



# Darlingtonia

WINTER 2013  
January—March

Newsletter of the North Coast Chapter of the California Native Plant Society  
Dedicated to the Preservation of California Native Flora

## CALIFORNIA BAY-LAUREL

(*Umbellularia californica*)

[Editor's Note: This article and drawing are re-printed with permission from the San Louis Obispo Chapter of CNPS. Also, see Carol's 'Umbellifer Quest' Field Trip Report in this issue of the *Darlingtonia*]



Bonnie's cover drawing this time is a modified repeat from May 2009. It is derived from one that she did for David Keil and my plant taxonomy text. My guess is that it is a tree that almost all of you know already. It is one of the first trees for which I learned its name. It is known locally as the California bay laurel or simply California bay. Its scientific name is *Umbellularia californica* and belongs to the laurel, sassafras, cinnamon or camphor family

(Lauraceae). As can be surmised from the drawing of a flowering twig tip, it produces small flowers. Each yellowish-green flower cluster turns into a single dry olive-like fruit.

Why discuss this species so soon? It's because Heather asked me to explain the new family placements in the new *Jepson Manual*. Up until the middle of the 20<sup>th</sup> century, the flowering plants were divided into only two taxonomic classes. These were the monocots and the dicots. Different taxonomists divided the flowering plants in various ways, but none seriously messed with the dicot/monocot distinction. Then in the late 1960's, Arthur Cronquist came up with a new classification for the dicots, which accounts for 2/3 of the flowering plants. It should be noted that he too didn't mess seriously with the two classes – dicot and monocot. What he did do was recognize an

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## Find out what's happening:

- Visit our website:  
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[NorthCoast\\_CNPS-subscribe@yahoogroups.com](mailto:NorthCoast_CNPS-subscribe@yahoogroups.com)

## FIELD TRIPS AND PLANT WALKS

Please watch for later additions on our Web site ([www.northcoastcnps.org](http://www.northcoastcnps.org)) or sign up for e-mail announcements ([Northcoast\\_CNPS-subscribe@yahoo.com](mailto:Northcoast_CNPS-subscribe@yahoo.com)).

Outings are open to everyone, not just members. All levels of expertise, from beginners to experienced botanizers, are welcome. Address questions about physical ability requirements to the leader. It is wise to contact the leader if you are coming, in case plans change.

**February 23, Saturday. Mad River Beach to Lanphere Dunes Day Hike.** Even this early in spring some tiny things are blooming in the dunes. We will study them and watch for other treasures in the foredunes and swales paralleling the beach for about 2 miles. We will shuttle cars from the county park to the refuge, so we need walk only one way. Dress for the weather; bring lunch and water. Meet at 9:00 a.m. at Pacific Union School (3001 Janes Rd., Arcata). Return mid-afternoon. Please tell Carol (822-2015) that you are coming.

**March 10, Sunday. Rohner Park and Eureka Marsh--Two short hikes.** One feature of Rohner Park in Fortuna is a wealth of slinkpod, a.k.a. fetid adder's tongue. It's intricate, unusual flowers should be open as we walk the easy circle trail through this stand of mature second growth redwood. After eating our lunch in the park, we will drive to Eureka (Palco) Marsh (at the end of West Del Norte St.) to cast our botanical eyes on a place where Audubon regularly leads bird walks. The 1-2 hour, flat, loop trail passes mudflat, salt marsh, freshwater marsh, and riparian areas. We will surely see willows, but there may be surprises. Dress for the weather; bring lunch and water. Meet at 9:00 a.m. at Pacific Union School (3001 Janes Rd., Arcata), 9:30 at the Kohls end of Bayshore Mall parking lot, or 10:00 at the Fireman's Pavilion in Rohner Park (Park St. off Main St. by 16th St.). Return mid-afternoon. Please tell Carol (822-2015) that you are coming.

**March 30, Saturday. Horse Linto Day Hike.** The time to visit Horse Linto is before the poison oak leafs out. Hopefully this will also be the time that two trilliums, a fawn lily (*Trillium kurabayashii*, *Trillium ovatum*, and *Erythronium californicum*) will be blooming. This campsite in Six Rivers National Forest is about an hour from Arcata, north of Willow Creek. We will walk a short, uneven trail. Dress for the weather; bring lunch and water. Meet at 9:00 a.m. at Pacific Union School (3001 Janes Rd., Arcata) or arrange another place. Return mid-afternoon. Please tell Carol (822-2015) that you are coming.

**April 7, Sunday. Four Creeks and Three Fawn Lilies Tour.** With a bit of driving we will visit roadside patches of three species of fawn lilies (*Erythronium*) on Redwood Creek, East Fork Willow Creek, Supply Creek, and Skunk Creek. The farthest site is beyond Hoopa on route 96. If spring has progressed as expected, we will be able to study and measure these flowers using what we learned at our November program from Cherie Sanville and Bianca Hayashi. Dress for the weather; bring lunch and water. Meet at 9:00 a.m. at Pacific Union School (3001 Janes Rd., Arcata) or arrange another place. Return mid-afternoon. Please tell Carol (822-2015) that you are coming.

