DEDICATED TO THE PRESERVATION OF THE CALIFORNIA NATIVE FLORA

BRISTLECONE • CHAPTER

CNPS

NEWSLETTER

Vol. 7, No. 6 November 1988

NEXT MEETING

Wednesday, Nov. 30, 7:30 p.m., at the Sierra Baptist Church on Wall Street just east off Highway 395, Independence Heather Harvey, Inyo National Forest Planner, will bring us an up-dwte on the new Land Management Plan for the Forest. Come to learn and enjoy, and to share refreshments with us.

PRESIDENT'S MESSAGE:

This is my last president's letter. Over the course of three terms (not consecuvely) I've written 15 of these, concerned each time as to how it will be received. No more! I'll move on to another job. We are blessed with a core of hard-working members who get shuffled from one job to another and are never allowed to retire. Working with these people has been an honor and a joy. I know that meetings are not easy to attend for many of our widely scattered members. I've appreciated each time you have been with us. I wish you the joy that I have found in the Bristlecone Chapter of CNPS.

.....Doris Fredendall

EAGERLY AWAITED BOOKS NOW AVAILABLE:

The Fourth Edition of CNPS's Inventory of Rare and Endangered Vascular Plants, a revised and updated list with new features which make it easy to use. A valuable and attractive book.

Total cost, including tax and shipping, $22.90 for one copy. Make check to California Native Plant Society and send to 909 12th Street, Suite 116, Sacramento, CA 95814.

Plant Biology of Eastern Sierra, California, Natural History of the Inyo-White Range, Symposium Volume No. 2. Edited by Clarence A. Hall Jr. and Victoria Doyle-Jones. Contents: The Mary DeDecker Symposium, including papers by well-known CNPS authors.

Total cost, including tax and shipping, $15.00 each. Make check to The Regents of the University of California and send to White Mountain Research Station, 6713 Geology Building, University of California, LOs Angeles, CA 90024-1567

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The Bristlecone Chapter has been honored by receiving a 1988 Rare Plant Conservation Award for one of its members. Mary DeDecker, the recipient, was one of the founders of the chapter.

GARDISKY LAKE FIELD TRIP

Led by Tina and Mead Hargis

Well, we were warned--up 800 feet in about half a mile from trailhead to crest. Steep and slippery (coming back down) but a very rewarding field trip indeed. The views of Mts. Coness and Dana and down into the Hall Natural Area were spectacular.

The trail zigzagged up through a dryish, open lodgepole and white pine forest with dwarf juniper(*Juniperus communis*) and a few scattered aspen. Ground cover was mostly dried forbs and grasses with scattered gooseberry *(Ribes montigenum*) and sage (*Artemisia tridentata* and *A. nova*).Willows bordered the small stream down the slope, along with fireweed, meadow rue, shooting star, and rein orchid. Although this was a dry year many common forbes and small shrubs were present along the trail, including *Horkelia fusca, Eriogonum nudum, Monardella odoratissima, Carex rossii, ,Pteryxia terebinthina* var. *californica, Achillea lamulosa, Phleum alpinum, Potyentilla glandulosa, P. gracilis, Lupinus lyallii, Arabis platysperma, Phyllodoce breweri, Penstemon heterodoxus, Astragalus whitneyi, Castilleja applegatei, Erysisum capitatum, Eriogonum ovalifolium, Oryzopsis kingii, Wyethia mollis,* and *Cirsium scariosum.*

After the 800 foot climb we topped out into a beautiful open meadow with Lake Gardisky but a short walk ahead--and **lunch.**The upper areas were populated by many *Carex* and *Juncus* specieswith various grasses and meadow forbs throughout. *Salix brachycarpa, S. orestera, S. reticulata* ssp *.nivalis* and *S. artica* were widely scattered. *Mimulus primuloides, Haplopappus apargioides, Potentilla breweri, P. fruticosa, Allium validum, Vaccinium nivictum, Kalmia polifolia var. microphylla, Castilleja nana, Astragalus kentrophyta* var. *danaus*, an *Arenaria, Phlox covillei, Eriogonum caespitosum, Podistera nevadensis, Arabis lemmonii, Geum macrophyllum,* and especially *Arabis tiehmii* were all tops as they are seldom seen by us lowlanders. All in all a great day, although gale winds in the afternoon tossed us about. We vowed to return earlier in the season in a wetter year. Many thanks to Tina and Mead.

