IEP Update

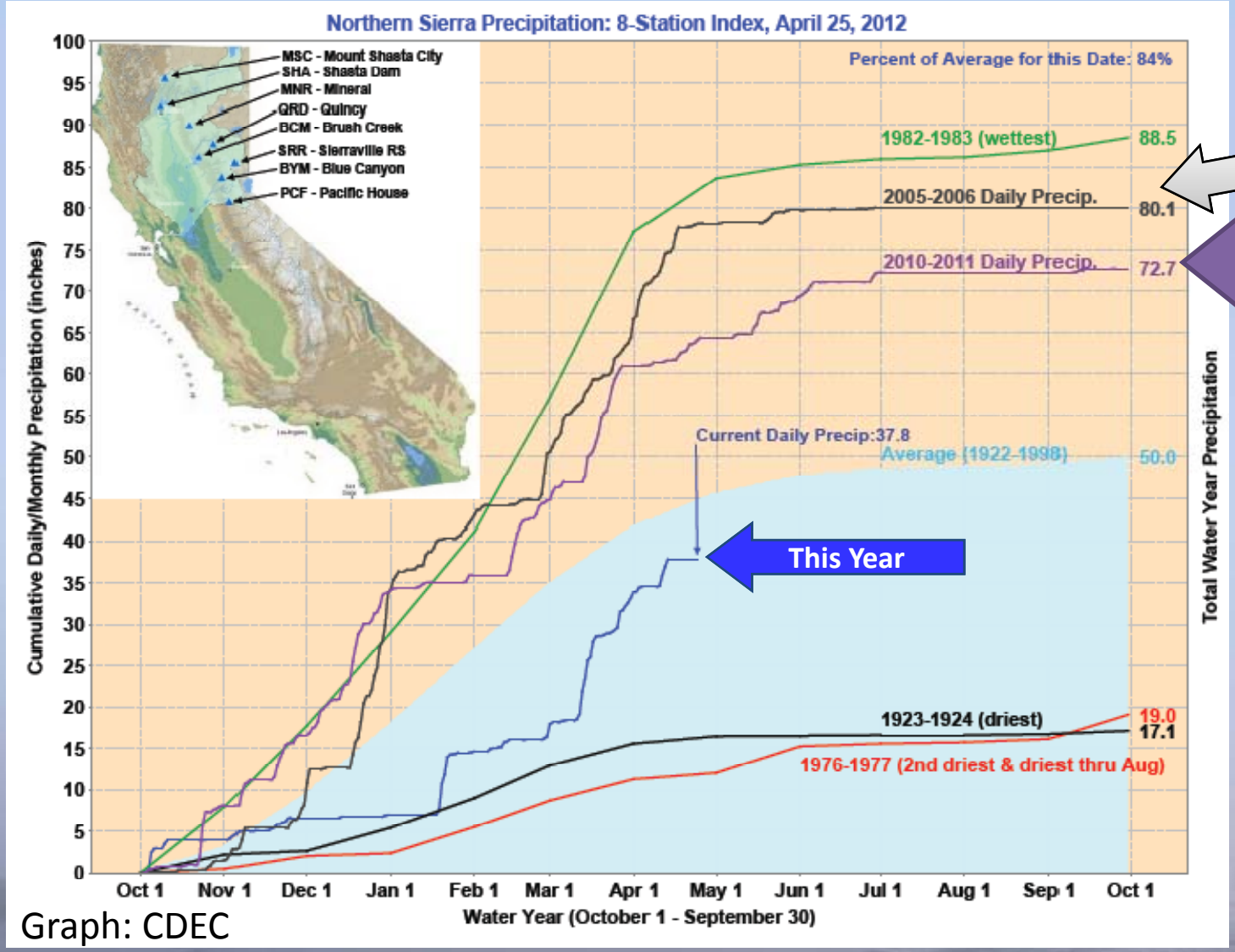
- 2011 – Water, Fish
- 2012 IEP Workshop
- What's next

