UNITED WATER CONSERVATION DISTRICT
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May 29, 2007

Mr. Don Tsai
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Reference: Comment on the Tentative Waste Discharge Requirement (Order No. R4-2007-XXXX, NPDES No. CA0053651) for the Ventura Water Reclamation Facility.

Dear Mr. Tsai,

I am pleased to provide you with comments regarding the tentative discharge requirements as outlined in Order No. R4-2007-XXXX. I have extensive statewide experience with the two federally-endangered fish species that occur in the Santa Clara River Estuary (Estuary). I also conducted some of the specific studies in the Estuary that pertain to this project during my employment with ENTRIX, Inc. in Ventura, California.

Treated wastewater effluent is unfortunately a major water source that is maintaining a number special status fish species in southern California such as the Santa Ana sucker in the Santa Ana River below the RIX/Rialto Plants, unarmored threespine stickleback in the Santa Clara River below the Valencia Water Reclamation and Saugus Water Reclamation Plants, and tidewater goby and steelhead in the Santa Clara River Estuary below the Ventura Water Reclamation Facility. The objective of this comment letter is to discuss the potential impacts to the two federally-endangered fish species from requirements outlined in Order No. R4-2007-XXXX. This comment letter is organized as follows:

- Introduction
- Tidewater Goby
- Steelhead
- Endangered Species Consultation
- Proposed Monitoring
- Enhancement of the Estuary
- Conclusions and Recommendations
- Literature Cited

INTRODUCTION

The Santa Clara River Estuary is extremely important to both tidewater goby and steelhead either during all or part of their life history stages. The Tentative Waste Discharge Requirement, Order No. R4-2007-XXXX will require the city to reduce the discharge to the estuary by 1 mgd per year and eventually discontinue the discharge altogether. The regional board stated at the meeting on May 8, 2007 that the objective of the annual reduction is to allow the city to evaluate impacts to the two special status fish species during the incremental decrease in discharge. The regional board is quoting the State Board Resolution No. 95-84 which states that discharges to estuaries be phased out at the earliest practicable date unless the discharge would enhance the quality of the receiving waters above that which would occur in the absence of the discharge.

Surface water diversions and groundwater pumping have reduced the amount of surface water available to the estuary. At present, the majority of the water entering the estuary during the dry season and during drought years is from the Ventura Water Reclamation Facility discharge. The discharge point empties into a backwater area that is located on the northern edge of the estuary within a heavily vegetated area that is shielded from flood events such as the events that occurred in the 2004-2005 rain season. A reduction and eventual elimination of this discharge to the estuary would eliminate this backwater area that is important to the continued existence of tidewater gobies and is most likely important to steelhead rearing in the Estuary.

Coastal and inland southern California has a distinctive, endemic native freshwater fish fauna. Today, all of the native freshwater and some of the euryhaline species are extirpated or severely reduced in numbers within their native range (Swift et al. 1993). Two of these species include the tidewater goby (*Eucylogobius newberryi*) and the southern California steelhead trout (*Oncorhynchus mykiss*).

TIDEWATER GOBY

The tidewater goby (*Eucylogobius newberryi*) was federally-listed in 1994. The Santa Clara River Estuary is extremely important to all life history stages of tidewater goby. Open areas are critical for breeding, while vegetation is critical for overwintering survival (providing a refuge from high flows) and probably feeding as well (Moyle 2002). Tidewater gobies are susceptible to extirpation especially in estuaries that have been heavily encroached upon such as the Santa Clara River Estuary. During unusually heavy flooding, some tidewater goby populations could become extinct locally because strong flows could easily push fish out to sea where they would most likely perish (Lafferty et al. 1999a). Backwater habitats within estuaries are important refuge sites to tidewater gobies during these flood events.

Potential Tidewater Goby Impacts

A decrease in surface water and the loss of backwater habitats in the north half of the estuary (the only backwater habitats in the estuary) from the reduction and eventual elimination of treated wastewater discharge to the estuary will increase the likelihood of extirpation of the Santa Clara River Estuary tidewater goby population. Presently 23 (17 percent) of the 134 documented localities are considered extirpated and it is estimated that 55 to 70 (41 to 52 percent) of the localities are naturally so small or have been degraded over time that long-term persistence is uncertain (USFWS 2005). With many populations considered susceptible to extirpation, the Santa Clara River Estuary population is extremely important in southern California since it is currently large comparable to other southern California estuaries and has the potential to re-establish other adjacent populations following catastrophic flood events.

