



Creek Chronicles

Friends of Corte Madera Creek Watershed

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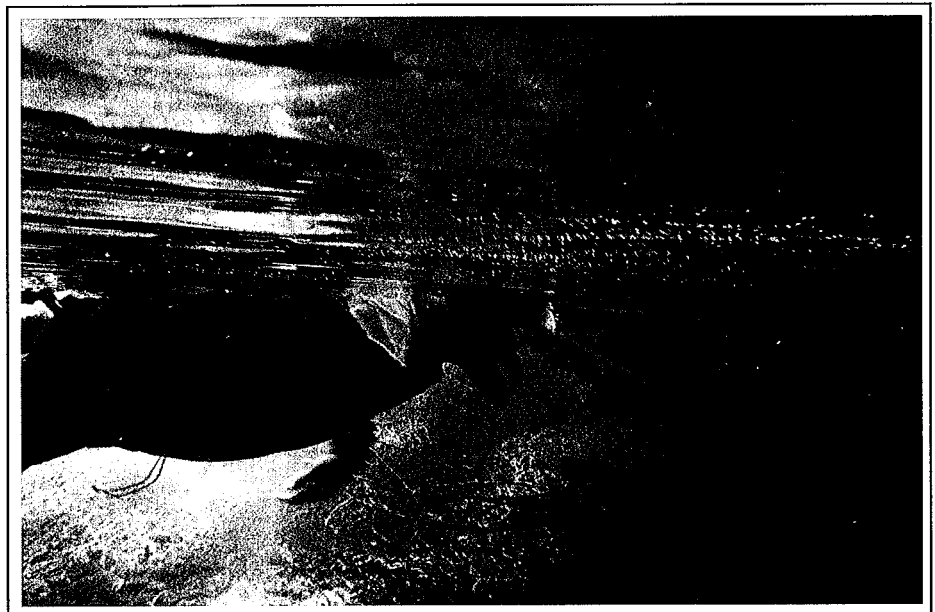
July-December 2014

Hominid Meets Salmonid, Eye to Eye

by Andrew Bartschire

I grew up in the Deer Park neighborhood of Fairfax, and in pre-school spent my afternoons exploring trails, climbing trees, and playing in ephemeral stream beds, being a typical carefree kid. I always found myself drawn to creeks. In the summer I would clamber through pitch-black culverts never knowing where the light at the other end would be. In the winter I would drop sticks off the Bridge Court footbridge into raging winter flows and marvel at how fast they would disappear into the brown turbid water. I would spend hot summer days trekking up San Anselmo Creek, splashing through riffles and throwing rocks into pools. I noticed wildlife, ducks, deer, frogs and the occasional small fish darting around the pools but I never thought too much about the volume or complexity of wildlife that calls the small year-round pools of the watershed home. I grew up instinctively being drawn to water but I always looked at it surface deep, never considering what was below the surface.

I moved away to go to school and continued my interest in the natural environment, getting a degree in geography. After school I was lucky enough to get a job for the University of California monitoring endangered coho salmon populations in the Russian River watershed. Up to that point, I had always looked at nature from the watershed perspective, of which the main elements were topography, climate, geology, hydrology, flora, and fauna. Suddenly I was looking at the watershed from the river bottom, up—literally.



California Sea Grant Coho Salmon Monitoring crew member conducting a fish survey in a tributary of the Russian River. Snorkelers can see into refuges invisible from above.

The first time I learned I would be snorkeling streams as a method to monitor salmon, I imagined the commercials of the people snorkeling in crystal clear water looking down on all the colorful marine life deep below them. Instead what I found was a creek very similar to San Anselmo Creek in the summertime. Small pools connected by trickling riffles, or sometimes completely dry riffles and isolated pools. It seemed kind of silly to waste my time snorkeling around in a pool that was only a foot or two deep and barely wider than a dinner table, but I put on my gear and stuck my head in the water anyway. It was as though I had entered a different world.