Anke Mueller-Solger,
IEP Lead Scientist,
Delta Stewardship Council

Interagency Ecological Program
COOPERATIVE ECOLOGICAL INVESTIGATIONS SINCE 1970

Delta Stewardship Council Meeting,
April 26, 2012

2011 Was Very Wet



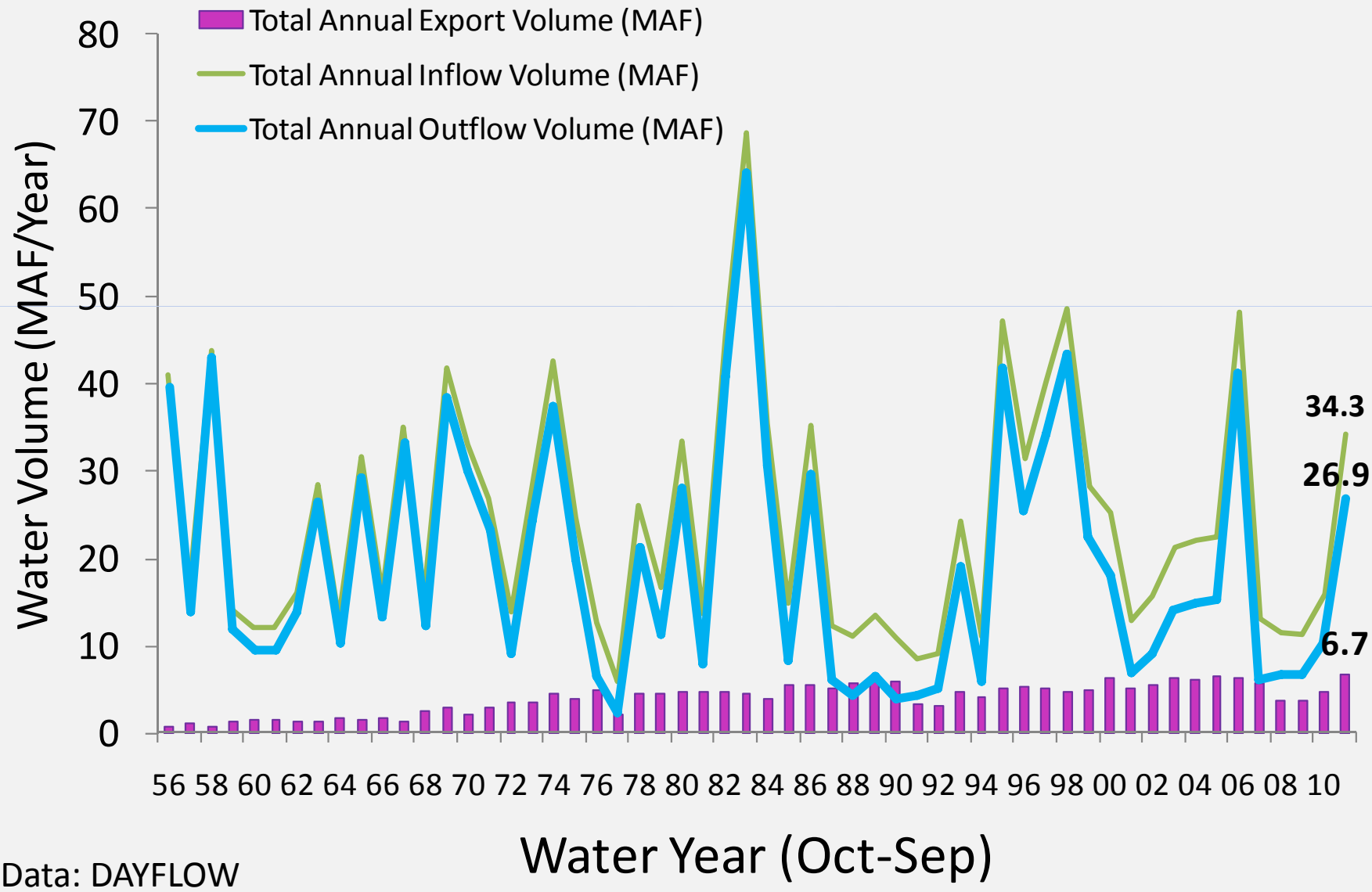
WY 2006

WY 2011

This Year

Graph: CDEC

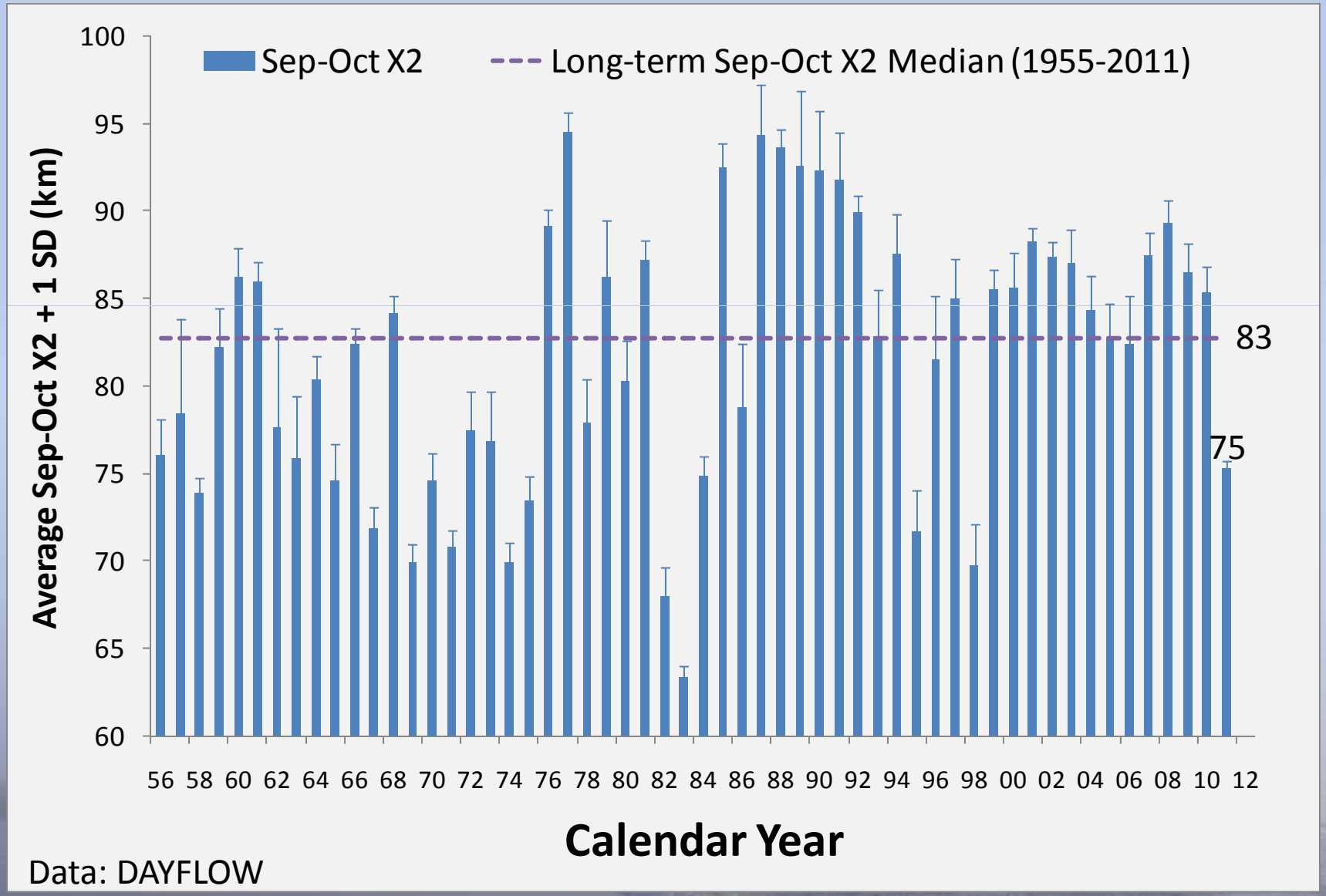
… And Had High In- & Outflows and Record High Exports



Data: DAYFLOW

… And a Westward Low Salinity Zone in the Fall.

