Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

October/November 1992
Volume 7 No. 1

Historic Victory: Camino Ruíz Voted Down!

by Mike Kelly, president

The San Diego City Council voted October 6 seven to zero (Mayor O'Connor and Councilwoman McCarthy were absent) to adopt the Mira Mesa Community Plan Update. With that vote they also voted to condemn the Camino Ruíz bridge extension across the canyon to the dustbin of history. This vote also includes the deletion of the Camino Ruíz extension from the City's General Plan.

The deletion of Camino Ruíz was not a side note in the community plan update. Rather, it was called out as one of the most important, and certainly, most controversial, aspects of the plan. The City Manager's Report to the City Council on the Mira Mesa Plan singled out the impacts and the importance of the Camino Ruíz decision for the City Council.

This victory for the future of our Preserve is due to the unwavering efforts of many individuals and groups. Many years of untiring efforts went into this battle. It would be disengenuous for our group, the Friends, to claim sole credit for this successful outcome.

Fighting alongside us over the years were some people and groups that should receive credit, including the Citizens Advisory Committee to the Peñasquitos Canyon Task Force and the Sierra Club. Councilman Tom Behr has been a consistent opponent of the road since taking office. Councilwoman Abbe Wolfsheimer and her staff have been very supportive of our efforts to stop the road for too many years to count.

Several individuals who have continuously pushed at every opportunity against the road were Pam and Jeff Stevens, well-known Mira Mesa community activists. Keven McNamara, the chairman of the Rancho Peñasquitos Planning Group and Bruce Brown, the chairman of the Mira Mesa Planning Group, were consistent opponents of the road and instrumental in achieving its demise. Garrett Beaumont organized homeowners in a petition drive in the new Fieldstone development off Calle Cristobal in Mira Mesa as soon as he became a neighbor of the canyon.

To these and the many other people who helped to preverse the bio-diversity of one of San Diego's most important canyon systems we say **THANKS**!

Why no bobcat babies this year?
See page 5 for the anwer.

In This Issue

A Bush in the Preserve

by Mike Kelly

Thankfully, we got off light. I feared the President's visit to the Preserve would result in the gratuitous bulldozing (helicopter pad, new one-time only trail) that accompanied Bush's foray into the Sequoia National Forest July 14 (see *Audubon Imprint* September/October 1992: A Bush in The Sequoias). We got off with only some trampled grass. Thank goodness for small favors!

The visit

On October 14, President George Bush chose Peñasquitos Canyon Preserve as the backdrop for a media event to attack the Endangered Species Act. From San Diego he flew up to Oregon where he used timber country for another attack on this same act. He also used his San Diego appearance to bolster the Natural Communities Conservation Program (NCCP), a program launched with much fanfare by Governor Wilson last year. The Wilson administration proposed that the NCCP become an alternative to the Endangered Species Act.

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Final Push for Forest Initiative

The final push is on for the initiative to save the Cleveland National Forest from subdivision development. If you have time to join a petitioning team in front of an area supermarket call 445-9638.

Given the short amount of time left to petition, the organizers have decided they also have to employ some paid petition gatherers. Your donations are urgently needed to allow this to happen. Send your donation to the address below.

Even the San Diego Union-Tribune endorsed the initiative in an aptly-named editorial "Wildlife or subdivisions" in its April 11 edition. The editorial noted that "Subdivisions and other development will fragment the wilderness and eventually destroy its viability. That's especially true in Cleveland National Forest. Most private property includes mountain meadows, which are an integral part of the forest and vital to the survival of many plants and animals, including deer and mountain lions. Developing the meadows with houses would cut the heart out of the forest."

"Save Our Forests & Ranchlands" at: P. O. Box 475, Descanso, CA 91916.

Fire in the Preserve

by Mike Kelly

Tuesday, September 29 a brush fire broke out in the Preserve, burning some 200–300 acres of grasslands and chaparral covered slope. The fire came close to several houses in the new Warmington development off Calle Cristobal in Mira Mesa.

According to the Fire Department Arson investigators, the fire appears to have been started by a cigarette butt carelessly discarded by an equestrian. The fire got its start in the dry grass just off the dirt utility road on the south of the creek in Peñasquitos Canyon about 2 miles in from the west end. This time of the year is when we suffer our worst fire conditions.

Luckily the winds were from the northwest and not out of the west. The high winds thus brought the fire up the north facing slope of López Ridge where the grading for the now defunct Monarch Estates and Calle Cristobal stopped it — for the most part. However, it did jump Calle Cristobal at one point where the vegetation comes up close to the road. This caused a finger canyon off López Canyon to burn.

Firefighters got control of the burn in the fire break between the Preserve and the Warmington project on one side, along the road, and in López Canyon. As I stood behind the fire lines I watched the tankers overhead dropping their cargo of retardant, while Firefighters from San Diego, the California Department of Forestry (CDF) and other jurisdictions fought it on the ground.

The City of San Diego Vernal Pool Preserve which touches on the west side of the Warmington project also burned.

How much damage

As a team of the Friends toured the fire site the next morning we sought to answer two questions. First, did the Preserve suffer any permanent biological losses. Second, did the fire fighting itself cause any significant damage to the Preserve.

Although fire is a normal part of the ecology of Southern California, not all fires are alike. Some burn hotter than others. Some burn the plants' crowns and inhibit resprouting. Some burn so hot they destroy the seed bank, leaving the burned area to be reseeded from outside the burn area. Some burn species that are on the edge of extinction and may not be able to bounce back after the blaze. Some burn mature trees that took hundreds of years to reach maturity. In an isolated habitat such as our own, there are two additional dangers. One is the invasion of exotic plants into the newly disturbed area. The other is that species that would eventually have reseeded themselves from nearby areas that didn't burn can't when development has rendered our once continuous habitat into fragmented areas.

Animal toll appears light

Our preliminary survey indicates that the fire was not very destructive to our biology. As we walked the site we were surprised to see few dead animals on the surface. Don Albright, one of our geologist members, remarked that the smaller fire north of Horseman's Park several years back had left many more dead animals, especially reptiles, on the surface. We actually saw only a dead rabbit and a dead skunk. Undoubtedly others, particularly rodents and reptiles, died of smoke inhalation in their burrows. Relatively speaking, however, the animal toll seems to have been light.

The fire didn't reach the riparian area and hence didn't burn any mature trees. What did burn were grasslands (mainly exotic grasses), chamise, chaparral broom, lemonade berry, scrub oak, Our Lord's Candle yucca, coast barrel cactus, and prickly pear. The coast barrel cactus is a species in decline due to habitat loss. However, there is some evidence that the cactus — because of their high water content — survived the burning, where the chamise and other bushes burned to the ground. The crown and root systems of many plants seem not to have burned completely, which leads us to expect a lot of crown resprouting by the chaparral species. Most of our chaparral plants are fire adapted. They have special nodules on their root systems that store surplus energy for stressful conditions such as drought and fire. Non fire-adapted plants tend to store more of their energy in their above ground structure — where it's vulnerable to drought and fire.

We met a team of biologists in the City Vernal Pool Preserve. They were there coincidentally the morning after the fire to inspect damage done to the pools months ago by a contractor. We discussed the effect of the fire on the Pool Preserve and agreed it would be beneficial. As we looked at the pools themselves we could see no ash in them. The vernal pool plants are small and leave little vegetative matter behind them when they die off each year — hence there was nothing to burn in them. The plant seeds and fairy shrimp eggs and tadpole eggs were probably untouched. In addition, the fire burned off the exotic grasses and the chaparral covered mima mounds that surround the pools — vegetation that began to encroach on the pools during the long drought. The pools should come back unscathed.

Fire fighter damage

During the Del Mar Mesa/Black Mountain fire of three years ago fire fighting bulldozers were used in a vernal pool area, severely damaging a number of the pools. In the Carmel Mountain fire in the 80s firefighters bulldozed a new road through one of the few populations of the endangered dudleya brevifolia, placing it closer to extinction.

Our survey of the fire site shows relatively little fire fighting damage. Several fire breaks were cut and dug with maddoxes and chain saws, but these are fairly narrow. No bulldozing was done. The fire retardant sprayed over the area is reported to be non-toxic and we could see no evidence of this remaining on plants outside the burn area.

Several fire breaks need to be blocked off to prevent them from being used as unauthorized shortcuts. We already have too many trails through habitat areas.

Erosion

There will be erosion of the burned hillsides. Ash and some of the topsoil will be scoured down the gullies during the first good rain. The area is small enough such that the siltation effect on the creek should be minor compared to that from recent construction activity upstream in the Preserve. The ash will actually add nutrients to both the soil and water it washes through.

The Friends will be mounting studies in the burn area. We'll monitor the erosion to see how much soil is lost and analyzing the soil nutrient mix. We'll also be recording to see which species come back and in what order. Of particular interest will be to see if there is any change in the mix of native and exotic plants, particularly in the grasslands that burned.

Fire breaks — a disturbing footnote

As I watched the fire burn I glanced over the brush clearance zone between the houses and the burning vegetation some

50-100 yards away.

Much to my amazement I saw eucalyptus trees and pampass grass planted throughout the fire break area. These are two of the worst plants that can be planted from a fire control point of view. Both are highly flammable plants. The eucalyptus is notorious because of the two big Bay Area fires, one in the 60s and the other a year ago. The eucalyptus has an oily resin that heats up quickly and rises to the top of the tree and explodes through the crown of the tree sending burning resin and branches through the air. This was an important factor in the spread of the most recent Bay Area fire to the housing in the area.

Pampass grass is bad because it dries out each year and there is often a buildup of dry grass in a dense thicket. This fire got started from just a cigarette butt discarded in a lot less dense grass than what you find in mature pampass grass stands.

Since the development is new, neither the eucalyptus trees nor the pampass grass was yet mature enough to have been a factor in spreading the fire. In five years however, both will offer a danger.

Planting species such as this in the fire break/brush clearance zone is like planting future fire bombs. They will act as an explosive bridge between the canyon vegetation and the housing. They should be removed. This would benefit the Preserve in another way, since both species are highly aggressive invaders that spread into the Park itself.

The ice plant in the area is okay as long as it is watered sufficiently. It can become a problem if allowed to dry out. We've all seen blackened patches of dead ice plant. These dense dead mats of vegetation will burn as well as any other dead plants.

Prescription burning?

One issue that the Citizens Advisory Committee for the Preserve will be discussing is the issue of prescriptive burning. If used correctly, such burning could reduce the high fuel load of several areas in the Preserve and reduce the extent and intensity of future fires. It can also be used to reduce exotic invasive plants in favor of native plants, helping to restore our biodiversity.

Volunteer Patrol Sign Up

If you're interested in serving on the combined, hiker, biker, equestrian patrol in Peñasquitos Canyon Preserve, contact City Ranger Bill Lawrence at 533-4067.

The Use of Fire in Coastal Sage Scrub Restoration

by Scott Eliason

*[**Note**: Here Eliason looks at fire from another perspective — as a natural part of our ecosystem and in restoring an endangered habitat. For the complete article with references send your request to POB 26523, San Diego 92196 — Editor.]*

Abstract

Coastal sage scrub is one of the most endangered habitat types in California. Interest in the conservation of this habitat has led to a focus on restoration. The majority of the disturbed coastal sage scrub habitat that holds the potential for restoration is grazing-disturbed and is more or less dominated by non-native annual grasses.

In this paper, a successful grassland fire restoration is studied along with the fire ecology of coastal sage scrub to assess the potential of fire as an effective restoration tool. It was found that fire can be effective in reducing annual grasses and that coastal sage scrub can be very resilient after fire. It is concluded that fire has good potential as a tool for the restoration of coastal sage scrub.

Introduction

Coastal sage scrub is a plant community characterized by generally small, soft leaved aromatic shrubs. It is one of the two mediterranean-climate shrubland types occuring in California, the other being chaparral. The main selective forces which have shaped these shrublands over evolutionary time are the long summer-fall dry season and the occurrence of periodic wildfire.

Unlike the typical hard-leaved evergreen chaparral species, the dominant species of coastal sage scrub have drought deciduous or seasonally dimorphic leaves (Westman, 1981b). Where chaparral is *drought tolerant*, coastal sage scrub is *drought evading*. Both communities are resilient after periodic wildfire. Without fire, chaparral becomes senescent [uniformly mature, overgrown, declining in vigor] while coastal sage scrub retains an open canopy of mixed aged, continually basal-resprouting shrubs and a diverse herbaceous understory (Malanson and Westman, 1985).

Coastal sage scrub, because of its deciduous habit, is better adapted to prolonged drought and typically occupies lower, dryer sites than chaparral (O'Leary, 1989). The latitudinal range of coastal sage scrub extends south from San Francisco along the cismontane region of southern California and Baja California to El Rosario, B.C.

Coastal sage scrub habitat supports a rich biota and is an integral component of the ecology of cismontane California. Several sensitive animal species occupy this habitat exclusively or nearly so. These include the California gnatcatcher, coastal cactus wren, San Diego horned lizard, and orange throated whiptail. Coastal sage scrub provides a good resource base for insects, small mammals and birds and in turn is a good hunting ground for reptilian, mammalian and avian predators. The rich herbaceous component of coastal sage scrub may provide an important seed source for chaparral which only exhibits a few seasons of diverse herbaceous growth following fire (Westman, 1979a). By supporting flora and fauna which utilize and enrich adjacent habitats, coastal sage scrub is functionally linked to the greater cismontane ecosystem.

Disturbance history

Coastal sage scrub emerged as a zonal vegetation type after the last glacial retreat about 12,000 years ago at the onset of southern California's mediterranean climate (Axelrod, 1978). Since that time and up until European settlement, periodic fire was the principal disturbance regime. Coastal sage scrub species evolved resilience to fire and spread into less fire adapted areas. Lightning is the natural ignition source, but native Americans likely started most of the fires in the coastal areas which probably assisted in the early spread of coastal sage scrub (O'Leary, 1989).

With European settlement came European annual grasses and other associated weeds. These aggressive exotic plants became common in the canopy gaps of coastal sage scrub. With increased anthropogenic [people] disturbance, they have become established in pure stands surrounding remnant patches of coastal sage scrub. Fire size and frequency are directly related to herbaceous biomass and stand continuity (Minnich, 1983). Therefore the introduction of exotic species may have led to a change in the properties of fire in coastal sage scrub.

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Birding in Penasquitos Canyon

The Corvids: Crows and Ravens

by Barbara Zepf

After you've been birding for a while, "life birds" become harder to find. Studying bird behavior is one way to keep the excitement when those new species are in short supply. As the open space around Peñasquitos Canyon shrinks, feeding birds in your backyard is one way to extend the birds' feeding range. I've had several bird feeders in my yard for many years. They provide a good opportunity to learn more about the behavior of everyday birds.

Peanuts on the half shell anyone?

Sometimes a new bird will frequent my yard. Although they're common in the canyon, Scrub Jays have just recently started visiting my yard (just a few miles from the canyon). I was looking for a way to encourage them to stay, when I hit upon the idea of using peanuts (in the shell). It was an immediate success.

The peanut "bait" provided an ideal opportunity to study bird behavior in Scrub Jays. They're so smart! About 6 Scrub Jays feed in my yard. The dominant Jay gets most of the peanuts. He'll quickly grab one and hide it. He used to hide them in my neighbor's yard, until he found out that another Jay would grab some of the nuts while he was gone. He cached his nuts closer and closer to my yard to minimize the time he would be gone. After 3 days, he started hiding most of his nuts in my yard. I have decorative bark and that is where he stashes most of his take. The less dominant Jays keep a close eye on where he hides them. If they can't sneak a peanut from the tray for themselves, they dig up one of the hidden ones in the bark.

Sometimes a Jay will pretend to hide a nut by moving some of the bark around, then he'll really go hide it in another place. While the other Jays are spending time searching for the real burial spot, the dominant Jay has more time to snatch another peanut from the tray. Some of the Jays have even learned to recognize me as their provider. If I visit a neighbor, they come right along with me. They sit outside my friend's window until I go home.

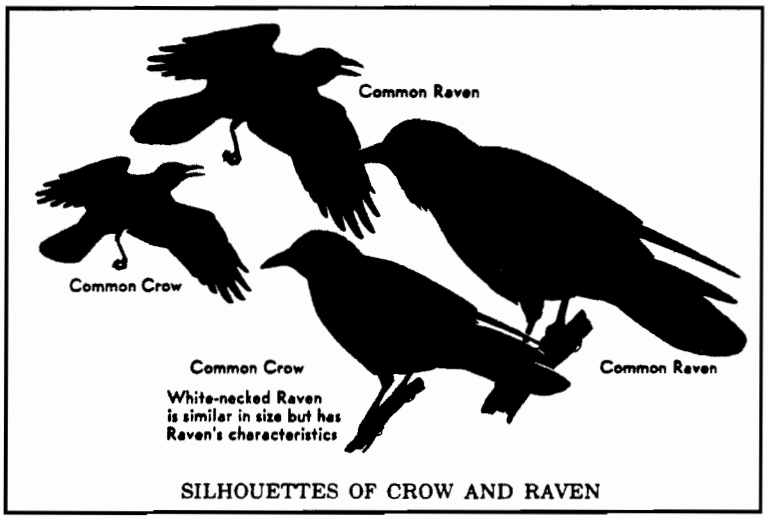
Birdbrains?

Watching their daily antics led me to wonder where the term "birdbrain" (implying a stupid person) got its start. It seems inappropriate in the case of Jays. I read up on the subject and found that birds have a brain proportionately larger than any of the vertebrates, except for mammals. The bird brain is ten or more times larger than the brain of a reptile of comparable body weight. The avian brain seems most highly developed in the Corvids — the Crows, Ravens, Jays and Magpies.

Brainier birds

Since I've already profiled the Scrub Jay in another column, I thought I'd talk about the American Crow and Common Raven this month, since they're also included in the "brainier" bird groups.

Peñasquitos Canyon has plenty of both.



SILHOUETTES OF CROW AND RAVEN

Finding them isn't hard. Telling them apart is! Unless you see them sitting side by side, where you can readily distinguish the larger Raven from the smaller Crow, you'll have a real opportunity to test your birding identification skills.

Since Crows and Ravens are more alike than different, I'll first tell you what they have in common. As a family (*Corvidae*), they have apparently evolved the highest degree of intelligence among birds. Both mimic sounds uttered by other birds, other animals, and, in captivity, the human voice. Both are black from end of bill to tip of tail and claws. They have a metallic violet gloss on the body and blue-violet and green-blue gloss on the wings (usually only seen in good light). Sexes are outwardly alike. Their nostrils are usually covered by dense feathers, and they have rictal bristles (about the mouth). Their calls are loud and harsh. They generally seem to ignore each other, unless one ventures too close to the other's nesting area.

Tails tell the tale

Now for the differences — tail shape is the most noticeable difference. On the Common Raven, the tail is long, full and wedge-shaped. The American Crow has a squared and slightly fan-shaped tail. The Raven's neck feathers are pointed, giving it a distinctively shaggy appearance. The Raven's bill is huge, very deep at the base, and relatively much larger than the Crow's. The bill is arched or curved ("Roman nose"). Both Ravens and Crows are magnificent fliers. Ravens alternately flap and soar, gliding on flat wings. They spend more time soaring than flapping. The American Crow seldom glides more that 2 or 3 seconds with a slight upward dihedral. They spend most of their time flapping.

Bon apetît

Both eat almost anything edible —insects, snails, frogs, eggs and young of other birds, worms, clams, seeds, fruit, grain, etc. They're also scavengers of garbage, dead fish, seals and traffic-killed animals.

The Common Raven is larger (21-1/2 – 27 inches). The American Crow is 17-21 inches long. The "caw" call of the Common Crow is not as hoarse as that of the Common Raven. The Raven utters hoarse, croaking "Kraaak" or a low, guttural "krock".

Ravens are usually found single, in pairs, or small groups. Crows are much more gregarious, often nesting in loose colonies and roosting in huge flocks. The American Crow occurs over most of the United States, while the Common Raven lives largely in the western states.

Both birds are aggressive and highly conspicuous. Crows are usually found in very large numbers in areas associated with human activities, such as farmland, cities and towns. Ravens generally prefer more rugged habitats. But I've seen both nesting in Peñasquitos Canyon. Usually only the female incubates the eggs, about 5, laid from February to June. In the canyon, both nest in the tops of the large sycamore trees.

Both birds live in the canyon all year.

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No Bobcat Babies This Year

by Mike Kelly

Summer is almost over and we have yet to receive any sightings of bobcat babies. We've been to the same places we've seen them in the past and have many observers reporting mule deer fawns, coyote pups and many other animals — but no bobcat kittens. This doesn't mean we don't have bobcats. We have two that we know of, both males — one in the east end of Peñasquitos Canyon and one in López Canyon. A particularly big old male is well known to the Rangers and other frequenters of the park. It has been seen in its usual haunts near the ranch house in recent months.

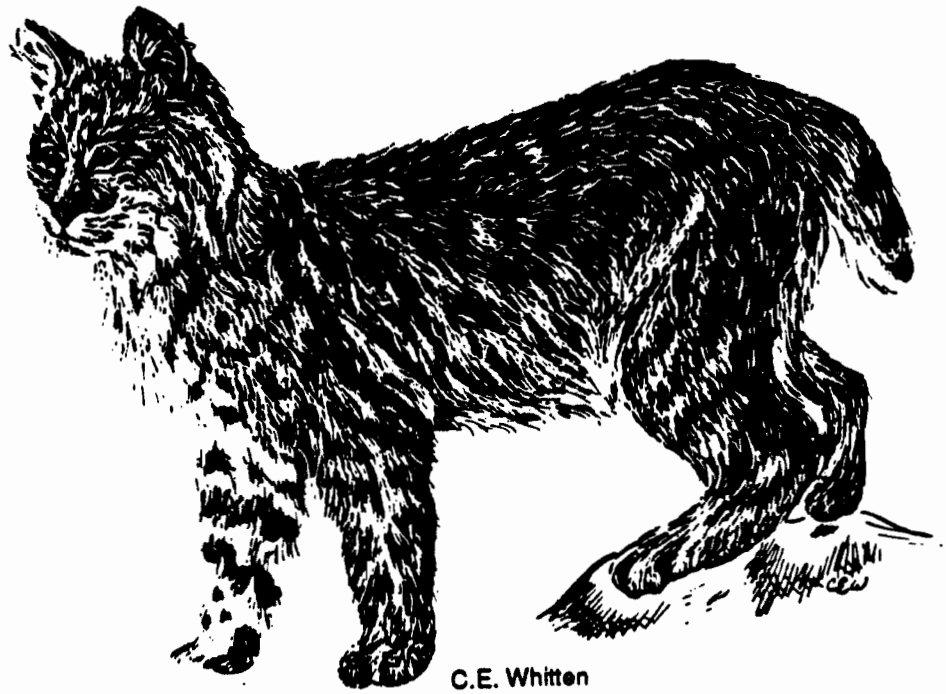
Road kills

That both are males saddens, but doesn't surprise us. When Calle Cristobal opened to Sorrento Valley in August of 1991, not a week had gone by before members reported two mule deer and an adult bobcat killed on this road or the connecting Camino Santa Fe, which opened at the same time. Less than a year before that one of the Rangers stationed at the adobe ranch reported a bobcat was killed on Black Mountain Road near the Preserve. We now believe that these were females and the mates of the remaining males. In the years prior to the road kills bobcat babies were much in evidence.

This would have been a good year for bobcat young. We've had an explosion in their prey base, i.e., the rodents they eat, including mice, rats, squirrels and especially rabbits. Our above average rainfall produced a bumper crop of seed, berries and insects. This in turn fueled larger than normal litters of rodents and more baby birds. When the food supply increases thusly, it's normal for the carnivores to increase the size of their litters. Conversely, when droughts cut down the available food supply, the average number of baby animals born to a mother declines — nature's own birth control! So, if you're overrun with rodents in your house, it's due to the rain, plentiful food — and sadly — the absence of bobcat families.

Astonishing data

I recently received a print out of road kill data for the period January 1990 to May 1992 for the North City area (north of Route 52 basically) for the City of San Diego. The data was compiled largely by CalTrans and the City of San Diego, Animal Control Dept., Special Collections Division. "Special Collections" indeed. Why the euphemism? Why not call it the Dead Animal Collection Division? Perhaps because it might call too much attention to the mounting massacre on our area streets? The data sheets show some **184 animals killed** in this area alone during this period of about 30 months. These are the carcasses of animals actually collected by these agencies — not just those reported to them. These figures included 5 bobcats (Mira Mesa and 805, Sorrento Valley Rd near Peasquitos Canyon, Camino Ruiz), 74 coyotes, 79 mule deer, and 25 foxes. There is no data for the countless small animals, the rabbits, squirrels, snakes, opposum and others killed by our vehicles. ~



C.E. Whitten

My own experience and that of area biologists, is that most of the animals that are killed are not collected by any agency. Most are picked up by private citizens who want the meat or the pelt. One of our members called me last year to report the driver of a Hundai tying a dead mule deer over his hood and driving off (he wasn't the one who killed it). From my own experience I believe doubling the official data on road kills would give a conservative estimate of the actual death count.