I was immediately struck by how large the pool appeared once I eliminated the optical and physical barrier of the water surface. The root

structures, which seen from above appeared to be merely a part of the bank, now opened up into a massive undercut cave going back five or six feet with a labyrinth of nooks and crannies where even the most slow-moving aquatic species could hide out. Rocks and cobble on the bottom of the pool that gave the appearance of a smooth bottom from the surface, now formed a series of peaks and valleys where thumb-size

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Ross Valley Watershed Program Update

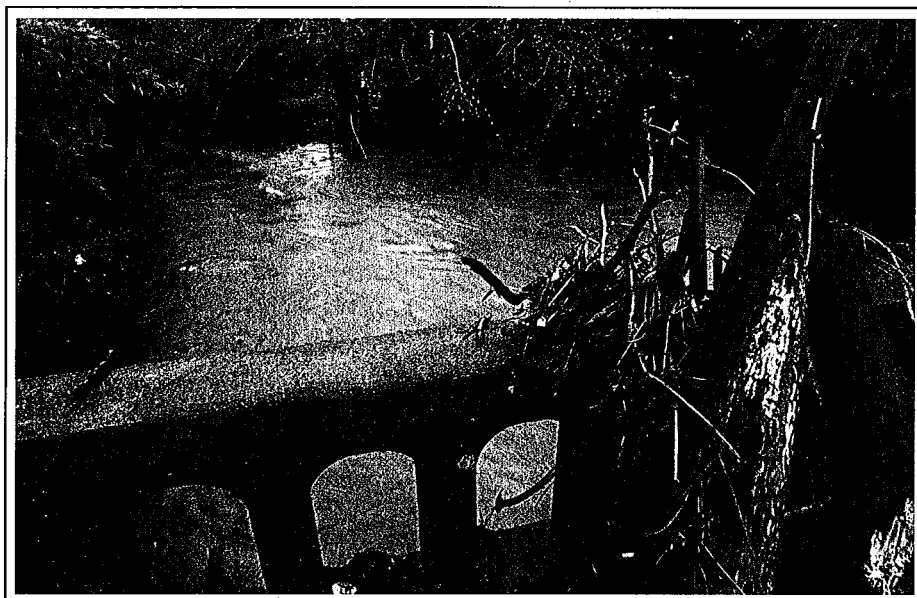
by Sandy Goldman

The Ross Valley Capital Improvement Plan Study was released in 2011 to guide flood control efforts and measures valley-wide over the next 20 years. It is intended to eliminate overbank flows during a storm with a 1% chance of occurring in any year. Although this is commonly called the *100-year event*, a more accurate and meaningful shorthand is the *1% annual chance flood* or 1% ACF. To focus on providing some flood risk reduction for the whole watershed, on April 3, 2012 the Flood Zone 9 Advisory Board adopted a 10-year plan to provide all locations with flood protection during a 4% ACF (the 25-year event).

Efforts are now underway on key parts of the 10-year plan. They include finishing the Corte Madera Creek Flood Control Project in Kentfield and Ross, constructing detention basins to retard water flows during floods, replacing some bridges in San Anselmo and Fairfax, and planning for dredging the earthen channel of Corte Madera Creek. All components of the plans can be reviewed at the Ross Valley Watershed Program website.

Corte Madera Creek Flood Control Project

The project extends from the mouth of Corte Madera Creek to upstream of the Lagunitas Road Bridge in Ross. It is a joint project of the Marin County Water Conservation and Flood Control District (FCD) as local sponsor and the US



Nokomis Bridge in San Anselmo, shortly after the high water on 12/31/2005: It is one of several inadequate bridges that also cause flooding scheduled for replacement as part of the Ross Valley Watershed Program. Photo by Charles Kennard

Army Corps of Engineers (USACE). Even though there is now local support to complete the project, it has been contentious in the past and has had little or no federal funding for decades. There is considerable inertia to overcome. Both the concrete channel and the creek upstream of it have limited capacity. Completing this project will result in: 1) increasing capacity and improving fish passage in the concrete channel between the College Avenue Bridge and the upstream end of the concrete channel (Unit 3); and 2) increasing the capacity in the reach above the concrete channel (Unit 4). The Unit 4 work will remove the existing fish

ladder and may include lowering the bottom of the natural creek bed, stabilizing the banks, and other measures identified in the design and permitting. The design and environmental assessment phase of the project, expected to last no more than 3 years, will be funded under a 50-50 cost share between the County and USACE. So that work can begin, the County is exploring an agreement with the USACE to allow the County's share to fund the initial tasks. Supervisor Katie Rice is working with Congressman Jared Huffman and Senator Feinstein to obtain federal funding for the project.

