

From: [Andrea Taber](#)
To: [Rice, Katie](#); [Adams, Susan](#); [Sears, Kathrin](#); [Kinsey, Steven](#); [Arnold, Judy](#); [Thorsen, Suzanne](#); [Lai, Thomas](#)
Cc: [beth.descala](#); [Steve Taber](#); [Dan Stein](#); [sean@sfinh.com](#); [John Grubb](#)
Subject: SCA Update
Date: Tuesday, August 20, 2013 5:17:34 PM

Dear Supervisors Rice, Adams, Sears, Kinsey, Arnold and Suzanne and Tom,

Thank you again for your thoughtful approach moving forward on the SCA Ordinance. MAST and the Sleepy Hollow Homeowners Association urge you to **NOT** adopt a Countywide interim SCA ordinance. An interim expanded ordinance for the San Geronimo watershed which will remove the moratorium makes excellent sense and will relieve a great burden on the residents. To impose an unworkable interim ordinance on the developed areas, however, will create great confusion and uncertainty for the public, and generate unnecessary and exorbitant costs for Marin County and excessive work for CDA staff. An interim SCA ordinance for these areas would accomplish absolutely nothing. We urge you to continue on the path identified by the Board subcommittee and CDA staff and abandon this notion. Additionally, interim ordinances in the developed areas will preclude the utilization of conservation easements and other critical incentives being developed through MAST. Please implement the timing of a successful SCA Ordinance to maximize incentive opportunities for landowners.

Sincerely,

Andrea Taber
Beth De Scala

MAST

From: [BOS](#)
To: [Thorsen, Suzanne](#)
Subject: FW: Streamside Ordinance
Date: Tuesday, September 03, 2013 8:56:19 AM

The attached message was received through the email address link for sending one email to all Supervisors. Please forward as you deem appropriate.

Toni Stewart
Deputy Clerk

From: mba53@yahoo.com [mailto:mba53@yahoo.com]
Sent: Sunday, September 01, 2013 2:25 PM
To: BOS
Subject: Streamside Ordinance

Mary B Abbott would like information about:
I am writing to say that I am in favor of

NO change to the Countywide Plan AND

Adoption of the SCA Ordinance (now).

Mary B Abbott
PO Box 271
Bollinas, CA 94924

From: [BOS](#)
To: [Thorsen, Suzanne](#); [Albert, Tanya](#); [Alden, Leslie](#); [Clark, Susannah](#); [Crosse, Liza](#); [Escobar, David](#); [Fraitel, Rick](#); [Laird, Sandy](#); [Parton, Maureen](#); [Vernon, Nancy](#); [Weber, Leslie](#)
Subject: FW: Monetary Value Riparian (SCA) Corridors
Date: Tuesday, September 03, 2013 10:59:13 AM
Attachments: [Monetary value of streams.pdf](#)
[ATT00001.htm](#)

The attached message was received through the email address link for sending one email to all Supervisors. Please forward as you deem appropriate.

Toni Stewart
Deputy Clerk

From: Laura Chariton [mailto:laurachariton@comcast.net]
Sent: Tuesday, September 03, 2013 9:40 AM
To: Sears, Kathrin; BOS
Cc: Laura Chariton; Joyce Britt; Rachel Kamman; April; barbara wilson; rachael koss; Susan Ives; Todd Steiner; nancy okada; Tom Yarish; neysaking@tomalesbaywatershed.org; Betsy Bikle; Gordon Bennett; Cynthia; Amy Trainer; Judy Schriebman
Subject: Monetary Value Riparian (SCA) Corridors

To all:

Here is a valuable comparative study of the quantified monetary value provided by streams that are functioning and healthy as opposed to constructed treatment facilities for polluted storm run off in urban areas.

Please consider having Ann Riley, PhD, author and the State Water Board present to the supervisors, planning and public works.

California Regional Water Quality Control Board San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, California 94612
<http://www.swrcb.ca.gov/rwqcb2>

Putting A Price On Riparian Corridors As Water Treatment Facilities

Ann L. Riley¹

Abstract: The monetary value of natural riparian environments that provide water quality treatment functions by processing nutrients, storing sediment, moderating temperatures, and other services can be estimated by calculating the costs associated with the construction of “brick and mortar” water treatment plants built to achieve similar functions. A demonstration urban runoff treatment plant built by the City of Santa Monica provides similar water quality services as a 4,000-5,000 lineal foot riparian corridor does, and has annualized costs of approximately \$1.3 million per year (\$2008) over a 50-year period.

These costs can be compared to the costs of protecting and/or restoring naturally functioning riparian systems. For example, a large, federally-funded, multi-objective urban flood damage reduction project with water quality benefits has costs that are approximately \$967,600 per year (\$2008). Other urban stream restoration projects for 5,000 lineal feet of stream with riparian habitat can range in cost from \$1,900 for fencing projects to \$227,000 per year for “typical” restoration projects annualized over 50 years (\$2008). While most riparian restoration projects will provide benefits over a 100 year period or in perpetuity, the life spans of the structural plants are generally much shorter, thereby requiring significant replacement costs.

If it can be demonstrated that the water quality treatment services of a “brick and mortar” plant can be equated to similar services provided by naturally functioning riparian systems, then a cost comparison between the “brick and mortar” plant is not only illustrative, but may also provide a benefit measure that can be used to evaluate the economic efficiency of proposed habitat protection and/or restoration projects.

The Policy Context

Ecologically functioning riparian environments are valued because they provide aquatic and terrestrial habitat for fish, amphibians, reptiles, mammals, and birds, and recreational and open space opportunities for the public. Yet little or no research appears to be available on the economic benefits of riparian areas to society for their water quality treatment functions. Riparian areas improve water quality by removing nutrients, improving dissolved oxygen, storing sediment and regulating temperatures among other benefits. These benefits can be achieved by protecting existing healthy riparian environments, or by restoring degraded areas into functioning ecosystems. Protection can

¹ A.L. Riley, Ph.D., Watershed and River Restoration Advisor, San Francisco Bay Regional Water Quality Control Board, Oakland, CA.. August 6, 2009

be achieved by voluntary ecologically sound landowner practices, and/or through regulation, conservation easements, or fee purchase of riparian corridors. Therefore, one purpose of assigning monetary value to these natural systems is to record what society pays to prevent farming or other land uses in these areas, pass protection regulations, purchase easements or full public rights to the riparian land, and/or to restore the ecosystem.

However, in many circumstances, particularly in urban environments, the monetary costs of protecting a healthy system can be difficult to estimate. Therefore, this research focuses on putting the benefits and services of a riparian environment into perspective by describing what we need to pay if we were to substitute these naturally occurring services with a constructed plant.

Santa Monica Urban Runoff Recycling Facility

The first of its kind, state-of-the-art stormwater treatment plant located in Santa Monica, California, gives us the opportunity to compare the benefits and costs of a physical “brick and mortar” stormwater facility with the benefits and costs of naturally occurring or restored riparian environments based upon their respective abilities to affect the quality of stormwater runoff. The Santa Monica Urban Runoff Recycling Facility (SMURRF) collects polluted runoff from the Los Angeles area and reclaims it sufficiently so that it can be re-used for landscape irrigation or dual plumbing systems (Figure 1). The plant came on line in February 2001 and is located near the Santa Monica pier. The building design involved a collaboration of engineers and artists. The plant features interesting architecture, art, and on-going visitor tours with public education about urban stormwater runoff, making this interesting, pioneering engineering facility an engaging tourist attraction. There are proposals to construct similar plants at Lake Tahoe.



Figure 1: SMURRF Plant

This plant is intriguing for reasons other than its merits as a currently one-of-a kind centralized stormwater collection and treatment facility. The presence of a “brick and mortar” plant and the costs associated with its construction, operations and maintenance provides an excellent opportunity to compare its long term costs with the costs of protecting and/or restoring the treatment capabilities of a natural, functioning riparian systems. If we do allocate financial resources to protecting riparian resources or to restoring degraded waterways, this comparison gives us one method for assigning monetary benefit values for these natural system restoration projects based upon the avoided costs of more costly “brick and mortar” plants that would provide similar water quality services.

The SMURRF Plant Functions and Costs

The SMURRF Plant was constructed in 2000. In 2008 dollars, construction costs were approximately \$14.8 million dollars and the annual maintenance and operations costs are about \$216,900 a year; the plant treats about 320,000 gallons of runoff a day.² One function of the plant is to remove fine sediments from the water, which is accomplished with a rotating drum screen. A second chamber removes grit and sand. Oil and grease are then removed in a unit that aerates the water using a compressed air unit (the dissolved air flotation unit). This unit brings the oil and greases to the top so they can be skimmed off.

The next process in the plant is micro-filtration, which helps reduce the turbidity of the water by forcing the water through membranes. The membranes have to be periodically cleaned of pollutant build-up. The final step in the treatment process is to disinfect bacteria and viruses by passing the water under ultraviolet radiation lamps. The basic functions of the plant therefore are to filter sediment, reduce turbidity, trap oil and grease, and treat bacteria and viruses. Removal of sediment can also benefit removal of nutrients and other pollutants that may adhere to it.³ A separate trash collecting unit, which cost \$200,000, catches trash from about 50,000 gallons a day before it enters the plant.⁴

Comparing A Treatment Plant To A Stream

To compare the costs of a “brick and mortar” plant with the costs of protecting and/or restoring a riparian corridor, we need to identify whether the water treatment functions of the plant and the riparian corridor are similar, including an evaluation of the treatment of similar quantities and qualities of stormwater. The SMURRF plant treats approximately 320,000 gallons of water a day. The water treated is not wet weather runoff but dry weather run-off collected from about 5,100 urbanized acres. Stormwater flows from winter rainfall continue to run untreated into the ocean.⁵ Theoretically, the plant could be

² City of Santa Monica (2003) and Shapiro (2005) Visit the SMURFF website at: <http://www01.smgov.net/epwm/smurff/smurff.html>

³ City of Santa Monica (2003).

⁴ Shapiro (2005).

⁵ Shapiro (2005).

expanded to treat wet and dry weather runoff, but for now it is assumed that the costs per gallon of either dry season or wet season runoff are comparable. It is important to keep in mind that the plant may treat runoff from 5,100 acres but only treats a small portion of the runoff from that acreage. Therefore, we cannot use as a basis of comparison the number of acres served by our “brick and mortar” plant and natural “facilities,” but we need to compare systems that can accommodate similar quantities of water. Under perfect research conditions we would collect a wide variety of water quality and sediment measurements for the same discharges in both the field conditions and the plant and compare them. This is challenging to achieve at this time, but a future research project may try to evaluate some water quality parameters at low discharges on Wildcat Creek at the project site.

A stream flowing at 1 cfs (cubic foot per second) produces a volume of water equal to 646,272 gallons per day. The 320,000 gallons treated by the plant equates to about 0.5 cfs flow per day. Using watershed and hydrologic information from a San Francisco Bay Area stream we can estimate the size of the drainage area and creek that would produce a flow of about 0.5 cfs and then evaluate the ability of a stream of this scale to treat stormwater naturally. We can also compare the costs associated with restoring a length of stream that would treat a similar average annual flow to the costs of the stormwater plant providing similar water quality services.

The San Francisco Bay Area creek we will use for a costs and benefits comparison with the plant is Wildcat Creek located in the cities of Richmond and San Pablo, and the East Bay Regional Park system in Alameda and Contra Costa Counties (Figures 2 and 3). The average discharge or average annual flow (the arithmetic mean of the daily flows for the period of the hydrologic record) of Wildcat Creek using twenty years of gage data located on the creek is approximately 7 cfs for the location we are going to evaluate on the lower portion of Wildcat Creek. This twenty-year average for the daily flow takes into account the occurrence of large fluctuations of flows during the year, including very low summer flows where the creek may dry up in places, to high flood flow events—as high as 2,000 cfs or more. Wildcat Creek drains a watershed area of about 11 square miles and the length of the creek is about 11 miles.

Figure 2: Wildcat Creek Floodplain Flows



Figure 3: Wildcat Creek Channel



The length of the Wildcat Creek stream channel is about 5,280 feet for each square mile of watershed drained, and the average daily flow from this square mile is about 0.64 cfs. Using this hydrologic information for the Wildcat Creek watershed we can estimate that a section of creek channel about 4,125 feet long comprising an area of 0.78 square miles of the lower watershed will produce a 0.5 cfs average daily flow on an annual basis. Another way to describe the scale of this watershed is as a 500-acre area. In 2000, the Wildcat San Pablo Creeks Watershed Council completed a restoration project 5,000 feet long on lower Wildcat Creek where the average daily discharge is about 7cfs. The width of the riparian corridor varies from 50 feet to 65 feet. The channel width is 10 feet and the floodplain located outside the riparian zone is maintained in grasses, shrubs, and cattails. The entire corridor is 250 feet wide. If you evaluated this reach of creek in isolation from the rest of the watershed it would produce about 0.6 cfs average daily discharge. The scale of this project and the discharges produced by this reach (if considered separated from other watershed runoff) make it a reasonable case study with which to make comparisons to the SMURRF plant which treats an average daily discharge of 0.5 cfs.

Natural Riparian Systems Functions

Research and collected field data is now available that addresses the issue of not only the water treatment functions riparian systems perform but also the area of the natural systems that produce the treatment results. A significant body of water quality research details the ability of riparian systems to store sediment, and retain and transform excess nutrients, pesticides, and toxic substances.⁶ The literature represents a wide range of environmental conditions and landscapes and therefore produces a range of quantifiable findings. For example, researchers in Corvallis, Oregon found that 60 to 80 percent of the sediment generated from forest roads were captured by less than 250 feet of a healthy riparian system in point bars and pools, and their measurements indicated that stream systems could store sediment for as long as 114 years.⁷ A study in the Southern Appalachian Mountains indicates that phosphorous- and nitrogen-containing compound ammonium traveled less than 65 feet downstream before being removed from the water by riparian areas.⁸ First order headwater streams in the northeastern United States have been found to be responsible for 90 percent phosphorus removal.⁹ A mathematical model based on research in 14 headwater streams throughout the country shows that 64 percent of inorganic nitrogen entering a small stream is transformed within 3,000 feet of stream channel.¹⁰

⁶ Meyer et al. 2003; Klapproth and Johnson 2000); Wenger 1999; Osborne and Kovacic 1993; Peterjohn and Correll 1984; Chagrin River Watershed Partners 2006;Perry et al 1999; Mayeret.al 2005

⁷ Meyer et al. 2003.

⁸ Meyer et al. 2003.

