

Exposure of Delta Smelt to Dissolved Pesticides During Larval and Juvenile Stages in 1998 and 1999

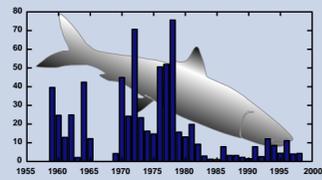
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This study measures the temporal and spatial variations in exposure of Delta Smelt to dissolved pesticides during sensitive life

Background:

Delta smelt populations have plummeted and have not yet recovered despite recent wet years.

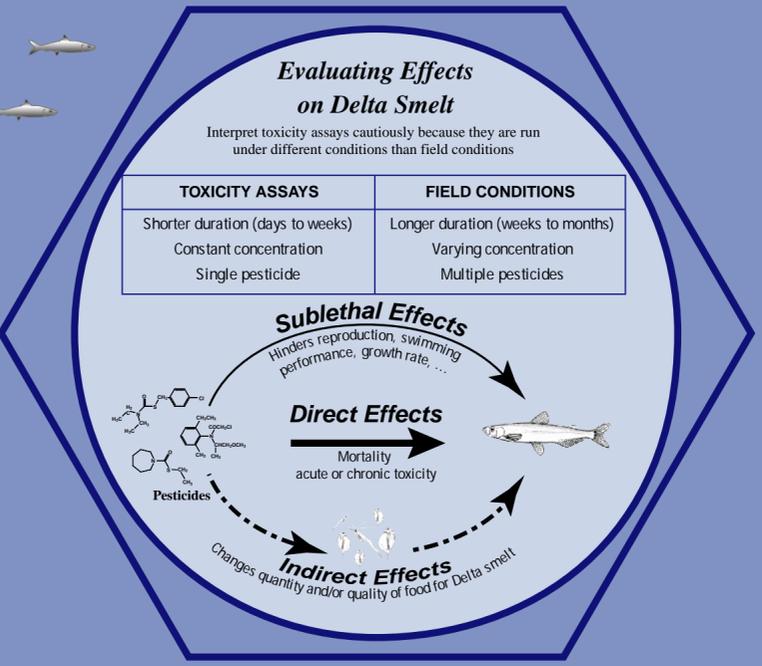
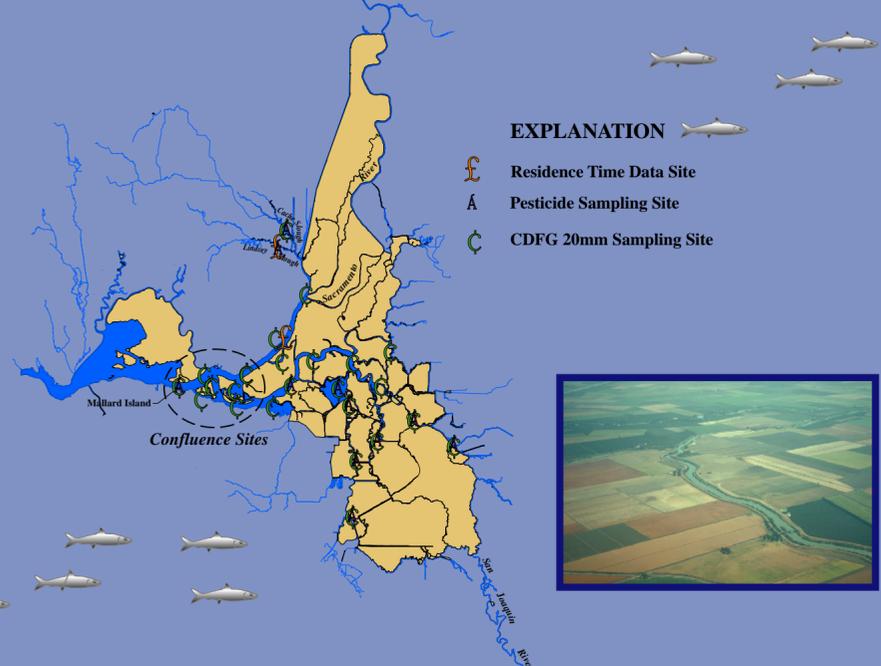
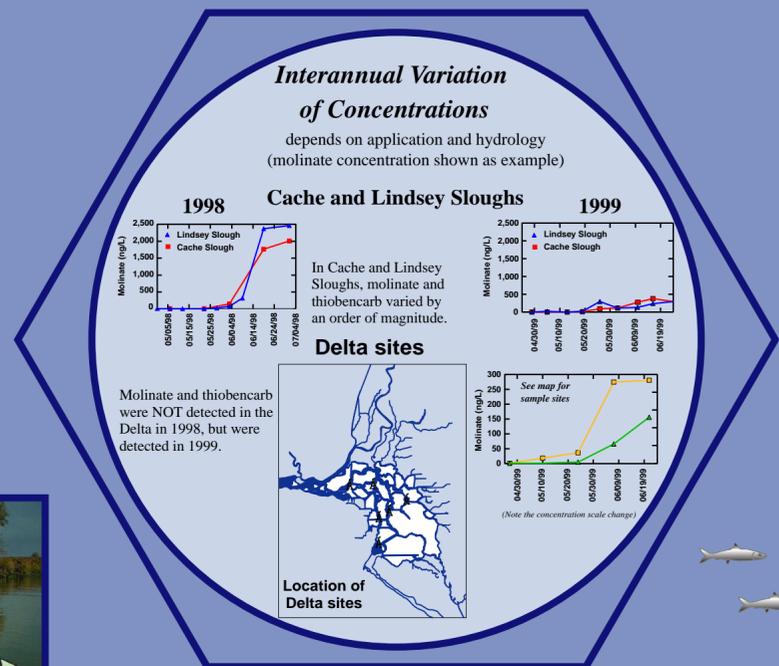


