



California Streaming

News from CUSP Partners Around the State

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Issue 2

What's Inside?

Urban Streams and the Homeless

1

Watershed Apprentices

3

Los Angeles River

3

Ft. Bragg

6

Report from Sacramento

7

Thank You to Our Partners

10

Book Review: *Restoring Neighborhood Streams*

13

Urban Streams and The Homeless

Urban creek and river advocates are on the front lines of trying to address the issue of the homeless. Desperate for shelter, homeless people occupy vacant lots, parks, roadsides, freeway underpasses, and railroad rights-of-way. Creek corridors are also a favored refuge. Unfortunately, people living along creek banks often leads to trash, debris, and human waste in the creek. This creates a special concern for creek advocates because of the associated impacts to water quality, native fish, and wildlife; it has also led to the public perception that urban streams are dangerous. Old school strategies for managing the homeless are cleaning up streams and settlements, confiscating homeless possessions, and removing vegetation along creek corridors. These methods often lead to homeless people being able to easily settle where vegetation has been removed, creating a cycle of removal and then return of the homeless encampments.

It hadn't occurred to most of us to consider homeless people themselves as possible solutions to pollution and damaged stream habitat, but there have been precedents. In 1993, a contingent of homeless people arrived at our first national urban waterways organizing conference in Fort Mason, San Francisco. They considered themselves stewards of the American River Parkway and wanted to network with others involved with urban waterways and learn more about how to be good river stewards. Then in 2006, an inspiring model for using homeless people as stewards was organized for the Pajaro River, which flows through a mix of urban and rural areas in Monterey, Benito, and Santa Cruz Counties. A native of the watershed, Herman Garcia, who grew up fishing the Pajaro, was disturbed by the steeply declining anadromous fish populations. In partnership with the National Marine Fisheries Service (NMFS), Garcia developed a river stewardship program in which he negotiated agreements with the residents of homeless encampments. Garcia's contract with the encampment residents was that he would deliver a daily hot meal, drinking water, and basic provisions in exchange for river cleanup, garbage, and waste management services. The homeless stewards also helped rescue stranded steelhead.

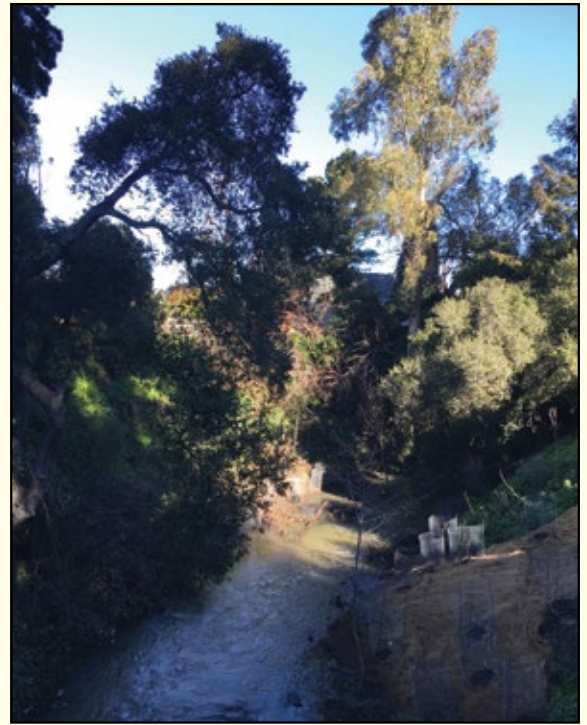


Pipevine Swallowtail by Dave Harper

NMFS estimated that thousands of juveniles were saved from certain death. Garcia's group, Coastal Habitat Education and Environmental Restoration (CHEER), advocates constructive engagement with homeless populations. His motto is "show compassion, tolerance, and then provide a purpose." Another version of this approach are the cities, such as Berkeley, which hire the homeless to help keep the streets clean and orderly and hire the recovered homeless to do more effective outreach with the current homeless population.

A new development in the San Francisco Bay Area is the adoption of a resolution by the San Francisco Bay Regional Water Quality Control Board to eliminate trash from homeless encampments as part of the Board's stormwater permits. The Water Board involvement was spurred by a horrific pollution problem created by encampments in Santa Clara County along Stevens Creek, Coyote Creek, Guadalupe River, and other urban waterways in the San Jose area. The city of San Jose's solution to reducing these impacts was to coordinate cleanup crews with social services professionals, who joined them at the sites to provide assistance in housing, health, and employment services.

The *San Francisco Chronicle* ran a multi-week feature in the fall of 2016 on how to address the intractable homeless problem in San Francisco. Their conclusion: the homeless need housing. The city of San Leandro, located in the East Bay, is stepping up to this challenge to address the approximately 150-200 homeless people who have largely selected San Leandro Creek as their residence. San Leandro's approach is to coordinate multiple agencies and non-profits with the ultimate goal of providing housing. In March of 2016, the City of San Leandro, Building Futures, and the Rental Housing Association of Southern Alameda County (RHO) committed to a compact to find apartments for the homeless. This resulted in an enormous compassionate volunteer network that feeds, showers, and assists its homeless--and, ultimately, a cleaner creek.



San Leandro Creek

The nonprofit Building Futures was granted federal housing vouchers from the U.S. Department of Housing and Urban Development to house chronically homeless persons. Given the competitive economy and surge in rental unit costs, housing was already a challenge for the entire community. RHO was able to promise 25 rental units, using the federal vouchers that covered rent, and to coordinate with others to deliver comprehensive "wrap-around services" to assist the newly housed homeless persons in their living transition.