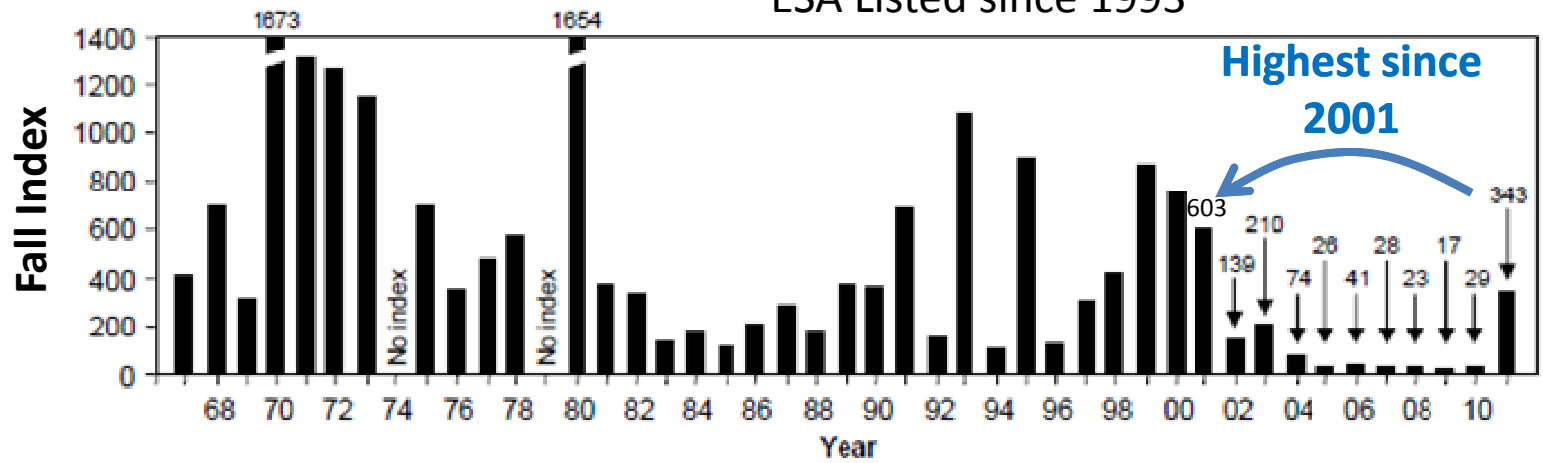
(September-October)



