



# ANNUAL REPORT 2016

Fiscal year 2016 July 1, 2015 to June 30, 2016



# About the Riverside-Corona Resource Conservation District

The Riverside-Corona Resource Conservation District (RCRCD) is a local government agency that works to conserve the natural resources (soil, water, air, native plants and wildlife) of areas within western Riverside and San Bernardino Counties in southern California.

The District advocates that each acre of land be managed according to its needs and promotes the sustainable use of natural resources for each land-use, including native habitats, urban/suburban areas, and agriculture.

RCRCD provides resource management assistance to private and public land users and conducts land treatment, education, and volunteer programs. The District works to sustain natural resources in a variety of ways:

- providing onsite technical assistance, such as irrigation system evaluations;
- restoring habitat through the removal of invasive species and reestablishment of native species; and
- educating broad audiences about stewardship of resources in natural, urban and agricultural ecosystems.

RCRCD is non-regulatory and self-governing with a five member Board of Directors. The Board retains local administration and direction over programs. The District achieves its conservation goals by coordinating public and private resources and by partnering with “cooperators”, land owners who are interested in conserving natural resources while using or developing property. A cooperator may be an individual land owner, a group, such as a Home Owner Association, agency and/or a business. The District enters into Memorandums of Understanding (MOUs) with cooperating agencies, which spell out working relationships.



*Riverside-Corona Resource Conservation District*

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# Annual Report

This report of accomplishments for the period from July 1, 2015 through June 30, 2016 (Fiscal Year 2015-16) is organized to follow the three main RCRCO program areas:

**Assisting Land Users with Resource Management**

**Habitat Land Management and Preservation**

**Urban Sustainability, Education, and Outreach**

# Assisting Land Users with Resource Management

RCRCD provides technical assistance to land users, “cooperators”, who are interested in conserving natural resources while using or developing property. Services provided to cooperators might include:

- onsite evaluation of a problem, such as an inefficient irrigation system;
- conservation planning based on resource data such as soil type and crop water needs; and
- specifications for the installation of conservation practices, such as erosion control structures.

The RCRCD office provides resource data and planning tools, including soil and water testing, soil survey maps, and other technical information. Some natural resource management and conservation planning information is provided to RCRCD cooperators from our technical partner the USDA Natural Resources Conservation Service (NRCS).

## Water Conservation

Water is one of our most vital natural resources. RCRCD’s Irrigation Water Management (IWM) Mobile Lab evaluates irrigation systems for efficiency and uniformity. Efficiency is the total amount of water applied to vegetation, based on plants’ evapotranspiration, and uniformity is the amount of water distributed evenly over the total vegetated area. The Mobile Lab auditor travels to cropland, homes, and large turf areas at parks, schools, and golf courses to test irrigation systems. On properties over one half an acre, soil samples are taken and tested for pH, nitrate nitrogen, phosphorus, conductivity, Potassium, Calcium, Ferric Iron, magnesium, manganese, nitrite nitrogen, sulfate, and soil texture. The auditor then develops a report with recommendations for system improvements to help cooperators conserve water, and in doing so, save money. During Fiscal Year 2015-16, the IWM mobile lab performed a total of 60 evaluations on 751.54 acres, which included 30 agricultural evaluations on 457.58 acres and 30 turf evaluations on 293.96 acres.



## Soil and Water Testing

RCRCD continued providing low-cost soil and water testing for private landowners and home owners. The lab completed 72 soil tests and one irrigation water test during Fiscal Year 2015-16. Soil tests evaluate macronutrients and micronutrients, soil texture, conductivity, and pH level. Water tests evaluate nitrate-nitrogen, phosphorus, pH level and conductivity.



## Technical Advice and Organizational Support

RCRCD staff works on committees and provides information about sustaining natural resources in cooperation with a variety of entities including:

- Santa Ana Sucker Recovery Team
- Native Freshwater Fauna Working Group
- Riverside Green Action Plan (GAP)
- Santa Ana River Task Force
- Inland Urban Forestry Council (IUFC)
- Santa Ana River and Orange County Weed Management Area (SAROCWMA)
- California Invasive Plant Council (Cal-IPC)
- Irvine Ranch Conservancy

# Habitat Land Management and Preservation

## Conserving Critical Habitat

The Riverside-Corona Resource Conservation District (RCRCD) is a non-regulatory local agency that works to permanently protect land that has habitat, scenic, and/or agricultural values. RCRCD works to connect blocks of habitat by preserving and restoring corridors or linkages for wildlife movement and migration. RCRCD conserves open space through habitat restoration, management, and land preservation:

**Restoration:** The Conservation District improves degraded habitat by removing invasive species and trash, replanting native plants, augmenting native populations of plants and animals, protecting soil from erosion, protecting water from pollutants, and more.

**Management:** RCRCD continues to maintain and monitor restored habitat for water quality, critical wildlife species, invasion of exotic weeds, trash dumping, Off-Road Vehicle (ORV) intrusion, noise, and other impacts.

**Preservation:** The District protects important areas from future development by accepting donations of land (fee title) and conservation easements.

## Habitat Restoration

Restoration projects are cooperative efforts between RCRCD, private landowners and other agencies on private and/or public lands, including the District's conservation easements. The amount of restoration is determined by permit requirements (by regulatory agencies) and field assessments of habitat quality and site conditions. RCRCD restores habitat in natural areas by re-establishing local native plant species for a variety of plant communities: riparian, alluvial scrub, coastal sage scrub, wetland, grassland, oak woodland and more. Restoration efforts provide habitat for sensitive animal species including the California Gnatcatcher, Stephen's Kangaroo Rat, Horned Lizard, Red-sided Garter Snake, Least Bell's Vireo, Willow Flycatcher, Santa Ana Sucker, Munz's onion, Chocolate lily and other native birds, mammals, fish, and amphibians as well as for several rare plant species.

