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303 (d) Deadline: 1/31/06

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SANTA BARBARA CHANNELKEEPER®

Protecting and Restoring the Santa Barbara Channel and Its Watersheds

714 Bond Avenue ◊ Santa Barbara, CA 93103 ◊ Tel (805) 563 3377 ◊ Fax (805) 687 5635 ◊ www.sbck.org

January 25, 2006

Selica Potter, Acting Clerk to the Board
State Water Resources Control Board
Executive Office
1001 I Street, 24th Floor
Sacramento, CA 95814

Re: Revision to Federal Clean Water Act Section 303(d) List of Water Quality Limited Segments for California

Dear Ms. Potter:

Please accept the following comments on the proposed Revisions to the Federal Clean Water Act Section 303(d) List of Water Quality Limited Segments for California ("303(d) List"), which are hereby submitted on behalf of Santa Barbara Channelkeeper. Santa Barbara Channelkeeper is a non-profit organization dedicated to protecting and restoring the Santa Barbara Channel and its watersheds.

Channelkeeper is **extremely** concerned that the State Water Resources Control Board's ("SWRCB") staff ("Staff") is proposing to de-list large numbers of waterbodies from the 303(d) List with what appears to be insufficient evidence to support such de-listings. Rather than using the protective principle, which would require the SWRCB to put forward affirmative evidence that a waterbody is not impaired to support removal from the 303(d) List, Staff is recommending de-listing based on a lack of information available to Staff now. Perhaps the most egregious example of this is the proposed de-listing of the Carpinteria Marsh and Goleta Slough because Staff cannot find the data that originally supported the listings. Thus, because the bureaucracy has lost data supporting the listing of the Carpinteria Salt Marsh and the Goleta Slough, two of the most precious ecological resources in Santa Barbara County are to lose their protections under the Clean Water Act and California's Porter-Cologne Water Quality Control Act. Further, in proposing these de-listings, Staff ignores information in the Regional Water Quality Control Board's ("RWQCB") files demonstrating the impairments. In fact, it is unclear from the Fact Sheets for the de-listings exactly what Staff in fact did review.

Staff's zeal to de-list waters is not only contrary to the SWRCB's mandate to protect water quality and Beneficial Uses, it violates the requirements of the Clean Water Act.

The proposal to de-list the Goleta Slough for metals again relies on the "data cannot be found" excuse. However, Staff also stated, as noted in the associated Fact Sheet, that State Mussel Watch, Toxic Substances Monitoring Programs and Regional Board sampling were probably used to develop this listing, but this data cannot be found. The Fact Sheet notes that Dave Hubbard, research biologist at UCSB, suggested that "silver and copper associate (sic) with industrial activities was a possible reason the Slough was listed. However, these types of practices have not been occurring since the 1980s and are *probably* not a source of impairment any longer. It is unknown why the Slough was listed as impaired for metals in the first place" (emphasis added).

Surely Staff is not suggesting that its predecessors or senior colleagues simply concocted this listing out of thin air, with no data to support it, in which case data to support this listing in the past must exist. With all due respect, it is incomprehensible and ludicrous that (a) the SWRCB has lost or misplaced these data, and (b) that this would be used as a justification to de-list this or any waterbody. Furthermore, it is highly likely metals still exist in high concentrations in sediment in the Slough, and "probably" is simply not an acceptable basis on which to de-list it absent any sampling to confirm that metals are no longer impairing Beneficial Uses in the Goleta Slough.

On the contrary, data do exist, but again Staff failed to analyze or consider it in this process. Dave Hubbard, the UCSB biologist who is cited in the associated Fact Sheet, informed Channelkeeper of a study in which he and a team of scientists collected sand crabs and analyzed their tissues for the presence of metal contamination in the 1980s. Their findings demonstrated elevated levels of silver, copper and zinc.[1]

Finally, perhaps the most glaring oversight is the failure of Staff to consider data in the RWQCB's files analyzing water quality in the Slough. Sampling conducted by the Santa Barbara Municipal Airport pursuant to its 401 Water Quality Certification for the huge construction project it is about to undertake, and sampling at the airport conducted pursuant to the General Industrial Storm Water Permit, found levels of metals and sediment well above Water Quality Standards in Tecolotito and Carneros Creeks (which, on airport property, are located in the Goleta Slough) in both in wet and dry weather ambient stream flows and in storm water flows going into the Slough. For example, during the 2004-05 wet season, copper was measured in base flow in Tecolotito Creek at .01 mg/l, over the .009 mg/l CTR Water Quality Standard. Storm flows in Tecolotito Creek were measured at between .0175 and .06, again both above CTR. Lead and zinc were also measured over CTR levels in Tecolotito and Carneros Creeks both in base flows and during rain events. This demonstrates that the Slough is impaired for at least these metals. TSS, TDS, and turbidity were all observed at very high levels, again violating Water Quality Standards—and demonstrating that the Slough is indeed impaired for sediment. Finally, total coliform, fecal coliform, and enterococcus were all measured at extremely high concentrations, demonstrating that these creeks and the Slough are in fact impaired for these pollutants as well.[2] These data were submitted to the RWQCB as required by the permits, but were not discussed in the Fact Sheet and apparently were not considered in formulating the listing and de-listing proposals.

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[1] Wenner, Adrian M. "Crustaceans and Other Invertebrates as Indicators of Beach Pollution," in *Marine Organisms as Indicators*. 1988.

[2] URS Corporation, "Pre-Construction 2004/2005 Winter Season Stormwater Monitoring Report, Airfield Safety Projects, Santa Barbara Airport." June 2005; URS Corporation, "Storm Water Quality Data – Santa Barbara Airport, 2004-2005 Winter." July 3, 2005.

