FLOW: Amigos de Bolsa Chica Citizen Science Program

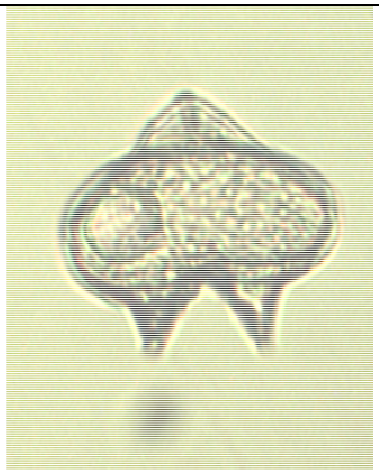
Plankton Collection and Identification Report

Date: 04/19/13 Time: 10:40 AM
Collectors: Dennis P., Judy H., Nicole G., Joana T. (analysis also performed by Margaret C., Chuck D. and Jerry D.)
Tide: ebb (going out) last high: 6 AM
Secchi: N/A
Temp.: 18C
Salinity: 37 ppt
pH: 8
Nitrates: 0 ppm
Phosphates: 0.25 ppm
Ammonia: 0.25 - 0.50 ppm (close to 0.25 ppm)
Weather/ wind: Sunny/ clear; onshore breeze (approx. 5 knots NW)

Summary:
We (Nicole, Dennis, Judy and Joana) collected plankton at the Tidal Inlet this morning without problems. There was a dead sealion (adult, female?) lying on the tidal inlet beach (on the inside of the north jetty) and we photographed it. We then went back to the Visitor Center where we measured nutrients and pH and we observed samples under the microscope: Nicole and Dennis were in charge of microscopy; others worked on physic-chemical parameters. The potentially harmful genus of diatom *Pseudo-nitzschia* spp. is still present in the water, but we noticed a much greater diversity of species in the phytoplankton community compared to the observations from the past 4-5 weeks.

Nutrients and pH were within expected ranges (this water was collected when the tide is going out so it makes sense that ammonia and phosphates are a bit above 0 ppm).

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).

 *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 abundance observed in today's sample was low to medium (higher than last week's)
 *Protoperidinium* sp.	*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 abundance of *Protoperidinium* observed in today's sample was low to medium
 *Prorocentrum micans*	*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 of *P. micans* observed in today's sample was very medium-high

Pseudo-nitzschia spp.

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 abundance of *Pseudo-nitzschia* in the sample analyzed today was medium to high (lower than last week's concentration)

Plankton ID	
04/19/13	Conc/ Abundance
Pseudo-nitzchia spp.	Common/ Medium
Thalassionema spp.	Low-medium
Chaetoceros spp.	Medium-high
Eucampia sp.	Low
Bacteriastrum cf.	Low
Rhizosolenia cf.	Low
Guinardia striata	Low
Protoperidinium sp.	Low-medium
Gonyaulax spp.	Low
Ceratium furca	Medium-high
Prorocentrum micans	Medium
Dinophysis acuminata	Low- medium