Friends of the Van Duzen
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3/4/15

To Jeanine Townsend, Clerk to the Board
State Water Resources Control Board

Regarding comments on the Basin Plan Amendment
Establishing a policy for the Implementation of Water Quality Objectives for Temperature and Action Plans to Address Temperature Impairments in the Mattole, Navarro, and Eel River Watersheds.

I am writing on behalf of Friends of the Van Duzen River, a major tributary of the Eel River, to be included as temperature impaired in your water quality standards. Currently the Van Duzen River has been left out of this designation, and water quality objectives and action plans need to be addressed for the Van Duzen River.

In 2007 and 2008, Friends of the Van Duzen with funding from the Water Quality Control Board conducted an extensive water quality study of multiple sites along the Van Duzen River. Our stations along the main stem especially at Rainbow Bridge and along Yager Creek revealed lethal temperature readings for salmonids. Enclosed you will find text and data from Chapter 6 of the final report which includes our documentation and information. Since then, Friends of the Van Duzen River has teamed with the Eel River Recovery Project to continue to place hobotemps provided by WQCB North Coast to monitor temperature. The main stem and Yager Creek continue to show extreme temperature impairment and must be included in your action plan of the Basin Amendment.

In late 2014, The National Oceanic and Atmospheric Administration (NOAA Fisheries) published the Coho Recovery Plan with a section to restore coho salmon to the Lower Eel and Van Duzen Rivers. In the section Recovering Coho Salmon: Current Conditions & Goals, it states the following:

“The Lower Eel and Van Duzen rivers have few coho compared to historic conditions. The number of adults is estimated to be so low that the population is currently at risk of extinction. The first recovery goal is to rebuild the population to at least 394 spawners so it is at lower risk of extinction. The long term goal is to rebuild it so that it is at lower risk of extinction and can contribute to the recovery of the entire species.”

Currently, the Eel River Forum, working with a variety of environmental organizations is developing its water quality recommendations for the Eel River and would be a valuable document for the Water Quality Control Board to review. One component of this document is the recommendation to include the Van Duzen River in the list of temperature impaired streams.

Friends of the Van Duzen River is also currently a river steward with the Native Fish Society which emphasizes the preservation of native species.

Enclosed you will find excerpt and graphs from Friends of the Van Duzen's final report in 2009 from studies conducted in 2007 and 2008.

Continuous Temperature

HOBO temperature data loggers (thermographs) in water tight containers were placed in streams at the same seven monitoring sites where water quality indices and macro invertebrate samples were taken, as described above (Figure 6-1). Thermographs were placed in run or pool habitats in the shade in as deep a part of the stream as possible within the sample site area (Figure 6-16). In 2007, thermographs were set to record temperature in degrees Celsius at hourly intervals and two temperature probes were deployed at each site. In 2008, temperatures were recorded at two-hour intervals, with two probes deployed at Yager Creek, MS Rainbow Bridge, and MS Weares. A single temperature probe was deployed at each of the four other sites in 2008. Data loggers were placed in the streams in early June, and retrieved at the end September or early October, depending on year, for a deployment of four months.

Prior to the field season, an accuracy check of the temperature probes was performed according to the guidelines set forth by the manufacturer, Onset Computer Co. The units are launched on a short duration (15 second) interval. A gallon of water is placed in a cooler overnight along with frozen ice bottles to bring the temperature of the bath close to freezing. In the morning, the bottles are removed and 20 pounds of crushed ice is added creating a slushy mixture. The loggers are placed into the water bath to equilibrate to the conditions for a half-hour before the units start recording. The cooler is covered and the probes are removed after 40 minutes. At this time the probes are then placed in a room (ambient) temperature circulating water bath for another 20 minutes. The units are removed and the data offloaded and analyzed. Accuracy must be within 0.2 C of the ice bath (0 C).

