

Fish Team Meeting Notes

Feb 3, 2015 - DWR West Sac Office Room 106

Attendance: Anitra Pawley, Stacy Sherman, Dave Contreras, Dave Zezulak, Gardner Jones, Bruce Herbold, Alice Low, Larry Brown, Pascale Goertler, Lori Smith, Rosemary Hartman

Discussion and ranking of metrics:

Core:

- Larval, Juvenile, and adult Frequency of occurrence
- Add sampling pelagic habitat to light traps
- Condition (30 length and weights for each species of interest at each site, depending if things aren't going well, Pascale has some tips for weighing fish quickly and easily) Definitely do lengths and weights for at-risk species, maybe just do lengths for other species unless you are particularly interested in them. Make sure you capture the whole range of ones you catch, even if the first 30 are all small. In SOP, specify procedure for "representative subsample."
- Substrate composition methods are similar to those taken by the USFWS Liberty Island larval fish sampling.
- Habitat classification and change in habitat classification is captured by the Physical Processes Team and not addressed here.
- Vegetation: want to do rake samples to see what the SAV is like. Fish team says we really want to know what species the vegetation is. Fish move, so it's hard to get relationships between fish and anything. There might be experimental approaches that will be more fruitful. However, that's definitely a special study.
- Water velocity – Point velocity measurements when doing trapping or seining to test gear efficiency and habitat associations. Detailed velocity mapping is not necessary.
- Fish health score – "Health Assessment Index" for lesions, eyes, gills, deformities etc. This is often forgotten and hard to standardize, but is a trigger for contaminant studies. **We need to work on this one during pilot studies.**

Triggered:

- Condition: HSI/GSI, or histopathology. Histopathology may be more informative, but also more expensive. We will list all possible methods here and give prices in the pros and cons.

Special Studies

- Diet studies should be coupled with prey availability.
- Consumption study, catch some every 3 hours for 30 hours.
- Fish residence time: pit tags. PIT tag array could theoretically get put over the entire breach. Or other mark-recapture methods. Could do otoliths for total time spent in the delta, land-scape level.
- Growth rates: FiSat (frequency of size classes, but need lots of fish and not super accurate), mark-recapture, otoliths.
- Tethering studies to get at predation rates.

Methods:

Light traps: They mostly sample the top of the water column though they could be littoral or pelagic. Light traps only at night. We will test them in pilot work, especially in vegetation.

Larval trawls: catches from Liberty were highly variable from year to year, probably somewhat due to water year. Larval ID is really tough, especially longfin versus delta. Must do ID accuracy studies.

Frequency of larval sampling: 2x/month, Jan-June. Sampling will be concurrent with zooplankton using a twin bongo net. We should look into sampling drift invertebrates as well.

Zooplankton –53 micron nets are too small to use in trawls, though they would be useful in zooplankton growth rates. Probably only as a special study. The FRP plan to use 150 micron mesh for regular sampling.

How much do we really care about sampling in the littoral zone? We should do this for the pilot, but it is may be dropped from core metrics if salmon and smelt are never found there.

Purse seines are often not used in areas deeper than the net itself.

Gill nets can be used any depth of water, including in vegetation, you just have to decide whether you want them on the bottom or the top. Set them between ½ hour and 2 hours. However, they kill all the fish caught in them.

Lampara net can be used in a number of different ways: trawls (sorta, ask Pascale for details), purse seines, and beach seines.

Add screw trap to the list of potential gears, could be used in channels, best with uni-directional flow.

We could insist every site installs a boat ramp and does beach seines at the boat ramp. This might be the most comparable method we could get. However, it might tell you more about boat ramps than about restoration sites. Also, it requires us to have input into the design of the restoration site and we have been pretty insistent about not dictating design.

We will test a lot of these gears in a pilot study and hopefully recommend 3-4 that could be used depending on the site, the habitat, the weather conditions, and the fish of interest. We will include the pros and cons table with all the gear types in an appendix.

Notes on plan structure or overall sampling considerations:

Need to have a standard protocol and develop standard data sheets. Tablets would be awesome for this.

We should start figuring out when we can use the same sampling for different reasons. For example, the grabs we take for substrate composition could also be used for benthic inverts.

We could group our metrics by frequency. Some things will only be done every few years, other done monthly.

We should recommend checking for coded wire tags on salmon for “opportunistic” study

We should include discussion of permits, and uses of surrogates to reduce take of endangered species.

Need a section on gear efficiency, data quality, and comparability.