Wildlife corridors offer solution

Although we'll never eliminate road kills there are ways to reduce them. The most important is to provide safe wildlife corridors in the traditional animal crossings that exist. Fencing along roadways can prevent animals from crossing dangerous roads and encourage them to use safe underpasses, culverts or tunnels. Besides providing safe passage, such corridors also allow migration between habitat areas. Since we still have several corridors into Peñasquitos Canyon Preserve, I expect female bobcats to find there way into our system within a year or two.

Wildlife corridors, however, are fast disappearing. We've lost any corridor to our south to the animal rich habitats in Carroll and Soledad Canyons and NAS Miramar. Natural corridors have recently been lost to the east due to the construction of the new Pomerado Road and the South Poway Parkway. To the west, under the I-805 bridge, only small animals are crossing into Sorrento Valley and Peñasquitos Lagoon and Torrey Pines State Park beyond. The bridges are too low, the noise too great and the route too tortuous for larger animals to attempt it.

We look to the north for the only remaining viable wildlife corridors for the Preserve. That is why we are paying so much attention to the development of the Framework Plan for the North City Future Urbanizing Area. Our only hope for avoiding isolation of the Preserve and the decline of our animal and plant species is to protect viable corridors to Carmel Mountain, San Dieguito River Park and Black Mountain Open-Space Park. See the article in this issue for our analysis of this Plan.

(Fire in Coastal Sage cont'd)

With European settlement also came grazing and agriculture. Coastal sage scrub was cleared for pasture or cultivation. Many of the European weeds were purposely introduced for grazing forage. Pastures were overgrazed and cattle continually pressed on into remaining scrub, opening it up to further invasion by the annual grasses. The extensive annual grasslands of California are a result of this long history of overgrazing.

More recently, urbanization has become the most profound agent of disturbance and loss of coastal sage scrub habitat. A majority of California's 30 million residents live in the Los Angeles and San Diego areas within the geographic range of coastal sage scrub (O'Leary, 1989).

Large areas of coastal sage scrub remain only in the Santa Monica Mountains National Recreation Area and on military lands at Vandenburg AFB and at Camp Pendleton. Isolated fragments of coastal sage scrub are protected on public lands throughout the range.

Fragments also remain on undevelopable slopes and in areas where development is imminent. Because of the island biogeographic effect, habitat fragments tend to have reduced species richness (Soulé et al, 1988, Bolger et al, 1990).

In addition to direct destruction, the effects of urbanization are felt by coastal sage scrub in the form of air pollution. Increased air pollution is negatively correlated with percent native cover and greenhouse studies have shown that pollutants cause foliar damage (Westman, 1979b, 1983a).

The need for restoration

All in all, not much coastal sage scrub remains, and that which does remain is degraded to varying degrees. **Over ten development-intensive years ago, an estimated 10-15% was left** (Westman, 1981a). Coastal sage scrub has been declared an endangered plant community (Westman 1986), and is the first target of the new state law AB 2172: Natural Community Conservation Planning (Vanderwier, 1992). The species which rely solely on coastal sage scrub are well on their way to the the endangered species lists, the controversial California gnatcatcher being first in line.

As the habitat continues to shrink, mitigation is becoming an increasingly common part of the development permitting process. Environmentalists, biologists, developers, and politicians, all for their own reasons, are becoming very interested in the conservation of coastal sage scrub. Since there is so little relatively undisturbed coastal sage scrub remaining, ecological restoration holds a very important role in conservation.

Target areas for coastal sage scrub restoration range from road cuts and utility easements to vast annual grasslands. State of the art restoration including weed removal, soil preparation, seeding and planting with inoculated site specific materials, establishment period maintenance, and long term monitoring and stewardship can be practical for relatively small sites with a large budget.

However, this intensive treatment is probably not practical for the restoration of large areas of degraded coastal sage scrub or to the reversion of annual grassland to coastal sage scrub. If it proves possible, this scale of restoration would be a substantial contribution to the conservation effort. The most suitable restoration tool for large area coastal sage scrub restoration may be fire. With the use of fire, it may be possible to eliminate exotic species and enhance coastal sage scrub vegetation.

Lessons from fire restoration

The only fire restoration program in southern California to date is ongoing at The Nature Conservancy's Santa Rosa Plateau preserve. The objective of this program is to convert predominantly nonnative annual grassland to native perennial grassland and maintain it over the long term. The exotic components at the Santa Rosa Plateau are essentially the same as those in disturbed coastal sage scrub, so lessons from these grassland restoration efforts are very pertinent to the question of fire restoration in coastal sage scrub.

Fire timing (seasonality) and intensity largely determine community response. The seeds of annual grasses do not survive more than one year in soil; however, they can survive fire in soil. Therefore it is best to burn in spring before the grasses set seed. Hotter fires more effectively kill seeds, but spring is a time of moderately high fuel moisture and consequently cool burning fires relative to those in summer and early fall. Hence, the optimum season to burn is in late spring, when the grasses are as dry as they are going to get before dropping their seeds. Fuel moisture can change from day to day, so it is best to burn on a dry day following a period of warm dry weather. This treatment has been found effective in reducing annual grasses and stimulating natives.

Additionally, Santa Rosa Plateau is planning for a six year fire rotation period to maintain the perennial grassland over the long term (Wills, 1992). This work has shown that it is possible reduce annual grasses with fire, but the question remains whether coastal sage scrub can be enhanced by fire.

The resilience to fire in coastal sage scrub

Resilience in this case refers to the pace, manner and degree of community recovery following fire. Investigators have done preliminary work on the fire ecology of coastal sage scrub and a study of this work illuminates the potential of fire as a restoration tool.

Three distinct components of resilience are especially useful in this study: *elasticity, amplitude*, and *malleability* (Westman and O'Leary 1986). *Elasticity* describes the speed of recovery to a stable state. *Amplitude* is the maximum level of disturbance from which a system can recover to its original state. *Malleability* is the degree to which the post-disturbance stable state differs from the original state.

Most of the work in this area has been done by four researchers, Keeley, Malanson, O'Leary, and Westman beginning around 1980 and is limited to about 100 sampling sites throughout the range of coastal sage scrub. Of this work, the majority has been performed on a handful of study sites in the Santa Monica Mountains of coastal Ventura County and in the inland area of western Riverside and San Bernardino Counties. The results of the work begin to reveal some interesting patterns in the resilience of coastal sage scrub to fire.

Post-fire resprouting of shrubs is a key factor in the resilience of coastal sage scrub. The quick development of foliar cover associated with the energy stores and water/nutrient uptake ability of surviving root systems results in high elasticity. The conserved shrub density and mosaic reduces malleability (Westman and O'Leary, 1986).

Although all common shrubs found in coastal sage scrub have a documented ability to resprout (Keeley and Keeley, 1984), the vigor with which shrubs resprout varies widely between floristic associations, study sites, aspects, species, ecotypes and fire temperature. In the coastal venturan association, resprouting of shrub species is vigorous. In the Santa Monica Mountains study area, 70% of individuals resprouted, and by the end of the second growing season covered an average one third of the ground surface (Keeley and Keeley, 1984). Pre-burn shrub foliar cover was found to recover within five years (O'Leary and Westman, 1988).

In contrast, shrubs have shown little to no resprouting in the inland riversidian sites. The virtual lack of resprouting results in slow shrub recovery (O'Leary and Westman, 1988) and hence low elasticity (Westman and O'Leary, 1986). Most of the species which fail to resprout in the in-

land areas resprout vigorously on the coast. The low resprouting vigor of the inland shrubs may be attributable to the weakening of root crown reserves by higher peak evapotranspiritive [water evaporation from the plant] stress and air pollution (O'Leary and Westman, 1988). Fire intensity may not be as important as the health of the root crown in determining whether resprouting occurs (Westman et al, 1981).

Post-fire germination of shrubs is also more vigorous on the coast than inland. During the first post fire season at the coastal sites, resprouts comprise virtually all shrub cover and density. This response suggests that fire causes high mortality of seeds in the soil. The resprouts set seed in the first season which germinate prolifically in the second. By the end of the second season these seedlings comprise 15% of shrub cover and 98% of shrub density (Keeley and Keeley, 1984). This impressive recruitment may be attributable in part to the presence of ash, which has been shown to stimulate germination in some species (Keeley, 1986).

Only *Eriogonum fasciculatum* and *Malacothamnus fasciculatus* seedlings surpassed resprouts in foliar cover reestablishment (Malanson and O'Leary, 1982). Because of poor resprouting vigor and the consequent lack of first season seed set, the reestablishment of inland shrubs is dependant on seed dispersal from off site. Therefore the return of shrubs to the inland sites is very slow (Westman et al, 1981).

Herb resprouting is also important in the resilience of coastal sage scrub. 28% of coastal sage scrub herbs can resprout (Westman 1983). The vines *Calystegia macrostegia* and *Marah macrocarpus* resprout in all areas. They are abundant in the first and second post burn years, especially on xeric [dry] south and west aspects, then decrease (O'Leary and Westman, 1988). These spreading vines attain considerable ground cover and may aid soil water retention and stability. At the less disturbed coastal sites, the perennial grass, *Stipa lepida* resprouted and set seed in the first season, but perennial grass was generally outcompeted by annual grasses at inland and grazing-disturbed coastal sites (O'Leary and Westman, 1988).

Most coastal sage scrub herbs have seeds which can survive fire in the soil or which have good dispersal mechanisms. Herbs present in the first post-fire year were generally persistent over a five year study period (O'Leary and Westman, 1988). The herb component of coastal sage scrub contributes the most to the overall species richness (Westman, 1981a).

At the ungrazed coastal sites herb cover returned to pre-burn cover levels within the first year, but contained 15-55% exotics. This cover remained stable over the five year study period (O'Leary and Westman, 1988). At the inland and grazed coastal sites herb cover was triple the pre-burn level throughout a five year sampling period. However, exotics composed 63-86% of this cover. This exotic cover, composed mostly of annual grasses, may further contribute to low shrub establishment in turn reflecting low amplitude and high malleability in disturbed areas (O'Leary and Westman, 1988).

Soils in coastal sage scrub tend to be fairly elastic from fire. Nutrient levels have been shown to return to pre-burn conditions within five years (Westman and O'Leary, 1989). This resilience can be largely attributed to ash leachate and to the nitrogen fixing symbionts of leguminous plants. *Lotus scoparius*, along with several other leguminous plants, is abundant in the first 4–5 years after fire then decreases.

Conclusions

From the current knowledge of coastal sage scrub, it's possible to gain insight into the fire conditions which promote good resilience and show promise for restoration. Any intervention to maintain diversity favors some species at the cost of others (Parker, 1990). In the case of coastal sage scrub fire restoration, the goal is to favor the native species at the cost of exotics.

Fire conditions can be optimized for natives with good timing. Seasonal timing is critical for the reduction of exotics as seen at the Santa Rosa Plateau. Additionally, because of its drought deciduous habit, coastal sage scrub would likely suffer less from a dry season burn. Fire temperature is a function of timing and is also of critical importance to the resilience of coastal sage scrub. Moderately high temperatures are needed to assure good exotic seed destruction, but high intensity burns can prevent resprouting. Also, as fire temperature increases, more soil nitrogen is lost by volatilization.

Soil moisture at the time of fire, also a function of timing, is important because native herb seeds, especially legumes, are susceptible to steam kill resulting from high soil moisture. Finally, the time since the last fire is important. As the interval between fires decreases, the amplitude also decreases, malleability increases, and more species are lost (Westman and O'Leary, 1986). Therefore it's vital to restoration success that natives be more elastic than exotics under the fire treatment.

In addition to fire conditions, post fire conditions can be managed to favor natives over exotics. At the onset of the first post-fire wet season, seeding with natives collected locally, or even on site before fire, can counter poor shrub resprouting and depauperate seeds banks. Based on observations of natural recruitment, germination rates could be excellent. An emphasis in the seed mix of early successional species like *Lotus scoparius*, *Marah macrocarpus*, and *Calystegia macrostegia* along with the dominant shrub species could prove especially successful.

Because of the reliance on natural community development and the looming specter of exotic domination, the ongoing monitoring of plant reproduction and establishment is critical. The variable fire response in coastal sage scrub indicates that fire restoration success would vary from site to site. In general, it appears that a carefully timed fire in concert with post-fire management has the potential to reduce exotics and at the same time stimulate the native plant community.

Summary

Coastal sage scrub is a diverse, drought tolerant, fire adapted plant community of southern and Baja California which is endangered by rapid urbanization and ongoing agricultural and grazing disturbance. The need to conserve this declining habitat, along with an increasing exercise of mitigation in development permitting, has resulted in a considerable interest in coastal sage scrub restoration.

The greatest area of potentially restorable coastal sage scrub ranges from grazing disturbed scrub to annual grassland converted from coastal sage scrub by grazing operations. The greatest challenge posed in restoring these areas is the reduction of annual grasses in order to favor native coastal sage scrub species.

The Nature Conservancy has had success reducing exotics to favor native perennial grassland by the use of fire. A review of the literature on the fire ecology of coastal sage scrub suggests that this habitat may be enhanced by a similar fire treatment. The probable components of a successful fire restoration are a late spring, moderate temperature burn with low soil and plant moisture followed by ash conservation, native seeding and monitoring.

Every factor of fire restoration is a balance on a fine line between opposing forces. If the fire is too hot, resprouting is reduced and soil nitrogen loss is increased. If it is less hot, exotic seed kill is less thorough. Additionally, every site is different and within each site there are many uncontrollable variables. Fire restoration of coastal sage scrub shows great promise but must be considered highly experimental.

Friends of Peñasquitos Canyon October/November Events Schedule

Gnatcatcher and Plant Community Walks Highlight Fall Program

Join us on our fall walks and enjoy autumn temperatures and the color of the changing sycamores and poison oak (!). We have three new walks in November: a gnatcatcher walk, a fire walk and a plant community walk. See below for details.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

OCTOBER

Rancho Santa Maria De Los Penasquitos
Adobe Ranch Tour
Sat., Oct. 17, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See historic adobe, settler and Indian artifacts.

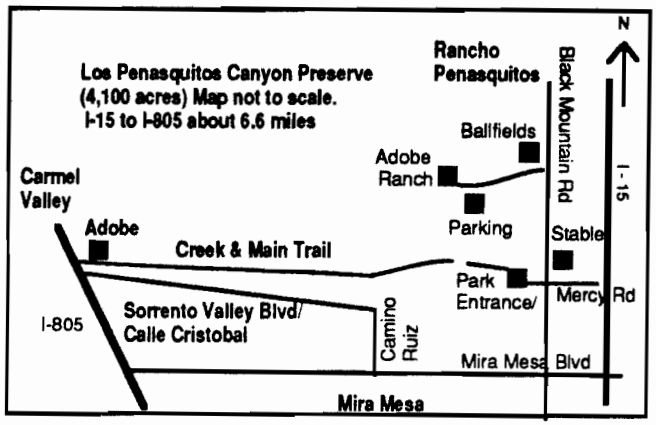
Bird Walk in López Canyon
Sun., Oct. 18, 8 a.m. Meet in the new parking-staging area off Sorrento Valley Boulevard. Parking lot is about 3/4 mile east of the intersection of Sorrento Valley Boulevard and Vista Sorrento, on the right side going east. Parking lot can also be reached by traveling west on Calle Cristobal in Mira Mesa. Lot is on left at bottom of the big hill into Sorrento Valley.

Fall Color Walk in López Canyon
Sun., Oct. 18, 9 a.m. Meet in the new parking-staging area off Sorrento Valley Boulevard. Parking lot is about 3/4 mile east of the intersection of Sorrento Valley Boulevard and Vista Sorrento, on the right side going east. Parking lot can also be reached by traveling west on Calle Cristobal in Mira Mesa. Lot is on left at bottom of the big hill into Sorrento Valley. With luck the sycamores should be turning to their fall colors. This is always a pleasant walk through a tree-lined canyon. We'll also visit the old López homestead.

Medicinal Plant Walk
Sat., Oct. 24, 5:00 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen.

NOVEMBER

Rancho Santa Maria De Los Penasquitos
Adobe Ranch Tour
Sat., Nov. 7, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.



Fitness Walk
Sun., Nov. 8, 8 a.m. Join Dr. Jaya Pereyman on a 10-K (6 mile roundtrip, 2-1/2–3 hours) brisk walk to waterfall and back. Bring water. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite.

Medicinal Plant Walk
Sun., Nov. 8, 4:00 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen.

Full Moon Walk
Tues., Nov. 10, 7:30 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. **Bring flashlight.** Learn moon lore and legends. Look for deer and other nocturnal animals. Watch out for hungry ghosts! Led by Will Bowen.

Plant Community Walk
Sun., Nov. 15. Time to be confirmed. Call 484-3219 for time. Dr. Alan Pepper will lead a walk from Peñasquitos Creek Park into the Preserve and introduce participants to some of our varied plant communities. He'll explain the conditions that lead to a certain community of plants forming and their role in the ecosystem. A good basic education for the person who wants to learn more than the names of our local plants.

Fire Walk on Lopez Ridge
Sat., Nov. 21, 9 a.m. Meet at Caminito Propico at Calle Cristobal in Mira Mesa (via Camino Ruiz going north, or Sorrento Valley Blvd. going east). We'll tour the recent Penasquitos Canyon Fire area and discuss the ecology of fire and what to expect in this area in years to come. Led by Mike Kelly. Wear good boots and clothes you don't mind getting dirty with ash.

Gnatcatcher Walk in Sabre Springs
Sun., Nov. 22, 8 a.m. Meet on Sabre Springs Parkway South of the intersection with Poway Road just off I-15. Brian Swanson will take us into a pretty area where gnatcatchers are often seen, along with a variety of other birds. This is the bird the developers are trying to stop from being added to the endangered species list. We'll be walking in a soon-to-be open-space riparian area that is to be connected to Peñasquitos Canyon Preserve.

Rancho Santa Maria De Los Penasquitos
Adobe Ranch Tour
Sat., Nov. 21, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. See Nov. 7 listing for details.

(**Bush** cont'd)

Wilson's NCCP

Under the NCCP large blocks of the most sensitive coastal sage scrub habitat would be purchased by developers and the State and put aside as permanent preserves. In return for this, the developers would be allowed to bulldoze the remaining coastal sage scrub habitat.

Although the environmental community obviously disagreed with the attempt to derail the Endangered Species Act, it was agreed that more and better quality habitat could be saved by this approach, if properly implemented, than by a parcel by parcel fight throughout Southern California.

The Friends joined with the Audubon Society, the Sierra Club and many other groups to form a coalition called the Endangered Habitat League to negotiate with the Wilson administration and the developers over the organization and implementation of the NCCP. Our negotiators were hopeful in the early months that a workable plan could emerge that would protect more coastal sage scrub habitat and its most famous inhabitant, the California gnatcatcher, than through the EIR and development process. However, as the months grew into a year, it became clear that many landowners and developers were refusing to participate in the program even to the extent of surveying and registering their properties containing this habitat type. Indeed, several projects went forward in coastal sage scrub habitat without any land being set aside through the NCCP program.

My own opinion is that the developer community deliberately delayed implementation of the program in the hope that the Endangered Species Act would be gutted by the Bush administration in its second term. The only leverage the environmental community has had in saving many areas has been the listing of species such as the gnatcatcher as Endangered. Without this threat or listing, the developers can hope to put aside less land and build with greater density and profits.

Although the media claimed Bush was addressing members of the Natural Communities Conservation Planning program, in fact the only members of this program invited were the developer members, who appear to have come from all over Southern California to attend. None of the environmental members were invited. In fact, representatives of the Friends, the Sierra Club, the Audubon Society, and others were outside the Ranch event picketing in protest. A copy of the Friends press release appears at the right.

Letters

Re: Bush Visit

The selection of Los Peñasquitos Canyon Preserve as the stage for the President to bash the Endangered Species Act was, in my opinion, a mistake. Los Peñasquitos Canyon Preserve's master plan specifically stresses the importance of the Preserve as a functioning ecosystem and states that "this can be accomplished through an effective management of sensitive resources, as well as expanding preserve boundaries to encompass additional habitat areas." At present, about a third of the Preserve's 3500 acres is made up of coastal sage scrub, the habitat of the California gnatcatcher, an endangered species.

The Citizens Advisory Committee for the Preserve has been working for over twenty years both to support a bio-diversity program in Peñasquitos Canyon and to expand the gnatcatcher's habitat. To have the President use the Preserve as a staging area to sack the Endangered Species Act is an affront not only to the Committee members but to all environmentalists. Mr. Bush would have done better to speak in the Sorrento Valley Industrial Park at the west end of the Canyon.

Sincerely yours, John Nothrop, member
Citizens Advisory Committee to the Peñasquitos Canyon Preserve Task Force.

Framework Plan for Future Urbanizing Area Approved

September 29 the San Diego City Council voted to approve a modified Framework Plan for the Future Urbanizing Area (FUA). This decision will greatly impact Peña–squitos Canyon Preserve.

Also commonly known as the Urban Reserve, the FUA is comprised of 12,000 acres of relatively undeveloped land between North City West, Rancho Penasquitos and Peñasquitos Canyon Preserve. About half the land has been used for agriculture, nurserys or horse ranches. In 1985 a citizens initiative, Proposition A, put development in this area off limits for the near future to avoid "leap-frog" development that stretches City resources too thin and sacrifices open-space.

Despite the Prop A vote, the City Council voted in a split decision in November 1991 to open up the development process. A Citizens Advisory Committee was formed to work with a consulting firm to develop a Framework Plan for future development in the area.

The CAC was charged to prioritize sensitive lands for protection and look at all of the issues that go into community planning: schools, transportation, affordable housing, commercial, industrial and residential building.

The Friends submitted maps of the most sensitive lands and wildlife corridors that connect our Preserve up with other open-space systems in the region. In the Framework Plan and CAC's accompanying recommendations, as much as 50-60% of the FUA is supposed to remain in open-space, including the most sensitive open-space area, the Del Mar Mesa, and our major wildlife corridors. However, much of the open-space will be fragments, ribbons of land surrounding development — of little biological value.

The chief weakness in the Plan is that no reliable mechanism was identified by which the 500 acres on the Del Mar Mesa, the biologically most important lands, can be obtained and thus spared development.

A future report is supposed to detail how this can be accomplished.

The voters will have an opportunity to vote on most, but not all of the component parts of the plan about June 1994. If the sensitive lands and parks can't be financed by the development within the Framework area, the voters will undoubtedly be inclined to vote down these plans, a reasonable position.

(**Birding** cont'd)

so keep an eye out for them the next time you're down there, and see if you can tell the difference between the two species. It will be a good test of your bird identification skills. Whether you can differentiate between them or not, you'll have a great time just studying their behavior. They're very entertaining birds.

Good Birding!

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
619-484-3219

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Tax Blues Got You Down?

It's that time of the year when we're asked to dig down deep into our pockets by our State and Federal Governments to finance S&L bailouts and other questionable "investments." One way to cut down what you give the bureaucrats, of course, is to give as much as you can afford to a worthy, tax-deductible cause. If you're in a position to make such a donation, please consider the Friends of Los Peñasquitos Canyon Preserve. We're a non-profit organization registered with both the State and Federal Governments. We can provide the necessary tax letter receipt your accountant might require.

Your donation will go for a cause you can appreciate every time you enter our Park Preserve. With the victory against Camino Ruíz we'll be spending even more time with ambitious conservation projects designed to protect and enhance the bio-diversity of our canyon system. We'll also be embarking on a program of greater public education within the park with display kiosks on the ecosystems, wildlife and plants of the Preserve. We'll also be publishing a series of educational publications on many of these same themes.

We're also planning — for the first time — our own research projects. One immediate one will be in the newly burned sites on López Ridge.

Send your tax-deductible donations to us at:
P.O. Box 26523, San Diego, CA 92196.

Check Your Label

Take a moment to examine the address label on this newsletter. Check to see if your expiration date has come and gone. If so, please take the time now to send in a renewal check for your membership dues. This will enable you to keep receiving our newsletter, recognized as one of the best environmental newsletters of any organization in San Diego. That way you'll keep learing about the progress of the Camino Ruíz issue and what you can do about it; about family walks; about the plants and animals that inhabit the Preserve, and the many conservation projects

Membership Application

Membership category? Circle below:
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Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

December 1992
Volume 7 No. 2

Southern California Biodiversity Sampler

by David Hogan, San Diego Biodiversity Project

Southern California endangered species issues have recently begun to hit national news. The following article was written to tell folks what's really happening to southern California sensitive species and habitats, and to try to offset the distortion of facts often caused by the national press.

The article focuses on the three rarest habitats in San Diego County: coastal sage scrub, southern maritime chaparral, and vernal pools.

