

Santa Fe Extension Master Gardeners Newsletter

Reduce Indoor Air Pollution with Houseplants

Part 2: Golden Pothos and Snake Plant

by Chris Durlak

In last month's newsletter, Peggy Rudberg discussed the peace lily and aloe vera as among the 20 common houseplants studied by NASA for their potential to clean the air in closed environments. Below are two additional low-care plants for you to consider.

Golden Pothos

Also known as devil's ivy, golden pothos ([*Epipremnum aureum*](#)) is a widely grown houseplant that tolerates low light levels and even neglect. A member of the Araceae family, it is tropical plant native to the Solomon Islands. Its yellow-tinged foliage give the plant its common name. It has been shown to break down pollutants such as benzene, formaldehyde, xylene, trichlorethene, and torilene.

Although golden pothos will grow easily in low light, its variegation is often lost in those conditions. Faster growth and stronger variegation occur in medium to high light. Fertilize monthly in winter months, a bit more often in summer, when the plant is actively growing. It prefers evenly moist soil that dries out slightly between waterings; it does not like to be soggy! When it becomes too dry, its leaves begin to wilt, so it's obvious when water is needed. To keep the foliage full, periodically prune the long, trailing stems.

A note of [caution from the ASPCA](#): Pothos plants can be toxic to pets. The leaves contain raphides, needle-shaped crystals of calcium oxalate that they cannot digest. If you have a pothos plant, keep it high enough so that pets can't reach it. It's always better to be safe than sorry.



Golden pothos. Photo by Elvis Ripley.

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Snake Plant

Native to tropical West Africa, [Sansevieria trifasciata](#) is an evergreen perennial of the family Asparagaceae. Its stiff, sword-like leaves grow vertically from a basal rosette, spreading via rhizome. Leaves are dark green with lighter cross-banding and usually range from 28 to 35 inches tall, often shorter when kept indoors. Also known as mother-in-law's tongue, snake plant is among the toughest of houseplants.



Snake plant. Photo by Martin Olsson.

S. trifasciata has demonstrated the ability to absorb toxins, including formaldehyde, trichloroethylene, xylene, toluene, and benzene. As a succulent it is also one of a small percentage of plants that has adapted to aridity through a process called [cassulacean acid metabolism](#) (CAM). These plants keep their stomata closed during the day to reduce moisture loss; they open them at night to capture carbon dioxide.

Snake plant is very forgiving and has few requirements: loose, well-drained soil; indirect but steady light; moderate water and mild fertilizer during the growing season; and monthly watering or less from fall through winter (its one weakness is its susceptibility to root rot). This plant is often recommended for beginners.

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Editor: Sarah Baldwin
Art Director: Jannine Cabossel



A Nod to the Skeptics

by Sarah Baldwin

The results of the 1989 NASA study on the air-purifying potential of houseplants have been widely publicized over the years. Environmental scientist [Bill Wolverton](#), who led the study, went on to publish dozens of technical papers and several trade books on the air- and water-cleaning capacities of houseplants.

Still, there are skeptics who claim, fairly enough, that most household environments bear little resemblance to the tightly controlled settings of the NASA study and those of subsequent studies. Some speculate that you would need an enormous number of plants in a home or office environment to obtain anything like the results proclaimed by enthusiasts.

Research on the matter continues. Until we know more, it's prudent not to count on substantial air-cleaning benefits from your houseplants. The EPA and the American Lung Association recommend limiting toxin-releasing materials in the home and ensuring proper ventilation as the most efficient ways to improve indoor air quality.

As for our houseplants, let's thank them for their proven psychological, physiological, and cognitive benefits and for being the resilient, mysterious beings they are, many with origins in forest or desert ecosystems thousands of miles from our homes, now managing to thrive (or at least survive) in modest pots on windowsills and cabinets. That they also add moisture and oxygen to the air around them and reduce pollutants to any degree makes them that much more amazing.

From the Board

by Linda Fleming, co-chair and member-at-large

When I look out my window, the only activity I see in my backyard is at the bird feeders. My small garden spot is on the north-facing side of a coyote fence, so the snow will be there for a while. But we've already had the shortest day, and now is the time to make plans for another gardening season.



2019 SFEMG Board

In late January we held our potluck dinner and graduation ceremony for the 31 Extension Master Gardeners who completed the training and all requirements in 2018, as well as for the MGs who took part in the advanced SNaPP native plant and SCAT compost programs. The event was well attended and the food superb; our speaker, Luke Spangenburg, director of biofuels at Santa Fe Community College, gave a thought-provoking talk. Early this month our new intern classes begin.

