

Van Duzen Watershed Project  
First Annual Community Watershed Workshop Report  
August 8, 2007

Sal: Opening Remarks

Paul: Presentation – First Hydrologic Year in Review

Steve: Presentation – Van Duzen River Basin Salmonid Stock & Habitat

**Sal Steinberg: “What Does It Take to Make a Successful Citizens Monitoring Group?”**

The California coast has some of the most impaired rivers in the US and was given a sediment-impaired status 15 years ago. Land use, including timber harvesting, have played a major role in the lower Van Duzen. Fine sediment is beyond acceptable levels throughout the project area and fish counts are down. Mr. Steinberg reported on the number of Coho and Chinook salmon that came up the tributaries in December of 2005, and that the numbers that came up in December of 2006 were dramatically lower than in 2005.

In response to these declining numbers of salmon, a citizens monitoring group was put together. It took nine months to take that concept through the grant process, and with Paul’s grant writing skills, the VDWP came in fifth in its category. FOER assisted in making the grant a reality by extending their 501(c)(3) status to cover the VDWP. It also took local residents willing to go out in storm conditions collecting samples to make the program work.

In October of 2006, volunteers were trained in sample collecting, reading the turbidimeters and staff plates, and the use of orange-peel flow-rate technique. 675 triplicate samples were taken in HY07: which translates into almost 2,000 total samples. Sal showed examples of sample bottles, turbidimeter, staff plate and a ‘Slyter stick’ invented by local resident Dave Slyter. Maria Jorgenson was commended for her 126 samples and Bill and Laura Weare for their 101 samples. It was noted that Barry Stewart on Fox Creek had started his own program previous to VDWP and was a big help in making the Project a success, along with the Weare family’s contribution.

To make a program like this happen, individuals need to make the decision to see our salmonids make a comeback; it takes the cooperation of various agencies, like Steve Cannata from F&G, and continued efforts to recruit new monitors/samplers; it takes matching funds and fundraising - thanks to Mike Guerriero; it takes communication (storm watch heads up); and it takes education – thanks to Kristina Darby, Pam Halsted, and Superintendent Colver.

To make a citizens monitoring group successful, it needs high standards such as those Ed Brenneman suggested, and guidance such as we get from our Technical Advisory Committee, Clark Fenton, Randy Klein, Jesse Noell, Steve Cannata, Eric Nelson, Bill Shapiro, and Kristine Brenneman. And it takes the involvement of many others as well. In short, a successful citizens monitoring group takes Commitment, Conviction, and Community.

Awards were presented to Bill and Laura Weare, Jim Rizza, Ken and Maria Jorgenson, Dave Slyter, and Marge Lasky. Awards were also presented to several others in absentia. There followed a 3<sup>1</sup>/<sub>2</sub>-minute video: “Toward a Working TMDL, A Watershed Management Plan for the Van Duzen River Basin.”

**Paul Trichilo: Presentation, A review of the HY07 monitoring program, and a glimpse of some GIS work to come. “Toward a Working TMDL: A Watershed Management Plan for the Van Duzen River Basin”**

In the Fall of 2006, the Van Duzen Watershed Project was approved for funding through the CA WQCB – IWMP. The project was funded for a two year study to quantify water quality in the Lower VDR Basin, and will culminate in the submission of a Watershed Management Plan in the Fall of 2009. The Lower Van Duzen extends from Bridgeville downstream to where it flows into the Eel River and includes the large Yager Creek sub-basin. In this area we have 10, and sometimes 11 monitoring sites, a number which seem to vary from time to time.

With the help of our intrepid volunteers, sampling takes place during and after storm events, as does the staff plate and water velocity (using the orange peel & stopwatch technique) readings. All samples and data are labeled with the location, date, and time of day. Cross sections of sample sites are used to diagram the morphology of the stream channel, and calculate volume of water (CFS), also referred to as discharge.

The data collected are then analyzed, creating a graph that shows a history of each storm event – and dry spells – for the year. We are looking to see if there is a clear relationship between turbidity and discharge. Yager Creek in particular shows an obvious relationship in that turbidity is a function of discharge as well as stage. Yager and Cummings Creeks graphs, based on data from samples, appear to show a direct relationship between turbidity and discharge. Plans for the next hydrologic year will include sampling for suspended sediment. We know that turbidity is an indicator of suspended sediment that may vary from stream to stream. We will be monitoring this relationship more closely in HY08.