Some Fish Abundance Indices Improved in 2011

Delta Smelt

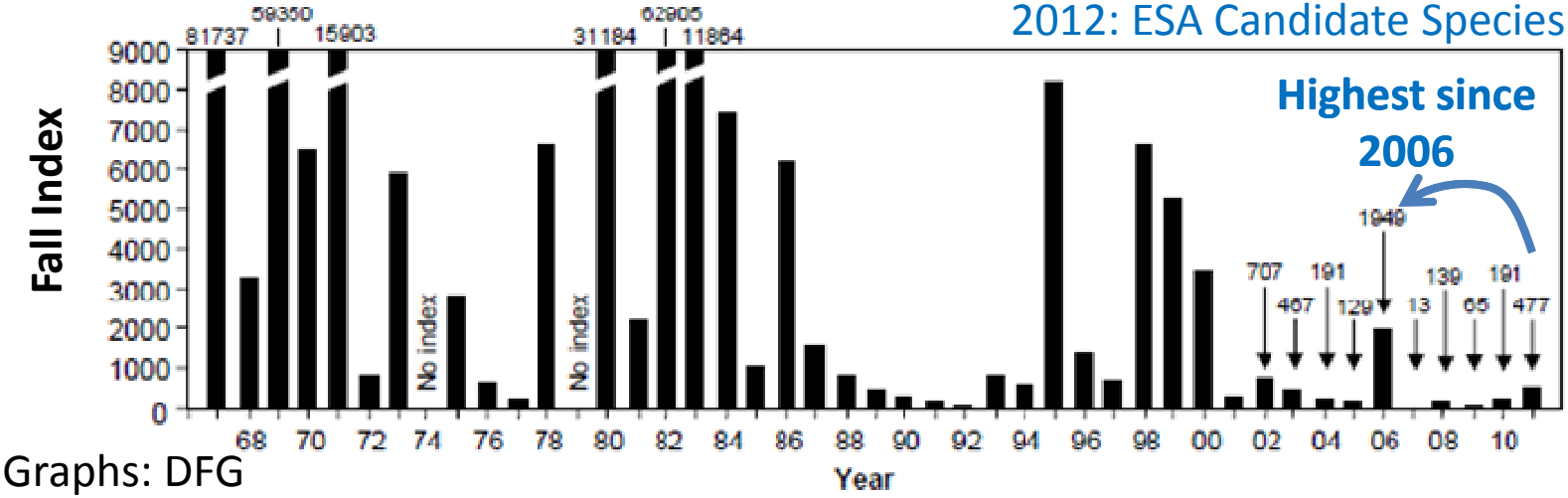
ESA Listed since 1993



Longfin Smelt

CESA Listed since 2009

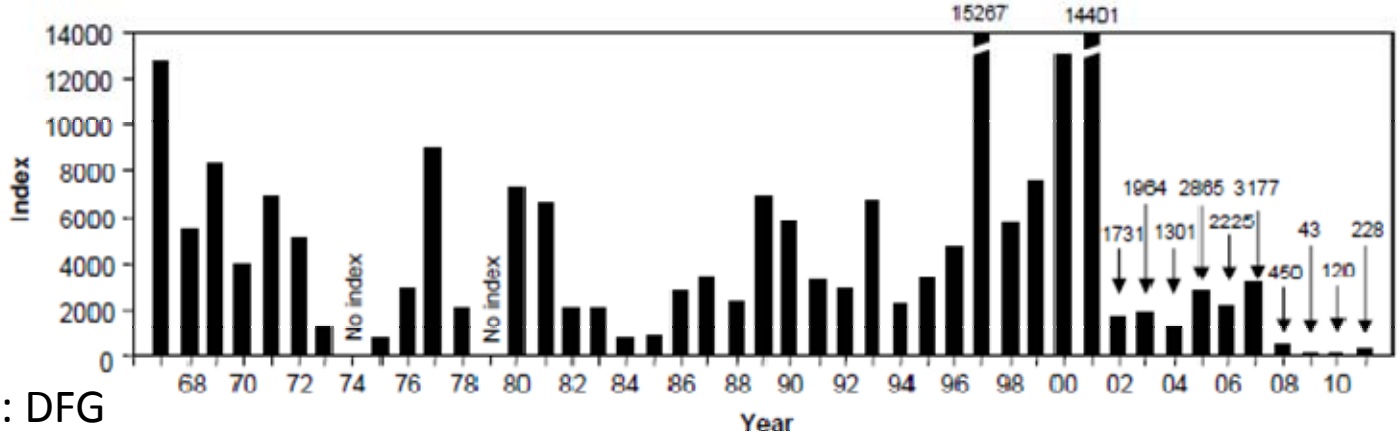
2012: ESA Candidate Species



Graphs: DFG

… Others Did Not

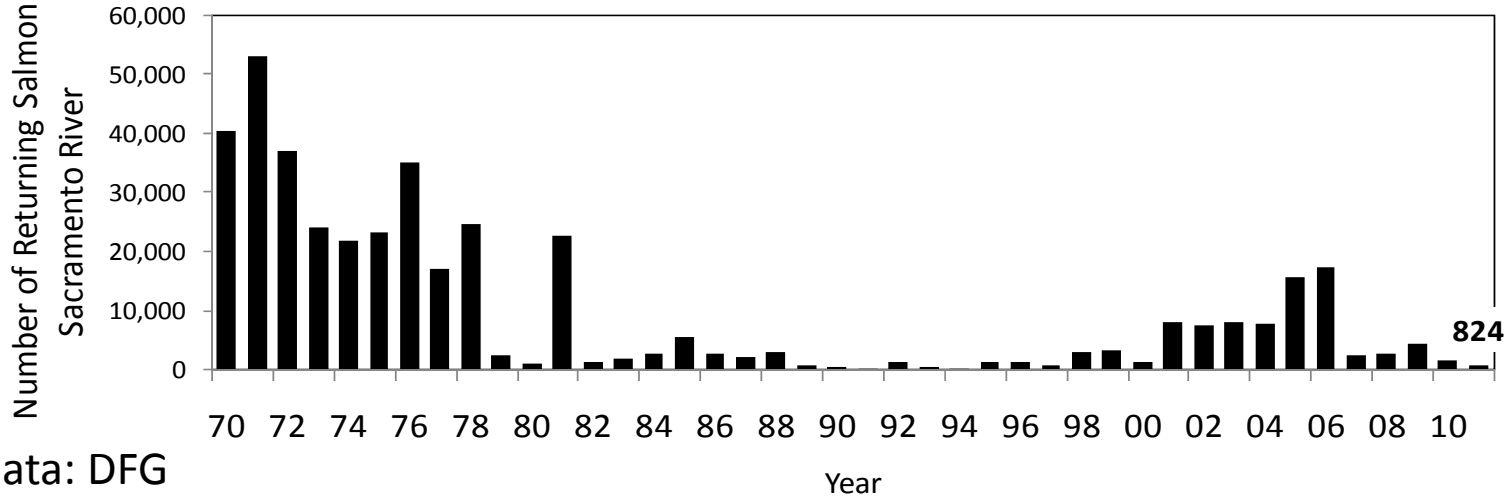
Threadfin Shad (non-native)



Graph: DFG