Threats to Delta Smelt Population:

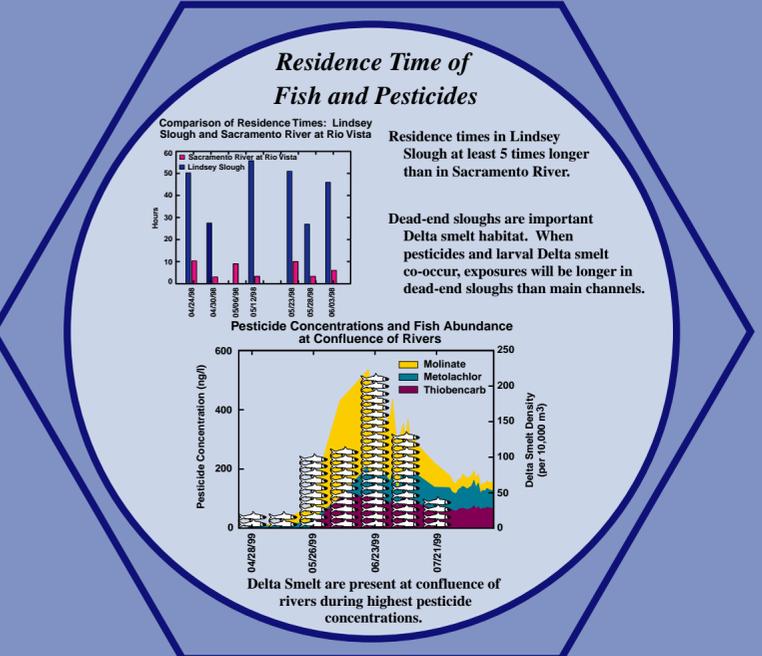
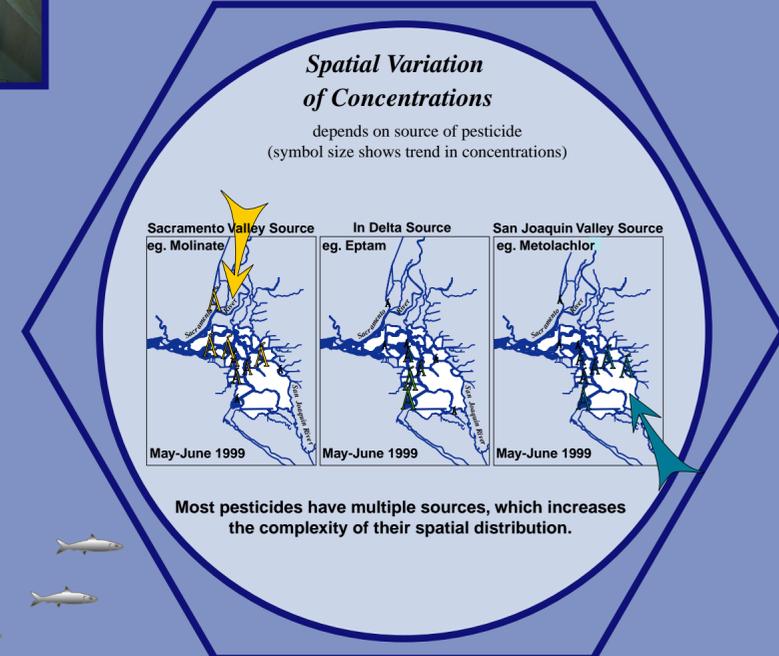
- Á Contaminants
- Á Predation
- Á Food availability
- Á Flow extremes
- Á Entrainment
- Á Competition

Strategy:

- Á **Spawning Habitat:** Measure pesticide concentrations at the same time and location as the CDFG 20mm Delta Smelt Surveys.
- Á **Nursery Habitat:** Measure pesticide concentrations at Mallard Island when salinity is approximately 2 ppt.



CONCENTRATION x DURATION = EXPOSURE → EFFECTS



Summary and Future Directions

- Á Concentrations of pesticides varied interannually (1998 vs 1999) and spatially.
- Á Measured pesticide concentrations are NOT likely to cause mortality (well below acute toxicity values). Potential effects could be chronic, sublethal, or indirect.
- Á Pesticide concentrations will be measured during spawning and larval stages in FY 2000.
- Á Pesticide results will be compared with growth rate estimates and biomarker studies by Bennett and others.

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