The compact is an amazing achievement, but a more significant outcome is the partnership, flexibility, and collegiality it created among the agencies with overlapping responsibilities for the homeless. The City Department of Recreation and Human Services (RHS) created a multi-disciplinary case management team. This team includes, but is not limited to, some of the following partners: the San Leandro Police Department, Building Futures, April Showers, Swords to Ploughshares, and others as needed. RHS raised additional funding to hire street outreach workers for Building Futures and to find additional shelter space. Street outreach workers, human services agencies, and the police often coordinate times to address pockets of homeless *together*. The city, Building Futures, and April Showers all worked together outside of their traditional perspectives and developed an extraordinary level of trust. The compact has already received a "Community Peace Champion" award from Assemblymember Rob Bonta.

The city stresses the importance of recognizing that the homeless are not a homogenous group of people. In San Leandro, issues affecting the homeless include: mental illness and/or addiction; domestic violence; significant physical illness (lost job/health insurance as a result); unemployment; and under-employment (not making enough to meet housing costs). Another characteristic of San Leandro's homeless population is that most are seniors and are from San Leandro.

The San Leandro Creek project is the first experience involving cooperative efforts in a large area. The creek is a community asset owned by a patchwork of private and public agencies. While preserving the rights of the homeless and their property, the city moved people to shelter or housing. As a part of their cooperative work, the city was also able to move thousands of pounds of garbage from the creek.

*By Mike Vukman, Co-director of CUSP,
and A.L. Riley, CUSP Advisory Board*

Watershed Apprentices Transform Their Communities

Urban Tilth is pleased to announce the graduation of our 2016 Watershed Apprentices from our Basins of Relations Watershed Restoration Training Program! This team of young adults from West Contra Costa County spent the past year hard at work, transforming natural spaces in their communities and spreading watershed awareness amongst their neighbors, friends, and families.

Our seven apprentices came to the program with varying levels of experience and comfort with working outdoors—some had grown up playing in Wildcat Creek while others wanted nothing to do with wild, untamed spaces. As they acquired hands-on skills and familiarity with the creeks and parks of West County, they blossomed into watershed stewards: passionate leaders committed to protecting the natural resources that support our creeks and our communities.

The apprentices spent time learning from experts in creek restoration and ecosystem management, developing a base of knowledge to inform on-the-ground management practices. They then had an opportunity to put that knowledge to use. The apprentices removed invasive species from the Wildcat Creek riparian corridor and replaced them with native riparian plants grown in our Native Plant Nursery; they installed erosion control measures on sensitive upper watershed habitat, thanks to support from the East Bay Regional Park District; they installed water catchment systems and constructed bioswales at the North Richmond Farm—the list goes on! In addition to learning the mechanisms of management, they also had an opportunity to think critically about how management decisions are made, the way humans engage with natural spaces, and what it truly means to “restore” a landscape.

When they didn't have their hands in the soil, these young leaders explored and analyzed watersheds all around the San Francisco Bay Area, saw some of the Bay Area's landmark ecosystems, and participated in professional development workshops to help them cultivate successful and fulfilling careers. They challenged themselves, engaged with the natural spaces around them, and improved the health of their communities; these young adults have been truly inspiring to work with.

We would like to take a moment to thank all of the wonderful organizations who partnered with the Basins of Relations program this past year; we couldn't have done it without you: YES Families, East Bay Regional Park District, Contra Costa Flood Control and Water Conservation District, California Urban Streams Partnership, Neighborhood House of North Richmond, North Richmond Missionary Baptist Church, Outdoor Afro, Nevin Center, RYSE Center, The Watershed Project, Clif Bar, Weigh of Life, Spawners, the SF Estuary Partnership. In your own unique ways, you helped give our apprentices a rich and empowering experience, and for that we are very grateful.

By Nathan Bickert

Los Angeles River Revitalization: Will the River Come First?

As excitement mounts over the opportunities for revitalizing the Los Angeles River, it is worthwhile for us, as advocates of urban stream restoration, to reflect on the sometimes conflicting goals humans have for waterways. As most readers probably know, the story of the Los Angeles River is a cautionary tale about the hazards of developing in the floodplain of a river, and of not understanding the river's processes, structures, or ecology. It is not just the story of the Los Angeles River, but of the entire basin upon which sits the region's urban sprawl: the San Gabriel



Urban Tilth Watershed Apprentices study creek ecology

River, the Santa Ana River, Ballona Creek, Coyote Creek, Compton Creek, Walnut Creek, the Dominguez wetlands, and multitudes of smaller streams and wetlands all followed a similar trajectory of development and destruction. This destruction is not unique to Los Angeles, although LA is often the reviled poster-child for overdevelopment.

I think it is fair to say that the desire to live near—and control—waterways is at least one fairly consistent expression of human nature. It contains contradictions: our need for water, our aesthetic and spiritual experiences of water, and the economic benefits rivers confer as sources of materials, as conduits for transport and waste, as spaces for play and refreshment. Development along riverbanks often enshrines these uses, usually emphasizing one to the detriment of others. And when development ignores the river's basic functions, structures, and resiliency responses, it is the ecosystem that invariably loses.

