Instituting Best Practices for a CNPS Chapter Native Plant Nursery

Throughout California, CNPS chapter members propagate native plants for sale and restoration projects. Many of these plants are grown in chapter nursery facilities. Having witnessed the devastating effects of sudden oak death (SOD), Californians have learned that plant nurseries can be sources of pathogen spread. Although many efforts are underway to curb this, the California Native Plant Society (CNPS) recognizes the importance of improving our chapter nursery practices and procedures to ensure that plant sales do not inadvertently spread diseases.

As a case in point, the Willis Jepson Chapter has had one or more nurseries since the chapter’s beginnings in 2002. Totally volunteer run, we built our first irrigated shade structure as a holding area for plants purchased from commercial nurseries for our annual plant sale. When the Deaner Native Plant Garden at Benicia State Recreation Area became a reality, we constructed a greenhouse and members began to grow plants from seeds and cuttings for the Deaner Garden and plant sales.

Not long after that, the chapter was offered a growing area at the local wastewater treatment plant along with free recycled water. We expanded into this site and began donating plants to school gardens, local restoration projects, and other nonprofits. Recycling and reuse was the name of the game—recycled water, recycled pots, reused soil, and even repotted sickly plants as we nursed them back to health.

At the 2009 CNPS Conservation Conference, Dr. Ted Swiecki gave a talk about Phytophthora and related diseases (sudden oak death) and how these pathogenic fungi are spread by the nursery industry. It made us think twice about our practices, but with a small volunteer crew and upcoming plant sales we had no time to investigate our practices and procedures to determine what diseases we might be spreading.

At the January 2013 CNPS Chapter Board meeting, Ted Swiecki, Willis Jepson conservation chair, reminded us of the importance of best nursery practices. After lengthy discussion and support from Executive Director Dan Gluesenkamp, we set a goal to implement clean nursery practices in 2013. We agreed not to sell, distribute, or buy plants that were not from a clean growing area. Our focus for the year was to raise awareness about plant and soil origins and improve our nursery sanitation methods.

Throughout the chapter’s new growing area, the chapter now uses best growing practices to avoid the spread of plant diseases. Not long after that, the chapter was offered a growing area at the local wastewater treatment plant along with free recycled water. We expanded into this site and began donating plants to school gardens, local restoration projects, and other nonprofits. Recycling and reuse was the name of the game—recycled water, recycled pots, reused soil, and even repotted sickly plants as we nursed them back to health.

At the 2009 CNPS Conservation Conference, Dr. Ted Swiecki gave a talk about Phytophthora and related diseases (sudden oak death) and how these pathogenic fungi are spread by the nursery industry. It made us think twice about our practices, but with a small volunteer crew and upcoming plant sales we had no time to investigate our practices and procedures to determine what diseases we might be spreading.

At the January 2013 CNPS Chapter Board meeting, Ted Swiecki, Willis Jepson conservation chair, reminded us of the importance of best nursery practices. After lengthy discussion and support from Executive Director Dan Gluesenkamp, we set a goal to implement clean nursery practices in 2013. We agreed not to sell, distribute, or buy plants that were not from a clean growing area. Recycling and reuse was the name of the game—recycled water, recycled pots, reused soil, and even repotted sickly plants as we nursed them back to health.

The guiding document for our efforts was the “Rare Campaign Reminder.” CNPS is currently celebrating the Rare Campaign for rare plants and places. You can contribute to this important effort online at http://CNPS.org/support, or by mail to CNPS, 2707 K Street #1, Sacramento, CA 95816. For additional ideas on ways to support the campaign, see the Oct.–Dec. 2013 issue of the CNPS Bulletin.

Rare Campaign Reminder

CNPS is committed to the best practices for our plants and places. You can contribute to this important effort by helping CNPS grow more rare plants and places. Visit http://CNPS.org/support for more information on how you can help.

The guiding document for our efforts was the “Rare Campaign Reminder.” CNPS is currently celebrating the Rare Campaign for rare plants and places. You can contribute to this important effort online at http://CNPS.org/support, or by mail to CNPS, 2707 K Street #1, Sacramento, CA 95816. For additional ideas on ways to support the campaign, see the Oct.–Dec. 2013 issue of the CNPS Bulletin.
I am like you: as I look out at winter rains hitting the window, I think of native plants getting watered. Of course, among those are the plants I purchased at CNPS fall plant sales. In two weeks I visited seven chapter plant sales, including five in one day! It was an amazing experience and I highly recommend you try it. The diversity of plants is absolutely inspiring, as is the variation among chapters. Each sale is different from the last. Napa Chapter holds a pre-party with fine cheeses to accompany the fine plants. Jepson Chapter’s sale is a community picnic in a small-town park. The Milo Baker Chapter sale feels like a conspiracy of friends, pulling in curious passers-by from the adjacent farmer’s market and infecting them with a passion for gardening natives. Santa Clara and East Bay sales are, of course, highly evolved “native plant festivals” with adept volunteers and engaging public talks.