Planning is already underway for our annual garden fair, scheduled for May 4. The first of our free Let's Grow presentations will be a two-part soil-testing workshop, starting on February 23, at the New Mexico Wildlife Center, in Española. Aspiring vegetable gardeners will want to take advantage of our Gardening 101 class, on March 10 and March 24, with lots of growing tips for Santa Fe.

The Santa Fe Compost Action Team (SCAT), an advanced certification Extension Master Gardener group, is now collaborating with both the City of Santa Fe and Santa Fe County to provide more learning opportunities for the general public; see this issue of the newsletter for more information. Visit our website, www.sfemg.org, for details and schedules for all EMG programs. We are here to share science-based horticultural information and to answer your gardening questions.

Please, no hail this year!



Nichols and McClure Reservoirs.
Photo by George Johnson, 2010.

Thin Ice: Santa Fe's Water Supply in Changing Times

by Karen Armijo

Agua es vida is a platitude here in New Mexico. Many of us *nativos/norteños* have been raised to value water as the lifeblood of our communities. It flows through our *acequias*, is part of our folklore, and brings our communities together, in times of plenty and especially in times of drought. Water sustains our ecosystems, our bodies, and our economic well-being.

So where does Santa Fe's water supply come from? For centuries the [Santa Fe Watershed](#) was our sole source of surface water. Since 2011 we have also obtained surface water from the [San Juan–Chama Project](#), in which Colorado River Basin drainage water is tunneled through the Continental Divide to New Mexico, held at Heron Lake, and then channeled via the Rio Chama to the Rio Grande and the [Buckman Direct Diversion](#) (BDD) facility, owned jointly by the city and the county.

In addition to these sources, groundwater is collected in well fields in the city and at Buckman Well Field, northwest of the city. Since increasing our surface water supply with BDD, the city and the county have determined to sustain groundwater supplies primarily for droughts and emergencies.

How much of our supply comes from each of these sources varies from month to month, depending on a variety of factors. In an average year, the municipal watershed provides about 40 percent of our water.

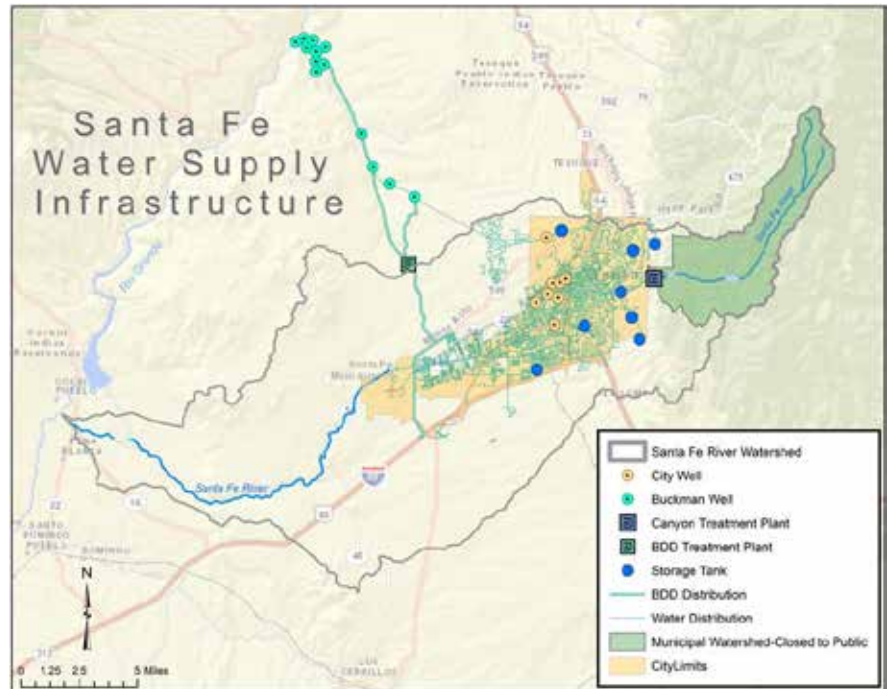
First dammed in 1881, the [Santa Fe River](#) is now an intermittent stream with two perennial stretches. Starting in the upper reaches of the watershed, in the Sangre de Cristos, it runs 46 miles to the confluence with the Rio Grande, at Cochiti Lake. From its headwaters the river collects additional runoff as it moves downstream toward our two manmade reservoirs, McClure and Nichols. Here water is stored for delivery to four *acequias* and for treatment at the Canyon Road Water Treatment Plant. When supplies are adequate, water is also released back into the river, as provided by the city's Living River ordinance.