This did not escape early observers of the region's waterways. Interviews of farmers by James Reagan in 1914 included observations of how railroad construction along the river contributed to catastrophic flooding. A *Los Angeles Times* editorial in 1924 lamented "Rivers Lost to City," and a subsequent cover article in 1941 cried "Pity Poor Fish in L.A. River!" These concerns were ignored, and along with the loss of these waterways, steelhead trout, among other fish species, were expelled from the region. Today, southern steelhead trout are imperiled, yet periodically an optimistic fish tentatively noses up the lower reach of one or the other region's channelized rivers. The lucky ones give up, turn around, and leave—the less fortunate die in the warm shallows of these unforgiving, concrete structures. The fish want to return to their old rivers but cannot. Other species will come home no more, ever: stream channelization and culverting resulted in the extinction of the Pasadena freshwater shrimp, the Sacatela narrowleaf cattail, and the Ballona cinquefoil. The Los Angeles sunflower, presumed extinct in 1968, was rediscovered in 2002

at a development site on the Santa Clara River. Efforts to revive the population are not known.

At the same time as this trajectory of ecological loss, the development pattern of the Los Angeles basin cemented social inequalities: for decades scholars and justice workers have observed the concentrations of race, wealth, and poverty in the basin. While middle class regions of the city have become much more integrated in the past 25 years, segregation by race and class persists. Gentrification, as housing prices have escalated, has also been a double-edged sword, creating transitory integration as the impoverished residents, mostly of color, are priced out, moving to even more marginalized locales. In the background of these shifts is a stunning lack of accessibility to open space and park land, especially in some of the city's densest neighborhoods.



North Fork of the Los Angeles River

Some neighborhoods have less than 0.25 acres of park land per 1,000 residents, almost 10 times lower than the city's standard, and up to 40 times lower than standards in many communities elsewhere in the country.

The region's cities and county are challenged to create new parks in a built-out landscape that has maximized private gain without consideration of the social (or ecological) good and public spaces. Public works departments are also burdened with addressing the failings of poor planning: in the city's early days, no one really considered the cumulative impacts of sprawl, from increased flood risks, contaminated storm water and aquifers, to the aforementioned lack of parks. Indeed as recently as the early 2000s, I have seen parking lots and concrete flood control channels labeled "Open Space" in planning documents—a testament to the lack of regard for what the designation should provide in terms of social and ecological benefits. Public lands, the land within which the Public Works and Parks departments can work, in this context is often the leftover land, the land nobody wanted to develop.

In the context of these pressures, the revitalization movement for the Los Angeles River was born. It began with artists and urban foresters recognizing the inherent beauty of the soft-bottom Los Angeles River channel in the Elysian Valley, where geology favored high groundwater, and treated sewage enhanced reportedly perennial flows. The advocacy and activity of groups celebrating the river with this stretch as their staging ground gained attention.



Raccoon by Dave Harper

Small parks flourished along the river's maintenance access roads, which were then converted to bicycle paths by the city. The idea that underutilized rights-of-way—essentially utility corridors for everything from electricity to channelized rivers and streams to oil pipelines—could also function for recreational and habitat benefits took root, and similar projects occurred elsewhere in the county. Some pre-dated or occurred in tandem with Los Angeles River developments. State conservancies were formed and became critical leaders in funding and implementing projects.

These were all wins for recreation, and for access to open space. They helped to elevate conversations about equal access for all communities. The center of gravity of this activity was the Elysian Valley, however. Communities in southeast Los Angeles, the Valley, and along the San Gabriel River had similar needs and were implementing similar projects but did not receive the same level of attention and

funding. These constituencies and their political representatives have become more active, however, and there are attendant shifts to better address their needs.

The framing for much of these shifts focuses on people and addressing the impacts of urbanization: access to open space, safe and healthy alternatives for exercise, urban greening, integrated stormwater management, green jobs. Habitat fits into the framework when native plants can coexist in this context: mostly in the form of upland habitat, or created, artificial stream features. These concepts will benefit the people of the Los Angeles region. But as those of us who have weathered flood and drought in the basin know, engineered water features lack resilience and depend upon higher levels of maintenance than natural streams, which will respond to and recover from environmental challenges. And parks departments rarely have the budgets for maintenance as it is.

What has faltered is the dialogue about the river systems themselves, and the endangered fish they once supported. The presumption of the impossibility of restoration, partial restoration, or naturalization of the region's waterways has been a detriment to the planning process, and is contradicted by the presence and function of semi-naturalized flood control channels in the region. In addition to the soft-bottom reaches of the Los Angeles River, San Jose Creek in the City of Industry, Compton Creek in Compton, a segment of the Arroyo Seco in Pasadena, and a restored channelized reach of Las Virgenes Creek in Calabasas all demonstrate the feasibility of in-stream habitat along channel bottoms while maintaining flood capacity. Given the development constraints of the Los Angeles region, the Elysian Valley reach of the Los Angeles River—with its soft bottom, imperfect but extant geomorphic development of channel and floodplain, willow-lined banks, birds and non-native fish—is the model for planning the rest of the river, with the incorporation of under- and undeveloped parcels along the channel to create opportunities for a wider channel, developed parks, etc. Revitalization goals and concepts could have explored replicating that model up and downstream and advanced planning strategies for land acquisition where needed to widen the right-of-way.