Though each CNPS plant sale is distinct, they have much in common. Each is an expression of optimism, hope, and community. Each is a labor of love, delivered to the public by generous volunteers, with a neighborly confidence that attracts those who love plants for community, faith in a coalescence of affirmations and unceasingly countered by a relentless array of dispiriting uphill struggles to save beautiful places from ugly development. Our chapter plant sales are a much-needed chance to laugh with old friends and smile with newcomers. Where conservation work often involves saying “no, no, no!” sales and gardening are a chance to say “yes, yes, yes!” This is the yin and yang of CNPS and the secret of how CNPS has remained wonderfully affirmative and tenaciously committed for so many years.

Speaking of many years, I hope you will join me in recognizing outgoing CNPS Board Director Brett Hall. Brett has served in that position for six years, guiding our organization through times of tremendous change. His generosity of spirit, patience, and effectiveness as a leader have been inspirational. I cannot speak highly enough of Brett’s contributions to CNPS. We are grateful to have you at our side; you have been an essential part of CNPS. Thank you Brett! We are grateful to have you remaining devoted to the work of CNPS, and deeply appreciative of all you have done on behalf of California natives."

Dan Gluesenkamp
Executive Director
For me, the most important function of the California Native Plant Society is rare plant conservation because no other group does it as well as we do. Our Golden State is bountifully endowed with so many endemic plant species that we should make every effort to protect them. I often travel far from home to enhance my understanding and connection with these special plants and places.

Similarly, I derive inspiration from the stories of our early botanical explorers. Imagine, for instance, that it’s May 29, 1860, and William Brewer, botanist and leader of the California Geological Survey, is not far from Mount Diablo when he collects a plant new to science. He sends the specimen to Harvard’s Dr. Asa Gray, who later names it for this diligent 32-year-old explorer—*Hesperolinon breweri*, Brewer’s dwarf flax. Or imagine it is a cool February day in 1903 and you’re botanizing with Alice Eastwood. She’s looking smart in one of her iconic hats, out on Mount Diablo collecting the type specimen of the new, narrow endemic *Mount Diablo manzanita* (*Arctostaphylos auriculata*).

Nostalgic snippets like this link us to our botanical past, and remind me that the East Bay is an exemplar of history, diversity, and conservation. To share these stories, I have spearheaded a rare plant monitoring program called the East Bay Chapter’s Adopt A Rare Plant Program, which began one year after the Rare Plant Treasure Hunt and is now two years old. The primary goals of this program are to:

- Develop local expertise and community knowledge by systematically collecting species-specific qualitative and quantitative data in the field.
- Build upon existing population occurrence information to assess the condition of each species and make recommendations for conservation.
- Record population threats and management issues facing each species at a chapter level.

With any rare plant monitoring effort, it is important to keep the information up-to-date and up-to-date as possible. This can be a very large and labor-intensive task. Here, this information is updated systematically, for single populations, or small geographic areas, such as the East Bay Treasure Hunt sites. In this manner, a comprehensive overview of a rare plant population or community can be achieved. With the help of dedicated volunteers, it is possible to build a local, volunteer-driven database of rare plant occurrence. With this database, we can make informed decisions about the future of these plants and the places they live.

To date, 15 East Bay citizen scientists have provided information on 37 rare plant occurrences through the Adopt A Rare Plant Program. We gratefully thank our volunteers, for they are the heart and soul of the program. For more information, please contact Heath Bartosh or visit http://ebcnps.org/plant-science/rare-plants-committee/.

Heath Bartosh is senior botanist for Nomad Ecology, an ecological consulting firm in Martinez, California, and rare plant chair for the East Bay Chapter of CNPS.
**NEW NURSERY MANAGER**

The East Bay Chapter of CNPS is pleased to announce that Theo Fitanides has been hired to serve as the new manager for Native Here Nursery, the chapter’s nursery dedicated to growing locally native plants from Alameda and Contra Costa counties.

