Invasion of the Water Body Snatchers

Tridentiger spp. Stomach Contents and Competition with Native Smelt

Timothy D. Malinich* **Christina E. Burdi** **Steven B. Slater**

timothy.malinich@wildlife.ca.gov

***Presenting Author**
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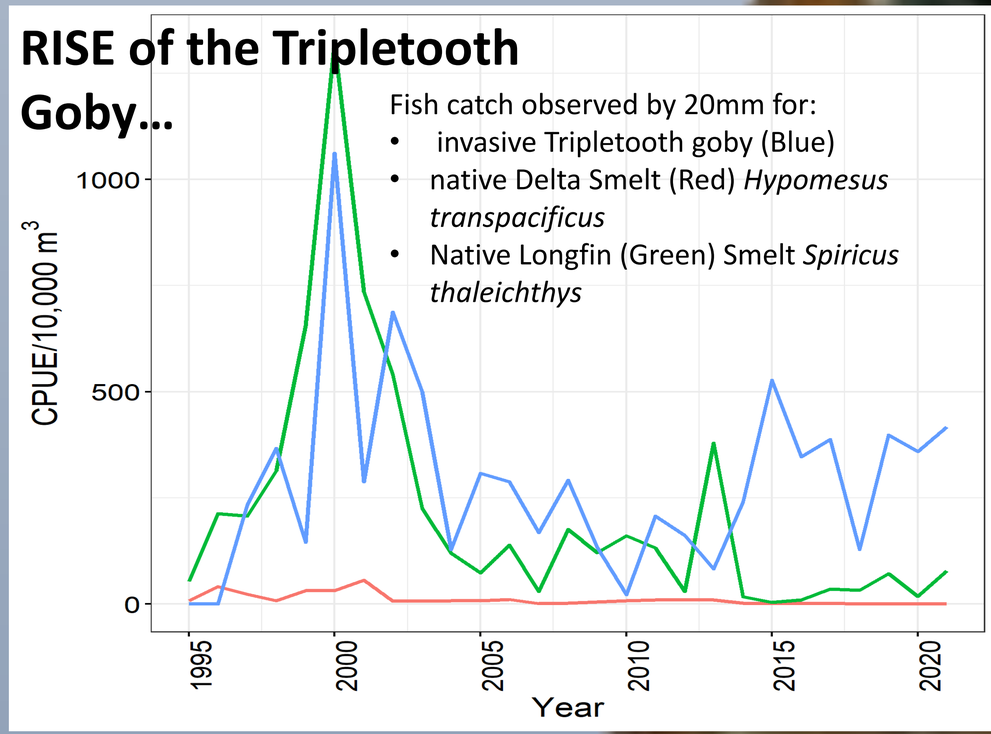
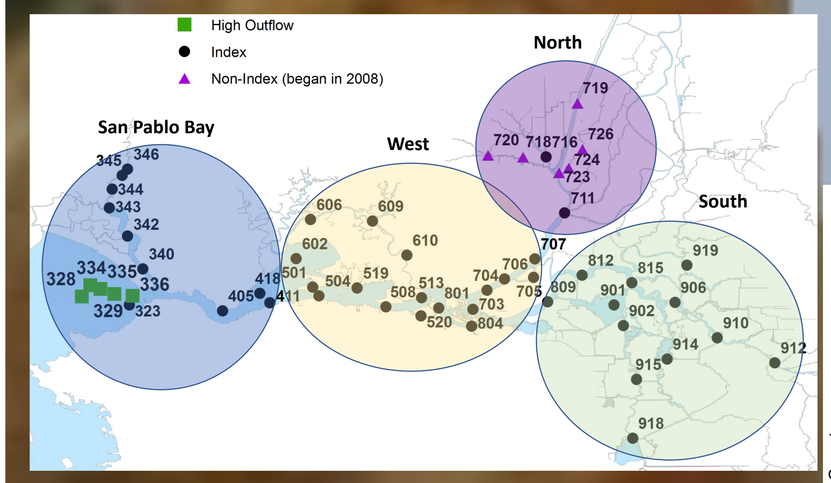
We're going to need a bigger manuscript…

Invasive Tripletooth gobies, despite smaller sizes, consume more zooplankton biomass compared to two Native Smelts.