## Mitigation Projects for Loss of Habitat

RCRCD worked with numerous developers, state agencies, cities, counties and other special districts to actively restore and monitor habitat to compensate for development impacts and land use changes. The California Department of Fish and Wildlife, Army Corps of Engineers and Santa Ana Regional Water Quality Control Board allow RCRCD to work in waterways through Permits 1601, 1603, 404 and 401. Mitigation restoration projects were installed at two new project sites this year. This included oak plantings along Temescal Wash and riparian habitat restoration at Springbrook Arroyo.

## In-Lieu Fee Program

RCRCD worked with the Army Corps of Engineers to further develop the “In-Lieu Fee” program in response to increasing demand for mitigation opportunities to help offset impacts due to jurisdictional lands in the Santa Ana Watershed. In-Lieu-Fee (ILF) is an approach to habitat mitigation in which a “permittee” (i.e.: land developer or public agency project proponent) pays a fee to a third party “in lieu of” conducting project-specific mitigation. ILF mitigation is used to compensate for unavoidable impacts to wetlands or other waters when it is in the best interest of the environment, and when other approaches to compensation are not available or practical. In the Santa Ana River one site was approved for future restoration and enhancement of riparian wetland habitat. Restoration and enhancement of riparian habitat is in progress at an approved site in Temescal Wash.

## Monitoring of Habitat Restoration Projects and Conservation Lands

RCRCD staff conducted periodic monitoring of 15 restoration projects during Fiscal Year 2015-16. Staff conducted annual, quantitative monitoring for 10 restoration projects. Quantitative monitoring included measurements of survival, vegetation cover, and species richness. For all other planting projects, qualitative monitoring was conducted, including taking photos from fixed photo points and recording notes on general condition of the vegetation.

RCRCD staff monitored its other conservation lands quarterly to annually and conducted various types of surveys. For example, staff conducted bird surveys for the California Gnatcatcher (CAGN) within the Temescal Open Space and continued work on detailed mapping of vegetation and soils. Bird surveys for CAGN and for Least Bell's Vireo were conducted at the Dos Lagos Conservation Easement and Bedford-Temescal Property. The data will be used to update a long-term management and restoration plan for these reserves. Focused species surveys for rare plants, including Munz's onion, were done at the Sycamore Creek Preserve as part of a periodic monitoring process. Staff also began preliminary vegetation surveys within the new McBride Preserve.

As part of ongoing stewardship, RCRCD coordinates the cleanup of trash and debris and conducts water quality testing and wildlife monitoring on easements. RCRCD blocks illegal Off-Road Vehicle (ORV) routes and replants disturbed soil with native vegetation. Occupation of reserve sites by homeless camps continued to increase throughout riparian areas during the drought. Staff worked with neighboring land owners, code compliance officers, and law enforcement to deal with this increasingly difficult issue.



Least Bell's Vireo

Photo by Jim Pike

## Conserved Lands

During Fiscal Year 2015-2016, the District continued to work to obtain land and conservation easements. RCRC D has accepted numerous easements and is in the process of acquiring 10 more. Agencies, individual landowners, and Home Owners Associations have given conservation easements to RCRC D. Most of the conservation lands have required extensive restoration, including removal of exotic weeds and replanting with native species.

Conservation Easements	Acreage
Anza Creek	12.57
Brown Canyon (in progress)	0.76
Cajalco Wetlands (in progress)	10.2
City of Corona easements (in progress)	88.24
City of Riverside – Lower Tequesquite	2.71
Coronation-Main Street (in progress)	TBA
Department of Water Resources Slope	4.9
Foster Road (in progress)	1.04
Hole Creek	10.5
Lee Lake Water District	30
McBride (in progress)	19
Mission Ranch	3
Munaretto	1.5
Riverside County Park and OSP - Lower Tequesquite	4.3
Shinkle - Highgrove	0.6
Spring Mountain Ranch (in progress)	±59.52
Sycamore Creek Preserve	72.66
Tagorda	0.3
Temescal Wash	13
Thomas Ranch	4.35

RCRC D Owned	Acreage
Altfillisch	±111
Bedford-Temescal Confluence Parcel	15
Boulder Basins & Drainages (in progress)	8.7
Chandler	7.8
Deleo	26.49
Dos Lagos Open Space – Temescal	135
Goldenstar	8.21
Horsethief Canyon (in progress)	306.71
Lake Street (in progress)	4.69
McLane	0.9
McBride	496
Trilogy (in progress)	±225.8



## Wildlife Corridors

RCRCD manages many valuable conservation lands that are important to the region's plants and animals. The habitat lands provide corridors which link larger blocks of habitat for wildlife movement and migration. They also help improve water quality, provide beautiful vistas, and stabilize eroding waterways. Many of these conservation lands have required extensive restoration. Most, but not all of the District's conserved and managed lands are located within four main areas: the Temescal Corridor, Cajalco Corridor, Riverside Area Arroyos, and the Santa Ana River Main Stem.

**Temescal Corridor:** One of the District's long-term goals is to preserve habitat lands that extend from the Cleveland National Forest through Temescal Canyon to the Gavilan Plateau and Lake Mathews. Besides multiple easements, RCRCD owns 680 acres of natural lands (fee title) along Temescal Wash, Bedford Wash, the hills above Dos Lagos and the McBride property in the foothills of the Santa Ana Mountains, adjacent to the Cleveland National Forest. These lands include 631 acres of upland habitat and 49 acres of riparian and alluvial habitat. RCRCD also holds conservation easements over 124 acres of riparian, alluvial, and upland habitat within the Temescal corridor.



The rare Tecate cypress is protected within the newly acquired McBride conservation property.

**Cajalco Corridor:** The Temescal Corridor connects to the Cajalco Corridor. The Cajalco floodplain and adjacent Gavilan Hills support a variety of important habitats, including: wetlands, waterways, oak woodlands, juniper woodlands, and alkali plant communities. RCRCDD holds conservation easements over 4.8 acres of lands in the Cajalco corridor and is in the process of acquiring more.