Theo is a 2010 graduate from California Polytechnic State University, San Luis Obispo, with a BA in biological sciences, and has worked with the Bureau of Land Management, organic farms, National Tropical Botanical Gardens in Hawaii, Terra Verde Environmental Consulting, and The Watershed Nursery. Last summer Theo was a community crew leader for the Student Conservation Association, which serves as a variety of deeds. There are the many permits and forms and the red tape. When we started in 2012, the area was full of weeds and was long overgrown and overrun with decades. Since then we have steadily grown the nursery under control, and have just started planting native species (initially) from the Santa Clara County Parks, the Natural Resources Conservation District, and the local community. The combination of Theo’s interest in native plants and environmental stewardship make him well qualified for his new position. At Native Here Nursery, Theo will work with our volunteers to continue to maintain the nursery garden, as well as to create new gardens, to grow a variety of native plants and to provide education and outreach.

**EAST BAY CHAPTER: New Nursery Manager**

The East Bay Chapter of CNPS is pleased to announce that Theo Fitanides has been hired to serve as the new manager for Native Here Nursery, the chapter’s nursery dedicated to growing locally native plants from Alameda and Contra Costa counties.

Theo is a 2010 graduate from California Polytechnic State University, San Luis Obispo, with a BA in biological sciences, and has worked with the Bureau of Land Management, organic farms, National Tropical Botanical Gardens in Hawaii, Terra Verde Environmental Consulting, and The Watershed Nursery. Last summer Theo was a community crew leader for the Student Conservation Association, which serves as a variety of deeds. There are the many permits and forms and the red tape. When we started in 2012, the area was full of weeds and was long overgrown and overrun with decades. Since then we have steadily grown the nursery under control, and have just started planting native species (initially) from the Santa Clara County Parks, the Natural Resources Conservation District, and the local community. The combination of Theo’s interest in native plants and environmental stewardship make him well qualified for his new position. At Native Here Nursery, Theo will work with our volunteers to continue to maintain the nursery garden, as well as to create new gardens, to grow a variety of native plants and to provide education and outreach.
More on Conifers

The North Coast Chapter has a prolific author in its midst. CNPS member and teacher Michael Kauffmann, who recently published Conifer Country, has now published another new book, Conifers of the Pacific Slope. It is a contemporary field guide to conifers from the coastal temperate rainforests to the highest alpine meadows, and covers California, Oregon, Washington, Idaho, Montana, Wyoming, Colorado, and northern New Mexico. This guide highlights the unique characteristics of each species, and includes color photos and maps that are an important addition to the conifer identification...
The benefits of the Safe Procurement and Production Manual published by the Oregon Association of Nurseries, which is available free online at http://www.oan.org (click on "Publications"). Although intended for wholesale commercial growers, the information has great relevance to our Willis Jepson nurseries. The Manual outlines a systems approach to produce high quality, disease-free plants.

After reviewing the Manual we realized we had a lot of work ahead of us. First we addressed the soil issue, the most likely source of plant diseases. We removed the old soil bin and replaced it with a clean work area. We built a wood frame for the bin's foundation and covered it with a load of sand. On top of this we placed 16" x 16" concrete pavers creating a clean work space approximately 20' by 15'. Soil is stored on this pad in a lined bin and the area will serve as our potting area. The frame, sand, and pavers keep the soil away from native soil and in a location that is less likely to become contaminated with weeds. Now, all our soil is purchased locally and prior to buying soil mixes, we ask for and evaluate the laboratory analysis of the soil mix. The analysis must say whether the mix is pathogen free or we will not purchase it.

Next we looked at the surface of our growing area, which has always been covered with fabric on top of which is a thick layer of gravel. We added more gravel around the new soil bin area and walking paths. Again, this is to keep pots off the ground to avoid contamination with soil borne pathogens.

Members and friends are constantly dropping off gallon cans and plastic pots of various sizes. Sometimes there are so many dropped off we wonder if we'll ever grow that much. All used containers are removed away from clean containers and in a manner making procedures before they allowed into the potting area. The pots also have a soak in a 10% bleach solution. The cleaned pots are dried and kept separate from uncleaned ones. The wash water is drained into the wastewater system located outside the nursery to avoid contamination of potting materials.

The following are other other practices that we are trying to implement:

- Diseased plants and soil are removed immediately. Sick or dying plants and soil are tossed into the garbage bin.
- Irrigation is managed carefully. We make sure our plants don't get too wet so they are not prone to diseases. We are strict about preventing pots to be left on the ground to avoid contamination with soil borne pathogens.
- We propagate from healthy stock, and use seeds whenever possible.