Results were obtained for average weekly temperatures at each sample site. Maximum weekly average temperatures (MWAT) were calculated using a seven-day moving average of daily average temperatures. Water quality criteria developed by the Environmental Protection Agency (EPA 1986) recommends that the MWAT threshold should not exceed 18 C (64.4 F) during the summer months for coho salmon and 19 C (66.2 F) for steelhead/rainbow trout. Whenever two thermographs were used at a sample site, data represent the average of the two records.

Water temperature data collected hours during the summer of 2007 showed that Hely Creek had the lowest daily average temperatures and that MS Rainbow Bridge had the highest daily average temperatures (Figure 6-17).

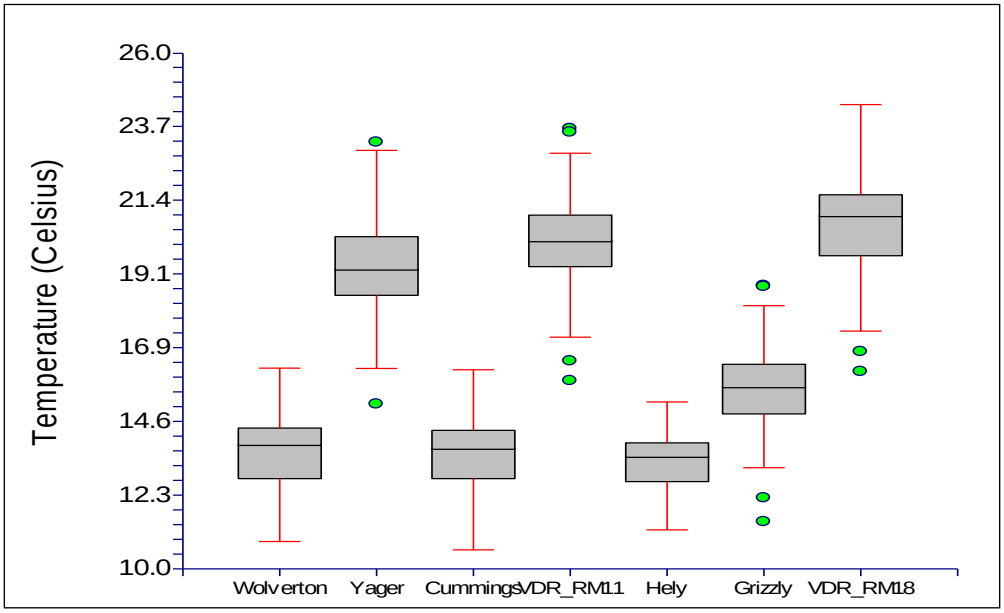

Figure 6-17. Average of daily water temperatures recorded from streams in the lower VDR Basin during the summer of 2007. See Figure 6-3.

The Van Duzen River had weekly average temperatures and MWAT (maximum weekly average temperature) that exceeded the recommended 18 C threshold for all 15 weeks of data collection and Yager Creek exceeded the threshold for 14 weeks (Figures 6-18 & 6-19). Grizzly Creek, Hely Creek, Cummings Creek, and Wolverton Gulch did not exceed the recommended threshold at any time during data collection (Figure 6-18). The highest MWAT (22.9°C) was recorded on the main stem VDR at Rainbow Bridge.

Comparison of the monthly and continuous water temperature data from the seven sampling sites verified that there was a significant difference in temperatures between the sites (*p*-value = 0.005 and <0.001). Water temperatures in Yager Creek and the Van Duzen River were significantly higher than temperatures in Wolverton Gulch, Cummings Creek, Hely Creek and Grizzly Creek. The significant difference in temperatures between the seven sampling locations was associated with the high summer water temperatures occurring in the Van Duzen River and Yager Creek, which surpass the listed MWAT threshold of 16.8 C for juvenile coho salmon (Welsh et al 2001, Hines and Ambrose 1998). These temperatures also surpass the optimal range of temperatures (10 – 16 C) for growth of steelhead (Sullivan et al. 2000).