The body of regulations and guidance that bear on 303(d) listing are unambiguous about the information that should be considered in making listing decisions: all of it. TMDL regulations state clearly that "[e]ach State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the [303(d)] list."[3] The regulations go on to mandate that local, state and federal agencies, members of the public, and academic institutions "should be actively solicited for research they may be conducting or reporting."[4] Furthermore, EPA's 2004 Integrated Guidance similarly states that "[a]ll existing and readily available data and information must be considered during the assessment process."

In formulating its recommendation to de-list the heavily impacted and ecologically damaged Goleta Slough, Staff asserts that it lost the original supporting data, while at the same time ignoring widely known and respected scientific studies on the Slough, and failing to consider sampling data *in the RWQCB's files!* This is both outrageous and illegal. Santa Barbara Channelkeeper strongly opposes both Staff's proposed de-listing of the Goleta Slough for metals and sedimentation/siltation, and the process by which Staff arrived at the recommendation, and respectfully requests that existing data be reviewed and additional sampling be conducted as soon as practicable. To de-list without such review and sampling would be an abnegation of the SWRCB's responsibility to protect water quality and Beneficial Uses.

Carpinteria Salt Marsh

The Carpinteria Salt Marsh contains some of the most biologically important estuarine wetlands that remain in southern California. It provides critical habitat for nearly 200 bird species, including many endangered species. It also provides nursery grounds for numerous commercially and recreationally important fish species such as the diamond turbot and California halibut. Steelhead trout still enter the Salt Marsh, although streambed alterations prevent them from returning upstream. The Marsh hosts over 250 plant species and a dozen mammals.

The marsh is a conduit for flood waters flowing from the watershed to the Pacific Ocean. Large areas of intensively developed agricultural and urban lands surrounding the marsh are subject to flooding, erosion and the deposition of sediment and debris. Sedimentation reduces the marsh tidal prism and thus reduces the oxygenation of sediments and removal of pollutants and nuisance algae in channels and on tidal flats. According to the Management Plan for the Carpinteria Salt Marsh Reserve, "To ensure the long-term protection of the Carpinteria Salt Marsh ecosystem, sedimentation impacts to the marsh need to be reduced.... A work plan to manage flood waters and associated sediments in the Carpinteria Valley was completed in 1968... However, large volumes of sediments continue to enter the marsh during storm events and additional efforts should be made to reduce the erosion of agricultural land and to trap sediments prior to entering the marsh." A primary goal of the Management Plan is reduce sedimentation in the marsh.[5]

De-listing the Carpinteria Salt Marsh for sedimentation based on the "faulty data/data cannot be found" line of evidence is again inexcusable for the same reasons outlined in our arguments against de-listing the Goleta Slough for sedimentation. There is not in fact a lack of data but a lack of effort on the part of the SWRCB, again *as required by the Listing Guidance*, to evaluate the existing and readily

[3] 40 C.F.R.§ 130.7(b)(5).
[4] 40 C.F.R.§ 130.7(b)(5)(iii).
[5] Museum of Systematics and Ecology, Department of Ecology, Evolution and Marine Biology, University of California Santa Barbara. "Management Plan for the Carpinteria Salt Marsh Reserve, A Southern California Estuary." April 1997.

available data and evidence demonstrating an ongoing sedimentation problem in the Carpinteria Salt Marsh.

Glen Annie Canyon

Channelkeeper strongly supports the proposed listing of Glen Annie Canyon for nitrate. Channelkeeper has been leading a volunteer-based citizen monitoring program in the Goleta Slough watershed, collecting important water quality data at 14 sites in the Goleta Slough and its major tributaries monthly since June 2002. At each site, volunteers led by Channelkeeper staff take in-stream measurements on temperature, dissolved oxygen, pH, turbidity and conductivity, and collect samples that are later analyzed in our in-house laboratory for enterococcus, *E. coli* and total coliform, and at UCSB's Santa Barbara Channel Long-Term Ecological Research (Santa Barbara Channelkeeper-LTER) project's lab for nutrients. Visual observations, such as algae coverage, trash and weather conditions, are also recorded at every site. Two of our fourteen established sampling sites are on Glen Annie Creek.

The most egregious problem we have identified through our Goleta Stream Team monitoring efforts is that of nutrient pollution. Glen Annie Creek flows through areas with intensive agricultural use, indicating probable contamination from fertilizers and pesticides. The Glen Annie Golf Club also contributes high levels of nitrate to the creek from over-irrigation and heavy fertilization. Nearly all samples taken at our two Glen Annie sites showed excessive nitrate.[6] Our data can be accessed on our website at www.stream-team.org for future reference and use. Other CCAMP and SWAMP data referenced in the Fact Sheet for this proposed listing also support the finding that nitrate pollution is a significant problem in Glen Annie Canyon. Therefore, we urge the SWRCB to list Glen Annie Canyon an impaired for nitrate on the revised 303(d) List, and begin efforts to develop TMDLs for this pollutant of concern as soon as possible.

Our Goleta Stream Team monitoring efforts also identified excessive nutrients in other creeks that are tributary to Goleta Slough, including excessive nitrate levels on Los Carneros Creek and excessive phosphate levels Atascadero Creek. (Please see Figures 1 and 2 in Exhibit B for a graphical presentation of our data, or go to www.stream-team.org to download our raw data.) As with sediment, problems in tributary streams almost always indicate similar problems in receiving waters, and the Goleta Slough is no exception - excessive nutrient concentrations in Goleta creeks are producing over-enrichment in the Slough. Channelkeeper has direct measurements from the slough supporting this finding, and Figure 3 in Exhibit B shows that data. EPA's recommended ecological limits for nitrogen and phosphorus in this eco-region (0.16 mg/L for total nitrate and 0.03 mg/L for phosphorous) are typically exceeded during the dry season when Santa Barbara Channel saltwater inputs are either eliminated or greatly restricted by the formation of a sand berm at the slough mouth. We have also measured early morning dissolved oxygen levels circa 4 mg/L.[7] With the aforementioned data, as well as the numerous instances of fish kills in the slough, we believe there is substantial data and evidence of over-enrichment or eutrophication due to excessive nutrients in the Slough to support its listing as impaired for nutrients.