⁹ Meyer et al. 2003.

¹⁰Naiman et al. 1997.

In general, riparian areas are found to be efficient at processing organic matter and sediments, and sediment bound pollutants carried in surface runoff are deposited effectively in riparian forests and floodplain areas. The finer sediments are removed from runoff as a result of deposition and erosion, infiltration, dilution, and adsorption/desorption reactions with woodland soil and litter.¹¹ Riparian systems are known to have significant impacts on water temperatures and microclimates.¹²

Scientists have described how the oxidized hyporheic water from the stream bed mixes with the interstitial water flowing from riparian zones, which reduces the transfer of inorganic nitrogen and phosphorous to stream water. Ecological processes that occur in the hyporheic zones have strong effects on water quality in which bacteria, fungi, and other microorganisms living in stream bottoms consume nutrients and convert them to less harmful, more biologically beneficial compounds.¹³ Riparian areas and their floodplains have been measured to remove 80 to 90 percent of the sediments contributed by agricultural areas.¹⁴ Plant uptake can be an important mechanism for nutrient removal in riparian forests in both intermittent and perennial streams.¹⁵ The width and length of riparian corridors needed to act as chemical filters for nitrogen varies by stream environment, but researchers have found that riparian areas as narrow as 48 feet were effective in removing it.¹⁶ A project involving fencing a 5000 lineal foot corridor that is 45 feet wide and planting some willow posts resulted in downstream benefits with a measured significant increase in benthic insect taxa richness and increase of the presence of family taxa typically not found in polluted and degraded conditions.¹⁷ Even smaller headwater areas have been found to rapidly take up and transform nutrients within just hundreds of lineal feet.¹⁸

Researchers have also found that the loss of riparian areas to clearing and channelization not only equates to a loss of these treatment functions but may also result in the disturbance of areas that have served as nutrient sinks for sediment and sediment associated nutrients, which then causes the export of the nutrient sink accumulated over many years.¹⁹ Removal of wooded areas and the subsequent changes in the peak discharges and shortening of runoff lag time typically results in geometric increases in sediment loads being transported by streams.²⁰

¹¹ Bhowmilk et al. 1980; Lowrance et al 1984; Lowrance et al 1986

¹² Naiman et al. 1997;

¹³ Naiman 1997; Korum 1992

¹⁴ Cooper et al. 1987.

¹⁵ Karr and Schlosser 1978.

¹⁶ Cooper et al. 1986.

¹⁷ SFBRWQCB 2007

¹⁸ Peterson, et al 2001

¹⁹ Kuenzler et al. 1977.

²⁰ Leopold 1981.

Research also indicates that healthy aquatic systems can transform animal waste and chemical fertilizers into less harmful substances. Vegetated buffers and protected riparian areas with contiguous riparian corridors have been shown to be effective in reducing pathogens such as coliform and cryptosporidium parvuum.²¹

Comparing Costs: SMURFF vs. Habitat Restoration Projects

If it can be demonstrated that the water quality treatment services of a “brick and mortar” plant can be equated to similar services provided by naturally functioning riparian systems, then a cost comparison between the “brick and mortar” plant is not only illustrative, but may also provide a benefit measure that can be used to evaluate the economic efficiency of proposed habitat protection and/or restoration projects. For this research, we will compare the costs of the SMURFF stormwater treatment plant with a Wildcat Creek multi-objective project in the Bay Area as well as other restoration projects. The critical underlying assumption is that the restoration projects provide similar water quality treatment services as the SMURFF plant. The following assumptions were used to perform the cost comparisons:

- 50 year analysis period and
- 6% discount rate

SMURFF. The SMURFF plant was constructed in year 2000 at a cost of about \$12 million (including land costs). The City Engineer’s best estimate on the life of this plant is twenty years, based on the technology becoming obsolete by that time, although she cautions that breakdowns and replacements of machinery are inherent in the use of the new technology. The plant construction and land costs converted to 2008 dollars are \$14.8 million.²² Annual maintenance costs are now approximately \$216,900 per year. Because the plant’s life is shorter than the 50-year analysis period, replacement costs (\$5,000,000) were included for each 20 year period to account for significant machinery and equipment replacement. Therefore, the SMURFF construction and operations and maintenance costs annualized over this length of time are about \$1.3 million per year for the treatment of 0.5 cfs per day.

Wildcat Creek. Between 1986 and 1989, the Army Corps of Engineers, in partnership with Contra Costa County, constructed a multi-objective flood damage reduction project which included acquisition of the 250-foot-wide-corridor, and creation of a floodplain, vegetated corridor, and stream channel within the 250-foot-wide-corridor over 10,000 lineal feet. Objectives of the project were to provide for a naturally functioning bankfull stream channel and adjacent floodplain, and protection of a riparian corridor. In 2008 dollars, the total construction costs for 10,000 lineal feet was about \$26.7 million, and land costs and relocation costs were about \$3.7 million for a total project cost of about \$30.4 million. The annual maintenance cost expended by the county for this project area and staff support for the watershed council, which oversees the long term management of

²¹ Meyer et al. 2003; Tate, et al. 2004; Tate 1978; Balance Hydrologics 2007.

²² Higbee 2007.

the project area, is approximately \$9,000 per year. Army Corps projects represent the high end of costs for stream and river restoration work; the costs in this case equated to about \$2,700 per lineal foot. To make this project comparable to the SMURFF plant, a length of 5,000 should be used, or about half the size of the Army Corps project. Thus, the costs of this project were halved which results in annualized costs over a fifty year period of approximately \$967,600 per year.

The Army Corps project should have similar water quality treatment capacities as the SMURFF plant in respect to sediment removal, nutrient absorption, and breakdown of grease and oils, as described above. This riparian area also has the inherent capacity to reduce bacteria and viruses. The ultraviolet light treatment for pathogens is likely a more consistently reliable treatment for the latter; therefore, this may be the one area in which natural riparian system do not have equal treatment capacity. However, the primary objective of this project is flood damage reduction, and water quality benefits would be incidentally related to the creation of a vegetated floodplain corridor. Thus, it is unfair to compare the total cost of the Army Corps project with the SMURFF plant because many of these project costs should be allocated to the flood damage reduction objective, and such a cost allocation was not performed. However, even without a water quality cost allocation, the annualized cost of the Wildcat Creek project (\$967,600) is less than the SMURFF plant (\$1.3 million per year).

In 2000, the Wildcat-San Pablo Creeks Watershed Council implemented a 5,000-lineal-foot project along a reach in the same corridor to bring the project into conformance with the latest in geomorphic and engineering design knowledge and to provide a stream system with improved environmental values that could better maintain itself in an equilibrium condition. This project restored the stream channel to new dimensions, increased its sinuosity, and increased the average width of the riparian corridor from 30 to 55 feet. The 2000 project represents a major design and construction effort of the county and a non-profit organization; however, the project represents the lower end of the costs spectrum for restoration work at only \$23 per lineal foot, for a total cost of \$116,600 (2008). The Army Corps did provide a design document that helped validate the restoration design prepared by the non-profit organization. If the cost of that document is included, the cost of this restoration project is increased to \$239,300, with a per lineal foot cost of \$48 (2008 dollars). The annualized cost of this restoration project for a fifty-year period is \$19,700 per year including maintenance costs (in 2008 dollars). If we add in the original land acquisition costs included in the earlier Corps project, the average annual cost increases to \$253,600 and the cost per lineal foot to \$785 (in 2008 dollars). Thus, the Wildcat Creek case allows us to compare very high and low range costs associated with stream restoration projects that occurred along the same reach of channel at different times.

Fencing/Easement/Restoration Projects.

Protecting With Easements and Fencing

The restoration of degraded riparian corridors is a relatively expensive method of attaining their benefits compared to the more cost effective method of retaining the benefits through the protection of stream and floodplain corridors. Two of the most

effective and commonly used methods to protect and or restore streams are to fence out livestock and/or purchase conservation easements to remove riparian corridors from grazing or other agricultural uses. Only very limited cost information is available for purchase of conservation easements to protect riparian resources in the San Francisco Bay Area. The Napa Valley Regional Natural Resources Conservation Service office located in an agrarian region contiguous with the more urban part of the San Francisco Bay Area, reports that it is exceedingly rare for the federal wetland and floodplain reserve programs to be used to acquire easements in the more urbanized coastal, high value urban and agricultural lands. This rarity of conservation easements is a result of the fact that most of the Bay Area landowners generally want in-fee purchase for the total land values, and land trusts are reticent to accept the maintenance and management costs associated with conservation easements for relatively small linear tracts of property characteristic of riparian corridors as opposed to the advantages of purchasing large parcels of property for open space and wildlife refuges. The U.S. Department of Agriculture reports that its wetland reserve program was used once in the past decade in the Bay Area in partnership with Marin Audubon Society in east Marin County, where the easement price was capped at \$5,000 an acre. Most wetland reserve programs are capped at \$3,000 per acre federal acquisition costs, but coastal counties in California are allowed a \$5,000 cap. In Stanislaus County (inland from the Bay Area) easements purchased in 1999 along the Tuolumne River required a combination of funding sources to cover costs as high as \$4,000 an acre.²³ If the per acre cost of \$5,000 is applied to a 150-foot-wide riparian corridor it puts the cost of a riparian easement at \$86,000 for 5,000 lineal feet of stream. Fencing costs to protect riparian corridors can typically range from \$19,000 to \$26,000 for a 5,000-foot length of creek (including both banks).²⁴ A fencing cost of \$26,000 results in an annualized cost of about \$1,900. The costs estimates in this paper focus on the costs of both in-fee acquisition of land and restoring a 5,000 foot riparian corridor in urban western Contra Costa County and represent low, moderate and high costs associated with an urban environment.

Typical Restoration Costs

The above costs provide actual figures for expensive and low cost projects; therefore, it is also useful to estimate costs that better represent average costs for stream restoration projects. Based on the experience of the author, who is involved in implementing stream restoration projects and comparing costs with other practitioners, a reasonable average lineal foot cost for a project of this scope conducted in 2008 in the San Francisco Bay Area would range between \$300 and \$700. Using the higher average value of \$700 per lineal foot, a reasonable capital cost estimate for a “typical” 5,000-foot riparian restoration project in the median range would be \$3.5 million. Adding in average annual maintenance costs of \$5,000 per year brings the annualized costs over a fifty-year period to \$227,000 per year.

Thus far, we have established that our total project cost comparisons on an annualized basis are \$1.3 million per year for the SMURRF plant, and the restoration projects have a wide range of annual costs, from \$967,600 for a large multi-objective federal project to

²³ Blake 2008 and Fourkey 2008.

²⁴ Blake 2008.

\$227,000 for “typical” restoration projects and \$1,900 for fencing projects. Research indicates that the wide riparian and floodplain corridor and project length of the Wildcat creek case should be more than adequate to insure equivalent water treatment functions and benefits as the plant except possibly virus control. The reason we evaluated a 5,000 foot restoration corridor on Wildcat Creek is that this length of corridor, if it was viewed in isolation from the rest of the watershed, would produce approximately an equivalent average daily flow of about 0.6 cfs compared to the SMURRF plant average daily discharge of 0.5 cfs. However, we do have to recognize that we are probably not comparing equivalent water treatment functions because the average daily discharge that flows through this restored section of Wildcat Creek—because it is part of a larger watershed—is closer to 7 cfs, as opposed to the 0.5 cfs treated by the plant. Again it is reasonable to assume that the riparian corridor is affecting the quality of the total average daily 7 cfs. We could correct for the equivalent costs for “treatment” of 0.5 cfs by proportionately lowering the costs to approximate the costs per cfs treated. For example the treatment by a riparian system of 7 cfs average annual flow comes at a cost of \$877,200 for the large, multi-objective federal project and therefore, theoretically, the costs for treating only 0.5-0.6 cfs would be about \$63,000.

Multiple Benefits

This analysis so far restricts itself to only the comparable water treatment functions of the riparian system and the SMURRF plant. However, there are additional benefits of both the SMURRF Plant and the riparian systems that should be recognized and these can be described in either qualitative or quantitative terms.

The SMURRF plant also serves as a public education facility in which visitors can tour the plant and read interpretive displays about the plant and stormwater management. City records indicate that the plant averages about 230 visitors a year.²⁵ Some of the water treated by the SMURRF plant is sold to customers, including the City of Santa Monica, for landscape irrigation and use in dual plumbing systems. Currently the water supplied by the plant is used in the new dual-plumbed Santa Monica Public Safety Building housing the police and fire departments, and the water is used to irrigate the grounds of the civic center parking structure, city parks, and cemetery, and Caltrans applies it to Santa Monica freeway landscaping. The income receipts for this water use currently total \$32,000 a year based on 2003-2004 records.²⁶ New water customers just now hooking up include a state-of-the art Rand Corporation Building and a commercial building known as The Water Gardens, which will be dual plumbed. It is estimated that this may increase the use of the water from the plant by 20 percent; therefore, receipts in the next few years could reasonably expect to increase to almost \$40,000 annually. Unused flows return to the regional sewage treatment plant. It is very hard to predict future demand for the water cleaned by the plant because high volume estimates would be based on demand for newly constructed dual plumbing systems. The city water resources engineer’s best estimate of a potential full use annual income if there is a demand for the full 230,000

²⁵ Higbee 2005.

²⁶ Lowell 2005.

gallons a day (based on a three tier pricing rate structure) is about \$390,000 per year by 2016.²⁷ If we apply some optimistic assumptions about increasing demand over time for the water supply created by the plant, which includes a demand for the full amount treated by 2016, the plant will bring in an average annual income, based on a plant life of twenty years, of about \$150,000 per year. (The plant may reasonably bring in total revenue of about \$3,000,000 during its life span.) This benefit helps offset the annual maintenance costs of \$216,900 (\$2008) which lowers the total annualized costs of the plant to about \$1.1 million a year.

The Wildcat Creek restoration project has enabled an adjacent regional trail to be developed, and the project serves as a part of the educational opportunities for a very disadvantaged elementary school serving an impoverished community located next to the creek. The creek restoration area is also the focus for a Richmond High School environmental education program that serves about 25 students a year. The elementary school located next to the restored creek banks serves about 307 students a year. The project also serves as an anadromous steelhead (a threatened species) fisheries habitat restoration project and supports habitat and protection for the endangered California clapper rail and salt marsh harvest mouse. It is known that the restored riparian system offers habitat for mammals, raptors and other birds, and a range of aquatic organisms. One of the important objectives of the restoration project is to protect 200 acres of high quality brackish marsh from degradation by sedimentation. Environmental organizations hold regularly scheduled birding and wildlife hikes along the creek. The restored creek serves as the location for an on-going inner city youth environmental stewardship, training, and employment program that has involved an average of another 15 students on an annual basis for the past ten years, and there are varying numbers of community based water quality monitoring volunteers. This particular program has attracted over \$200,000 in grants and donations to the community's desperately needed youth programs in a ten-year period.