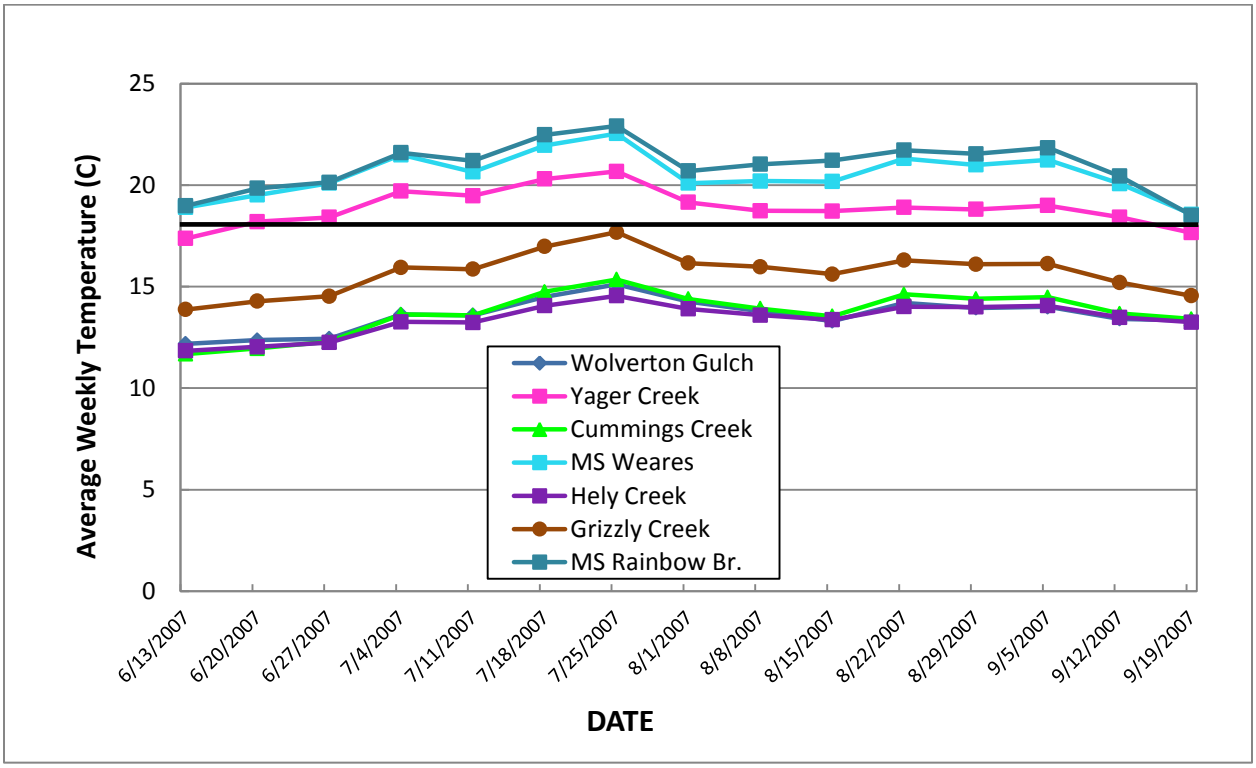

Figure 6-18. Weekly average temperatures for streams in the lower VDR Basin during the summer of 2007. Horizontal black line represents the MWAT threshold of 18°C for coho salmon.

In the summer of 2008, temperature data were recovered from nine of the ten HOBO temperature canisters. One of the two canisters deployed at Rainbow Bridge leaked slightly, which was enough to destroy the recording unit inside. However, the second data logger at that site was recovered successfully. Results were converted to average weekly temperatures at each of the seven monitoring sites in the lower basin.

Similar to 2007, in 2008 each sampling site on the Van Duzen River registered weekly average temperatures that exceeded the recommended 18 C threshold throughout the period of data collection, and Yager Creek exceeded the threshold for nearly the entire sampling period as well (Figure 6-20). Grizzly Creek, Hely Creek, Cummings Creek, and Wolverton Gulch did not exceed the recommended threshold at any time during data collection.

