What a year – in a few short months we went from exceptional drought to over 100 inches of rain in several parts of the County. This shift, from drought to deluge, highlights the need to prepare for the extremes, and here at the RCD, working with our partners and landowners, we have been busy doing just that.

During the drought, our efforts focused on helping residents and the agricultural industry through programs and projects that help manage in times of water scarcity. We hired an agronomist, who working in partnership with PV Water and in support of the goals of the Community Water Dialogue, provided irrigation system performance audits in the Pajaro Valley. Armed with recommendations from those assessments, landowners and growers were primed to take advantage of funding from the Natural Resources Conservation Services (NRCS) to implement projects and irrigation system improvements helping reduce overall water use in the valley. Understanding the role that healthy soils can play in mitigating and adapting to climate change, our staff has been working on an innovative plan to improve soil health by incentivizing rotational cover cropping. Building soil health will achieve multiple benefits including increasing carbon sequestration, water storage capacity and soil fertility while reducing overall water demand. The drought also had significant impact on streamflow, which impacted resident’s water supply and also took a toll on habitat for steelhead. We worked with Trout Unlimited to secured funding from the Wildlife Conservation Board (WCB) to find win-win solutions for residents of the Soquel Creek Watershed by finding opportunities for off-stream storage that will improve streamflow while providing a more secure water supply for residents. The WCB and Coastal Conservancy are also funding out work with CalTrans, Cal Poly and a number of other partners on an ambitious plan to restore the Scotts Creek lagoon and marsh ecosystem while providing for a resilient transportation corridor.

And then the rains came…this past winter’s storms wreaked havoc throughout the county, we saw landslides, road failures, slip outs, flooding and downed trees across the County. Many of these impacts were not-so-subtle reminders of the need for proper maintenance of culverts, roads and drainage in advanced of winter storms. The RCD, together with the NRCS, has been busy with requests for service from landowners impacted by the storms. As we assist residents with last year’s impacts, we are in the midst of another construction season, building projects that will capture and infiltrate stormwater for recharge, repair erosion and other storm-related impacts, and that will restore sections of several creeks with the placement of large wood structures.

None of this work would be possible without the support of our numerous partners and this community that prides itself on environmental stewardship, and we are grateful for all of the support we receive.

~Chris Coburn, Executive Director
Scotts Creek: Collaborative Restoration

Over the past three years, the RCD secured critical funding from CalTrans, the State Coastal Conservancy and the Wildlife Conservation Board (WCB) to support the development of restoration and infrastructure designs for the estuary and creek surrounding the Highway 1 Scott Creek Bridge.

Many Santa Cruz County residents know the mouth of Scotts Creek as a great surf spot, wildlife viewing area or the perfect place to take in the beauty of our coastline. But a lesser known fact is that Scotts Creek is absolutely critical to the recovery of coho salmon and steelhead and provides important habitat for a number of other threatened and endangered species including California red-legged frogs, tidewater goby and snowy plover. According to the 2012 National Marine Fisheries Service’s (NMFS) Coho Recovery Plan, Scotts Creek is regarded as the most important stream in the region for supporting a sustained run of Coho and for contributing to regional recovery of the species. Unfortunately, over the last 100+ years, Scotts Creek, its marshplain and lagoon have been significantly impacted and by historic activities, most notably construction of Highway 1. Three of the major limiting factors identified for the Scotts Creek estuary are all linked to the infrastructure associated with the Highway 1 crossing and result in a significant loss in the effective area and quality of habitat available for threatened and endangered species. Because the bridge is nearing the end of its useful life and currently presents safety concerns due to its narrow approach, it presented a unique opportunity for the RCD to lead an effort with other stakeholders to work with CalTrans on a design that benefits both people and wildlife. In 2012, CalTrans committed to support development of a restoration concept while exploring approaches to replacing the Highway 1 Bridge. The goal will be to maximize ecological value and to re-establish a dynamic and complex lagoon while providing a safe transportation corridor. The collaboration through the Integrated Watershed Restoration Program (IWRP) was the link that established the partnership among the RCD, Conservancy, CalTrans, County and the Regional Transportation Commission (RTC) to work together with resource management agencies to find creative solutions to this challenge.

Soquel Creek Streamflow Stewardship Project

Soquel Creek is historically one of the most important steelhead spawning and rearing streams in Santa Cruz County. In 1959, the abundance of steelhead in the creek was estimated at 17,500 fish, but the stock declined significantly during the 1970’s, coincident with increased diversions and drought that reduced stream flow. While progress has been made in the watershed to address other impairments, streamflow still suffers. The Soquel Creek Watershed Enhancement Plan, Soquel Creek Salmonid Assessment and Enhancement Plan, and the Coho Recovery Plan all point to low summer and early fall streamflow as a key limiting factor in the effectiveness of recovery efforts. All of the plans call for working with local water users on ways to leave more water in the stream or change the timing of their diversions away from the critical low-flow time period.

The RCD, Trout Unlimited, landowners and water users in the watershed mutually formed the Soquel Creek Streamflow Stewardship Project (SCSSP). Together, we are working to develop voluntary, high-priority and technically- and socially-feasible projects that yield benefits for fisheries and human populations. At its core, the SCSSP seeks to shift water diversion from the dry season to the rainy season to benefit salmonid recovery in Soquel Creek while meeting human water needs. The types of solutions being looked at are installing tanks, ponds and alternatives to streamside wells that could be accompanied by improvements in water use efficiency and rotations of diversions. Funding from the Wildlife Conservation Board, is enabling us to conduct outreach and work with local landowners to collect data. Stay tuned for more exciting news about this project.