To replenish these sources, we need precipitation, always scarce and increasingly unpredictable in our part of the world. Santa Fe receives an average of 12 to 14 inches of annual precipitation, the lower number reflecting more recent trends. The snow season is November through April, with the largest snowfalls in January and February. Melting snow generates the majority of river discharge and creates recharging stream conditions in the upper watershed. In July and August Santa Fe often

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receives hard and fast rainstorms, accounting for most of our annual precipitation. In recent years the monsoon season has been starting later and extending into October.

Santa Fe's total precipitation for 2017 was near average, but the weather patterns that produced it were out of sync with long-term patterns. Spring snowmelt and subsequent runoff started early and were well below normal for the seventh year in a row, following climate-change predictions. Above normal temperatures and a dry and windy spring quickly reduced the snowpack. Monsoons arrived late and produced heavy rains, which broke the meteorological drought that had been occurring.



Santa Fe Water Supply Infrastructure. Graphic by City of Santa Fe.

Then, in 2018, an exceedingly dry and warm winter followed by a typically dry spring and early summer threw us back into severe drought. Reservoirs were near empty. Intense, flood-causing monsoons arrived late and brought precipitation for the year back up, but the reservoirs still have a lot of catching up to do.

This season we're off to a strong start. According to a [recent article](#) in the Santa Fe New Mexican, Seton Station has measured 21.5 inches of snow since October, as compared to 3.3 inches over the same period last year. The article notes that this is the most snow for the period since 2013. It also notes, however, that because of ongoing drought, moisture-depleted soil will probably absorb much of this year's snowmelt. While this is good news for the health of the land, it means we may not have as much runoff as we'd like or expect.

We don't know how much precipitation any given year will bring. What we do know is our population is growing, and climate predictions are for hotter and dryer times: in other words, more people, less water. Through active conservation efforts, the citizens of Santa Fe have [reduced their water use](#) from 168 gallons per capita per day (GCPD) in 1995 to 90 GCPD in 2017, making the city a conservation leader in the Southwest. Incentives such as [rebates and tiered pricing](#) have helped. But city planners indicate more efforts are needed if we're going to sustain our community into the future.

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Thin Ice: Santa Fe's Water Supply in Changing Times—cont. from page 6

Recommended Reading:

- *Albuquerque Journal*, [Santa Fe Water Supply Study: A dry future?](#) by T.S. Last
- deBuys, William. *A Great Aridness: Climate Change and the Future of the American Southwest* (Oxford, 2013)
- City of Santa Fe, [Water Conservation and Drought Management Plan](#) (2015)
- New Mexico In Depth, [Climate Change: Rio Grande 101](#), by Laura Paskus
- *The Reporter*, [In Deep Water](#), by Laura Paskus
- Santa Fe Watershed Association and City of Santa Fe, [The Santa Fe Blue Pages](#) (downloadable file)
- Sustainable Santa Fe, [Water](#)
- U.S. Bureau of Reclamation, City of Santa Fe, and Santa Fe County, [Santa Fe Basin Study: Adaptations to Projected Changes in Water Supply and Demand](#) (2015)

Join us for a community discussion...

CLIMATE CHANGE, WATER & RESILIENCY:
A VISION FOR THE FUTURE

"Water is personal, water is local, water is regional, water is statewide. Water is the most personal issue we have."
– Susan Marks

Saturday, March 2nd | 10:00 am - 2:00 pm
Genoveva Chavez Community Center (Community Room)

Free event open to the public. Lunch will be provided. Co-hosted by City of Santa Fe Water Conservation Office, Water Conservation Committee, and Santa Fe Watershed Association

Visit savewatersantafe.com for more info.

Master Composter Volunteer Training: Dig in Deeper!

by Kathy Morse

The Santa Fe Compost Action Team (SCAT) is an advanced certified group of Extension Master Gardeners providing compost education for the Santa Fe area. Members of the SCAT team have provided home-composting education in a variety of settings since 2013.

To expand our outreach, SCAT is now collaborating with both the City of Santa Fe and Santa Fe County. The objective of

this collaboration is to provide more learning opportunities for the general public and more compost educators, who will be instrumental in furthering composting in and around Santa Fe.

