

Proposal for ESP deployment during the CANON Fall 2013 Experiment

Based on results from past experiments and discussion with local ECOHAB team members who will be collaborating in our next CANON experiment, I propose this ESP “footprint”:

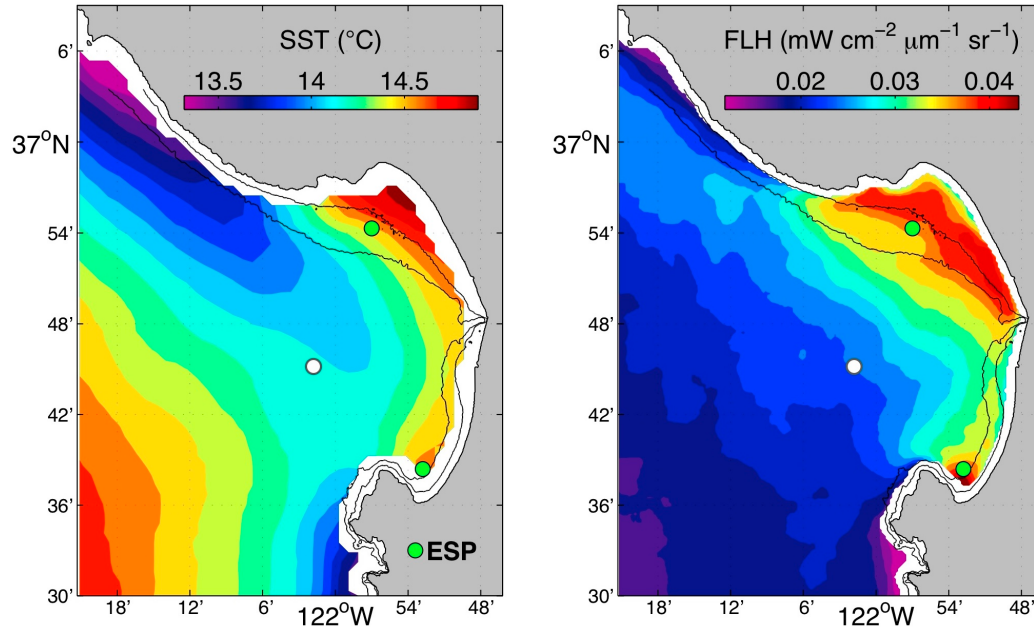


Figure 1. Proposed ESP locations overlaid on fall climatology from satellite data.

Motivations:

- From MUSE 2000 to recent CANON experiments, along the outer boundary of the northern bay upwelling shadow we have observed high abundances of toxigenic *Pseudo-nitzschia* spp., strong response of their abundance and toxicity to upwelling, processes of nutrient/phytoplankton mixing, and phytoplankton layer processes. These aspects of phytoplankton ecology are all key to the ECOHAB project, and this location is clearly essential for ESP presence and synoptic mapping/sampling.
- In situ and remote sensing data also support that the "southern bight" inshore of the Monterey Peninsula is an important piece of the regional HAB puzzle. Data further indicate that the southern bay is key to the export puzzle (export to the coastal transition zone). Our experiments have thus far largely neglected this region of the bay, and we have never examined the question of how the northern and southern “shadows” respond to the same regional forcing.
- Thus far, we have used ESP “networks” and other observations to examine variation in HAB community ecology only within the northern bay. We’ve seen the HAB community in the outer versus inner upwelling shadow respond differently to the same regional forcing. This has been insightful. However, I think it will be effective to extend beyond what we’ve already done (and published) and explore south versus north. Dorado can readily cover this scale in repeated day operations, and Gulper sampling capacity will be expanded by the time of this experiment. Jason Smith plans to use the R/V Martin to sample the southern bay and to increase sampling frequency from the Monterey Wharf. The cabled Kelp Forest Array will also be expanded and active in the southern bight.