The loss of treated wastewater discharge during drought years could cause goby die-offs from stranding and poor water quality and cause an increase in bird predation within shallow water. Tidewater goby die-offs did occur in some estuaries during the 1987-1992 drought (Lafferty et al. 1999b). The proposed annual ratcheting down of 1 mgd could cause die-offs if a drought occurs during the monitoring timeframe. It is during times of environmental stochastisity such as unpredicted droughts that gobies would need to leave an estuary to disperse (via a short ocean migration) to more favorable estuaries (if possible) but they would not have an opportunity because during these conditions, the sandbar would have closed the estuary to the ocean.

In Lafferty et al. 1999b, they estimated an extirpation rate of the Santa Clara River tidewater goby population at 0.47 and a recolonization rate at 0.60 which means there is a fairly high extirpation rate especially compared to other large estuary extirpation rates in southern California. The recolonization rate of 0.60 is higher than the extirpation rate which means that recolonization is possible and would probably be from the Ventura River population. This extirpation rate would increase with a reduction in surface flow to the estuary and the recolonization rate would decrease if the sandbar is closed more frequently throughout the year.

STEELHEAD

The southern California steelhead trout (*Oncorhynchus mykiss*) was federally-listed as endangered in 1997. The Santa Clara River Estuary is extremely important to the juvenile, smolt, and kelt life history stages and serves as a migration corridor for adult steelhead migrating from the ocean. Steelhead smolt downstream migration can occur during a wide variety of hydraulic conditions from wet years to dry years (UWCD data). Downstream migrant smolts most likely either spend little time in the estuary acclimating to a saline environment before emigrating to the ocean or they oversummer when the estuary is closed to the ocean for an extended period of time during dry conditions. Rearing steelhead require good water quality and instream cover to survive in the estuary. Boughton et al. 2007 describe a life-history group of steelhead as *lagoon anadromous* that

spend either the first or second summer as juveniles in seasonal lagoons. This is based on studies conducted in seasonal lagoons in Santa Cruz and San Francisco where high densities of juvenile steelhead have been observed rearing in these lagoons. Also high juvenile steelhead growth rates have been observed in these seasonal lagoons and it is well known that this growth is important to the survival of steelhead emigrating to the ocean.

Potential Steelhead Impacts

The reduction and eventual elimination of treated wastewater discharge to the estuary would reduce the wetted perimeter of the estuary eliminating backwater and adjacent littoral habitats that provide cover for refuge to steelhead. Studies conducted by Nautilus Environmental and Kamman Hydrology and Engineering indicate that water from the shallow groundwater table will infiltrate and partially fill the estuary in place of the treated wastewater effluent. This shallow groundwater is most likely polluted with pesticides and fecal coliform from adjacent agricultural practices. No studies of this water source and the potential impacts to special status species have been conducted to my knowledge. So, not only will there be a loss of important backwater habitats, this new source of water could have an impact. Some of the comments at the May 8, 2007 meeting appeared to be based on the notion that this water source would bring the estuary back to a historic natural condition. There have been impacts to the shallow groundwater table that need to be evaluated before treated wastewater is eliminated from the estuary. Additionally, the reduction and eventual loss of a constant water source that has been discharged to the estuary for years could disrupt the important lagoon anadromous life history stage for juvenile steelhead.

ENDANGERED SPECIES CONSULTATION

Section 7 of the Federal Endangered Species Act of 1973 requires that any federal agency confer with the jurisdictional federal agency that is responsible for a federally-listed species if an action is likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat proposed for a listed species. There appeared to be some confusion at the May 8, 2007 meeting in Ventura regarding this formal consultation. The Tentative Waste Discharge Requirement (Order No. R4-2007-XXXX) may affect the federally listed tidewater goby and steelhead including designated critical habitat so formal consultation with the USFWS and NMFS under Section 7 of the federal Endangered Species Act should be required through the U.S. Environmental Protection Agency.

PROPOSED MONITORING

There are inherent problems with the proposed monitoring of the fish (tidewater goby) population during the annual ratcheting down of treated wastewater discharge to the estuary.

Problems with Proposed Monitoring

Here are a few points:

- Tidewater goby populations can experience large fluctuations naturally so it would be difficult to know if an impact is from a decrease in discharge or natural variability.

