

Contaminants Subteam meeting notes  
Tuesday, November 25, 2014, 10:00-10:00  
DWR – West Sacramento, Room 106

Participants:

- Stephanie Fong (ESA)
  - Stacy Sherman (DFW)
  - Dave Contreras (DFW)
  - Rosemary Hartman (DFW)
  - Bruce Herbold
  - Krista Hoffman (DWR)
  - Petra Lee (DWR)
  - Leanna Zweig (USFWS)
  - Shawn Acuna (MWD)
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- Contaminants monitoring may be set up as a series of “If-Then Flowcharts”
    - This will help tease apart the fiscal and site-specific aspects of monitoring
    - Does this approach address hypotheses or just metrics used?
      - It addresses both
  - Want to address bottom up effects
  - Each site have limited amount of funds and will probably only be able to address three contaminants maximum.
  - Contaminant effects on smelt and salmon may be more relevant when 8,000 acres or more of tidal wetland is restored.
    - There is concern within the subteam how mercury and legacy pesticides may affect Delta Smelt
  - Our monitoring is separate from compliance monitoring, which is more likely to be focused on classes of contaminants. Perhaps it makes more sense for us to focus on biological effects.
    - Would be nice to know the concentration of contaminants in the water and the effect they have on fish, but this may be too costly.
  - Regulatory contaminants from the 303d list will be monitored (mercury, selenium, unknown toxin, legacy pesticide, etc)
  - We should focus on different types of analysis that account for monetary limitations of a project.
    - Biomarkers – very sensitive and can detect sub-lethal effects on fish or their food. Experimental controls can be a problem. This method doesn’t directly indicate which contaminant is responsible
      - Comparisons across sites may help to test if certain biomarkers are occurring on the restoration site
    - Toxicity testing – lethality, growth, reproductive effects; tests standardized for specific organisms, some of which do not occur in the Delta. Good for detecting if chemical there, but not as good for general responses in the field
    - In Situ testing

- Put something in the water and let it collect your toxins for you
  - Would want to use sentinel species with broad salinity tolerances, but local adaptations for contaminant tolerances could confound results
  - Would want to collect a water sample concurrently
  - In Situ is high dollar method
- To reduce cost and improve monitoring efficiency, first determine if there's a problem with fish, then zoom in to test which contaminant may present and affecting your fish. Also for zooplankton – if something that we expect to find is missing, look into whether a toxin could be responsible.
  - Pesticides should be distinguished (insecticides, herbicides, waste water treatment plant near site (urban vs ag), surfactants, etc)
  - Is there seasonality that is applicable across various sites?
    - First turbidity flush signals for smelt and salmon,
    - When contaminants may be most present:
      - San Joaquin – Snow melt driven (Spring flush), but ag runoff most of year
      - Sacramento – Rainfall (Fall)
      - Suisun Marsh – Rainfall and tidal
    - Tides can also be important - Mercury and other sediment-associated contaminants re-suspended during King Tides.
  - Can we make recommendations on spatial scale?
    - Yes, it is addressed at the landscape level
  - Wastewater treatment plants releases happen year round, so indicates monthly monitoring; consider proximity of wastewater treatment in deciding whether to assess “human things” (caffeine, ibuprofen, etc.)
  - This group considers water quality only as affects contaminant action
- Next meeting is currently scheduled for Dec. 1.