**Watch for:** Likely visit to Bill Shapeero's Hydesville property on April 27 or 28 and dune walks at the Manila Community Center during the Spring Wildflower Show May 4 and 5.

**HELP PLAN FUTURE TRIPS** We always need ideas for trip destinations. Tell Carol your ideas any time, or join a two-hour planning party on February 15. Contact Carol (822-2015 or [theralphs@humboldt1.com](mailto:theralphs@humboldt1.com)) for time and place.



SPRING WILDFLOWER SHOW  
MAY 3-5 at the Manila Community Center  
Free Admission!

## CHAPTER PROGRAMS AND MEETINGS

### EVENING PROGRAMS

The North Coast Chapter of CNPS ([www.northcoastcnps.org](http://www.northcoastcnps.org)) offers free, public programs on the **second Wednesday** of each month, September through May, at the Six Rivers Masonic Lodge, 251 Bayside Rd., Arcata. Refreshments at 7:00 p.m.; program at 7:30 p.m.

Botanical FAQ's: At 7:15 p.m. Pete Haggard or some other presenter shares a brief, hands-on demonstration and discussion of some botanical topic.

- Jan 9**      **"Native Bees in the Garden."** You can have these special, important insects in your yard. Learn from local gardener, naturalist, author, and photographer **Pete Haggard** to recognize them and to provide for them. Simple garden changes involving native plants, nesting sites, garden tillage, and landscape stability can favor native bees.
- Feb 13**     **"A River Rehabilitation Project on the Trinity."** Making a river functional for fish involves the vegetation growing along it. Riparian botanist and ecologist **John Bair** will describe a ten-year effort to rehabilitate a section of the Trinity River--why it needed it, what they did, and what happened. The project has been both destructive and constructive, involving both bulldozers and willow sprouts, reshaping the channel and encouraging riparian vegetation. John will share some of what he has learned about willows and cottonwoods, his special interest.
- Mar 13**     **"Nitrogen in Yosemite: Too Much of a Good Thing"** When every rain drop and every gust of wind brings down just a little bit more nitrogen than it used to, does that matter? **Martin Hutten** has found that it does, for lichens and for plants like our California natives, adapted to low nitrogen diets. Even in the heart of Yosemite's most remote wilderness nitrogen is affecting lichens. It could also be encouraging non-native plants. Martin, a lichen and an invasive plant specialist and a photographer working for National Parks, will tell about his studies. Attendees are invited to bring lichens on branches (label with tree species.) to learn to distinguish healthy from sick ones.
- Apr 10**     **"Lichens and bryophytes— enigmatic, charismatic cryptogams"**. If you like lichens, love liverworts, and/or are mesmerized by mosses, then this evening is for you! From the tops of the tallest trees to the rocks at the ocean edge, these oft-overlooked creatures can be found almost anywhere. Join HSU lecturer **Marie Antoine** to learn some fun facts that will allow you to further your own discovery of lichens and bryophytes.
- May 8**      **"Patterns of Plant Discovery in California--You Too Can Discover a New Species"** Prolific field botanist **Dr. Dean Wm. Taylor** will talk about some of his exciting finds and about how you too can contribute to field botany this way.

## & PLANT SALE

*School groups welcome on Friday, May 3.*

Join our volunteers (no botanical knowledge required)!  
Contact a Beresford (WFS-Richard / Plant Show-Chris  
at [thegang7@pacbell.net](mailto:thegang7@pacbell.net) / 826-0259).



# VOLUNTEER CORNER

Contact Carol (822-2015 / [theralphs@humboldt1.com](mailto:theralphs@humboldt1.com)) to volunteer, ask questions, or make suggestions.

## Welcome Aboard!

**Kim McFarland**, as Vice-President. Kim brings botanical skill, committee experience, and enthusiasm to our Steering Committee.

Other officers re-elected in October are **Carol Ralph**, president; **Frances Ferguson**, secretary; and **Michael Kauffmann**, treasurer. More than 10% of our membership voted. Thank you!

## Thank you!

- **Anna Bernard** and her employer, **Time Warner**, for a generous company donation to an organization the employee supports as a volunteer.
- **Tom Carlberg** for leading a fascinating lichen trip.
- **Sylvia White** for taking on the task of getting our publicity into the *Northcoast Journal*.
- **Roberta Allen** for a generous donation in memory of John Sawyer.
- **Paul Abel** for hosting a dig-and-divide.
- **Anna Bernard, Chris Beresford, Sylvia White, Connie Gregorson, and Angie Lottes** for digging, dividing, and potting up plants for our sale.
- **Michael Kauffmann** for organizing the Klamath film night.
- **Stephanie Klein, Jen Kalt, and Carol Ralph** for helping at the Klamath film night.
- **Anna Bernard and Carol Ralph** for advising HSU students doing restoration projects and helping them get native plants to install.