Coastal Sage Scrub

Brown, dry, dust; no splendid waterfalls or cathedral forests here . . . welcome to the increasingly rare coastal sage scrub of southern California and Baja California Norte; summer, fall, and winter . . . .

Then spring. The foothills are vibrant with the bright greens of young sages, lemonade berry, and perennial bunch grasses. Wildflowers carpet entire hillsides. Sweet sage smells float down drainages on evening breezes.

According to the US Fish and Wildlife Service in their status review for the California gnatcatcher, the coastal sage scrub of southern California and Baja has been reduced to 10% of its former range. It once covered the coastline from Ventura County in the north to a region of Baja south of Ensenada, and reached up to 3500 feet on sunny, south facing slopes. Much of this coastline has been converted to asphalt or crops. For example, the Los Angeles basin was almost 80% covered by coastal sage scrub prior to the buildup of the LA megalopolis.

Southern California's coastal sage scrub community carried distinct characteristics, depending on latitude and variables such as ocean breezes and inland temperatures. Four variations of the coastal sage scrub community have been recognized in southern California: the venturan sage scrub, riversidean sage scrub, diegan sage scrub, and maritime succulent scrub, although considerable variation occurs within these types. All are considered greatly reduced in range by the California Natural Diversity Data Base (California Department of Fish and Game) and all are threatened with elimination.

Diegan sage scrub is one of two coastal sage scrub habitats occurring in San Diego County. This habitat type, as defined by the presence of *Artemisia californica* (coastal sagebrush), *Eriogonum fasciculatum* (buckwheat), *Galvisia speciosa*, *Haplopappus venetus* (goldenbush), *La-*

➡ p. 6 for more

Forest Initiative Over the Top

Congratulations to Duncan McFetridge and all the fine folks who volunteered their time and money to collect signatures to put the "Save Our Forests & Ranchlands" on the ballot. It took a heroic last minute effort to collect some 109,000 signatures, but it was done by the Nov. 9th deadline. It will take about a month for the Registrar of Voters to certify if there were enough valid signatures to qualify the petition for the ballot. Heroic is an understatement: Duncan took out additional mortgages on his house to throw tens of thousands of dollars of his own money into the campaign. The Friends, the Sierra Club and the Audubon Society also contributed about $10,000. **Please** send a donation now to help repay Duncan on his mortgages: **Save Our Forests & Ranchland at: PO Box 475, Descanso, CA 91916.**

Already the developers and their cronies on the County Board of Supervisors are mounting their propaganda campaign against the initiative (witness Supervisors Bailey and Bilbray "Op-Ed" piece in the S.D. Union.) Qualifying for the ballot is only step one. Step two will be fending off lawsuits by developer landowners to remain on the ballot and Step three will be the election itself. Stay tuned for further developments!

Inside

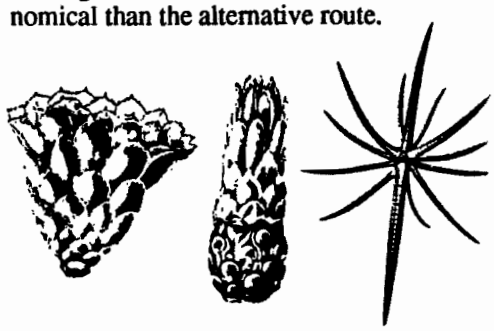
Sewer Line Stopped

by Mike Kelly, president

A second sewer line proposed for the Preserve has been killed. This is another important victory for protecting the Preserve. We opposed the second sewer line for several reasons: loss of habitat for a corridor over 6 miles long; constuction is always destructive beyond the corridor itself; invasive exotic plants follow such disturbances; and routine maintenance is an annual headache since it is always destructive of the surrounding area.

Last year we had to file [successful] complaints with State Fish and Game Dept. against the City's Water Utility Dept. over bulldozing of new roads, damage to the streambed and other destruction.

The sewer line was stopped by early opposition from the City and County Parks Depts, ourselves and other citizens who made our opposition clear and that mitigation for damage to sensitive areas would be expected. In their original plan no significant monies had been allocated for mitigation of environmental damage, making the Preserve route seem more economical than the alternative route.



Ferocactus veridenscens with flower, fruit, and spine cluster. See p. 2

The Ecology of Ferocactus Viridescens: Preservation and Restoration

By Viviane Marquez

[Editor's note: Coast barrel cactus has a home in Peñasquitos Canyon Preserve — one of the few places where it's future may be secure. Thus we find ourselves very interested in its ecology and what we can learn to promote its longevity here and elsewhere. The author of this article is a practicing biologist in San Diego.]

Ferocactus viridescens, (Coast barrel cactus), is a category 2 candidate for listing as an endangered species. I'll explain the status of this plant, the ecology/ecophysiology of cacti in general and — where possible — of *Ferocactus viridescens* or its closest relative, *Ferocactus acanthodes*. The technique used for translocation of this plant and survival rate of the cacti at four translocation sites will also be covered. I'll attempt to make a conclusion as to whether trans-location, at least in the case of *F. viridescens*, is indeed an adequate mitigation and make suggestions as to possible ways to improve survival rates of trans-located plants.

Status

The Coast Barrel Cactus is a cactus occurring on west and south facing slopes of coastal sage scrub, in compact sandy soil. Its range consists of San Diego County (north to Escondido) and Northern Baja California, (south to El Rosario). It's never found more than 20 miles from the coast (Dawson). It's a Federal and State category 2 candidate species for listing as well as classified as endangered by the California Native Plant Society.

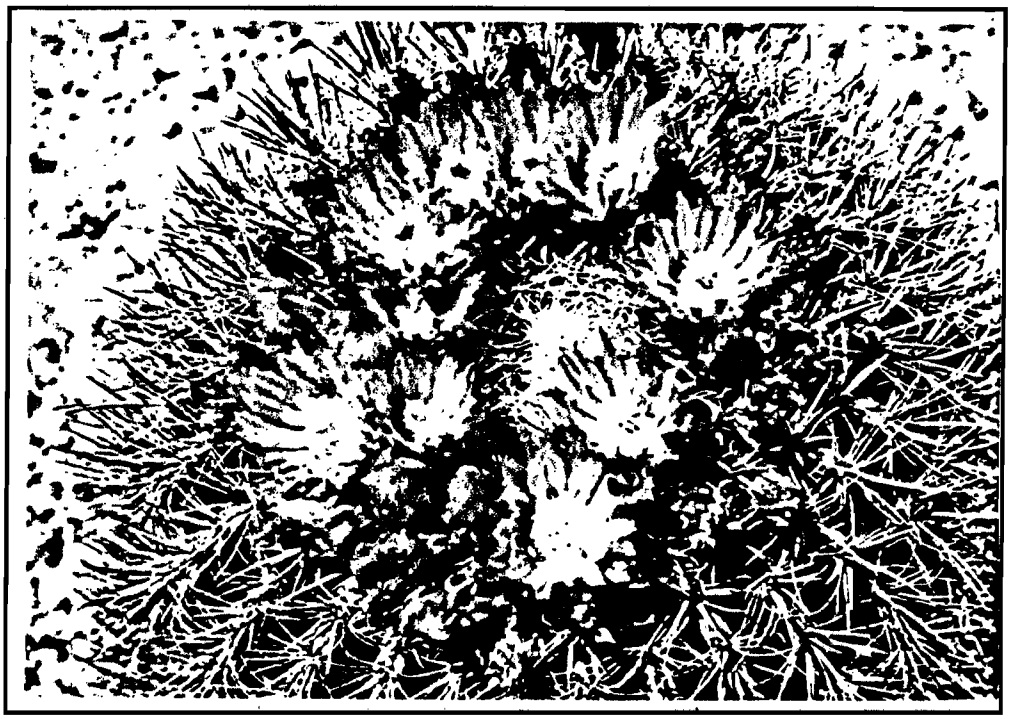
Candidate species for listing as endangered are classified into two categories. Category 1 species qualify for listing based on available data; Category 2 species require additional information as to their status (Meese). 3,000 species, like the Coastal Barrel Cactus, are awaiting further study. **It's estimated that 200 to 300 of these are already extinct.**

Due to the incredible amount of backlog in the Department of Fish and Wildlife, as well as the time consuming process of research and creating recovery plans, the majority of these species will not make it out of the candidate for listing status (Meese).

The California Native Plant Society has recently filed suit against the Department of Fish and Wildlife regarding Federal listing of the State's candidate 1 plant species. On August 7, 1991 they reached an agreement which included their listing a minimum of 30 species per fiscal year. Prior to this, plant listing averaged 2.3 per year since 1973 (CNPS Newsletter 10/09/91). As a candidate requiring further study *F. viridescens* has absolutely no binding Federal or State protection at this time. Fortunately, many agencies voluntarily mitigate or attempt to avoid destruction of this plant.

Ecology And Ecophysiology

Very little has been written about *F. viridescens*. There is an abundance of information on cacti in general and a relatively large amount of information regarding *F. acanthodes*, the familiar Barrel Cactus of the desert, and the Coast Barrel Cactus' closest relative. These references are my sources for the effects of environmental factors on *F. viridescens*.



Ferocactus acanthodes in bloom

Water Ecophysiology — *F. viridescens* has many water saving features. It's a Crassulacean acid metabolism (CAM) plant, as are most succulents. This is the physiological process where by the stomates, (the pores through which gas exchange occur), open at night to take up CO2 and are closed during the day, which greatly reduces loss of water through transpiration. Other features include:

1. its shape; spheres maximize the volume of water stored per unit area of transpiring surface (Jordan and Nobel 1981).

2. the ribs, which allow the plant to expand accordion style to accommodate an increase in water storage during wet times.

3. the roots of cacti are particularly conducive to maximum water intake. The roots of even large cacti average only 10 cm. deep and are very rarely more than 30 cm deep. This allows water intake by cactus of light rains of only 6-7 mm. on completely dry soils (Gibson and Nobel 1986). Cacti are also known to develop new root systems immediately after a rain. The established root system is responsible for the majority of the initial water intake, but after 5–6 days of wet conditions the rain induced roots have grown sufficiently to take up as much water as the main root. An adult Barrel Cactus can absorb over five gallons of water in a few days (Gibson and Novel 1986).

Climate — The cacti's tolerance of high temperatures is well known. A lesser known fact is that they are highly susceptible to damage by freezing. This in fact is the limiting factor to their prospective ranges. They have developed mechanisms like hardening, an increase in tolerance to very low temperatures after the plants are exposed to moderately low temperatures, and super-

cooling, the ability of a cactus to cool to -3 to -12C without freezing (Nobel 1982).

In addition to these advantages, cacti receive further protection from freezing by morphological factors. A study by Park S. Nobel shows that degree of apical pubescence and spine shading are correlated to northern limits of several species of Ferocactus. For instance F. acanthodes whose range extends to the coldest sites of Ferocactus has 8 mm. of apical pubescence and up to 98% shading of the stem apex by spines, as compared to *F. viridescens*, which is restricted to much warmer climates and has 2 mm. pubescence and 23% spine shading. The spines may also serve to protect the plants from damaging solar radiation (Nobel 1982).

Seedling Establishment — Succulents are among the easiest of all plants to propagate under nursery conditions, but not so in the field. The dependence on water for seedling establishment critically affects its success. A seedling of *F. acanthodes* that has grown for 1-1/2 months in moist soil can tolerate only 9 days of drought. By 5 months of age the seedling can tolerate 2-1/2 months of drought (Jordan and Nobel 1981).

The fact that few years have sufficient rainfall for the establishment of seedlings is evidenced by the age class distribution in the field. It experiences a pulse phenomenon of establishment. It's thought that cactus species are found only in areas where at least 10% of the years are suitable for seedling establishment. Although a healthy *F. viridescens* can produce hundreds of seeds/flower and have as many as 15 flower/plant/year, the seeds and seedlings face many obstacles.

For instance, it is estimated that while a Saguaro may produce about 40 million viable seeds in its lifetime, only about 1/4 land in a suitable microhabitat for germination. Of these only about 50,000 actually germinate and over 99% of these seedlings succumb to animal predation (herbivory) during their first year (Gibson and Nobel 1986). Most of the seedlings that do survive are concealed beneath protecting plants or rocky crevices. Eventually the cactus will develop defenses against herbivory by the accumulation of poisonous oxalates and the development of spines (Jordon and Nobel 1981).

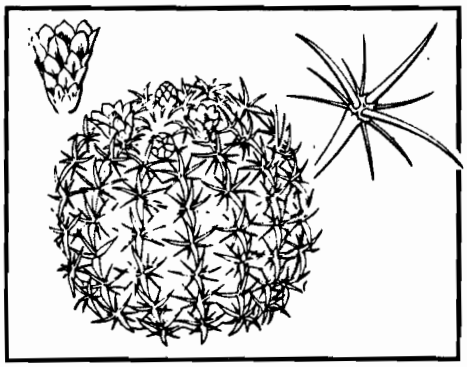
Transplantation

A state agency in connection with freeway development has often encountered populations of *F. viridescens* along their right of way. Although not obligated by law to do so, their policy has been to relocate them prior to habitat destruction.

Method — The method of transplantation has been essentially the same for the four sites studied. Prior to uprooting the cacti they have their south facing side marked in some way. This has varied from typing a ribbon around the cactus with the knot demarking the south facing side to spraying this side with a water soluble plant solution. This is done so that the cacti may be positioned at their new location with the same southerly orientation , thus reducing damage from sunburn of areas less acclimated to direct sun.

In the months between August 1, and November 1 during which the plants are in dormancy, the plant and root ball are dislodged with tools ranging from shovels to picks. They're then placed on palletes in a cool dry spot to allow the roots to callous on the damaged tissue. This minimizes damage by bacterial or fungal infection. If the plants are to be held for greater than 3 months before replanting they would be planted in containers until they are placed in their permanent location. In all of the cases studied that was not necessary.

A suitable transplantation site is judged



Coast barrel cactus

based on the following criterion;

a.) south or west facing slopes;

b.) proximity to original habitat;

c.) finding of an existing population of *F. viridescens* nearby;

d.) similarity of soil to the original habitat; and

e.) an area reasonably protected from future development.

The soil is broken up four to five inches deep and the cactus positioned with their markers facing south with the soil compacted around the cactus by hand or foot. No watering is done as this is thought to increase likelihood of bacterial or fungal infection. No aftercare is given.

Results

The translocation sites were surveyed by Viviane Marquez and Gina Moran in April 1992. We walked slowly along the area and counted both cacti found alive and cacti found dead. Due to the Barrel Cactus' ability to resprout after major damage our criterion for determining a plant to be alive was if there was any evidence of green still on the plant.

Site # 1

In 1983, a population of *F. viridescen* was relocated from the I-15 right of way t the east side of I-15, (near the SR 52 inter change). 218 individuals were moved and were reported dead a year later (97% survival rate). Monitoring was not done agai until April of 1992 at which time 45 were found dead and 103 alive (43.4% survival rate). The surviving plants were flowering and appeared in good health.

Site # 2

On August 16, 1991, 73 *F. viridescens* were removed from the SR 56 right of way, off of Rancho Penasquitos Blvd. They were left in a cool dry place until September 5th (three weeks). At this time they were replanted on the upper section of the south facing slopes of Carmel Mountain Road.

7-1/2 months later 40 were counted including 3 new ones on a cluster of eight. The transplantation site was thoroughly surveyed but we found no remains of dead plants (55% survival rate). Although the slope was covered with a thick stand of African daisies we were perplexed at our inability to locate 33 plants in a small area.

Upon further investigation, 3 were found which had rolled down the hill. Signs of herbivory had been indicated on a November 1991 survey (plants out of the soil with roots missing and rabbit droppings in a pile nearby). I believe this was the fate of the missing plants. Due to the fact that the roots were loose in the soil, they could easily be dislodged by the rabbits. Of the three found down the hill one was missing it's root and the two others had sent small roots down into the soil at their new location.

Site # 3

Another population located in Mission Trails Regional Park, had 1,043 individuals that were removed between July 15 – July 17 and July 22, 1991. They were relocated on August 6 – 9 1991 (three weeks later) to five locations directly west of Fortuna Mountain in the Northwestern portion of Mission Trails Regional Park off of Seda Drive (Gina Moran Report).

On April 16, 1992, 761 plants were found alive and 239 dead (76% survival rate). The 43 which were not located were very likely being obscured by the lush growth from a very wet year.

Site # 4

On July 16, 1991, 256 plants were removed from the eastern limits of San Diego County in Mission Trails Regional

➡ p.9 for more

New Hope for State Listing!

With a court decision handed down on August 27, there is renewed hope for the California Gnatcatcher and all coastal sage scrub species. The case goes back to the California Fish and Game Commission hearings of August, 1991, when the Natural Resources Defense Council (NRDC) and Manomet Bird Observatory petitioned for listing under the State Endangered Species Act. After the Commission refused to advance the gnatcatcher to candidate status on a 3 to 1 vote, the NRDC filed suit against them.

Under California law, the Commission must advance a species to candidacy if it finds that an eventual listing "may be warranted". The NRDC held that the Commission had acted using an invalid evidentiary standard and had made inadequate findings to support their position. Judge Ridgeway of the California Superior Court has now agreed with the plaintiffs, ruling that the Commission had indeed acted illegally.

In his decision, the judge clearly stated that candidacy status is required if substantial evidence is presented which "a reasonable mind might accept as adequate to support a conclusion the listing was necessary". According to his decision, the Fish and Game Commission gave "no hint of the reasoning used or the evidence relied upon" to reject the listing petition. Judge Ridgeway was openly contemptuous of the blatantly conclusory "findings" presented by the Commission, and stated that "The Court is left to wonder whether and on what basis the commission rejected the documentation in the petition that the gnatcatcher's costal sage scrub community habitat would be lost with 20 years".

NRDC attorney Joel Reynolds hailed the decision, saying that it will create a new legal standard for the politically-appointed Fish and Game Commission to meet when it considers listing petitions. The development industry tried- without much success, however- to give the story a different spin.

Historically, the current Fish and Game Commission has shown a consistent and unscientific bias favoring narrow economic interest over biological considerations. This was certainly evident during the 1991 public hearings on the gnatcatcher when the Endangered Habitats League and others brought overwhelming evidence forward to support listing. In their decision not to advance to candidacy, the Commission over-ruled both the Director of Fish and Game and their own scientific staff. They also relied upon vague promises given by the State Resources Agency of future land protection via Natural Community Conservation Planning (NCCP), which is itself impermissible.

Now, in the face of the illegality of their decision on the gnatcatcher, the discredited Fish and Game Commission faces a choice: It has the seemingly impossible task of issuing legally adequate findings to support their previous opinion, or it can appeal the decision, or it can follow the law and the science and act responsibly to advance the listing petition. We can only hope that the Commission will not stubbornly insist upon digging itself into an ever deeper legal hole.

Gnatcatcher Update

On Sept. 17, Secretary of the Interior Manual Lujan extended for up to six months the deadline for listing of the California Gnatcatcher under the federal Endangered Species Act. The delay is ostensibly to resolve scientific dispute over whether the bird's subspecies designation is valid, or if it is identical to larger populations in Mexico.

For several months, biologists hired by Chevron Oil and other land developers have been trying to disprove the subspecies classification. Making the erroneous claim that there is "substantial disagreement regarding the sufficiency or accuracy of the available data," the Interior Dept. asked the American Ornithologists' Union (AOU) to re-review the issue. Previously, in 1989, the AOU had accepted the subspecies *Polioptila californica californica*, whose range from southern California to northern Baja was established by Dr. Jon Atwood.

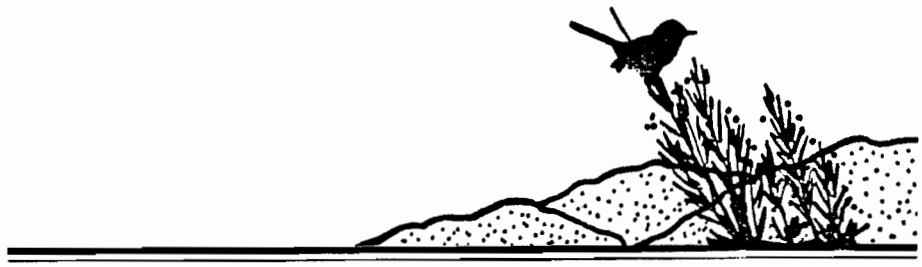
However, with a rapid response which stunned the building industry, on Sept 24, Dr Burt Monroe of the AOU confirmed their acceptance of the subspecies. In a letter to the Fish and Wildlife Service he stated that there was no scientific basis to reconsider their earlier decision.

Also, immediately following the announcement of the extension, the Natural Resources Defense Council wrote to Secretary Lujan taking legal issue with his "arbitrary and capricious" action and gave 60 days notice of intent to sue.

The maneuvers to delay a listing come as no surprise given the impending election and pressure from the development industry. The Bush administration is openly hostile to the Endangered Species Act, and Secretary Lujan has emphatically stated that subspecies do not deserve protection at all. It is noteworthy and encouraging, however, that the grounds for delay were limited to the narrow point of taxonomy. In fact, definitive settlement of this issue will be valuable in protecting an eventual listing from legal challenge.

Listing opponents have also pointed to recent increases in gnatcatcher populations due to good winter rains. According to Dr. Dennis Murphy of the Center for Conservation Biology at Stanford, though, such fluctuations relating to food supply are expected, and "the key issue here is the loss of habitat." As excuses run out, the California Gnatcatcher should finally get the protection it requires.

[Reprinted from the Endangered Habitat League newsletter. The Friends belong to the league.]



For over a year now, the California Gnatcatcher and its coastal sage scrub habitat have had no legal protection. Over 2000 acres have been lost, and further losses are being documented. Mitigation for habitat destruction has been, according to the Dept. of Fish and Game, grossly insufficient. If the gnatcatcher advances to candidacy two things will happen: There will be immediate protection of most habitat for a one year study period, and there will also be a greatly enhanced ability to implement the State's own Natural Community Conservation Planning (NCCP) program for protecting the coastal sage scrub ecosystem.

[Reprinted from the Endangered Habitat League newsletter. The Friends belong to the league.]

Birding Field Guides

by Barbara Zepf

[Editor's Note: *Newer members have been asking what birding field guides they should buy so they can start identifying birds. This reprint of an earlier Barbard Zepf article offers just such advice.]*

While leafing through my field guide trying to decide which bird to talk about this month, it occurred to me I should say something about selecting a field guide. This is a very personal decision. What you think is the perfect choice might not be someone else's selection. As a beginning birder, one certain guide may be the most helpful. Later on, a different field guide may be what you prefer.

Some field guides use photographs, and some use artist's renditions. Usually, the ones which use artists are preferable. A photograph only captures the bird at one certain moment. An artist can show all of the identifying marks in one drawing that may not occur in a photo of any given specimen. Every bird you see may not have all these marks, but the more clues you have to work with, the better your chances are of identifying the bird.

For the most part, water birds are in the first half of the field guides and land birds in the second half. Usually, the books follow the "natural" or evolutionary avian order from the most primitive to the more advanced bird families.

I'll write here of four different field guides. The first is *The National Geographic Society Field Guide to the Birds of North America*. Right now, this is my first choice. Be sure you purchase the "second edition." Many field guides are updated and the newer editions are, for the most part, an improvement over the older ones. As more is learned about birds, the guides change: maps are altered, birds' names change, new birds range to North America, etc..

The National Geographic Society guide is a compilation of many artists' works. I like this guide because it shows both male and female plummages, mature and immature birds and summer and winter plummages, if any of these differ. Descriptive paragraphs and range maps are directly opposite the illustrated birds. This book covers all North America, so a different book is not needed when birding in the eastern states or where east and west overlap.

One disadvantage is size. It's large and heavy to carry. I also find the index a bit difficult to use quickly.

Next is *A Guide to Field Identification Birds of North America* by Robbins, Bruun and Zim — the "Golden" Field Guide. Again, be sure to purchase the second edition. This covers all North America. This guide was my first choice as a beginning birder. It's inexpensive, easy to carry and has crisp, definitive illustrations. All the art work was done by one man, Arthur Singer — mind-boggling, isn't it? This is still one of my favorite field guides. There are several pages which make it a superb guide. There are two comparison pages of spring warblers, two of fall warblers and two of sparrows. These are a gigantic help. I use them so much that I bought an extra copy of this field guide just for these six pages. I cut them out and pasted them in the back of *The National Geographic Field Guide* which I presently use.

One of the things I dislike about this book is the way it identifies the birds' songs. It uses sonagrams — a graph depiction of pitch and note intervals, which I find very hard to interpret. Since we often identify a bird by its song, I prefer a field guide which describes the song in words. "Ja-cob ja-cob" identifies the Acorn Woodpecker for me, faster than I can decipher a sonagram.