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| | 10-year Plan Detention Basins | | | |
|--|-------------------------------|-------------|---------------|--------------|
| | Loma Alta | Lefty Gomez | Memorial Park | Phoenix Lake |
| Peak flow reduction at detention basin | 51 cfs | 295 cfs | 132 cfs | 270 cfs |
| Peak flow reduction at Fairfax | 93 cfs | 360 cfs | 0 | 0 |
| Peak flow reduction below Sorich | 93 cfs | 358 cfs | 202 cfs | 0 |
| Peak flow reduction at Ross Gage | 92 cfs | 356 cfs | 201 cfs | 646 cfs |

cfs = cubic feet per second

Source: http://www.marinwatersheds.org/documents/AttachmentAtoTM2_000.pdf

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Detention Basins

These basins need to be implemented early in the program, since otherwise desirable projects to increase the capacity of the creek (such as replacing bridges that constrict flow) would increase the risk of downstream flooding. The reduction of peak flood flows during the 1% ACF by the four detention basins at different locations is shown in the table at the bottom of page 4.

The total flow at the Ross Gage during the 1% ACF in December 2005 was 6840 cfs. That flow was divided between 3630 cfs in the creek and 3210 cfs of out-of-bank flow (flooding). The 10-year plan includes increasing the capacity of Corte Madera Creek in Kentfield and Ross by 1770 cfs from 3630 cfs to 5400 cfs. Constructing the detention basins in the 10-year plan (but doing nothing else) would not eliminate flooding during a 1% ACF, but the amount of out-of-bank flow at the Ross Gage would be reduced by 40%, from 3210 cfs to 1900 cfs. Many fewer properties would be affected and the water would be lower.

Except for Phoenix Lake, the detention basins are likely to be used infrequently and only when flooding is imminent at downstream locations. This is a time when recreational activities in and near the basins would have been canceled because of heavy rainfall or saturated fields. Water will be released from the basins when the risk of flooding has abated, probably within 48 hours.

Loma Alta Detention Basin:

Located in an unincorporated area of Fairfax near the end of Glen Drive, the detention basin would be formed by an earthen embankment across an unnamed gulch that flows into Fairfax Creek. The embankment would be constructed of fill excavated from Lefty Gomez Field, reducing the need to haul material from Lefty Gomez Field to a remote disposal location. Construction of this basin

would not involve any excavation other than keyway excavation under the embankment. This basin lies within the Loma Alta Open Space Preserve, which is owned and managed by the Marin County Open Space District (OSD) for recreation. The project will require approval from the OSD and it will be subject to conditions the OSD may impose. FCD has obtained approvals for preliminary geotechnical studies.

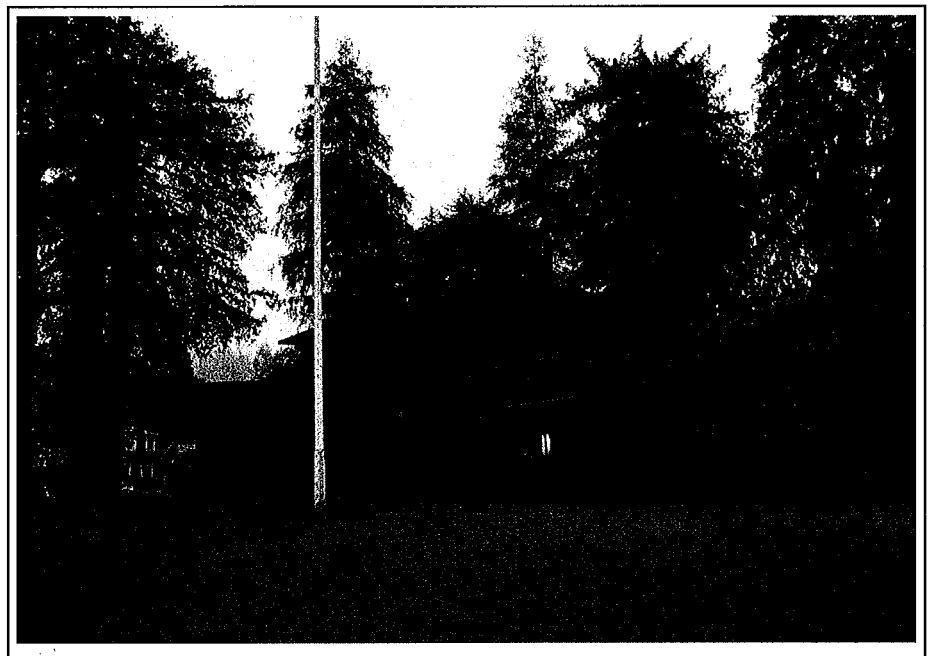
Lefty Gomez Dual Use Facility: This site, located along Sir Francis Drake Boulevard in Fairfax just below the Loma Alta tributary site, is owned and maintained by the Ross Valley School District. It serves as the playing field for White Hill Middle School and for community youth soccer and baseball leagues. This project involves lowering and rehabilitating the recreational facilities, relocating the bathrooms, and building low walls or berms along the north and east of the field. The FCD has signed an agreement with the Ross Valley School District to conduct feasibility studies.

