



BAYKEEPER.

*Defending Our Waters—from the
High Sierra to the Golden Gate*

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January 31, 2006

Submitted via Electronic Mail to cjwilson@waterboards.ca.gov

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RE: Baykeeper Comments on 303(D) Listing Proposal for Regions 2 and 5

Dear Mr. Wilson:

On behalf of Baykeeper and its San Francisco Bay and Deltakeeper chapters, we appreciate this opportunity to submit comments regarding the 2006 Clean Water Act §303(d) list of impaired waters ("303(d) list") proposed by the California State Water Resources Control Board ("State Board"). In order to minimize repetition, Baykeeper hereby incorporates by reference the overarching comments and statewide concerns put forth by California Coastkeeper Alliance and NRDC in their letter submitted January 31, 2006. Baykeeper's letter, therefore, will only focus on the most important issues specific to Regions 2 and 5 – the Bay-Delta watershed. A one-page summary of Baykeeper's regional concerns is attached to the end of this comment letter for your convenience.

A. The State Board failed to review all readily available data as required by law and thus failed to list significantly impaired waterways.

Of critical concern to Baykeeper is that in making its listing and delisting decisions, Board Staff failed to review important scientific data that is readily and publicly available. The regulations and guidance regarding 303(d) listing decisions is clear – the Board must consider all available information. TMDL regulations state 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."¹ The regulations further 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,"² and United States Environmental Protection Agency ("EPA") guidance directs the State to "make reasonable efforts to obtain and consider sources of data and information not provided by

¹ 40 C.F.R. § 130.7(b)(5) (emphasis added).

² 40 C.F.R. § 130.7(b)(5)(iii) (emphasis added).

commenters.”³ Moreover, the listing policy itself explicitly states that “all readily available data and information shall be evaluated” and that the Boards “shall *actively* solicit, assemble and consider all readily available data and information.”⁴

In creating this list, however, Staff has failed to review available studies when making its listing decisions for Regions 2 and 5. For example, the Board should have listed San Francisco Bay for PBDEs, and PAHs because there is ample evidence to demonstrate that these two pollutants persist throughout the Bay and in Bay species at levels that harm beneficial uses. In light of the available evidence cited below, Baykeeper recommends that the Board make the following listing corrections at this time.

1. There is sufficient data of impairment to list the greater San Francisco Bay for PBDEs.

PBDEs (or polybrominated diphenyl ethers) are flame retardant compounds used widely in everyday items such as vehicles, furniture, clothing, and carpet. PBDEs are lipophilic and bioaccumulate in the fatty tissues of organisms. These compounds are also resistant to degradation and thus persist in the environment. PBDEs present many of the same human and ecosystem health concerns as PCBs due to the similarities in their structures. PBDEs, like PCBs have a high octanol-water partition coefficient (K_{ow}) and therefore tend to similarly bioaccumulate in the environment and to adsorb/absorb to sediment particles.⁵ There is increasing evidence that PBDEs bioaccumulating in the environment cause liver toxicity, thyroid toxicity, and neuro-developmental toxicity in organisms. There also is growing—and disturbing—evidence that PBDEs are present in the San Francisco Bay ecosystem at levels that are harming beneficial uses of the Bay in terms of aquatic organisms, wildlife, and human health. These studies are further described and cited below.

In recommending that the San Francisco Bay not be listed for PBDEs, Board Staff asserted that data submitted on the presence of PBDEs in bird nests, seal tissue and fish tissue was insufficient to demonstrate impairment because the organisms investigated did not forage locally and therefore, could not be linked to PBDE levels in specific waters or sediment.⁶ As Staff stated, “it is easier to establish this link [the link between a waterbody and an organism] when the tissues of filter-feeding organisms or organisms that forage locally are exclusively used.”⁷ Not considered by Board Staff, however, is at least one specific study described below that found PBDEs in the tissue of local filter-feeding bivalves. Board Staff also ignored several other studies described below that

³ U.S. EPA Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, pg. 32 (July 29, 2005).

⁴ Section 6 of the State Board 303 (d) Listing Policy (emphasis added).

⁵ Larson, R. & Weber, E., “Reaction Mechanisms in Environmental Organic Chemistry,” CRC Press, pg.12 (1994).

⁶ Fact Sheets Supporting “Do Not List” Recommendations, California Regional Water Quality Control Boards, Region 2, pg. 137 (September 2005).

⁷ *Id.*

inarguably demonstrate the presence of PBDEs in the Bay at levels that can cause impairment.