The SCAT Master Composter Volunteer Training Program educates participants in the art, science, materials, methods, and benefits of home composting. As part of the training program students will participate in about 25 hours of lectures, demonstrations, and field trips.

There are two ways to participate in this course:

Track I

You may join the SCAT program to become a Certified Master Compost Educator, which requires successfully completing this course and then maintaining certification by participating in at least two SCAT Public Education (PE) events, contributing six hours of Operational Support (OS), and completing one SCAT-certified Continuing Education (CE) event per year.

Track II

Persons interested in learning more about home-composting methods but not in becoming a Certified Master Compost Educator may take the course, as space is available, without any further requirements.

Dates: Saturdays 9 a.m.–4 p.m., March 23–April 13

Location: Master Gardener classroom at the county fairgrounds, 3229 Rodeo Road

Registration: Opens February 15; further information and the application form will be available on the [Santa Fe Extension Master Gardeners](#) website.

Fee: \$65 for both Track I and Track II. Details will be posted on February 15.





Navajo Tea (*Thelesperma megapotamicum*)

by Bonnie Martin

Also called greenthread, Hopi tea, and Pueblo tea, this yellow-flowered herb has thin, green, threadlike leaves. Navajo tea has long been valued for its medicinal properties by Native Americans. It grows abundantly in New Mexico and is even sold at the Santa Fe Farmers Market. It is also used to make a dye for basket weaving and textiles. *Thelesperma megapotamicum* is closely related to another herb, bidens, species of which are commonly used in Chinese medicine.



For tea, harvest the plant just as the buds open by cutting two to three inches above the soil (to allow for regrowth), wash gently, allow to dry, and then gather in bundles of about four inches long and weighing about six grams each. When ready to use, combine one bundle of tea with six or more cups of boiling water and steep for five minutes.

To save the seeds of Navajo tea, follow this process: Once the flower has bloomed and petals have fallen, a center cone develops seeds. Remove the seed head just below the cone after the stem has begun to dry and turn brown. Let the cone fully dry away from direct sunlight, then separate it from the seed by rubbing gently between your hands. Store cleaned seed in a dry, cool place.

Planting and care: To propagate, mix the seed with moist sand and store in the refrigerator for about 30 days before planting. Keep the sand lightly moist until germination occurs. In spring direct sow seed just below the soil surface. Seedlings do need to be watered occasionally until established.

Landscape use: Species of *Thelesperma* are found from plains to elevations of up to 9,000 feet. Navajo tea grows in any well-drained soil and in gravel, making it perfect for rock gardens and for restoring prairie ecosystems. Navajo tea is a hermaphrodite, meaning that it has both male and female parts, and is pollinated by insects; it attracts bees and butterflies, among other beneficial insects.

Plant type: herbacious perennial

Bloom time: April–October

Size: 1–3 feet high x 1 foot wide

Exposure: full sun

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Navajo Tea (*Thelesperma megapotamicum*)—cont from page 9

Soil moisture: very low once established

Zones: 2–12

References:

Dharmananda, Subhuti. [Greenthread: Navajo-Hopi Tea](#), Institute for Traditional Medicine SEINet, [Thelesperma megapotamicum](#)
Southwest Desert Flora, [Thelesperma megapotamicum](#)

Photo by Jerry Oldenettel

Saving Beauty Project

In the central New Mexican community of Santa Rosa, the endangered Pecos sunflower sets acres of land aglow for one month of the year. Growing along the edges of Blue Hole Cienega, the sunflower's last stand is a tourist destination and a nature preserve on public lands. New Mexico state botanist Daniela Roth and her partners are working to save this rare sunflower and the multitudes of wildlife and native plants that share its disappearing wetlands.

Nearly all our native wildlife depends on wetlands at some point in their lives. But instead of preserving them, the federal government is weakening protections for New Mexico's waterways, endangered species, and public lands. This puts our heritage and our future at stake, along with a universal symbol of beauty: the sunflower.

Widespread conservation of native plants and wetland habitats succeeds only with public support. The Saving Beauty Project is creating a [documentary film](#), a photo exhibit, and community events to generate broad support for these conservation efforts. To join us in saving beauty and to lend your support to the project, visit our [Indiegogo Fundraising Campaign](#).

We Are Here to Help!

If you have a gardening question, Santa Fe Extension Master Gardeners are available to help. Go to our [website](#), click on the Garden Questions? link in the bar below the photo, and pose your question. Someone will do research and get back to you.