**Volunteers needed.** Big jobs and small, every one important. Every job-holder is eligible to be on our Steering Committee.

- **Program Chair.** The job is to assure a program speaker and publicity for them, monthly September through May. Carol and others often suggest speakers and make the first contact. The Program Chair follows up. The primary qualifications for the job are: planning ahead, remembering to contact people, and submitting publicity to the publicity channels. It is helpful, but not required that the program chair be able to attend programs and introduce speakers. Meet interesting people while maintaining one of the important and visible public functions of the chapter and providing substance to the monthly chapter get-together.
- **School Visits Organizer.** One of the most important and fun aspects of the spring wildflower show is sharing it with school classes. A template and procedure is available to accomplish this, as well a list of people who like to teach and guide the students. The organizer recruits classes and puts it all together. The event is on May 3, 2013.
- **Chief Outreach.** Keep our displays and handouts in good shape for use at various public events, about 6/year. A good group of volunteers help staff the table (booth).
- **Science Fair Coordinator.** A brief, fun job one day each year in mid-March selecting the recipient of our chapter's award. Other people help judge. Criteria have been developed.

## FIELD TRIP REPORTS

### Umbellifer Quest

June 17, 2012

by Carol Ralph

How many umbellifers (carrot family members; *Apiaceae*) can you see in one lovely summer day with a group of 14 botanizers along Forest Highway 1 (Titlow Hill Rd.) off Highway 299 in Six Rivers National Forest? We saw eleven, stopping in four places, the farthest at the White Rocks (9.4 miles from Highway 299) and the longest at Cold Spring, where we walked in the meadow and on the trail to the "secret fen." With greater efficiency and greater taxonomic expertise on my part we could have added a few more mountain species and coastal stops for weedy, wetland, and dune species, adding about 13 species to the list, but we needed to admire some other spring treats on the mountain, such as western waterleaf (*Hydrophyllum occidentale*), columbine (*Aquilegia formosa*), blue dicks (*Dichelostemma capitata*), meadowfoam (*Limnanthes* sp.), spreading phlox (*Phlox diffusa*), pussy ears (*Calochortus tolmei*), California fawn lily (*Erythronium californicum*), baby blue eyes (*Nemophila menziesii* var. *atomaria*, the white one), giant white wakerobin (*Trillium albidum*), and Siskiyou onion (*Allium siskiyouense*).

The umbellifer species we saw and I am fairly confident of identifying correctly were:

- *Angelica tomentosa*--woolly angelica
- *Ligusticum apiifolium*--celery-leaved lovage
- *Osmorhiza berteroi* (= *chilensis*)--common sweet cicely
- *Osmorhiza occidentalis*--western sweet cicely
- *Lomatium dissectum*--fernleaf lomatium
- *Lomatium macrocarpum*--giant-seed lomatium
- *Lomatium utriculatum*--common lomatium, bladder parsnip, hog fennel
- *Perideridia* sp.--yampah
- *Sanicula crassicaulis*--Pacific sanicle
- *Sanicula tuberosa*--turkey pea
- *Tauschia kelloggii*--Kellogg's tauschia, umbrellawort

What a great family the umbellifers are! Distinct, diverse, fragrant, useful, and beautiful!

### Looking at Lichens at Cold Spring

October 27, 2012

by Carol Ralph

Despite a high overcast and patches of snow in higher and shadier places in the Horse Mountain area, the day eleven of us spent with lichen-master Tom Carlberg was mild and definitely rewarding. We parked in the dirt area on the left of Forest Highway 1 (Titlow Hill Rd.) a little before the entrance on the right to Cold Spring (7.8 miles from Highway 299) in Six Rivers National Forest, then walked down past the spring to the "prairie" area. There we examined lichens on a white oak (*Quercus garryana*), on a large Douglas-fir (*Pseudotsuga menziesii*), briefly on a rock, and spent a half-hour scouting around on our own to bring back things to share. Under the Douglas-fir an exciting, non-lichen find was a wad of stiff, tan, needle-like plant bits which luckily one of us could identify: the discarded resin ducts from Douglas-fir needles eaten by the red tree vole (*Arborimus* (*Phenacomys*) *longicaudus*), a rare and specialized mammal.



Sign that red tree vole lives in the tree

Lichen names are challenging to the novice. I decided I would concentrate on really learning one this day, the most common lichen on oaks--the crustose, light gray-green, lumpy *Ochrolechia*. I was already familiar with the name *Usnea*, having heard it over the years as people pointed to various pale gray-green, branched lichens, and I was pleased to learn that the round, elastic cord inside *Usnea* branches (break it carefully to see it.) defines the genus

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worldwide. *Usnea* always has it; no other genus does. I was also glad to clarify that the hanging lichen festooning the pines at Cold Spring was not the same as that festooning all trees and shrubs in the dune forest on the coast. In the pine was *Alectoria sarmentosa*, a tangle of yellowish green, roughly circular, ridged branches with tiny, white slashes. On the coast is *Ramalina menziesii*, the lace lichen, a longer, greener, shinier tangle of lichen branches that fuse in places to make a net.