The San Francisco Estuary Institute published a study last year that shows high concentrations of PBDEs in South Bay sediment and concentrations of PBDEs in mussels, oysters, and clams as high as 64, 47 and 106 parts per billion, respectively.⁸ While the EPA has yet to establish criteria for PBDEs for the protection of human and aquatic health, the bivalve study clearly demonstrates that PBDEs in the Bay water column are accumulating in fish and shellfish. Accumulation of PBDEs violates the San Francisco Bay Basin Plan, which specifies that controllable factors shall not cause a detrimental increase in concentrations of substances found in bottom sediments or aquatic life.⁹ Since this data firmly establishes the link that the Board Staff was looking for, Baykeeper believes Staff made an error in not listing the Bay for PBDEs.

Another study that Board Staff failed to consider is one that reported that concentrations of PBDEs found in Bay Least Terns were the highest ever reported in biota. The results, published in 2004, revealed concentrations of PBDEs in the eggs of the Caspian, Forster and California Least Terns as high as 63 ppm.¹⁰ These studies and the years of data behind them were available for the asking from the responsible agencies at the time of the Staff's listing decisions, and thus Staff should have requested the information.

Not only are PBDEs already in the Bay water column and sediment and accumulating in species around the Bay, but studies also show that there are new and controllable sources of PBDEs currently being discharged within the Bay watershed. For instance, the City of Palo Alto recently identified PBDEs in the effluent of its wastewater treatment plant and estimated the yearly loading from the advanced treatment plant alone to be 2 pounds per year. Their study concludes, "wastewater treatment plants could be a *significant* point source [of PBDEs]."¹¹ Because wastewater receiving no treatment or primary treatment is regularly discharged from wastewater facilities into the Bay throughout the year, the loading of PBDEs via wastewater at other facilities could be much higher than the loads from Palo Alto's facility, which has advanced treatment.

We believe that the State Board Staff erred in its decision to not list the Bay for PBDEs. The Board did not consider all available evidence, and in fact blatantly ignored available evidence stated as necessary for listing. Available studies already show that PBDEs can be found in Bay water and sediment at harmful levels, are accumulating in local Bay seals, fish, bird eggs and bivalves, and are currently being discharged. Baykeeper

⁸ Oros, D.R. et al., "Levels and Distribution of Polybrominated Diphenyl Ethers in Water, Surface Sediments, and Bivalves from the San Francisco Estuary," *Environ. Sci. Technol.* 39:33-41 (2005).

⁹ Bay Basin Plan, Chapter 3, Water Quality Objectives for Surface Waters: Bioaccumulation.

¹⁰ She, J. et al. "Highest PBDE Levels (max 63 ppm) Yet Found In Biota Measured in Seabird Eggs from San Francisco Bay." *Organohalogen Compounds* 66:3939-3944 (2004).

¹¹ North, Karin, "Tracking Polybrominated Diphenyl Ether (PBDE) Releases in a Wastewater Treatment Plant Effluent, Palo Alto, California, USA,." (January 2004). Available at www.cityofpaloalto.org/public-works/documents/cb-PBDEst.pdf (emphasis added).

believes that the Staff had sufficient evidence to list the San Francisco Bay as impaired for PBDEs, and we strongly recommend that Staff do so now.

2. There is sufficient data of impairment to list the greater San Francisco Bay for Polycyclic Aromatic Hydrocarbons.

More than ten years of data compiled by the San Francisco Estuary Institute (SFEI), and available on the SFEI website, demonstrate that PAH contamination is widespread in the San Francisco Bay.¹² PAHs are a group of over 100 petrochemicals that are formed as a result of the incomplete combustion of various substances, such as coal, oil, and gasoline. PAHs have been found to cause cancer, suppress the immune system and cause various other harmful effects in laboratory animals.¹³ In aquatic animals, a sediment quality threshold of 1,000 ppb dry weight for total PAH concentrations has been suggested as protective of estuarine fish against health effects.¹⁴ Much of the current research on the effects of PAHs on aquatic organisms has been summarized by the EPA in its National Sediment Quality Survey.¹⁵ The San Francisco Bay Basin Plan specifies PAH water quality objectives of 15 ug/L and requires that all waters be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.¹⁶

Between 1993 and 2001, the San Francisco Estuary Institute collected water, sediment and bivalve samples from a variety of sites distributed across the South Bay and the North Bay into the Delta. The results of this study led the scientists to conclude that "sediment total PAH concentrations are...high enough to cause adverse biological effects," and that "unless external loading levels of PAH are controlled...the Bay is not expected to recover rapidly."¹⁷ Of the 26 sediment samples collected, 19 (or 73%) exceeded 1,000 ppb, a sediment threshold level above which adverse effects have been observed in aquatic organisms. With respect to the bivalve tissue analysis, concentrations of PAHs were found in oysters placed for only 90 days in the South Bay and the mouth of the Petaluma River. Eighteen water samples collected from the greater San Francisco Bay also demonstrated widespread presence of PAHs in the water column.

