SANTA BARBARA CHANNELKEEPER®

Protecting and Restoring the Santa Barbara Channel and Its Watersheds

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February 27, 2007

Mary Adams
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401

Re: Santa Barbara Channelkeeper Water Quality Data Submittal and 303(d) List Recommendations.

Dear Ms. Adams,

Santa Barbara Channelkeeper (Channelkeeper) is pleased to submit to the Central Coast Regional Water Quality Control Board (CCRWQCB) these data and recommendations regarding the 303(d) List. The following pages outline our recommendations and rationale for the listing of several water bodies for multiple impairments on the 303(d) List.

The data provided in this submittal comes from the Stream Team, Channelkeeper's citizen monitoring program. This program has collected water quality data from 12 sites throughout the Goleta Slough watershed since 2002. A State approved QAAP for Channelkeeper's program exists and is already on file with the State Board.

Attached to these recommendations please find:

- Excel spreadsheet summaries for physical parameters, bacteria, nutrient data, and algae observations.
- Photographic records of algae impairments
- A map of Stream Team sites
- An unprojected GIS shapefile of Goleta Stream Team sites in WGS1984 datum.
- Raw data files

Countless staff and volunteer hours have been spent collecting this water quality data for over 5 years. This data set represents the most comprehensive, existing water quality data set for the Goleta Slough Watershed. We sincerely hope that the CCRWQCB considers these data and recommendations with care.

Water Quality Criteria for Listing Recommendations

Conductivity
The CCRWQCB has not established any water quality objective for conductivity. For these recommendations we have used *2200 umhos/cm* as the most conservative existing criteria.

- Public Health Goals = Upper Limit = *1600 umhos/cm*, Short Term Limit = *2200 umhos/cm* (2)
- Agricultural Water Quality Limit = *700 umhos/cm* (1)

TDS

- CCRWQCB Basin Plan (3) = *1400 mg/L* is the most conservative criteria listed in Table 3.7

Turbidity

- Primary MCL = *5 NTUs* (5), (6) (non-storm turbidity)
- CCRWQCB Basin Plan – *20% greater than natural turbidity* (3) (0.125 NTU is median natural turbidity based on 5 years of data from N. Matilija Creek Reference Site) For these recommendations we use *1.9* as non-storm turbidity standard. 1.9 is 1,267% above natural turbidity.
- USEPA (9) suggested reference turbidity for Ecoregion III, Sub-region 6 = *1.9* NTU

Algae

Multiple lines of available evidence:

- *Photographic evidence*
- *Elevated daytime, dissolved oxygen levels greater than 120% saturation (4)*
- *Percent cover data*
- *Elevated nutrient data*

Nitrate

- Public Health Standard = *10 mg/L*
- CCRWQCB Basin Plan Table 3-3 (3) *5 mg/L*

Water quality targets established in the Basin plan are based on human health standards and are not adequate to address aquatic life issues. For this reason the following standards are also used for these recommendations.

- LARWQCB Malibu TMDL (7) = *1 mg/L*
- USEPA (9) suggested standard for Ecoregion III = *0.38 mg/L*

Phosphate

- USEPA suggested maximum phosphorus concentration for Ecoregion III = 0.022 mg/L. For these recommendations we use the more conservative value *0.03 mg/L*.
- LARWQCB Malibu TMDL (7) = *0.01 mg/L*

Bacteria

- Enterococci – EPA (9) Freshwater = *62 MPN*
- E. Coli – EPA (9), LARWQCB Basin Plan (11) = *235 MPN*
- Total Coliform – LARWQCB Basin Plan Marine Water (11) = *10,000 MPN*

Recommendations

Atascadero Creek

- List for conductivity. Rationale: 76 of 156 samples exceed 2200 umhos/cm.
- List for turbidity. Rationale: 34 of 160 non-storm samples exceed 5 NTU.
- List for TDS. Rationale: 27 of 155 samples exceed 1400 mg/L.
- List for indicator bacteria. Rationale: 11 of 33 E. Coli samples exceed 235 MPN/100ml . 8 of 31 Enterococcus samples exceed 62 MPN/100ml. 15 of 33 Total Coliform samples exceed 10,000 MPN/100ml.
- List for nitrate. Rationale: 81 of 230 samples exceed 1mg/L.
- List for phosphate. Rationale: 81 of 230 samples exceed 00.3 mg/L.
- List for algae. Rationale: 51 of 74 observations indicate greater than 30%coverage. Historical photographic evidence supplied. 45 of 147 day-time dissolved oxygen samples exceeded 120% saturation. Atascadero creek has elevated nitrate and phosphate levels.

Maria Ygnacio Creek

- List for turbidity. Rationale: 5 of 13 non-storm samples exceed 5 NTU.
- List for indicator bacteria. Rationale: 5 of 14 E. Coli samples exceed 235 MPN/100ml. 9 of 14 Enterococcus samples exceed 62 MPN/100ml.