Franklin Creek

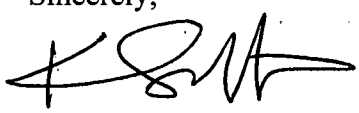
Channelkeeper strongly supports the proposal to list Franklin Creek as impaired for nitrate. Franklin Creek, located in the Carpinteria Valley, receives discharges from numerous greenhouses, nurseries, field crops and orchards, which are significant sources of nitrates and pesticides. Franklin Creek

[6] Santa Barbara Channelkeeper. *Goleta Stream Team 2002-2005*. January 2006. www.sbck.org.
[7] Ibid.

empties into the Carpinteria Salt Marsh. Numerous entities, including Channelkeeper, UCSB, Santa Barbara County's Project Clean Water and CCAMP, have conducted monitoring on Franklin Creek and found elevated nitrate concentrations.[8] This listing is long overdue, and may finally result in the RWQCB addressing the problem of greenhouse discharges into Franklin Creek and the Carpinteria Salt Marsh.

Thank you for the opportunity to comment on the proposed Revisions to California's 303(d) List, and for your ongoing efforts to protect water quality and Beneficial Uses. Please do not hesitate to contact me should you have any questions or concerns regarding the above comments.

Sincerely,



Kira Schmidt
Executive Director

[8] Santa Barbara County Planning & Development. Carpinteria Valley Greenhouse Program: Proposed Final Environmental Impact Report. 99-EIR-02. March 2000; Robinson, Leydecker, Keller and Melack. *Steps Towards Modeling Nutrient Export in coastal Californian Streams with a Mediterranean Climate* in Agricultural Water Management 77 (2005) 144-158; Page, Henry M. *Nutrient Inputs into Carpinteria Salt Marsh Associated with Greenhouse Development in the Carpinteria Valley.* October 20, 1999.