Studying *Platismatia stenophylla* under a Douglas-fir

Here are some other things I learned about lichens:

1. The fungal partner of a lichen accommodates the algal (or blue-green bacterial) partner in a layer between the very thin cortex (skin) of the thallus (the body of the lichen) and the thicker, white layer called the medulla. The lichen is a truly symbiotic partnership, in which each species benefits from the other--the alga or bacterium gets shelter; the fungus gets nutrients produced photosynthetically by the alga or bacterium.
2. "Lichenized" refers to the condition of symbiosis between the two partners. Some fungi can become lichenized with more than one species of algae, sometimes at the same time.
3. Some of the algae in lichens can be free-living. When they are lichenized, algae change form.
4. Lichen taxonomy is based on the fungus.
5. The color of the top surface of a lichen is not the color of the alga inside. The color changes as a lichen hydrates or dries. Colors in lichen books are talking about dry lichens. Many different lichens are whitish green and black
6. Lichens grow all tangled and intermixed with each other and with mosses. A differently shaped thallus sticking out of another of the same color is probably a different lichen, not a fruiting structure or "different growth phase."
7. Any difference in shape between two lichens is significant. It's not just "an aberration" or "a different growth phase," which were my first thoughts. In other words, when looking at lichens "shape trumps color" as far as character importance. Some adjectives I found useful in describing lichen thalli were: flat, frilly, hollow, solid, wide, narrow, rounded, pointed, branched, flat, crustose, stringy, and sheet-like. The nature of any bumps, pits, or protrusions on the top or bottom of the lichen is also an important part of its shape.
8. The bumps, pits, or protrusions all have special names, e.g. apothecium, pycnidium, isidium, soredium, rhizine.
9. The lower surface will often tell you the genus.
10. Lichens as a group have multiple, amazing ways of reproducing, and any one species may employ several. Fungal spores (that travel without algal partner) are produced in varied and intricate structures called apothecia. Fragmentation, producing fragments, and soredia, producing dust-like bundles, both produce units of fungal filaments plus algae.
11. A very important character for identification is the substrate on which the lichen grows. Most lichens are particular. Oak bark is very different from Douglas-fir bark from granite, in physical and chemical nature.
12. 99% of lichenized fungi are ascomycetes (cup fungi).
13. Lichens are diverse! Our lichen list for the day was 50 species. Tom said the single white oak we studied could have 40+ species on it; most of this diversity would be in crustose species. He found five species on a 1 x 2 cm chip of dead oak.

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## Jacoby Creek Forest

14 October 2012

by Carol Ralph

Armed with the required permit from the City of Arcata, on a cool but gentle fall day our party of twelve parked at the end of Jacoby Creek Rd., about 3.5 miles up, and hiked about two miles in to see a grove of old growth western redcedar (*Thuja plicata*). The trail was partly old logging road and partly constructed trail. It crossed the creek four times, but we forded fairly easily, given the low water of the season. After escaping the weedy zone at the start of the trail, we were in a tall, tangled, freshly damp, mossy, fragrant riparian forest in the narrow canyon of Jacoby Creek.



Admiring a redcedar. Photo by Rita Zito

We noted various coniferous trees along the way and learned to recognize western burning bush (*Euonymus occidentalis*), which still had a few of its red fruits. We saw young western redcedar. After the fourth stream crossing we encountered one about four feet DBH (diameter breast high), looked around and realized we were there, in the grove of old growth redcedars. The large trees, up to 12 ft DBH, were on a level bench above the stream. Red alders (*Alnus rubra*) and a very few tanoak (*Notholithocarpus densiflorus*), western hemlock (*Tsuga heterophylla*), and grand fir (*Abies grandis*) accompanied the redcedar, and also a dense understory of salmonberry (*Rubus spectabilis*), sword fern (*Polystichum munitum*), redwood sorrel (*Oxalis oregana*), slough sedge (*Carex obnupta*), piggyback plant (*Tolmiea menziesii*), and wild ginger (*Asarum caudatum*), but no redwood (*Sequoia sempervirens*) or Douglas fir (*Pseudotsuga menziesii*). The last two were abundant just above the flat bench, in the second growth on the side hill.

We admired the redcedars and some nearby, huge, mossy big-leaf maple (*Acer macrophyllum*), and then hiked back to the cars. We were glad the City now owns the grove of redcedars and plans to preserve it. We helped in their effort of controlling how the forest is used by reporting that we encountered eleven people on bicycles, four on motorcycles, and one on foot. These were not all approved users of the trails.