- The Santa Clara River Estuary is highly dynamic meaning that the physical habitat within the estuary is in continual flux primarily from freshwater and tidal hydraulic processes and long shore drift. Based on this condition it is extremely difficult to define a baseline and success criteria.

- The tidewater goby population in the Santa Clara River Estuary could become extirpated during the study if there is a loss of backwater habitats during the ratcheting down of treated wastewater effluent.

- There are no methods that can quantify the optimum amount of water tidewater gobies need such as "weighted usable area" quantified during PHABSIM exercises for salmonids in streams. This is because tidewater gobies can exist in large numbers within some of the smallest estuaries in California but they are susceptible to extirpation because they lack backwater habitats and some are satellite populations that turn on and off (presence-absence) following large flood events such as Arroyo Hondo and Cojo Creek Lagoons in the Conception Coast area.

- Steelhead don't appear to be a focus in the monitoring scheme and the proposed action could reduce the amount of rearing habitat for smolts and eliminate this habitat during dry years when downstream migration can still occur (United Water unpublished information).

ENHANCEMENT OF THE ESTUARY

The regional water board stated during the May 8, 2007 meeting that the City of Ventura has not presented a strong case that the treated wastewater discharged to the estuary enhanced the quality of the receiving water in the estuary as required in State Board Resolution No. 95-84. As stated in the introduction, it is unfortunate that a number of special status aquatic species now rely on treated wastewater effluent for their continued existence. The treated effluent from the Ventura Water Reclamation Facility enhances tidewater goby habitat in the form of backwater habitats within the northern extend near the outfall. If the discharge is discontinued these important backwater areas will cease to exist. As stated in the tidewater goby section of this letter, backwater habitats are important rearing areas for gobies. The biggest concern here is that if an extreme flood event were to occur in the Santa Clara River and there are no backwater habitats present in the estuary, the Santa Clara River tidewater goby population could become extirpated. For example, during the 2004-2005 rain season the region experienced heavy flooding. The Santa Clara River Estuary was

completely washed out by flood flows well over 100,000 cubic feet per second. Tidewater gobies that were in the estuary were most likely swept out to the ocean and perished. The backwater habitats resulting from the treated wastewater effluent were shielded from the floods and tidewater gobies that were rearing in these habitats most likely re-establish the population.

CONCLUSIONS AND RECOMMENDATIONS

Based on the presence of two special status fish species in the Santa Clara River Estuary it is a concern that the Regional Water Quality Control Board is requiring the City of Ventura to reduce and eventually eliminate the treated wastewater discharge to the estuary without conducting detailed studies to understand the potential impacts to these species from this action. As stated above there are benefits to tidewater gobies from the formation of backwater habitats that are formed near the dischrge point at the north end of the estuary. These benefits were addressed in a study by Entrix, Inc. (2004) that looked at the "Beneficial Uses" to tidewater gobies in the estuary. These beneficial uses were described as tidewater goby utilization of backwater habitats in the northern half of the estuary near the wastewater outfall. The backwater habitats that the wastewater effluent creates should be considered as an enhancement to the receiving waters of the estuary since they enhance the physical habitat for tidewater gobies and most likely steelhead as well.

If the regional board decides to continue with the proposed action, it is recommended that these actions take place to understand what impacts might occur from such an action.

- Conduct a detailed study of the shallow aquifer (water quality) that is assumed to become the primary surface water influence to the estuary following the elimination of treated wastewater discharge.

- Conduct a study on the potential effects the ocean might have on the salinity of the estuary in dry years following the elimination of treated wastewater discharge. The concern would be potential changes to the brackish Santa Clara River Estuary that has a seasonal freshwater character to a brackish system with a seasonal marine character.

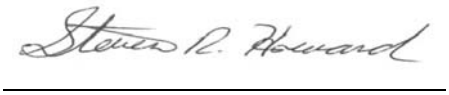
- A part of any water balance or water quality study should take into account other cumulative effects including but not limited to the increasing reliance on water resources from an increasing population in Ventura County. A study should attempt to predict the growth rate over decades including the increase in water use.

- Conduct hydrologic modeling that will address the loss of backwater habitats based on various discharge scenarios.

- Look at various alternatives to enhance the estuary so that these backwater habitats remain if the proposed action is implemented.

I appreciate the opportunity to comment on the Tentative Waste Discharge Requirement Order No. R4-2007-XXXX. Please contact me at (805) 671-9536 if you have any questions.

Sincerely,



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