The next field guide to consider is Roger Tory Peterson's *Western Birds*, third edition. This is a vast improvement over his two previous editions. I'is a family effort. The text and illustrations (now on facing pages) were done by Roger. The maps were done by his wife, Virginia Marie Peterson. This field guide illustrates the "Peterson Method," which he invented. This method is based on patternistic drawings with arrows that pinpoint the key field marks. Voice descriptions are good, and the silhouettes of similar birds are an excellent means to help separate like species. This field guide is excellent when trying to identify a bird which is very similar to another bird. The "arrows" point out which distinguishing feature to look for.

I see two disadvantages to this book. First, the maps are at the back of the book, not usually a big problem. Second, this guide only covers the birds of western North America. There is a companion book for eastern North America.

The last field guide I wish to comment on is *The Audubon Society Field Guide to North American Birds-Western Region* published by Alfred A. Knopf. This is my least favorite book. The pictures are photographs instead of drawings. The male and female of the same species aren't on the same page. Descriptions are separate from the photos. The range of birds isn't depicted in map form (which is quicker to decipher). I find the index very confusing. In my opinion, these disadvantages add up to it being a poor *field* guide.

However, this is an excellent *reference* book: voice descriptions are good; the habitat of each bird discussed; nesting for each bird described and general information provided about each species. A good book for many reasons, it's just not an easy book to use in the field.

One final suggestion which you will be sorely tempted to ignore (as I did, and I came to regret) — don't use your field guide as your first means of identifying a bird. Most beginning (and some advanced) birders make this mistake. Scenario: you see a bird you can't identify. It's small and yellow. You frantically start looking at every yellow bird in your book. You finally find one that resembles it. The book says the bird has a faintly streaked breast. You look back to check its breast, and . . . it's gone! What's worse — it never comes back, even though you wait for 15 minutes.

Study your field guide at home before you set out on your birding trip. Learn what to look for. Does the bird have an eyeline, or wing-bars, or a thin beak or black legs? Does it flick its tail? Live near water? Travel in flocks? All these things, and more, help narrow the field of identification.

But you have to *see* these things *first*! When you comeupon a new bird, resist the temptation to open your field guide right away. Look at the bird! Start at the head. Most experts can identify a bird by the head alone. (I can't yet, but I'm working on it.) Notice the beak. A sparrow's beak will not look like a warbler's beak. Look for eye rings, eyebrows and ear patches. Look at the lores. Notice the color of the chin. Is the bird's crown streaked or crested? Follow through checking as much as the bird as you can *before* it flies. Is the breast streaked? Does it have wing bars or wing patches? Note general size by comparing it to a bird that you know. When you've studied the bird as much as you can — *then* look in your field guide. You'll have many more clues to work with. If you're lucky, the bird will still be there when you look back up. But, even if it isn't, you'll know what detail to look for the next time you see him.

(**Sampler** cont'd)

vatera assurgentiflora (malva rose), *Lotus scoparius* (deerweed), *Malocathamnus fasciculatus* (bushmallow), *Malosma laurina* (laurel sumac), *Rhus integrifolia* (lemonade berry), *Salvia apiana* (white sage), and *Stipa lepida* (foothill bushgrass), was once widely distributed from the area now obliterated by Los Angeles south into Baja California Norte. Venturan sage scrub was (and still is, barely) found north of this region, and riversidean sage scrub to the east. Only two small areas of diegan sage scrub remain in Los Angeles County; one in the Whittier Hills, and the other on the Palos Verdes Peninsula. California gnatcatchers are found on this same Peninsula, which was until recently in Earth history a channel island.

Orange County presently contains some of the finest remaining diegan sage scrub, in areas just east of Laguna Beach (Laguna Hills) and east of Irvine up to the base of the Santa Ana Mountains. In this most conservative county in the U.S., much of the remaining habitat will be doomed without the listing of the California gnatcatcher, and even with the listing, things will get uglier. Presently approved and soon to be constructed toll roads in the Laguna Hills and Santa Ana Foothills virtually assure the destruction of much of the remaining diegan sage scrub in Orange County.

Things are slightly better in San Diego County. Most municipalities are attempting to put on a good show for the coastal sage scrub and the California gnatcatcher in an effort to dissuade the US Fish and Wildlife Service from listing the bird. In reality, 80% of the original diegan sage scrub in San Diego County has already been eliminated, and city governments want to compromise away most of what remains.

Maritime succulent scrub reaches its northern distributional limit in central San Diego County, and is the most common coastal sage scrub in Baja California Norte. This habitat has abundant populations of cacti and other succulents, as well as the standard diegan sage scrub species.

In Baja, no habitats or species are protected, though the Mexican government would claim otherwise. Nonetheless, southern California developers point to "millions" of acres of coastal sage scrub in Baja. Even US conservation groups advocate the purchase of tracts of costal sage scrub in Baja with mitigation monies from project in the U.S.

Diegan costal sage scrub and maritime succulent scrub support numerous unusual plant and animal species, several of which require certain micro-habitat, including

Gnatcatcher

unique soil types and climate conditions, to exist. These finicky species have never been widespread in recent Earth history, and since the onslaught of European cultures, many have undergone severe population losses.

Other more common species dependent on the different types of coastal sage scrub face extinction simply because most of the original habitat has been eliminated. The San Diego Biodiversity Project in late 1990 submitted petitions to Fish and Wildlife Service requesting Endangered status for the following plant and bird species. Thus far, Fish and Wildlife Service has failed to list an endemic southern California coastal sage scrub species.

1) **California Gnatcatcher** (*Polioptila californica californica*): Presently receiving much media attention as the southern California equivalent of the northern spotted owl, the California gnatcatcher may be listed as an Endangered species in the near future by the Fish and Wildlife Service. It is likely that fewer than 2000 pairs of this tiny black and white songbird remain. the California gnatcatcher is completely dependent on the southern California coastal sage scrub community for nesting and foraging.

FWS estimates that fewer than 50,000 acres of suitable gnatcatcher habitat remain, and much of this is in small, isolated and highly fragmented patches surrounded by urban areas. Gnatcatchers require large areas of coastal sage scrub as territories, which they vigorously defend against any outsider. Average territory is 30-40 acres, but varies widely place to place and year to year. Many consultants hired by developers claim that gnatcatchers are found in areas as small as five acres. They fail to add that the gnatcatcher will use any native habitat acreage if all nearby available coastal sage scrub is occupied or eliminated, and that these small patches are unlikely to support the birds, or any other sage scrub dependent species, far into the future.

2) **Coastal Cactus Wren** (*Campylorhynchus brunneicapillus*): In the shadow of the California Gnatcatcher, despite its greater size, the coastal (or San Diego) cactus wren is considered an extremely restricted coastal race or a distinct subspecies, depending on the biologist. If *considered Campylorhynchus brunneicapillus sandiegensis*, fewer that 500 pairs of the taxon remain, and they are restricted to San Diego County and one site in northern Baja. However, due to lack of recognition from the American Ornithologists Union, FWS instead considered our petition to list this subspecies as Endangered a petition to list the coastal population of the cactus wren found throughout the Southwestern deserts. Due to development, apparently no connection remains between the desert and coastal populations of the cactus wren.

The cactus wren needs large thickets of prickly pear or cholla for nesting and defense. The bird forages in the surrounding coastal sage scrub. Coastal cactus wrens are hyper-sensitive to human disturbance, and any nearby roads, development, or even trails, seems to be enough to drive the birds away.

FWS has completed their status review of the coastal population of the cactus wren, and a final finding is due in September 1992, as with the gnatcatcher.

3) **San Diego Thornmint** (*Acanthomintha illicifolia*): Possibly San Diego's rarest plant associated with the coastal sage scrub is small, thorny, and highly minty. *Acanthomintha illicifolia* is found only in about 10 sites of inland coastal sage scrub. The thornmint favors moisture-holding, heavy clay soils, and is often found around vernal pools.

4) **Otay Tarplant** (*Hemizonia conjugens*); The Otay tarplant was considered even rarer than the thornmint prior to the last couple of years when surveys for the proposed 40,000 unit Otay Ranch Development turned up several new populations. Nonetheless, fewer than ten populations remain.

Southern Maritime Chaparral

Developer-hired biological consultants have for years labeled thousands of acres of coastal chaparral regions in San Diego County as southern mixed chaparral, an extremely common chaparral type. A special type of coastal chaparral was not recognized, except in Holland's "Terrestrial Natural Communities of California" and individual biologist opinion. According to Holland, whose text has been adopted by the Natural Diversity Data Base (Department of Fish and Game), southern maritime chaparral was known only from Tor-

➡ p. 7 for more

(**Sampler** cont'd)

rey Pines State Reserve and a "few nearby scattered localities."

Because Holland's definition was never clear, different biologists carried different opinions as to where these localities actually were. As development of the coastline surrounding Torrey Pines Reserve has progressed over the last twenty years, most nearby chaparral areas have been eliminated, leaving little habitat to bicker over, save one extremely important site known to locals as Carmel Mountain.

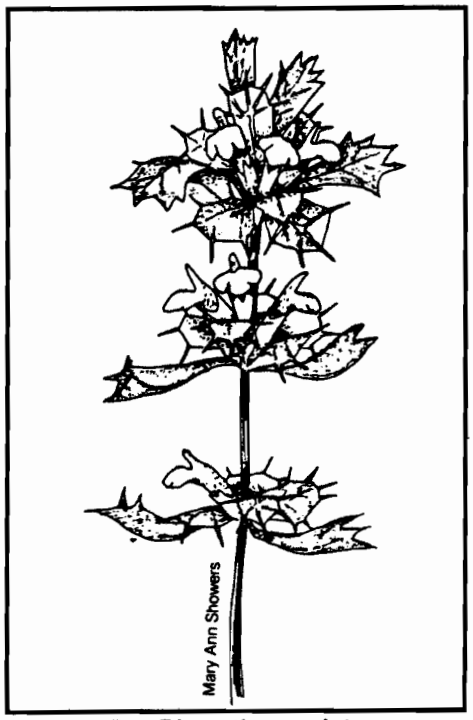
Since city mitigation requirements have become stiffer in the last two years, sensitive land (as defined by the City of San Diego's Resource Protection Ordinance) becomes quite a headache for the landowner/developer, so consultants may mislabel habitats to eliminate problems for their clients.

Presently, the San Diego Biodiversity Project is monitoring four projects where it seems obvious the biological consultant has incorrectly labeled certain areas as southern mixed chaparral rather than southern maritime chaparral. In the process of proving these consultants wrong, we have had to create an entirely new definition of southern maritime chaparral for the Natural Diversity Data Base to eliminate the confusion created by Holland's definition.

Included in this effort was the mapping of all remaining southern maritime chaparral. The task isn't as big as it may seem, since at least 95% of this habitat has been eliminated by northern coastal San Diego County development over the last hundred years, and southern maritime chaparral was never widespread: prior to modern European colonization of the regions, it covered less than one hundred square miles of what is now the San Diego coastline.

Southern maritime chaparral, according to Holland, is strictly a vegetative community. Although we agree with the concept of vegetative communities, soil types and climate must also be included in the definition of this and other habitats. Keep in mind that "defining" habitats according to human standards is a necessary evil in an area where developers are completely out of control. Often, recognition of sensitive habitats is the only thing that even slows a project down for a short time. Typically, consultants do not consider all aspects of factors that have created a habitat such as southern maritime chaparral. Because ours is a tighter definition of this habitat, we hope that fewer remaining patches will be lost through failure to recognize their rarity.

An experience of this habitat might go like this: It is fall, and you are sitting on small outcrop of sandstone, pure white like compressed beach sand. Almost no vegetation can grow in this poor sandy soil, except a small bonsai-like shrub, growing prostrate across and down a bluff. Up a draw nearby, a single scraggly torrey pine is fighting for existence in a climate that seems barely favorable, compared to that of a time a few hundred thousand years back. Sunset progresses and night falls, and soon a moist breeze blows off the nearby lagoon and ocean. Haze seems to develop over the ocean, and beads of moisture begin to drip from blades of bright green grass. You sit through the night; and by early morning, thick fog creates dancing figures in the pines and chaparral. Evolution has produced an agreement between the fog, sandstone, and plant life, and some humans would try to define it to save it. Here's our definition:



San Diego thorn mint
(*Acanthomintha ilicifolia*)

Element Name: Southern Maritime Chaparral

Description: a low to medium height (8 ft) dense to fairly open chaparral usually dominated by a mixture of typical southern mixed chaparral species and unusual coastal species including the coast white lilac and the Del Mar manzinita.

Site factors: weathered sands of several specific soil types (not listed) within the coastal fog belt, up to approximately three miles from the ocean. Fire is necessary for the reproduction of most of the indicator species. Soil type and fog belt are considered Type One Indicators.

Characteristic species: (Type One Indicators) **Arctostaphylos glandulosa crassifolia* (Del Mar manzinita), **Ceanothus verrucosus* (coast white lilac), **Chorizanthe orcuttiana* (Orcutt's spineflower), **Coreopsis maritima* (sea-dahlia), **Corethrogyne filaginifolia linifolia* (Del Mar Mesa sand aster), *Dendromecon saligna* (bush poppy), **Dudley brevifolia* (short-leaved dudleya), and **Pinus torreyana* (Torrey Pine).

(Type Two Indicators) **Baccharis vanessae* (Encinitas baccharis), *Cercocarpus minutifloras* (coast mahogany), *Cneoridium dumosum* (spice bush), **Comarostaphylos diversifolis* (summer holly), **Dichondra occidentalis* (spike moss), **Quercus dumosa* (scrub oak), *Salvia clevelandii* (Cleveland's sage), *Salvia mellifera* (black sage), *Eylococcus bicolor* (mission manzinita), and *Yucca schidigera* (Mojave yucca).

Note: Southern maritime chaparral can be defined by the presence of any four Type One Indicators, or an assortment of Type Two Indicators.

Distribution: today restricted to San Diego County from La Jolla to Carlsbad up to three miles from the coast, with isolated patches remaining at the International Border (Spooner's Mesa), Point Loma, and Penasquitos Canyon.

This definition has been adopted by the Natural Heritage Program until further habitat surveys can be complete.

The southern maritime chaparral has several sensitive to severely imperiled plant species. Because the unusual nature of the plants indicates the unusual nature of the habitat, brief descriptions of these species follow:

1) *Arctostaphylos glandulosa crassifolis* (Del Mar Manzinita)-This shrub with blue-green leaves and smooth red bark is found only within the range of southern maritime chaparral. It is likely that fewer than thirty populations remain, most threatened with development. It's limited to extremely poor, sandy soils.

2) *Ceanothus verrucosus* (coast white lilac) has given those of us fighting for the protection of the southern maritime chaparral a headache because of a large population found outside the range of this habitat, where no other indicators of southern maritime chaparral are found. This species has a limited distribution, but is fairly abundant within that area, so extinction is unlikely. The scent of an entire hillside of white lilac in bloom blows the mind.

3) *Chorizanthe orcuttiana* (Orcutt's spineflower) — Before April of 1991, this tiny plant hadn't been seen since 1967, and

**indicates biologically sensitive or endangered species*

➡ p. 8 for more

(Sampler cont'd)

was considered extinct by the Fish and Wildlife Service. Rediscovered in a small residential park in Encinitas completely surrounded by development, this species is now threatened by the construction of a community pool.

4) *Coreopsis maritima* (sea-dahlia) — Despite an extremely limited distribution, many populations of this species remain due to its preferred coastal bluff of cliff habitat, which is often left in open-space while flatter areas are nuked. During the hot season, this plant is dormant, with only a dead looking two inch high stump to be seen by the human eye. With winter rains, however, the stump explodes into lush, fern-like growth and finishes its short winter/spring life stage with a five inch diameter sunflower type bloom.

5) *Corethroogyne filaginifolia linifolia* (Del Mar Mesa sand aster) — This blue daisy perennial is similar to the white lilac in that it has a restricted range but is abundant within that small area. Most land supporting this species is threatened with development.

6) *Dudleya brevifolia* (short-leaved dudleya) — Truly a cute plant, found only at four locations until recently when a fifth population was found at the University of California San Diego campus by local activists. Although three populations are "protected" within Torrey Pines State Reserve and San Diego's Crest Canyon Park, two of these populations have been nearly eliminated by bikers, hikers, and high school parties. The populations are small with no more than 1000 plants at each location. This tiny succulent is unique in that it mimics its environment of pebble-strewn sandstone outcrops to avoid predation. Searchers of this plant often resort to belly botany.

7) *Pinus torreyana* (Torrey Pine) — The megaflora of the southern maritime chaparral, this species was limited before European arrival to what is now a stretch of the San Diego coastline from La Jolla to Del Mar. Natural habitat for this open, shapely pine remains only at Torrey Pines State Reserve and Crest Canyon and a few scattered sites around these parks. The City of Del Mar is built on southern maritime chaparral and Torrey pines woodland habitat, eliminating almost half the tree's natural range.

The San Diego Biodiversity Project is presently encouraging the US Fish and Wildlife Service to create a multiple species listing package for the southern maritime chaparral which would include the Del Mar manzinita, Orcutt's spineflower, the Del Mar Mesa sand aster, the short-leaved dudleya, and the Torrey pine. Another species deserving immediate protection is the Encinitas baccharis. Although this species is found primarily outside the range of the southern maritime chaparral, two populations are found in the Encinitas area, and could protect an important chunk of southern maritime chaparral if listed with the other species.

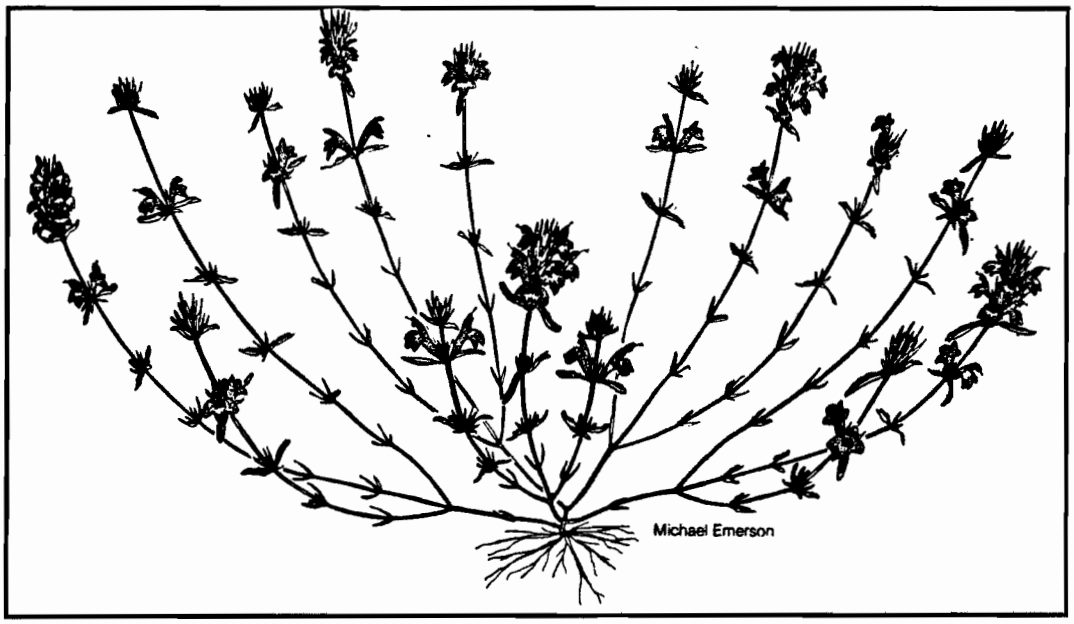
Vernal Pools

Once the most common mesa-top habitat in San Diego County, vernal pools are virtually gone. Rather than quote percentages, suffice it to say that coastal mesas are flat, and humans like to build in flat areas. **On all mesas in San Diego County except one, vernal pools no longer function as an integral part of the mesa-canyon ecosystem**; no longer provide winter and springtime water sources for deer and other critters. Most vernal pool sites are surrounded by development or agriculture, thus disconnected from larger wildish regions of San Diego County.

Vernal pools form each winter and spring when seasonal rains fill depressions on San Diego's mesas and inland plateaus. Some of these low spots resulted long ago from mounding of unknown origin (mima mounds). Vernal pools support an incredibly adaptable flora and fauna. Duration of ponding, depending on soil type and rainfall, can range from one day to five months. Dependent on the standing water are numerous vernal pool species in San Diego County, with some plants preferring long periods of standing water, and others needing just a little winter moisture.

Vernal pools were the first sensitive habitat to be recognized by San Diego's different municipalities, and the result of that early "concern" of the late seventies and early eighties was the creation of several "postage stamp" preserves in the midst of approved development. These "reserves" protect only the plant and insect species of the pools themselves, and do nothing for the surrounding ecosystem.

Only on Del Mar Mesa/Carmel Mountain in north-central San Diego County is the situation better. The opportunity exists, and is being pushed by most San Diego environmental groups, to protect a large chunk of extremely sensitive mesa-top as a part of the already existing 5000 acre Peñasquitos Canyon Preserve. This canyon is in turn connected to wilder areas to the east, so some semblance of the natural ecosystem could be retained. Descriptions of the most sensitive vernal pool species follow.



San Diego mesa mint (*Pogogyne abramsii*)

1) **San Diego fairy shrimp** (*Branchinecta sandiegensis*) was only recently described as a distinct species. Before, it was considered the same species as a freshwater shrimp found in every state west of the Mississippi. The fairy shrimp hatches in the vernal pool within about a week of the first ponding of water and matures and breeds within two weeks of first ponding. As the water evaporates, the females die with eggs attached, and the eggs remain in the soil until the next year's wet season. All vernal pools supporting the San Diego fairy shrimp are threatened with destruction. The San Diego Biodiviersity Project petitioned the Fish and Wildlife Service in January of this year for Emergency listing of this species as Endangered. The listing

➡ p. 9 for more

(**Cactus** cont'd)

Park (near Santee). 100 of these were replanted on August 7, 1991 to a slope northwest of the 52 riparian mitigation site within Sage Scrub.

In April 1992, 19 were found dead and 69 were found alive. (78% survival rate). The remaining 156 cacti were planted in soil mix after callousing and are awaiting transplantation along the I-52 slopes when the highway construction project is completed.

Conclusions and recommendations

The results of first year survivorship of a transplantation project of *F. viridescens* nine years ago (97%) indicated a potential for optimism which did not hold true for three populations transplanted in 1991 (55%, 76%, and 78%). Even the population with 97% survivorship was down to 43% after nine years.

This indicates that although translocation is preferable to decimation of the populations, it is not a method for ensuring the long term survival of the species.

Even more disheartening is the fact that cacti are one of the most resilient of plants. Translocations of other species could not be expected to fare as well.

There are many possibilities for improving survivorship in future *F. viridescens* transplantations. I recommend that the season preceding translocation, seeds be removed from the cactus flowers to be broadcast at the new site after the first winter rain. I suggest that the cacti be dusted with an antifungal/antibacterial powder (perhaps sulfur based) after being removed from their original site and again before planting (dead plants appear to have succumbed to fungal or bacterial infections).

I further recommend that instead of using the fixed time of 2–3 weeks for callousing of roots that callousing be determined by visual inspection and 1–2 additional weeks be allowed, as an assurance of sufficient callousing. It's also recommended that prior to transplantation the plants be slowly exposed to greater amounts of sunshine for acclimation purposes. This may prevent shocking the plants with strong sunlight following three weeks of shade (Mark Dodero pers. comm.). I suggest that prior to uprooting, monitoring be done to estimate the density of cacti in their original locations and that attempts be made to simulate this density in its new location (cacti although randomly placed are found to appear unnaturally clustered and competition for water could be occurring).

I would also encourage that when a new location is found using the previously listed criterion (see Methods), that surveys be done of the proposed site, in various seasons, prior to planting, for determination of associate species that may not be evident during a one time survey (African daisies and dense stands of annual grasses were found during April which were not evident in Fall). It's also recommended that future monitoring of *F. viridescens* be conducted in late fall for greater accuracy. During this time the cactus is less likely to be obscured by annual grasses or by drought deciduous sage scrub species.

Some say that endangered plant translocations are done more for moral or ethical reasons than because they serve a purpose in the large scheme of things. Others do not follow this train of thought. They believe that all species have a right to coexist on this planet and that destruction of any species to extinction is unjustified. They find that in spite of the great advances that have been made in the sciences, a great deal is still unknown. Not only does every species add to the biodiversity and wealth of the environment but any or every specie could in fact be a vital link for the survival of an ecosystem. Responsibility for destruction of habitat cannot be relieved by mitigating for an individual species. A population of *F. viridescens* in their natural, native setting is a far cry from the cacti sitting amongst African Daisies. The preservation of habitat for multispecies survival could very well be the only feasible solution to the long term survival of many species and should be encouraged at all costs.

[For a complete reprint of this article with references send a stamped, self-addressed envelope to The Friends of Los Peñasquitos Canyon Preserve, PO Box 26523, San Diego, CA 92196.]

(**Sampler** cont'd)

of Critical Habitat, protect all San Diego vernal pools that don't have the luck to support the other soon to be listed sensitive plant or shrimp species.