Water Quality Program Policy Implications

Water quality programs have followed a logical progression from the first emphasis on the treatment of "point pollution" discharges from sewage treatment plants and industrial facilities. The second generation of water quality programs has focused on the avoidance and treatment of polluted runoff from "non-point" sources. The U.S. Environmental Protection Agency has identified six categories of non-point sources of polluted runoff including: urban properties and streets; farm fields, pastures and operations; forestry activities; marinas and recreational boating; hydromodifications of streams such as channelization, bank stabilization projects and stormwater discharge increases; and alteration of wetland and riparian areas. The three strategies applied to managing non-point sources pollution are prevention of pollution at the source, control and reduction of unavoidable runoff, and cleanup and remediation of pollutants that remain. Best management practices including environmentally sensitive land use and development site plans, and stormwater catchment and detention and filtering systems are common

²⁷ Lowell 2005.

examples of source control and remediation. Protecting riparian areas, of course, directly addresses the avoidance of pollution from environmentally damaging hydromodifications and alterations of wetland areas. The evaluation most often missing from this non-point source management model is the recognition of the role of natural riparian areas to serve as part of the remediation system for runoff that escapes catchment and or detention near its source. This gives added value to riparian areas of not only addressing a part of the strategy to avoid degradation but also pro-actively remediating the impacts of various causes of non-point source pollution. A possible practical application of this information could be to assign water quality credits for meeting TMDL requirements in a watershed through the implementation of stream protection and restoration projects.

Current water quality budgets and priorities should evaluate the expenditures that have gone into treatment plants in the past and the expenditures that could occur in the future with mechanical stormwater treatment facilities, and use this evaluation as a budgeting framework for addressing the next generation of treatment systems. The comparisons described here indicate that projects designed to restore degraded stream environments as fully functioning water treatment systems (which provide a significant range of other environmental benefits) can have a wide range of annual costs, from \$967,600 for a large multi-objective federal project to \$227,000 for “typical” restoration projects but involve discharge amounts much greater than those addressed by a treatment plant. More attention could be given to the purchase of riparian easements for unprotected riparian corridors in suburban and urban areas to provide cost-effective long term benefits as part of a protection program which supplements regulatory programs. The costs of these alternatives can be compared to the annual cost of the stormwater treatment plant of around \$1.3 million for a system that treats a fraction of the amount of water and that has inherent limitations on additional environmental benefits. This represents a substantial magnitude in cost differences while the benefits of riparian environmental protection or restoration should be viewed as a more sustainable approach for attaining many more benefits through time.

Comparison of Project Costs (2008 Dollars)

US Army Corps of Engineers Wildcat Creek Project	Wildcat-San Pablo Creeks Watershed Council Wildcat Creek Project	SMURRF Plant
<p>1986 U.S. Army Corps of Engineers multi-objective flood damage reduction project of 10,000 foot length</p> <p>Estimated construction costs: \$26,673,400</p> <p>Estimated permanent rights of way and relocation costs for \$3,687,700</p> <p>Total project costs: \$30,361,100</p> <p>Design and construction per lineal foot: \$2,700</p> <p>Average Annual Maintenance costs: \$9,000</p> <p>These costs were reduced by 50% to be comparable with a stream length (5,000 feet) that would provide similar water quality benefits.</p>	<p>2000 Watershed Council Restoration Project (executed by Contra Costa County and a non-profit). Channel excavation and partial revegetation for 5,021 feet of project channel</p> <p>Costs: \$116,600 for design and construction by the watershed council</p> <p>\$127,700 Army Corps planning</p> <p>Total Cost: \$239,300</p> <p>Design and construction per lineal foot including Army Corps planning; \$48</p> <p>Average Annual Maintenance including management of the watershed council: \$4,500.</p>	<p>Constructed in 2000. Values provided by City of Santa Monica</p> <p>Construction costs: \$14,761,900</p> <p>Land Costs: The land used for construction of the SMURRF plant was in city ownership and is an odd shaped parcel, which made it infeasible to develop. The Los Angeles Assessors' office values the parcel of land, 2,783 sq. ft at \$33,300.</p> <p>Average Annual Management costs: \$216,900</p>
<p>Total Annual Average Cost for 5,000 length project \$967,600</p>	<p>Total Average Annual Costs \$19,700 With Corps land purchase & relocation costs: \$253,600</p>	<p>Total Average Annual Cost \$1,283,800</p>

Data from:

- Contra Costa County Wildcat and San Pablo Creeks Project Cost Summary
- 1985 U.S. Army Corps of Engineers Design Memorandum for the Wildcat- San Pablo Creeks Flood Control Project, Richmond, Contra Costa County, Calif.
- City of Santa Monica
- Cost annualization computed over a fifty year analysis period with a 6% discount rate (Capital Recovery Factor = 0.06344)

Comparison of Projects Benefits

Summary of Benefits of the Wildcat Creek Project	Summary of Benefits of the SMURRF Project
<ul style="list-style-type: none"> • 6.9 acres of high quality riparian corridor with a diversity of species and forest tiers to support wildlife habitat • 5,000 lineal feet of fish habitat and habitat for other aquatic species • Water quality functions: sediment collection and storage; nutrient uptake and conversion; bacteria reduction • Watershed Council conducts biannual community sponsored program of trash clean up • Water quality functions for average annual flows and greater magnitude flows • Flood storage and conveyance sufficient to protect the surrounding community from the damages associated with the one in one hundred year flood. Estimated average annual savings from avoided flood control damages calculated by the Army Corps of Engineers in 1986 for the period 1988-2088 is \$1,498,000 (\$2008). • Active, hands-on environmental education experiences including water quality monitoring, and cleanup and revegetation projects for 340 plus elementary school students and other local public schools and community members • Youth training and employment projects (ten year program attracted more than \$200,000 to community youth programs) • Riparian corridor bird habitat and bird watching for hikers who use the creekside trail. (The Sierra Club, schools and other organizations sponsor hikes.) • Riparian corridor and floodplain protect 250 acres of downstream brackish and saltwater wetlands and San Francisco Bay water quality. • Endangered species habitat 	<ul style="list-style-type: none"> • 1,200 sq.ft. educational facility for the public. Visitors recorded averaged 230 annually • Partial trash collection • Treatment of low-flow dry weather runoff • Water Quality functions: sediment removal; nutrient removal to a water treatment plant for further treatment; bacterial treatment, and virus control • Protection of the Santa Monica beach and the surfers and other public who frequent the ocean in the area • Income from the sale of recycled water averages \$153,000 a year. • Water conservation for avoidance of use of equivalent potable supplies.

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Acknowledgements: The author is grateful for substantial review and contributions to this paper (including calculations in The Comparison of Projects Costs Table) by Steve Cowdin, an economist at the California Department of Water Resources in Sacramento, and for the review provided by Dr. Bo Cutter, Assistant Professor, Environmental Studies, UC Riverside.

From: [Sandra Goldman](#)
To: [Arnold, Judy](#)
Cc: [Rice, Katie](#); [Thorsen, Suzanne](#); [Kathy Goldsmith \(kaybg@comcast.net\)](mailto:kaybg@comcast.net)
Subject: Friends comments regarding KWPOA letter dated July 24, 2013
Date: Tuesday, September 03, 2013 2:46:37 PM
Attachments: [Friends SCA-Comments re KWPOA letter.pdf](#)

Hello Judy,

The attached letter responds to only two issues raised by KWPOA's letter asserting that the SCA Ordinance should not apply to Kent Woodlands, specifically the contentions that their creeks are seasonal and don't have fish. Neither statement is true, as documented in our letter.

We urge the Supervisors to maintain robust creek protection measures.

Sandy



Friends of Corte Madera Creek Watershed

P.O. Box 415 • Larkspur • California 94977

info@friendsofcortemaderacreek.org (415) 456-5052 www.friendsofcortemaderacreek.org

September 3 2013

Marin County Board of Supervisors
Supervisor Judy Arnold, President
3501 Civic Center Drive,
San Rafael CA 94903

RE: KWPOA letter dated July 24, 2013 regarding
the Stream Conservation Area Ordinance

Dear Supervisor Arnold:

The Kent Woodlands Property Owners Association (KWPOA) sent a letter dated July 24, 2013 to the Board of Supervisors regarding the SCA Ordinance. In that letter, KWPOA concluded that, "governance under an SCA ordinance is not suitable for [the Kent Woodlands] area." We are writing to rebut one of their main rationales for this conclusion, which was stated in their letter as follows:

"Moreover, Kent Woodlands contains only "seasonal" streams that DO NOT CONTAIN ANY FISH."

Here are some documents and observations that show that some creeks in Kent Woodlands do have water the year-round and contain steelhead/rainbow trout, as well as other fish species. For your information, *Oncorhynchus mykiss* (*O. mykiss*) are called steelhead trout if they are anadromous (undergo physical changes and migrate to saltwater) or rainbow trout if they remain in freshwater for their whole lives. The Corte Madera Creek Watershed contains both steelhead and rainbow trout populations.

Leidy, Becker, and Harvey reported in 2005 on historical distribution and current status of steelhead/rainbow trout in San Francisco Bay tributaries (<http://www.cemar.org/pdf/marin.pdf>). Their report states:

"Tamalpais Creek flows west to east along Woodland Road and joins Corte Madera Creek southeast of the College of Marin in Kentfield. Staff from DFG electrofished Tamalpais Creek in August 1969 upstream of the Evergreen Street Bridge. A total of 21 *O. mykiss* (60-90 mm) were collected in a 30-meter reach (Jones 1969). The DFG report stated the area extending from Ridge View Road downstream to a Corps flood control project as containing nursery habitat, and estimated the steelhead population in the stream to be 552 based on a density of 21 per 30 meters (Jones 1969).

"In July 1998, Leidy sampled a 30-meter reach of Tamalpais Creek centered on the lowermost Woodland Road crossing. He collected two *O. mykiss* (65, 87 mm FL) (Leidy 2002). Steelhead YOY were found in Tamalpais Creek during observations in 2000 and in 2001 (Jones 2001). In April 2002, Leidy and Lewis observed a single juvenile *O. mykiss* (estimated 75-100 mm TL) off Woodland Road near Laurel Way (Leidy and Lewis 2002)."

Tamalpais Creek is critical habitat for both coho salmon and steelhead trout. The Endangered Species Act (ESA) requires the Federal government to designate critical habitat for any species it lists under the ESA. Critical habitat is defined as:

1. Specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and
2. Specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation.

NOAA Fisheries designated coho critical habitat on May 5, 1999 -
(<http://www.nmfs.noaa.gov/pr/pdfs/fr/fr64-24049.pdf>).

NOAA Fisheries designated steelhead critical habitat on September 2, 2005 -
(<http://www.gpo.gov/fdsys/pkg/FR-2005-09-02/pdf/05-16389.pdf#page=1>).

Marin County staff report on the Morgan project at 111 Woodland Road in 2007

(http://marin.granicus.com/MetaViewer.php?meta_id=281780&view=&showpdf=1) states:

“Tamalpais Creek is a known Steelhead fishery and could also support Coho Salmon.”

And closer to home, here is an excerpt from an item in the KWPOA newsletter from February 2007
(http://www.kwpoa.com/_newsletters/feb2007.pdf):

...Engineers hope to restore the creek for its historic steelhead run and simultaneously use some of the same environmental enhancements to decrease flood risk. The program aims for comprehensive flood protection and damage reduction, conserving and enhancing the natural creek network and aquatic habitat, and providing an affordable local financing plan agreed upon by the community. If the program succeeds, Kent Woodlands schoolchildren on their way to school could once again watch spawning steelhead and salmon coming up Tamalpais Creek. ...

These resources show that *O. mykiss* have been documented in Tamalpais Creek on a regular basis in very recent history. The presumption should be that *O. mykiss* still use the creek at the present time. Clearly, the KWPOA's assertion that there are no fish in Tamalpais Creek is contradicted by the above documentary evidence, so they cannot reasonably conclude that the SCA ordinance is not suitable for the Kent Woodlands—at least not on the basis of an absence of fish.

Seasonal Streams: The life cycle of salmonids (salmon and trout) enables them to use even seasonal streams as spawning habitat, with the young-of-the-year moving upstream or downstream to areas with year-round pools. Steelhead in particular are known to have diverse life cycles depending on the local geography/climate and will use estuary habitat at a relatively small size, so it is plausible that the spawning habitat in Tamalpais Creek could be supporting steelhead in the estuary. Furthermore, isolated pools are very capable of supporting over-summer survival of salmonids, especially the durable steelhead, if the dissolved oxygen remains high (>7 mg/L) and temperatures low (<19°C).

The KWPOA's assertion that, "Kent Woodlands contains only 'seasonal' streams," also appears to run counter to what can be observed in Kent Woodlands. While KWPOA does not provide a definition of "seasonal stream," we think they mean that the creeks completely dry up for part of the year. But on August 30, 2013 we observed water in Kent Woodlands creeks at the following locations:

- Evergreen Drive bridge over Tamalpais Creek
- The creek running parallel to Greenwood Drive at intersection with Evergreen
- North Ridgewood bridge over Tamalpais Creek
- Woodland Road bridge over Tamalpais Creek near Laurel Way.

Any of these locations could be supporting *O. mykiss* spawned in Tamalpais Creek and reared in pools in Tamalpais Creek or in the estuary of Corte Madera Creek. This year, 2013, has been a year of historically dry conditions and the fact that water remains in Kent Woodlands creeks at the end of August does not support KWPOA's assertion that Kent Woodlands contains only seasonal streams. In any event, the SCA is meant to apply to creeks that are intermittent as well as perennial, and Tamalpais Creek, the creek draining most of Kent Woodlands, is considered a perennial stream.

And finally, there are other native fish in Tamalpais Creek that tolerate warmer water than salmonids and that are worth preserving. These include California roach, three spine stickleback, and sculpin. The fact that Kent

Marin County Board of Supervisors
Letter re: KWPOA Letter dated July 24, 2013
September 3, 2013

Page 3

Woodlands residents seldom see fish in Tamalpais Creek these days only reinforces the need for the SCA Ordinance to be enacted and faithfully followed by residents of the County.

