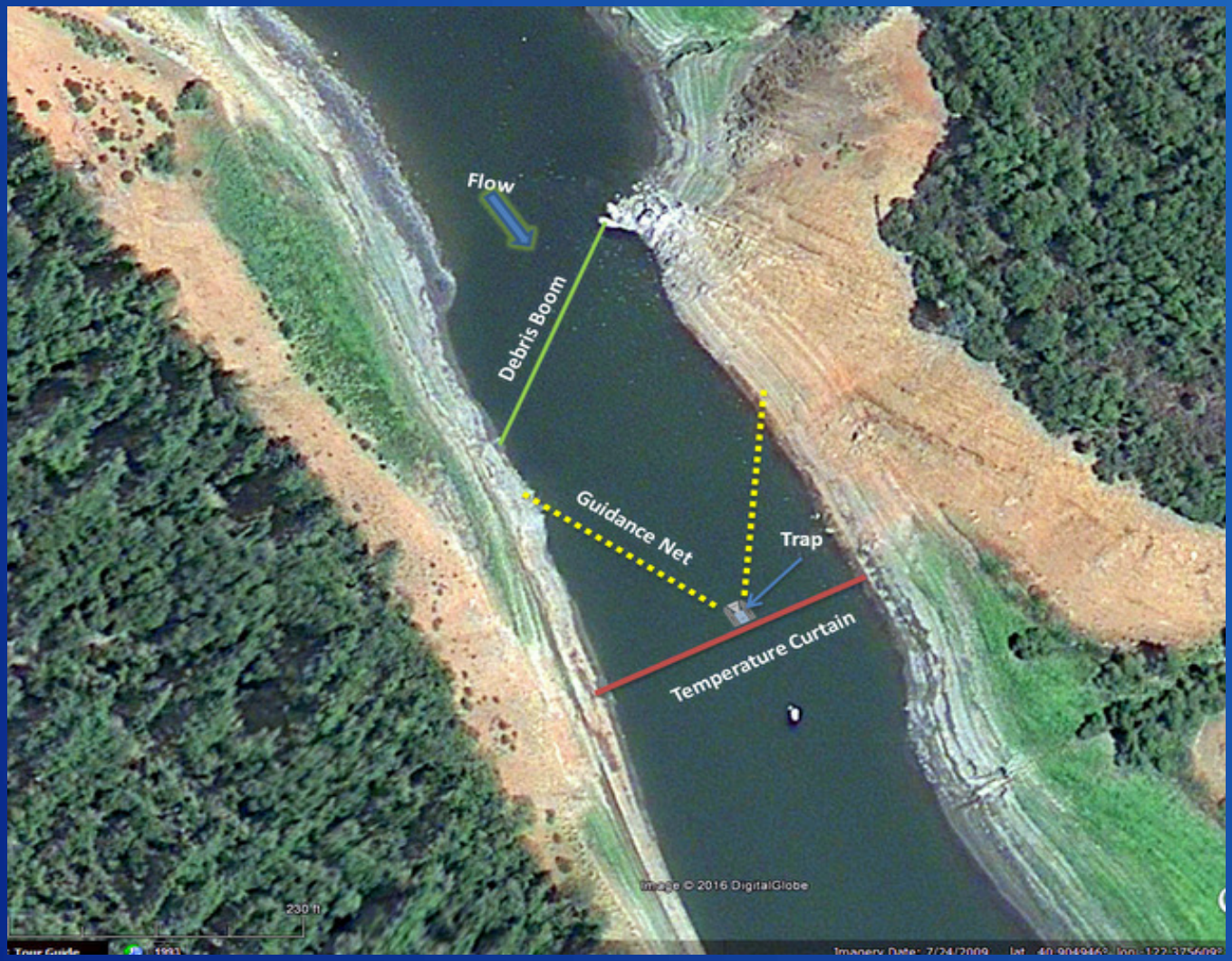
Head of Reservoir Juvenile Collection



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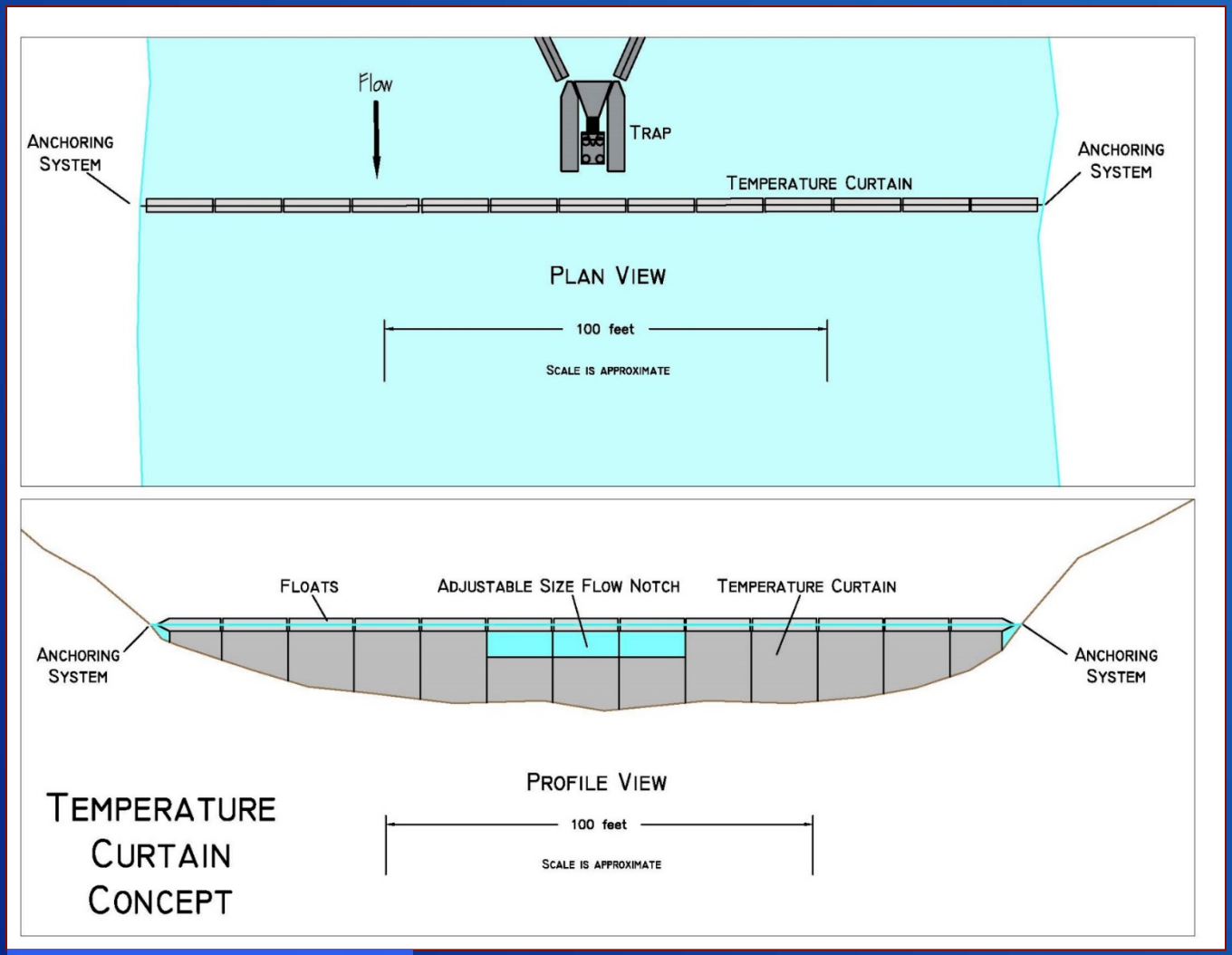
Temperature Curtain Concept



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NMFS ESA 10(j)

Experimental Population

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ESA Section 10(j) – Experimental Population

- **Allows for reintroductions of Threatened & Endangered (T&E) species as "experimental populations" into suitable habitat outside the species current natural range but within probable historic range**
- **Primary purpose is to promote recovery of T&E species in the face of regulatory concern**
- **10(j) actions must:**
  - further the conservation of species
  - be determined "essential" or "nonessential"
  - be wholly separate from non-10(j) populations.

Environmental Compliance
ESA Section 10(j)

- Draft EA – Winter 2017
  - Will include Sacramento winter-run Chinook and Central Valley spring-run Chinook
- Draft 10(j) rule
  - The rule is proposed to remain until species are delisted
- Draft 4(d) rule
  - Allows regulatory flexibility

Cultural Resources

Cultural Resources: *Prehistoric and historical sites, buildings, structures, objects, districts, cultural landscapes, sacred sites, and traditional cultural properties.*

Cultural Resources

- **Archaeological Sites**

  Generally Native American

- **Historical Sites**

  Generally post-dating Euro-American arrival to the region

- **Traditional Cultural Properties (TCPs)**