# Mad River Beach Restoration

## Yellow Bush Lupine (*Lupinus arboreus*) Removal and Planting of Native Dune Vegetation

By: Katie Siedel, Kellie Roussos, Forest Kirk, and Jennifer Hidalgo



### Project Summary:

This fall a group of four seniors from Humboldt State University removed invasive yellow bush lupine (*Lupinus arboreus*) from a dune area at Mad River Beach in Humboldt County, CA. The project was a Senior Project by students focusing in the Ecological Restoration option of the Environmental Science major. The students removed two flat-bed truck-loads of *L. arboreus* from the project site just north of the parking lot at Mad River Beach, and then planted the site with native dune mat vegetation. *L. arboreus* is an invasive non-native species, and facilitates the conversion of native dune mat vegetation into a shrub and grass dominated ecosystem. *L. arboreus* is able to tolerate the sterile dune soils by fixing atmospheric nitrogen, and thus increasing the fertility of the soil. This negatively impacts native species which are adapted to the nutrient poor dune soils, and facilitates invasion of the dunes by upland species. Through restoration the *L. arboreus* cover at the project site was reduced from about 30% to zero at the time of lupine removal. The cover of *L. arboreus* and native species will be monitored for 2 years by the Humboldt State Natural Resources Club, and all new *L. arboreus* growth will be removed.

*L. arboreus* was introduced to the north spit of Humboldt bay in the 1900's. It was planted with seeds from the Presidio in San Francisco by the Army Corps of Engineers to stabilize the mobile sand dunes to prevent the railroad from being buried during the construction of the north jetty (Friends of the Dunes). *L. arboreus* is native to areas in southern and central California (Wozniak 2000). *L. arboreus* now dominates 28 percent of the total vegetation cover on Humboldt Bay dunes (Pickart and Sawyer 1998). Since it has been here for 100 years, some wildlife species have learned to utilize *L. arboreus* as habitat. However, the objective of this project was to restore native dune mat vegetation, to combat the loss of vegetative diversity in Humboldt Bay dune ecosystems, so *L. arboreus* removal was necessary.

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## STEERING COMMITTEE MEMBERS/CONTACTS

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### COMMUNICATIONS

North Coast CNPS members have four ways to share information with each other:

1. The ***Darlingtonia* Newsletter** (quarterly),
2. Our chapter's website: **www.northcoastcnps.org**
3. E-mail lists/forums (Announcements, Business, and Gardening – subscribe from the **E-mail lists and Forums** page on [www.northcoastcnps.org](http://www.northcoastcnps.org)).
4. Facebook **www.facebook.com/NorthCoastCNPS**

The *Darlingtonia* is the quarterly newsletter of the North Coast Chapter of CNPS. Items for submittal to *Darlingtonia* should be sent to [marisa\\_nativecalifornian@yahoo.com](mailto:marisa_nativecalifornian@yahoo.com) no later than: December 1, March 1, June 1, and September 1. Botanical articles, poetry, stories, photographs, illustrations, sightings, news items, action alerts, events, factoids, tidbits, etc. are welcome and appreciated.

### EcoNEWS AND YOU

We, the North Coast Chapter of CNPS, are a member organization of the Northcoast Environmental Center (NEC), a valuable voice for conservation in our area. We have a seat on their board of directors.

The NEC is the only organization with which we share our mailing list. We think it is important that our members receive *EcoNews*, an informative publication about conservation issues in our area. Our chapter pays NEC to mail *EcoNews* to our members who are not also NEC members. You can reduce this cost to our chapter by joining NEC at [www.yournec.org](http://www.yournec.org) or requesting your *EcoNews* be electronic (contact [jenkalt@gmail.com](mailto:jenkalt@gmail.com)).

### NATIVE PLANT CONSULTATION SERVICE



Are you wondering which plants in your yard are native? Are you unsure if that vine in the corner is an invasive exotic? Would you like to know some native species that would grow well in your yard?

The North Coast Chapter of the California Native Plant Society offers the Native Plant Consultation Service to answer these questions and to give advice on gardening with natives. If you are a member of CNPS, this service is free, if not, you can join or make a donation to our chapter.

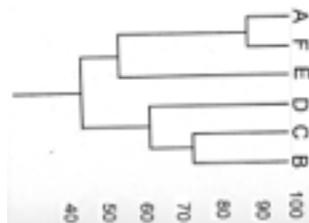
A phone call to our coordinator, Bev Zeman at 677-9391 or [donjzeman@yahoo.com](mailto:donjzeman@yahoo.com), will put you in touch with a team of volunteer consultants who will arrange a visit to your property to look at what you have and help choose suitable plants for your garden.