**Riverside Arroyos and Santa Ana River Main Stem:** Many of RCRCDD's conservation easements are along beautiful and important arroyos (waterways) that flow through unincorporated parts of Riverside County and across adjoining portions of the City of Riverside. Besides multiple easements, RCRCDD now owns natural lands (fee title) in the Altfillisch Conservation Area along the Santa Ana River, which includes over 111 acres of riparian wetland habitat to be restored. RCRCDD owns over 120 acres and holds conservation easements over roughly 26 acres of mostly riparian and wetland habitat within this area. For areas along Riverside's arroyos, the District worked to help educate homeowners, land users and local groups about stewardship at the wildland-urban interface. Staff presented for the Lake Mathews Homeowners Association. Residents learned about specific actions that they could take to reduce their impacts on habitat and wildlife, such as by eliminating invasive plant species from landscaping and using integrated pest management techniques in their yards. To add to the education component, several RCRCDD publications were distributed to residents:

*Living on the Edge of the Urban-Wildland Interface* [www.rcrcd.org/uploads/files/LivingOnTheEdge.pdf](http://www.rcrcd.org/uploads/files/LivingOnTheEdge.pdf)

*Conserving Critical Habitat* [www.rcrcd.org/uploads/files/ConservingCriticalHabitat.pdf](http://www.rcrcd.org/uploads/files/ConservingCriticalHabitat.pdf)

*Protecting our Native Fish* [www.rcrcd.org/uploads/files/ProtectingOurNativeFish\\_6-10-10.pdf](http://www.rcrcd.org/uploads/files/ProtectingOurNativeFish_6-10-10.pdf)



## Santa Ana Watershed Association (SAWA)

RCRCD is a member of the Santa Ana Watershed Association. SAWA is a nonprofit organization that works in native habitats within the Santa Ana River watershed by removing invasive plants and animals from riparian areas and monitoring wildlife populations.

## Santa Ana River and Orange County Weed Management Area

RCRCD continued as a partner with the Santa Ana River and Orange County Weed Management Area (SAROCWMA), which works to eradicate non-native weeds on both private and public lands in portions of Riverside, San Bernardino and Orange Counties. The Weed Management Area has been successful in controlling common invasive weeds, especially *Arundo donax* (giant reed), perennial pepperweed, Tamarisk (salt cedar) and castor bean in outlying populations. The group works to control populations of invasive plants but also targets smaller populations of weeds and removes them before they become a problem. This group has been unfunded since 2014 so current efforts have been focused on early detection of emerging weeds and collaboration between members on weed control work with outside funding.



Castor bean plants

## Fish and Amphibian Programs

RCRCD conducted a variety of restoration and research projects in an effort to increase fish and amphibian populations in their native ranges of the Santa Ana Watershed. Native fish and amphibian species are impacted by loss or degradation of stream habitat, water pollution, drought, non-native fish and aquatic animals, flood control structures, water diversion, sand and gravel mining, and changes in the watershed that result in erosion, sediment and debris flows.

### Native Fish Rescues, Reintroductions and Studies

During Fiscal Year 2015-16, the RCRCD's stream supported a native fish population of Speckled Dace, Arroyo Chub, and Santa Ana Sucker, a threatened species. The number of fish varies from year to year, depending on natural reproduction. The recirculating, 300-foot long stream was constructed to support and propagate native fish and to provide opportunities for study and research of native fish life history. The seven, 100 foot long augmentation raceways at the Districts headquarters were used for the breeding and study of two native fish species. One in a project conducted with the California Department of Fish and Game (DFG)- Region 6, for the purposes of reintroduction of Santa Ana speckled dace into Santa Ana river tributaries, primarily in the San Bernardino mountains, and the other with the US Fish and Wildlife Service (FWS) for the purposes of researching the effects of a non-native red algae that now grows in the Santa Ana river and has affected the reproduction of Santa Ana sucker. The study was completed this year and results were published in a separate report. A third study was provided by the district in a cooperative effort with the U.S. Geologic Survey on the Santa Ana River to survey the size and age class of native fish and current habitat conditions. The US Geological Survey (USGS) is conducting analysis of the results.



The RCRCDD has also managed and monitored a coastal rainbow trout population in the Coldwater Creek watershed of its Trilogy Open Space property for several years. This year, the creek ran dry in various sections due to the multiple year drought. RCRCDD staff and members of the Region 6 office of the CA Dept. of Fish and Wildlife assisted with a relocation of 150 fish to the Mojave Hatchery in a successful effort to keep fish from being lost during drought conditions. All fish will be placed back in the creek once water levels return after winter rains.



## Riverside Waterways

RCRCDD continued to work with local water districts, US Fish and Wildlife Service, California Department of Fish and Wildlife, San Bernardino Valley Municipal Water District, and the City of Riverside on the restoration of the lower Tequesquite Arroyo for the benefit of the Santa Ana Sucker. The creek was degraded due to trash, exotic plants and lack of connectivity to the river. The five-year project involves removing exotic species, controlling erosion on channel banks, placing substrate onto the channel bottoms for spawning habitat, and planting native vegetation.

RCRCDD also restored riparian areas adjacent to Anza Drain and Hole Creek in collaboration with the County and City of Riverside. The District received \$125,000 from the Santa Ana River Restoration/Recovery Trust Fund held by San Bernardino Valley Municipal Water District to restore native fish habitat in the lower Tequesquite Arroyo.

## Water Quality Testing

During Fiscal Year 2015-16 staff monitored water quality quarterly at Lee Lake Conservation Easement pond, other sites in Temescal Canyon, RCRCDD's native fish stream and raceways; periodically in Coldwater Canyon; and occasionally at other sites. Most of the testing locations were dry due to lack of water. The testing provides data for RCRCDD and the Regional Water Quality Control Board to help track water quality fluctuation and trends.

## Amphibian and Aquatic Reptile Restoration

RCRCD and partners work to foster and reintroduce amphibian and aquatic reptile (pond turtle) populations into restored conservation areas. Some species include the Western pond turtle, California salamander, Coast Range newt, California tree frog and Spade-foot toad. The RCRCD rescued a number of pond turtles this year, with one used in an exhibit to educate the public on the effects of the drought, water flows and non-native species on native aquatic reptile and amphibian populations. Other pond turtles are released into conservation area ponds and creeks to help re-establish reproducing populations in cooperation with DFW.