2) **The San Diego mesa-mint** (*Pogogyne abramsii*), remaining in strong populations on only two mesa, is the only San Diego County vernal pool species already listed as Endangered by FWT. This single listing has afforded imperiled pools little protection. The mesa-mint favors pools with standing water that evaporates fairly quickly after winter-spring storms. It is found along the margins of these pools, forming a purple ring in the month of May. Extremely pungent, the mint can sometimes be smelled half a mile away on a windless day even by humans.

3-5) Fish and Wildlife, in November 1991, proposed the listing of the Coyote thistle (*Eryngium aristulatum parishii*), Otay mesa-mint (*Pogogyne nudiuscula*), and Orcutt's grass (*Orcuttii californica*) due to continued loss of vernal pool habitat. Coyote thistle, the most common of the three, is a spiny, prostrate member of the carrot family inhabiting many of the remaining San Diego vernal pools. Otay mesa-mint, very similar to the San Diego mesa-mint, is known from only two locations in the U.S., at Otay Mesa, and two locations in Baja, all threatened with development or agriculture. Orcutt's grass has distribution similar to the Otay mesa-mint, but favors larger and deeper pools on heavy clay soils.

Most municipal ordinances protect recognized pool complexes, but the wrongful identification by biological consultants of potential or definite pool complexes as grassland or some other less sensitive habitat can lead to their destruction. Many municipalities accept biological surveys conducted during the summer or fall when pools are dry and look just like the surrounding terrain or vegetation. Hundreds of pools have been lost to this misleading survey technique. The San Diego Biodiversity Project now monitors all consulting firms and their work in San Diego County.

What You Can Do:

Numerous petitions and listing packages for sensitive species in San Diego County, and indeed, the rest of the country, sit on the desks of the Bush administration in Washington. These folks have a noose around the necks of Regional and Field Office Directors, encouraging them to slow the listing process down. Send letters demanding expedited listing for the above San Diego species to:

Marvin Plenert, Director of Region 1
US Fish and Wildlife Service
Eastside Federal Complex
911 NE 11th Avenue
Portland, OR 97232-4181.

If your pockets are bulging with spare dollars, you could also send us a check to continue our most valuable work:

San Diego Biodiversity Project
POB 1944, Julian, CA 92036

Friends of Peñasquitos Canyon December Events Schedule

Habitat Restoration Projects
Tracking Walk, Holly & Mistletoe Walk

Our cool weather is an ideal time for some of our habitat restoration projects. We'll be planting coast barrel cactus and California live oak trees as well as weeding our native bunch grass plot at the ranch house. See the Dec. 5 listing below for details.

This is also a good month to walk in the Preserve and see typical holiday plants such as holly (Toyon) and mistletoe. See our Dec. 12 listing for details.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

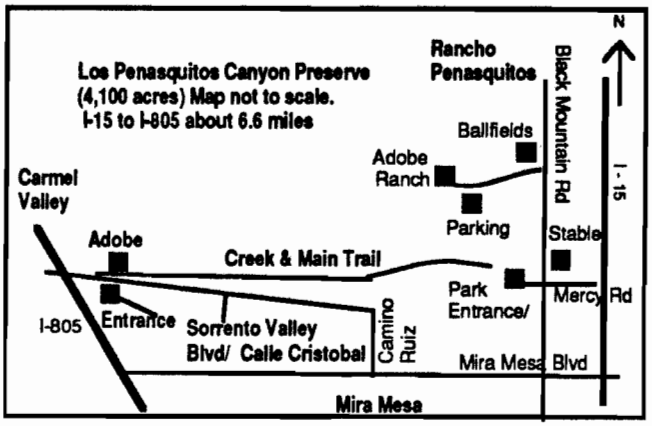
DECEMBER

Mystery Tree Walk
Sat., Dec. 5, 9 a.m. (2-1/2 hours). Meet at the parking-staging area off Black Mountain Road. Take the Mercy Exit off I-15 west to Black Mountain Road. Parking for the Preserve is opposite this intersection. Investigate the legend of the Mexican era sign map on trees in the Preserve that describe where the Mission treasure was buried. Visit a Native America grinding site and learn about the plants they used to survive. Led by Mike Kelly.

Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour
Sat., Dec. 5, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Habitat Restoration Project — Plantings in the Preserve
Sat., Dec. 5, 1 p.m. (2–3 hours). Call Mike Kelly at 566-6489 if you would like to help plant coast barrel cactus, weed our native grass plot or plant live oak trees. Meet at the adobe ranch house (see map). The only tools required are gloves. Plan to bring water and sun protection.

Fitness Walk
Sun., Dec. 6, 8 a.m. Join Dr. Jaya Pereyman on a 10-K (6 mile roundtrip, 2-1/2 hours) brisk walk to waterfall and back. Bring water. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite.



Wild Animal Observation and Tracking
Sun., Dec. 6, 9 a.m. (2 hours). Join Barry Martin, member of the Los Peñasquitos Canyon Preserve Volunteer Patrol, as he demonstrates techniques for observing and tracking wild animals. Meet in the parking lot off Black Mountain Road opposite Mercy Road between Rancho Peñasquitos and Mira Mesa. Be sure to wear old clothes and boots you don't mind getting a bit dirty since it's necessary to kneel down to examine tracks.

Friends Business Meeting
Wed., Dec. 9, 7:00 p.m. (2 hours). Members are welcome to attend the meeting at the Adobe Ranch House. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields and all the up to red barn.

Full Moon Walk
Wed., Dec. 9, 7:30 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. **Bring flashlight**. Learn moon lore and legends. Look for deer and other nocturnal animals. Led by Will Bowen.

Mistletoe and Holly Nature Walk
Sat., Dec. 12, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. See native misteltoe and Holly plants and learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Fire Walk on López Ridge
Sat., Dec. 19, 9 a.m. Meet at Caminito Propico and Calle Cristobal in Mira Mesa (via Camino Ruiz going north, or Sorrento Valley Blvd. going east). We'll tour the recent Penasquitos Canyon Fire area and discuss the ecology of fire and what to expect in this area in years to come. Led by Mike Kelly. Wear good boots and clothes you don't mind getting dirty. One of a series of walks that will explore this area every few months over the coming years.

Habitat Restoration Project — Tamarisk Removal
Sat., Dec. 12, 1 p.m. (2–3 hours). Call Mike Kelly at 566-6489 if you would like to help remove this invasive plant. The only tools required are gloves. Plan to bring water and sun protection.

Geology Walk
Sun., Dec. 20, 9 a.m. (3 hours). Meet in Mira Mesa on Lopez Ridge. From I-15 or I-805 take Mira Mesa Boulevard to Camino Santa Fe. Go north on Camino Santa Fe to the intersection with Calle Cristobal. Right on Calle Cristobal to Caminito Propico. Bring water and wear hiking boots since a steep hill is involved. Learn about area geology and visit the Preserve's waterfall. Led by geologist Don Albright.

Medicinal Plant Walk
Sun., Dec. 20, 3:30 p.m. (2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants Indian and settler ancestors (and people today) used for medicinal purposes. Will Bowen.

Sensitive Species Listing Status

by David Hogan; Coordinator, San Diego Biodiversity Project

The thick of Autumn, southern California vegetation lies dormant. Dusty whirlwinds whip off the recent burn, a crusty vernal pool bakes . . . the arrival of spring may bring some new State and Federal endangered species listings.

For the vernal pools of Southern California, three plant species may be listed as endangered by the US Fish and Wildlife Service, as well as two invertebrate. In response to a lawsuit from the California Native Plant Society and petitions from the San Diego Biodiversity Project, Fish and Wildlife Service personnel have created a listing package of species that make vernal pools their home.

These species include the Coyote Thistle (San Diego Co.), the Otay Mesa Mint (San Diego Co, Baja), the California Orcutt's Grass (San Diego Co, Baja), and the Riverside Fairy Shrimp (Riverside Co, San Diego Co, Baja). In January of 1992, the San Diego Biodiversity Project petitioned F&WS to list the San Diego Fairy Shrimp along with the other species. Although not included in the package, the SD Fairy Shrimp will likely be listed by Jan/94. A final finding for the three plants and the Riverside Fairy Shrimp is due by November 12, 1992. A listing of the Coyote Thistle and the SD Fairy Shrimp would add a layer of Federal Protection over the Del Mar Mesa area.

The denizens of coastal sage scrub eagerly await the possible listing of the California gnatcatcher in late November of December. F&WS's deadline to list this species passed on September 17. This failure to list would have been illegal on their part had they not signed "new evidence" indicating that the California gnatcatcher was the same species as gnatcatchers occurring all the way to the tip of Baja. Within a week the American Ornithologists Union issued a statement that this information provided by the development industry was false (see accompanying article). The Natural Resources Defense Council has indicated to F&WS that they will sue after November 17 (sixty-day notice) to have the bird listed. The listing will definitely be affected by a change of presidents. The listing of the imperiled California gnatcatcher as Endangered will represent a major victory for the ecosystems of Southern California.

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Newsletter Submissions

Since we have no paid staffers *Canyon News* depends on our readers for articles. Our articles run the gamut from news about the canyon to poems to animal observations to hard science about a species or habitat and letters. If you would like to submit something for the newsletter here's how to do it.

Ideally we would like to receive your article on a computer disk accompanied by a printout. We can accept either Macintosh or IBM disks, 5-1/4 or 3-1/2 inch. The word processing program you use isn't important. Call Mike Kelly at 566-6489 if you have any questions. He works with computers for a living.

Newsletter editor? If you're interested in becoming our newsletter editor and have both a computer and a page-makeup program, give Mike Kelly a call. He can give you any other training you might need.

Thanks Volunteers

Many people joined one or more of our Habitat Restoration Teams this fall to do plantings, endangered plant surveys or invasive weed removals. They included Cindy Burruscano, Trinity Gabriel, Bruce Martin, Les Braund, Mike Kelly, Bob Chamberlain, Karen Duburguet, Uli Burgin, Christine Ohanian, Rena Kerwin, Don Albright, Neil Bouscaren, Diane Morey and her daughter, Jeff Rundel, Linda Way, Rich and Susan Breisch.

Special thanks to Barbara Fennessey and her Webloe den of scouts who helped out on a tough project: tamarisk removal at the west end of the Preserve. Five scouts and their parents pitched in.

Next projects:

Sat., Dec. 5, 1 p.m. at the Adobe Ranch House. Planting coast barrel cactus and replacement of live oak seedlings. No heavy digging this time. Also, weeding of native bunch grass plot. Just gloves required.

Sat., Dec. 12, 1 p.m. Tamirisk removal. Call Mike at 566-6489 for details.

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
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Your donation will go for a cause you can appreciate every time you enter our Park Preserve. With the victory against Camino Ruíz we'll be spending even more time with ambitious conservation projects designed to protect and enhance the bio-diversity of our canyon system. We'll also be embarking on a program of greater public education within the park with display kiosks on the ecosystems, wildlife and plants of the Preserve. We'll also be publishing a series of educational publications on many of these same themes.

We're also planning — for the first time — our own research projects.

Send your tax-deductible donations to us at:
P.O. Box 26523, San Diego, CA 92196.

Check Your Label

Take a moment to examine the address label on this newsletter. Check to see if your expiration date has come and gone. If so, please take the time now to send in a renewal check for your membership dues. This will enable you to keep receiving our newsletter, recognized as one of the best environmental newsletters of any organization in San Diego. That way you'll keep learing about the progress of the Camino Ruíz issue and what you can do about it; about family walks; about the plants and animals that inhabit the Preserve, and the many conservation projects open to you and your family or friends.

Membership Application

Membership category? Circle below:
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Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

January 1992
Volume 7 No. 3

Mountain Lion Seen on Old Wagon Trail

by John Northrop

[Editor's note: Several months ago we reported the death of our female mountain lion on Carmel Mountain. We worried then that our increasingly urbanized surroundings would prevent a new lion from establishing itself. This article records the third sighting over a period of 4-5 months. Combined with the tracks several of us have documented, it is clear a new male lion (*Felis concolor*) has established itself in the general area.]

On Saturday morning, November 7, I saw a large animal about 100 yards ahead of me while riding up the Old Wagon Trail at the west end of Peñasquitos Canyon. Not being sure what it was, I halted my horse and sat very still while watching intently. The animal turned it's head and stared at me over his shoulder for what seemed like several minutes. Once I saw it's distinctive tawny color, pointed ears, sunken eyes and marked muzzle, I knew in a minute it must be a mountain lion!

I had never seen one before and was astounded, as well as a little bit scared. Would my horse flee and dump me in the process? Would the animal attack? What should I do? These thoughts raced through

➡ p. 5 for more

Front Foot: 3¼ (L) × 3½ (W) in.
Rear Foot: 3 × 3¼ in.
Trail Width: 8 in.
Slow Stride: 14-17 in.
Running: 3-6 ft.

Tracks and scat of mountain lion (*Felis concolor*)

Forest Initiative Qualifies for Ballot; Letters Needed!

by Mike Kelly, president

The "Save Our Forests and Ranchlands Initiative," crafted to prevent urban-level development of inholdings in the Cleveland National Forest, moved two steps closer to becoming law. In early December of last year the County Registrar of Voters certified that more than 87,000 of the 109,000 signatures submitted for the initiative were valid, well over the number required. Next, the County Board of Super-

➡ p. 5 for more

Date Set for Exotic Pest Plant Meet

Saturday, March 6, a one-day symposium to introduce the California Exotic Pest Plant Council and the issue of invasive exotics will be held at Sumner Auditorium at the Scripps Institute of Oceanography in La Jolla, San Diego. La Jolla is a suburb of San Diego and is readily accessible. The meeting will be co-hosted by the University of California Natural Reserve System, the San Diego Chapter of the California Native Plant Society, the Friends of Los Peñasquitos Canyon Preserve and Cal-EPPC.

The gathering will cover a range of exotic plant issues, ranging from the scientific to field reports on particular species. Participants are expected to attend from all over San Diego County. They will be from City Planning Departments, City, County, State and Federal Park Agencies, environmental groups, landscape architects, plant nurseries, agricultural and road agencies and environmental companies.

For more a detailed program and registration information call Mike Kelly of the Friends at 619 566-6489 or write him c/o Friends: POB 26523, San Diego 92196.

Inside

Forest Initiative's McFetridge To Speak

Duncan McFetridge, the leader of the initiative campaign to save the inholdings of the Cleveland National Forest from the developers will speak at the Friends monthly business meeting, January 13 at 7 p.m. This is open to any member. He'll bring his maps to show where the inholdings are and explain why they're so important to save from development. This will be the first point on the meeting agenda and should last about 45 minutes. You're welcome to stay for the rest of the meeting (or to leave!). Meet at the adobe ranch house. Take the Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields all the way up to the red barn parking area.

See related articles this page and page 6.

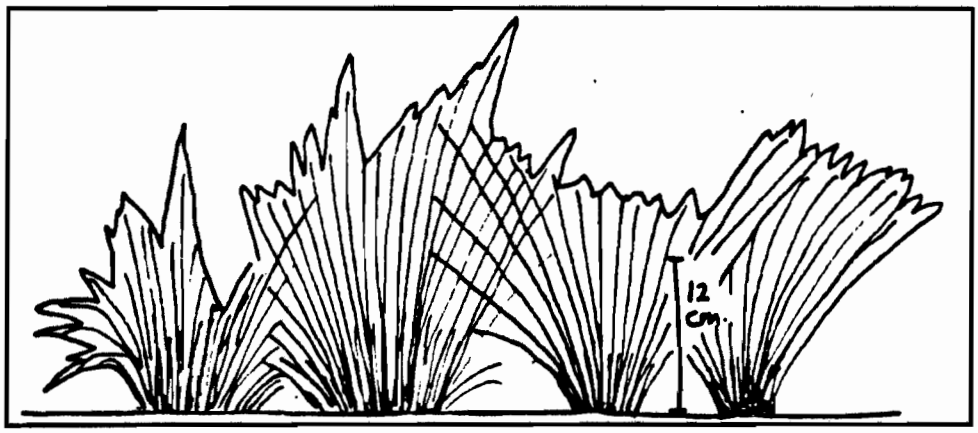
Grassland Restoration in California

by David Amme

[**Editor's note**: increasing the presence of native grasses is one of our restoration goals for Peñasquitos Canyon Preserve. The Friends are members of the California Native Grass Association. Les Braund, our Secretary, has traveled to attend their first two annual meetings in order to research the best methods of restoring our native grasses to more of their historic range. The following article is reprinted from *Grasslands*, the newsletter of the new Association (P.O. Box 566, Dixon, CA 95620.]

The Restoration Process

There are four main tools available for grassland restoration and management: 1) Rest, 2) Fire, 3) Grazing, and 4) Technology (Savory 1988). These tools are not necessarily exclusive of each other and when used together or in tandem can be effective in accomplishing restoration goals.



Stipa pulcra (purple needlegrass) unmolested by European grasses.

Stipa pulcra (purple needlegrass) plants (or their remains) after being destroyed by 'Blando' brome growing amongst them for four months.

From: "Grasses of European Origin and their impact upon California Bunchgrass (Stipa Pulcra)," Craig C. Dremann (Redwood Seed Co., P.O. Box 361, Redwood City, CA 94064.

Rest

The concept of rest as defined here is no application of fire, grazing, or technology. There is both periodic rest and permanent rest. There is a misconception held by the public and many land managers that once livestock are removed from a grassland habitat, plant succession proceeds to the native climax vegetation that existed before disturbance. This is not the case, and in studies throughout California rested or ungrazed vegetation grasslands remains dominated by weedy species such as ripgut brome (*Bromus diandrus*), wild oats (*Avena spp.*), and foxtail (*Hordewn spp.*) (Biswell 1956, White 1966, Bartolome and Gemmill 1981, Saenz and Sawyer 1986, Foin and Hecktner 1986).

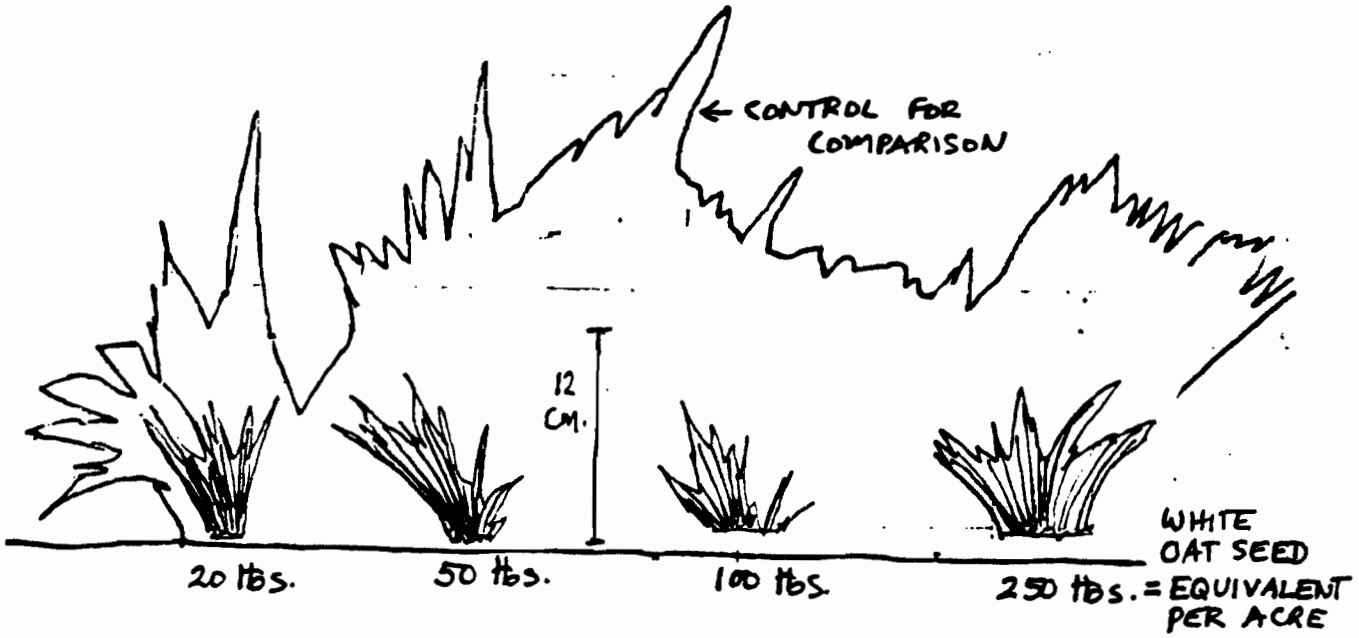
Plant succession is largely controlled by the litter buildup of annual grasses and competition from the fast-growing annuals (Sinclair and Sampson 1931, Heady 1956, Menke 1989). Plant diversity in ungrazed grassland is actually depressed by the weedy grasses (Heady 1977). There is much evidence, both circumstantial and direct, that indicates grassland rest is detrimental to native annual wildflower displays (Edwards 1992).

Fire

There are many factors that must be taken into consideration when developing a grassland restoration strategy utilizing fire. Most of the grassland plants' above ground portions die back at least once a year. Grassland plants generally grow rapidly and decompose slowly because of their chemical and physical composition. (Mutch 1970, Philpot, 1970). Grassland fuels ignite easily and burn readily. Consequently fire is a major decomposition agent and a key nutrient recycler in grasslands (Vogl 1974). Fire increases soil pH and temperatures, creates favorable conditions for the growth of soil fungi, algae, and nitrogen production (Wicklow 1973, Vogl 1979), and suppresses soil pathogens (Parmeter 1977). Generally, perennial grasses produce more flowers and seed for a few years following fire (Vogl 1979). Fire also substantially reduces annual grass production and density while greatly increasing the herbaceous forb component (Hervey 1949, Daubenmire 1968). Periodic fires in grassland generally promote perennial grasses and forb production at the expense of woody species (Daubenmire 1968, Vogl 1977).

Indian burning of the grasslands came late in the evolution of California's Mediterranean grassland (Edwards 1992). However, periodic fires set by lightning have historically occurred in the California grasslands and are the primary source of natural ignition (Komarek 1968, Heady 1972). Until very recently, very little scientific work concerning the effect of fire on the establishment and management of native perennial grasses has been conducted in California's Foothill Grassland (Heady 1972). It has been generally accepted that the California Mediterranean grassland is well adapted to periodic fires (Biswell 1956, Barry 1972). Prescribed fire studies have been recently initiated at Jepson prairie in Solano County (Menke and Langstroth 1978) and in the grasslands of the north coast and sierra foothills (Bartolome 1968). Prescribed burning in late spring has resulted in the reduction of exotic annual plant seed production and the increase of perennial grass seedling establishment (McClaren 1981, Bartolome per comm. 1968). On an inner coast range site in San Joaquin County (Site 300, Lawrence Livermore National Laboratory), yearly prescribed fires in May over a period of 26 years resulted in a dramatic increase of the native bunchgrass Poa Scabrella (Taylor and Davilla 1968). This grassland area with over 158 plant taxa was characterized by Taylor and Davilla to be one of the three largest native grasslands in California.

At the Jepson Prairie, summer burning stimulates perennial bunchgrass fragmentation into two or more vigorous "daughter plants" (Menke 1992). At the U.C. Sierra



White oat's preplanting germination 40%. Seeds per pound 35,000.

White oats Seeds sown per sq.ft.	White oats Equivalent in lbs/acre	Resultant seedlings & tillers	Stipa growth (% of control)	Stipa seedstalks produced	New Stipa seedlings per sq.ft.
8	20	8	8%	0	8
20	50	20	11%	0	8
40	100	56	7%	0	4
100	250	92	19%	0	0

The impact of white oats (Avena sativa) on Stipa pulcra. The outline silhoulette shows the control plot of unmolested Stipa. The dark plant silhoulettes show the Stipa after the sowing of the oat seeds in increasing quantities.

From: "Grasses of European Origin and their impact upon California Bunchgrass (Stipa Pulcra)," Craig C. Dremann (Redwood Seed Co., P.O. Box 361, Redwood City, CA 94064.

Field Station, late fall burning after the annual grasses have germinated resulted in a dramatic increase of seedling recruitment of Purple Needlegrass (Hatchet al 1990). Today periodic burning with prescribed fire is the preferred tool for grassland restoration utilized by the California Department of Parks and Recreation and The Nature Conservancy (Amme and Prischel 1990). Menke (1992) cautions against frequent prescribed burning because of the volitization of nitrogen and sulfur. Any management tool that exposes the ground to wind and water erosion should be used judiciously and with clear vegetation objectives (Savory 1988).

Fires at too infrequent of an interval, especially on productive soils where the above ground biomass (yield) is great, can lead to native perennial grass mortality (Menke, 1992) and in some cases valley oak (O. lobata) mortality (Griffin per. comm.)