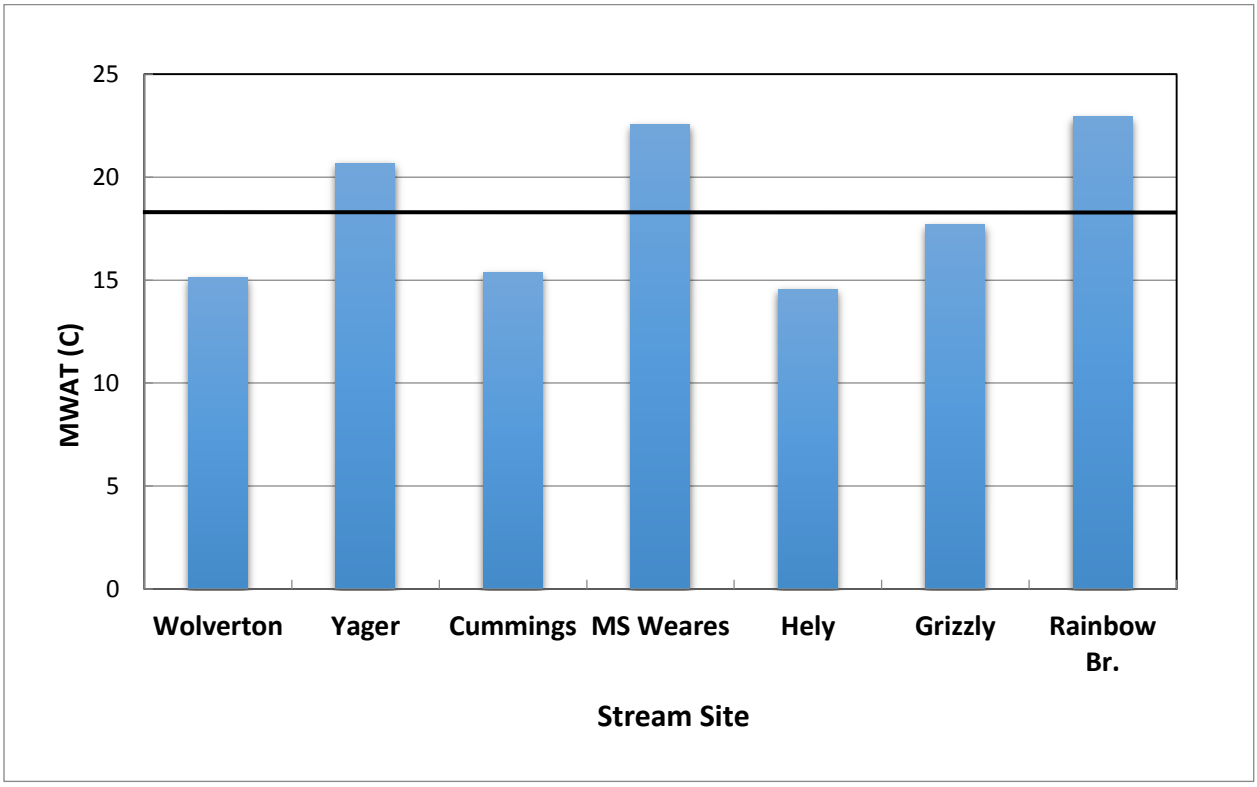

Figure 6-19. Maximum weekly average temperature (MWAT) for streams in the Lower VDR Basin during the summer of 2007. Horizontal black line represents the MWAT threshold of 18°C for coho salmon.

In results that were nearly identical to 2007, the highest MWAT in 2008 (22.8 C) was recorded on the main stem VDR at Rainbow Bridge (Figures 6-20, 6-21). Similar to the previous year, in 2008 the lowest MWAT was registered in Hely Creek (14.6 C), which was followed by Wolverton Gulch (15.1 C) and

Cummings Creek (15.4 C). As in 2007, the seven streams again fell into the same two groups, and those with MWATs below the 18-degree Celsius EPA recommended threshold (Hely, Wolverton, Cummings, and Grizzly) and those that exceeded the threshold (Yager, MS Weares, and MS Rainbow Bridge) were the same each year.