Photo by Elodie Holmes

New & Noteworthy

Have you recently read a plant-related article, visited a horticultural website or blog, listened to podcast, or seen a nature show or documentary you think other gardeners would enjoy or find useful? Send a link to the newsletter (news.sfemg@gmail.com) and we'll include the information in the next issue. **Note that some of these sources have paywalls.**

Atlantic, [Plants Can Hear Animals Using Their Flowers](#), by Ed Yong

BBC News, [China's Moon mission sees first seeds sprout](#), by Paul Rincon

Crop Trust, [Svalbard Global Seed Vault](#)

Delancy Place, [Fifteen Plants](#)

New York Times, [How Beauty Is Making Scientists Rethink Evolution](#), by Ferris Jabr

New York Times, [With 86% Drop, California's Monarch Butterfly Population Hits Record Low](#), by Laura M. Holson

New York Times, [When Fungi Fight Back](#), by JoAnn Klein

Public Domain Review, [Flower Power: Hamilton's Doctor and the Healing Power of Nature](#), by Rebecca Rego Barry

Quartz, [Arborists are bringing the "dinosaur of trees" back to life](#), by Ephrat Livni

Santa Fe New Mexican, [A walkway peppered with haiku](#), by Paul Weideman

You can't impose order, where nature is concerned. A garden may be a defined area, but it is also an artificial concept, and plants will evade definition if it suits them—jump the wall and flourish elsewhere. It seems a form of give-and-take: the garden colonizes the wild, the wild probes the garden...

—Penelope Lively (*Life in the Garden*, 2017)

The Garden Journal Radio Show in 2019

by Christine Salem

As regular listeners know, the Garden Journal radio show, which airs on KSFR 101.1 FM on Saturday mornings, has had an ongoing relationship with the Santa Fe Farmers Market. For the five-plus years the show has been on the air, we have regularly broadcast live from the market. We have also featured Clayton Bass, CEO of the Santa Fe Botanical Garden (SFBG), at least quarterly and have frequently interviewed speakers from the SFBG lecture series. So for 2019 we decided to make our partnership with these two organizations more official.



Designed by freepik.com

SFBG now has their own show, on the first Saturday of every month, hosted by SFBG communications director Lindsay Taylor. And the Santa Fe Farmers Market Institute (SFFMI) will take over the third Saturday of the month to broadcast live from the market, in a show hosted by SFFMI staffer Carrie Core. The last Saturday of the month will continue to feature Master Gardener Jannine Cabossel, the Tomato Lady. Her show will be in partnership with Home Grown New Mexico. Every week our partners will announce that they are presenting the program in partnership with Santa Fe Extension Master Gardeners.

I will continue to produce and host the remaining one or two shows each month, making sure to include Master Gardeners to highlight all our projects and the public-facing events we have planned throughout the year. Please send me anything you want mentioned. And I'm always happy to devote an entire show to a project or a topic you would like to see featured. Contact me, Christine Salem, at jcsalem@comcast.net or 505-501-3415.

The Garden Journal Radio Show

Every Saturday

10–10:30 a.m.

Live from the Farmers Market



Tune in to KSFR 101.1 FM on Saturday mornings from 10 to 10:30 to listen to a lively, entertaining, and informative gardening show.

- Feb 02 Santa Fe Botanical Garden's Clayton Bass and Lindsay Taylor on the coming month's SFBG news and events
- Feb 09 The Los Luceros Heritage Grain Trials Team, with Ron Boyd, Alessandra Haines, Deborah Madison, and host Christine Salem
- Feb 16 Santa Fe Farmers Market Institute's "Live at the Market," with Carrie Core and guests
- Feb 23 Jannine Cabossel, the Tomato Lady, with tips and techniques for next month's veggie garden; more gardening info at [Giant Veggie Gardener](#)

Schedule subject to change. For updates and to listen to previous broadcasts, visit [this section](#) of our website.

2018 MASTER GARDENER HOURS



2018
Goal: 10,000 hours
Total: 10,168 hours

	DECEMBER—10,168 hrs 102% of goal
NOVEMBER	
SEPTEMBER—6,757 hrs 68% of goal	OCTOBER
JULY—6,017 hrs 60% of goal	AUGUST—6,694 hrs 67% of goal
MAY—4,537 hrs 45% of goal	JUNE—5,336 hrs 53% of goal
MARCH—1,942 hrs 19% of goal	APRIL—2,780 hrs 36% of goal
JANUARY—419 hrs 4% of goal	FEBRUARY—1,114 hrs 11% of goal

4th Quarter 2018 Membership Report

Dear Members and Interns,

As of January 1, I took on the role of Membership Coordinator, replacing Flicka Slade. Flicka has done so much for SFMGA, and we wish her the best of luck in her future endeavors.