Spotted Towhee by Dave Harper

Instead, the Los Angeles River Revitalization Plan process attempted to mediate a restoration discussion but was ultimately constrained by other goals and what an outsider can only assume were political pressures: issues of jurisdiction, boundaries, and economics. The plan's preferred alternative represents an earnest, if expensive, attempt to enhance ecological values while maximizing recreational opportunities. It does include widening the channel and removing concrete in a few places in the Elysian Valley. Predictably, this has jump-started gentrification there. New development and increased property values near the river constrain the ability to consider future open space or floodplain acquisition, a serious concern for restoration advocates. And now enters Frank Gehry, a world famous architect, to produce a new vision for the River at the request of the Los Angeles River Corporation, an entity born of the revitalization planning effort. He has publicly sounded dismissive of restoration, yet his team

includes experts on engineering design of natural systems. From a restoration perspective it is hard to predict if his proposal will do less for the river as “the living symbol of all the life it sustains,” to quote William O. Douglas, than the current revitalization plan supported by community members. It has been clear, however, that the decision to bring a “starchitect” into the effort has been received as a betrayal of the community values and commitment that led to the successful adoption of the preferred alternative. Add to the mix the uncertainty of how a new presidential administration and congress will shift federal funding priorities for Army Corps-sponsored projects.

While humans tussle, steelhead trout wait restlessly in San Pedro Harbor, ignored by all but the curious fisherman peeking over their boat’s railings. With climate change, the future of these fish is more at risk than ever. Urban stream restoration funding dedicated to the Los Angeles region—the bulk of Proposition 1 “urban stream” funding—will support the long-neglected needs of people, but not the fish, nor the river’s system itself. Boosters of the current revitalization plans argue that the effort will likely, eventually, open public opinion up to a more restoration-oriented approach to the river. Amidst the fanfare about “ecology and sustainability,” the promise of a river system restored remains deferred. We are left with hope, rather than will. Hang in there, fishies.

*By Jessica Hall, co-founder, LA Creek Freak, and advocate for Los Angeles stream restoration
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Will Mill’s Creeks See The Light of Day?

Late in 2002, the Georgia-Pacific lumber mill in Fort Bragg, California finally closed. It had been a tortured process. The once bustling mill, which represented one-third of the town’s area, had been running on empty for a long time. But mill operations contaminated the site with heavy metals, dioxin, PAHs, and petroleum hydrocarbons. In November 2005, Koch Industries bought Georgia Pacific for \$13.2 billion, hoping to develop the site after Georgia Pacific finished the cleanup. The site is now in its thirteenth year of cleanup under the oversight of the Department of Toxic Substances Control and the North Coast Regional Water Quality Control Board.

To all of us on the North Coast, it was obvious that the future of our community hinged upon the reuse of this huge site. The health, wellbeing, and prosperity of Fort Bragg would either be determined by us, or by some developer from outside our community. We spoke with Native American people who knew the land intimately. Some of them still lived on a small portion of the south headlands. We poured over old maps, talking with former employees who were trying to understand what the headlands had been like before the devastation and reckless exploitation by the mill. Inspired by the work of Ian McHarg, we discovered that there had been trees all over the headlands. There had been year-round creeks that flowed across this coastal plateau and down into the natural harbor. Abundant wetlands had graced the coastline. Their footprints were still quite clear despite the years of trashing and filling.



The former George Pacific mill site, showing its many wetlands

We began to tell a new kind of story about what the future of the abandoned mill site could look like. We stressed environmental restoration first. The idea of daylighting the creek was immediately popular. We made public presentations: to the city council, high schools, and organizations such as Audubon and the League Of Women Voters, the Fort Bragg Soroptimists—to anyone who was interested! After sending a scathing critique of

Koch's development vision to the California Coastal Commission, we were heartened by the many commissioners who supported us at their quarterly meeting, which was held in Fort Bragg for the first and only time. The Coastal Conservancy, the state's coastal preservation agency, has been very helpful in acquiring land for the coastal trail; they are hoping to work with the community to acquire and restore the property.

Alder and Maple creeks had gradually been buried over the last century and a half, but they still flow beneath the town, intermingling with the stormwater system, and then underneath the mill site, where they were diverted into the man-made mill pond to float the seemingly endless stream of redwood trees. To this day, in big rain events, the site floods. In every way except one, this site is an ideal opportunity for creek daylighting and wetland restoration. But many in the corporate community do not understand the benefits, both economic and to nature, of restoration. To the Koch organization, our extraordinary coastline is a "non performing asset." But persistence on our community's part has already brought about terrific changes: a lovely coastal trail and the establishment of the Noyo Center for Science and Education.

When confronted by stalling and avoidance, our best approach is persistent advocacy. The "rights" of the property owner are not the only rights at play. Climate change, environmental justice, and the newly emerging "rights of nature" are changing the field of play. With Coastal Commission support for wetland restoration, we are assembling a coalition of local stakeholders, and the entities that can carry out the daylighting and restoration plan. We have created a roadmap of how daylighting can be accomplished, and are currently updating it:

NHUDG Road Map for Daylighting Alder and Maple Creeks
<http://www.noyohadlands.org>

*By George Reinhardt, Noyo Headlands Urban Design Group
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REPORT FROM SACRAMENTO

Sacramento policymakers have heard the CUSP education campaign on the benefits of restoring and protecting urban streams, and CUSP has achieved amendments to important parks and water bond acts. We have found that the Governor and members of the Legislature are increasingly interested in the natural environment in urban communities. The rising concerns about and understanding of environmental justice, climate change, and drought all have helped bring a focus to these issues. Working together we can continue to focus attention on the multiple benefits of addressing fish habitat recovery, flood and erosion reduction, education, jobs creation, and business district revival. Thank you to all of you who have communicated with your legislators. We will need to keep your involvement active in 2017 to assure the outcomes.