¹² Oros, Daniel R. & Ross, John R.M., "Polycyclic Aromatic Hydrocarbons in Bivalves from the San Francisco Estuary: Spatial Distributions, Temporal Trends, and Sources (1993-2001)," San Francisco Estuary Project. Oros, Daniel R. et al., "Polycyclic Aromatic Hydrocarbon (PAH) Contamination in San Francisco Bay: A 10-Year Retrospective of Monitoring In An Urbanized Estuary," San Francisco Estuary Institute. Both papers are available online at www.sfei.org.

¹³ Agency for Toxic Substance and Disease Registry "ToxFAQ for Polycyclic Aromatic Hydrocarbons," available at <http://www.atsdr.cdc.gov/tfacts69.html#bookmark02>.

¹⁴ Oros, D., "A 10-Year Retrospective," at 1. Johnson, L.L. et al., "An analysis in support of sediment quality thresholds for polycyclic aromatic hydrocarbons (PAHs) to protect estuarine fish," *Aquatic Cons.: Marin & Freshwater Ecosyst.* 12:517-538.

¹⁵ USEPA, "The Incidence and Severity of Sediment Contamination in Surface Waters of the United States, National Sediment Quality Survey: Second Edition," EPA-823-R-04-007 (November 2004).

¹⁶ Bay Basin Plan, Table 3-3: Marine Water Quality Objectives for Toxic Pollutants in Surface Waters.

¹⁷ Oros, D., "A 10-Year Retrospective," at 1.

The SFEI research demonstrates that PAHs are present in the Bay sediment and water column at concentrations that are likely to produce detrimental responses in aquatic organisms, in violation of the Basin Plan. Collected across the Bay and over a period of nine years, the data generated by SFEI is spatially and temporarily representative as required by the Listing Policy. The 19 of 26 exceedances for sediment threshold levels meets the requirements of listing factor 3.6. Baykeeper believes PAHs are measurably and negatively impacting aquatic life in the Bay, in violation of the Basin Plan, and therefore we strongly recommend that the Board place the Bay on the 303(d) list for this harmful pollutant.

3. There is sufficient data to list Kirker Creek for pyrethroids. The Board should also consider listing all Bay Area urban creeks for pyrethroids.

Baykeeper believes that Board staff should list Kirker Creek near Pittsburg as impaired by pyrethroids, and strongly recommends that all Bay Area urban creeks be listed for these harmful pesticides. Pyrethroids are known to be toxic to fish, tadpoles and many benthic invertebrates. It is also known that the use of pyrethroids in the Bay-Delta watershed has steadily increased during the past decade and is expected to continue rising.¹⁸ Given the increase in pyrethroid use and the large amounts of impervious surfaces in urban areas, such as the San Francisco Bay Area, it is very likely that significant amounts of pyrethroids are getting into urban creeks.

This conclusion is consistent with several recent studies of pyrethroids in Bay Area urban creeks. At least one of the creeks, Kirker Creek, had sediment concentrations of pyrethroids several times the acutely lethal levels for *H. azteca*. Toxicity tests revealed total or near total mortality at almost all locations.¹⁹ A related study published just this month found similar conditions in urban creeks in the East Bay and near Sacramento.²⁰ Toxicity was observed in 12 of the 15 creeks studied and sediment pyrethroid concentrations were high enough to explain the observed toxicity. These findings show that the Basin Plan objective for toxicity is being violated and that levels of pyrethroids are significantly harming Bay Area creeks. Interestingly, the results of the study suggested that residential areas were the principal source for the pyrethroids found in Kirker Creek. When the results of this study are considered in conjunction with the known toxic effects of pyrethroids and their increasing residential and urban use in the Bay Area, it is clear that the weight of the evidence suggests that Bay Area creeks are

¹⁸ "Pesticides in Urban Surface Waters: Urban Pesticides Use Trends Annual Report," prepared by TDC Environmental for the San Francisco Estuary Project, pp. 8, 18 (March 2005).

¹⁹ Weston, D. & Holmes, R., "A tale of two creeks: An intensive study of pyrethroids and related toxicity in urban environments," Abstract from SETAC 26th Annual Meeting (November 2005). Available at <http://abstracts.co.allenpress.com/pweb/setac2005/category/?ID=57578>.