Sincerely,



Sandra Guldman
President, Friends of Corte Madera Creek Watershed

c: Supervisor Katie Rice (email)
Suzanne Thorsen (email)

Kathy Goldsmith, President, KWPOA (email)



RECEIVED
SEP 13 2013
MARIN COUNTY
BOARD OF SUPERVISORS

Marin County Board of Supervisors
Supervisor Judy Arnold, President
Marin County Civic Center
3501 Civic Center Drive
San Rafael CA 94903

Sept. 9, 2013

Re: Stream Conservation Area Ordinance

Dear Supervisors:

We are responding to Sandra Guldman's September 3, 2013 [Friends of Corte Madera Creek Watershed] letter addressed to you. It agrees with our conclusion that there are no fish in Kent Woodlands' seasonable streams. That, was our statement.

We thank the Friends of Corte Madera Creek Watershed for their letter which shows that 44 years ago, before the U.S. Army Corps of Engineers' flood control box or conduit was built, there were, in fact, some fish here. Sadly, since then, the species became endangered, was declared so, and has subsequently vanished from Kent Woodlands.

For that reason, we don't feel the Countywide streams ordinance with its arbitrary set backs is appropriate for Kent Woodlands zoning. Under our governing documents, design review already applies substantial set-backs from our creeks; additional regulations would impose redundant, time consuming steps to owners' projects.

We have no barriers to fish: no dams, no fishing pools for people to take fish, nor do we allow toxins to be dumped into the creeks. We would welcome the fish, but there are none, unfortunately. The Friends of Corte Madera Creek Watershed claim of fish in our creeks rests on their presumption thereof, not on facts; their search for fish in our streams confirmed our factual position: there are no fish.

Sincerely,

A handwritten signature in black ink that reads "Kathy Goldsmith". The signature is written in a cursive, flowing style.

Kent Woodlands Property Owners Association Board of Directors
Kathy Goldsmith, president

cc: Friends of Corte Madera Creek Watershed

Thomas G. Lambach

P. O. Box 206
Kentfield CA 94914

Marin County Board of Supervisors
Marin County Civic Center
San Rafael CA

September 25, 2013

Re: Streams Ordinance

Dear Supervisors:

Initially, the streams ordinance was to me, and others, about protecting salmon but many streams, particularly "ephemeral streams," lack any fish; now the county's goal is to improve streams' "water quality". Yet no "water quality" standard or quantitative goal therefor is stated. Conversely, no "water quality" deficiency has been quantified. Lacking such objective specificity, what's the county's justification for taking an owner's property rights?

This ordinance's mandated setbacks from all streams, regardless of their relevance to fish or "water quality" is an arbitrary exercise applied *only* to private properties, all government agencies are excused and roadway runoff is not addressed. Furthermore, setbacks' claimed benefits are moot until someone requests a permit, with the worst offenders, those with the most severe and costly problems, the last to apply. The setback approach is time inefficient and completely omits addressing roadway runoff, a major pollution source.

The 2007 county wide plan includes laudable goals but then presumptively uses stream setbacks rather than science to implement those goals. You Supervisors are making the best out of this flawed premise and I thank you for your considerable efforts to bridge the error.

In five or so years the 2007 plan will be reviewed for update. A footnote to your contemplated amendment would be that the plan's update *apply science to the water quality issue, watershed by watershed, and so incorporate scientific methods in the new plan's watershed implementation goals.*

Science not setbacks.

Thank you for your work to improve our fine county.

Sincerely,

Thomas G. Lambach

From: [Garril Page](#)
To: [Tejirian, Jeremy](#); [Thorsen, Suzanne](#); [Stephanie Thomas](#)
Cc: [Rice, Katie](#); [Sears, Kathrin](#); [Kinsey, Steven](#); [Arnold, Judy](#); [Adams, Susan](#)
Subject: Kaye Design Approval, 2013-0247
Date: Wednesday, September 25, 2013 5:36:56 PM

Brian Crawford, Marin CDA
Sent by USPS as email contact is "Service Unavailable" on County website

re Kaye Design Approval, 2013-0247

Please note: the September 24, 2013, Approval of this project effectively removes Sleepy Hollow from any SCA designation. Criteria used by the Planning Division, including the adopted statements of CWP Consistency, will be binding on the County.

Retroactive application will be met with legal challenges.

Garril Page
70 Fawn Drive
San Anselmo

From: [Randy Greenberg](#)
To: [Kinsey, Steven](#); [Sears, Kathrin](#)
Cc: [Crosse, Liza](#); [Alden, Leslie](#); [Crawford, Brian](#); [Lai, Thomas](#); [Thorsen, Suzanne](#)
Subject: recommendation re SCA ordinance
Date: Wednesday, September 25, 2013 6:50:35 PM
Attachments: [SCA.ltr on ord to Kinsey-Sears.9.25.13.docx](#)

Please see attached re a recommendation for the draft SCA countywide ordinance.

Randy Greenberg
rgreenberg11@gmail.com
415-435-2769

To: Supervisors Steve Kinsey & Kate Sears
CC: Liza Crosse, Leslie Alden, Brian Crawford, Tom Lai, Suzanne Thorsen
Date: 9/25/13
RE: SCA ordinance

We thank you for meeting with and listening to us on the SCA issue. We strongly support what we understand to be the recommendations in the 10/1/13 staff report for a countywide ordinance with ongoing assessment to enable an informed determination if future amendments to the ordinance and Countywide Plan are necessary.

We would like to suggest one change to the draft countywide ordinance as recommended by the Planning Commission.

The argument has been made that the current draft SCA ordinance seeks to maintain degraded conditions, rather than support needed improvements. We are sympathetic to this argument. If the county allows building closer to waterways than policy allows, then there should be some quid pro quo. Requiring some net improvement in SCA or stream conditions also adds to property values. We support the following approach, which is contained in the current draft LCP:

Draft LCP. p. 33 (p. 41 online). C-BIO-25 Stream Buffer Adjustments and Exceptions.

3. A Coastal Permit authorizing a buffer adjustment shall require measures that create a net environmental improvement over existing conditions, in addition to what is otherwise required by minimum applicable site development standards. Such measures shall be commensurate with the nature and scope of the project and shall be determined at the site level, supported by the findings of a site assessment or other technical document. ... [the text goes on to list a non-inclusive list of possible improvement measures, including improving runoff quantity or quality (e.g. permeable surfaces); elimination of invasive species; increasing native vegetation; improvement of bank or in-stream conditions; reduction in need for irrigation; et al.

We appreciate your consideration of this issue.

Priscilla Bull, Randy Greenberg, Marge Macris, Barbara Salzman, Susan Stompe, AnnThomas

From: peggycreeks@comcast.net
To: [Patterson, Diane](#); [Kinsey, Steven](#); [Adams, Susan](#); [Arnold, Judy](#); [Rice, Katie](#); [Sears, Kathrin](#); [Lai, Thomas](#); [Thorsen, Suzanne](#)
Subject: Oct 1 BOS Mtg: Comments on Stream Ordinance from SGV Stewards
Date: Friday, September 27, 2013 1:51:38 PM

From: San Geronimo Valley Stewards
Peggy Sheneman 415-488-4426

To: Supervisors Steve Kinsey, Susan Adams, Judy Arnold, Katie Rice, Kathrin Sears
Assistant Clerk of the Board, Diane Patterson
Community Development Agency: Thomas Lai, Suzanne Thorsen

**SAN GERONIMO VALLEY STEWARDS COMMENT ON INTERIM
STREAM ORDINANCE-- OCT. 1, 2013, TUES 10:30 am**

On October 1, the Marin Board of Supervisors will consider an interim stream ordinance for San Geronimo Valley.

San Geronimo Valley Stewards thank Thomas Lai, Suzanne Thorsen, and CDA staff for their accessibility and interactive communications over the past several months.

We appreciate that the Planning Commissioners and CDA staff gave thoughtful consideration to difficult issues, on which their hands were tied by the 2007 Countywide Plan.

SCA WORK PROGRAM

The Board will also consider an SCA Implementation Work Program. SGV Stewards reserve comments on the Work Program, until we have read it thoroughly and discussed it with other Marin homeowner associations, as well as conservation groups. Two business days is not sufficient time to evaluate this Work Program.

Please, we request that the Board of Supervisors continue on calendar until its meeting October 29, 2013, any decision on the Work Program.

SGV STEWARDS CONDITIONAL SUPPORT FOR TEMPORARY STREAM ORDINANCE

The temporary ordinance will apply only to San Geronimo Valley, not to southern or eastern Marin. It will expire automatically on April 28, 2016, or upon adoption of amendments to the Countywide Plan or a new SCA ordinance.

Since February 2008, over 900 families in our Valley have been punished by a series of moratoriums, extensions, and court orders.

San Geronimo Valley Stewards SUPPORT adoption of the temporary stream ordinance, AS A LIMITED TWO-YEAR EXPERIMENT.

We request the Board adopt the temporary ordinance on October 1, so it can take effect immediately.

Our support is on the condition and FOR ONE REASON: The temporary ordinance will LIFT THE COURT INJUNCTION. For the first time in five years, 933 families homes within the Stream Conservation Area (SCA) will be allowed to repair, maintain, and replace existing structures, and add up to 500 square feet. There will be reasonable exemptions (at no charge), and ministerial Tier 1 permits for small home projects.

WE RESPECTFULLY REQUEST FROM BOARD OF SUPERVISORS:

1. Please use the LIDAR stream map that the County published in September 2013.

Do not return to the old inaccurate stream maps. Do not add new streams or change boundaries during this two-year experimental ordinance.

The LIDAR (Light Detection and Ranging technology) map shows 933 parcels in San Geronimo are fully or partially within the Stream Conservation Area (SCA). This is about half of the 1,925 parcels in the San Geronimo Valley. LIDAR has mapped the channels of perennial and intermittent (seasonal) streams, plus the uphill ephemerals that flow into the major channels.

Please do not create uncertainty by changing the stream map during these two years. Families must be able to plan the use and enjoyment of their land by knowing where the SCA is located. Home sellers must disclose to home buyers the clear lines of the SCA as shown on the map. Owners seeking to refinance mortgages cannot afford depressed appraisals caused by adding new streams or changing boundaries.

The LIDAR map is the best source we have, at this time, without intrusive government inspections of private properties. We are informed the LIDAR map was created by airplane flights over Marin County in 2010. Some questions about surface run offs cannot be determined by LIDAR, such as-- Does the water have a bed and a bank (the geophysical definition of a stream)? Does the water run in a natural direction, or was it diverted by man? Is this standing water, or a flowing watercourse with 100 feet of riparian vegetation? During this two-year experiment, homeowners should not be harassed with backyard examinations.

2. Confirm the Permit Fees.

For small home projects, Tier 1 Stream Permit flat fee is \$250.

Please clarify: Does this \$250 include site assessment by County staff?

For larger projects, Tier 2 Stream Permit flat fee is \$2,500,
plus \$5,000 deposit for initial environmental study under CEQA.

3. Equalize the fees for trees.

The tree removal permit fee is \$150 for trees outside the Stream Conservation Area. Up to two protected trees each year can be removed from a developed parcel outside the SCA, with no permit. Development Code chapter 22.62.

The stream ordinance would charge \$250 for a Tier 1 Permit to remove any single protected tree within the SCA.

Please equalize the fees at \$150 for tree removal.

4. Publish a "tool kit" and meet to guide homeowners.

Please provide adequate funding to develop a "tool kit" and staff support to guide homeowners through small home projects. We need plain language explaining development standards, SMP's (standard management practices), table of Common Residential Improvements in the SCA, and flow charts for project permits. These materials should be available on line on the SCA website, as well as over the counter at the Planning Department.

A community meeting with CDA staff would be helpful. San Geronimo Valley Stewards offers to co-host with other SG Valley organizations.

5. Clarify how CDA staff will apply the ordinance.

We request that CDA clarify how staff will apply three Development Code changes under the new ordinance. We questioned the language, but for procedural and administrative reasons, CDA staff suggested the clarification be in published CDA guidelines:

A. Diseased trees should be removed under exemption with no permit. Tree removal for reasons of hazard or threat to public health/safety is exempt under Stream Ordinance section 22.63.020. B.1.c. (on developed parcels, without determination) and under section 22.63.020.B.2.c.) (on vacant lots, with determination). This language is different from the Marin Tree Ordinance (chapter 22.62.040), which expressly refers to diseased trees.

San Geronimo has a continuing problem with trees infected by sudden oak death, pine beetles, and other pathogens and insects. We must clear out these sick trees fast, so they do not infect nearby healthy trees. We cannot afford expensive arborist reports, in addition to the usual \$500 cost for tree cutter services.

The Board should request CDA to issue standards stating the stream permit exemption is available for diseased trees.

B. Discretionary Land Use Permits should not be required for projects that are exempt or Tier 1 under the Stream Ordinance.

Two sections of the Stream Ordinance could be misread to require a discretionary

permit under the Land Use Permit chapter 22.06. Both sections state that the exemptions from Land Use Permit laws do not apply within the Stream Conservation Area. (See section 22.63.020. A.1. page 50 and section 22.06.050 (page 13).

Does this mean that the homeowner with a small project (which is exempt or qualifies for Tier 1 ministerial permit under the stream ordinance) must comply with the long and expensive process of a discretionary Land Use Permit?

CDA staff says no, it is intended that Chapter 22.06 (Land Use Permits) would not apply at all in the SCA. Instead, all permits in the SCA are governed by Chapter 22.63.

We request the Board to direct staff to clarify in CDA published guidelines, that discretionary Land Use Permits are not required for projects that are exempt or Tier 1 under the stream ordinance.

C. Clarify similar drafting for Design Review, Second Units, and Environmental Protection standards.

The stream ordinance carves out exceptions to other sections of the Development Code. (See BOS Attachment #4, pages 12 and 13, Subjects 6, 7, and 8.) These would exempt or exclude properties in the SCA from certain provisions of the Development Code dealing with Design Review, Second Units, and Environmental Protection standards. (For full explanation, see BOS Attachment #6, pages 13-21.)

Staff has explained this is because the exemptions or exceptions for SCA properties are fully covered by the Stream Ordinance; the other Code sections simply do not apply. We ask CDA staff to clarify in its published standards that homes in the SCA can still qualify for Design Review, Minor Design Review and Second Units, provided they comply with the Stream Ordinance.

6. This experimental ordinance must end in two years.

SGV Stewards request: By November 28, 2016, the temporary ordinance must expire automatically, without Supervisors' vote. We will work toward the goal of ending it sooner, by urging adoption of amendments to the Countywide Plan, and replacing the temporary ordinance with a new, permanent and effective stream protection program.