Opportunities for Urban Streams via Bonds

Over the past couple of years CUSP and its partners have advocated for support and funding to restore and enhance long neglected urban waterways. This effort first focused on 2015's Proposition 1 and 2016's AB 2444, the parks bond measure by Assembly Member Eduardo Garcia (Coachella).

Some of you have applied for grants under the Proposition 1 urban streams restoration-stormwater-water conservation program administered by the Natural Resources Agency. Last year's AB 2444 parks bond almost passed out of the Legislature this past session, but will be reintroduced through the legislative process this year as AB 18. CUSP identified numerous provisions that, if amended or added to AB 2444, would support urban stream communities, including: 1) ensure all qualified youth conservation training and jobs programs would be eligible for a grant priority; 2) provide a separate allocation for funds to the DWR Urban Stream Restoration Program (USR); 3) support community partnerships with state and local government entities in undertaking multi-benefit projects in urban riparian corridors; 4) authorize a standard allowance for grant recipients' indirect costs; and 5) authorize advance payments to smaller grant recipients.

Largely due to CUSP advocacy, the final version of AB 2444 gave priority to youth conservation programs, authorized 25 percent advance payments on grants serving disadvantaged communities, allocated funds directly to the USRP, and directed the Resources Agency to develop grant guidelines supporting local partnerships to restore and enhance waterways.

Already in 2017, two parks and water bond measure have been introduced: SB 5 (DeLeon) and AB 18 (Garcia). Each of our 2016 victories is retained in the new bond measures with the exception that SB 5 does not yet include a direct allocation to the USRP. Nonetheless, retaining those victories and ensuring adequate funding to the USRP will require diligent attention from all of us.

In addition to legislative action on parks and water bonds, a citizen-based initiative is underway to place a park-water bond measure on the November 2018 ballot. CUSP will be reaching out to these organizers to ensure that the needs of urban streams are adequately addressed.

Other Funding Opportunities

CUSP is looking at the potential for Proposition 64, the marijuana initiative that passed in November, to support restoration of urban streams and riparian areas. The Proposition levies a tax on growing and selling marijuana, and after covering collection and enforcement costs, the measure directs 20 percent of the funds into a new *Environmental Restoration & Protection Account* to clean up, remediate, and restore environmental damage in watersheds affected by marijuana cultivation and also *“to support local partnerships for this purpose.”* This latter provision was added at the request of CUSP and is intended to ensure that community based groups have the capacity to engage and advocate for the best watershed projects in their neighborhood, and to support local watershed councils.

Early estimates suggest that eventually nearly \$1 billion annually may be available in Prop 64 tax revenues. As the Legislature begins to consider this revenue, CUSP will work to ensure that a portion goes directly to developing these partnerships.

Existing grant programs may also provide opportunities for stream restoration and enhancement projects sponsored by community based organizations. The CA Natural Resources Agency administers several, including:

- Environmental Enhancement & Mitigation: \$7m annually from fuel taxes for projects related to transportation infrastructure such as urban forestry, resources land protection, and others.
- Urban Rivers: Prop 1 funding, the second of two cycles (\$9.3m each), will get underway in 2017.
- Urban Greening: Green House Gas Reduction Funds (GHGRF) from the climate Cap & Trade program; the first cycle will be available in 2017.

For more information regarding these and other CNRA programs go to: <http://resources.ca.gov/grants/> or http://resources.ca.gov/bonds_and_grants/statewide_bonds_oversight/

Other state departments that implement stream restoration funding are:

- CalFire administers the Urban Forestry program using GHGRF funds (although the 2017 cycle has closed). http://www.fire.ca.gov/resource_mgt/resource_mgt_urbanforestry_grants
- Wildlife Conservation Board administers various grant programs that may be applicable, www.wcb.ca.gov

What About Cap & Trade Funds?

Many people wonder whether Cap & Trade funds could be used for stream and waterways restoration. The answer is complicated, both technically and politically.

In 2006, state law was enacted (AB 32) setting a goal to reduce greenhouse gas emissions to 1990 levels by 2020. The CA Air Resources Board (CARB) was given a wide array of authorities to accomplish this, including the market-based trading of emission allowances (Cap & Trade). However, the market-based system faces two challenges: the regulations are limited to being effective only between 2012 and Dec. 31, 2020, and the revenues generated from the sale of allowances are being contested as unconstitutional taxes.

California law requires that taxes (revenue collected from one source and used for largely unrelated purposes) be adopted by a two-thirds vote of the Legislature. Since AB 32 was adopted with a simple majority, industry groups went to court to nullify the sale aspects of Cap & Trade. The Appellate Court heard the case on Jan. 24, 2017, and will probably issue a ruling within two to three months, which will likely then be appealed to the state Supreme Court.

In 2016, the Legislature adopted and the Governor signed SB 32, which set a new greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030. It passed with a simple majority vote and didn't try to extend the market-based allowance sale authority, although it did elevate the role direct regulatory limits should play in greenhouse gas reductions, thereby giving the California Air Resources Board the hammer of heavy regulation vs. the existing, more flexible Cap & Trade program.

Because of an uncertain future for trading allowances (uncertain market value), recent sales have been disappointing, generating little new revenue. The Governor's 2017/18 FY budget includes a proposal to spend \$2.2 billion Cap & Trade revenues (\$700M in hand and \$1.5B anticipated), pending a continuation of the market-based allowance trading system.

To protect it from legal challenge, the Governor is proposing legislation to extend the Cap & Trade market system by two-thirds vote legislation this year. Although the Democrats have two-thirds vote majorities in each legislative house, there is a sizable group of moderate anti-tax business-friendly members. On the other hand, many in the business community, fearing heavy-handed regulations, now seem to support Cap & Trade allowance trading.