²⁰ Amweg, E. et al., "Pyrethroid Insecticides and Sediment Toxicity in Urban Creeks from California and Tennessee," *Environ. Sci. Technol.*, ASAP Article 10.1021/es051407c S0013-936X(05)01407-0 (Web Release Date: January 31, 2006).

being impaired. Therefore, Baykeeper requests that the State Board add Kirker Creek, and all Bay Area urban creeks, to the 303(d) list for pyrethroids.

4. There is sufficient data to list the Delta and its tributaries for pyrethroids.

Delta waterways must be listed for pyrethroids. As diazinon and chlorpyrifos have been phased out, the levels of pyrethroid have increased 1.6 to 2 times the amount in 1991-95. As stated above, pyrethroids are hydrophobic compounds that contaminate sediment at higher levels than the water column and can harm benthic invertebrates.

A recent draft white paper from the San Francisco Estuary Institute found pyrethroid concentrations in Central Valley sediment and water samples at levels which could be harmful to sensitive aquatic species. The paper also noted contamination at the following locations: Westport Drain (water – esfenvalerate 57 ng/L; sediment – permethrin 32 ng/g), Pomelo Ag Drain (water – bifenthrin maximum of 20 ng/l, esfenvalerate maximum 142 ng/L; sediment – esfenvalerate maximum of 17 ng/g, permethrin at trace amounts), Orestimba Creek (water – bifenthrin at trace amounts; sediment – esfenvalerate maximum of 23 ng/g), Del Puerto Creek (water – bifenthrin maximum of 55 ng/L, esfenvalerate maximum of 166 ng/L, permethrin at trace amounts; sediment – esfenvalerate maximum of 12 ng/g, permethrin maximum of 14 ng/g). Due to the major concerns regarding the toxicity to aquatic organisms at current levels and increased pyrethroid use, the Delta waterways and above creeks should be included on the listings as impaired by pyrethroids.²¹

5. There is sufficient data not to delist the Feather River, Morrison Creek, and the Sacramento River for Diazinon.

The proposed revisions of the 303(d) list recommend delisting the Feather River (lower), Morrison Creek, and the Sacramento River (Knights Landing to the Delta) for diazinon. While diazinon levels have decreased due to management changes, these waterways should continue to be listed for diazinon for several reasons. First, we do not believe that the samples necessarily represent the temporal and spatial fluctuations in diazinon levels that can occur. Second, the delisting recommendations are inappropriate because they do not take into consideration the known, documented additive effects of diazinon and chlorpyrifos. Both chemicals act on cholinesterases and, due to this same method of action, need to be evaluated based on the additive effects of the two within a given ecosystem. In fact, a 2004 presentation at the Society for Environmental Toxicology and Chemistry meeting, Les Grober et al stated that “[a]ny load-based control program, such as applied in a TMDL, must also account for the additive effects of the pesticide

²¹ Oros, Daniel R. PhD and Inge Werner PhD (UC Davis) “Draft Pyrethroid Insecticides: An Analysis of Use Patterns, Distributions, Potential Toxicity and Fate in the Sacramento-San Joaquin Delta Central Valley.” October 7, 2005.

toxicity.”²² For a bioaccumulant such as diazinon, we cannot afford to take risks. We encourage future, increased levels of monitoring and reevaluation in two years.

6. There is sufficient data of impairment to list Bay Area urban creeks for trash.

Baykeeper believes that San Francisco Bay area creeks should be placed on the 3030(d) list for trash. The San Francisco Bay Basin Plan sets narrative standards for both floating and settleable materials, such as plastics, trash and other debris.²³ Specifically, it states that waters shall not contain floating or deposited materials that cause nuisance or adversely affect beneficial uses. The Basin Plan also specifies that the Bay and many Bay Area urban creeks have designated beneficial uses that include fish migration, marine habitat, and recreation, all of which can and currently are significantly impaired by trash.

In 2002, the San Francisco Regional Water Board placed trash on an informal “watch” list because there was concern that the trash problem in the Bay Area was causing significant impairment of beneficial uses. In the interim four years, Regional Board staff collected sufficient evidence to support formal listings for trash. Therefore, Baykeeper requests that the State Board list all Region 2 creeks for trash at this time. As argued in the collective California Coastkeeper Alliance letter, if the Regional Boards had been given appropriate input into this listing process, the San Francisco Regional Water Board would have moved trash to the 303(d) list and Baykeeper believes the State Board acting in the Regional Board’s stead should do the same.

In addition to being unsightly and discouraging recreation, trash can impair fish migration by blocking creek channels; it can reduce habitat by filling riffles and other habitat necessary for fish and amphibians, and can contribute pathogens and toxic pollutants to the water. Several recent studies have helped quantify the extent of the trash problem in Bay Area creeks, and they demonstrate that trash is a nuisance and is adversely affecting the beneficial uses of Bay Area creeks in violation of the Basin Plan.