EXHIBIT A

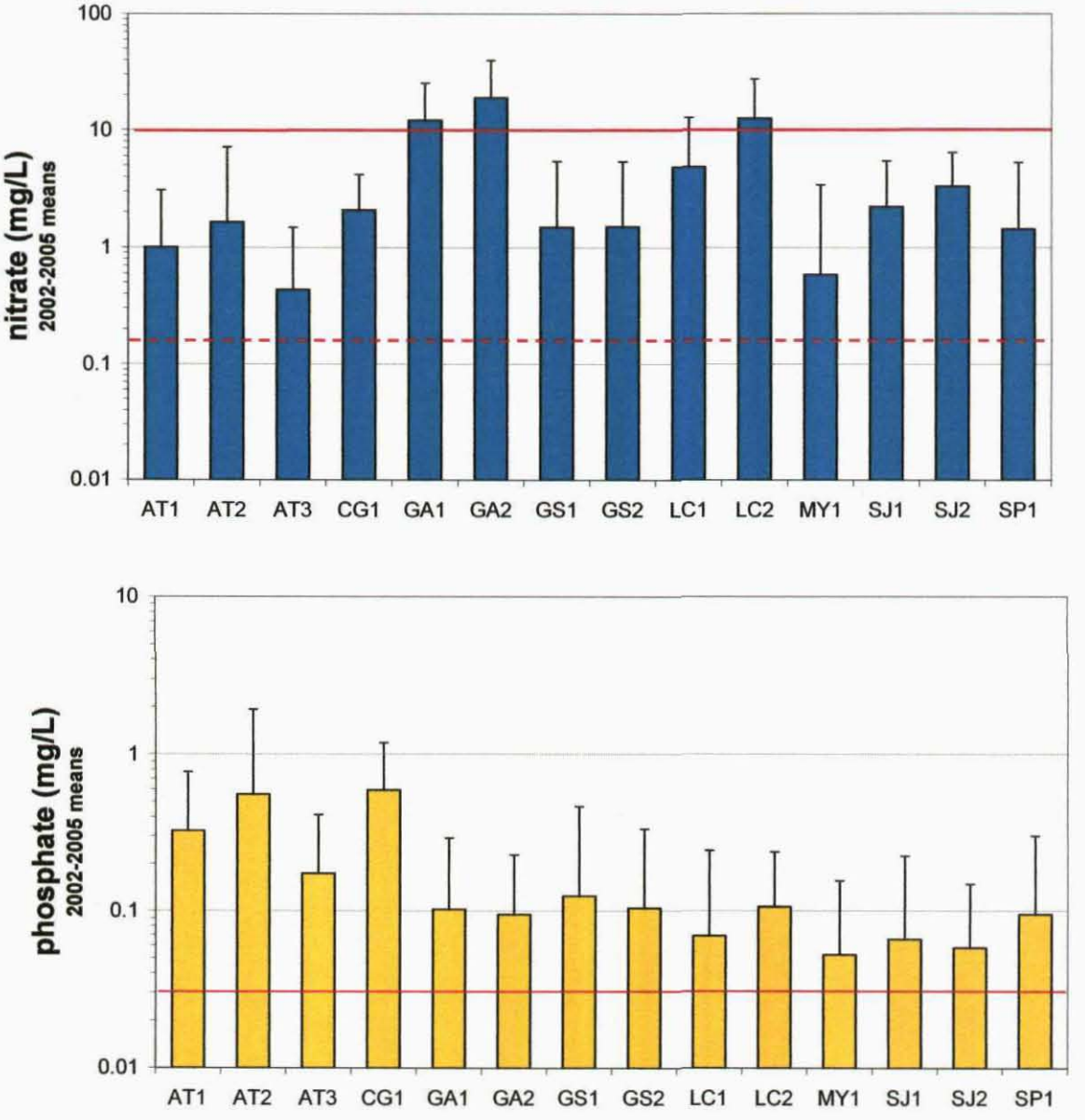


Figure 1. Upper panel: Average nitrate concentrations, June 2002 to December 2005, as measured by Santa Barbara Channelkeeper's Goleta Stream Team citizen water quality monitoring project. The solid horizontal line marks the 10 mg/L Public Health limit, the dashed line the EPA's proposed ecological limit for maximum nitrate in this region: 0.16 mg/L. Lower panel: Average phosphate concentrations, June 2002 to December 2005. The horizontal line marks the EPA's proposed limit for maximum phosphorus in this region: 0.030 mg/L. Phosphate typically makes up more than 90% of the total phosphorus in the stream. The "error bars" represent twice the standard deviation of the samples at each site – 95% of the measured values will typically be below this limit.

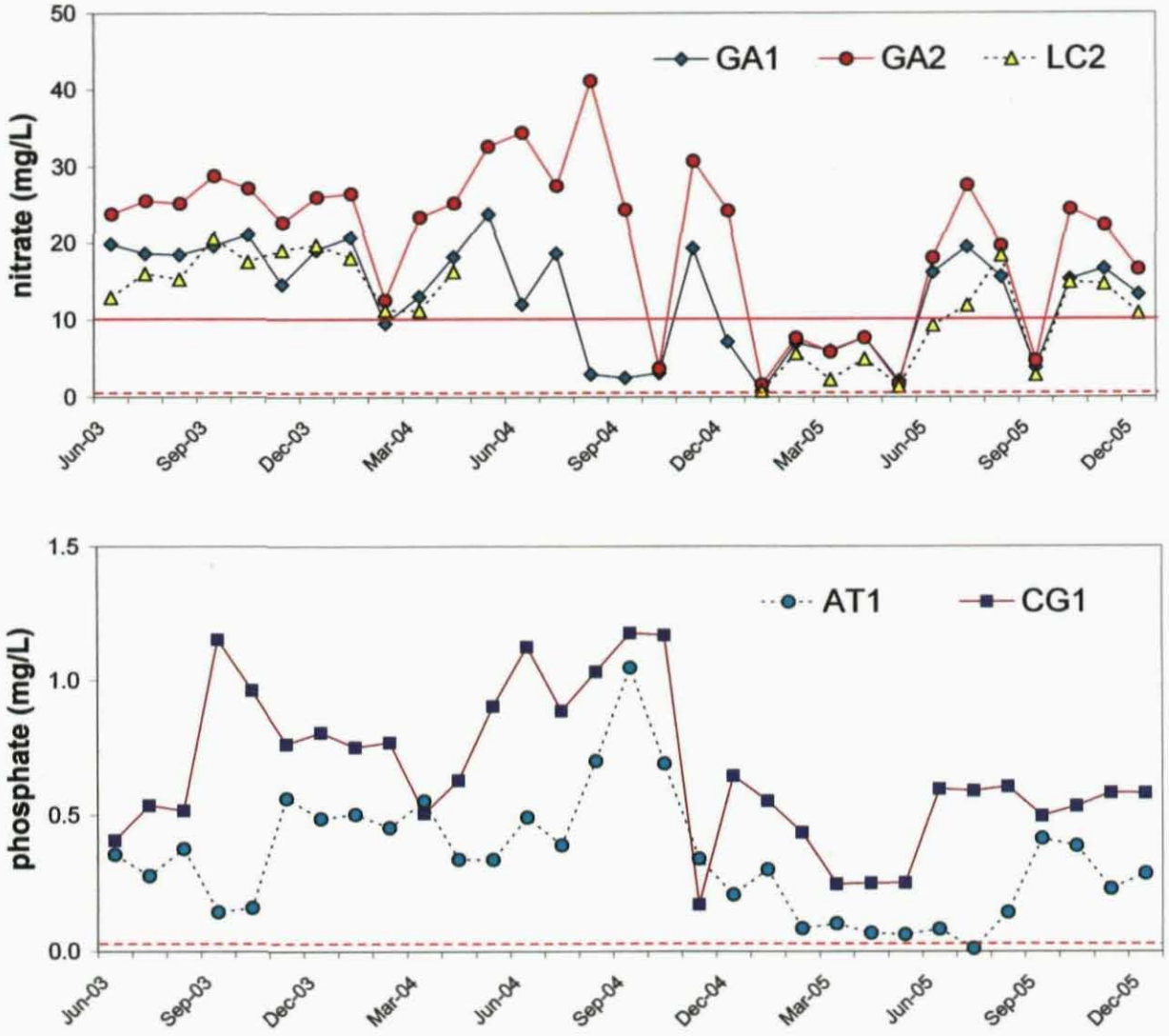


Figure 2. On the western end of Goleta Slough, excessive nitrate from agricultural practices on Glen Annie (GA) and Los Carneros (LC) creeks typically exceeds both EPA public and ecological health limits (10 and 0.16 mg/L, respectively). Monthly nitrate concentrations, June 2003 to December 2005, are shown for these streams in the upper panel. In contrast, excessive phosphate from urban landscaping and horses (exceeding the EPA's ecological health recommendation of 0.03 mg/L) is the major problem on the eastern end of the slough. Monthly phosphate concentrations, June 2003 to December 2005, for Atascadero and Cieneguitas creeks are shown in the lower panel.