A two-thirds vote reauthorization of Cap & Trade would allow a flexible use of emission trade revenues, which could include stream restoration projects. Revenue obtained by majority vote legislation must be used for purposes closely tied to the source. Therefore, using existing Cap & Trade requires a highly developed analysis quantifying greenhouse gas emissions reductions, something not yet attained for stream/riparian restoration projects.

*By Vern Goehring, CUSP Capitol Representative,
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What you can do to support CUSP in the Capitol

It is critically important that Legislators know what their constituents are interested in and learn of those interests from constituents. Elected officials can be important allies whether you're looking for a vote in Sacramento or enhanced credibility in the community. Regardless of what you hear, most legislators want to know their constituents. Easy things you should do:

- Identify your state senator and assemblymember(s), <http://leginfo.ca.gov> as well as their address, phone numbers, email, etc.
- Create a file containing their interests, positions and statements regarding streams and related issues.
- Identify your members/supporters who are prominent community members who know legislators and who would be willing to help build relationships.
- Meet with legislators, preferably in their district offices, at least twice annually, including once just to introduce/re-introduce your organization and report on events in the area.
- Invite them to your organization's events—meetings, fundraisers, workdays, etc.
- If you are meeting to ask for a vote or other specific action, come prepared to make a limited number of supporting statements. Know the bill number of the budget item and where it is in the legislative process.
- Share important information learned with others in CUSP.

We thank the following for their support of CUSP:

- California Watershed Network
- California Riparian Joint Ventures
- Schwemm Family Foundation
- Balance Hydrologics
- Stantec
- Richard and Mariko Eastman



CUSP soil bioengineering workshop funded by the Schwemm Family Foundation. Schwemm has funded CUSP restoration projects on Wildcat, Sausal, Alhambra, and San Leandro Creeks in the East Bay.

FEATURED PARTNERS

Balance Hydrologics

Balance is a specialized firm, recognized as a leader in the analysis of watershed, channel, groundwater, and wetland dynamics. Our firm provides comprehensive experience in areas of particular significance with bank and channel stability. We work closely with planners, landscape architects, and biologists to provide implementable solutions to complex environmental needs. Our staff consists of over 30 highly qualified professionals with expertise in:

- hydraulic and hydrologic analyses
- geomorphic assessments
- channel monitoring
- fish passage
- groundwater and surface water interactions
- watershed assessment and restoration design
- sediment management and sediment quality
- stream gaging and sediment transport monitoring
- CEQA and NEPA support
- wetland protection and restoration

One of our principal goals is providing planners, engineers, biologists, and land managers with rigorous analyses quantifying significant watershed processes. Our emphasis is on intensive field study, generally structured to meet the specific needs of the habitat or watershed manager. Most investigations are designed to measure and control the effects of specific land uses on aquatic, riparian, or estuarine and wetland habitat values.



Balance Hydrologics restoration project on Penitencia Creek

Balance Hydrologics applies a multi-faceted approach to channel restoration projects that best utilizes the range of expertise in the firm. We typically begin our projects by evaluating the project site conditions and objectives within the context of the broader geomorphic and environmental setting. This leads to a fundamental understanding of the watershed- and reach-scale geomorphic and hydrologic factors that influence conditions at the site. Once the underlying processes are identified, Balance geomorphologists and engineers are equipped to further the design process using the latest computational methods and hydrologic and hydraulic modeling tools coupled with the breadth of practical experience garnered in previous projects. The end

product is typically a set of construction plans and specifications that are permissible, constructible, and cost-effective. Our familiarity with permitting requirements and our sensitivity to environmental impacts directly addresses other key factors for successful project implementation.

For fish-passage projects, we can draw on expertise in hydraulic modeling, fish swimming energetics, step pool and riffle design, hydraulics of fish ladders and culvert retrofits, development of construction documents and specifications, construction observation, and field engineering. To provide fish passage past vertical obstructions, we have completed projects involving restoration of entire river reaches as well as creation of step pools, riffle-pool sequences, and roughened channels. In each case our designs have provided habitat enhancements as well as fish passage. These enhancements have typically included additional or deeper pool habitat, improved spawning substrate, increased channel complexity, overhead cover, and improved riparian vegetation. Our designs have also addressed the severe bank erosion that is often associated with abrupt grade changes in stream bed elevations using methods that focus on bio-engineered solutions commensurate with the level of protection required. Whenever possible, our designs make use of locally-available or native materials appropriate to the site location.

The Riparian Habitat Joint Venture

By Stephen Lorenzato

More people are using our public spaces to do more things in more ways than ever before. When it comes to streams and rivers this is particularly true. This wave of need is leading to both new partnerships and new twists on old partnerships. A case in point is the work of the Urban Streams Restoration Program (USRP) at the state Department of Water Resources and the Riparian Habitat Joint Venture (RHJV), an ad hoc group of representatives of state and federal agencies and non-profits. The USRP has been around since the early 1980s, providing grants to small community stream restoration projects. The RHJV was established in the early 1990s to promote better management of riparian lands, habitats, and species. The USRP and the RHJV are joining forces to sponsor a *Riparian Summit* this October at the University of California, Davis.