As part of the Surface Water Ambient Monitoring Program (SWAMP), the San Francisco Regional Water Board assessed levels of trash at fourteen creeks in the Bay Area.²⁴ After

²² Additive Toxicity of Diazinon and Chlorpyrifos in a San Joaquin River TMDL. GROBER, LESLIE¹, BEAULAUER, DIANE¹, DENTON, DEBRA², ¹ California Regional Water Quality Control Board, Central Valley Region, Rancho Cordova, CA, USA² U.S.E.P.A., San Francisco, CA, USA. Society for Environmental Toxicology and Chemistry 25th meeting.

²³ Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin, Chapter 3: Water Quality Objectives

²⁴ “A Rapid Assessment Method Applied to Waters of the San Francisco Bay Region: Trash Measurement in Streams,” Draft Report, San Francisco Bay Regional Water Quality Control Board (August 22, 2005).

conducting ninety-three site surveys, the authors of the report concluded that trash is “a ubiquitous problem at the bottom of all watersheds...with particularly high plastic levels in wet weather,”²⁵ and that “alarmingly high” levels of trash may even be rising in some locations.²⁶ In assessing the levels of trash, two of the six parameters used were designed to “estimate actual threat to water quality.”²⁷ While this raw data was not included in the Regional Board’s final report, it is easily obtainable by the State Board.

In addition to the Regional Board’s rapid assessment project, there are and have been numerous watershed evaluation efforts at urban creeks in the Bay Area. For example, one study at Baxter Creek in Richmond concluded that a previous restoration effort intended to improve beneficial uses for wildlife and humans was undermined by “the large volume of trash and its negative effects on water quality.”²⁸ For additional data on trash, Baykeeper recommends that the State Board Staff contact representatives of the Coastal Commission for data on their coastal cleanup efforts, which track the volume and characteristics of trash and the California Department of Fish & Game to see whether that agency has records on wildlife killed by entanglement or ingestion of trash and plastics in the Bay area.

All of these sources of information about trash in the Bay Area meet the State Board’s guidance under the Listing Policy with respect to data quantity and quality. Especially when considered as a whole, the data is temporally and spatially representative of the various creeks in the Bay in accordance with section 6.1.5. Therefore, we urge Staff to list Bay Area urban creeks for trash.

7. The Board should consider listing the greater San Francisco Bay for trash.

Baykeeper recommends that the State Board consider listing the San Francisco Bay as impaired because of high trash levels. As described above, trash is a prevalent problem throughout Bay Area urban creeks. Most, if not all, of the floatables in Bay Area creeks and stormwater runoff reach the Bay. And because of tides and currents, trash tends to accumulate in a few locations in the Bay, such as the shoreline along the City of Richmond and the Shoreline Nature Center in Berkeley. Due to the frequency with which the Bay is used as a recreational spot for boaters, swimmers, and kayakers who may come into direct contact with dangerous debris, and due to the harmful impact that plastics can have on aquatic organisms, Baykeeper recommends that Staff list the Bay for trash in order to protect these valuable beneficial uses.

²⁵ “Executive Officer’s Report,” California Regional Water Quality Control Board, San Francisco Bay Region, page 6 (September 2005). Available at <http://www.waterboards.ca.gov/sanfranciscobay/Agenda/09-21-05/ Toc114474055>.

²⁶ Rapid Assessment, pg. 29.

²⁷ Rapid Assessment, pg. 9.

²⁸ Bronner, C. et al., “Post-Project Appraisal of Baxter Creek at Booker T. Anderson Park: Shopping Carts-the New Boulders,” Water Resources Center Archives, University of California (2005).

B. The rationale to delist or not list because “another program is addressing the problem” is untenable when water quality standards are exceeded.

Section 303(d) of the Clean Water Act does not contemplate excluding impaired waters from the list because programs other than the two explicitly mentioned are in effect. Section 303(d) expressly requires each State to identify waters within its boundaries for which effluent limits are not stringent enough to implement all water quality standards for that particular water segment.²⁹ Effluent limits, as defined in this provision, are those point sources designed to meet the standards of best practicable control technology (technology-based standards) and specific POTW secondary treatment and pretreatment requirements.³⁰ In general, when a statutory provision specifically includes certain items, it implies the exclusion of others.³¹ Congress intended enforcement and cleanup programs to coexist with, not preempt, the TMDL program.³² Thus, only when water quality standards are achieved in a particular waterbody may the State Board choose to delist that water.