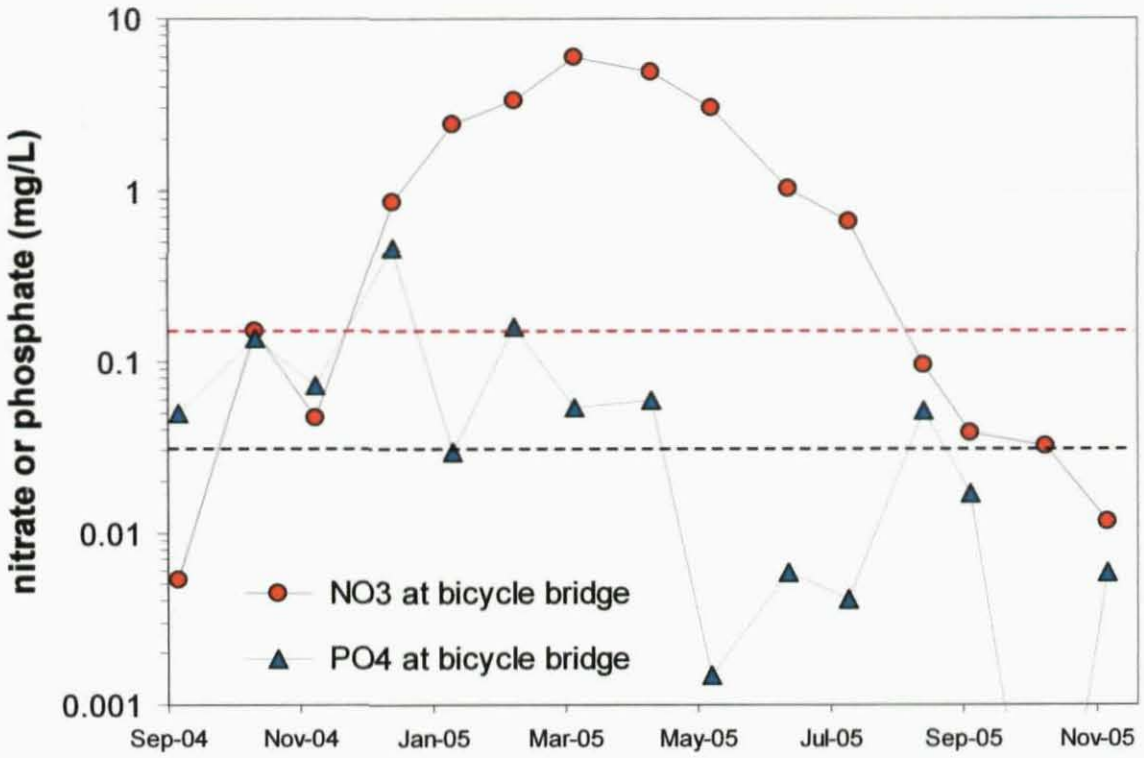


Figure 3. Monthly measurements of nitrate and phosphate from the Goleta Beach bicycle bridge over the eastern end of the Goleta Slough, September 2004 to December 2005. Nutrient concentrations vary dramatically from the dry season to the wet season, in other words, from periods of high concentrations from creek inflows to low oceanic concentrations from Santa Barbara Channel waters. Recommended ecological limits for nitrogen and phosphorus (dashed lines) are exceeded more than half the time, and the Public Health limit for nitrate came close to being reached in April 2005. The bicycle bridge is a mile west of Atascadero Creek, the major source of phosphate, and approximately two miles southeast of Glen Annie and Los Carneros creeks. Without doubt, concentrations nearer these source areas in the slough exceed those measured at the bridge.