Stevens Creek restoration by Balance Hydrologics

Riparian restoration is taking place across California, mainly prompted by mitigation requirements imposed on projects with other purposes. Despite mitigation, we continue to lose riparian acreage, and other riparian areas continue to wither under the stress of adjacent land uses. California supports less than five percent of its historic riparian acreage, and for some specialized riparian habitats far less than two percent of the historic level remains. A main goal of the summit is to move riparian management past the mitigation mind set. The summit, "Confluence to Influence," will have five themes:

- Riparian responses to a changing climate
- Tools and methods to advance riparian management
- Food safety and other regulations impacting riparian ecosystems
- Revitalizing riparian habitats in urban landscapes
- The multiple benefits of well-functioning riparian habitats

Our intent for the summit is to bring together people in a new wave of creativity and imagination that will move our efforts to sustain riparian lands to a new level. With the increasing demands on public spaces, and particularly streams, it is increasingly important for our communities to understand the value of our stream systems and how we can bring together our resources and needs. Blending efforts to provide parks, recreation, and alternative transit, to assist disadvantaged communities, and to restore our streams offers a new paradigm of collaboration backed by multiple funding streams. At the heart of this effort is the old philosophy of community based action, and community need. The RHJV and USRP have embarked on an effort to capture these old ideas in new ways with new

people and new outcomes. Please join us. "Confluence to Influence" will be held October 17-19 at the University of California, Davis. Contact Stephan Lorenzato at Stefan.Lorenzato@water.ca.gov for more information.

The California Watershed Network

By Michael Wellborn

The California Watershed Network (CWN) is a non-profit, all-volunteer organization that works to assist community-based restoration groups throughout California. We work to help local groups understand the complexities and key contacts in Sacramento while also advising legislators, staffers, and political representatives about the interests and needs of the community groups.

CWN has also participated in the actions of the ad-hoc California Watershed Coalition. The Coalition came about some 10 years ago in response to the determination by the Department of Industrial Relations that community volunteers helping on outdoor restoration projects funded by the state had to be paid prevailing wages. The Coalition came together to educate the governor and legislators on the absurdity of having to pay volunteers. Eventually, then Assembly Member Loni Hancock authored legislation exempting community volunteers from the wage regulation.

Future efforts for CWN include collaborating on conferences with Coalition partner groups to expand outreach about topical issues in the Capitol. CWN continues to stage its Watershed Day in the Capitol every spring in Sacramento; that Day has brought a new awareness of Sacramento issues and opportunities. This year's event will take place on March 29th and kick off at 9:00 a.m. at the Cal EPA building. Registration information is available at www.watershednetwork.org

Stantec

Stantec is a pioneer in the field of watershed science, river enhancement, and waterway design. Watershed science, engineering design, and ecology are disciplines we truly understand and bring definition to. We are leaders in the field of river restoration, constantly setting the bar for continued technical innovations and ecological sensitivity. We have proven experience in implementing techniques to reduce bed and bank erosion, restore ecological function, and enhance habitat. Our watershed professionals are passionate about their careers and include engineers, fluvial geomorphologists, biologists, soil scientists, regulatory experts, aquatic toxicologists, botanists, and hydrologists. Our multidisciplinary team will consistently deliver a complete understanding of interdependencies and ultimate performance metrics, blended with a clear understanding of your needs, throughout the project lifecycle.

Our innovations include:

- RIVERMorph® – The single most advanced software package developed for stream assessment. RIVER Morph® output facilitates development of innovative, project specific design criteria.
- 3-Dimensional (3D) Design – Provides accurate hydraulic modeling through the creation of a precise 3D proposed stream surface using proprietary Breakline software. 3D design allows optimization of cut/fill surfaces and reduces project cost.
- In-Stream Structures – Our in-stream structures have been successfully installed on federal, state, and municipal projects throughout the United States, and are now recommended for use by several regulatory authorities. Stantec utilizes only natural materials to create in-stream structures, restoring ecological function, and fluvial mechanics while maintaining natural aesthetics.



Stantec project in Duluth, Minnesota to reduce streambank erosion

Stantec has designed and implemented more than 450 miles of river restoration projects and conducted well over 1,000 miles of stream assessment and stream surveying projects across North America. We live in your watersheds; they are as important to us as they are to you. If interested in hearing more, feel free to contact Mike Vukman at mike.vukman@stantec.com or via his work cell phone at 925-818-2507.

As a long-time ally and friend of the urban creeks restoration movement, Mike has been working to address on-the-ground practical environmental resource management issues, mostly centered on riparian corridor restoration, since 1996. After working for the Urban Creeks Council of Berkeley for many years, he has been serving as a lead Environmental Scientist and Project Manager for one of the largest stream restoration groups in North America within Stantec's Ecosystem Restoration Division for the past five years. Even though he now gets to work on projects all across North America, he tries to maintain close connections with our like-minded friends and allies throughout California by staying involved in CUSP.

BOOK REVIEW

Urban Streams: Dead Or Alive?