(Continued from page 1)

evolutionary basal subclass he called the Magnoliidae. This subclass contained many woody plants that displayed characteristics that he considered very primitive. These included such traits as a wood anatomy more like conifers than the rest of the flowering plants. A few of them, but none of our native California plants, even had immature seeds (ovules) that were exposed to the open via an opening in their ovaries which resulted in a pollination process where the pollen landed directly on the ovule. Again this is reminiscent of what occurs in gymnosperms. One thing we need to remember about the plants classified in this subclass is that they all produced true flowers so there was no controversy about their being flowering plants. We now skip ahead to the 1980s and 1990s. Genetic procedures were developed that allowed the molecule DNA (deoxyribonucleic acid) to be readily extracted from organisms and duplicated rapidly. This produced sufficient quantities to be easily studied. Studying DNA means determining the sequences of the four nucleotides that are found in all DNA molecules. These nucleotides include A (adenine), C (cytosine), G (guanine), and T (thymine). Basically all DNA molecules contain long sequences of these four nucleotides in patterns unique to the group to which an individual organism belongs. Each individual within a group also possesses DNA sequences that are a very slight variation of its group DNA.

At this time plant taxonomists combined the newer DNA sequences with older morphological (form or appearance) and biochemical traits (as well as fossil evidence where available) into extremely large data tables (similar to computer spreadsheets and tables produced in Microsoft Word and Excel only larger and read by different software. These huge data sets required computers running specialized analysis programs. These programs basically create groups of species on the basis of similarity using all the characteristics including DNA sequence data. That is, it would first link species together that shared the most characteristics. Then it would combine these new groups, again based on combined similarity, into a smaller number of slightly larger groups. If you repeat this procedure long enough, it will produce series of fewer but larger clusters. Ultimately, the large number of individual starting groups (species) will end up in a single, all encompassing group. The computer can also produce a picture of the process. This diagram resembles an intricately branched shrub or tree. In the diagram below, species (or genera or families) are represented by letters and the numbers represent degree of similarity or percent of shared characters. In the diagram below, the many first-formed, highly similar small groups appear to the right of the tree or at the branch tips while the

few last formed, diverse, composite groups appear toward the left. I'm guessing that some of you will picture the tree as potentially representing an evolutionary sequence, with the more primitive groups at the left and the derived (advanced) groups to the left.



How does all this impinge on the placement of California bay, as well as spicebush (*Calycanthus*) and yerba manza (*Anemopsis*), in Jepson? Well, when this process was repeated many times by many researchers, it turned out that these plants fell not only below and separate from the rest of the dicots and monocots but also between the dicots and monocots. The only way to translate these relationships into a classification system was to create a new category of flowering plants that is neither monocot nor dicot but equal to them in rank. This is the "magnoliids." Look at Bonnie's picture of the enlarged flower. Count the sepals (it doesn't have any petals). There are six, which is a monocot character. There are also nine stamens also on the monocot 3-merous plan. Note that the plant is a tree whose trunk increases in diameter via a cylindrical layer of dividing cells (cambium). This, the pinnate veined leaves, and two seed leaves (cotyledons) found in the embryo are dicot characters. So even without the esoteric DNA information, a case can be made for the creation of this NEW class of flowering plants to contain intermediates such as our California bay. - Dirk Walters, illustration by Bonnie Walters



# CALIFORNIA STATE PARKS

## VOLUNTEER RESTORATION WORK DAYS

### ❖ 2<sup>ND</sup> SATURDAY EACH MONTH - PATRICK'S POINT STATE PARK

MEET AT THE PATRICK'S POINT STATE PARK VISITOR CENTER PARKING LOT BY  
9:00A.M. WE WILL WORK UNTIL 12:00 P.M.

*HEAVY RAIN AND WINDS – CANCELLED!*

### ❖ 4<sup>TH</sup> SATURDAY EACH MONTH - TRINIDAD STATE BEACH

MEET AT THE TRINIDAD STATE BEACH PARKING LOT IN THE TOWN OF LOT BY 9:00A.M.  
WE WILL WORK UNTIL 12:00 P.M.

*HEAVY RAIN AND WINDS – CANCELLED!*

Restoration work days will concentrate on pulling out invasive, non-native plants such as English ivy. Work will consist of moderate activity and participants are encouraged to wear sturdy shoes for walking off trail. Gloves and tools are provided or bring your own. Work locations are less than a ½ mile hike from the trailhead. In addition, volunteers will learn about the native plants that normally grow in a Sitka spruce forest.

*If you have questions please call Michelle at (707) 677-3109.*

## MEMBERS' CORNER

### WELCOME NEW MEMBERS

KATHLEEN BECKER  
RONALD FRITZSCHE  
MARA GALVEZ  
CARRIE GRANT  
DE-ANNE HOOPER  
CRAIG KNOX  
BENJAMIN LARDIERE  
HELENA OROZCO  
CARRIE PEYTON DAHLBERG  
CARA SCOTT  
GWEN THOELE  
KATHERINE WHITE