I am happy to announce that we exceeded our 2018 goal of 10,000 volunteer hours. The breakdown was 6,711 hours of Operational Support, 1,743 hours of Continuing Education, and 1,714 hours of Public Education, for a grand total of 10,168 hours. Congratulations to the Master Gardeners who worked to educate the citizens of Santa Fe and to beautify this community. I am so proud to be a member of this organization!

We currently have 180 members, including the 31 graduates from 2018. This month a new group of interns starts classes, with 47 in Track I.

Our biggest goal this year is to make the organizational transition to Santa Fe Extension Master Gardeners as smooth as possible. Accordingly, we have decided to keep our total volunteer hours goal at 10,000 for 2019.

Here's to a fruitful year!

Tammy McLellan
 Membership Coordinator

Calendar of Events

All events are open to the public. Visit the [events calendar](#) on our website for a complete list of garden-related activities and classes with times, locations, and registration information.

Note: phc stands for “per hour of class time.”

DATES	EVENTS	CREDITS
Feb 04	Global Climate Change (5 weeks), 5:30–8:30 p.m. (SFCC)	3 CE
Feb 05	Tools for Rose Gardeners, 6–7:30 p.m. (SFRS)	1 CE
Feb 07	Public Land Environmental Issues (5 weeks), 6:30–8:30 p.m. (SFCC)	3 CE
Feb 09	Keeping Backyard Chickens, 9 a.m.–1 p.m. (SFCC)	3 CE
Feb 13	Gardening Good Enough to Eat, 7–9 p.m. (SFCC)	2 CE
Feb 14	Lecture: Ninfa and La Foce, a Garden Duet, 3–4:30 p.m. (SFBG)	1.5 CE
Feb 15–16	Organic Farming Conference, 7 a.m.–6 p.m. (NMDA)	1 CE phc
Feb 16	Simple Greywater Systems, 9 a.m.–noon (SFCC)	3 CE
Feb 20	A Rose by Any Name Is Easy to Grow, 7–9 p.m. (SFCC)	2 CE
Feb 20	Penstemon Gardens at Los Alamos Nature Center, 6:30 p.m. (NPSNM)	1 CE
Feb 21	Cactus & Succulent Club Meeting and Talk, 6:30 p.m. (SFCSC)	1 CE
Feb 22–23	Mountain West Seed Summit, 8 a.m.–5 p.m. (RMSA)	1 CE phc
Feb 23	Pruning a Fruit Tree as an Espalier, 1–4 p.m. (SFBG)	3 CE
Feb 24	Soils Testing Workshop (2-part class), 1–4 p.m. (NMWC)	3 CE
Feb 28	Tree Care and Maintenance, 5:30–7:30 p.m. (SFCE)	2 CE
Feb 28/Mar 01	Land and Water Summit, 8:15 a.m.–4:30 p.m. (XCNM)	1 CE phc

NMDA: [New Mexico Department of Agriculture](#); conference at Hotel Albuquerque

NMWC: New Mexico Wildlife Center, in Española; class sponsored by [SFEMG](#)

NPSNM: [Native Plant Society of New Mexico, SF Chapter](#); Christ Lutheran Church

RMSA: [Rocky Mountain Seed Alliance](#); summit at IAIA, Santa Fe

SFBG: [Santa Fe Botanical Garden](#), 715 Camino Lejo, 505-471-9103

SFCC: [Santa Fe Community College](#), 6401 Richards Ave., 505-428-1676

SFCE: Santa Fe County Extension Office; workshop at fairgrounds, 3229 Rodeo Road

SFCSC: Santa Fe Cactus & Succulent Club, cactusdata@msn.com; Christ Lutheran Church

SFRS: Santa Fe Rose Society; contact Cindy Hoffman (cindyhoffman@yahoo.com)

XCNM: [Xeriscape Council of New Mexico](#); conference at Sheraton Albuquerque Airport

Members Only: For a complete list of Master Gardener projects and to sign up, please visit Sign Up Genius, a link to which is in the [Members Only](#) section of the website. To log hours worked and to see year-to-date totals, visit Track It Forward in the same location.



Mission Statement:

Santa Fe Extension Master Gardeners is a non-profit volunteer organization whose mission is to learn, teach, and promote locally sustainable gardening through reliable, current research-based practices