On June 5, 2008, Kristi and I arrived at the Ventura Estuary to begin algal sampling on the research contract UCSB has with the LA Regional Water Quality Control Board. In my previous report, "*Diel cycle_May 15, 2008*," (which can be downloaded from either my download site or the Channelkeeper Stream-team website) I documented the changes that had occurred since the last visit for pre-dawn/mid-afternoon sampling on April 9. The green soupy color of April, indicative of phytoplankton in the water column, had disappeared by May 15 and in it's place were extravagant growths of macro-algae (photos in the May and April reports, and additional photos available on my download site, show the transformations). A sand berm had sealed off the lagoon from the Channel and water levels had risen 2-3 feet. And it was all freshwater: conductivity in the lagoon was about the same as that measured in the river at Main Street.

Kristi and I came equipped with a raft, prepared to tackle a seemingly near impossible task. Sampling water-column plankton is straight-forward and relatively easy. Algae growing on bottom muds are a little harder to sample, but since these probably make up a small fraction of the overall total, large errors would be relatively unimportant. But how to sample dense growths of algae reaching from the bottom to the surface in 6 to 10 feet of water? I was happy to leave it up to Kristi, and looking forward to laughing a lot as I rowed her around the lagoon.

However, to my great surprise, the appearance of the lagoon had completely changed. Water levels had dropped considerably (approximately 4 feet, as measured by algal and water marks on the RR bridge piers). There was a wide breach in the blocking berm and tidal waters were flowing freely in. And most important, the water column macro-algae had almost totally disappeared.

Conversations with residents visiting the lagoon seemed to place the actual breach as occurring during the previous evening. I was initially skeptical, since a lot of the macro-algae seemed to have been swept away and the surface color of the collapsed mats that remained – on what was now exposed dry land – was quite faded (see the top photos in figures 4 and 5). It seemed like too little time had passed to effect these changes – especially the tidal flushing of collapsed algae out of the lagoon. However, having revisited the lagoon on Saturday, June 7, and seen the changes that another day and a half produced, I'm now more of a believer. However, I still think Tuesday, June 3 is a more likely date. On both these days (3 and 4 June), there were extreme low tides during the early morning hours (-1.7 to -1.9 feet). The appearance of the lagoon, along with lots of dead polliwogs and small fish trapped in the collapsed mats, would seem to indicate, to me at least, a breach at low tide and a rapid deflation.

The photos that follow show the changes from May 15, to either June 5 or June 7, and the changes that occurred between June 5 and June 7. Most of the figures are self-explanatory. And as far as measuring the amount of water column macro-algae, well, perhaps there is a special providence that looks after stumbling aquatic biologists – it was now all laying on the ground waiting for us to simply walk over dry land taking as many samples as our little hearts might desire from all those lovely, relatively intact, pale-green, drying mats.

More importantly, we've now returned to what the lagoon looked like in early April. Water levels are now about the same. It will be extremely interesting to see if the changes that now take place are simply a repeat of the recent past, or if the lagoon takes another path – and if it does, why?



Figure 1. On the left, photo taken on May 15, 2008. The lagoon had risen about 3 feet since I last saw it on April 9 due to the formation of a solid sand berm across the river's outlet to the ocean. On the 15th the lagoon was filled with dense macro-algae and had lost the green color (due to planktonic algae) seen in April.

On the right, photo taken on June 7, 2008. The lagoon level dropped almost 4 feet during the evening of June 4. Rising lagoon water levels overtopped the sand berm, probably at low tide, causing a rapid outwash from the estuary. On the 5th, collapsed macro-algae littered the banks, but by this date most of it was gone – the white patches in the center left of the photo are the remaining remnants.





Figure 2. Above, photo taken on May 15, 2008. Macro-algae and a blue water color are clearly visible. On the right is a June 7th photo of almost the same scene. The former lagoon level is visible as a whitened region on the riprap protecting the bridge abutment - some of the collapsed algae is still green in this area. The shoreline exposed on the right of the photo has been swept clean of collapsed algae by subsequent tides. Watermarks on the bridge abutments showed an approximately 4 ft. drop in water level.





Figure 3. A little further upstream from the scene in Figure 2: on top, May 15, 2008, below, June 7^a. Again, the white patches are the now dried-out, collapsed macro-algae (almost all entromorpha).



Figure 4. The tidal cleaning-out and algal-drying processes were rapid. On top, June 5, 2008, below, June 7 (the same photo shown in Figure 3).



Figure 5. Again, illustrating the rapid tidal cleaning-out and algal-drying that took place between June 5 (top) and June 7 (bottom).