The State Board’s failure to list impaired waters because another program is in place is bad policy and violates the intent of the Clean Water Act. California’s enforcement programs are not working. The 303(d) and TMDL programs are the last stop to clean water – they are emergency provisions that come into play when a water body is impaired because effluent limits in permits are not achieving protection of beneficial uses. By definition of the TMDL program, if a waterbody is impaired, the Board must put it on the 303(d) list *regardless* of the other programs in place to try to remedy the situation. If other programs are allowed to act as pseudo TMDLs, it is foreseeable that a situation would arise in which numerous impaired waters will never be properly listed or subject to a TMDL thereby ensuring the water body will be restored. Refusals to list due to misplaced reliance on other programs could well go on indefinitely. And an enforcement only strategy without TMDLs will limit public involvement in the process of deciding how best to clean up a waterbody.

In several instances in Region 2, the State Board Staff wrongly delisted or failed to list impaired waters on the grounds that “another program is addressing the problem.”³³ In reviewing the Region 2 “Do Not List” fact sheet, we noticed several instances where either Regional Board Staff recommended listing of a water and the State Board refused or where the Staff failed to list in part because “another program is addressing the problem.

²⁹ 33 U.S.C. §1313(d).

³⁰ 33 U.S.C. § 1311(b)(1)(A), (B).

³¹ See e.g., *In re Cybernetic Svcs., Inc.*, 252 F.3d 1039 (9th Cir. 2001), *cert. denied*, 122 S.Ct. 1069 (2001).

³² See *Owasso Indep. Sch. Distr. No. 1-011 v. Falvo*, 534 U.S. 426 (2002) (“It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme”).

³³ For example, Peyton Slough and Stege Marsh in Region 2. “Fact Sheets Supporting ‘Do Not List Recommendations’” pp. 110 & 151.

For example, Board Staff improperly excluded listing Peyton Slough for Cadmium, Copper, Silver, and Zinc. Sediment concentrations for all of these pollutants were found to exceed evaluation guidelines, sediment toxicity was very high, and benthic communities were marginally existent.³⁴ Despite these findings, and Regional Board Staff's recommendation that Peyton Slough be listed, the decision was to not list. This failure to list is erroneous given that listing factor 3.1 requires inclusion on the 303(d) list and the existence of "another applicable program" is not permissible justification to remove it.

The above Region 2 waterway is offered only as an example; we strongly urge Staff to review all listings in Regions 2 and 5 and the rest of California to ensure that impaired waters were not improperly kept off the 303(d) list because of the existence of another program.

C. The List Inappropriately Leaves Out Waters for Which the Regional Boards Failed to Identify an Evaluation Guideline.

Throughout the Region 2 fact sheets, Staff has proposed to not list or delist waters solely on the grounds that "an evaluation guideline is not available that complies with section 6.1.3 of the [State listing] Policy," and therefore, "it cannot be determined if applicable water quality standards are being exceeded."³⁵ This rationale is not only illogical, it is illegal. If the Board waited to place an impaired waterbody on the 303(d) list until science clearly identified a "safe" range for every dangerous pollutant, the entire Clean Water Act would be undermined and beneficial uses would be destroyed before the waters even made it on the list. If the weight of the evidence suggests that the beneficial uses of a water segment are being impaired, then that water must be placed on the 303(d) list. Furthermore, this rationale is not one that may be considered by the Board in delisting decisions.³⁶

Evaluation guidelines are merely guidelines. They can – but do not have to be – water quality standards, criteria, objectives, or any other standard against which a value is measured. In the listing context, all scientifically defensible information can be used to guide the Board in determining whether a particular pollutant is harming beneficial uses. Guidelines, information about potential impacts and risks, should be compared to the data available and the Board should use its best professional judgment to determine whether the weight of the evidence mandates that the water be placed on the 303(d) list.³⁷

For example, Board Staff must carefully consider whether Peyton Slough should be listed for Chlordane, Pyrene, Selenium, and ppDDE and whether Stege Marsh should be listed

³⁴ Region 2 "Fact Sheets Supporting 'Do Not List Recommendations,'" pp. 110, 116, 128, and 131.

³⁵ See, e.g., Region 2 "Fact Sheets Supporting 'Do Not List Recommendations'" pg. 137.

³⁶ State 303(d) Listing Policy at 11.