Memorial Park Dual Use Facility: Memorial Park is located on Sorich Creek, in the Town of San

Anselmo. The Town Council authorized entering into an agreement with The Department of Water Resources for 50% funding for this project, up to a total cost of \$17.4 million. Now that the agreement with DWR is finalized, the Town will contract for design and environmental review. During this process Town will hold a number of public meetings so that community members can provide input on the design of the refurbished Memorial Park and identify issues of concern. Check the Town of San Anselmo's website for more information about this project.

Phoenix Lake Dual Use Facility: The FCD entered into a memorandum of understanding with MMWD to study using Phoenix Lake as a flood detention basin and to enhance water supply, recreational facilities, and water quality in Phoenix Lake and Ross Creek. Following the agreement with MMWD, FCD signed a contract with the Department of Water Resources (DWR) for 39% funding for the project, up to a total cost of \$19.7

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Flooding at Fairfax Town Hall in 1982: Installation of the Lefty Gomez and Loma Alta detention basins would lower flood waters in downtown Fairfax in flood events. Photo by Charles Kennard

Ross Valley Watershed Program Update

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million. FCD engaged a consultant to conduct geotechnical studies of Phoenix Dam and to prepare a preliminary design. This study should be completed by late 2015. FCD is also gathering information about flows and water quality in Ross Creek that will be used as baseline data for the environmental analysis. FCD is in the process of selecting a consultant to complete the final engineering design, conduct environmental compliance, and handle permitting services necessary for the proposal to proceed.

Bridge Replacements

The Town of San Anselmo applied to Caltrans for and obtained funding for the replacement of the Nokomis Bridge (100% funding) and the Madrone Avenue and Center Boulevard bridges (88.53%). The remaining costs for the Madrone and Center bridges will be covered by Ross Valley Watershed Program revenues, pending an approved funding agreement between the Town and the County. All three bridges will undergo environmental review as part of the design and permitting process. There will be community meetings to discuss the design and impact to the community for all three bridges. The Center Boulevard Bridge due to its size and location, and the adjacent Bridge Street Bridge will begin with a more comprehensive design process and community review to evaluate alternatives to a simple replacement.

The design process is expected to take 2 to 3 years for each bridge (concurrently). Removing these existing bridges will increase the flow capacity of the creek and reduce upstream flooding; this may increase downstream flooding unless mitigation is provided by detention basins and some low floodwalls on the

creek. However, the combined effects of bridge replacements and the Memorial Park detention basin would be a significant reduction in the level of floodwater in San Anselmo's downtown flood plain. But it is essential that all these actions be taken, as otherwise there is a high probability that piecemeal actions will actually make flooding worse unless remedial measures are taken.

The Winship Avenue Bridge in Ross is eligible for Caltrans funding. The Town of Ross has awarded a contract for bridge design and environmental work. Funding details are being negotiated.

Dredging the Earthen Channel in Kentfield & Greenbrae

This channel was last dredged in 1998 and sediment has continued to accumulate since that time. In 2010, the channel was surveyed and there was adequate capacity for the channel to accommodate the 1% ACF. Another survey is planned for summer 2014. The results of that survey will determine if dredging is needed and where it should be done. The permit process is lengthy and the earliest any dredging could be carried out would be 2017.

For regular updates on the Ross Valley Watershed Program, check the webpage maintained by Marin County.

Hominid Meets Salmonid, Eye to Eye

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California roach and three-spine stickleback dive in and out of view. A crayfish scurries backwards into the closest hole, daring me to come after him and face his open claws.

At first I am so overwhelmed with the vastness and complexity of this subsurface ecosystem that I fail to notice the telltale dark parr marks and large round eyes of the juvenile salmonid staring at me from the deepest part of the pool. Their contrasting tones and transparent fins allow them to blend into the gravel bottom and disappear from view.

Soon they will lose the creek camouflage and turn a bright silver color as they shift into the smolt lifestage and move out to the ocean.

What appeared to be a small pool in a seasonal creek is teeming with life when the water is clear and cool. It makes me think back to my childhood, playing around in San Anselmo creek, splashing through riffles and throwing rocks into pools just like this. If I had known then how much was going on below the surface, I would have taken greater care not to disturb my finny neighbors.

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