Although Spawn demanded the court to order a stream ordinance, this apparently does not satisfy Spawn. The Court ordered the ordinance must be consistent with the flawed and outdated 2007 Countywide Plan.

The Countywide Plan, when translated into this ordinance, encourages citizen disrespect for the law. The 100 foot setback cannot be enforced against historic homes on small lots, and is not proved to be necessary. It makes no common sense to mandate setback from every "ephemeral stream" (surface run off only when it rains).

The 2007 Countywide Plan does not follow the recommendations of the 2010 Salmon Enhancement Plan (SEP), for which the County paid over \$300,000 in experts. SEP recommends a setback of only 35 feet from perennial and seasonal streams. SEP recommends that ephemeral functions be protected with drainage techniques, as more effective than a 100-foot setback.

Missing from the 2007 Countywide Plan is the active support of 3,900 families across the County who live on the creeks and care for the habitat every day. We own the land on both sides of the creeks, and we can control access for research and restoration. Marin County cannot accomplish its mission without homeowners' enthusiastic participation.

7. Supervisors should commit Marin County to amending the 2007 Countywide Plan and adopting an effective stream program for the entire County.

San Geronimo Valley Stewards recommends a temporary stream ordinance be adopted now for the entire County. We appreciate the decades of work by Marin Conservation League, Friends of Corte Madera Creek, Mill Valley Streamkeepers, and other conservation groups. Despite these efforts, the water pollution, flood damage, and armored creekbanks continue unchecked in other parts of Marin. We have a difficult time rationalizing further delay in adopting now a stream protection ordinance for the entire County.

However, we believe each community should have a meaningful role in determining the creekside regulations that effect its own neighborhoods. Sleepy Hollow, Corte Madera, Tam Valley, Strawberry, Kentfield, Greenbrae, Kent Woodlands, San Rafael, Indian Valley--each neighborhood should have a seat at the table in revising the Countywide Plan and a replacement ordinance.

During the next two years, let's try something new. Let's listen to each other. Engage in civil discussions about the best future for all our creeks, county wide.

Let's focus on the big picture--actions that will have direct and substantial impact on flood control and stream restoration. We should not waste time debating whether to require a site inspection for a child's swing set or grandma's wheelchair ramp.

Amend the Countywide Plan to reflect a shared vision built on consensus, and tailored to the particular needs of each community.

This will require support for CDA staff, additional funding for experts and a Supplemental EIR, and the good will of everyone involved.

Together we can do it!



September 27, 2013

To: County of Marin
Board of Supervisors and Community Development Agency
Re: SCA Ordinance

Dear Board of Supervisors

A. After careful deliberation we support the following key positions:

1. Pass the SCA ordinance as recommended 6 – 0 by the Planning Commission and CDA Staff.
2. Apply the SCA Ordinance countywide.
3. Do not amend the Countywide Plan.

B. By taking these actions the Board of Supervisors will achieve the following goals:

1. Allow the moratorium to be lifted.
2. Provide a regulatory SCA process, for the first time.
3. Provide the opportunity to collect data that can determine if the SCA regulatory process is working or needs changing.
4. Provide the opportunity for education and outreach.
5. Allow for resources and seed funding for necessary habitat restoration.

C. Following is our rationale for supporting these three positions:

1. PASS THE SCA ORDINANCE

- Provide a formal, objective process whereby data can be accumulated, stored and reviewed on a regular basis (6 months or yearly) by staff in order to measure the success of the ordinance and determine desirable changes.
- Objective data to be studied to include: number of permit apps received/approved/denied and reasons for denial. Did the project protect active channels; improve water quality and improve flood control functions? Did it help the fish? Did it impact survival of vegetation? Did it affect property values?
- Provide an annual public report that includes a summary of the data, shows trends and includes recommendations for improvement.
- The acquisition of this type of objective data is excellent preparation for an update of the next Countywide Plan.
- Gathering objective data removes politics from the equation and provides measurable results.
- Implement program BIO - 4.b. The assessment of these stream function studies will provide additional hard data that can be used in guiding staff in making recommendations for change in the program as well as in the ordinance and as preparation for the update of the next Countywide Plan.

2. APPLY THE ORDINANCE COUNTY WIDE

- The intent of the 2007 Countywide Plan was to adopt an SCA ordinance for all unincorporated areas – not just the San Geronimo Valley.
- Hearings and meetings have shown that many county residents support inclusion of

processes that improve and restore the health of stream side habitat with the goal of bringing back salmon that existed in their watersheds in historic times.

- It would show the Board's commitment to restoring viable salmonid populations county wide.
- It would provide opportunities for studies that would generate invaluable data that would be useful in seeking grants. The Existing Conditions Study and Salmon Enhancement Plan (SEP) in the SGV was key to the Open Space Dist and DPW getting funding for special projects on San Geronimo Creek and tributaries and trails in the Giacomini Preserve.
- Additional objective data from all watersheds added to existing data would be invaluable and helpful in seeking grants critical for the necessary restoration of habitat.

3. DO NOT AMEND THE 2007 COUNTYWIDE PLAN

- It is unnecessary. Implementation of BIO-4.b will provide what is needed for flexibility.
- It is premature. BIO-4.b provides the data that can be collected, analyzed to see what is effective and what needs strengthening or deleting.
- It is expensive – fiscally irresponsible!
- It is inefficient. BIO-4.b provides the opportunity to collect the data to see how effective the ordinance is. Recommendations as a result of analysis of objective data will be extraordinarily helpful when reviewing the 2007 Countywide Plan.
- It will weaken the Plan. The main reason for considering an amendment is because a small group of residents have been misinformed about the purpose and how the ordinance works and are more concerned about the impacts on their property than they are about the ordinance objectives in the Countywide Plan: Protecting the active channel, water quality and flood control functions and associated fish and wildlife habitat along streams. These are not the reasons to amend a Plan that was years in review and has been in effect but not implemented since 2007. Further delays are unconscionable.

4. EMPHASIZE EDUCATION AND OUTREACH.

Use some of the money you were willing to spend on an amendment on Education and Outreach.

- A homeowner manual based on the Landowner's Assistance Program (LAP) packet.
- Workshops. Hands on. Easy things to do.
- Workshops: Plants.
- Workshops: Trees
- Role models in the community.
- Workshops: Endangered and threatened species.
- Tours.
- Field trips.
- Additional programs as experience guides us and applicable to the needs of the watershed.

5. EMPHASIZE RESTORATION – Salmon Survival Program

Use some of the money you were willing to spend on an amendment on restoration.

- Manage a program to restore salmon populations to NOAA targets for viability (survival).
- Determine locations to initiate this program.
- Seek grants for this purpose.
- Use all data available to enhance the program.
- Fund a study that picks up where the SEP leaves off and identify objectives, metrics and locations for necessary habitat restoration.
- Work closely in partnership with County Open Space District and MMWD as well as all State and Federal agencies that fund restoration projects.
- Creek restoration provides jobs in the Valley and elsewhere which is good for the local economy.
- Hire a managing consultant and generate regular progress reports.

Sincerely,

Jean Berensmeier

SGV Planning Group Chair

From: [BOS](#)
To: [Albert, Tanya](#); [Alden, Leslie](#); [Clark, Susannah](#); [Crosse, Liza](#); [Escobar, David](#); [Fraitses, Rick](#); [Laird, Sandy](#); [Parton, Maureen](#); [Vernon, Nancy](#); [Weber, Leslie](#)
Cc: [Thorsen, Suzanne](#)
Subject: FW: attached ltr. for 10/1/13 BoS SCA hearing
Date: Monday, September 30, 2013 7:17:32 AM
Attachments: [SCA_net_improvement_recommendation.9-29-13.docx](#)

The attached message was received through the email address link for sending one email to all Supervisors. Please forward as you deem appropriate. (This will be distributed later today with the "Agenda Change Memo.")

From: Randy Greenberg [mailto:rgreenberg11@gmail.com]
Sent: Sunday, September 29, 2013 8:31 PM
To: BOS
Subject: attached ltr. for 10/1/13 BoS SCA hearing

Please provide the attached letter to members of the Board of Supervisors as soon as possible.

Thank you.

Randy Greenberg
rgreenberg11@gmail.com
415-435-2769

TO: President Judy Arnold and Board of Supervisors
FROM: Randy Greenberg
DATE: September 30, 2013
RE: SCA ordinance provision for net improvement in conditions

Currently, the draft SCA ordinance provisions work to *maintain* current SCA conditions. I urge you to include language that would not just maintain, but *improve* degraded conditions, in line with County goals. If an applicant is allowed to build inside the SCA, he should provide something in return. Here is some background support for new language to achieve this.

1. Current draft LCP contains language aimed at improvement in SCA conditions. It requires that when you get an exception to setback policy, you have to *create a net environmental improvement over existing conditions*. This LCP policy, C-BIO-25, #3¹, further states that such improvement will be consistent with the nature and scope of the project.

2. CWP program (p.2-22, p. 55 online) BIO-2.e² says to implement recommendations of the FishNet4C Program. In FishNet's 2001 report³, Recommendation #1 is "***Consider extending coastal zone protective policies to non-coastal areas of the counties where applicable and feasible.***" The CWP categorizes this program to implement FishNet4C recommendations as "ongoing" and "high priority", further supporting inclusion of the LCP language in order to promote some improvement in conditions when building is allowed inside SCA setback areas.

Language similar to LCP C-BIO-25 to improve, not just maintain degraded SCA conditions, should be included in any SCA ordinance.

¹ Draft LCP policy C-BIO-25, #3, Stream Buffer Adjustments & Exceptions, states: "A Coastal Permit authorizing a buffer [setback] adjustment shall require measures that create a net environmental improvement over existing conditions, in addition to what is otherwise required by minimum applicable site development standards. Such measures shall be commensurate with the nature and scope of the project and shall be determined at the site level, supported by the findings of a site assessment or other technical document."

² BIO-2.e (p. 2-22, p. 55 online): "Participate in FishNet4C Program. Continue to actively participate in the FishNet4C program and work cooperatively with participating agencies to implement recommendations to improve and restore aquatic habitat for listed anadromous fish species and other fishery resources."

³ "Effects of County Land Use Policies and Management Practices on Anadromous Fish and Their Habitat for Sonoma, Marin, San Mateo, Santa Cruz & Monterey Counties" by Richard R. Harris, U. Berkeley, 2001, p. 8.

From: [BOS](#)
To: [Albert, Tanya](#); [Alden, Leslie](#); [Clark, Susannah](#); [Crosse, Liza](#); [Escobar, David](#); [Fraits, Rick](#); [Laird, Sandy](#); [Parton, Maureen](#); [Vernon, Nancy](#); [Weber, Leslie](#)
Cc: [Thorsen, Suzanne](#)
Subject: FW: Stream Conservation Ordinance
Date: Monday, September 30, 2013 10:39:00 AM
Attachments: [image002.png](#)

The attached message was received through the email address link for sending one email to all Supervisors. Please forward as you deem appropriate. (This will be distributed later today with the "Agenda Change Memo.")

From: MCL [mailto:mcl@marinconservationleague.org]
Sent: Monday, September 30, 2013 10:13 AM
To: BOS; Arnold, Judy; Sears, Kathrin; Rice, Katie; Kinsey, Steven; Adams, Susan
Subject: Stream Conservation Ordinance



October 1, 2013

Marin County Board of Supervisors
3501 Civic Center Drive
San Rafael CA 94903

Subject: Stream Conservation Ordinance

Dear President Arnold and Supervisors:

Marin Conservation League urges you to accept this staff report and proposed work program, conduct the recommended hearing, and direct staff to pursue the option of an interim countywide SCA ordinance. We especially compliment staff on their wisdom in recognizing the need for a year to carry out the work program, thereby gaining better understanding of ephemeral streams, completing mapping, and engaging in outreach and permit assistance.

It is critical that an ordinance work toward preventing further decline in the endangered Coho salmon in the Lagunitas Creek watershed, as well as protecting habitat for fish populations in other waterways around the county. In addition to this ordinance, the County needs to actively participate with other programs and agencies, including regional, state and federal efforts that are working to restore Coho populations to a sustainable level.

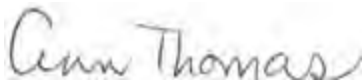
CWP Goal Bio-4.1 also underscores the importance of SCA protections to protect “water quality and flood control functions” as well as fish and wildlife habitat values. The SCA ordinance would be part of a fabric of administrative tools to address this through guidelines for bank retention and vegetation, sediment control and reduction of impervious surface. Flooding is a particular issue in areas such as Tamalpais Valley, lower Ross Valley, Santa Venetia and other low-lying areas. Staff notes the importance of regulating installation of “flatwork” not currently regulated and this added attention to hard surfaces would have positive implications for flood management.

We applaud the increased attention to plans for outreach and education. Coordination with the excellent work done by MCSTOPPP, the County’s watershed program and other agencies, e.g. water districts, will increase effectiveness of CDA resources and maximize service to the public.

Thank you for this opportunity to comment.



Priscilla Bull



Ann Thomas

Co-Chairs

Marin Conservation League Water and Watersheds Committee

Marin Conservation League Water and Watersheds Committee

175 N. Redwood Dr., Ste. 135

San Rafael, CA 94903

415-485-6257

From: peggycreeks@comcast.net
To: [Kinsey, Steven](#); [Adams, Susan](#); [Arnold, Judy](#); [Rice, Katie](#); [Sears, Kathrin](#); [Crosse, Liza](#); [Patterson, Diane](#); [Crawford, Brian](#); [Lai, Thomas](#); [Thorsen, Suzanne](#)
Subject: Oct. 1 BOS Mtg: SCA Work Program, SGV Stewards Comments
Date: Monday, September 30, 2013 9:06:32 AM
Attachments: [WorkProgramSGVSCComments.pdf](#)

**SCA Implementation Work Program
San Geronimo Valley Stewards Comments
for October 1, 2013 Board of Supervisors Meeting**

From: San Geronimo Valley Stewards
Peggy Sheneman 488-4426

To: Supervisors Kinsey, Adams, Arnold, Rice and Sears
Assistant Clerk of the Board, Diane Patterson
Community Development Agency, Thomas Lai, Suzanne Thorsen, Brian Crawford

1. SGV Stewards strongly support RCD as ombudsperson/outreach coordinator.

- A. The \$85,000 cost is well worth the effort. Marin RCD is a good fit for the San Geronimo Valley.
- B. RCD has a proven success record with grant writing and project administration. This capacity is necessary for small groups of creekside neighbors who volunteer for restoration projects.
- C. We really need RCD help in navigating the permit processes of the seven (7) local, state, and federal agencies that control work on the creeks. SGV Stewards have seen two good restoration projects stopped, because of lack of coordination among the government agencies.