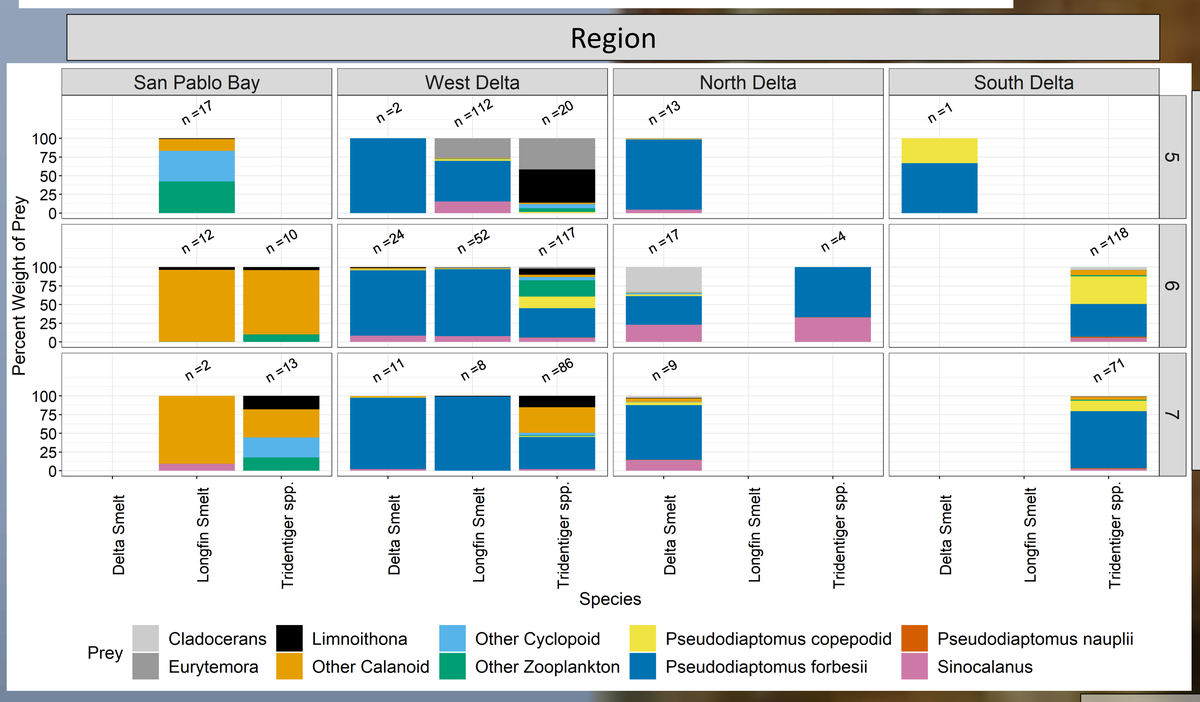
Can a 2008 California Department of Fish and Wildlife stomach content dataset reveal foraging overlap between native smelts and invasive tripletooth (*Tridentiger* spp.) gobies?!?

Fish were collected by the 20-mm Survey (May-July) from 4 regions in the Upper San Francisco Estuary (SFE).





Smelts and gobies spawn at different times. Gobies had smaller fork lengths but were more abundant in June and July.



A sub-set of fish (left, n=stomachs processed) reveal significant (perMANOVA) differences in percent weight of total prey in stomach contents due to fork length (0.06 R^2), fish species (0.037 R^2), region (0.10 R^2), and month collected (0.02 R^2). However, a large amount of variation remains unexplained (.079 R^2).

Carl Critic says: ★★★★★

- Results are comparable to other studies supporting regional and temporal differences in fish stomach content.
- The sampling design is uneven.
- Doesn't account for larger smelt collected by other CDFW surveys such as The Summer Townet Survey.

Gorden Goby says: ★★★★★

- Gobies had diverse stomach contents
- Gobies may have negative effects on pelagic trophic zones by shunting trophic energy away from pelagic systems.

Sally Smelt says: ★★★★★

- Recovering smelt populations may face increased competition if food availability is limited.

Applying (right) the proportion of prey content to fish catch (n) we estimate biomass consumed in the upper SFE.