Temperature data from the two summer seasons were similar in max/min and average values, as well as in the relationships among the seven streams. Data clearly demonstrated that temperatures in the larger streams (main stem and Yager Creek) were dramatically higher than in the smaller streams, and surpassed safe levels for salmonids. Whether these differences were simply the result of channel size and canopy cover, or were a function of more complex relationships, such as habitat, pool depth, sedimentation rates, etc., cannot be determined from these data. These differences in temperature and their underlying causes should be studied further in order to advance our understanding of how human activity affects the health of these streams. Salmon runs in all of these streams are severely impaired, and temperature is an important influencing factor.

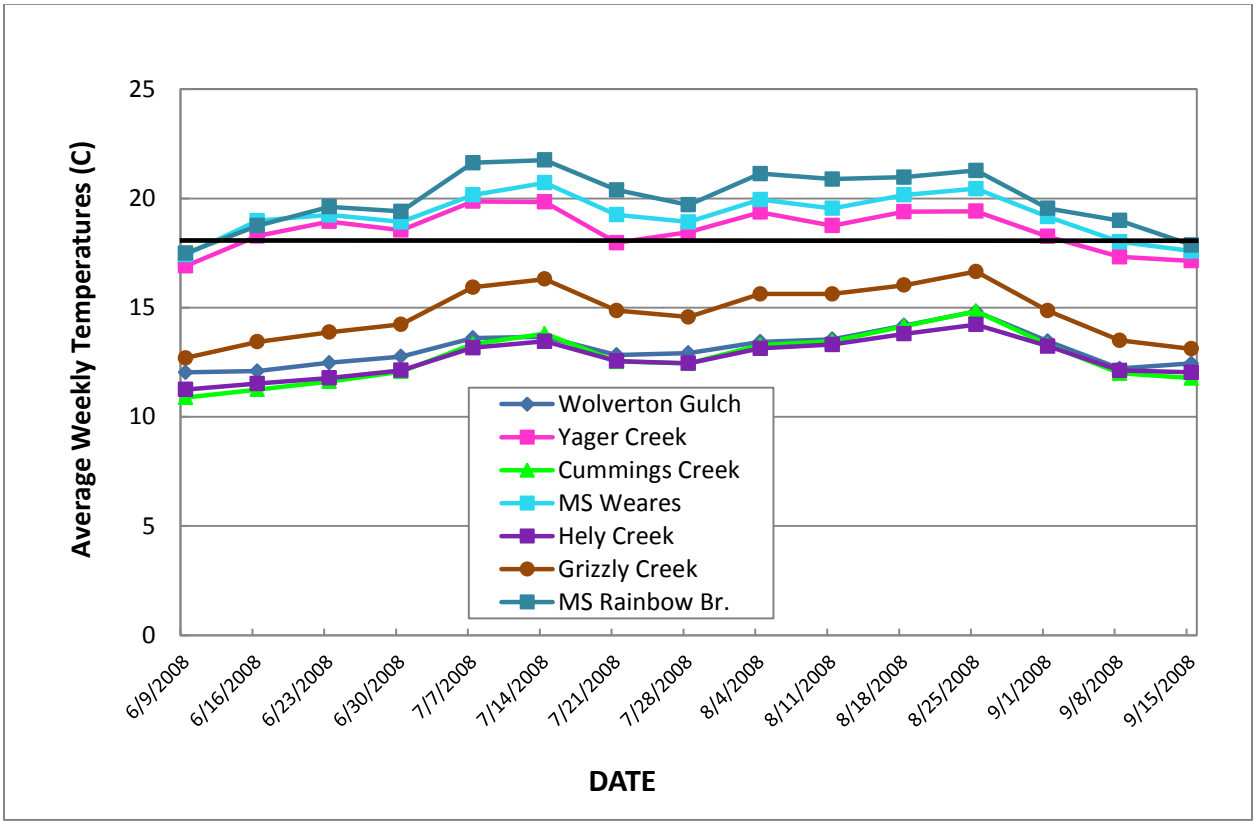

Figure 6-20. Weekly average temperatures for streams in the lower VDR Basin during the summer of 2008. Horizontal black line represents MWAT threshold of 18^{o}C for coho salmon.