2. Study scope should include setbacks for perennial and intermittent (seasonal) streams.

The Work Program should include study of the effectiveness of perennial and intermittent (seasonal) streams, in both City Centered and Rural Inland Corridors. The focus should be on existing homes and small vacant lots in developed neighborhoods.

- A. The 2010 Salmon Enhancement Plan (SEP) recommends, for the SG Valley with its coho population, a 35-foot setback (not 100 feet), for areas of existing development and small vacant lots. (See SEP page 2-21.)
- B. Sleepy Hollow visually demonstrated at the June 18 BOS meeting that a small lot cannot support 100 feet of stream setback (50 feet on both sides) where the creek runs through the middle of the lot, particularly where there are other

constraints such as large trees, neighbor sideyard space, or steep grades. Rigid setbacks make residential homesites unusable, regardless of the type or definition of the stream.

C. The Supervisors on June 18 correctly identified the need to adapt setbacks to variable land use, watershed and stream characteristics. We would add topography as a factor. For example, seasonal stream channels on steep grades fill with dry brush in the summer and become fire chimneys.

We attach a PDF markup of changes in the Work Program and the Framework/Guiding Principles. Current draft says different things on different pages.

3. Study scope should include all ephemerals (not only "headwaters") and look at drainage issues.

While we applaud the fresh look at ephemerals, there seems to be a (perhaps inadvertent?) limitation to study only those ephemerals that might be classified as "headwaters." (See Framework and Guiding Principles, BOS Attachment #2.)

Development Code part VII defines ephemeral streams as any surface run off when it rains. (See BOS Attachment #4 page 10.) Virtually every home parcel in Marin has at least one ephemeral stream in February storms. Many ephemerals run only 100 feet (or less), and then dissipate into swells or soak into the forest floor.

In contrast, certain ephemerals at the ridgetops flow directly into major channels of seasonal or perennial creeks (as shown in the new SCA map) and these could more commonly be called "headwaters."

The concept of a fixed footage setback for every ephemeral should be abandoned in favor of the drainage protection approach recommended by the SEP. (See SEP page 2-22 and 2-46 to 2-49.)

4. SWAG should be a participating partner in the Work Program.

We offer the following suggestions and attached mark up, in the spirit of civil discourse and to encourage respectful listening to differing viewpoints. We want the Stream Watershed Advisory Group to succeed in the goals set by this Board of Supervisors.

SGV Stewards recommends the County not repeat the secretive process of San Geronimo in 2008-10. The committee was dominated by government agencies, with two "citizen" representatives hand picked by Spawn and Supervisor Kinsey; "technical" meetings were closed to the public; and outside experts failed to listen to local residents about local conditions. Despite good intentions, the result was suspicious angry homeowners, and major factual errors in the Existing Conditions Report.

We have learned, and can do better this time:

A. SWAG should include representatives of each residential community, plus conservation groups and government agencies. We can start with the number of parcels within the SCA in each community. (See Planning Commission Staff report, April 1, 2013, Item No 4, page 7.)

Indian Valley -- 65 parcels

Kentfield/Greenbrae -- 234 parcels (Isn't this really 2 distinct communities?)

Lucas Valley/Marinwood -- 405 parcels (Isn't this really 2 distinct communities?)

San Geronimo Valley -- 933 parcels (in the new SCA map of Sept 2013)
(Two groups represent different homeowners, with differing views of CWPlan--
SG Valley Planning Group and SG Valley Stewards)

Sleepy Hollow -- 184 parcels

Strawberry -- 5 parcels

Tam -- 299 parcels (Are there separate neighborhoods and organizations?)

Kent Woodlands -- (about 500 homes are members of KW Property Owners Assoc.)
(Kent Woodlands was not listed in April PC Staff report.)

Other unincorporated -- about 250 parcels?
(April PC Staff report estimates 750, including 500 in Kent Woodlands)

B. CDA Director should invite each stakeholder group to send one representative, plus an alternate, of its own choosing. County staff should not be in the business of selecting individuals they "like" to represent certain stakeholder groups.

This system works fine with the Lagunitas Creek Technical Advisory Committee. SGValley Stewards is a member of Lagunitas TAC, along with Spawn and SG Valley Planning Group, various government agencies, and non profit conservation groups. Each group or agency selects its own representative, plus one alternate.

With one representative plus one alternate, there is no loss in continuity, and consistency in meeting attendance is maintained. We are all unpaid volunteers with jobs and other commitments, but we will make time for business day meetings.

C. Allow SWAG members to submit inquiries to the expert consultants CDA engages. Perhaps require a majority vote of SWAG, so the County does not spend expert fees on unproductive detours.

D. Technical Subcommittee meetings should be open to SWAG representatives and the public can observe. Lagunitas TAC is a good example.

E. Encourage expert consultants to share information and solicit information from local communities before submitting draft ECR reports. People who have lived on a creek for decades have observed the weather, creek flows and habitat. Capture on-the-ground knowledge and local history.

F. Please do not rush to hire a "facilitator" for SWAG. Conduct one or two get acquainted meetings first. Then hire a facilitator only if a majority of SWAG thinks it is necessary. We realize an outside facilitator is quite the latest fad for public outreach. However--

We have attended "facilitator" meetings in San Geronimo for 5 years. The facilitator can dilute major issues, and damper the discovery of commonality among the attendees. The facilitator gives everyone an excuse to hover with their own interest group, and to hold back from reaching compromise/consensus with other groups. For a meeting of less than 20 or 25 people, like the SWAG, a facilitator brings little value to the table.

San Geronimo Valley Stewards have been very impressed with the successful meetings of Lagunitas TAC and Marin Conservation League, where representatives of different groups come together to share information, discuss developments, and respectfully listen to other views. Let's try it!

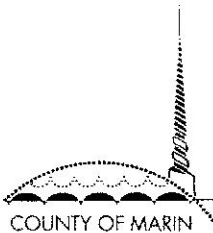
These comments are rushed to the Board, after only a few days of notice. We look forward to the October 1 hearing for comments of other groups and individuals, and to hear the concerns of the Board.

We respectfully request that any decision or vote on the SCA Implementation Work Program be continued until the October 29 Board meeting, for further consideration.

9-30-2013

SGV Stewards comments

COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION



**Stream Protection and Watershed Enhancement:
Framework and Guiding Principles**
October 1, 2013

1. **Landowners will receive increased support** through improved education and assistance. *Through Marin Resource Conservation District*
 - a. Retain an Outreach Coordinator who will provide public information through written materials, workshops and informational meeting about creek care issues important to landowners and serve as an ombudsperson to assist landowners with permitting.
 - b. Complement and coordinate with ongoing efforts of the Marin Watershed Program and MCSTOPPP.

2. **Stream Conservation Area is a special permit zone** that is important to watershed protection and requires low impact development. The SCA should incorporate a broad set of techniques to protect and enhance stream and riparian resources.
 - a. Account for the latest science: watershed planning, studies, map and information resources, and technology.
 - b. Complement other related regulations: State of CA Phase II stormwater, Native Tree Protection Ordinance, Anadromous Fish Stream Ordinance, Creek Permit, drainage setback, etc.

2. **Ephemerals** ~~Headwaters~~ are distinct and will be the subject of additional scientific analysis. Any subsequent County Code or Countywide Plan amendments relating to ephemeral streams will recognize their unique function, characteristics, and vulnerabilities.
 - a. Critically evaluate the definition of ephemeral streams as well as current policies, practices and regulations to identify opportunities for protection of ephemeral stream functions.
 - b. Techniques for ~~headwaters~~ protection may differ from those applicable to perennial and intermittent streams but should be coordinated with existing permit procedures and best practices to the extent feasible. *in Rural Inland Corridor.*

3. **Implement Program BIO-4.b Reevaluate SCA Boundaries** in the City-Centered Corridor and smaller parcels
 - a. Review existing science including local watershed information and literature supporting standards to protect streams and regulate development.
 - b. Assess the effectiveness of current County standards. Consider stream functions on a watershed-level basis, including input from professionals such as a fluvial geomorphologist, hydrologist, wildlife biologist and vegetation ecologist, together with resource agencies and interested members of the public.

Ephemerals

including perennial and intermittent streams.

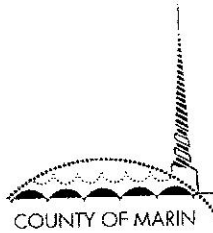
Guiding Principles:

- Future actions should contribute to the overall improvement of the watershed.
- Expand available tools for watershed stewardship, including education and incentives.
- Recognize the distinction between historic neighborhoods with smaller developed lots and those areas of the county with larger lots or vacant parcels.
- Achieve consistency and avoid redundancy with existing regulations.
- Support public and private investments that protect habitat and improve watershed health.
- The Countywide Plan establishes policy objectives while regulatory details are best suited to County Code.
- Avoid ambiguity and eliminate inconsistencies.

9-30-2013

SGV Stewards Comments

COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION



**STREAM CONSERVATION AREA IMPLEMENTATION
WORK PROGRAM**
(October 1, 2013)

1. Goal

perennial and intermittent

- a. Assess effectiveness of the existing Stream Conservation Area (SCA) standards applicable to ephemeral streams to the City Centered Corridor and smaller lots in the Inland Rural Corridor (Program BIO-4.b)
- b. Implement watershed enhancement program that includes education, homeowner assistance, permitting assistance, and funding mechanisms to support long-term protection of habitat (Programs WR-1.a, WR-1.d, BIO-4.j, BIO-4.n, BIO-4.s, BIO-4.t)
- c. Update county stream map (Program BIO-4.c)

2. Roles and Responsibilities

Board of Supervisors (BOS) Oversight Sub-committee

- a. Review and approve implementation of detailed work program
- b. Provide policy direction, as needed
- c. Coordinate with CAO on budget

CDA

- a. Sponsor, project manage, and oversee implementation of the project
- b. Map SCAs for compliance with Program BIO-4.c
- c. Implement watershed enhancement and ombudsperson programs
- d. Conduct public outreach and communications plan (online, social media, workshops)
- e. Oversee Stream Watershed Advisory Group (SWAG) and public workshops (may involve third-party meeting facilitator)
- f. Engage consulting fluvial geomorphologist, hydrologist, and wildlife biologist/ecologist
- g. Provide staff support to the BOS Oversight Sub-committee

DPW

- a. Provide technical assistance through stormwater and watershed programs
- b. Provide technical support and attend SWAG meetings
- c. Provide guidance on how existing stormwater management and sediment control measures can be integrated with implementation of the SCA.

Stream Watershed Advisory Group (SWAG)

to each stakeholder group,

Formed by invitation from the CDA director, the Stream Watershed Advisory Group (SWAG) is comprised of ~~12 to 14~~ individuals representing various backgrounds

about 20 representatives of

(resource agency, environmental organization, homeowner association, etc.). Meetings are anticipated to be scheduled during business hours, but may extend into the early evening. The meetings are not public meetings, although members of the public may attend as observers. In the interest of maintaining consistency in meeting attendance, only one representative from each stakeholder group will participate on the SWAG.

and one alternate

The SWAG's role includes:

1. Providing input on how specific issues should be evaluated;
2. Applying technical expertise, where appropriate, to specific issue areas;
3. Providing input on draft strategies and how they relate to existing state and federal requirements; and
4. Applying local knowledge and expertise.

5. Submitting inquiries to CDA-engaged consultants

Agency representatives:

Marin Municipal Water District
 California Department of Fish and Wildlife
 National Marine Fisheries Services
 Marin County Resource Conservation District

{Agency representatives may also be invited to serve on a technical subcommittee of the SWAG along with other Agency representatives (e.g. Regional Water Quality Control board).}

Meetings of technical subcommittee can be attended by SWAG representatives and the public may observe.

Community stakeholders:

Community Marin
 Farm Bureau/Agriculture
 Community organizations

Phase II: Evaluate effectiveness of SCA standards (20 to 24 weeks)

Goal: Using the existing conditions report, data on stream protection and management standards, and information from the Salmon Enhancement Plan and work completed for the watershed planning areas, evaluate the effectiveness of the CWP SCA standards governing ephemeral streams, including the 50- and 100-foot setback distances to properties in the City-Centered Corridor and smaller parcels in the Inland Rural Corridor. (CWP Program BIO-4.a)

Deliverable: SCA Strategies Report

perennial and intermittent

Who drafts?

Milestone	Date
Issue draft SCA Strategies Report to SWAG	Week 24
SWAG Meeting #3 – Review SCA Strategies Report	Week 26
Public Workshop #1 – Review Existing Conditions and SCA Strategies Report	Week 32
SWAG Meeting #4 – Review Workshop #1 Comments	Week 36
BOS Meeting #1 <ul style="list-style-type: none">Accept Existing Conditions and SCA Strategies ReportProvide direction on scope of amendments to County Code and/or CWP.	Week 44
Contingency	+ 4 weeks

From: [BOS](#)
To: [Albert, Tanya](#); [Alden, Leslie](#); [Clark, Susannah](#); [Crosse, Liza](#); [Escobar, David](#); [Fraits, Rick](#); [Laird, Sandy](#); [Parton, Maureen](#); [Vernon, Nancy](#); [Weber, Leslie](#)
Cc: [Thorsen, Suzanne](#)
Subject: Protect California's Endangered Coho Salmon
Date: Monday, September 30, 2013 1:36:53 PM
Attachments: [Protect California's Endangered Coho Salmon!.msg](#)
[Protect California's Endangered Coho Salmon!.msg](#)
[Protect California's Endangered Coho Salmon!.msg](#)
[Protect California's Endangered Coho Salmon!.msg](#)

The attached message is a SAMPLE of the 200+ (and counting!) received through the email address link for sending one email to all Supervisors. Please forward as you deem appropriate.

(If you want to receive these emails, let the Clerk's staff know. However, if you want them, we will forward all of them to you, we will not be screening by district. (This and the other 200+ emails will NOT be distributed later today with the "Agenda Change Memo.")

-----Original Message-----

From: Savin6055@marincounty.org [<mailto:Savin6055@marincounty.org>]
Sent: Monday, September 30, 2013 10:29 AM
To: BOS
Subject: From " Sanford I. Gossman"(Fax Message NO.6955)

This E-mail was sent from "RNPE6830B" (C6055).