.....Vince Yoder

ALL THE FLOWERS OF ALL THE TOMORROWS ARE IN THE SEEDS OF TODAY

LAST CHANCE MOUNTAIN FIELD TRIP

LED BY DORIS FREDENDALL

On a warm October day approximately 15 of us challenged a canyon on the west side of the Last Chance Range.It was decided to leave the smaller cars at the foot of the slope and take 4-wheel-drive trucks up past four species of cactus to park at an old mining camp site. We chcked out the plants and began our trek up the canyon. We liked it when the beautifully colored canyon walls came in close and made us feel isolated from the world. Then they opened up for a lovely view across Eureka Valley to the rugged Inyo Mountains.

It was too late in the season for many flowers but we recognized the following plants:

Atriplex hymenelytra, desert holly
Brickellia arguta, pungent brickellbush
Encelia virginensis ssp. actonii, bush sunflower
Galium stellatum, shrubby bedstraw
Gilia latifolia, Holly-gilia
Nicotiana trigonophylla, desert tobacco
Physalis crassifolia, thick-leaved ground-cherry
Hazardia brickelloides, holly goldenbush
Viguiera reticulata, golden-eye

A coyote skull and raven's feathers added interest. At our lunch site we found dendrites on the rocks. On the walk down the canyon we found great slabs of ripple rock left by some ancient shallow lake.

As always, Doris's trip was proclaimed a winner.

.....Diane Payne

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We extend a warm welcome to new members, with the hope that we will see them on future field trips.

Kathy Duvall, P.O. Box 1494, Bishop, CA 93514
Helen Fry, 3536 Roselawn, Glendale, CA 91208
Wrigley Botanical Garden, P.O. Box 88, Avalon, CA 90704

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OWENS VALLEY WATER UPDATE

Water is the No. 1 resource of Inyo and Mono counties. Water export is the major concern. The future of both counties will be determined by decisions made **now** concerning water management. Inyo County and Los Angeles are preparing to enter into negotiations on a long-term water management agreement. The input from an informed public is so important that the Boards of Supervisors of Inyo and Mono counties have voted to join the Bristlecone Chapter, CNPS, Eastern Sierra Audubon Society, the Owens Valley Committee and the Toiyabe Chapter of the Sierra Club in sponsoring an all-day **Eastern Sierra Water Symposium.** This will be held on February 4, 1989, at the Bishop High School auditorium in Bishop. More detailed informaion will come later.

In early October the Inyo County/Los Angeles Standing Committee adopted its Technical Group's recommendation for a pumping program for the second half of the 1988-1989 runoff year. The program calls for a pumping rate of 75,000 acre feet plus 12,000 acre feet for enhancement/mitigation projects in Owens Valley. This will result in a total of 200,000 acre feet pumped by Los Angeles Department of Water and Power for the entire runoff year.

The Technical Group made this recommendation based on considerations of the "current condition of vegetation, water levels, soil moisture available to vegetation, and vegetation water requirements in each well field area." In anticipation of possible vegetation changes in some of the valley's well fields, ten wells will be turned off between the Big Pine and Symmes-Shepherd areas. The Technical Group did advise, however, that at the recommended rate of pumping ,"It is anticipated that some vegetation change will occur in the valley. However, any significant impacts will be mitigated."

Mitigation measures taken in the Owens Valley include establishing pasture, alfalfa fields, and town woodlots in areas significantly damaged from groundwater pumping and providing "substitute resources" such as parks rehabilitation and development at locations away from the actual areas of impact. Before instituting a mitigation measure, the Standing Committee, using California Environmental Quality Act guidelines, determines whether or not mitigation is feasible.

If the valley experiences a third dry winter, the Standing Committee agreed, in general terms, to either reduce next year's pumping or implement new mitigation measures, or both. A major stumbling block to getting the City to

voluntarily reduce the rate of groundwater pumping is the difference in cost between Owens Valley water and DWP's other water sources. While Metropolitan Water District Water from the Colorado River and the State Water Project costs $230 per acre foot, the water exported from Owens Valley costs just under $100 per acre foot. And the electricity that water generates while in the Los Angeles aqueduct system brings that figure very close to zero. Unless it becomes more expensive for the City to pump excessive amounts from the Valley's aquifer than to tap into other water supply options, it seems unlikely that they will freely lower the pumping rate in dry years.

Meanwhile,Inyo's and Los Angeles' agreement on an October, 1988, to March 1989, pumping plan opens the way for the County and City to resume negotiations on a long-term water management plan. At the Inyo County Water Commisioners' October 10th meeting, Water Director Greg James told the Commissioners and the public that Los Angeles' representatives to the Standing Committee have suggested starting negotiations in the near future with a small group of negotiators selected from both sides. This group would negotiate what L.A.'s officials called the "critical chapter " of the final negotiations for a long-term agreement. Negotiators for Inyo and Los Angeles would develop a concept for cooperative gropundwater management, defining the roles the County and City would play and the policies governing any long-term agreement.

