



RICHARD F. AMBROSE  
PHONE: (310) 206-1984  
FAX: (310) 206-3358  
EMAIL: rambrose@ucla.edu  
http://www.ph.ucla.edu/ese/

OFFICE OF THE DIRECTOR  
ENVIRONMENTAL SCIENCE AND ENGINEERING PROGRAM  
10833 LE CONTE AVENUE  
BOX 951772  
LOS ANGELES, CALIFORNIA 90095-1772

July 3, 2007

Deborah Smith  
Interim Executive Officer  
Los Angeles Regional Water Quality Control Board  
320 West Fourth Street, Suite 200  
Los Angeles, CA 90013

RECEIVED  
2007 JUL 6 PM 1 25  
CALIFORNIA REGIONAL WATER  
QUALITY CONTROL BOARD  
LOS ANGELES REGION

Re: Effects of wastewater discharge to the Santa Clara River Estuary on tidewater goby populations (Order number R4-2007-XXXX (Order) and the National Pollutant Discharge Elimination System permit number CA0053651 (NPDES) regarding discharge of tertiary treated wastewater to the Santa Clara River estuary via outfall number 001)

Dear Ms. Smith:

I am writing to comment on the issue of how the City of San Buenaventura's wastewater discharge may affect tidewater gobies living in the Santa Clara River Estuary. I have conducted research in southern California estuaries for more than 15 years and have published several papers and reports concerning the tidewater goby.

In a letter dated May 30, 2007, the U.S. Fish and Wildlife Service (USFWS) raised concerns about the possible effects of reducing the wastewater discharge on tidewater gobies. This letter asserts certain knowledge about the natural dynamics of the Santa Clara River Estuary and draws some questionable conclusions.

One important aspect of the USFWS argument is the claim that "[u]nder current conditions, the estuary breaching regime in summer may not be significantly different than historic conditions when the river likely provided water input through much of the dry season." There is much uncertainty about the historical conditions at southern California coastal wetlands, including the Santa Clara River Estuary. Detailed studies of the historical ecology of southern California river systems have just recently begun (e.g., the recent study by Stein et al. for the San Gabriel River), and no equivalent study of the Santa Clara River system has been completed. Although it is possible there was normally dry-weather flow in the lower Santa Clara River, it is also possible that the estuary was typically separated from the ocean in the dry season by a sand barrier; there is accumulating evidence that this was the typical state for most southern California estuaries (David Jacobs, UCLA, personal communication). A much more thorough

analysis must be completed before accepting the assertion that "the estuary breaching regime in summer may not be significantly different than historic conditions."

Regardless of the natural dynamics of the Santa Clara Estuary system, existing knowledge about the tidewater goby does not support the USFWS assertion that reduced wastewater inflow would be harmful to tidewater gobies. In fact, the Service itself seems to recognize the benefits that would likely accrue, stating that "if wastewater discharge is reduced to less than about 5 million gallons per day, the estuary will no longer breach during the dry season. The water budget analysis concluded that the estuary will remain dominated by freshwater (due to groundwater input), which could be beneficial for the tidewater goby. Frequent breaching of the estuary mouth can stress tidewater gobies by causing water fluctuations that compromise shallow breeding areas, and by introducing rapid spikes in salinity as ocean water enters the estuary." The impacts of breaching on tidewater goby populations are certainly a concern; I have personally observed many tidewater gobies stranded after Malibu Lagoon breached during the summer after it attained a sustained high water level. Given these acknowledged benefits of reduced wastewater inflow, it is hard to understand the logic behind the Service's conclusion that reduced wastewater inflow could be harmful to the tidewater goby. Simply because "tidewater gobies are adapted to such fluctuations and have fared well in the Santa Clara River estuary for over 45 years under the current conditions" does not mean that reducing wastewater would be harmful to the gobies; to the contrary, our current knowledge about the ecology of the tidewater goby suggests it would be beneficial. The USFWS does mention two potential threats to tidewater goby populations, the African clawed frog and eutrophication, but the responses of these threats to reduced wastewater inflow is highly speculative. In fact, it is much more likely that continued wastewater discharge into the estuary would *increase* eutrophication than decrease it due to the high nutrient levels in the treated wastewater.

While the USFWS clearly is concerned about the sustainability of the tidewater goby population in the Santa Clara River Estuary, and I commend them for that worthwhile concern, it seems to me that their fear about the potential negative impacts of reducing the wastewater discharge into the estuary is misplaced. In my opinion, the net effect on tidewater gobies of reducing wastewater discharge into the estuary would be positive, mainly from reduced impacts from breaching.

Thank you for your consideration of these comments.

Sincerely yours,



Richard F. Ambrose, Ph.D.  
Professor