Winter Run Chinook Salmon

ESA Listed since 1989



Data: DFG

So what happened?

Thursday

?

Friday

Wednesday

Some answers at the 2012 Annual IEP Workshop

Many preliminary

~ 350 registered attendees, 56 talks in 11 sessions, 51 posters

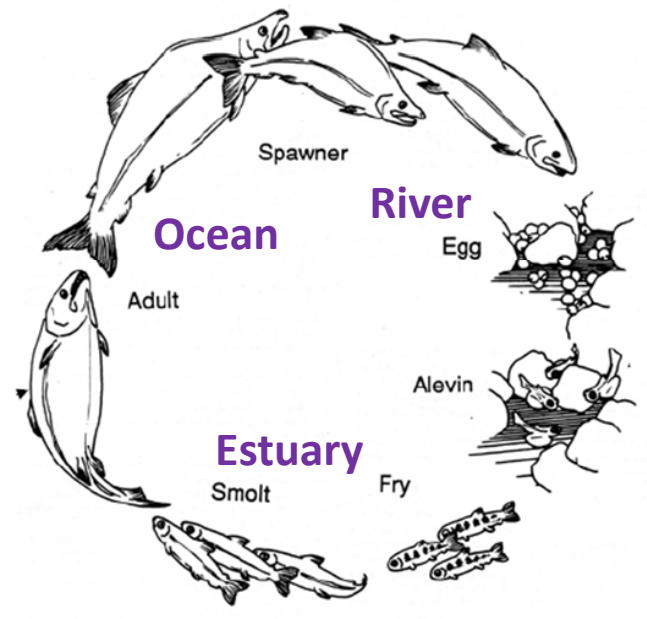
Cooperation with CWEMF

Photo: Bill Templin, DWR

Thursday

A few Workshop Highlights:

