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Public Comment
Bacteria Provisions
Deadline: 8/16/17 by 12 noon

August 16, 2017

Letter 19

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
PO Box 100
Sacramento, CA 95812-2000
commentletters@waterboards.ca.gov

Re: Comment Letter-Bacteria Provisions

Ayukii State Water Resources Control Board Chair, Members, and Staff:

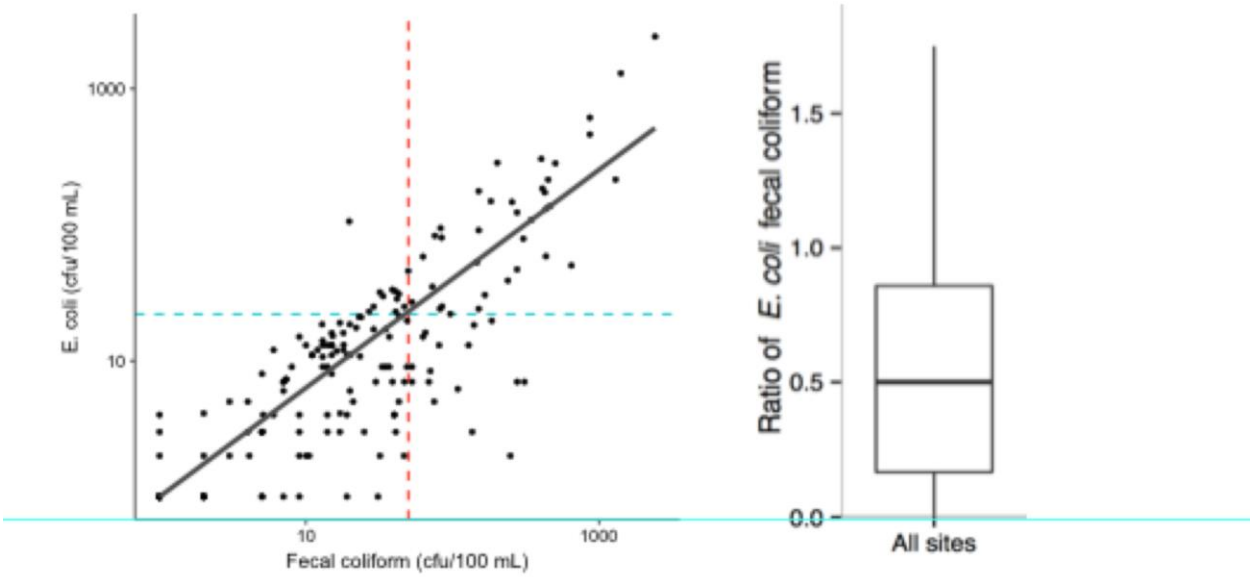
Please accept the following comments on the The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Bacteria Provisions and a Water Quality Standards Variance Policy* (Bacteria Provisions) and related documents which were released for comment by the State Water Resources Control Board (State Board) on June 30, 2017.

19,01

1. Proposed statewide objectives for indicator bacteria weaken the Regional Board's current numeric standards

Current numeric standards in Region 1 for fecal coliform are 50 cfs/100 mL, whereas the proposed threshold for *E. coli* is 100 cfs/100 mL. *E. coli* is a component of fecal coliform, and although the percent composition of *E. coli* in a fecal coliform sample is variable, it is never more than 100%. Therefore, the State Board's proposed increase in the bacterial threshold would at the minimum double the acceptable bacteria levels, and subsequently increase the illness rate which has become accepted by the public residing in Region 1 under the current regulations. This is an important point, because the EPA noted that the illness rates of 32 and 36/1000 were chosen in the new bacteria standards because these illness rates were accepted by the public.