Queries to: Savin6055@marincounty.org

From: [Maura Riley](#)
To: [BOS](#)
Subject: Protect California's Endangered Coho Salmon!
Date: Monday, September 30, 2013 1:29:05 PM

Dear Marin County Board of Supervisors,

Protection of federally listed endangered coho salmon is of national importance to U.S. citizens.

I urge you to strengthen protections for the endangered coho salmon and steelhead trout that reside in Marin County streams, and to expand their chances for recovery to sustainable population levels.

Your current efforts should include the following basic provisions:

- Adopt science-based Stream Conservation Area ordinance with protections necessary to the survival of the coho.
- Remove the loopholes that allow more than 500,000 square feet of new development on already developed lots in the San Geronimo Valley and an additional 500,000 square feet on undeveloped parcels.
- Require environmental mitigation for any new development in the Stream Conservation Area
- Protect the valuable habitat provided by ephemeral streams. These areas must remain undeveloped to relieve flooding, improve water quality, and provide refuge for salmon during high-flows.

Sincerely,

Maura Riley

10 reservoir st
nashua, NH 03064

From: [Shirley Wallack](#)
To: [BOS](#)
Subject: Protect California's Endangered Coho Salmon!
Date: Monday, September 30, 2013 1:29:52 PM

Dear Marin County Board of Supervisors,

Protection of federally listed endangered coho salmon is of national importance to U.S. citizens.

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Sincerely,

Shirley Wallack

Santa Rosa, CA 95403

From: [Allison Argo](#)
To: [BOS](#)
Subject: Protect California's Endangered Coho Salmon!
Date: Monday, September 30, 2013 1:28:48 PM

Dear Marin County Board of Supervisors,

Protection of federally listed endangered coho salmon is of national importance to U.S. citizens.

I urge you to strengthen protections for the endangered coho salmon and steelhead trout that reside in Marin County streams, and to expand their chances for recovery to sustainable population levels.

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Sincerely,

Allison Argo

157 Owl Pond Rd.
Brewster, MA 02631

From: [Dean Roskosz](#)
To: [BOS](#)
Subject: Protect California's Endangered Coho Salmon!
Date: Monday, September 30, 2013 1:29:54 PM

Dear Marin County Board of Supervisors,

Protection of federally listed endangered coho salmon is of national importance to U.S. citizens.

I urge you to strengthen protections for the endangered coho salmon and steelhead trout that reside in Marin County streams, and to expand their chances for recovery to sustainable population levels.

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Sincerely,

Dean Roskosz

Phoenix, AZ 85014

From: [Todd Steiner](#)
To: [Thorsen, Suzanne](#)
Cc: [Teri Shore](#)
Subject: Please add to Supervisor's Packet for Oct 1 hearing
Date: Monday, September 30, 2013 3:41:22 PM
Attachments: [Supes letter RE- Streamside Ordinance FINAL.pdf .pdf](#)
[The Importance of Ephemeral Streams to Salmonids FINAL.pdf](#)

Hi Suzanne,

Please add to Supervisor's Packet for Oct 1 hearing.

Thanks,

Todd

and attachment

Todd Steiner
Executive Director
Turtle Island Restoration Network
tsteiner@TIRN.net
PO Box 370
Forest Knolls, CA 94933 USA
Ph. 415 663-8590 ext. 103
mobile 415 488-7652

Visit our Websites!
www.SeaTurtles.org
www.SpawnUSA.org
www.GotMercury.org
www.TIRN.net

Whatever you can do, or dream you can, begin it. Boldness has genius, power and magic in it.

-- Johan Wolfgang von Goethe

Center for Biological Diversity • Sierra Club • Turtle Island Restoration Network • Salmon Protection and Watershed Network • Environmental Action Committee of West Marin • Watershed Alliance of Marin • Marine Conservation Institute • Mission Blue: Sylvia Earle Alliance

30 June 2013

Delivered Via Email

Dear Marin County Supervisors,

We appreciate your consideration of the comments being submitted on behalf of the following organizations:

**Center for Biological Diversity
Sierra Club
Turtle Island Restoration Network, and its Salmon Protection and Watershed Network
Environmental Action Committee of West Marin
Watershed Alliance of Marin
Marine Conservation Institute
Mission Blue: Sylvia Earle Alliance**

We support many of the recommendations of County staff to implement a County Stream work plan including:

Ephemeral Stream SCA Standards and County Stream Map

We support better mapping of ephemeral streams and better understanding of the importance of ephemeral streams. Attached is a scientific memo on the importance of ephemeral streams. We believe a better understanding by the County of the importance of ephemeral streams, along with implementation of stated commitment to restoring healthy stream function will necessitate eliminating the current clause in the draft SCA ordinance that arbitrarily removes the protection of ephemeral streams that do not possess 100 feet of continuous riparian vegetation (see below).

Public Education and Outreach

We support greater public education and outreach.

Interim Ordinance Geographic Scope

We do not support limiting an interim ordinance to the San Geronimo Valley only. While this watershed may be the most important for the protection and recovery of coho salmon, and may require more stringent regulations than streams that do not support this endangered species, a delay of years to review current existing studies, after decades of inaction, appears no more than an additional delaying tactic and is contrary to the implementing strategy of the 2007 Countywide Plan for other watersheds. We believe a single ordinance, or multiple ordinances if necessary, should be enacted simultaneously, even if they are considered "interim."

Interim Ordinance

The San Geronimo watershed contains critical stream habitat used by coho salmon and steelhead trout for spawning and for migrating to and from the Pacific Ocean. These species are listed under the federal Endangered Species Act and considered Endangered, and Threatened, respectively. One of the greatest threats to their long-term viability is the future development of the watershed, particularly future building alongside streams, within riparian areas that provide shade, water quality regulation and habitat for these species.

The 2007 CountyWide Plan (“CWP”) allows for development in the stream conservation area (“SCA”) under a number of exceptions. The County has stated that this development will not have significant cumulative effects on salmonids due to the Plan’s “no net loss” of habitat policy, and the County’s continuing participation in the FishNet 4C program.

We have participated in the ordinance development process in the hope that the ordinance could clarify questions left unanswered by the CWP relating to how habitat loss will be avoided or how FishNet participation will avoid impacts from development. However, in our view, the proposed ordinance does not ensure that the CWP’s objective of no net loss of habitat will be met. In fact, in several instances, as discussed below, the ordinance actually makes it less likely that habitat will be retained and significant effects avoided.

1. There is No CEQA Compliance For Adoption of the Ordinance.

The County has apparently elected to proceed with the ordinance approval without doing any review under the California Environmental Quality Act (“CEQA”). In our view, that is contrary to CEQA’s requirements because the County’s adoption of the ordinance is a “project” with the potential for significant effects.

The County’s position here may be that the ordinance is simply implementing the CWP, the impacts of which were already addressed in the CWP EIR. However, although the Environmental Impact Report (“EIR”) for the CWP purported to analyze the impacts of full build-out under the land use designations of the CWP, including hundreds of vacant streamside parcels in the San Geronimo watershed in western Marin, it actually contained no information about how much habitat could be lost or how that lost habitat could be adequately mitigated. The County cannot rely on that lack of analysis to determine that the adoption of the ordinance will not have cumulative impacts to salmonids. Due to the moratorium, the adoption of the ordinance is the trigger that allows development to occur. The County has never conducted a cumulative impacts analysis for its regulatory program for development in SCAs.

The County should provide data on how much current salmonid habitat can be replaced with development under a full build-out scenario.

In addition, the ordinance presents new information about how the County will regulate SCAs in the future, including allowing for exempted development, lesser protections for ephemeral streams and a mitigation scheme that in several respects will not be adequate to avoid habitat loss. These issues could not have been addressed by the CWP EIR because the regulatory policies are not in the CWP, and thus CEQA review is warranted.

2. The Ordinance Exempts Development in the SCA From Mitigation Requirements

The proposed ordinance impacts 955 developed and 205 vacant in the San Geronimo Valley. The ordinance proposes a 500 square foot addition AND allows for an additional 120 square feet for a shed on currently developed parcels without any mitigation.

In the San Geronimo Valley, this would legalize and possibly allow under full-build-out 592,100 square feet (500 ft X 955 parcels) of additional development on currently developed lots, since the current Existing Conditions Report for the San Geronimo Valley suggests that most developed lots have already disturbed riparian habitat and thus would not require any mitigation as the draft ordinance is written.

On undeveloped lots, no limitation on house size is proposed and thus it is impossible to calculate the additional loss of habitat that will occur when these lots are developed. We believe the County ordinance should identify maximum allowable build-out per lot, and provide an estimate of habitat lost under a full build-out scenario.

The ordinance further proposes to exempt incursions on “previously disturbed areas” from any mitigation when “native riparian vegetation” is removed, despite the fact that many parcels do not contain such vegetation. Even without full riparian vegetation, an undeveloped area still provides habitat and some of the ecological functions needed by salmonids. Yet no mitigation will be required for this loss, resulting in hundreds of thousands of additional square feet of development without mitigation.

The ordinance also exempts hundreds to thousands of acres agricultural lands from these rules. The staff report contained no information about how much habitat could be lost through this exemption and that information must be provided.

3. The Ordinance Mitigation Does Not Avoid Loss of Habitat.

An earlier staff report identified 205 undeveloped parcels in the San Geronimo Watershed where development in the SCA would likely occur under the current Ordinance policies. The Ordinance proposes mitigation requirements to achieve “no net loss” of habitat, but this mitigation is grossly inadequate, as SPAWN has pointed out in prior comments.

For example, even as to loss of “riparian vegetation,” mitigation is limited to high water-table-dependent species. The 2009 San Geronimo Valley Salmon Enhancement Plan (“SEP”) documented that much of the high water-table-dependent vegetation has been removed, but remaining facultative riparian species (bay, redwood, oak) perform the same critical ecological functions. However, the current Ordinance does not protect these this “facultative” riparian vegetation, but instead only the water-table-dependent species.

The ordinance also exempts hundreds to thousands of acres of agricultural lands from these rules. The staff report contained no information about how much habitat could be lost through this exemption.

In addition, the mitigation is itself inadequate. As SPAWN has stated in prior

comments, there can be no substitute for the actual loss of riparian habitat, because that physical space along the stream is now gone. The ordinance does not clarify how the requirement to plant some trees repairs the permanent loss of stream habitat, where a development structure has been allowed to be located.

The best available science, the San Geronimo Salmon Enhancement Plan and the San Geronimo Existing Conditions Report all indicate currently degraded habitat must be repaired to recover endangered coho salmon.

4. The Ordinance Does Not Protect the Majority of Ephemeral Streams

Ephemeral streams are waterways that flow briefly in direct response to precipitation. Ephemeral streams are important sources of water, nutrients, seeds, salmon spawning gravel, and organic matter for downstream systems and provide habitat for many species and their inclusion is important in watershed-based assessments. They are also sources of harmful sediment, pathogens and nutrients that flow downstream to season and permanent creeks.

Vegetated buffer zones along ephemeral streams help to slow and dissipate energy of water during storm events that kill juvenile salmon and cause erosion of stream banks downstream in permanent and seasonal creeks, to which they flow. Furthermore vegetated buffers along ephemeral streams act as biofilters, reducing the amounts of excessive pathogens, nutrients and sediment that enter permanent and seasonal creeks.

The current draft ordinance requires 100 feet of continuous riparian vegetation to qualify for protection. There is no scientific justification to only limit protection to streams that currently have 100 feet of continuous riparian vegetation. Furthermore, Thomas Lai, County Planner, has indicated (via personal communication on 9/27/13) that to be protected, ephemeral streams must have 100 feet of continuous riparian vegetation on the individual parcel before applying for a development permit. As the County has noted, a majority of the parcels in the San Geronimo Valley are only approximately 100 feet long. Adding this additional condition to the protection clause means that few, if any, ephemeral streams will actually see any protection once all the exceptions are taken into consideration.

Critical Elements of a Strong Science-Based Ordinance

We believe a strong science-based ordinance should:

A. Strongly discourage any development within 100-foot setback from creeks. New development in this buffer zone that is allowed should require mitigation if new structures or activities reduce the potential for rehabilitation of riparian habitat, even if it is currently disturbed by lawns, patios, etc. A 2:1 or higher mitigation ratio is recommended to improve on current conditions that already include a significant loss of riparian habitat.

B. Provide similar protections for ephemeral tributaries as are required for permanent and intermittent streams, including a 100-foot setback. Presently, the draft ordinance only provides for the 100-foot setback if 100 feet of "continuous" riparian vegetation is present, basically exempting a large percentage of important habitat, thus decreasing stream habitat for juvenile coho. We see no scientific basis for limiting protection only to ephemeral streams with "100 feet of continuous

riparian vegetation." A functioning network of ephemeral streams mitigates flooding and forms the headwaters without which mainstems could not support salmon.

C. Provide County participation and funding for mechanisms to permanently protect streamside buffers through voluntary conservation easements, placement of permanent deed restrictions, etc.

D. Provide County cooperation and funding with agencies and NGOs to promote voluntary restoration and enhancement projects in creekside habitat through education and outreach.

Conclusion

The proposed ordinance fails to meet the goals of the Countywide Plan to prevent loss of riparian habitat. It narrowly defines riparian vegetation to that which allows for continued destruction of the ecological functions of the riparian buffer zone. As currently drafted, it allows for over one million square feet of additional construction inside the so-called Stream Conservation Area in the tiny San Geronimo Valley, which hosts the highest density of coho salmon in Marin County.

The federal Coho Recovery Plan calls for actions to "*avoid new development within riparian zones and the 100 year flood plain*" and to "*adopt a policy of managed retreat to remove problematic structures and replace with native vegetation.*"

This ordinance fails to meet these recovery goals and is likely to allow development that will further harm the habitat of endangered coho salmon and prevent its recovery in the Lagunitas Watershed. Most of this future development would be allowed with no or inadequate mitigation. It is for these reasons, we encourage you to reject the current draft and encourage you to enact a science-based stream conservation ordinance.