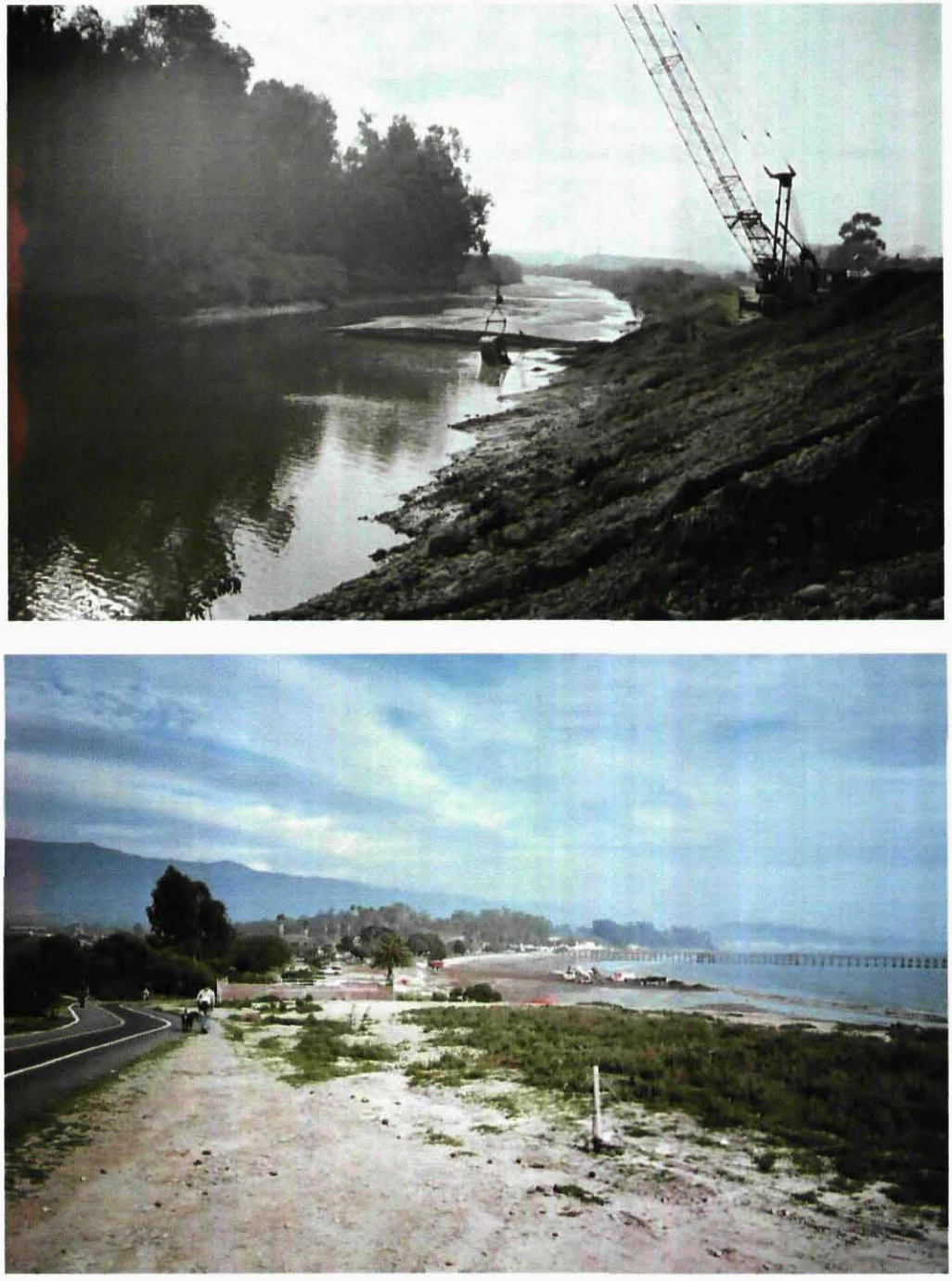


Figure 4. The upper photo shows dredging operations on the Atascadero branch of the Goleta slough on January 20, 2005, following storms earlier in the month. The lower photo shows beach replenishment at Goleta Beach on the same day. Removal of sediment, and its transport to Goleta Beach, is an almost annual occurrence. Failure to remove the immense volumes of sediment deposited in Goleta streams by annual storms would lead to rapid failure of the area's flood control system.

Figure 5. The upper photo shows storm flow in Atascadero Creek (at Patterson Avenue) on January 9, 2005. Sediment concentrations during storms can range up to 66 g/L. Measured concentrations in Atascadero, during a storm on March 4, 2001, were 9 g/L. The lower photo shows sediment deposition west of the bicycle bridge after the January 9, 2005 storm.