### THANK YOU RENEWING MEMBERS

ROBERTA ALLEN  
TOM ALLEN / KATY ALLEN  
PAUL ANDERSON  
BARNEY BARTELLE  
ANNA BERNARD  
MIGNONNE BIVIN  
TRACIE BRANDT  
HEATHER BRENT  
NANCY BUCK  
BUREAU OF LAND MANAGEMENT  
ANN BURROUGHS  
SUSAN CAMPBELL  
DIANA CHAPMAN  
KATHRYN CORBETT  
MATTIE CULVER  
ERIN DEGENSTEIN  
JANELLE EGGER / NEIL PALMER  
YVONNE EVERETT  
GARY FALXA  
COLIN FISKE  
PAULA FONG  
BRENDA FORD / ROBERT SNYDER  
NED FORSYTH  
GREGORY FREER  
LEIA GIAMBASTIANI  
CLARE GOLEC  
NANCY GREGORY  
MELINDA GROOM  
DEBRA HARRISON / GREG BLOMSTROM  
  
RONALD W HILDEBRANT

JUDITH HINMAN  
DENNIS HOGAN  
JEFF HOGUE  
JOANNE HOLMES  
GAIL HOVORKA  
DAVID K. IMPER  
THOMAS JIMERSON  
WILMA W. JOHNSTON  
MICHELE KAMPRATH  
MARIE KELLEHER-ROY  
BARBARA KELLY  
DR. BRUCE KESSLER / PAM KESSLER

JOYCE KING  
STEPHANIE KLEIN  
MARLA KNIGHT  
RHIANNON KORHUMMEL  
LAURIE LAWRENCE  
LARRY LEVINE  
TOM LISLE  
BEN LUCKENS  
LEAH MAHAN  
LLOYD MCCLELLAND  
KIMBERLY MCFARLAND  
JOHN MCRAE  
MARY MELVIN  
LINDA MILLER  
JAN MOUNTJOY / BOB MOUNTJOY  
VICTORIA PATTON / JOHN PATTON  
TOM PRATUM / PEGGY LEVITON  
CAROL RALPH / C.J. RALPH  
JENNIFER RIDDELL  
PETER RYAN  
DIANE RYERSON  
APRIL SAHARA  
ZACHARY SILBER-COATS  
JUDIE SNYDER  
MICHAEL STUART / BETHEL LABORDE  
AUDI THOELE  
BRADLEY L. THOMPSON / KAREN SHEPHERD  
DONNA M. THOMPSON  
JENNIFER TOMPKINS  
CARL TUCK  
THEODORE UTECHT  
CAROL VANDER MEER  
NEZZIE WADE  
WENDY WAHLUND  
JAMES F. WATERS / VIRGINIA

WATERS  
CHRISTINE WEST  
SYLVIA WHITE  
ART WILSON  
JENNIFER WOOD  
WILLIAM WOOD  
JOHN YOAKLEY  
DANA YORK

### MEMBERSHIP BENEFITS

Support these local businesses and with proof of your North Coast membership, receive discounts on your purchases.

- **Bamboo & Maples**, 10% discount on plants, 445-1281
- **Freshwater Farms**: 10% off plant purchases, 444-8261
- **Greenlot Nursery**, 10% discount on plants, 443-9484
- **Mad River Gardens**: 10% discount on plant purchases, 822-7049
- **Miller Farms**: 5% discount on plant materials, 839-1571
- **Pierson's Garden Shop**, 10% discount on all garden shop items (except sale or non-discountable items—please ask staff before going to register), 441-2713
- **Samara Restoration LLC**, 10% discount on plants, 834.4379 / samararestoration.com

### JOIN THE CNPS

#### NORTH COAST CHAPTER!

To join or renew, you can either:

- ◆ Send your name and address, check (payable to CNPS) CNPS, 2707 K St., Suite 1, Sacramento, CA 95816-5113.
- ◆ Pay on-line <http://www.cnps.org/cnps/join/>

## FALL PLANT SALE VOLUNTEER THANK YOU

On behalf of the plant sale committee, we wish to thank all of the volunteers that made the plant sale held at the Arcata Marsh Parking Lot in September such a success – it was our best fall plant sale to date! To those that helped out on by assisting with publicity; making our labels for all of our CNPS provided plants as well as the nursery plant labels; moving plants from the Beresford's home to the sale and back; helping to set up for the sale; checking in and out the participating nurseries; answering the many numerous plant questions for folks coming to the plant sale; adding up plant sales; working the cashiering table; providing food for the volunteers; helping to clean up after the sale; talking home plants to plant sit until the spring sale and anything else that we may have missed – a Big Thank You – we could not have done this without everyone's assistance!

Those who volunteered to work on the sale are: Kathy Dilley, Ron Johnson, Richard Beresford, Chris Brant, Randi Swedenburg, Judie Hinman, Donna Wildearth, Bev Zeman, Karen Isa, Kim McFarland, Carole Smilie, Kathy Goodman, Ann Burroughs, Prairie Moore, Joan Watanabe, Colin Fiske, Alan & Barbara Wilkinson, Sam & Frances Rich, Jay Harris, Tami Camper, Wanda Naylor, Anda Webb, Tom Stoddard, Pete Haggard, Becky Deja, and Sylvia White. If we have missed anyone, our sincere apologies on our oversight.