³⁷ Section 3.11 of the State 303(d) Listing Policy (weight of the evidence standard).

for Dacthal Dichlorobenzophenone, Endosulfan, Endosulfan sulfate, Heptachlor epoxide, Hexachlorocyclohexane, Mirex, Oxadiazon, Selenium, Toxaphene, and ppDDE. In all of these situations, the waterbody was kept of the 303(d) list because of the existence of another program AND because "it cannot be determined if the applicable water quality standards are being exceeded," or because "it cannot be determined if the pollutant is likely to cause or contribute to the toxic effects."³⁸

While not entirely clear from the fact sheets, it appears that Staff could not determine whether applicable water quality standards were being exceeded or whether the pollutant was causing observed toxic effects because it failed to identify an appropriate evaluation guideline. For instance in the example of Stege Marsh, sediment toxicity was extremely high and DDT sediment concentrations ranged from 304 to 542 ng/g, more than twelve times the consensus midrange effects concentration value developed by the Los Angeles Region Contaminated Sediments Task Force.³⁹ Despite this, Staff's recommendation was "Do Not List." An impaired waterbody may not be kept off of the 303(d) list on the grounds that Board Staff failed to identify appropriate evaluation guidelines and apply the weight of the evidence listing factor. The burden of proof is on Staff to demonstrate that water quality standards are not being exceeded. Until that burden is met, these waters should remain on the list.

Similarly, Board Staff failed to place a number of Region 2 water segments on the 303(d) list because Staff failed to identify evaluation criteria and to consider whether the weight of the evidence supported listing. We request that evaluation guidelines be selected and listing reconsidered for at least the following waterbody-pollutant combinations:

1. Greater San Francisco Bay for PBDEs
2. Islais Creek for Endosulfan
3. Mission Creek for Chloropyrifos and Mirex
4. Oakland Inner Harbor for Chloropyrifos, Tributyltin, and ppDDE.
5. San Leandro Bay for Selenium and DDT⁴⁰
6. Peyton Slough for Chlordane, Pyrene, Selenium, and ppDDE
7. Stege Marsh for Dacthal Dichlorobenzophenone, Endosulfan, Endosulfan sulfate, Heptachlor epoxide, Hexachlorocyclohexane, Mirex, Oxadiazon, Selenium, Toxaphene, ppDDE

³⁸ *Ibid* pp. 122

³⁹ Los Angeles Region Contaminated Sediments Task Force, Sediments Thresholds Subcommittee, Meeting Minutes from January 28, 2003. <http://www.coastal.ca.gov/sediment/sed-1-28-mm3.pdf>.

⁴⁰ For a discussion of tributyltin in sediments see Meador, James P, "An analysis in support of a sediment quality threshold for tributyltin to protect prey species for juvenile salmonids listed by the Endangered Species Act," NOAA Northwest Fisheries Science Center (August 3, 2000). It concludes that a TBT sediment concentration of 6,000 ng/g organic carbon would be protective against severe adverse sublethal effects for many salmonid prey species. To protect all benthic species, a value of 600 ng/g would be more appropriate.

D. The Fact Sheet Descriptions are Inadequate to Evaluate the Listing Proposal.

Public participation in the listing and TMDL process is not only necessary for an effective nonpoint source program, it's also required by law.⁴¹ The Regional Boards' fact sheets thwart public involvement because they are not written in a way that provides the public with sufficient information to evaluate the Regional and State Boards' proposals. Because they are generally incomplete and often confusing, they discourage and arguably prevent useful and effective comments. The following information should be contained in the fact sheets in order for the public commenting process to be meaningful. At a minimum, for each listing/delisting proposal the fact sheets should:

1. Explicitly list the evaluation guideline or parameters used;⁴²
2. Explain why that particular guideline or parameter is appropriate for that particular waterbody;
3. Provide values and the uncertainty in those values for all numeric data used to assess water quality;⁴³
4. List all evidence relevant to the decision and provide specific citations to references;
5. Ensure that the guideline units are the same as the data used to assess water quality; and
6. When Listing Factor 3.11 is relevant, explain in detail how it was applied and how it affected the conclusion to list or not list.

E. Listing Decisions Supported by Baykeeper

1. Invasive Species

Baykeeper concurs strongly with the listing of invasive species. The State Board approved the listing of various waters in Region 2 as being impaired by "exotic species," including the Carquinez Strait, Richardson Bay, San Francisco Bay (Central), San Francisco Bay (Lower), San Francisco Bay (South), San Pablo Bay, Suisun Bay, and the Sacramento/San Joaquin Delta. In approving the listings, the State Board supported the Staff report, which found that "[e]xotic species meet the definition of 'pollutant' at Section 502 of the Clean Water Act."⁴⁴ Baykeeper believes this was the correct listing decision to make. We encourage staff, in addressing this TMDL, to work collaboratively

⁴¹ See Cal. Gov't Code § 11340 et seq.

⁴² For example, the fact sheet for turbidity in Butano Creek states that "[z]ero of the 3 samples exceeded the standard," but no specific standard is identified. Region 2 "Fact Sheets Supporting 'Do Not List Recommendations'" pg. 100.