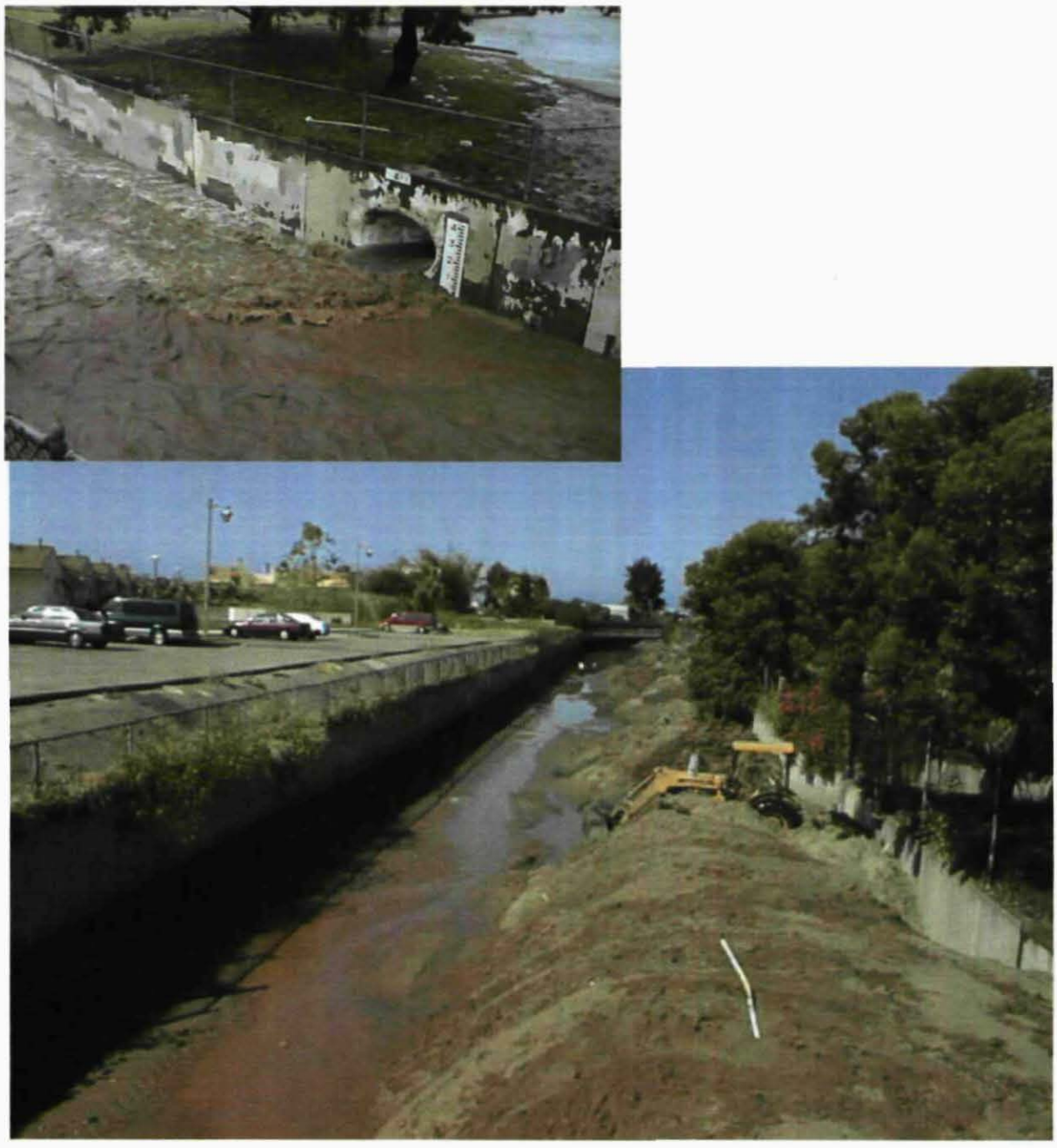


Figure 6. The upper photo shows sediment-laden storm flow in Franklin Creek during a storm on March 15, 2003. Sediment concentrations ranged up to 10 g/L during this event. The lower photo shows channel cleaning operations in Franklin Creek in April 2001 following the large storm of March 3-4, 2001. This is the sediment from a single large event. Deposited sediment volumes from large storms are almost unread, demonstrating a substantial and ongoing sedimentation problem for the Carpinteria Salt Marsh (the main tributaries of which are Franklin and Santa Monica creeks).

Sediment series I 11 March 1995

To respond to problems at Goleta Beach we need think in a larger context. We need to recognize the relationship of the beach to the larger organ -- the estuary and the watershed. The seriousness of the sedimentation of Goleta Slough is shown in the next 5 images. Prior to the flood event of 1995, this area shown under mud here was Salicornia marsh a couple of days previous. Flood waters carrying sediment topped the berm as the channel was unable to contain the flow volume. As soon as the muddy waters broke over the bank, the rate of flow dropped and, because fast moving water carries sediment, the sediment dropped out of suspension and settled over the *Salicornia* marsh.

EXHIBIT B

Sediment series II 4 May 1996

This load apparently brought seeds and sprouts from upland vegetation. The level of the soil is now above that at which tides can exert their effects and the process of 'Uplandization' begins. Fourteen months after the March 1995 flood that muddy area has now colonized with shrubby upland growth.

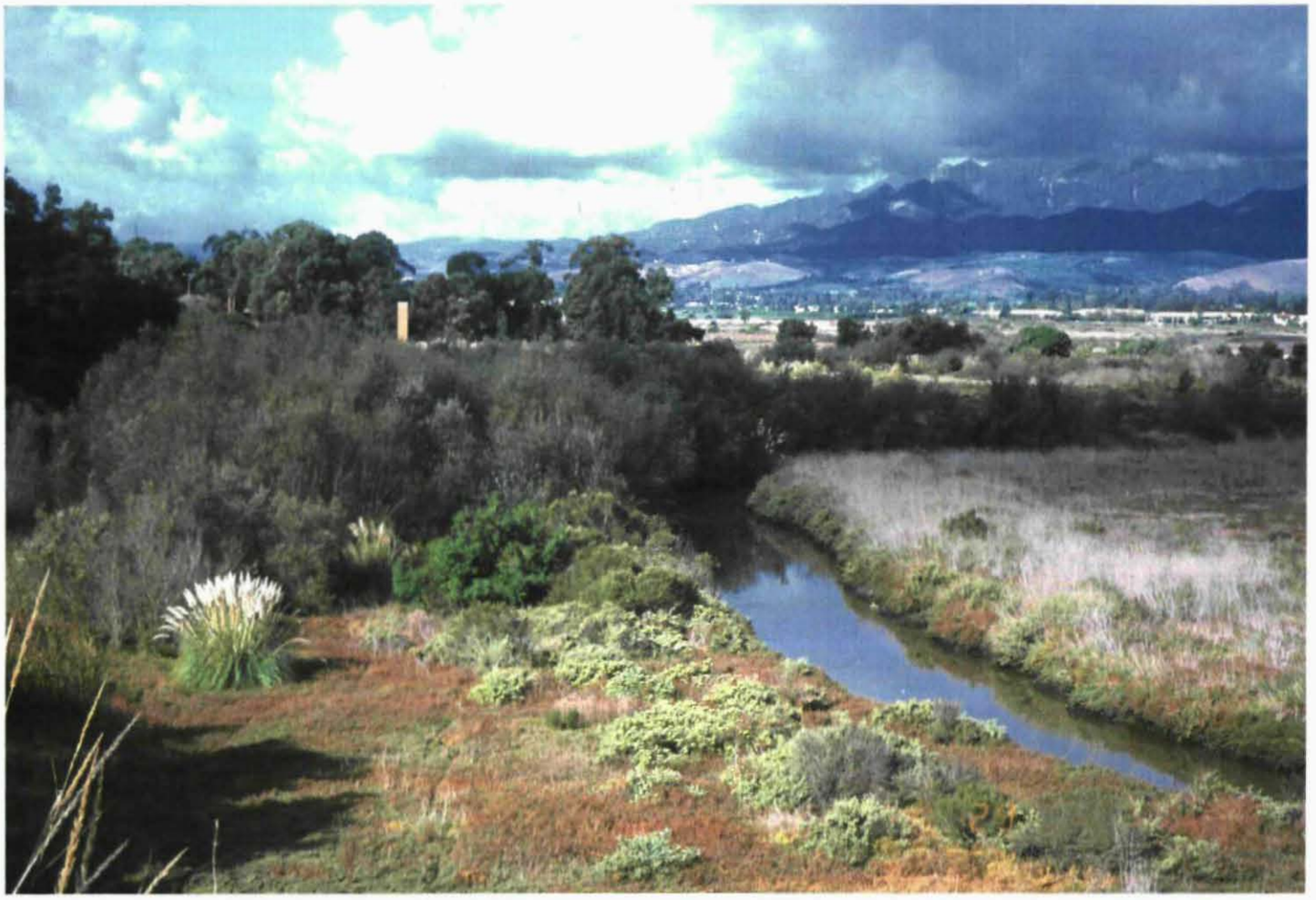
Sediment series III 30 March 1997

Shrubs in the deposition area and along the banks of the channel are increasing. You can now see the types of plants that have colonized – willows!