## Plant Programs and Projects

The Riverside-Corona Resource Conservation District (RCRCD) provides native plants for habitat restoration, landscaping and other types of planting projects. RCRCD propagates plants at its native plant nursery for a variety of re-vegetation projects and uses its own refrigerated seed storage facilities to store locally-collected seed. Staff helps train others in production and use of native plants in ways that are beneficial to the natural biological diversity of southern California.

### Native Plant Nursery

All plants produced in the native plant nursery were started from wild-collected seeds and rhizomes from our local ecoregions. Staff continued to propagate plants from the local watershed for current and future planting projects, but the nursery began to shift its focus to testing stored seeds and to collecting propagules for future large projects. RCRCD provided 1,042 container plants to restoration projects. Of these, 151 plants were installed in a bioswale improvement project at a local park. Over 100 plants were provided for landscaping projects during the fiscal year. In addition, RCRCD continued to maintain a “cutting” nursery of mule fat and three species of willow.

From Fiscal Years 2005-2016, the nursery has supplied more than 29,064 local native plants for restoration, erosion control, and water quality projects and 1,715 for landscaping. Many of the landscaping plants have been utilized at RCRCD facilities. In FY2015-16, the nursery continued to downsize its inventory and will be working with other nurseries to contract grow for restoration projects.



## Seed Collections

RCRCD continued to store special collections of seeds for RCRCD projects in the two walk-in cold rooms that it renovated in 2013. The temperature and relative humidity are controlled in the storage rooms so that seeds remain viable for several to many years. This is especially important during drought when seeds are hard to collect. The stored seeds are used primarily to propagate plants for restoration, water quality, and bank stabilization projects. RCRCD also stored seed for the Irvine Ranch Conservancy in its refrigerated storage rooms until summer 2016 when their new facility was ready to receive their seeds. The native plant seeds will be used for the Conservancy's future restoration projects.

Staff received permits to collect seeds on public lands and focused on making collections of seeds in a way that reflects the genetic diversity of natural populations. The extended drought made finding and collection of viable seeds a difficult task. Staff collected seeds from 36 native plant taxa to be used in restoration of coastal sage scrub, alluvial scrub, chaparral, oak woodland, and grassland plant communities.



Staff checking for ripe seeds to produce plants for restoration (April 12, 2016).

## Native Plant Materials and Climate Change Project

Plant Restoration Ecologist Dr. Arlee Montalvo and postdoctoral intern, Dr. Erin Riordan continued work on a collaborative project funded by the USDA Forest Service Native Plant Materials Program and a Pacific Southwest Research Station internal grant program. They continued to collect information about native plants used to prepare plant profiles that focus on use of plants for habitat restoration and on modeling the distribution of species under contemporary, baseline climates compared to where they may be able to live under various scenarios of climate change. Over 40 taxa of plants native to southern Californian chaparral, coastal sage scrub, and alluvial scrub habitats have been included in their study. A proposal for additional funding was submitted in June for furthering the work in Fiscal Year 2016/2017. An annual FY report on the project was provided to the Forest Service on July 6, 2015.

## Adaptation to Climate Change: Eco-Adapt

Dr. Montalvo continued to attend workshops with the US Forest Service, other agencies, universities, and non-government organizations to help develop forest management priorities that will help to deal with some of the problems associated with climate change. Montalvo assisted with documents that focused on the exposure, vulnerability, and resilience of different shrubland communities to climate change and other stressors such as nitrogen deposition from air pollution, altered fire return intervals, water diversions, and mining. The publications resulting from the workshop provide information and guidance useful for managing conserved lands within and outside federal lands.



In the Dos Lagos Open Space, staff continued to work on restoration of coastal sage scrub.



# Urban Sustainability, Education, and Outreach

During Fiscal Year 2015-16, RCRCDD worked with public-private partnerships to foster sustainable practices and educate the public. RCRCDD partnered with the newly formed Riverside Food Systems Alliance, Riverside Community Garden Council and local gardens, California Native Plant Society, California Urban Forest Council, California ReLeaf, UC Riverside, US Forest Service Fire Lab, Inland Urban Forest Council, and the Environmental Education Collaborative of Riverside and San Bernardino Counties. RCRCDD sponsored the third GrowRIVERSIDE conference, the second Environmental Education Symposium, and the first Riverside Green Festival.

## Riverside Food Systems

An essential component of a sustainable community is a food system that provides for access to locally produced, healthy foods; preserved prime farmlands; and urban agriculture. RCRCDD was awarded a \$50,000 grant to assist with development of a Local Guide, farmer education, and best management practices, specifically irrigation water management. RCRCDD partnered with the City of Riverside and the RFSA in conducting two Growers' Forums and two Community Gatherings. Staff solicited partnerships and began development of a draft Local Guide to connect consumers to local foods and to educate about components of the local food system. Diana Ruiz created an advertising campaign to help fund development of *Fresh and Local*.

## California Native Plants

RCRCDD works to conserve natural resources, including the restoration of native plants and the creation of urban areas/landscapes that support local native habitats. RCRCDD continued to support and collaborate with the California Native Plant Society's (CNPS) Riverside-San Bernardino chapter. Staff assisted with program planning, tours, outreach and the annual plant sale. In November 2015, the District provided some plants for the CNPS plant sale and provided the publication *Wild about Natives*; an introduction to the use of native plants in landscaping: <http://www.rcrcdd.org/uploads/files/WildAboutNatives.pdf>. During February 2016, the CNPS and District co-hosted a butterfly gardening workshop at the RCRCDD facility.



A butterfly garden workshop on February 27, 2016 was co-sponsored by the California Native Plant Society, Riverside-San Bernardino Chapter and the RCRCDD.