Wolverton Gulch when compared to Yager Creek, demonstrates the difference between turbidity, which was highest in Wolverton, and total suspended sediment carried by a stream. Yager Creek by far, carries the most sediment of any of the creeks because it is much, much larger and discharge is much, much higher, especially during storm events. A figure was displayed representing further analysis of the turbidity/discharge relationships on Van Duzen tributaries. Results showed that 6 tributary streams are severely impaired and two others are moderately impaired. The lower Van Duzen River is in much worse shape than the Upper Van Duzen. Turbidity doubled from Rainbow Bridge to Mainstem Weares, which is only one quarter of the distance from the headwaters to Rainbow Bridge.

Streams differ from one another as they each have their own unique responses to storm events, and we learned that turbidity is a function of stage and discharge. In 1992 the Federal Clean Water Act came into being and the Van Duzen River was rated as sediment impaired with 36% of the VD basin sediment perceived as being due to human activity in the watershed and therefore controllable. From 1991 through 2003 ( a 12-year period), a full third of all of the planning watersheds in the Lower Van Duzen Basin had between 40% and 60% of their total area under timber harvest. This figure is conservative because some of these areas are not timberlands, so the percentages would be significantly higher if based solely on harvestable timberland.

Analysis of up-slope conditions using GIS software will be carried out in the next several months to include an up-to-date road database and produce a road area density map. This analysis will include road-stream crossings, roads within 100 meters of streams, elevation/slope data, vegetation changes and geology (as in landslides). GIS is a powerful tool for analyzing multi-layered information, and is a great asset to our project in getting at some of the core problems within the basin, including unsustainable timber harvest practices. Dr. Trichilo displayed several slides of aerial photos of Stevens Creek and Grizzly Creek watersheds, which clearly showed numerous clear cuts, some near streams, and road data that did not completely represent all of the roads visible in the photograph.

### **Steve Cannata, CA DF&G**

#### **Van Duzen River Basin Salmonid Stock & Habitat Assessment**

This project and the VDWP compliment each other and enable us to share our data and results. The web site for this project is [coastalwatersheds.ca.gov](http://coastalwatersheds.ca.gov).

Our goal is to provide information to landowners, watershed groups, restoration specialists and other responsible agencies in regards to coastal watershed planning and assessments using up to date analysis. We came up with 9 guiding questions covering topics including sub-basins, geography, topography and watersheds (catchments). One thing we did was to compile existing information from different sources making the information more accessible.

For an historic overview: the Van Duzen was designated as a National Wild & Scenic River and has federal protections; the Van Duzen is home to Coho, Chinook, Rainbow Trout, and summer Steelhead. The Eel River estuary has been home to Steelhead (other than the winter and summer runs) all year long. Eaton Ruffs, which is a fairly new geologic feature, blocks steelhead passage, although they are believed to go up the Little Van Duzen. Historically, fish (especially steelhead) went all the way up to Hetten. Fox and Yager Creeks both have coastal cutthroat, although the Fox Creek population is now landlocked. In better days, 25 million pounds of salmon per year were harvested with an estimated 500,000 fish using the Eel River.

Geology and precipitation play their part in the sediment problem. When these fish can't see in turbid waters they don't eat. Further, sediment suffocates salmon eggs, killing them before they hatch. Those that do survive must fight their way through the sediment. The Van Duzen is subject to landslides and once they have 'opened' they can continue to bleed for years, adding sediment to the river. Hely Creek is a good example - there had been an arched culvert put in place which backed sediment up behind it, blocking the creek. There were landslides as well, and although portions have been restored, there still is not a well-defined channel.

Using GIS we can track changes in vegetation including timber harvesting in the years between 1991 & 2005. We can see that not all timber harvests are the same – some are light, others not so light. Between the railroad and the logging roads, we can see the “road to sediment” connection.

We conducted surveys for stream habitat looking for pool shelter conditions and large wood debris. Lawrence Creek habitat has been enhanced by replacing large wood debris, which creates conditions favorable to fish. We will be conducting surveys to count spawning fish, redds and carcasses later in the year.

The mainstem Eel River at Benbow has seen a faster decline in salmonid populations than those of other fish species from 5,000 down to less than 500 between 1940's and 1970's. One limiting factor is a summertime low-flow bottleneck. We've identified five main problems: sediment, lack of deep pools, high temperatures, low flow and the non-indigenous Pikeminnow.

We have come up with some recommendations: Control erosion (especially in road construction); educate and encourage the use of best land use practices; improve flow and water quality; remove barriers to fish passage; conduct riparian and in-stream projects such as planting large conifers in/near streams and discouraging the removal of large wood debris from stream channels; and implement in stream projects to increase shelter complexity such as creating deep, cool pools.

The mouth of the Van Duzen is another problem area. In 2002 the Van Duzen was divided into several small channels, which led to the formation of isolated pools in which approximately 120 fish became stranded. A special trench was put in place to block fish from entering the likely to be isolated area until the water level comes up.

A public comment period followed, notes taken by Chris Ramsey