Because there is variability in the ratios of *E. coli* to fecal coliform, agreeing on a comparable *E. coli* threshold is challenging. For example, the E. coli concentration presented in appendix C of the Staff Report suggests that an *E. coli* threshold of 45 cfu/100 mL corresponds to the current fecal coliform limits, based on a 90% conversion factor used by the Ocean Plan staff. Data from the Scott River watershed showed a range of *E. coli* to fecal coliform ratios, with a median ratio of about 50%, based on 160 paired samples (Genzoli et al. 2015), which points to an *E. coli* threshold of about 25 cfu/100 mL as a comparable threshold to the current standards. The figures below show the range in *E. coli* to fecal coliform ratios, and the paired *E. coli* and fecal coliform samples from the Scott River Watershed with the median regression (black line), the current fecal coliform thresholds (dashed red line), and the corresponding *E. coli* threshold of 25 cfu/100 mL (dashed blue line) that we propose for Region 1. The proposed *E. coli* threshold was plotted where the fecal coliform threshold crossed the median linear regression.



In addition to a lower illness rate being accepted by those living in Region 1, the illness rate of 32/1000 water users is unacceptably high for people with increased levels of water contact. In the Tribal communities within the Klamath Basin, many people, including young children, use lakes and rivers for recreation, subsistence, and ceremonies throughout the year. Some individuals are immersed in water daily during summer months. At an illness rate of 32/1000, and a daily *E. coli* level of 100 cfu/100mL, an individual who swims every summer day would be expected to become ill three times that summer. For a single individual, three bouts of gastrointestinal illness due to water contact is unacceptable.

Region 1 also has numerous water-bodies that warrant increased levels of protection due to their pristine nature, including high mountain lakes used for drinking water by wilderness travelers and proposed Outstanding National Resource Water (Smith River). Additionally, rivers coming out of minimally disturbed ecosystems should receive, at a minimum, the current levels of protection against bacterial contamination. The Region 1 Basin Plan contains a narrative objective, which states, "the bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels". The Staff Report says that these narrative objectives would not to be superseded by the proposed statewide numeric objectives; however, the narrative objective requires demonstrating what background levels are in a specific water-body. Further, because background levels are not currently understood for many water bodies, there could be debate as to what background levels should be. Therefore a threshold for *E. coli* should be established for use, when background values are not available, that is at least as protective as current thresholds.

Under section 5.2.4 (*Issue E - Level of Public Health Protection for Illness Rate for Fresh and Marine Waters),* there should be an option for Region 1 (North Coast) waters similar to option 4, which states, "Continue to maintain a higher standard for Fecal Indicator Bacteria for Lake Tahoe which is designated as an Outstanding National Resource Water. Under this option Lake

Tahoe would retain an equivalent objective to their bacteria objective of 20/100ml fecal coliform (17cfu/100ml for *E. coli*)." As was done for Lake Tahoe, Region 1 should also retain previous protective levels based on both the more pristine waters and the high water contact levels of many individuals residing in Region 1, especially from within tribal communities.

19.02

2. Narrative objectives that will not be superseded for Region 1 should be clearly stated in the new bacterial provisions

Currently, the Bacteria Provisions only mention how the old numeric criteria from the Basin Plans will be treated in response to the Bacteria Provisions. It should be clearly stated in the Bacteria Provisions that narrative water quality criteria will supersede the new draft provisions. These exceptions for each region should be clearly stated in the Bacteria Provisions so that water quality managers do not have to search through multiple documents (Staff Report and Basin Plans) in order to understand what the most current bacterial regulations are for their regions. All deviations to the state-wide standard, numeric or narrative, should appear in Table 1 of the Bacteria Provisions, as the exception for Lake Tahoe does currently.