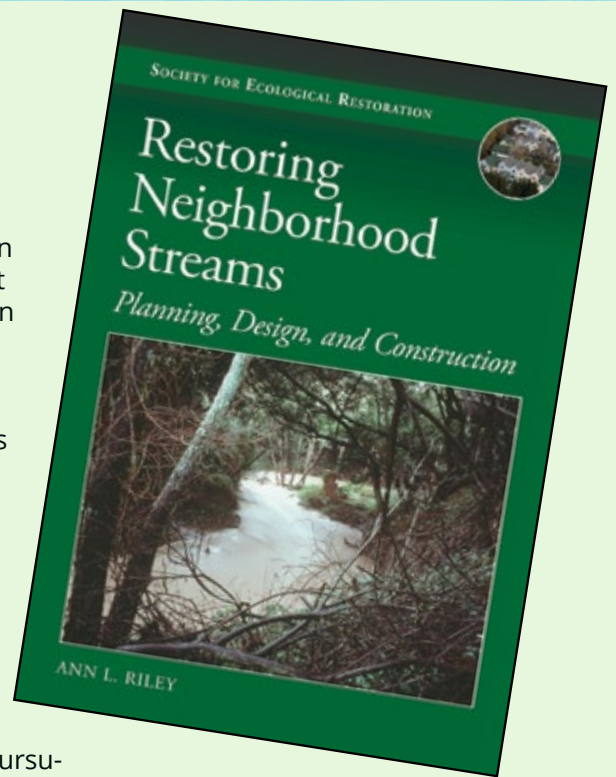
Restoring Neighborhood Streams, by Ann L. Riley, Island Press 2016

We habitually give up on restoring ecological functions to urban streams before we should. The widespread tendency is to attempt to make these chronically degraded waterways prettier rather than make the extra effort to return them to functioning ecosystems.

Restoring Neighborhood Streams, recently published by Island Press, and authored by CUSP co-founder Ann Riley, records efforts over a period of 30 years by urban creek advocates and restoration design professionals to achieve ecologically functioning environments in the characteristically constrained, challenging urban environment. It's important to achieve agreement on the definition of ecological functioning, and in that regard, the book relies on contributions from the Society for Ecological Restoration and a national task force of scientists who drafted consensus definitions based on the opinions of a variety of restoration professionals. In the San Francisco Bay Area, where the neighborhood cases in the book are located, the original objective for pursuing urban stream restoration was to find an alternative to stream-killing flood control channelization projects. The stream restoration movement was a search for an alternative approach to engineering projects that put streams in concrete or rock straightjackets. Later, groups organized around protecting native anadromous fish populations. The new alternative designs featured "quasi-equilibrium" or dynamic "active" or "bankfull" channels contained within floodplains; these channels could erode, deposit and transport sediment, meander, flood, and support riparian vegetation and in-stream habitat.

If you love to hear about project failures, this book is for you. The book's 10 neighborhood cases were selected because they offer a full array of environmental, social, and political situations. The book therefore contains lessons on project planning as well as detailed information on the projects' designs and construction methods. The issues represented are: how to acquire needed floodplain space to support an ecologically functioning stream in urban, high value real estate areas; how best to reduce flood damages without destroying the creek; how to integrate the fields of fluvial geomorphology, hydraulic engineering, and conservation biology to achieve an interdisciplinary project design; which geomorphic, biological, and wildlife monitoring makes sense? All of these questions required experimentation over time, which meant that in the process, mistakes were made in addressing these questions.

What do these cases teach? The cases show us that when design professionals make the extra effort to raise awareness with their clients and the public on the space and design features needed by the creek so it can be



alive and dynamic and support aquatic and terrestrial wildlife, we achieve the best projects. Replacing rock riprap, gabions, geocells, articulated concrete blocks, concrete, and other structural products with soil bioengineering plant systems provides dramatic value by substituting inherently destabilizing stream practices with systems that have been proven to achieve equal or better performance, according to the U.S. Army Corps of Engineers and Natural Resources Conservation Service engineering manuals (NRCS 2007) (USACE 1994, 2000). Another lesson learned is that using regional stream restoration curves, which are based on plots of watershed drainage areas with “stable” stream dimensions, is a reliable and primary tool to design dynamic but low-maintenance stream channels. Often, writers of restoration literature disapprove of applying hydraulic geometry relations such as these regional curves to restoration design in general, and design in urban areas in particular. The success of the design tool is related to efforts to develop restoration curves representing similar, nearby built-out urban watersheds, and sub-regional differences found in counties or parts of counties with similar annual average rainfall and geography. Data collected over time also revealed that only a small percentage of the native riparian species used to re-vegetate the projects thrived. Understory shrubs and trees were able to survive if planted after a canopy was established, something that may take a number of years in order to complete the revegetation. Project designers may be trying to impose a complexity of riparian species that the site did not support historically. The social-political lessons include the finding that good projects were not implemented unless local citizens advocated for the project, and that ultimately a project succeeded or failed based on whether or not it was adopted by a local public agency.

Finally, there are different “schools” of restoration, each of which has advocates and detractors. The best performing projects were those that combined different schools, including engineering-based analysis, stream and floodplain processes and channel evolution, and hydraulic geometry tools.

The data summarized in the book include the costs of construction, land acquisition, planning, design and permitting as well as flood performance, geomorphic channel changes, evolving public issues, and planting performance over a period of 20 to 30 years.

Why write a book on neighborhood or reach-scale stream projects, particularly given the current emphasis on the importance of landscape scale restoration? The neighborhood scale projects presented here have value alone, as less expensive and more effective flood- and erosion-reduction projects. They benefit disadvantaged communities and introduced local youth to the environment, science, and environmental jobs. A view of neighborhood projects over time reveals an additional perspective on reach-level projects, which is that in each case described, an initial project motivated a chain of others. In a 20 to 30 year period, the watersheds benefitted from a sequence of multiple projects. The neighborhood scale projects in this book were the pilots that motivated larger, regional scale stream restoration projects that occurred later on.

Restoring Neighborhood Streams will be featured in a National Public Broadcasting show called *Urban Nature* on March 30, 2017. To order the book, go to www.islandpress.org



Baxter Creek before and after. Top photo by Lisa Owens. Bottom (kite) photo by Cris Benton. Island Press 2016.