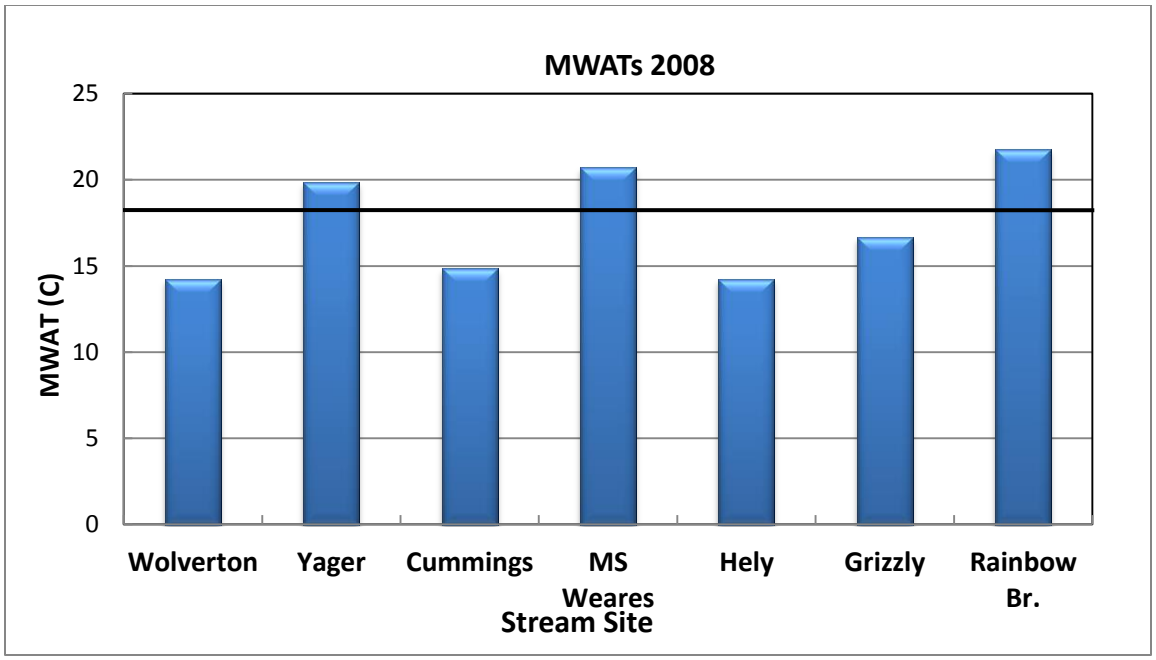

Figure 6-21. Maximum weekly average temperature (MWAT) for streams in the Lower VDR Basin during the summer of 2008. Horizontal black line represents the MWAT threshold of 18^{o}C for coho salmon.

Friends of the Van Duzen River hopes this information provides valid proof of the temperature impairment in key sections of the Van Duzen River and Yager Creek, and that the Basin Plan Ammendment will take this data into serious consideration when finalizing the Basin Plan policy and actions for temperature in the Mattole, Navarro, and Eel Rivers. Friends of the Van Duzen River would like the Water Control Board to include the Van Duzen as temperature impaired and take actions to remedy this serious water quality issue.

Additional information regarding the Van Duzen Watershed Project: Toward a Working TMDL: A Watershed Management Plan for the Van Duzen River Basin can be found on our web site www.fovd.org

Sincerely,

Sal Steinberg

Sal Steinberg, Director Friends of the Van Duzen

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Mark Sherwood

Mark Sherwood, Southern District Manager Native Fish Society