## Riverside Sustainability Coalition and Green Festival

Diana Ruiz, Public Affairs Manager for the RCRCD, served on the mayor's Riverside Sustainability Coalition (formerly the Green Action Plan committee), and an outgrowth of that was the first Riverside Green Festival and third Summit. Riverside has held two prior Green Riverside Leadership Summits. The first summit solicited input from community leaders who identified the need to engage the community, hold an event, build a network, and raise awareness. RCRCD coordinated the Festival, and the fundraising. In addition the RCRCD assisted the Green Riverside Leadership Summit (GRLS) collaborative with promoting the event. GRLS is an informal public-private partnership with community volunteers and a variety of agencies and city departments.

The morning Festival included 32 lectures and 29 booths with unique outdoor demonstrations and interactive activities, including a tree planting, plant exchange, and ladybug release. The Festival was organized around four tracks: Local Foods, Green Living, Smart and Sustainable Cities, and Wild Riverside with information about local wildlife, watersheds, and native plants. Participants were given a 12-page program, the *Green Guide* with listings of local environmental groups, speakers and resources.

After a free lunch (of local foods), the Summit was introduced by Mayor Rusty Bailey. The Summit included a facilitated forum in the afternoon, which provided participants the opportunity to share ideas about making Riverside a greener city. Concurrently, environmental movies were provided for families. The Southwest Resource Management Association sponsored the event by providing in-kind fiscal management services.

Financial sponsorships raised \$6,820 from nine partners. Community group support came from individuals, 16 organizations, schools, the California Conservation Corps, and businesses. 1,428 hours valued at \$40,000 were contributed by the community through in-kind service. Additional in-kind support came from Riverside City College, the Press-Enterprise, the Army Corps of Engineers, and the Regional Conservation Authority.



A variety of city departments provided support, including Mayor Bailey and staff, Riverside Public Utilities, Museum/Citizen Science, Solid Waste Division, and Economic Development. Marketing assistance included: a Green Power Report, E-billboard ads, GTV commercials, on-hold recordings, radio ads, and social media.

Green Fest promotions included 40 ads on the new Facebook page that reached 8,574 people, and 200 page “likes” for the Facebook page in first two months. Ads were shared on multiple online sites including: Nextdoor.com, Twitter, and Instagram. Over 600 people pre-registered on Eventbrite. Survey Monkey was used for event evaluation. Survey results for the festival portion included: 23% Excellent, 57% Very Good, 20% Good.

Learn more at RiversideGreenNetwork.net and Facebook: Riverside Green Festival and Summit. The outgrowth of the community effort was the creation of a new organization: GREEN or Greater Riverside Environmental Engagement Network. The website will be updated to provide for information exchange and reflect the work of GREEN.

## Environmental Education Collaborative

RCRCD supported and hosted a meeting of the Environmental Education Collaborative (EEC) of Riverside and San Bernardino Counties. The second annual Environmental Education Symposium was held at the Living Desert Museum in Palm Desert, and staff helped plan the third symposium, which will include citizen science activities.

## Urban Forestry

Community forests are fundamental components of urban ecosystems, and their management is essential for creating sustainable communities. RCRCD works to increase canopy cover and promotes best practices and urban forest management planning. During Fiscal Year 2015-16, Public Affairs Manager Ruiz worked with a coalition of tree care professionals, wildlife biologists, and Audubon volunteers to develop best practices and public messaging about tree trimming during nesting season.

The District partnered with the Inland Urban Forest Council (IUFC) to bring professional education programs to local tree-care professionals. RCRCD partnered on development of a *Waterwise Tree Care* campaign which included a publication at <http://rcrcd.com/uploads/files/RCRCDNewsFall2015.pdf>, a Green Power Report radio show (by Riverside Public Utilities), and large tree “Price Tags” that are hung in trees to raise awareness about the value of trees and watering trees during drought. RCRCD was recognized by the California Urban Forest Council with a statewide education award for the campaign.

**Trees Provide \$3,880\* in Benefits:**

- Shade
- Energy savings
- Improved air quality
- Reduced noise and dust
- Wildlife nesting sites and food sources
- Control of storm water, erosion, and wind
- Higher property values
- Improved quality of life

\*Research by USDA Forest Service  
Trees Pay Us Back

Learn about the benefits of trees  
<http://InvestFromTheGroundUp.org>

www.InlandUrbanForestCouncil.org

RCRCD  
Riverside-Corona  
Resource Conservation District  
951-483-7881  
www.RCRCD.org

SIMS TLC  
Sims Tree Learning Center  
www.SIMSTLC.com

## Education Projects

The Riverside-Corona Resource Conservation District (RCRCD) provides a variety of educational and public relations programs and services concerning natural resources and their stewardship. This section details some accomplishments for Fiscal Year 2015-16 with information about education programs, citizen science, materials, and outreach efforts.

### Corona Water Education Program

The RCRCD Resource Educator conducted 63 classroom presentations that included hands on activities for 1,939 elementary school students during the 2015-2016 fiscal/academic year. Presentations were provided at 11 elementary schools within the Corona/Norco and Alvord Unified School Districts. In addition, the presentation was conducted at Promenade Elementary School's Family Science Night. The presentations were supplemented with educational materials including the appropriate grade-level student booklets *Where Does Your Watershed?*, teacher guides, Santa Ana River Watershed posters, Santa Ana River Steward bookmarks, and Corona Department of Water and Power's grant information and applications. Additionally, six teachers were provided classroom materials for their students without presentations. In total, 4,406 consumable educational materials were distributed.

## Citizen Science

### Riverside Citizen Science

RCRCD continued to support Riverside Citizen Science in a variety of ways including maintenance of the Facebook page and promotion of activities, events and programs. Riverside Citizen Science launched the Riverside Nature Spotter app that helps people share their observations of insects, plants, animals, or other living things. Spotters can send a photo with questions about what they've seen and a naturalist will reply with feedback. Observations are collected and used to create an online database located at iNaturalist.org to document the Riverside area's resources. Anyone can participate by downloading the free Riverside Nature Spotter app on a smartphone, or by using a camera and emailing observations to [naturespotter@riversideca.gov](mailto:naturespotter@riversideca.gov). Submissions will be identified (if needed), mapped, and stored at [www.inaturalist.org/projects/riverside-citizen-science](http://www.inaturalist.org/projects/riverside-citizen-science).



