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**Craig J. Wilson, Chief, Monitoring and TMDL Listing Unit**  
**Division of Water Quality, State Water Resources Control Board**  
**P.O. Box 100**  
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**Re: Request for Public Comments on Revisions of California’s Clean Water Act Sec. 303(d) List of Water Quality Limited Segments**

Dear Mr. Wilson,

May 16, 2002

I am submitting two comments and an attached note released by the USEPA, that are fundamental to the SWRCB’s consideration of “*proposed revisions of the federal Clean Water Act Sec. 303(d) list of water quality limited segments.*” This information was also submitted to the San Diego RWQCB on November 28, 2001 prior to a public hearing held on December 8, 2002. I am not submitting new data or calling for the protection of any particular water body. I am raising more fundamental concerns about the Sec. 303(d) listing process, and limited accomplishments, and I am proposing several solutions.

The problem is that the Sec. 303(d) listing program is cumbersome, lacks sufficient data, and is not timely. By the time data are acquired, evaluated, water bodies are listed, and TMDL’s are implemented it will be “too late” to really do anything about it, and for many water bodies, that “too late” has already happened. *If we cannot get on top of this problem in the next 5 years you can forget about! Major progress is needed now.* The Sec. 303(d) listing process addresses symptoms and not causes, and the TMDL listing identifies how much, but is short on fixes. Two major forcing functions are already changing all the rules:

1. *NOAA has projected a long-term drought for the next 20 – 30 yrs with 30% less rain.*
2. *The projected population growth is significant (e.g. 44% by 2020 in San Diego County alone), and it will out compete any corrective action the Sec. 303(d) listing might implement.*

**Topic 1: What happens after a water body has been listed as impaired?**

Substantial effort has been made to acquire and interpret environmental data to update the present Sec. 303(d) list of Impaired Water Bodies. More effort now needs to be given to determining various courses of “action” that are need to be taken after a water body has been listed. Apparently, after the list is compiled, reviewed, and approved by the EPA, the state is required to prioritize waters/watersheds for development of “Total Maximum Daily Load” (TMDL) determinations. Unfortunately, most of our creeks and lagoons are already listed as impaired from a variety of stressors, and many are identified as Category 1 Impaired. Hence, they must be exceeding their future TMDL threshold level already, and have been for many years. *By the time the TMDL determinations are made and a strategy developed for managing each watershed, the projected future population growth and urbanization will make these TMDL determinations outdated and ineffective the day that they are published.* Even if the RWQCBs are able to identify and implement viable Best Management Practices for new developments (over the next 20 years), control spills from old broken sewage pipes, and contain major sewage overflow spills at wastewater treatment plants, we still will not have accounted for the impacts/impairment from the existing urbanization. The “water quality” impacts that will result from the projected growth and urbanization will exceed our ability to implement any management practices. This strategy is just not working and we cannot afford to take 10 years to implement it.

**Recommendation:** I propose an alternative approach that could be implemented in parallel with the above strategy, help focus attention to the most problematic subwatersheds, and could be within 12 months or less. This approach would provide valuable insight into creek performance. Since there is a strong correlation between the % Impervious Cover” in a watershed and stream condition, we should be able to predict stream condition from estimates of % Impervious Cover made in each watershed and subwatershed along the coast. This initial mapping effort would define the spatial extent and magnitude of the problem. Preliminary estimates of % Impervious Cover for each subwatershed made in the Carlsbad Hydrologic Unit in San Diego County (7 individual whole watersheds) correlate well with RWQCB’s Impaired Water Body data. I have already discussed this with John Norton (SWRCB) and Bruce Posthumus and David Gibson (San Diego RWQCB) and they agree that it has merit.

**Topic 2: Presence of invasive exotic plant species should be used as an indicator of impaired water bodies.** The present indicators of impaired water bodies, i.e. eutrophication, bacteria, low D.O., trace metals, total dissolved solids, pesticides, sedimentation, benthic community, nutrients, turbidity, etc. all exhibit substantial temporal and spatial variability and are difficult to interpret. In contrast, colonization of riparian habitats by exotic plant species is conspicuous, pervasive, and easily documented. In addition, “*invasive plants are now widely recognized worldwide as posing threats to biological diversity second only to direct habitat loss and fragmentation*” (Pimm and Gilpin 1989, Scott and Wilcove 1998). “*...Non-native invasive plants pose one of the worst threats, perhaps the worst threat of all, to the state’s remaining populations and communities of native species*” (Bossard et al. 2000). Conspicuous wetlands invaders include: Giant reed, ice plant, pampas grass, eucalyptus, wild fennel, Myoporum, tree tobacco, canary island palm, castor-bean, brazilian pepper, salt cedar, fan palm, cocklebur, etc. This looming ecological disaster to our riparian communities, in particular, is being lost between the regulatory cracks. Invasion of exotic plant species within the riparian plant community is being accelerated by the conversion of seasonal flow in creeks to continuous year round flow due to urbanization of the watersheds and to the discharge of excess nutrients..

**Recommendation:** I recommend that the distribution, abundance, species composition, and impacts of invasive plants associated with riparian habitats be aggressively included as an additional criterion in the SWRCB’s protocol for assessment of impaired water bodies. In addition, the general public may have difficulty in understanding and “seeing” what low pH means, but has no trouble in “seeing” a problem with *Arundo donax*. It is noteworthy that the SDRWQCB’s has stated that one of its Long Term Wetlands Goals is to “Protect wetlands from the invasion of exotic plants” (SDRWQCB Watershed Management Approach May 1998, p. 1-27).

Pimm, S.L. and M.E. Gilpin. 1989. Theoretical issues in conservation biology. In: Roughgarden, J., R. May, and S. Levin (eds.). Perspectives in Ecological Theory. Princeton University Press, Princeton, N.J. pp. 287 – 305.

Scott, J.M. and D.S. Wilcove. 1998. Improving the future for endangered species. Bioscience. 48(8): 579-580.

## RETHINKING ENVIRONMENTAL INDICATORS (ES&T 12/1/2000)

The United States should **use indicators that focus on ecological integrity to evaluate the success of environmental protection programs**, according to a draft report from the U.S. EPA's Science Advisory Board released this month. **Most environmental indicators now in use measure administrative processes, such as number of permits issued, or levels of stressors, such as concentrations of pollutants in streams**, says Stephanie Sanzone, EPA staff coordinator for the committee of independent scientists that wrote the report. **These measures lack information on the fundamental structure and function of ecological systems**, she says. **"For some ecological systems the most severe stressors are not chemical pollution, but alteration of the landscape by development and exotic species,"** she notes. *"A Conceptual Framework for Reporting on Ecological Condition"* can be found at [www.epa.gov/sab](http://www.epa.gov/sab). **The report proposes a framework for collecting data on characteristics such as habitat fragmentation, biological diversity, and nutrient cycling.** Once final, it could be used by agencies to identify monitoring gaps and provide the public with easily understood information about ecosystem health that can be compared across different regions. **This new information, because it could eventually lead to revisions of environmental statutes, highlights problems such as biodiversity loss, which are not addressed by current laws.**