Chinook Salmon

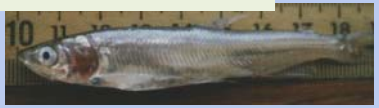


- Ocean, river, estuary conditions all matter – the 4 H's: hydrology, harvest, hatcheries, and habitat *(J. Israel & R. Johnson, Reclamation and S. Lindley, NMFS)*
- Survival of migrating juveniles is getting worse - best in North Delta/ Sacramento River (up to 70%), poor in Central Delta (down to < 10%, *Russ Perry & Jon Burau, USGS*), and poorest in the South Delta/San Joaquin River (often <10%, *Pat Brandes, FWS*)
- Survival is generally greater at higher flows (*several talks*). Duration of flow direction may be important metric (*B. Cavallo, Cramer Fish Sciences*)
- The Sacramento River banks near the city of Sacramento are "lined" with predators (>3 per 100m) – tethered salmon smolts had a 31% chance of being eaten in one hour (*Cyril J. Michel, NMFS*)
- Review of IEP Delta Juvenile Monitoring & Survival Studies **– Public scoping meeting May 11** (*J. Kirsch, FWS*)

A few Workshop Highlights:

Delta & Longfin Smelt

Wednesday



Friday

Population and individual-based life cycle models – food & flow matter

Fall low salinity habitat ("FLaSH") studies (*fka "Fall X2"*)

- Required by 2008 FWS **Delta Smelt** Biological Opinion
- FLaSH Report & AM Plan review by DSP panel in June/July
- Intensive new monitoring and studies starting in 2011

Delta Smelt, "FLaSH" Studies

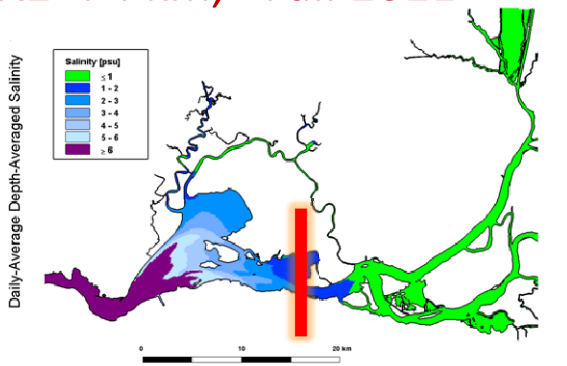
Current FLaSH **analysis & synthesis** approach: Compare

-4 regions (High Salinity, Low Salinity, Fresh, and Cache/SRDWSC)

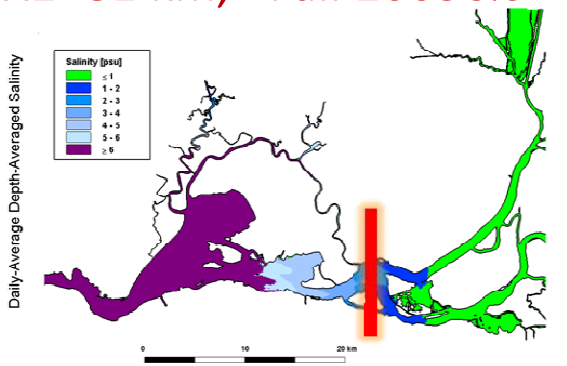
-4 years (2005, 2006, 2010, 2011)

→ Were habitat & fish predictions for **3 fall X2 scenarios** accurate?

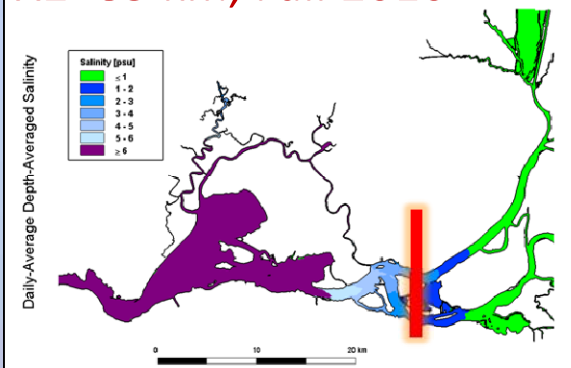
X2=74 km, ~Fall 2011



X2=81 km, ~Fall 2005&6



X2=85 km, Fall 2010



Graphs: Michael MacWilliams, Delta Modeling Associates, Inc.