Grazing

Grazing as well as periodic fire is a natural and necessary process in the grassland landscape (Edwards, 1992). Grazing has similar effects as fire: litter removal nutrient recycling, basal tiller stimulation, and seedbank reduction of competitive annual plants (Menke, 1992). Today in California there is a tendency to graze close in the California "annual-type" grassland in order to encourage more nutritious herbs and grasses (Erodium, Trifolium, Medicago, Bromus mollis, etc.). Because of this, grazing burden on the California Foothill Grassland is substantially higher than would be recommended for perennial bunchgrass management throughout the rest of western North America (Menke, 1992).

In short, Foothill Grassland habitat is historically and currently being managed as an "annual-type." Generally the grassland is grazed continuously throughout the year or primary growing season with little regard to species composition or diversity. The primary factor that is used to govern grazing intensity on the annual-type grassland is maintaining residual dry matter (RDM) levels at the end of the summer for erosion control purposes (Clawson et al., 1988). Continuous grazing leads to heavy overgrazing of preferred areas, the deterioration of the riparian zone and wetlands, the increase of unpalatable weeds, thistles, and exotic annuals, and the gradual erosion of the top soil resource.

A more holistic approach to grazing, utilizing techniques for the enhancement of native perennial grasses and sustained resource management (plant, wildlife, soil, water), is a relatively new concept in California grassland management. Recently, new grazing management systems have been introduced that mimic grazing processes under the heading of Holistic Resource Management (HRM) (Savory, 1988). The key feature of these grazing techniques is not so much the intensity of plant defoliation, but the time allowed for plant recovery between defoliation events (Voisin, 1959). Actual livestock numbers

➡ p.7 for more

Birding in Peñasquitos Canyon

Kestrels Hunted in Fire

by Barbara Zepf

Every time I drive down Calle Cristobal, I notice the aftermath of last fall's fire. I wonder what the long term effect will be on the canyon. Will the fire promote fresh new growth? Will run off from the barren hillsides silt up Penasquitos Creek? What effect will it have on the animals and birds in the canyon? It will be interesting to see the results of The Friends of Penasquitos Canyon's study on the ecology of the fire.

Each time I travel this way, I always have a flashback to the day of the fire. I followed the flames as they spread through the canyon. My last stop was at the parking lot on the west end of Calle Cristobal, where I sat hoping and praying the fire would be stopped before it destroyed those huge, old trees in Lopez Canyon. Thank God, it never went that far.

Feasting while canyon burned

I walked up on top of one of the hills in that west end of the canyon and watched the flames advancing towards me. I witnessed something I had only seen on television nature shows until this day — many raptors were following the line of the blaze, hunting for the insects and the animals fleeing from the fire. Two Red-tailed Hawks seemed to dive right into the flames. I wondered how they never got burned themselves.

Animals have many options in a fire. Some reptiles and burrowing animals simply crawl into their holes (where they will be safe, unless the fire is too hot). Some animals can run away, such as the deer. Some animals will die. Birds and insects can simply fly away.

Territoriality by the wayside

But some birds seemed attracted to the fire. I saw at least 5 American Kestrels hunting the fire line that day. It was quite a sight. Territoriality seemed to be forgotten for the moment, as one and all gorged themselves on the insects which were fleeing the conflagration. It was a spectacular sight.

The American Kestrel is the smallest, most common and most colorful of the North American falcons. Although the American Kestrel used to be called the "Sparrow Hawk," this is a misnomer. Although they're a relative of the hawks, they are a member of the falcon family. Falcons resemble hawks in having strongly hooked bills and taloned feet. But falcons differ from hawks both internally and in the fact that the bill of falcons is conspicuously toothed and notched. The nostril openings in the sere of their bills are circular. Their eyes are dark, their wings long and pointed, and their tail narrows at the tip. Falcons have a bullet-like head and a short neck. In falconry, only the female is called a falcon. The male is called a tiercel or tercel. But ornithologists usually call both the male and female a falcon.

The American Kestrel is 9-12 inches long, with a wingspread of 20-24-1/2 inches. The male has a rufous back with narrow black barring. The wings are bluish-gray. The tail is rufous-red with a black subterminal band and a white tip. The crown is slate-blue, usually with a central rufous patch. The throat and cheeks are whitish with two vertical black stripes or "whiskers". The nape is buff or apricot, with two broad dark streaks which appear as "eyes" when viewed from above by a hawk. Below the American Kestrel is buff to cinnamon or rufous, with variable spotting. He is quite a handsome bird!

American Kestrel

The female is rufous-brown above with black barring. The underparts are buff, blotched and streaked with darker rufous an brown. The tail is rusty with dark bars. The head is similar to the male, but somewhat duller.

Immatures resemble adults, but with heavier streaking. American Kestrels' underwings appear pale. They are readily identified just by their bright rusty backs and tails, which distinguish them from any other falcon.

The American Kestrel ranges from Alaska and Canada south to Mexico and from coast to coast. Some stay in the same area all year long; some migrate in winter as for south as Central America and Panama. In San Diego, they are most numerous in winter, when migratory birds swell the local population. They live along borders of woodlands, open fields, highways and deserts.

Their voice is a high-pitched "klee, klee, klee, klee" or "killy, killy, killy, killy". American Kestrels are the most vocal birds of prey.

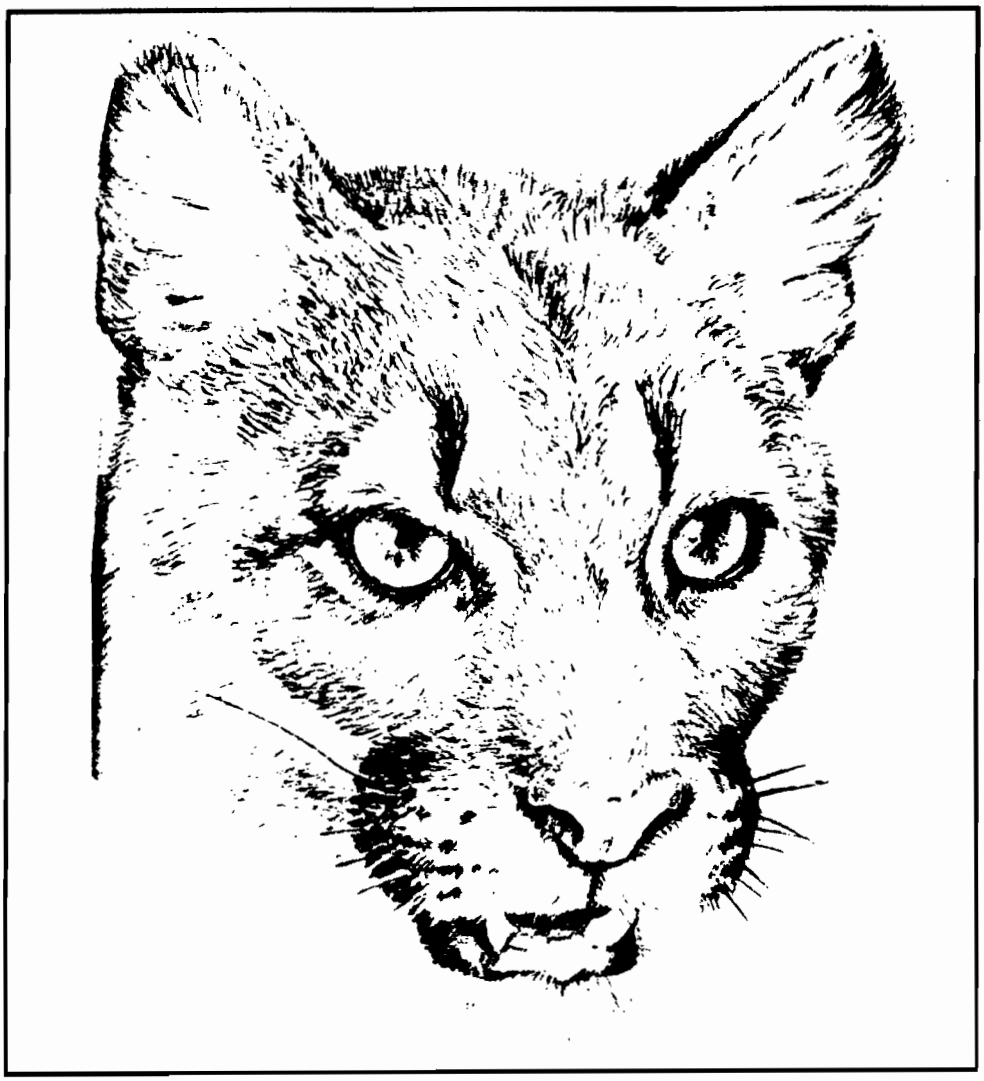
Male helps in nesting

Kestrels nest from March to May. The female does most of the incubation of the 3-5 eggs. Sometimes the male will help with the incubation-very unusual in raptors. Falcons don't build their own nest. They usually lay their eggs in tree hollows, old woodpecker holes, nests of other birds, on bare rock ledges or in cliff holes. They will also use people-made nest boxes.

Kestrels can fly from 22-36 miles per hour. They usually perch quietly through the middle of the day. They frequently raise and lower their tails while perched. They hunt mostly in morning or late afternoon. They have extraordinary eyesight. They fly with rapid wingbeats and short glides. They often stop in midair to hover on rapidly beating wings. If the kestrel sees prey, it drops lower with partly folded wings. Then it swoops to the ground to grasp the prey in its talons and flies to a perch to eat. Kestrels eat insects, bats, mice, birds, lizards, snakes, frogs, etc. They concentrate on grasshoppers when they're abundant.

Humans are their greatest enemy. Annual mortality is 57%. Most of them are shot, even though they are protected by law. They can live 1-3 years in the wild and 14 years in captivity. I'm so glad that this colorful little falcon has a secure place to live in Peñasquitos Canyon.

(Lion cont'd)



my mind, when I remembered that a friend had seen one while riding in Shaw Valley a couple of years ago. When asked "What did you do?", she'd replied " continued our ride." Well, that's exactly what I did . . . after the animal turned and trotted up the trail. It was then that I saw its long tail trailing almost to the ground behind him (her?).

It was indeed a thrilling sight and one that I had not been prepared for, although I had seen mountain lion tracks near there last March during the heavy rains when I hiked the trail because it was too muddy to ride. I've ridden that trail several times since, but haven't sighted another mountain lion although I keep a sharp lookout to be sure!

Those interested in finding this little used trail (and looking for mountain lion sightings) will find it's base directly across the creek from the hang gliding area, about half a mile in from the Ruiz Adobe. Built in the 1890's, it was used by four-horse teams to bring hay and grain to Peñasquitos and Sorrento Valley from Carmel Valley, which served as a "grain basket" for many a livery stable in San Diego around the turn of the century. Originally, the road started across the creek from the Ruíz Adobe and angled up the north slope of the Canyon where a wooden trestle was built over the first side canyon, near where the present trail ends. Old timbers from this bridge are still visible in the thick brush in the bottom of the ravine.

The trail washed out about half of the way up during the Hatfield flood of 1916 which ended its use by wagons. However, it continued to be used by deer (and mountain lions?) and cattle used the lower section during the ranching period in Peñasquitos. The part of the trail near the washout is in one of the wildest and most remote parts of the Preserve. Indeed, Claudi Jackson, one of the old time riders there, told me that numerous cow bones are to be found at the base of the washout. Apparently they went there to die — a sort of cow graveyard — away from the rest of the herd.

This historic trail was cleared out a couple of years ago and is now rideable within the boundaries of the Preserve. However, recent bulldozing of Sorrento Hills by Newland America has eradicated the upper part. A determined rider or hiker can still make it all the way, though, an effort that is very rewarding. Not many people do, and that's perhaps why the mountain lion was there undisturbed until I came along.

Those interested in helping preserve this historic trail are urged to contact the author (454-6570).

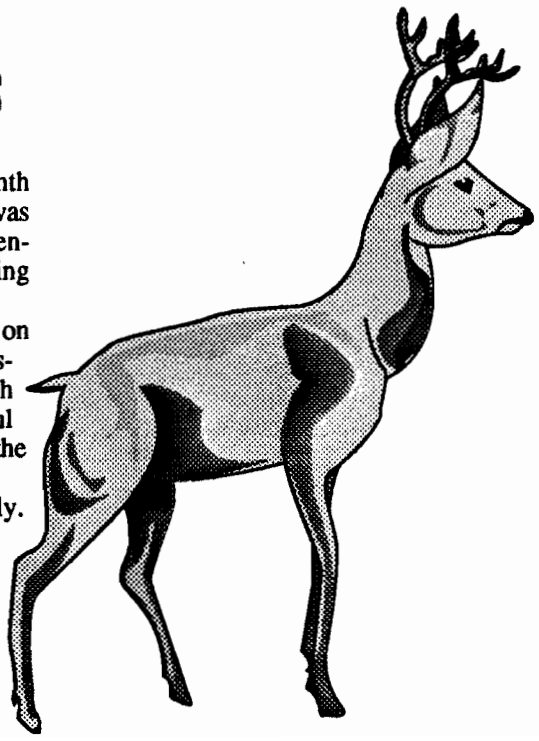
Saving Deer Lives

Some time ago there was a three-month period when nearly every day a deer was killed on I-8 west of Pine Valley. An engineer at Caltrans noticed this alarming statistic and decided to do something.

It seemed the deer were foraging on one side of the highway and then crossing over to a water source. Through some light engineering this thoughtful man created a new drinking hole on the foraging side of the highway.

Deaths stopped nearly immediately. There were no biologists or "environmentalists" involved in this project.

Hope for the animals can be found in the most unlikely places.



Duncan McFetridge and the Conservation Initiative

by Norma Sullivan, San Diego Audubon Society

It is such a strange situation. Here we are in San Diego County, with more bird species (475) than any other county in the US and more than most states. This is because we still have rich natural habitat, undeveloped and healthy. And yet, we have the most pro-development, anti-conservation, make-big-bucks-quick politicians this side of Texas. And where do these bucks come from? Our natural resources, our treasures. "Big Bucks" advertises them, builds on them and changes them forever.

And now development threatens the back country. Specifically, the inholdings in the Cleveland National Forest. These inholdings were mostly homesteaded, that is, acquired free, 100 years ago, before the US forest Service came along. Landowners have enjoyed tax breaks ever since while grazing cattle on the land. Now there is more money in development--gated communities, ranchetts, etc. We all know what this fragmentation does to the land.

The Cleveland National forest is, of course, our playground, our lungs, our watershed, our source of spiritual renewal and solitude, our direct connection with nature, our science laboratory for present and future scientists. The forest is the home of amazing species, plant and animal, some large, some small, and all in urgent need of this rich habitat since so much of their other living space has been overtaken.

We have agonizing negative examples to the north — Los Angeles, Orange and Riverside Counties. We have inspiring examples farther north — San Luis Obispo County zones its backcountry one house per 320 acres; Ventura and San Mateo, one per 160; Santa Barbara, one per 100. San Diego? One per four or eight acres, and this **inside** the National Forest, on those homesteaded (free) lands. And now the developers are looking to these lands for more subdivisions.

Duncan McFetridge has fought this effort, on all fronts, and has won, as you have read here and elsewhere. Virtually all cities, including San Diego, support 80 acre zoning in the inholdings, as do all environmental groups, most community groups and even the San Diego Union-Tribune. But the Board of Supervisors zoned 20 acres, with many exemptions for many of the land owners. And, believe it or not, they want praise for their efforts, are furious that their "superior land planning expertise" has been questioned. And so they attack "Save Our Forests and Ranchland"s and Duncan.

Duncan responded with the Forest Conservation Initiative, compromising at 40 acres. The Board could have put this measure on the ballot with a stroke of the pen, but no — they chose to fight Duncan instead. For example, George Bailey appears at small city council meetings to try to get them to not support the Initiative, or to rescind their support. Susan Golding claimed to support 80 acre zoning, but it seemed to be mostly talk, and appeared clear that she made the motion knowing full well it would not pass. And where is she now?

Duncan fights on, going deeply in debt, mortgaging his house, putting his business on hold. I hope you read the wonderful, accurate piece by Jim Gogek in the San Diego Union-Tribune. If not, call me for a copy.

[Editor's note: Please send a donation now to help repay Duncan on his mortgages to **Save Our Forests & Ranchland at: PO Box 475, Descanso, CA 91916.]**

McClure Memorial Fund

In October of last year Dr. Bruce McClure, an avid equestrian who loved riding his horse in the Preserve, died suddenly. A number of people, sent in memorial donations in his name to help the Friends in protecting the Preserve. They were:

Charlene Ables
Mary Rose Carey
Melissa J. and David T. Drake
Joel Gottesfeld
Lawrence M. Novick, MD
Sam W. Smith, MD
Lois Thornbrugh

Kiosk Fund off to Good Start

by Mike Kelly, president

Our end of the year appeal to raise funds for educational kiosks is off to a good start. The following people generously contributed towards the goal of raising $3,000 for two kiosks to be placed at the west end of the Preserve:

Dolores A. Bradshaw	Renee Krebs
Uli Burgin	Dave Kreitizer
Edith Cooper	The Luces
The Evans	The Maryotts
Randi Feinberg & Paul	Herbert McCoy, MD
Neustein	John Northrop
Mike Fry	The Pellars
The Gordons	Annalee Pogue
The Greenes	Bob Sauers
The Hollingsworths	David Seay
John Knoll	James Walton

We have yet to reach our goal, so, if you haven't already written a check for the fund, now's your chance. Any size donation is appreciated.

Visitors come to enjoy the plants, the animals, the peace and beauty of our open-space park. Yet, the only signage they pass on the way into the park is the usual list of "don'ts" common to all parks. **Nowhere** is there any signage explaining the foremost goal of our Preserve — **preserving the fantastic bio-diversity** of its different habitats.

Boy Scout Kevin Heinrich approached us several months ago with a proposal to build two such kiosks for our Park. He wants to do this as part of earning his Eagle Scout badge. He worked closely with the Park Rangers and citizen groups to come up with a set of plans which have now been approved. He and fellow scouts will build these educational displays — **if we can help him obtain the materials.** The kiosks will be double-sided and all-weather. Besides the usual trail map, rules, and activity schedules, there will be graphic displays and text panels detailing the natural resources we're trying to protect in the Preserve. Changing displays will describe the different eco-systems, endangered species, geology, Native American and settler period history. We already have volunteers ready to contribute their time and energy in creating the displays. All we need is your help in raising the funds to buy the materials. We expect these to be but the first two in a series of kiosks at all entrances and overlooks to the Preserve.

Your contribution to the Friends — earmarked for this project — is fully tax-deductible. We'll be happy to send you a tax-exempt letter for your records.

(Grass cont'd)

can be high, but the amount of time that the livestock spends on a particular area is limited. This time will vary according to type and number of livestock, terrain, pasture size, rainfall, air and soil temperatures, and plant growth rates. Technological advances in electric fence design has made HRM programs possible. Information and techniques derived from the HRM schemes are applicable to native Foothill Grassland habitat restoration (Menke, 1992).

Technology

There are several tools available in the technology category including mowing, herbicide application, and seeding and planting of native perennial grasses.

Mowing management involves considerations similar to both periodic burning and livestock grazing. Mowing must be employed with specific vegetation goals and with consideration for the season, light, and frequency of mowing as well as cutting removal.

An important study by Love (1944) tested the effect of management (both grazing and mowing) on the establishment of perennial grasses. Love found that early spring mowing *with removal of cut material* prevents additions of annual grass seeds to the soil seed bank, reduces competition for light and moisture, stimulates perennial grass tillering, and promotes perennial grass seedling establishment. Similar results were found on mulch manipulation trials at the U.C. Hopland Field Station, Mendocino County (Heady, 1956; Heady et al., 1991). Reducing or eliminating the annual plant litter layer inhibits the establishment of weedy annual range grasses (Evens and Young, 1970). Early spring mowing is an accepted worthwhile practice in the establishment and management of native perennial grasses in the face of stiff annual grass competition (Bartolome, pers. comm., Menke pers. comm.).

Selective and non-selective herbicides are available for initial weed control and seedling establishment of native perennial grasses and herbaceous species (Anderson, 1992). Herbicides do not distinguish between beneficial native plants and competitive noxious weeds. Therefore herbicide treatments are most applicable on greatly disturbed sites where the native flora is absent, otherwise there is a possibility that important native plant (both annual and perennial) will be destroyed.

Seeding disturbed sites and areas cleared of trees and shrubs with a mix of fast-growing native perennial grasses will mitigate erosion, provide competition against weed establishment, and encourage the natural establishment of other native grasses, forbs, and woody plants. The primary native perennial grasses that can be utilized in this general purpose, erosion control setting are California brome, blue wildrye, and meadow barley.

Seeding techniques available include broadcast seeding, hydroseeding, drilling, and spreading native perennial grass straw (Kephart and Amme, 1992). The preferred method of seeding in areas where machinery access is difficult or impossible is broadcast seeding coupled with light raking to bury or cover the seed.

Plug planting of selected, long-lived perennial grasses (Purple needlegrass, California Fescue, tufted hairgrass, etc.) is another important restoration technique for areas that are compacted, shady, or vernally wet (Amme, 1985). Recently on Mount Tamalpias, a plug planting of Idaho fescue was successfully used to restore the old eroded Laurel Dell trail from Rock Springs. The plugs used in this project are 3 cm. square at the top and taper down to a 1.5 cm point. The plug plants are grown in a rigid 200 cell tray (Plastimer container) and cost between 4 to 6 cents each depending on the quantity grown. Plugs should be grown in the late summer so they are ready to plant as early as possible in the fall when the soil has been moistened with the first rains. Depending upon drought, rain occurrences, and temperatures, plug planting of slow growing grasses (Stipa and Festuca Spp.) can be delayed until the end of January. If rainfall is low or absent, occasional deep watering is necessary.

The California Conservation Corp. (CCC) grows and plants native perennial grass plugs. The CCC plant plugs are commonly grown in "Stubble" containers that are 4 cm round at the top and taper to a blunt point, 14 cm, deep.

Monitoring

A proper restoration project requires a means of evaluating success. Monitoring grassland restoration is necessary for determining treatment success and adjusting treatments. Success may be measured by native plant diversity, weed reduction, site equilibrium, and vegetation stability. A restoration program requires permanent transects and plots, control sites, treatment areas on different soils and exposures, replicated treatment, and a fast and efficient means of recording plant compositions, cover, frequency, and other biotic factors.

Three types of permanent plots are needed to monitor grassland restoration treatments: 1) Large permanent 30x30 meter plots to monitor the effects of management on trees and shrub and to evaluate their regeneration; 2) five to fifteen permanent 1x1 meter quadrants on a 10 to 30 meter transect to monitor the effects of management on scrub habitat and weedy scrub infestations; and 3) Ten permanent 20 x 50 cm quadrants on a ten meter transect to monitor the effects of grassland management on habitat.

The number of transects and plots depends on the size and area to be treated and the number of different vegetation/habitat types in the treatment area. The number of tree and shrub plots should contain at least 20 trees and 150 shrubs. At least ten grassland transects are required to adequately monitor a grassland area up to an acre in size. Instead of randomly placing these permanent plots and transects, they should be placed (stratified) on specific sites representational of habitat being evaluated.

Control plots should be paired, that is, chosen to be similar as possible to treatment plots in history, aspect, exposure, cover, and species composition. The plots and transects should be monitored in the peak flowering period, (May) as well as summer, (August). Areas where yield (primary production) information is to be gathered should not be gathered in plots/transects but rather from similar representative locations near the plot/transect. Plot transect information must be recorded before and after treatments and each year after treatment for at least four years or until the next treatment occurs.

Each plot should have a master description/history data sheet that includes the following information:

- Exact location
- Description of site
- Physical parameters (slope, aspect, soil series)
- Soil description (% sand, silt, clay, organic matter)
- Vertebrate signs (deer, gophers, ground squirrels, mice, etc.)
- Managment history including grazing, cultivation, mowing, and horticultural and exotic introductions.

All plots should be grid mapped on data sheets, information to be gathered at each plot in each quadrant include:

- Species composition
- Tree and shrub stem location, numbers, diameters, and canopy (cover)
- Perennial grass numbers, basal diameter, and cover class
- Annual grass and forb densities and cover (by class/category)
- Yield samples (Primary production) of the grassland areas from all plots/transects

[Reprints of this article are available by sending a stamped, self-addressed envelope to POB 26523, San Diego, CA 92196.]

Friends of Peñasquitos Canyon January/February Events Schedule

New Walks: Looking for Bird's Nests, Tracking Wild Animals

Monthly highlights include a brand new walk *Looking for Nests* led by Barbara Moore, the co-author of the popular book *Walking San Diego*. Barbara's walks are always a treat because of her many interesting observations about a wide range of natural things.

Dave Hogan returns to lead us on vernal pool walks in the Del Mar Mesa area. Dave is one of the most knowledgeable people in San Diego about the various habitats and species that make up the Del Mar Mesa. This area is proposed as a new open-space preserve when the Future Urbanizing Area is opened to development.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

JANUARY

Full Moon Walk

Fri., Jan. 8, 7:00 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. **Bring flashlight.** Learn moon lore and legends. Look for deer and other nocturnal animals. Led by Will Bowen, Ph.D.