Cieneguitas Creek

- List for conductivity. Rationale: 13 of 53 samples exceed 2200 umhos/cm
- List for turbidity. Rationale: 23 of 54 samples exceed 5 NTU.
- List for indicator bacteria. Rationale: 29 of 55 E. Coli samples exceed 235 MPN/100ml. 46 of 56 Enterococcus samples exceed 62 MPN/100ml. 26 of 54 Total Coliform samples exceed 10,000 MPN/100ml.
- List for nitrate. Rationale: 50 of 56 samples exceed 1 mg/l. 12 of 56 samples exceed 3 mg/l.
- List for phosphate. Rationale: 48 of 56 samples exceed 0.3 mg/l.

San Jose Creek

- List for conductivity. Rationale: 14 of 70 samples exceed 2200 umhos/cm.
- List for turbidity. Rationale: 13 of 69 non-storm samples exceed 5 NTU.
- List for indicator bacteria: Rationale: 29 of 55 E. Coli samples exceed 235 MPN/100ml. 46 of 56 Enterococcus samples exceed 62 MPN/100ml. 26 of 54 Total Coliform samples exceed 10,000 MPN/100ml.
- List for nitrate. Rationale: 58 of 73 samples exceed 1 mg/l. 33 of 73 samples exceed 3 mg/l.
- List for Algae. Rationale: 16 of 46 observations indicate greater than 30% algae cover. Historical photographic evidence provided. 14 of 71 dissolved oxygen samples exceed 120% saturation. San Jose Creek has elevated nitrate concentrations.

San Pedro Creek

- List for turbidity. Rationale: 7 of 29 samples exceed 5 NTU.
- List for indicator bacteria. Rationale: 15 of 29 E. Coli samples exceed 235 MPN/100ml. 16 of 30 Enterococcus samples exceed 62 MPN/100ml. 16 of 29 Total Coliform samples exceed 10,000 MPN/100ml.
- List for nitrate. Rationale: 13 of 31 samples exceed 1 mg/l. 6 of 31 samples exceed 3 mg/l.

Glen Annie Creek

- List for conductivity. Rationale: 68 of 103 samples exceed 2200 umhos/cm.
- List for TDS. Rationale: 20 of 103 samples exceed 1400 mg/l.
- List for indicator bacteria. Rationale: 61 of 102 E. Coli samples exceed 235 MPN/100ml. 79 of 102 Enterococcus samples exceed 62 MPN/100ml. 41 of 100 Total Coliform samples exceed 10,000 MPN/100ml.
- List for nitrate. Rationale: 95 of 109 samples exceed 5 mg/l. 71 of 109 samples exceed 10 mg/l.
- List for phosphate. Rationale: 25 of 109 samples exceed 0.1 mg/l.

Los Carneros Creek

- List for conductivity. Rationale: 36 of 49 samples exceed 2200 umhos/cm.
- List for TDS. Rationale: 20 of 49 samples exceed 1400 mg/l.
- List for indicator bacteria. Rationale: 30 of 47 E. Coli samples exceed 235 MPN/100ml. 41 of 47 Enterococcus samples exceed 62 MPN/100ml. 12 of 47 Total Coliform samples exceed 10,000 MPN/100ml.
- List for Nitrate. Rationale: 95 of 109 samples exceed 5 mg/l. 71 of 109 samples exceed 10 mg/l.
- List for phosphate. Rationale: 25 of 109 samples exceed 0.3 mg/l.

Goleta Slough

- List for Nitrate. Rationale: 23 of 62 samples exceed 1 mg/l. 14 of 62 samples exceed 3 mg/l.

Please contact Ben Pitterle at (805) 563-3377 with any questions, comments, or response. Santa Barbara Channelkeeper thanks you for your consideration.

Sincerely

Ben Pitterle
Director of Watershed Programs

References

(1) Ayers, R. S. and D. W. Westcot, Water Quality for Agriculture, Food and Agriculture Organization of the United Nations – Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985)

(2) California Environmental Protection Agency (Cal/EPA), Office of Environmental Health Hazard Assessment, Public Health Goals for Chemicals in Drinking Water (various dates), http://www.oehha.org/water/phg/

(3) The Central Coast Regional Water Quality Control Board Basin Plan

(4) Leydecker, Al, Ph.D. Santa Barbara Channelkeeper, Ventura Stream Team 2001 – 2005 (January, 2006)

(5) California Department of Health Services, California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring, http://www.dhs.ca.gov/ps/ddwem/publications/Regulations/regulations_index.htm

(6) U.S. Environmental Protection Agency, Title 40, Code of Federal Regulations, Parts 141 [Primary MCLs] and 143 [Secondary MCLs], http://www.epa.gov/waterscience/drinking/.

(7) Los Angeles Regional Water Quality Control Board. Total maximum Daily Load for Nutrients in Malibu Creek and Lagoon, (2004).

(8) US Environmental Protection Agency (US EPA). 2000. Ambient water quality criteria recommendations: Rivers and streams in nutrient Ecoregion III. EPA 822-B-00-015. Washington, DC. (http://www.epa.gov/waterscience/criteria/nutrient/ecoregions/rivers/)

(9) USEPA, Implementation Guidance for Ambient Water Quality Criteria for Bacteria, 2002, EPA-823-B-02-003, Washington DC

(10) Santa Barbara County Public Health Department

(11) Los Angeles Regional Water Quality Control Board Basin Plan