More (broader) Analysis & Synthesis: IEP "MAST"

(IEP Management, Analysis, and Synthesis Team – 2012 Pilot)

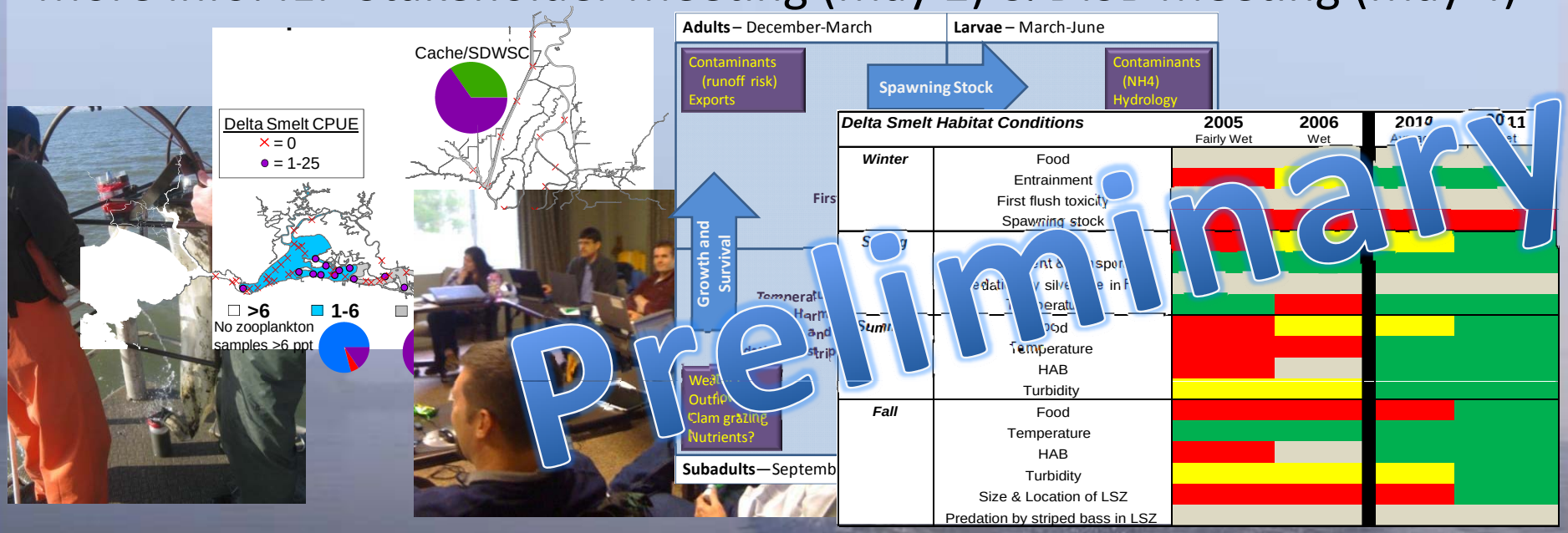
POD Fish Species – what happened in 2011?

FLaSH Report: Were "fall predictions" met?

MAST Report: How did changes in habitat conditions affect the POD fish species? What's missing?

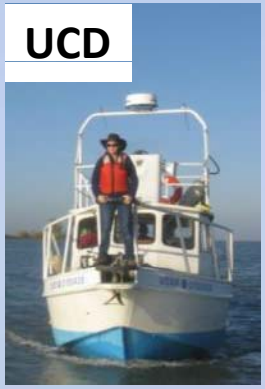
- Includes 2013 Workplan
- Assesses habitat conditions and fish responses in all seasons

More info: IEP Stakeholder Meeting (May 2) & DISB Meeting (May 4)



Thanks!

Cooperation and Communication
USBR • USFWS • SWRCB • DFG • USGS • NMFS • USACE • USEPA • DWR
With the Bay-Delta Science Community

Interagency Ecological Program

COOPERATIVE ECOLOGICAL INVESTIGATIONS SINCE 1970