

Amigos de Bolsa Chica Citizen Science Program

Plankton Collection and Identification

Collectors: Dennis Pope, Sandy Mattson, Judy Huck and Joana Tavares

Date: 3/29/13 Time: 10:15 AM

Tide: incoming

Secchi: N/A

Temp.: 16C

Salinity: 40-43ppt

pH: 8.3

Nitrates: 0 ppm

Phosphates: 0.25 ppm

Ammonia: 0.25 ppm

Summary:

Dennis, Sandy, Judy and I (Joana) collected plankton at the Tidal Inlet this morning and recorded many of the same microalgae we found last week. We sampled during the incoming tide (tide going up) which proved to be more challenging than what we had anticipated (we did it though!). Water conditions (Temp, Salinity, turbidity, nutrients, pH) were within expected ranges. Here are a few species and genera of plankton that we observed, identified and photographed under the microscope today. (See complete list of organisms observed at the end).

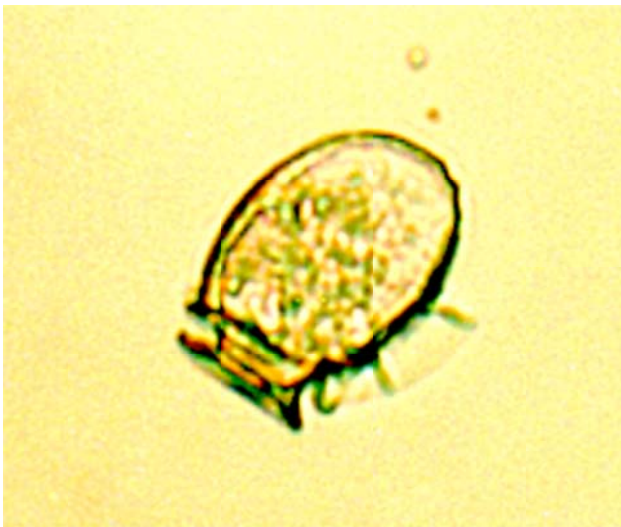


Figure 1. *Dinophysis acuminata*

Dinophysis acuminata is marine, planktonic dinoflagellate species. It is a potentially toxic species that may produce ocaadaic acid and blooms of this species have been associated with DSP events. It is commonly found in coastal waters of the northern Atlantic and Pacific Oceans. The most extensive blooms have been reported from the summer and fall months in many parts of the world.

The concentration observed in today's sample was very low (similar to last week's concentration)



P. micans is a marine bloom-forming dinoflagellate. This is a cosmopolitan species in cold temperate to tropical waters. Although *P. micans* is capable of forming extensive blooms, it is usually considered harmless. It may excrete substances that inhibit diatom growth, but apparently these substances do not enter the food chain or affect organisms at higher trophic levels. The concentration observed in today's sample was very low

Noctiluca scintillans is an unarmored (no hard shell), marine planktonic dinoflagellate species. This large and distinctive bloom forming species has an associated with fish and marine invertebrate mortality events. *Noctiluca scintillans* is a strongly buoyant planktonic species common in neritic and coastal regions of the world (cosmopolitan). It is also bioluminescent in some parts of the world. *N. scintillans* red tides frequently form in spring to summer in many parts of the world often resulting in a strong pinkish red or orange discoloration of the water (tomato-soup). Blooms have been reported from Australia, Japan, Hong Kong and China where the water is discolored red. In Indonesia, Malaysia, and Thailand (tropical regions), however, the watercolor is green due to the presence of green prasinophyte endosymbionts. This large cosmopolitan species is phagotrophic, feeding on phytoplankton (mainly diatoms and other dinoflagellates), protozoans, detritus, and fish eggs.



Figure 3. *Noctiluca scintillans*

Noctiluca scintillans was quite abundant in today's sample and certainly more abundant in water today than last week.



ia includes several known to produce the **biogenic acid**, a toxin which is illness called **amnesic** genus of phytoplankton is **al blooms** in coastal **ia, Oregon, Washington** **lia, New Zealand,** **h America.**

upper right corner four species (the needle-looking y; across the middle, 3 species (same genus) also in left corner, 2 two empty individual. The green chloroplasts (these are

do-nitzschia in the is extremely high (typical week) and there seem to be genus blooming the dominating

organism in the sample

Plankton ID	
3/29/13	Conc
<i>Pseudo-nitzschia</i>	High (bloom)
<i>Dinophysis acuminata</i>	low
<i>Noctiluca</i> sp.	Medium-high
<i>Gonyaulax</i> sp.	Low-medium
<i>Prorocentrum micans</i>	low
<i>Chaetoceros</i> spp.	low
<i>Melosira</i> spp.	low
<i>Rhizosolenia</i> spp	low
<i>Proto-peridinium</i> sp.	low