  Places rooted in a community's history and important in maintaining cultural continuity

Houses, drying racks; McCloud River, Shasta Co.; July 1903

Courtesy of UC Berkeley, Bancroft Library
http://www.oac.cdlib.org/ark:/13030/tf3199p2c2/?order=1

Cultural Resources Compliance

National Historic Preservation Act Section 106 (Title 54 U.S.C. §306108)

- Federal agencies must take into account the effect of an undertaking on any historic property, in consultation with interested parties.
- Historic Property: a cultural resource that is eligible for listing or listed on the National Register of Historic Places. Resource meets significance criteria at 36 CFR §60.4.

View on the Sacramento river. 1882

Courtesy of UC Berkeley, Bancroft Library
http://www.oac.cdlib.org/ark:/13030/tf3199p2c2/?order=1

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Project Timeline

• Public Scoping Meetings	Summer 2017
• Scoping Report	August 2017
• Public Draft EIS	Winter 2017
• Final EIS	Early Spring 2018
• Record of Decision	Late Spring 2018
• 10(j) Designation	Late Spring 2018
• Permitting	2017-2018
• Pilot Studies Initiated	2018
• Monitoring Studies	2018
• Fish Passage Report	2021

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For Additional Information

- **Program website: https://www.usbr.gov/mp/BayDeltaOffice/shasta-dam-fish-pass.html**
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- **John Hannon, Bureau of Reclamation, jhannon@usbr.gov, 916-414-2413**

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