⁴³ For example, in Region 2, a benthic index of 0.3 or less was deemed to be an exceedance of water quality standards. For Peyton Slough one of the benthic indices reported was 0.36. Thus, if the uncertainty in the data was greater than 0.06, then it is arguable that a value of 0.36 would constitute an exceedance.

⁴⁴ California Regional Water Quality Control Board, San Francisco Bay Region, "Prevention of Exotic Species Introductions to the San Francisco Bay Estuary: A Total Maximum Daily Load Report to U.S. EPA," pp. 1, 7-8 (May 8, 2000) ("TMDL Report"), www.swrcb.ca.gov/rwqcb2/download/Tmdl.pdf.

with the existing Interagency Aquatic Invasive Species Council created in California Fish and Game Code Section 6952.

2. Temperature

We support the listing of temperature in the Feather River where effluent from the reservoir has impacted this system. We encourage temperature analysis in Region 5 on a waterway-by-waterway basis so that we can better appreciate and tackle temperature changes from discharge.

3. Selenium

Drain water, from irrigated lands with high selenium levels, continues to create levels of this element that are toxic to fish and birds, causing death or birth defects. We support the listing of the San Joaquin River for selenium.

F. Conclusion

In conclusion, we urge the Board to err on the side of protecting water quality in Region 2 and 5 waterbodies by applying the precautionary principle to listings. As endorsed by the United Nations Conference on Environment and Development in 1992, this protective approach is a strong guidance for environmental decision makers. The central dogma of this principle is that uncertainty or lack of information does not justify inaction. The goal of the 303(d) listing process is to clean up our waters. It is not to show unequivocally that beneficial uses are impaired. If waters are listed using a precautionary approach, those who disagree with the listing will simply be incentivized to do the research and collect the data necessary to get the waterway delisted. And this is the correct placement of the burden of proof. Waters should be presumed impaired and be protected until proven clean. Practically speaking, since listing cycles are only two years, it is far more likely that clean waterways will be proven so and delisted before the Regional Boards spend significant resources on an unwarranted TMDL.

Thank you for this opportunity to provide comments. Please contact us with any questions.

Sincerely,



Sejal Choksi
San Francisco Baykeeper

Carrie McNeil
Deltakeeper

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Baykeeper: Summary of Region 2 & 5 Changes to 2006 303(d) Listing Letter

- A. The Board failed to look at all available data – Baykeeper recommends:**
1. Listing all parts of the Bay (South, Lower, Central), San Pablo Bay, and Suisun Bay for PBDEs
 2. Listing all parts of the Bay for PAHs
 3. Listing Kirker Creek and other Bay Area urban creeks for pyrethroids
 4. Listing the Delta and its tributaries for pyrethroids
 5. Listing the Feather River, Morrison Creek, and the Sacramento River for Diazinon
 6. Listing all Bay-area urban creeks for trash
 7. Listing the Bay for trash
- B. The Board's rationale that "another program is addressing the problem" is illegal – Baykeeper recommends:**
1. Listing Peyton Slough for Cadmium, Copper, Silver, and Zinc
 2. Reviewing all Region 2 and Region 5 listings to ensure this improper rationale is not inappropriately applied elsewhere.
- C. The Board inappropriately left waters off the list because it failed to identify evaluation guidelines – Baykeeper recommends:**
1. Listing Peyton Slough for Chlordane, Pyrene, Selenium, and ppDDE
 2. Listing Stege Marsh for Dacthal Dichlorobenzophenone, Endosulfan sulfate, Heptachlor epoxide, Hexachlorocyclohexane, Mirex, Oxadiazon, Selenium, Toxaphene, and ppDDE
 3. Greater San Francisco Bay for PBDEs (see also section A above)
 4. Islais Creek for Endosulfan
 5. Mission Creek for Chlorpyrifos and Mirex
 6. Oakland Inner Harbor for Chlorpyrifos, Tributyltin, and ppDDE.
 7. San Leandro Bay for Selenium and DDT
- D. The Fact Sheets are inadequate – Baykeeper recommends:**
1. Explicitly list the evaluation guideline or parameters used;
 2. Explain why that particular guideline or parameter is appropriate for that particular waterbody;
 3. Provide values and the uncertainty in those values for all numeric data used to assess water quality;
 4. List all evidence relevant to the decision and provide specific citations to references;
 5. Ensure that the guideline units are the same as the data used to assess water quality; and
 6. When Listing Factor 3.11 is relevant, explain in detail how it was applied and how it affected the conclusion to list or not list.
- E. Baykeeper supports listings for the following:**
1. Invasive Species
 2. Feather River – Temperature
 3. San Joaquin River – Selenium