Sincerely,

Todd Steiner, Executive Director, Turtle Island Restoration Network and SPAWN

Jeff Miller, Conservation Advocate, Center for Biological Diversity

Michele Barni, Chair Sierra Club Marin Group

Amy Trainer, Executive Director, Environmental Action Committee of West Marin

Laura Chariton, Director, Watershed Alliance of Marin

Lance Mogan, Ph.D., President & CEO, Marine Conservation Institute

Deb Castellana, Communications Director, Mission Blue: Sylvia Earle Alliance



The Importance of Ephemeral Streams to Salmonids

Introduction

Ephemeral streams can be defined as those channels with a distinct stream bed and bank that carry water only for a short period of time during and briefly after storms (Roy et al 2009). That is, their channels lie above the water table and depend directly on precipitation rather than on snow melt, springs or other sources (U.S. Geological Survey). Ephemeral and intermittent streams (which flow seasonally) make up 59% of all streams in the USA (Levick et al 2008), and 66% of all streams in California (Levick et al 2008).

Even when ephemeral streams do not have visible flow, these streams continue to flow below the surface. This **hyporheic zone** is the area between the stream channel and the alluvial groundwater. It is important to the physical, chemical, and biological integrity of the above-ground portion of the stream. A stream reach that lacks water at all times on the surface may continue to have a thriving hyporheic zone (Levick et al 2008).

Water in the hyporheic zone may be discharged downstream and vertically into groundwater. During hyporheic flow, ground water and stream water mix in the beds and banks of ephemeral and perennial streams and sometimes in a larger region surrounding the stream channel. In these zones, there is substantial biogeochemical cycling of nutrients and trace elements that are essential to aquatic life (Valett et al. 1994, Boulton et al. 1998, Hibbs 2008).

The San Geronimo Valley sub-watershed is a 10 square-mile headwaters region in the Lagunitas Creek Watershed of Marin County (California), which supports the largest documented wild population of endangered Central Coast ESU coho salmon and is also home to the second largest population of threatened CCC ESU steelhead. It is made up of a network of perennial, intermittent and ephemeral streams.

Juvenile coho salmon emerge from redds in late winter to early spring and spend over one year in the stream before undergoing a physiological and morphological smoltification process and migrating to the ocean in the following spring.

Steelhead are the anadromous form of rainbow trout. Fry emerge from gravel redds and can spend anywhere from 1-2 years as juvenile parr in the streams before undergoing smoltification and migrating to the ocean.

Importance to salmonids

Ephemeral streams perform the same ecological and hydrological functions as perennial streams by moving water, nutrients and sediment throughout the watershed. They may carry juvenile salmonids when they flow, and can provide important temporary rearing habitat for juvenile salmonids (Reid & Zimmer 1994).

Juvenile salmonids can move into ephemeral streams when they flow, releasing density dependence and stored nutrients, at the same time creating more rearing habitat. For example, 10% of juvenile coho salmon rearing in main channel of Carnation Creek during summer, moved into intermittent tributaries and ephemeral swamps in autumn 1983 (Brown & Hartman 1988).

However, aside from the physical presence of salmonids in these streams, they play a key role in the ecology of their respective watersheds and in the growth and survival of juvenile salmonids.

Ephemeral streams **deliver nutrients, detrital material and invertebrates downstream** to perennial salmonid rearing locations.

They are **sources of large woody debris** – the critical rearing habitat for many juvenile salmonids. Downstream reaches are highly subsidized by upstream tributary processes, both from non-fish bearing and ephemeral stream classes (Fig 1).

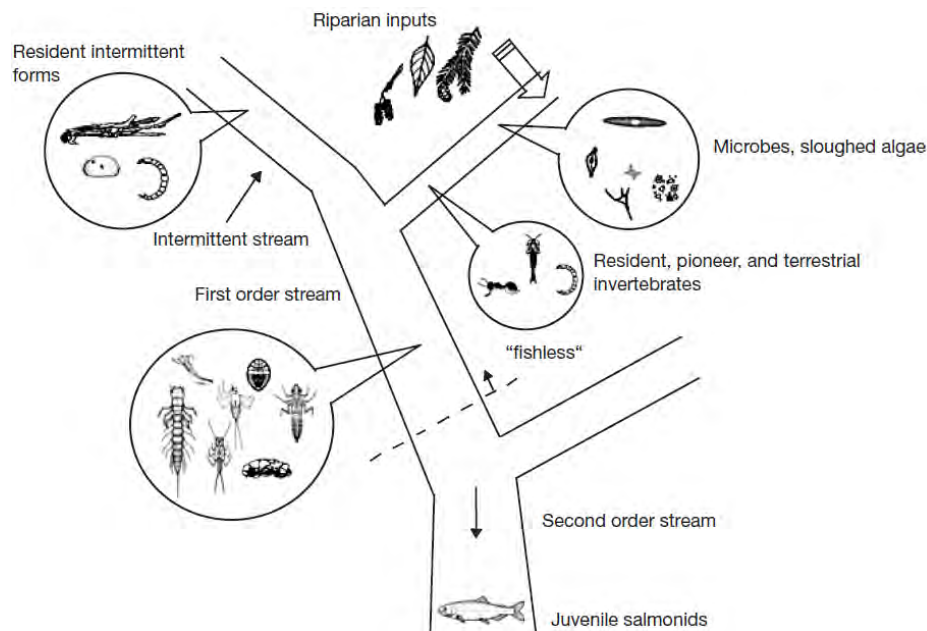


Fig.1 Conceptual model of the delivery of invertebrates and detritus from headwater intermittent and permanent first order fishless streams to larger, fish-bearing streams (from Cummins & Wilzbach 2005).

The biogeochemical functions of ephemeral streams include **cycling of elements and compounds, removal of imported elements and compounds, particulate detention, and organic matter transport**. These functions influence water quality, sediment deposition, nutrient availability, and biotic functions. Biogeochemical features are affected directly and indirectly by land-use and land-cover change (Levick et al 2008).

Stream **energy dissipation** is important for the prevention of channel erosion and increased sediment loads that can degrade water quality. High midwinter discharges in association with unstable debris can dislocate juvenile coho salmon overwintering in the main channel (Tschapinski & Hartman 1983). By providing channel and stream bank roughness through standing or downed material, vegetation can influence flow velocities, flow depths, bank and flood plain erosion, and sediment transport and deposition, and can be a major factor contributing both to channel stability and to channel instability (e.g. Heede 1985). Vegetation along the stream bank stabilizes the soil through the reinforcing nature of their roots, and prevents erosion (Groeneveld & Griepentrog 1985). Ephemeral stream vegetation also



influences biogeochemical cycles by providing leaf litter, and food and cover for wildlife. In some cases, vegetation can intercept rainfall, preventing it from infiltrating into the soil, and influencing the local water balance and ecosystem processes (Owens et al. 2006, Miller 2005). The existence of off-channel winter habitat may reduce variation in coho salmon smolt production and reduce the effect of single catastrophic events such as debris torrents within the main channel (Brown & Hartman 1988).

Threats

Various authors have recognized the importance of small stream and headwater habitats, including those of ephemeral streams, as **vital parts of the biological integrity of U.S. waterways**. The degradation of these habitats and loss of their connections to larger streams have negative consequences not only to the inhabitants of these streams, but also for the diversity of downstream and riparian ecosystems, and the biological integrity of the entire river network (Levick et al 2008).

The disturbance or loss of ephemeral streams has dramatic physical, biological, and chemical impacts, which are evident from the uplands to the riparian areas and stream courses of the watershed (Levick et al 2008).

Human-related disturbances include livestock grazing, land clearing, mining, timber harvesting, groundwater withdrawal, stream flow diversion, channelization, urbanization, agriculture, roads and road construction, off-road vehicle use, camping, hiking, and vegetation conversion. Biological stressors include habitat loss, alteration, effluent discharge, and degradation from decline in water quality, and changes in channel and flow characteristics (Pima County, 2000).

In particular:

- the increase in impermeable surfaces and channelization can lead to **high discharges through ephemeral streams after storm events**, which in turn can contribute to wash out juvenile salmon rearing in the mainstem (and may also erode suitable rearing habitat [and urban property] further downstream). Alteration of channel characteristics (e.g., channel shape and depth) and organic matter input will affect the ability of streams to cycle materials. Because small streams have high surface-area to volume ratios, they are often able to take up and process nutrients at higher rates than larger perennial streams (Pinay et al. 2002), and are important for maintaining downstream water quality.
- **increased sediment loading resulting** from loss of natural stabilizing riparian habitat along ephemeral stream banks can cause direct mortality of fish, but also reduce habitat quality and availability of invertebrate food sources. Clinnick (1985) [cited in Wenger 1999] noted that *“During storm events it is often the ephemeral elements of the stream system that act as a source of surface flow to permanent streams (Hewlett & Hibbert 1967). The prevention of sediment accession to streams thus relies primarily on protection of these ephemeral elements.”*
- **contamination from septic tanks and other sources of organic pollutants and heavy metals** can be transported downstream and into groundwater, and lead to eutrophication, presence of harmful pathogens and massive fish die offs.
- **loss of source for large woody debris** which forms essential rearing habitat for juvenile salmonids along perennial reaches.

It is essential to maintain ephemeral channels in a vegetated condition to allow them to slow water flow, trap sediment and to prevent their serving as sediment sources (Cooper et al 1987, Binford & Buchenau



1993). Lateral and canopy vegetation buffers along ephemeral streams help to “slow it, spread it, sink it,” a mantra of watershed movement (Bay Area Integrated Regional Water Management Plan).

Protecting ephemeral stream buffers help prevent and/or reduce these impacts.

Marin County Stream Conservation Ordinance

Riparian buffers are useful management tools to protect stream habitat from anthropogenic threats. Yet **to be most effective, buffers must extend along all streams, including intermittent and ephemeral channels** (Wenger & Fowler 2000). The effectiveness of a network of buffers is directly related to its extent; governments that do not apply buffers to certain classes of streams should be aware that such exemptions reduce benefits substantially (Wenger 1999).

The current draft ordinance (5/17/2013) **essentially eliminates protection of a large percentage of important habitat along ephemeral streams**, negatively impacting stream functions and salmonid recovery. There is no scientific basis for limiting protection only to ephemeral streams with 100 feet or more of riparian vegetation. A functioning network of ephemeral streams mitigates flooding and forms the headwaters without which mainstems could not support salmon.

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October 1, 2013

Judy Arnold, President and
Marin County Board of Supervisors
3501 Civic Center Drive
San Rafael CA 94903
Email: bos@marincounty.org

Re: Stream Conservation Area Work Program and Interim Ordinance

Dear Members of the Board:

We encourage you to approve the staff and subcommittee recommendations in your packet for this meeting, accepting the SCA work program and, in particular, to direct staff to prepare the proposed ordinance for countywide implementation.

We agree with concerns expressed in the report that confining the ordinance to the San Geronimo Valley would do a disservice to other unincorporated areas which also have fish-bearing waterways. In addition, there are properties along all of Marin's creeks susceptible to flooding, eroding creek banks due to erosion and poorly planned retention structures, and with unnecessary hard surfaces causing runoff which adds to downstream flooding. Landowners, often with the best intentions, may construct buildings and landscaping that have unintended negative impacts on their property and precipitate similar problems on downstream parcels. A strong ordinance, with expansive outreach and incentives would greatly alleviate this situation.

The staff report has suggestions for outreach, landowner services, and collaboration with other agencies and programs and this list could be expanded to the benefit of all parties. Outreach and incentives, working in tandem with a strong ordinance – and both are needed for the ultimate success of each – would ensure an effective SCA program.

We appreciate that staff does not, at this time, advocate for amendment of the 2007 Countywide Plan. We urge you to make every effort to avoid this step given the probable monetary cost, complexity, and distraction from other planning work which this would impose.

We suggest considering a change to the draft ordinance to add language similar to that in the current draft Local Coastal Plan (LCP) that could allow for a setback adjustment in exchange for improvement in stream conditions. Draft LCP C-BIO-25, Stream Buffer Adjustments & Exceptions, states: “*A Coastal Permit authorizing a buffer (setback) adjustment shall require measures that create a net environmental improvement over existing conditions, in addition to what is otherwise required by minimum applicable site development standards. Such measures shall be commensurate with the nature and scope of the project and shall be determined at the site level, supported by the findings of a site assessment or other technical document.*”

Thank you for consideration of our comments.

- Priscilla Bull, Randy Greenberg, Marge Macris,
Barbara Salzman, Susan Stompe, Ann Thomas

cc: Suzanne Thorsen, Brian Crawford



Friends of Corte Madera Creek Watershed

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October 1, 2013

Marin County Board of Supervisors
Supervisor Judy Arnold, President
3501 Civic Center Drive,
San Rafael CA 94903

RE: KWPOA letter dated September 9, 2013 regarding
the Stream Conservation Area Ordinance

Dear Supervisor Arnold:

In their September 9 letter to the Board of Supervisors, the KWPOA state: “[Friends of Corte Madera Creek Watershed’s] search for fish in our streams confirmed our factual position: there are no fish.” To clear up any confusion: we have not undertaken any “search for fish.” However, as said in our previous letter, we did find pools at several spots in Kent Woodlands creeks, which probably contain steelhead/rainbow trout (*Onchorhynchus mykiss*). Surveying for *O. mykiss* typically involves biologists with permits to handle *O. mykiss*, permission to access property, and a great deal of planning. The documentation of *O. mykiss* in Tamalpais Creek cited in our previous letter—in 1998, 2000, 2001, and 2002—was the result of surveys conducted by fully qualified biologists from the Environmental Protection Agency and the California Department of Fish and Wildlife.

The KWPOA seems to have misconstrued the point and data provided in our September 3 letter. In that letter we pointed out that the assertion that there are no fish in the Kent Woodlands runs contrary to the available facts and common sense. The documentation of *O. mykiss* presence in 1998, 2000, 2001, and 2002, shows that Tamalpais Creek is capable of supporting a viable *O. mykiss* population. There have been no major public works projects within the streams of the Kent Woodlands in the ten years since the stream was last surveyed for *O. mykiss* presence, although some residential development may have impacted the creek (e.g., 111 Woodland Road and 432 Woodland Road). Unless Kent Woodlands property owners have indeed taken actions to degrade the creek significantly, stream conditions today are much the same as those from 1998-2002. Thus, it is logical to conclude that *O. mykiss* are spawning and rearing in Kent Woodlands at present. How the KWPOA came to the opposite conclusion is not clear.

The KWPOA said in their recent letter that they welcome fish in their neighborhood streams. The good news is they are already there. Clearly, the SCA ordinance should apply to Kent Woodlands, and not only because fish are present. It should apply because it is appropriate to protect water quality, riparian habitat, and to reduce the risk of flooding on streamside properties.

Sincerely,

Sandra Goldman
President, Friends of Corte Madera Creek Watershed

c: Supervisor Katie Rice (email)
Suzanne Thorsen (email)

Kathy Goldsmith, President, KWPOA (email)