19.03

3. Proposed weekly sampling intervals are too restrictive to tribal natural resource departments' water quality monitoring programs: alternative sampling schedules should be accepted

Sampling water bodies for bacterial exceedances is time consuming and expensive for small water quality programs, especially in cases where staff are traveling to water-bodies that are not part of regular water quality sampling or to water-bodies in remote locations. Although the weekly sampling schedule suggested by the State Board is more relaxed than the five samples in 30 days suggested by the EPA, other sampling regimes should be accepted. For example, many programs already sample other water quality parameters twice per month (Karuk Tribe of California 2013, Yurok Tribe Environmental Program 2013). In theses cases, adding bacterial sampling to the established survey routine would provide five samples over a 10-week period. Page 72 of the Staff Report explained that the shorter duration (30 days) was chosen as the interval by the EPA in order to "help get the information out to the public more quickly and insuring a better health perspective." Using Beach Action Values, explained below, avoids the need to strictly define the time intervals between bacteria samples because it provides an alternative indicator for public health notifications based on the most recently collected bacteria samples.

Although the six-week period suggested in the Staff Report is a good time period to strive for, longer sampling windows should be accepted when listing impaired water bodies. Acceptance of alternative sampling timelines should be stated in the Bacteria Provisions so that water quality monitoring departments can plan sampling in a way to most efficiently utilize their available resources.

The case for flexible sampling schedules is especially relevant when sampling in remote locations. The Quartz Valley Indian Reservation has been sampling lakes and streams in

wilderness areas to assess the degree of bacterial contamination associated with cattle grazing (Genzoli et al. 2015). These water bodies are important to monitor because the Marble Mountains are recreational and cultural resources, but sites are remote and require long hikes to reach these sites.

19.04

4. Beach action values should be included in the Bacteria Provisions to guide public health warnings

Beach action values (BAVs) were suggested in the EPA 2012 draft bacteria standards as single sample thresholds to be used to warn the public of potentially dangerous water conditions. Although BAVs were not suggested by the EPA to be used for regulatory thresholds, a public warning level is helpful in informing water users of potentially dangerous conditions as they occur rather than waiting for a six-week average to base public health postings from. The EPA suggested a BAV of 190 cfu/100ml *E. coli* using the 32/1000 illness rate. More protective bacterial standards in Region 1 should correspond to more protective BAVs, based on the EPA suggested method: BAV corresponds to the 75th percentile of the *E. coli* water quality distribution.

19.05

5. LREC-1 designation should not be applied to Region 1 at any time, and anywhere in the state due to low-water conditions associated with impairment by flow alteration

We disagree with several aspects of the State Board's proposal to add a new Limited Water Contact Recreation (LREC-1) beneficial use for waters where body contact with water and ingestion of water is infrequent due to restricted access or very shallow water depth, such as in concrete flood conveyance channels. Los Angeles is currently the only Regional Board that has designated any water bodies as LREC-1. The State Board's support for additional designation of LREC-1 waters promotes an unfortunate vision for the future of the state's water bodies. The State should promote restoration of water quality and increased public access. The LREC-1 designation would be a step in the opposite direction. The LREC-1 designation would be particularly inappropriate in Region 1 due to the high water contact of people throughout the calendar year. Especially in the tribal communities, ceremonial, fishing and gathering practices occur throughout the year in a wide range of temperature and flow conditions.

Additionally, downgrading the REC-1 beneficial use designation to LREC-1 due to low-water conditions is not protective of public health. Some people will be drawn toward any water left during hot and dry conditions. Further, downgrading the beneficial use category, and thus holding the water-body to lower bacterial standards, does not promote systematic improvements in water quality that often require increased in-stream flows. Therefore, the State Board should not expand the LREC-1 designation.

Please contact me at 530-598-3414 or sfricke@karuk.us to discuss any concerns regarding these comments.

Yootva,

Susan Fricke
Water Quality Program Manager

REFERENCES

Genzoli, L., C. Robinson, and J.E. Asarian. 2015. Patterns of Fecal Indicator Bacteria in the Scott River Watershed, 2007-2014. Prepared by Kier Associates and Quartz Valley Indian Reservation. Prepared for the Quartz Valley Indian Reservation, Fort Jones, CA. 47 p. + appendices.

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conditions associated with cattle grazing and recreation on national forest lands. PloS one, 8(6)

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