## Bluebird Nest Box Monitoring

During the 2016 nesting season, February through July, 284 baby bluebirds fledged. Eight volunteer citizen-scientists hung and monitored 34 nest boxes for native birds including Western Bluebirds, Tree Swallows, Bewick's Wrens and Ash-throated Flycatchers. There were 66 nesting attempts, 309 eggs, 303 hatchlings and 284 fledglings at six sites. The results were submitted to Cornell University NestWatch Program, the California Bluebird Recovery Program, the North American Bluebird Society, and Southern California Bluebird Club. RCRCD volunteers manage the longest running, most prolific Bluebird Trail in Riverside County



## Operation Resilient Trees 2.0

Volunteers have been helping scientists study the cooling benefits of different tree species in Riverside since 2015. The project of Earthwatch Institute uses citizen scientists to collect data about tree condition, size, location, and understory, so that UC Riverside scientists can study the data and correlate it to high altitude aerial photos taken by NASA. RCRCD provides training and materials for volunteers. During Fiscal Year 2016, Earthwatch conducted a citizen science training workshop at RCRCD. Learn more about the Urban Resiliency Program at <http://earthwatch.urbanresiliency.org/get-involved/>.



Resilient Trees Training Class

## Santa Ana Watershed Citizen Science Network

RCRCD and the Southwest Resource Management Association (SRMA) are collaborating with other organizations throughout the watershed to create the Santa Ana Watershed Citizen Science Network. This Network is a coalition of conservation practitioners, scientists, educators, and citizens working to coordinate existing citizen science efforts, create new opportunities and projects, and encourage wider citizen science participation among the communities that live, work, and play in the Santa Ana Watershed. Driving this initiative is the belief that engaging citizens in the science behind the health of the watershed will result in a stronger ethic of stewardship.



Representatives from the following organizations have come together to form a committee to guide the development of the Network: the Riverside-Corona Resource Conservation District, the Southwest Resource Management Association, the San Bernardino County Museum, Riverside County Parks and Open Space, Orange County Parks, San Jacinto Basin Resource Conservation District. The committee will focus on identifying additional partners and locating facilities throughout the watershed that can support citizen science programs and projects. In addition, the committee will also create an inventory of all the existing citizen science projects and activities in the watershed in order to coordinate, promote and support these efforts.

## Educational Material Distribution

Free educational materials are offered annually to all elementary, middle, and high school teachers, who work or reside within the RCRCD's boundaries, via a "Materials Order Form". Staff distributed more than 17,000 educational materials during the 2015-2016 school year. Materials were provided to 77 teachers at 34 schools in the six school districts (Riverside, Alvord, Corona, Colton, Grand Terrace and Lake Elsinore). Educational materials provided included: *Where Does Your Water Shed?*; *Local Heroes*, *Your Hardworking Pollinators*; and *Soil to Spoon*. Additionally, more than 4,000 educational handouts were provided to local partners such as Riverside Metropolitan Museum, Riverside County Flood Control, California Native Plant Society, Riverside County Master Gardeners, Riverside Farm Bureau, Inland Urban Forest Council, UCR Botanic Gardens, and Norco Homeowner Associations.

## Outreach Efforts

### Events

RCRCD helped promote and participated in community sustainability events. Cumulatively, thousands of people attended the events, and more than 2000 educational materials were given away at the outreach events. During Fiscal Year 2015-16, the LandUse Learning Center was featured on the Riverside Garden Tour. Other events included:

- Riverside Boy Scout Roundtable
- Long Night of Arts and Innovation
- Girderness at Hidden Valley Wildlife Center
- UCR Botanic Garden Plant Sale
- “Do No Harm” Workshop
- Santa Ana River Fall Fest
- International Year of Soil Day*
- Growers Forums
- Riverside Metropolitan Museum Nature Lab Soil Discovery Day
- GrowRIVERSIDE Conference
- Corona Department of Water and Power Garden Festival
- Water Education Presentation at Plant Sale
- Victoria Avenue Forever Day
- Earth Night in the Garden
- Riverside Green Fest
- Temescal Valley Fair
- Grand Terrace Community Day
- “Ask the Experts”
- Soil Day of Wonder
- Bioswale Planting Project at Ryan Bonamino Park (collaboration with Riverside City College and City Parks)



## Publications

### Educational Publications

RCRCD creates localized educational publications about stewardship and resource management and distributes them at outreach events, workshops, and at partners' programs. A newsletter was created to celebrate the 2015 International Year of Soil: [http://www.rcrcd.org/uploads/files/RCRCDnewsletter\\_11-15\\_single\\_WEB.pdf](http://www.rcrcd.org/uploads/files/RCRCDnewsletter_11-15_single_WEB.pdf).


### Regional Books

Staff continues to promote and sell the enhanced, second edition of *Backyard Birds of the Inland Empire* by Sheila Kee, which was developed by the Riverside-Corona Resource Conservation District and published by Heyday Books in collaboration with Inlandia Institute. The book provides descriptions and tips for identifying over 50 of the most common birds that visit yards in Southern California's inland region. Each bird is identified by color, then described by its behavioral traits, calls, food preferences, and nesting patterns. The guide sells for \$14.95 at bookstores, local museums, and at the District's office. The first edition, published in 2004, won the National Association of Conservation Districts' Outreach Award.

RCRCD also sells *Flora of the Santa Ana River and Environs* by Oscar Clarke, Greg Ballmer, Danielle Svela and Dr. Arlee Montalvo (our plant restoration ecologist). RCRCD helped sponsor the first edition, and sells copies for \$25.00. The book is used as a reference for training workshops, such as for the California Rapid Assessment Method (CRAM).