Three local nurseries (Samara Restoration, Lost Foods and Freshwater Farms) participated by providing great shrubs, trees and perennials that we do not grow ourselves.



Our next sale will be held in conjunction with the 2013 Spring Wildflower Show, Saturday, May 4<sup>th</sup> and Sunday, May 5<sup>th</sup>. If you would like to help out, just let us know.

~ Chris Beresford (thegang7@pacbell.net) and Anna Bernard



## PLANT PROPOGATION PROGRAM LOOKING FOR VOLUNTEERS

...to help propagate and grow native plants for our plant sales.

You can contribute to our biggest fund-raiser and help to support the Chapter and its many activities.

We are looking for:

- Established landscapes/gardens from which we can obtain seedlings or divisions that we will pot-up for our upcoming plant sales. Species from 'A' - *Asarum caudatum* (wild ginger), to 'V' - *Vancouveria* (inside-out flower)
- Propagators who would like to start seeds or cuttings yourself or to divide some native plants out of your yard. The Chapter provides soil, pots, and labels. Please, check with us first to see what plants we need.
- Other volunteers to: help start seeds, transplant seedlings, participate in one of our "dig-n-divides," or have space to put a dozen or more 1-gallon pots.

To volunteer (no experience is required - we will show you how ), contact Chris Beresford (707 826-0259 / thegang7@pacbell.net).

To be notified of future activities, join the NC-CNPS Gardening with Natives Group (email - NorthCoast\_CNPS\_Gardening-subscribe@yahoo.com).

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The site was planted with native dune mat vegetation from both seedlings and seed to help increase the diversity and recovery rate of native vegetation. Large potted plants of beach knotweed (*Polygonum paronychia*) and bare-root pacific silverweed (*Potentilla anserina ssp. pacifica*) were generously donated by the North Coast chapter of the California Native Plant Society to be planted in the areas where *L. arboreus* and other non-native species were removed. Seeds were also collected from local dune habitat at Ma-el'l Dunes South, from dune species including dune tansy (*Tanacetum camphoratum*), seaside daisy (*Erigeron glaucus*), buckwheat (*Eriogonum latifolium*), and sand verbena (*Abronia latifolia*) to increase the diversity and cover of native species at the project site. The site was labeled with informational signs at multiple locations to encourage visitors to stay on the trail and keep their dogs on a leash, to protect the recovery of the site.

#### References:

- Friends of the Dunes. *Restoring the Dunes*. Nature and Science. <http://www.friendsofthedunes.org/nature/restore.shtml>
- Pickart, A.J. and J.O. Sawyer. 1998. Ecology and restoration of northern California coastal dunes. California Native Plant Society, Sacramento, California.
- Wozniak, Jennifer. 2000. Reversing Invasion of *Lupinus arboreus*, (Yellow Bush Lupine) an Invasive Species of Northern California Sand Dune Communities. Restoration and Reclamation Review. Vol. 6 No. 3. <http://conservancy.umn.edu/bitstream/59733/1/6.3.Wozniak.pdf>

#### Site Map:



Figure 1. Project site at the end of Mad River Rd., Northwest of Arcata, CA. Project boundary shown in red and the blue dot shows the location of photo point at the top of the first large dune.

(Continued on page 15)



Figure 2: Northern photo point before *L. arboreus* removal



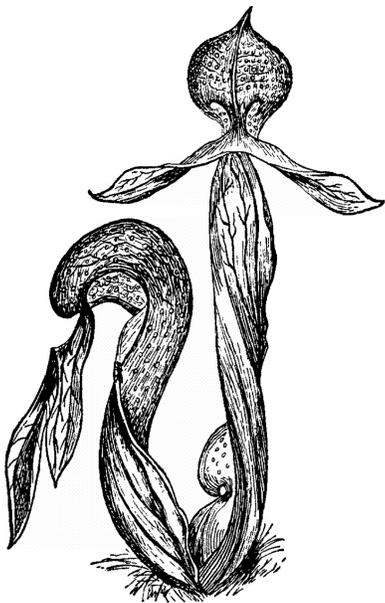
Figure 3: Northern photo point after *L. arboreus* removal

**CNPS, North Coast Chapter  
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CHANGE SERVICE REQUESTED

## *Darlingtonia*



**Visit us at  
[NorthCoastCNPS.org](http://NorthCoastCNPS.org)**

### **CALENDAR of EVENTS**

**(Plant Walks & Hikes—Page 2 / Programs— Page 3)**

#### ***January***

- ◆ Wed 9: Program

#### ***February***

- ◆ Wed 14: Program
- ◆ Sat 23: Hike

#### ***March***

- ◆ Sun 10: Hike
- ◆ Wed 13: Program

#### ***April***

- ◆ Sun 7: Hike
- ◆ Wed 10: Program

#### ***May***

- ◆ Fri-Sun 3-5: Wildflower Show
- ◆ Sat-Sun 4-5: Plant Show
- ◆ Wed 8: Program