Amigos de Bolsa Chica Citizen Science Program

Plankton Collection and Identification

Collectors: Dennis Pope, Sandy Mattson, Judy Huck, JT Reager and Joana Tavares
Date: 4/05/13 Time: 2:40 PM
Tide: ebb (going out)
Secchi: N/A
Temp.: 20C
Salinity: 40 ppt
pH: 8.0
Nitrates: 0 ppm
Phosphates: 0.20 ppm
Ammonia: 0.20 ppm
Weather/ wind: Sunny w/ strong onshore wind

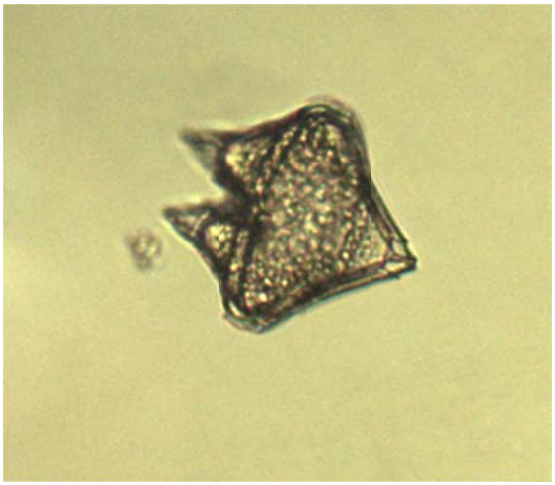
Summary:
Dennis, Sandy, Judy, JT and I (Joana) collected plankton at the Tidal Inlet this afternoon. We then went back to the Visitor Center where the team measured nutrients and pH and we observed samples under the microscope. The potentially harmful genus of diatom *Pseudo-nitzschia* spp. continues to dominate the plankton this week. We noticed a decreased variety (i.e. lower diversity) of genera and species in the plankton this week, compared to what we observed in last 2 weeks. We sampled during the ebb tide, which we believe explains the relatively high temperature and salinity measurements (the last high tide happened at 7 AM, so this water had been "trapped" inside the Full Tidal Basin for more than 7 hours). Nutrients and 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 ocadaic 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)



Protoperidinium is a type of marine armored dinoflagellate. Although often listed as a type of phytoplankton (mainly due to the fact that they are dinoflagellates), most species within this genus lack chloroplasts and therefore are heterotrophic (i.e. they graze on diatoms and other planktonic organisms). The genus has several species, none associated with potentially harmful effects or toxins and it is cosmopolitan (i.e. widespread throughout the world).

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

The genus ***Pseudo-nitzschia*** includes several species of marine diatoms known to produce the neurotoxin known as domoic acid, a toxin which is responsible for the human illness called amnesic shellfish poisoning. This genus of phytoplankton is known to form harmful algal blooms in coastal waters of Canada, California, Oregon, Washington state, Europe, Asia, Australia, New Zealand, Central America, and South America.

The concentration of *Pseudo-nitzschia* in the sample analyzed today was high and there seem to be 2-3 different species of the genus blooming concurrently. It was by far the dominating organism in the sample

Plankton ID	
4/5/13	Conc
Pseudo-nitzschia	High (dominant)
Dinophysis acuminata	low
Chaetoceros spp.	low
Protoperidinium sp.	low
Skeletonema sp.	low