RCD 2016-17 Fiscal Year Budget

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*The difference between income and expenses represents grant money spent but not yet received by the RCD.
Farm Water Conservation

Reducing overall groundwater pumping for agriculture is necessary in order to reduce aquifer overdraft in the Pajaro Valley Basin. While this is not an easy proposition to make, data collected by the Pajaro Valley Water Management Agency (PV Water) is showing a promising trend. How much of it can be attributed to on-farm conservation efforts? It’s hard to say. But the fact that we are moving in the right direction is certainly encouraging and a good testimony to all the partnerships and the cumulative efforts involving numerous stakeholders throughout the valley toward: a) raising awareness about aquifer overdraft and seawater intrusion issues, and b) taking concrete actions to tackle the problem.

This past year, the RCD of Santa Cruz County continued to provide and expand its technical assistance and mobile irrigation lab programs supporting growers to improve water conservation on farms. Funding through grants from the State and Regional Water Quality Control Board and PV Water, these programs are offered free of charge to the growers and include: irrigation system evaluations (and associated recommendations); irrigation water use monitoring and technical assistance for weather-based irrigation scheduling; nitrogen use monitoring and fertilizer recommendations; and soil moisture monitoring and associated recommendations for irrigation scheduling.

In addition to offering these technical assistance services, the RCD has been facilitating the development of a pilot Rotational Covered Fallow plan for increasing the acreage that gets temporarily fallowed (and planted with a cover crop) each year, as one more strategy for reducing groundwater pumping from the basin. RCD staff has also been partnering with RCD Monterey to develop a practical hands-on training series for irrigators, in Spanish.

Groundwater Recharge for Basin Sustainability

Pump less and recharge more. These seemingly simple guiding principles for reducing aquifer overdraft in coastal groundwater basins require thoughtful considerations and collaborative work in order to materialize. In late 2016, the RCD, with technical leadership from UCSC’s Hydrogeology Group and financial support from the State Coastal Conservancy completed a key project to help increase aquifer recharge in our region. This project generated a number of maps and spatial datasets to assess and prioritize suitability for Distributed Stormwater Collection and Managed Aquifer Recharge (DSC-MAR) throughout four basins within Santa Cruz and northern Monterey Counties.

DSC-MAR is a landscape management strategy that can help to maintain long-term water supply reliability by recapturing and infiltrating storm runoff when and where it is most available. DSC-MAR targets relatively small drainage areas (generally 100-1000 acres) from which stormwater runoff can be collected to infiltrate 100-300 acre-feet of water per year. Option for infiltration are surface basins, typically having an area of 1-5 acres, flooding of agricultural fields or flood plains, use of drywells, or other strategies. Smaller projects might provide additional benefit, but unit costs are likely to be somewhat greater. Larger projects can require more infrastructure and maintenance costs.

This project produced a Regional Managed Aquifer Recharge (MAR) and Runoff Analysis for Santa Cruz and Northern Monterey Counties, and developed information and decision support tools to identify areas with high potential for both suitable hydrologic conditions and enough stormwater runoff to justify implementation of MAR projects. The RCD identified multiple properties in the region for which favorable analyses were completed. We then developed working relationships with the landowners and are currently facilitating permitting and construction of three voluntary DSC-MAR projects. There is great potential for DSC-MAR in our region and the tools developed as part of this project can serve as a template for other areas of the state.
Woodchips Help Clean Water

For two decades, the RCD has been collaborating with landowners, farmers, agencies, and other non-profits in the Watsonville Sloughs to support a wide range of conservation efforts, including partnering with the Land Trust of Santa Cruz County (LTSCC) and Watsonville Wetlands Watch (WWW) on the acquisition and restoration of a 46-acre parcel in the slough system. While the parcel was farmed commercially, it was frequently inundated by floodwaters from the slough, which challenged viable operations. In 2012, during the management plan development for this parcel, approximately four acres was set aside with the intent to install a water treatment facility that could also serve as a demonstration site.

With project funding from the State Water Resources Control Board, the RCD worked closely with LTSCC, neighboring landowners and farmers to lead the installation of a woodchip bioreactor that collectively treats and removes nitrates from tile drain runoff water from multiple nearby farms. Woodchip bioreactors, also known as denitrification bioreactors, create low oxygen conditions for bacteria to remove nitrate from water using woodchips as the food source for the bacteria. The system collects runoff from approximately 60 acres of farmland where it’s held in a 1500 gallon tank before being routed through a 150-foot long by 55-foot wide bioreactor filled with 440 cubic yards of woodchips. After treatment, water leaves the bioreactor and passes through a broad, shallow, vegetated swale prior to being released into Watsonville Slough. A flow meter was installed at the inlet of the bioreactor to measure the volume of water treated by the project and water quality samples were collected at the bioreactor inlet, outlet, and at the end of the vegetated swale so that we can learn more about the effectiveness of the nitrate removal. So far, project monitoring has shown a reduction of Nitrate as N of 70-90%.

This project presents a unique opportunity to demonstrate the benefits of collective treatment projects, both to the downstream natural resources, and to the upstream landowners and growers. The RCD is excited to be partnering with the LTSCC on implementing and evaluating this project, and sharing the results with others in the region.

Have You Seen the Signs?

The RCD designed and installed interpretive signs for five sustainable stormwater management projects around the county. Outreach and education funding was awarded through a State Water Board Proposition 84 grant in collaboration with the City and County of Santa Cruz, Scotts Valley Water District and the Regional Water Management Foundation.

Put Your Money to Work for Local Resource Conservation

The Resource Conservation District of Santa Cruz County is primarily funded by grants and contracts with public and non-public entities. Private donations help to further the mission of the District and can be targeted toward your area of interest. The RCD can receive tax deductible donations under Internal Revenue Service Code Section 170 (b) and 170 (c) (1). Feel free to contact us with any questions at 831.464.2950 or online at www.rcdsantacruz.org.