Sediment series IV 27 Nov 1999

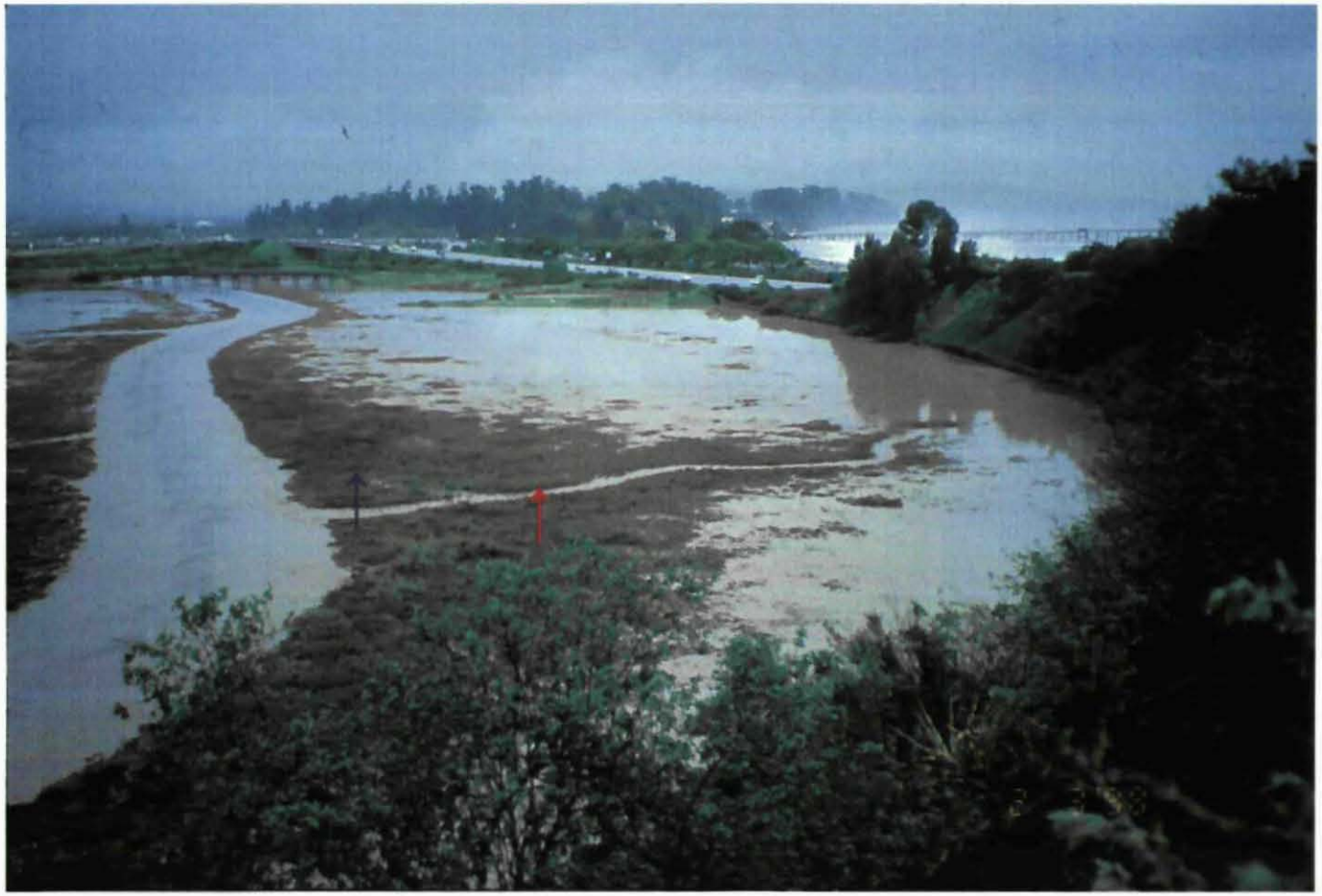
Two years after the previous photo we see a nearly mature willow forest with exotics. A forest has formed where salt marsh was prior to 1995.

Sediment series V 29 Nov 2001



Two more years later, Willows and *Baccharis* now dominate and a totally new kind of habitat is installed. The insidious aspect is that this new habitat serves as an even more effective sediment trap for subsequent silt carrying flood events. Goleta Slough is a highly effective sediment trap. The problems at Goleta Beach must be viewed in light of, and remedied in concert with, problems in the estuary and the watershed. Emergency action is needed here because if we can bring our combined forces together to solve this problem, then we may make headway on not only the sand loss problems at Goleta Beach but on other beaches downcoast.

2 March 1998



What does this have to do with Goleta Beach? Enormous amounts of sediment that would reach the beach and the long-shore current are instead trapped in the estuary. The two berms shown here constrain the outflow resulting in sedimentation in the basins seen in the foreground. The photographer of the previous five images turns around 180° and sees this. Looking from UCSB toward the mouth with Goleta Beach Park on the distant right we can view yet another aspect of the problems associated with infilling of the estuary. Two berms cut into the tidal channel, one at the bike bridge (blue arrow), the other closer to the viewer (red arrow). As sediment-laden flood waters approach these two berms, passage of water is slowed and the sediment drops out filling in the areas as shown here. The proposed 2nd slough mouth would be placed where the closer berm with the red arrow is visible. Through a new slough mouth sediment-laden waters would escape the impounded area and drain to the beach at the up coast end of the county park, hopefully assisting with beach replenishment. Also, mechanical removal of sediment in the estuary could be achieved more easily using this artificial opening. To accommodate the 2nd mouth, Highway 217 would have to be placed on a causeway.