

Dave Bitts presentation outline

Salmon fishing prospects for this year are dismal, based on one of the poorest projections of Klamath chinook abundance we've had, and a pretty poor, but maybe pessimistic, projection of Sacramento fall chinook. One of the three options to be considered next week by the Pacific Fishery Management Council is no salmon fishing after April 30; the other two would allow scraps of recreational and commercial fishing seasons.

It's not hard to see why: this year's maturing fish are the products of drought-year spawning conditions. For Klamath fish, that meant the upper river, left unscoured by too-low winter flows, was infested with the lethal parasite, *c. shasta*, which infected over 90% of the juvenile fish. For Sacramento fish, too much water was exported from the Delta before they passed through it. Both rivers' fish also encountered poor ocean conditions, specifically, predominantly warm-water copepods (food web building blocks) called "celery" by ocean ecologists, instead of the cold-water copepods called "cheeseburgers".

Shy of reversing climate change, we can't do much about ocean conditions except hope they change for the better. But the State has substantial control over river conditions.

On the Klamath, dam removal is on time and on track. The funding is in place, no federal money required, and ownership of the four dams to be removed is being transferred to the designated dam removal entity. 2020 is the magic year; sign up now for the auction to push the plunger. California has been on board from the start, good for us. Dam removal, in addition to its fish passage and water quality benefits, should take care of the *c. shasta* problem by allowing gravel to rumble downstream and scour the river bottom.

On the Sacramento, we have fixed a host of upriver problems large and small, but we haven't dealt with the Delta yet. Fish need better freshwater flows to and through the Delta, and not just salmon, but a host of other fish critters. To get those flows, we have to find other sources for several million acre feet of water per year, likely a combination of solar desal, groundwater recharge in years like this, purple pipes for domestic and industrial use, and ????. We will have to do this pretty soon in any case as demand continues to grow and Delta inflows aren't, so why not begin now, before we've destroyed what remains of the water-dependent natural wonders and abundance the Delta offers?