Mr. James also announced that the Water Department will hold meetings periodically during the coming months to inform the public on the technical aspects of Inyo County's water concerns. The first of these meeetings was held October 11, at the Bishop City Hall. Hydrologist Bill Hutchison and plant ecologist Dr. David Groeneveld explained how the Valley's hydrological system works and how its vegetation is affected by groundwater pumping. The audience was free to ask questions of the speakers at any time during the evening. The Inyo County Water Department also plans to publish a newsletter to describe cooperative study results and related topics. The newsletter and notice of public meetings will be sent to the local news media, to leaders of interested citizens' organizations, and to everyone on the Water Department's mailing list. If you would like to receive these mailings, contact the Inyo County Water Department at 301 West Line St., Bishop 93514, or call (619) 872-1168.

Show that you care by becoming an informed citizen who can help keep the eastern Sierra the beautiful place that means so much to us.

. . . . . Leah Kirk

BOW STAVE SCARS ON JUNIPER TREES

Recent archaeological studies in Mineral County, Nevada, resulted in the discovery of 47 Utah juniper (Juniperus osteosperma) trees scarred from removal of bow staves by Indians. The trees are in the Excelsior Mountains south of Whisky Flat, and in unnamed uplands south of Huntoon Valley at elevations between 7,000 and 8,000 feet. The scars are believed the result of bow stave harvesting by the local Northern Paiute Indians during the last several centuries.

Stave-removal scars reveal details of how the Indians harvested wood for bows. Wood was first growth-arrested, and then seasoned on the tree for an undetermined time, probably several years. Presumably, this was done to prevent cracking and distortion of the stave. Some bow staves were growth-arrested, but never removed from the trees. They may represent an industry that ended with the introduction of firearms or the demise of the native lifeway.

Analysis of 150 scars on 47 trees, 45 of which are still living, suggests the following: Nearly all trees have twisted grain and were unsuitable for manufacture of bows. In all cases, the trees from which bow staves were taken are very old. Most trees with straight grain are found growing in sheltered places. Straight-grained wood was consistently sought and was identified by removal of a strip of bark over at least a portion of the prospective stave. Staves usually were taken from the trunk rather than from a branch. Growth of the wood was arrested by a transverse cut chiseled into the tree with stone tools at one end of the stave. Several trees show removal of staves with metal axes. The cut typically was about an inch deep and two and one-half inches wide. Following a period of time during which the wood seasoned on the tree,

the remaining bark over the stave was removed. Still later, the opposite end of the stave was cut in a manner similar to that by which the initial cut was made. Finally, the stave, which averaged about 43 inches long, was pried from the tree. The outer growth rings formed the back of the bow, and the finished weapon probably was about 40 inches long, made of sapwood rather than heartwood, and reinforced with a backing of sinew.

Following stave removal, scars typically began to heal over, and regrowth wood was of straight, knot-free grain suitable for harvest several decades later. One tree shows evidence of stave removal, subsequent regrowth into the stave-removal scar, removal of the straight-grained regrowth, regrowth into that scar, removal of that regrowth, and ultimate regrowth into that scar. The history of cultural activity on this particular tree probably spans 400-500 years. Sixteen staves were removed from one tree; at least 12 were taken from another.

Research is continuing to determine the distribution of trees scarred by removal of bow staves. Experimental staves have been growth-arrested and are now seasoning for replication of the short sinew-backed juniper bow of the Great Basin based on information derived from analysis of scars on living trees.

A detailed report on these trees will appear in the Journal of California and Great Basin Anthropology, Vol. 10, No. 1, 1988.

P. J. Wilke
Dept. of Anthropology
Univ. of California, Riverside

CALIFORNIA NATIVE PLANT SOCIETY - Membership Application

The California Native Plant Society is an organization of lay persons and professionals united by an interest in the plants of California. It is open to all. The Society, working through its local chapters, seeks to increase understanding of California's native flora and to preserve this rich resource for future generations. Varied interests are represented.

Name_____ P.O. or Street_____

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Membership Category:

_____Life, Couple	$500
_____Life, Individual	450
_____Supporting	50
_____Household	30
_____Individual or Library	18
_____Student or Retired	12
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GIFT contribution: Where most needed_____ Conservation_____

I wish to be affiliated with the Bristlecone Chapter _____

Other_____

Please make check payable to:
California Native Plant Society

Mail to: Bristlecone Chapter, CNPS
P.O. Box 506
Independence, CA 93526

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P.O. Box 506
140 West Pavilion Street
Independence, CA 93526