Mystery Tree Walk

Sat., Jan. 9, 1 p.m. Meet at the parking-staging area off Black Mountain Road. Take the Mercy Exit off I-15 west to Black Mountain Road. Parking for the Preserve is opposite this intersection. Investigate the legend of the Mexican era sign map on trees in the Preserve that describe where the Mission treasure was buried. Visit a Native America grinding site and learn about the plants they used to survive. Led by Mike Kelly.

Fitness Walk

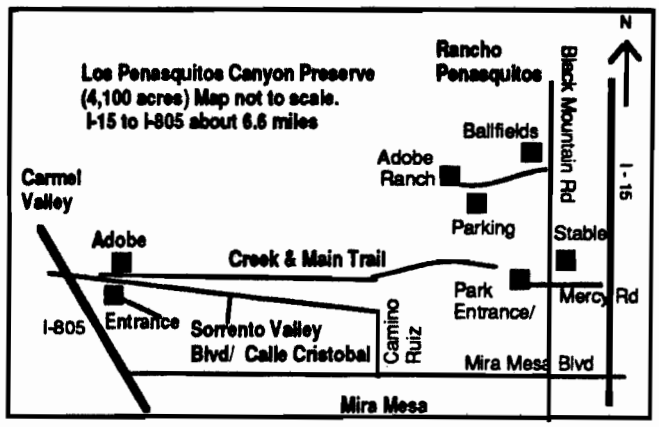
Sun., Jan. 10, 8 a.m. Join Dr. Jaya Pereyman on a 10-K (6 mile roundtrip, 2-1/2 hours) brisk walk to waterfall and back. Bring water. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite.

Habitat Restoration Project — Tamarisk Removal

Sun., Jan. 10, 1 p.m.We'll be continuing our removal of this invasive species of bush in the west end of the canyon. Call Mike Kelly 566-6489 for details. Rain cancels.

Cleveland Nat'l Forest Initiative Presentation at Friends Monthly Meeting

Wed., Jan. 13, 7 a.m. Come hear Duncan McFetridge, the leader of the initiative campaign to save the in-holdings of the Cleveland National Forest from the developers. He'll bring his maps to show us where the inholdings are and explain why they're so important to save from development. This will be the first point on our monthly business meeting agenda and should last about 45 minutes. You're welcome to stay for the rest of the meeting or to leave. Meet at the adobe ranch house. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields all the way up to the red barn parking area.



Nature Walk

Sat., Jan. 16, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour

Sat., Jan. 16, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Medicinal Plant Walk

Sun., Jan. 17, 4:00 p.m. (2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Bird Walk at East End

Sat., Jan. 23, 8 a.m. (1-1/2 hours). Take Mercy Road exist off I-15 west to Black Mountain Road.Parking for Preserve is opposite. Bring bird book and binoculars. Led by Brian Swanson.

Habitat Restoration Project — Tamarisk Removal

Sat., Jan. 23, 1 p.m.We'll be continuing our removal of this invasive species of bush in the west end of the canyon. Call Mike Kelly 566-6489 for details. Rain cancels.

Tracking Wild Animals

Sat., Jan. 30, 9 a.m. Join Barry Martin, member of the Volunteer Patrol in Peñas–quitos Canyon Preserve for practice in identifying and tracking wild animals. Meet at the Parking-Staging area off Black Mtn. Road. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite.

Looking for Nests

Sun., Jan. 31, 11 a.m. Join Barbara Moore, co-author of *Walking San Diego* & coordinator at the Chula Vista Nature Center, for a nature walk. A special focus will be looking for birds nests. Meet at the Parking-Staging area off Black Mtn. Road. Take Mercy Exit off I-15 west to Black Mountain Road. Preserve parking is opposite.

FEBRUARY

Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour

Sat., Feb. 6, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black

(Walks cont'd)

Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Old Stage Coach/Sabre Springs Walk
Sat., Feb. 6, 1 p.m. (4 miles, 2-1/2 - 3 hours). Meet on Sabre Springs Parkway, south of Poway Road, near the intersection with Poway Road. Several steep hills involved, about 3 mile roundtrip. We'll walk part of the historic Old Poway Run, part of the transportation network that connected to the Butterfield Stage Coach route, visit the Mercy property, soon to become part of Penasquitos Canyon Preserve, and walk the new Sabre Springs trail system in part.

Full Moon Walk
Sat., Feb. 6, 7:00 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. **Bring flashlight.** Learn moon lore and legends. Look for deer and other nocturnal animals. Led by Will Bowen, Ph.D.

Del Mar Mesa Vernal Pool Walk
Sun., Feb. 7, 9 a.m. We'll hike a major finger canyon up to the Del Mar Mesa Vernal Pools. A new preserve is proposed for this mesa as part of the Future Urbanizing Area Framework Plan. Good chance to see the area first hand. Time permitting we'll also visit the site of the Black Mountain fire of four years ago. The wildflowers and new chaparral growth have been fantastic since the fire. This is part of a series of visits during the spring to watch the succession of life in the pools. We'll may overlook Deer Canyon, one of the few relatively pristine canyons remaining in San Diego. Led by Dave Hogan of the S.D. Bio-Diversity Group. Meet at Peñasquitos Creek Park in Rancho Penasquitos. From I-15 take the Mercy Road Exit west to Black Mountain Road. Go right on Black Mountain Road and up the hill. Take a left at the first light, at Park Village Drive. Follow Park Village Drive to its intersection with Camino Ruiz. The park is on the left. Wear boots you don't mind getting wet.

Nature Walk
Sat., Feb. 13, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Bird Walk in Lopez Canyon
Sat., Feb. 20, 8 a.m. (1-1/2 hours). Meet in new Parking-Staging area off Sorrento Valley Blvd., 1/2 mile east of Sorrento Valley Industrial Park. Park entrance is on right, going east. From Mira Mesa take Calle Cristobal to Sorrento Valley Blvd., entrance will be on left. Bring bird book and binoculars. Led by Brian Swanson.

Looking for Nests in López Canyon
Sun., Feb. 28, 11 a.m. Join Barbara Moore, co-author of *Walking San Diego* and coordinator at the Chula Vista Nature Center for a nature walk. A special focus will be looking for birds nests. Meet in new Parking-Staging area off Sorrento Valley Blvd, 1/2 mile east of Sorrento Valley Industrial Park. Park entrance is on right, going east. From Mira Mesa take Calle Cristobal to Sorrento Valley Blvd., entrance will be on left.

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Habitat Resotration Teams/Volunteers

Thanks go to Kathy Buco, Cindy Burrascano, Neil Bouscaren, Marcus Spiegelberg, Les Braund, Karen Sundstrom, Mike Kelly who pitched in to plant coast barrel cactus, Califonria live oaks and scrub oaks Saturday Dec. 5 in the vicinity of the adobe ranch house.

Thanks too to Don Albright, Mike Kelly, Jeff Rundel and Linda Way who brought their chainsaws and waders to go after tamarisk one afternoon in late November.

Dec. 12 saw Cindy Burruscano, Paul Micheletti, Les Braund and Mike Kelly also cutting tamarisk in the West end.

Newsletter help from Carla Scott and Trinity Gabriele and **Fund-raising** help from Les Braund was greatly appreciated.

Next projects:

January 10, 1 p.m. and January 23, 1 p.m. Rain cancels. Call Mike Kelly at 566-6489 for details.

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
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(**Forest Initiative** cont'd)

visors voted at its last meeting of 1992 to put the initiative on the June 1994 ballot.

At the meeting, County Supervisor John MacDonald made a motion, seconded by new supervisor Pam Slater, to adopt the initiative as law. Under California initiative law, the legislative body in question has the option of putting an initiative on the ballot or adopting its contents unchanged. However, outgoing Supervisor Bailey opposed the adoption and was joined in this opposition by Supervisors Bilbray and Williams, thus voting it down. Bailey viciously attacked individuals and groups, including the League of Women Voters, who spoke in favor of adopting the initiative.

MacDonald did win the necessary support to bring the issue back to the Board of Supervisors with a report from County Staff in the new year. With a new supervisor, Diane Jacobs, replacing Bailey, there is still a slim opportunity to avoid a time-consuming and costly campaign for the June 1994 ballot. Take the time to call and write a letter to Supervisors Diane Jacobs (531-5522), Brian Bilbray (531-5511); and Leon Williams (531-5544) to urge them to adopt the initiative now. Call John MacDonald (531-5555) and Pam Slater (531-5533) to thank them for their support. All can be written to at: 1600 Pacific Highway, San Diego, Ca 92101.

Check Your Label

Take a moment to examine the address label on this newsletter. Check to see if your expiration date has come and gone. If so, please take the time now to send in a renewal check for your membership dues. This will enable you to keep receiving our newsletter, recognized as one of the best environmental newsletters of any organization in San Diego. That way you'll keep learing about the progress of the Camino Ruíz issue and what you can do about it; about family walks; about the plants and animals that inhabit the Preserve, and the many conservation projects open to you and your family or friends.

Membership Application

Membership category? Circle below:
Senior (62) or Student $7.00 Individual $10
Family $15 Sponsor $25 Patron $100
Corporate $250 Life $1000
Contribution $ _____

I/We are interested in the following: **1/93**
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Thank you for your support! Your donation is tax deductible.
Call **484-3219** or **566-6489** for more information.

Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

March/April 1993
Volume 7 No. 5-6

News Roundup

Canyon Closing/Reopening

The Preserve has been closed for almost 3 months now due to flood damaged trails and roads. As of March 22 patrol and rescue vehicles still face impassible sections on both sides of the Preserve. Due to extensive flood damage elsewhere the Park Dept. hasn't been able to get equipment in to fix the trails. They have decided to go outside and spend part of their reduced budget on renting equipment. We expect the Preserve to reopen the first week in April.

Vernal Pool Walk March 27

Join us as we begin our walk program again. See the Outings schedule beginning on p. 8. The first walk, to the Del Mar Mesa Vernal Pool Preserve and the Black Mtn. burn area led by Dave Hogan are always great.

➡ p. 7 for more

Kiosk Fund Success

by Mike Kelly, president

Our appeal to raise funds for educational kiosks has raised enough money to allow the purchase of materians for two kiosks by Eagle Scout candidate Kevin Heinrich. The following people generously contributed towards the raising since the list we ran in our last newsletter:

Bill Fleming in memory of Dr. Elberta W. Fleming
Karen Miller
Edith Helen Monsees
Bernie Kulchin & Paula Taylor
Harriet Pellar in memory of Helene Henkel (former member Los Peñasquitos Canyon Citizens Advisory Committee.
Mary Toomey

Special thanks to Mitch Beauchamp and Pacific Southwest Biological Services, Inc. for their especially generous donation.

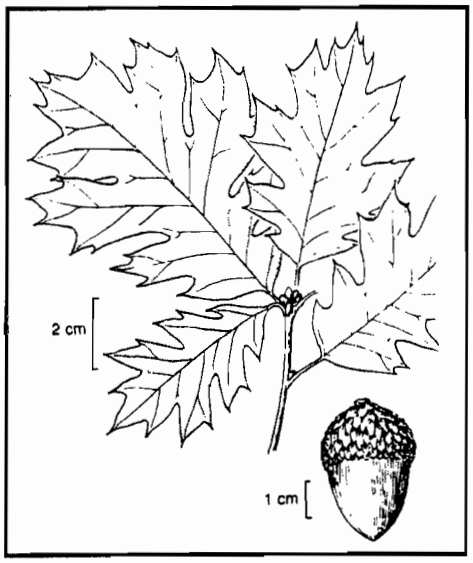
Wild Food Plants of the Cahuilla and Diegueno Indians

by Melanie Howe

Many people consider natural, undisturbed wilderness areas of Southern California a wasteland. They view local habitats, especially the desert, as being harsh and forbidding — no place for man. Yet there were several groups of Indians in San Diego County alone that made an admirable living from this seemingly unlivable environment.

The Cahuilla and Diegueñi tribes lived in adjacent territories, the division being well understood by both groups. The Cahuilla's territory prior to contact with the Spanish was bounded on the north by the San Bernardino Mountains, extended to the east into the middle of the Colorado Desert, was bounded in the south by the Santa Rosa Mountains and Anza-Borrego Desert, and in the west by the San Jacinto Mountains and portions of the San Jacinto and San Bernardino Valleys. They currently reside on the Morongo Reservation near Banning, California.

➡ p. 4 for more



Quercus kelloggi,
Jepson Manual, 1993, U. of Calif. Press

Inside

Park Day 1993:

The First Residents: Native Americans in Peñasquitos Canyon

by Mike Kelly, president

Mark Sunday, May 23 on your calendars as Park Day 1993. This will be the 12th "almost" annual Park Day Celebration since 1983 when the celebration first began. If you've been to one you know what fun it is for the whole family. This year Dr. Lynne Christianson of the San Diego County Archaeological Society and I are co-chairing the event. Park Day is sponsored by the Peñasquitos Canyon Task Force and the Citizens Advisory Committee to the Task Force. Admission is free as always.

Since Native Americans occupied what is now the adobe ranch and many other sites in the canyon we thought it appropriate to celebrate there history here. In fact, artifacts from their residency have been dated back about 5,000 years, to 3,500 B.C. give or take a hundred years or so!

Many aspects of Native American culture will be woven into the day's activities, including dancers, a storyteller, an acorn grinding and oak culture demonstration and talk, basket weaving, stone tool making and atlatl spear throwing. We also hope to have Indian face-painting for the kids, as well as other crafts and games.

The food this year will include authentic Indian fry bread and Indian tacs provided by a Native American food service. If you've never had these I promise you a great experience!

Following is a preliminary schedule of the day's activities. Watch for the final schedule in the Peñasquitos News, the Mira Mesa/Scripps Ranch Sentinel and in our May newsletter.

➡ p. 7 for more

Birding in Peñasquitos Canyon Preserve

Ruby-crowned Kinglets

by Barbara Zepf

[Editor's note: This article was submitted for the February newsletter — which didn't come out of course.]

Easy birding

February — Valentine's Day — the month of love! As you know by now, one of the places that I "love" is Peñasquitos Canyon. I also love the many nice things that have been done to it in the past year. The paved parking lot near the ranch house is a nice unmuddy place to watch birds from your car in the rain. The small overlook parking spot on the north side of Calle Cristobal is a good place to sit on a hot windy day and watch the crows, ravens and kites soar up the hillside towards you. The parking lot at the southwest end of Calle Cristobal provides easy access to both Peñasquitos and López Canyons. The latest spot that I love to visit in the canyon is the east end picnic area across from the lower parking lot.

I have eaten many a meal while sitting at one of these tables. Breakfast is the best time. No one is around, and the birds are quite active. Birds love "edges" of habitats. This little oasis provides just what they like — open space in which to forage and nearby thickets in which to hide. The first time my husband and I went there was in the late afternoon. What a show! Even California Quail strutted their stuff before us. In just a few short minutes we saw at least ten species of birds without moving from our table.

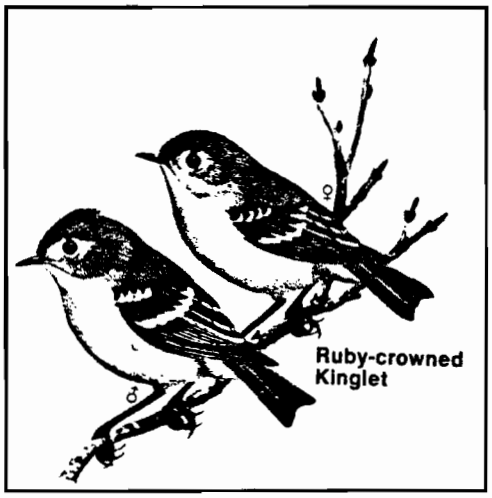
Kinglets are seasonal visitors

One of the tiniest birds we saw was the Ruby-crowned Kinglet. Even though they are very small (about 4 inches long), they are easy to spot. They have a surprisingly loud, scolding call--"je-dit, je-dit". Their song begins with several high, thin notes followed by loud whistled phrases. But I have never heard their song, so perhaps they don't sing in winter. Ruby-crowned Kinglets are only found in San Diego from late September to late April.

They're very active birds, nervously flicking their wings almost continuously. They often hover, briefly. Their flight is weak and usually short, so it's easy to keep track of them once you find them. They are unsuspicious birds, paying little attention to humans.

Ruby-crowned Kinglets are members of the Old World warblers. They're not related to the American wood warblers. Because they weigh so little (only one-sixth to one-fourth ounces), they're able to feed on the tips of branches, which makes them easier to spot. They characteristically hover above a twig looking for caterpillars, aphids and other insects and their eggs and larvae. Sometimes they eat small seeds or berries if insects are scarce. They also drink tree sap.

During migration, they sometimes travel in loosely organized flocks of other birds, but are usually found singly in winter.



when the bird is excited or hanging upside down to feed on the underside of a leaf. They have a short, slightly forked tail. Their large dark eyes and broken eye-ring give them a staring, big-eyed look.

They breed from coast to coast from Alaska through Canada: along the Rocky Mountains to Arizona; and along the Pacific coastal mountains of Southern California. They winter south to the Gulf states and Central America.

They nest from April to July, usually in evergreens, about 2–100 feet up. They build a globular nest with the entrance at the top from mosses and lichens which is lined with soft bark, rootlets and feathers. They lay from 5–11 eggs, which are incubated for 12 days. They young fly 12 days after hatching.

Besides the "picnic" area, another good spot to see the Ruby-crowned Kinglet is in the willows on the south side of the parking lot near the ranch house. I have seen them throughout the canyon, especially in oak trees. If you just listen for their loud, insistent calling, you will usually find them on any given hike. They are a bright cheery sound and sight on a winter's walk through Peñasquitos Canyon.

Chubby comes to mind

The Ruby-crowned Kinglet is a chubby bird, olive-gray above, whitish-buff below, with a broken white eye-ring. It has two white wing bars (the leading one is frequently concealed). There is a black band below the second wing bar. Their bill is fine, pointed and black. The adult male has a bright red crown patch, which is usually concealed. The patch is most visible

Bird List Available

For a free copy of a bird list for species found in Peñasquitos Canyon Preserve send a stamped, self-addressed envelope to the Friends'.

Newsletter Submissions

Since we have no paid staffers *Canyon News* depends on our readers for articles. Our articles run the gamut from news about the canyon to poems to animal observations to hard science about a species or habitat and letters. If you would like to submit something for the newsletter here's how to do it.

Ideally we would like to receive your article on a computer disk accompanied by a printout. We can accept either Macintosh or IBM disks, 5-1/4 or 3-1/2 inch. The word processing program you use isn't important. Call Mike Kelly at 566-6489 if you have any questions. He works with computers for a living.

Rattler Alert

Two good years of rain have helped produce a bumper crop of rattlesnakes in the Preserve (and elsewhere). Please watch where you and your children step. Stay on the trails and avoid grassy and brushy areas. Keep your dog on a leash at all times (it's the law). Don't harrass or kill the snakes — this is their home. and their an important part of our ecosystem. We'll run a longer article on rattlers next month.

Beware the Hitchhiking Tick

by Christine E. Whitten, M.D.,

[**Editor's note:** *The March 1991 "March miracle" and this year's above-average rainfall have produced a bumper crop of insects, including ticks. Mike Kelly, the Friends' president, picked off no le: than a dozen ticks during a two-hour hi in a brushy area recently. Watch out!*]

As a new owner of a dog — as well as a long-term owner of a husband — who both love to crawl through the underbrush, I'm becoming expert at tick-picking. Yes, once again its that time of year when famished ticks out for a quick snack give new meaning to "meal-on-the-run."

The increasing number of cases of Lyme disease being reported in San Diego County highlights the importance of taking precautions against picking up ticks while you're out walking. Starting in the spring and lasting through summer the local tick population is on the lookout for an easy meal.

Ticks aren't insects

Ticks are close relatives of spiders and mites, not insects. There are three different types of ticks. However, hard ticks from the family *Ixodidae* are most likely to parasitize humans and potentially spread disease. The adult hard tick has eight legs and a hard plate on its upper surface. They look fairly flat (prior to eating, that is) and they scuttle when they move. An engorged tick looks like a distended sack or a blister with legs.

Dracula's no match for these guys

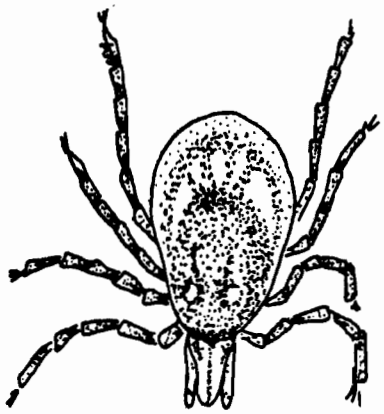
There are four stages in the life cycle of the tick: the egg, larvae, lymph, and adult. They moult their shell after each stage — like a crab. The full life cycle takes 2 years in some species and all stages require blood meals. The tick feeds by embedding its head in the skin of the host, usually a deer or other large animal. This process is painless and the tick may remain attached for days until totally engorged with blood. At this point they drop off and begin the next round of waiting.

Ticks of all stages tend to attach themselves to tall grasses and low bushes along animal trails, allowing themselves to hitch a ride as the animal brushes against the plant. Once full, they drop off and await the next meal. Ticks can sometimes wait for months or years, perhaps even decades for the right host to come along.

Hold your breath?

Carbon dioxide exhaled by the animal as well as the smell of butyric acid from certain animal skins alert the tick to a potential meal. Instantly activated from its long dormancy — even though it may not have moved in years — the tick leaps. Since ticks lay large numbers of eggs and the babies don't move very far, the unlucky traveller may occasionally activate a veritable horde of voracious ticks.

Fortunately, humans are infrequent hosts because ticks can transmit bacterial and rickettsial diseases such as Lyme Disease, Rocky Mountain Spotted Fever, and Q fever among others. They can also cause loss to industries dependent upon domestic animals such as cattle and sheep by damaging the hides and decreasing the animals weight gain.



The bite

The typical tick bite causes little more harm than a slightly raised red mark. If part of the head or other foreign matter is left in the wound a persistent, firm itchy nodule called a granuloma can develop. If this persists it may have to be surgically removed to relieve the itching. Rarely, an allergic reaction causing hives and fever can develop.

Even rarer is the development of paralysis of an arm or a leg which slowly ascends the limb following a prolonged attachment of 5–7 days. Certain ticks secrete a nerve toxin in their saliva. This paralysis resolves after the tick is removed.

Lyme disease spreading

The most common tick-born disease in the U.S. is Lyme disease. The disease effects several body systems. First, at the site of the bite a red papule may develop. When present, this expands into a ring shaped red lesion with a clear center. The rash is called *erythema chronicum migrans*, — in english — a chronic red rash which moves. Secondary rings sometimes develop months later at sites distant from the original bite. The major risk of Lyme disease, however, is involvement of the internal organs with heart, joint, and nervous system. Typical symptoms are headache, malaise, and fatigue. Often there's arthritis-like joint pain and swelling.

Because of the non-specific nature of the symptoms and the fact that the victim may not know he or she was bitten by a tick, the disease can sometimes be hard to diagnose. However, once diagnosed it is simple to treat with either tetracycline, penicillin, or erythromycin providing prompt resolution of symptoms.

Removal must be done carefully

If you find you've picked up an unwanted passenger, remove it with blunt tweezers, or with your fingers protected by a rubber glove, or paper towel. Grasp the tick as close to the skin as possible and pull straight back gently and steadily. You may need to lift the tick upward and pull parallel to the skin until it's freed. Don't twist or force the tick off as this can leave the head imbedded. Wash the bite thoroughly. Don't apply gasoline, alcohol, ether, nail polish or the hot end of a match. These methods don't work and can cause more damage than the tick did.

If your dog or cat picks up a tick, applying a pet-approved tick insecticide to kill the tick makes removal easy. Don't spray your children, however.

Prophylactic treatment with antibiotics after a tick bite is still controversial and currently not recommended. Unless the tick is attached longer than 24 hours the risk of disease transmission is minimal. One study has addressed this issue so far. In it, half of 56 tick-bitten patients received penicillin, half did not. One patient, 3%, developed Lyme disease in the untreated group. One patient (3%) developed penicillin reaction in the treated group. The jury is still out. However, if you develop a flu-like illness after hiking in a tick infested area make sure your doctor knows.

In the meantime, wear protective clothing when you hike (white or light colored when possible), tuck your long pants into your socks, use insect repellents, shower after exposure, and check yourself and your fellow hikers for ticks. Routinely check your children and pets when they come in from playing in the brush. Pet stores sell a very fine tick/flea comb that works well on our dog. This is one time when picking up hitchhikers is definitely not recommended.