- We only buy plants from clean nurseries. We question growers about their procedures to determine if they follow those in the Oregon Safe Procurement and Production Manual.
- We continue to educate our volunteers. For those who propagate plants at home, we emphasize that they must also use clean nursery practices to clean home environments.

We've come a long way in the past year. Our practices are evolving, as we learn more and come up with cleaner and more efficient methods to prevent pathogens from infecting the native plants we sell.

All three authors are members of the Willis Jepson chapter and propagate plants for the twice yearly plant sales.
California Indians developed intensive harvesting systems, but unlike other tribes, they made use of a much wider palette of plants and animals. Ken Lightfoot, in *California Indians and Their Environment*, writes, “One gets the feeling that California Indians revelled in this resource diversity, and that this may have been a common thread that ties together many of the distinctive Native cultures of our state.”

According to Kristie Orosco, resource manager for the San Pasqual Band of Mission Indians of Southern California, “Native people had the cures to all diseases before the advent of European contact. Because the biodiversity was so complete, any affliction was curable. With private property, we didn’t have access to these wild plants. Our land was so vey nished, and these "noxious" weeds can be quite charming, and their beauty and landscaping uses are as added bonus. Dried sage is just a true example of native plants medicinally used for healing.”

Historically, native people have harvested medicinal plants responsibly so that they would continue to be available in the future. It is equally incumbent upon us to follow their example. The best way to gain access to medicine is to grow it yourself. Native people grew their plants in large drifts, allowing for about five feet between plants, and waited for the regal flower stalks. The plants’ properties, like a botanic oil or a fiber, are strong even though the medicine person hasn’t been there for 200 years. This cultivation shows their talents and knowledge.

Integrate medicinal plants throughout the garden, depending on the requirements of the species. For instance, some require a sunny spot for the flowers, so they grow well on a south-facing hill. Plant it in large drifts, allowing for about five feet between plants, and wait for the regal flower stalks. The plants’ properties, like a botanic oil or a fiber, are strong even though the medicine person hasn’t been there for 200 years. This cultivation shows their talents and knowledge.

Below are just a few examples of native plants traditionally used for healing:

**White Sage** (*Salvia apiana*): used for smudges. Dried leaves, tied tightly together, are then lit to create a healing smoke. The odor clears a room, cleanses the body, and creates a feeling of calm. The plant can also be used as a tea for a sore throat, since it contains bacteria-killing cineole.

**Sambucus mexicana** or **S. nigra subsp. caerulea**: a shrubby tree. Commonly called blue elderberry, the berries are high in bioflavonoids and vitamin C. To be safe, pick them after the greenish tint under the powdery coating has changed to purple. They contain cyanide, so should not be eaten raw. Native peoples dried the blossoms and then brewed them into tea for fever. This deciduous tree is at home along wetlands, so it would be a good choice to grow in a wetter hydrozone.

**Yerba buena** (*Satureja douglasii*): used for the prevention of nausea and fainting. Crush a few leaves and inhale. To alleviate insect bites or skin rashes, crush the leaves and apply to the affected area. Yerba buena is a groundcover that can take some foot traffic, and prefers shade and moisture.

Two resources for further reading include the California Ethnobotany blog (http://deborahsmall.wordpress.com/2009/10/20/california-ethnobotany/), and the Northern California Ethnobotany website (http://www.asis.com-users/jknope/NorCal%20Ethnobotony%20Intro.html).

Susan Krzywicki is the newly appointed CNPS Horticulture Program Director. She was chair of the San Diego Chapter Gardening Committee, sat on the chapter board, and is co-chair of the San Diego Surfrider Foundation Ocean Friendly Gardens Committee.
MARCH 7–9, 2014 – RANCHO SANTA ANA BOTANIC GARDEN, CLAREMONT

HOST

CHAPTER S: LA/SANTA MONICA MTNS., ORANGE COUNTY, SAN BERNARDINO/RIVERSIDE, SAN GABRIEL MTNS., AND SOUTH COAST

Next Chapter Council Meeting
(details available at: http://cnps.org/cnps/admin/cc/)

California Native Plant Society • vol 44 / no 1 January–March 2014

The California Native Plant Society is a statewide, nonprofit organization of amateurs and professionals with a common interest in learning about and preserving California’s native plants and plant communities. Membership is open to all. Visit cnps.org

Printed on sustainably harvested paper containing 50% recycled and 25% post-consumer content, processed chlorine-free.