### Website and Social Media

RCRCD uses a website and a Facebook page at [www.facebook.com/RCRCD](http://www.facebook.com/RCRCD) to help publicize upcoming events. Staff also shares local information between partnering Facebook pages, such as Riverside Gardens, California Native Plant Society, and Riverside Food System Alliance pages.



## Resources

UPDATE

### Celebrate the Year of Soils

**How important is soil?**

Soil makes our lives possible. It provides the medium that supports plant growth for our food, fiber, and some biofuels. The entire earth—every ecosystem, every living organism—is dependent upon soils.

Soil supports the web of life and performs critical functions in farms, forests, deserts, marshes, and suburban areas. Soils that are sustainably managed provide ecosystem services that:

- modify the atmosphere by emitting and absorbing gases, including greenhouse gasses
- filter and clean water
- recycle nutrients (including carbon), so living things can use them over and over again, and
- provide habitat for soil-organisms, insects, and important larger animals, including burrowing owls, endangered Stephen's kangaroo rats, and desert tortoises.

Soil provides the microbes that make antibiotic medicines and that sequester (store) carbon from the atmosphere, building resilience to climate change.


Did you know that soil has been a defining part of cultures since the beginning of civilization? Some of the first written words were recorded on clay tablets. Water was carried in clay pitchers and flowed through clay pipes. Clay and sand were used to construct walls and adobe bricks. Soil holds the clues to past civilizations, to be revealed through erosion and archeology.

**Why is it important to take care of soil?**


When soil is poorly managed, it impairs the capacity of soil to sustain life. History tells us that around 3000 BC, the Sumerians built large cities in the deserts of southern Mesopotamia. Using irrigation, they farmed and created large food surpluses. But around 2200 BC, the civilization collapsed. Scientists debate why, but one reason is believed to have been due to the buildup of salts in the soil. Most crops can't grow in salty soils, and the region remains too salty for crop production today.

Our Nation learned the importance of sustainable soil management during the Dust Bowl of the 1930s, the name given to the Great Plains region for severe dust storms. Also called the "Dirty Thirties", Congress enacted Public Law 74-46 which created the Soil Conservation Service (now the USDA Natural Resources Conservation Service).


*A Nation that destroys its soils, destroys itself.*  
President Franklin D. Roosevelt 1937



**2015**  
International  
Year of Soils



The walls of this deserted farm bunk house are lined with papers dated September 1922. Apparently the destruction of this hillside orchard had taken place within a few short years.



RCRCD provides resource management assistance to private and public landowners and conducts land treatment, education, and volunteer programs to conserve natural resources. RCRCD fosters the sustainable use of natural resources for each land use, including native habitats, urban/suburban areas, and agriculture.



## Facilities

### Resource Conservation Center

RCRCD manages the Resource Conservation Center, a 9-acre facility that includes the Land-Use Learning Center demonstration garden and native plant nursery. The Center is a re-purposed facility (the former USDA Salinity Laboratory) that now serves as a location for information exchange and partnerships to achieve sustainable natural resource use. The campus is used to foster community conservation efforts and to empower southern Californians to practice natural resource stewardship at home, at work, and in the community. Conservation agencies and grassroots organizations use the Land-Use Learning Center demonstration garden and conference room for programs, training, and meetings.

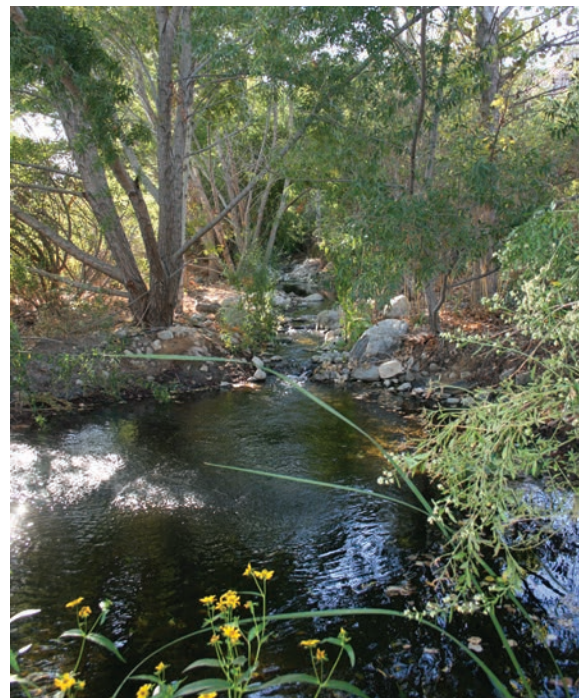
First demonstrations of “re-use” included renovating buildings and then parking areas with outdoor solar lighting, drought tolerant landscaping, and permeable surfacing materials. A native plant nursery was developed in abandoned plant propagation areas. Today, the nursery and seed bank are used for propagation of local habitat species.

The facility and buildings at 4500 Glenwood Dr., Riverside, CA 92501, house the Riverside-Corona Resource Conservation District (RCRCD) - lead agency; the USDA Natural Resources Conservation Service’s (NRCS) Area Office, the California Department of Fish and Wildlife’s monitoring unit for the Riverside County Multi-Species Habitat Conservation Plan (MSHCP), and the California Department of Food and Agriculture’s (CDFA’s) facility for research and control of the Glassy-winged Sharpshooter and Asian Citrus Psyllid.

### Land-Use Learning Center

The Land-Use Learning Center (LLC) is a 3-acre garden that demonstrates sustainable practices for the three main land uses of southern California: native habitats, urban areas, and agriculture. Each land use has been developed with trails, plantings, interpretive signs, and appropriate plant lists. During 2015, the garden opened for visitors, group tours and college class programs.

The Native Habitat area depicts four dwindling, local plant communities of inland western Riverside and San Bernardino Counties: riparian, coastal-sage-scrub, chaparral, and oak woodland. The riparian plant community includes a recycling stream for the study of native fish, including the threatened Santa Ana

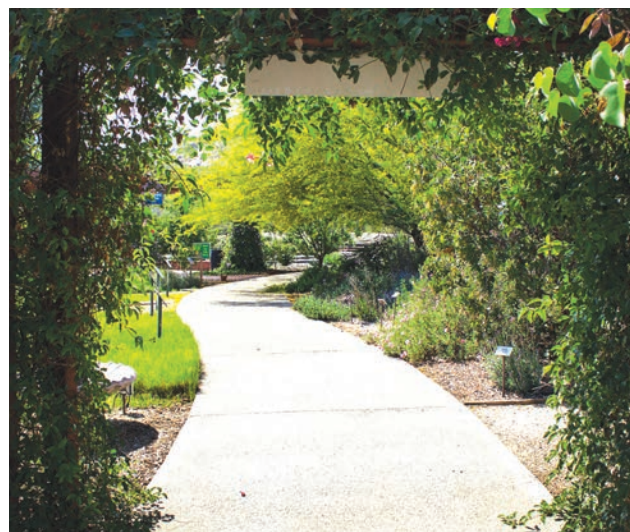


Sucker. Learn more about native fish in our publication: “Protecting our Native Fish” at <http://www.rcrcd.org/uploads/files/ProtectingOurNativeFish.pdf> . Learn about waterways and their protection in *Conserving Waterways: Preventing Impacts from Human Activity* at <http://www.rcrcd.org/uploads/Conserving-Waterways2018web.pdf> For more information about habitat, see the publication *Conserving Critical Habitat* at <http://www.rcrcd.org/uploads/files/ConservingCriticalHabitat.pdf> .

Visitors to the LLC learn about specific actions that they can take to reduce their impacts on habitat and wildlife, such as by eliminating invasive plant species from landscaping and creating habitat for urban-adapted wildlife in yards. You can learn more in *Living on the Edge of the Urban-Wildlands Interface* at <http://www.rcrcd.org/uploads/files/LivingOnTheEdge.pdf> and *Wild about Natives* is an introduction to the use of native plants in landscaping: <http://www.rcrcd.org/uploads/wildaboutNativesweb.pdf> .

The Urban Area demonstrates ways to steward resources in urban or suburban ecosystems with four styles of water-wise yards, lawn alternatives, and an Arbor Trail with tree species that are suitable for urban areas of inland southern California. Signs about urban forestry explain the value of trees and how trees mitigate for air pollution, the urban heat island effect, and climate change. Visitors learn about proper tree care and planting; placement of trees to reduce energy use; and more. Our current tree publications include: *Tree Care* at <http://www.rcrcd.org/uploads/files/TreeCare.pdf> and *Waterwise Tree Care* at <http://www.rcrcd.org/uploads/files/WaterwiseTreeCare.pdf>

The Agricultural Area demonstrates crops that thrive in our local climate. Interpretive signs depict sustainable agricultural practices, including irrigation water management, integrated pest management using a variety of biological controls, and other methods that farmers use, such as to build topsoil and to prevent erosion and sediment in water. Our signs encourage consumers to support sustainable agriculture and thus benefit from a high quality, safe, local food supply, while reducing transportation impacts and costs. (RCRCD provides irrigation system evaluations for farms and large turf areas.)



## Sycamore Creek Interpretive Center and Preserve

During Fiscal Year 2015-2016 the field office, located in Temescal Valley, CA, was converted into the Sycamore Creek Interpretive Center. This center overlooks the Sycamore Creek Preserve and serves as a focal point for environmental education and resources for the residents of Temescal Valley and the surrounding communities. The mission of the Sycamore Creek Interpretive Center is to promote and facilitate hands-on scientific exploration, natural resource conservation, stewardship, and sustainability throughout the Temescal Valley. RCRC staff began outfitting the Center with indoor exhibits and displays and providing activities, such as touch tables and tracking boxes, to inspire curiosity and engage both young and old in scientific thought and discovery. The Center will host public school, homeschool and scouting programs, as well as various community workshops and events, such as Day of Wonder and Citizen Science days. The Center initiated its first summer program for children in June of 2016. The summer program topics include soil and water conservation and the natural history of local wildlife. A homeschool program was offered beginning in the fall of 2016. A strategic plan for the Center is expected to be completed in the next year and will include input from the local community.



Sycamore Creek Homeschool Class

## Greenbelt

The Greenbelt property at 1900 Bradley in the City of Riverside's greenbelt area is an approximately 10 acre site that will house an off-site aquatic facility for the purposes of rearing, breeding and translocating native fish. A small office and storage unit for staff and equipment, and up to 8, 300 foot raceways will also be built. Currently, the district has planted 200 Haas avocado trees and 12 lemon trees to help screen the raceways and help provide some annual funds to maintain the facility. The site has two sources of water, one from shares of Gage Canal water and a pressurized potable source from the City of Riverside. A small 1-acre area on the lower part of the property will be restored to native riparian habitat as part of the Woodcrest Arroyo. New electric has been installed for the new raceways, lighting and security system and the site is maintained by district staff.

## Administration

During FY 2015-16, staff continued to seek funding sources, create partnerships, and sub-lease portions of the Resource Conservation Center at 4500 Glenwood Dr., Riverside. Other agencies and groups at the facility include the California Department of Food and Agriculture, Pest Monitoring Branch, the Citrus Research Board, the Riverside County Multi-Species Habitat Conservation Plan Monitoring Group and the Natural Resources Conservation Service.



The Riverside-Corona Resource Conservation District (RCRCD) is an independent, special district, enabled under Division 9 of the California Public Resources Code. As defined in Division 9, Resource Conservation Districts are given broad abilities to help sustain natural resources and to protect resources from preventable damage and waste. The scope of work at RCRCD reflects local issues and focuses on sustainable ecosystem management. RCRCD programs specifically address water conservation, soil erosion, storm water quality, habitat restoration, conservation education, and more. RCRCD was created by a vote of the people in 1953.



*Riverside-Corona Resource Conservation District*

**WWW.RCRCD.ORG**

For more information about RCRCD, please contact  
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