(Wild Plants cont'd)

Contact

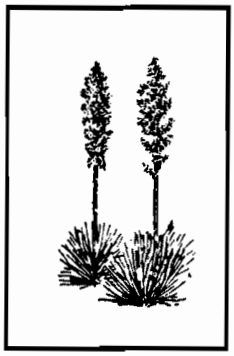
The earliest recorded contact between the Spanish and the Cahuilla was between 1774 and 1776: this contact was with the mountain Cahuilla. The desert Cahuilla were contacted in 1823. Until the time that the Indians were exposed to non-traditional foods from the Spanish explorers and later the America settlers, they were able to capture game and collect a wide variety of plant foods that made for a highly nutritious, healthful diet. These tribes utilized dozens of plants for food, medicine and household goods such as baskets and sandals.

The knowledge and insight that these peoples possessed was nothing short of astounding: "they were master ecologists" (Bean and Saubel, 1972: 2), drawing on hundreds of years worth of botanical knowledge gathered by and passed on from their ancestors. Careful experimentation by the shamans (men) and the doctors (women) over the centuries led to the abundance of botanical knowledge held by the tribes.

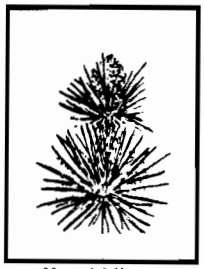
Harvest time

As with our own crop plants, which are harvested at a particular time of year depending on the species, the Indians also harvested different food plants at different times of year. The Diegueño were nomadic, wintering in the desert and summering in the mountains. The Cahuilla had a year-round homesite, sending out groups to collect food at different times of the year.

By exploiting both desert and mountain ecosystems, both groups had a wide choice of foods, though the Cahuilla utilized a great many more food plants than the Diegueño. It was only during the winter months when both groups were forced to rely on stored foods. It was at this time that the quantities of seeds, flowers, etc. that had been collected and stored became very important. The most important plants used by both tribes of Indians were *Agave deserti*, *Quercus kelloggii* (California black oak) and *Quercus agrifolia* (California live oak), *Prosopis juliflora var. torreyana* (currently *P. glandulosa var. torreyana* — Honey mesquite) and *Prosopis pubescens* (screw bean or tornillo) and *Yucca whipplei* (Yucca is commonly known as Spanish Bayonet, *whipplei* — Our Lord's Candle — is one variety).



Yucca whipplei
Jepson Manual, 1993, U. of Calif. Press



Y. schidigera
Jepson Manual, 1993, U. of Calif. Press

Agave deserti and *Yucca whipplei* were collected and prepared similarly. In a good year a group of men could collect several hundred pounds of *Agave* stalks in a day. The leaves, flowers, and flower stalk of *Agave* were all eaten; only the flowers and stalk of *Yucca* were eaten. Leaves of *Agave* were gathered throughout the year, but were considered best from November to May when the plants had a high content of photosynthetic sugars. The leaves were baked for immediate use or dried and stockpiled for later use. (The larvae of *Megathymus stephousi*, the *Agave* skipper butterfly were considered a delicacy; they were roasted on the leaves and eaten.) The very young leaves were occasionally eaten raw.

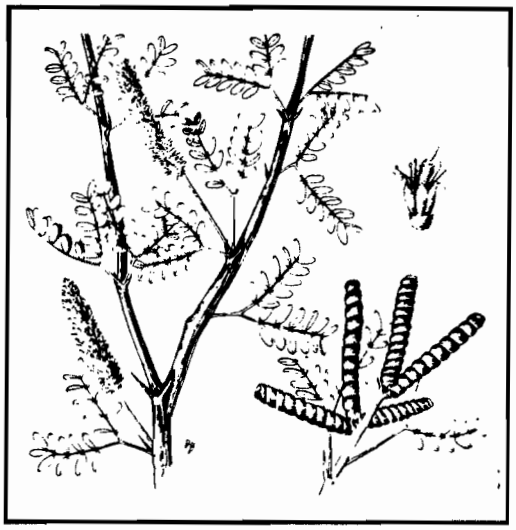
The blossoms of *Agave* and *Yucca* were both prepared in the same way. Immature blossoms were preferred, being sweeter than mature blossoms; they were parboiled and eaten. Very mature blossoms needed to be boiled up to three times before they were eaten. The blossoms could also be dried and stored after parboiling for as long as five years, being reboiled as needed.

Ripe seeds were also used; they were ground into flour and often mixed with the meal made from *Prosopis*. Occasionally the unripe fruits of *Yucca schidigera* were eaten raw, though they were "somewhat puckery" (Bean and Saubel, 1972: 151). Generally the fruits were baked in hot coals after being collected from April to May. The emerging flower stalk was the favorite part of the plant. They were removed from the basal rosette of leaves when they were four to five feet tall. The stalks and leaves were baked in pits: *Yucca* overnight and *Agave* for one to three nights.

The pit used for roasting the leaves and stalks was three to six feet long. Rocks were placed in the bottom of the pit and a hardwood fire was built on top of these and allowed to burn down to coals. After the rocks were hot, they were covered with *Agave* leaves, then the stalk. More leaves were piled on top of this (and grass, according to Bean [Bean and Saubel, 1972: 34]). The flavor of the roasted stalks has been likened by different sources to that of molasses and of pineapple.

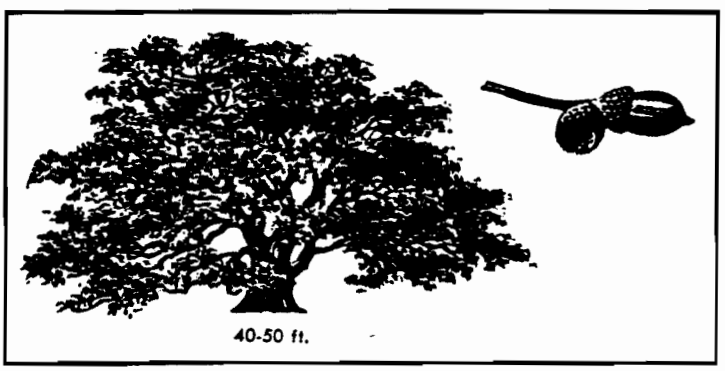
The acorn culture

Acorns were the staple food for those groups living in areas populated by *Quercus*. The groups of Cahuilla that inhabited the desert relied on acorns less, collecting only small amounts and trading with other groups that had access to a larger crop. Oak groves were owned by family groups, and individual families owned specific trees. Acorns were gathered from October to November, before the rains. *Quercus kelloggii* was the favorite species of the Indians. It bears a crop every other year, with each tree producing 200–300 pounds of acorns. *Quercus agrifolia* was second on the list of oaks utilized. Even though it bears an annual crop, each tree yields less than 100 pounds of acorns, which are smaller and less meaty than those of *Quercus kelloggii*. The acorns of *Quercus dumosa* were used only when other crops were not very good.



Prosopis pubescens **(screw bean or tornillo)**
California Desert Wildflowers, Philip A. Munz 1969, U. of Calif. Press

The acorns were gathered from the



Quercus agrifolia **(Calif. live oak),**
Oaks of California, Bruce M. Pavlik, 1991, Cachuma Press, Inc.

Gathering acorns, as depicted in Hutchings' California Magazine in 1859, Oaks of California

ground although Bean reports that the Cahuilla men climbed into the trees and knocked the acorns to the ground (Bean and Saubel, 1972: 126). After having been gathered, the shells were cracked open and the "meats" were allowed to dry to prevent spoilage. The shells were removed by hand, then the shelled acorns were worked slightly with mortar and pestle to remove the thin, papery covering. The acorns were ground to a meal. The meal was then sifted to separate the fine meal from the coarse, the latter being ground again until it became a fine meal.

After the acorn meal was prepared, it needed to be leached to remove the bitter-tasting tannins. The accounts differ regarding the leaching process. Hedges and Beresford (1962: 7) report that the meal was placed in a cloth-lined leaching basket, in a one-half inch layer. Warm or cold water was used for leaching, but cold water required many repetitions. The water was poured through the fingers to break the force and prevent the loss of meal. The leaching basket was kept full to the brim with water which seeped out slowly. When completed, the cloth holding the meal was removed and squeezed, forming a lump of meal; it was then ready to be cooked.

Bean reports a different leaching process. The meal was put into an indentation in the sand or a loosely woven basket. A layer of leaves, grass, or other fiber was placed into the bottom of the basket to prevent loss of meal. (By placing the meal in the sand for leaching, invariably some sand adhered to the outside of the lump of meal).

After leaching, the meal was ready to be cooked. It was poured slowly into boiling water, cooked about five to ten minutes, and stirred constantly. The meal turned purple when cooked. To vary the flavor of the cooked mush, different proportions of the various acorns were used. Other flavorings were also added, such as meat, berries, wheat, and chia (the seeds of *Salvia columbariae*). The acorns that were not used immediately after harvesting were stored in granaries for a year or more.

Acorns were important to the Indians because of their high fat content. A comparison between *Quercus kelloggii*, wheat (*Triticum sp.*), and barley (*Hordeum sp.*) shows the contents of protein, fat, fiber, and carbohydrates to be respectively: *Q. kelloggii* 4.6%, 18%, 11.4%, 55.5%, *Triticum sp.* 12.3%, 1.8%, 2.3%, 69.4%, *Hordeum sp.* 8.7%, 1.9%, 5.7%, 71% (Bean and Saubel, 1972: 126). *Triticum* has a higher protein content, but it was fat that helped the Indians through the winter.

Desert crops

For the Indians whose territories extended into or consisted solely of the desert, the fruit of *Prosopis* was the staple food, Two species were utilized, *P. glandulosa var. torreyana* and *P. pubescens*, the former having been used much more extensively. Harvesting of *Prosopis* occurred at three stages during the year. The first food product harvested was the blossom. They were picked in the spring and then roasted in a pit of heated stones. After cooking, the inflorescences were pressed into balls and then eaten. The blossoms were also used to make a tea.

The second *Prosopis* harvest occurred during the summer, when the immature, green fruits were picked. These were placed in mortars and crushed to a juicy pulp. This mixture was drunk by all members. It was reported that a light fermentation process enhanced the flavor of the drink, though the Indians have denied to researchers any intoxicating effect. About three weeks after the green fruits were picked, the remaining fruits were mature and ready to be picked. These dried fruits were either eaten immediately or ground into a meal. The ground meal was put in a basket, moistened with water, and left for a day or so to harden. The hardened meal was then formed into balls or cakes ranging in size from one to three inches thick by two to ten inches in diameter. These cakes were eaten dry, made into mush, or watered down to make a beverage.

In addition to the quality plant protein available in *Prosopis*, invertebrate (insect) infestation was common. Insect-damaged fruits were not picked out at harvest time and the granaries eventually became completely infested. The Indians simply ground the larvae along with the *Prosopis*, thus significantly raising the protein content of the meal.

It has been estimated that a single specimen of *Prosopis* will produce one-half to one bushel of fruit per season, and that one acre containing a fairly high concentration of Prosopis will produce 100 bushels per year. The nutritional value per 100 pounds of fruit is: 8.34 pounds crude protein, 52.02 pounds carbohydrates, and 2.4 pounds fat (Bean and Saubel, 1972: 112-113).

Cactus

Another desert plant that made a significant contribution to the diets of both tribes was the cactus. Several species were used. It was an "important and dependable food source" (Bean and Saubel, 1972: 49). The fruits of several species of *Opuntia* and *Ferocactus* were eaten, (See Appendices A and B) as well as the pads (stems) from *Opuntia megacantha, O. occidentalis, O. ramosissima*, and the seeds of *Opun-*

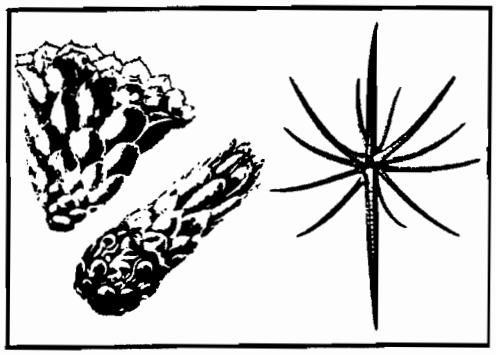
➡ p.6 for more

An acorn granary near Pala, San Diego County, circa 1910, San Diego Museum of Man, Oaks of California

(Wild Plants cont'd)

tia basilaris.

As previously mentioned, the Indians made use of dozens of plants. To supplement and add variety to their diet they collected a great many seeds and fruits, a few



Ferocactus veridenscens with flower, fruit, and spine cluster

types of bulbs, and many varied shoots, leaves and roots. For example, chia seeds, (*Salvia columbariae*) contains an amazing 20.2% protein and 34.4% oil. Appendix A contains an extensive list of these supplementary foods utilized by the Cahuilla, Appendix B contains the less extensive list of foods utilized by the Diegueño.

Diet was nutritious

All of the food plants used by the Cahuilla and Diegueño provided a nutritious, healthful diet. The gradual exchange of non-traditional foods for traditional foods during the past century is regrettable. The Cahuilla presently associate good eyesight, longevity, and mental alertness with their traditional diet. A tendency to obesity, shortened life span, dysmenorrhea (menstrual pain), stillbirth, and painful childbirth are generally thought to be attributable to the new, non-traditional foods.

The traditional diet was quite obviously superior to the foods eaten today: it was high in fiber, vitamins and other essential elements, and was lower in damaging fats, carbohydrates, and sugars. As a society, Indians and non-Indians alike, we are deprived nutritionally by current agricultural practices and food processing techniques. Food crops are genetically engineered for large size, large harvest, and attractiveness, not for food value. Most of the nutrients are lost from grains during milling and processing, and frequently many products are subsequently "vitamin-fortified" to replace lost nutrients. A close look at the former traditional dietary habits would provide a wealth of information that could benefit all of us.

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Appendix A — Seeds

Allenrolfea occidentalis Chenopodiaceae
Amaranthus fimbriatus Amaranthaceae
Artemisia tridentata Rosaceae
Atriplex lentiformis Chenopodiaceae
Avena fatua Poaceae
Baeria chrysostoma Asteraceae
Brassica geniculata Brassicaceae
Capsella bursa-pastoris Brassicaceae
Chaenactis glabriuscula Asteraceae
Chenopodium californicum Chenopodiaceae
C. fremontii Chenopodiaceae
Cleome isomeris Capparaceae
Cucurbita foetidissima Cucurbitaceae
Descurainia pinnata Brassicaceae
Eriogonum sp. Polygonaceae
Eriophyllum confertiflorum Asteraceae
Fouquieria splendens Fouquieriaceae
Helianthus annuus Asteraceae
Lasthenia glabrata Asteraceae
Layia glandulosa Asteraceae
Malva sp. Malvaceae
Medicago hispida Fabaceae
Mentzelia sp. Loasaceae
Olneya tesota Fabaceae
Opuntia basiliaris Cactaceae
Panicum urvilleanum Poaceae
Pinus sp. Pinaceae
Proboscidea altheaefolia Pedaliaceae
Salicornia subterminalis Chenopodiaceae
Salvia sp., particularly S. columbariae Lamiaceae
Scirpus sp. Cyperaceae
Simmondsia chinensis Simmondsiaceae
Suaeda sp. Chenopodiaceae
Trifolium sp. Fabaceae

Fruits

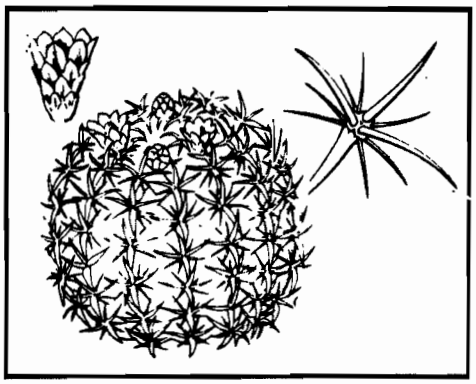
Amelanchier pallida Rosaceae
Arctostaphylos sp. Ericaceae
Cercidium floridum Fabaceae
Chilopsis linearis Bignoniaceae
Condalia parryi Rhamnaceae
Cucurbita moschata Cucurbitaceae
Ferocactus acanthodes, F. polycephala Cactaceae
Fragaria californica Rosaceae
Heteromeles arbutifolia Rosaceae
Holodiscus microphyllus Rosaceae
Lycium fremontii, L. andersonii Solanaceae
Opuntia acanthocarpa, O. basilaris, O. bigelovii, O. megacantha, O. occidentalis, O. ramosissima Cactaceae
Phoradendron sp. Viscaceae
Prunus andersonii, P. ilicifolia, P. virginiana var. demissa, and to a lesser extent P. fasciculata, P. fremontii, P. emarginata Rosaceae
Rhus andersonii, R. trilobata, R. integrifolia Anacardiaceae
Ribes sp. Grossulariaceae
Rubus sp. Rosaceae
Sambucus mexicana Adoxaceae
Vitis girdiana Vitaceae
Washingtonia filifera Arecaceae

Bulbs and corms

All *Liliaceae*
Allium validum
Broomeria crocea
Brodiaea sp.
Calochortus sp.
Hesperocallis undulata

Other plant parts

Apiastrum angustifolium Apiaceae Shoots and leaves
Apium graveolens Apiaceae Shoots and leaves



Coast barrel cactus

Brassica geniculata Brassicaceae Leaves
Chenopodium sp. Chenopodiaceae Shoots and leaves
Claytonia perfoliata Portulaceae Leaves
Dudleya sp. Crassulaceae Leaves
Ephedra sp. Ephedraceae Stems
Fouquieria splendens Fouquieriaceae Blossoms
Juniperus californica Cupressaceae Female cones
Nasturtium officinale Brassicaceae Leaves
Opuntia megacantha Cactaceae Stems
Oenothera clavaeformis Onagraceae Leaves
Orobanche ludoviciana var. cooperi Orobanchaceae Roots
Perideridia gairdneri Apiaceae Roots
Pluchea sericea Asteraceae Roots
Pteridium aquilinum var. lanuginosum Pteridaceae Shoots
Rosa californica Rosaceae Flower buds
Rumex hymenosepalus Polygonaceae Shoots
Scirpus sp. Cyperaceae Roots
Sisymbrium irio Brassicaceae Leaves
Suaeda sp. Chenopodiaceae Leaves
Taraxacum californicum Asteraceae Leaves
Trifolium sp. Fabaceae Leaves
Typha latifolia Typhaceae Roots and pollen
Urtica holosericea Urticaceae Leaves

Appendix B — Seeds

Avena fatua Poaceae
Pinus monophylla, P. quadrifolia Pinaceae
Salvia apiana, S. carduaceae, S. columbariae Lamiaceae

Fruits

Arctostaphylos sp. Ericaceae
Fragaria californica Rosaceae
Mammillaria dioica Cactaceae
Opuntia basilaris, O. phaeacantha var. discata, O. ficus-indica Cactaceae
Prunus ilicifolia Rosaceae
Rubus ursinus Rosaceae
Sambucus mexicana Adoxaceae
Vitis girdiana Vitaceae

Other plant parts — Leaves

Brassica nigra Brassicaceae
Chenopodium album Chenopodiacea
Claytonia perfoliata Portulacaceae
Erodium cicutarium Geraniaceae
Lepidium nitidum Brassicaceae
Paeonia californica Paeoniaceae
Rorippa nasturtium-aquaticum Brassicaceae
Trifolium sp. Fabaceae
Viola pedunculata Violaceae

Young stalks

Salvia apiana Lamiaceae

For a free reprint of this article (we might even find time to list common names!) send a SASE to P.O.B. 26523, San Diego, Ca 92196.

(Park Day cont'd)

Family Outings

9 a.m. Walk to waterfall and back, led by Dr. Jaya Perryman. Meet at Canyonside Park off Black Mountain Road. About 6 miles roundtrip. Bring water!

9 a.m. Equestrian walking ride to Carson crossing (or waterfall, time permitting). Led by Volunteer Patrol members. Any horse owner is welcome to ride along. Meet at Rancho Peñasquitos Equestrian Center off Black Mountain Road.

9 a.m. Trail ride with rental horses to Carson crossing and back led by wrangler. Pre-registration required. Call the Equestrian Center at 271-1120 for details.

9:30 a.m. Family Bike Ride led by Cantina Bike shop to waterfall and back. Meet at the Parking-Staging area off Black Mountain Road at Mercy. Bring water and locks. Call 554-1318 for details.

Ranch Events

10 a.m. - 2 p.m. Archaeological Docents will leadshort tours of the historic adobe and tours of the new archaeological dig for Native American artifacts near the ranch.

10 a.m. - 2 p.m. Short Native American plant walk led by Friends docents.

10 a.m. Exhibits open at Ranch House, including: Project Wildlife (live animals), S.D. County Archaeological Society, the Friends, the Cara Knott Oak Foundation, People for Trees, Cantina Bike Shop, The Volunteer Patrol, the Herpetological Society (live snakes) and many others. There'll also be demonstrations of basket weaving, tool making and atlatl throwing.

10 a.m. Soda, coffee, t-shirt booths open.

11 a.m. Kid's crafts.

11 a.m. Indian fry bread and tacos go on sale. Hot dogs and yogurt also on sale.

12 - 1 p.m. Main program. Exact times not set, but include Henry Rodriquez, Luiseño storytelle; Jane Dumas, Kumeyaay, demonstrating acorn grinding, acorn food preparation and discussing the importance of the oak culturen to California Native Americans, Native American dancers, Rescue demonstration by Volunteer Patrol members. Members of the Peñasquitos Canyon Task Force will present awards to volunteers who contribute to protecting and enhancing the preserve.

1 p.m. Kid's games.

Park Day Volunteers needed

We need your help in making this a success. We need help in distributing posters to community libraries and stores and fliers at activities such as Spring Fling, I Love a Mira Mesa Day or the Scripps Ranch Roundup. In addition, we need help in staffing t-shirt and food booths and other things. If you want to help in any way, call Mike Kelly at 566-6489.

(News Roundup cont'd)

Volunteer time

It's time to get rolling on our endangered plant surveys and conservation projects once again. See our Outings schedule for dates and times and activities. We'll be doing surveys of the Mesa mint, Poway mint, and Thorn mint. Conservation projects for the next two months will concentrate of controlling invasive exotic plants that threaten our bio-diversity, especially artichoke thistle and salt cedar (tamarisk). We sure could use your help. We can also use your help on Park Day May 23 (see separate article this issue).

Land acquisition for Preserve

The County is in escrow using Proposition 70 monies earmarked for the Preserve for the purchase of a 29 acre parcel of land on the Del Mar Mesa adjacent to the Caltrans Vernal Pool Preserve. If the City succeeds in its plan to purchase an 18.72 acre parcel between the County parcel and the Newland land swap parcel to the south (close to the waterfall), the Preserve will be permanently linked to the vernal pools, offering them protection on two sides. In addition this should eventually link up to a future 500 acre purchase of a core preserve on the Del Mar Mesa. This purchase is part of the state-wide June 1994 Park Bond Issue. The City Parks Dept. and the Friends both proposed it to the Planning and Conservation League for the ballot. We'll need your help in gathering signatures and petitions for the ballot measure, as well as your contributions.

The Clean Water Program is in the process of buying about 30 acres on the south rim of Deer Canyon as mitigation for environmental damage done by its new Eastgate Mall Water Reclamation & Sewage Plant. This is just north of the Del Mar Mesa proposed Core Preserve.

Our hope is to make viable wildlife and recreational corridor connections from our Preserve north across the mesa to connect up with Black Mtn. Open Space, the San Dieguito River Valley Park and through the new Carmel Valley Creek restoration into Torrey Pines Lagoon.

Exotic Conference a big success

The March 6 conference on invasive exotic plants held at Scripps Institution of Oceanography was a huge success. More than 90 people from many parks and organizations attended. Co-sponsored by the Friends, the S.D. chapter of the California Native Plant Society and the U.C. Natural Reserve Project., the conference focused on the damage done to bio-diversity of native plants and animals by invasive exotic plants. There were more than a dozen speakers addressing a wide variety of exotic issues in local and state parks, as well as in Nature Conservancy Preserves and in many open space areas.

One of the keynote speakers was John Randall, Ph.D., the Nature Conservancy's National Weed Specialist. He gave us an overview of the problem nationally and talked about their own efforts to control exotics in their hundreds of Preserve. He also detailed the high cost, biologically and financially that exotic invasions represent.

Carla D'Antonio, Ph.D. U.C. Berkeley spoke on the many factors that make a weed an invasive and what makes a park or open-space area prone to invasion.

Other speakers included vernal pool expert Ellen Bauder, Ph.D. (SDSU), Mitchel Beauchamp, M.S., author of *A Flora of San Diego County*,; Nature Conservancy Preserve Managers Cameron Barrows, M.S., Robin Wills, M.S. and Gary P. Bell, Ph.D.; Isabel Kay, M.S., representing the U.C. Natural Reserve System, spoke on the Kendall Frost Preserve. She was the key person in arranging the conference facilities. From the State Park System we heard from Paul Jorgensen, M.S. (Tijuana River) and Bill Tippets, M.S. (Torrey Pines). A public policy panel had representatives from the City Planning Dept., the Nursery Industry, the County Dept. of Agriculture, the Environmental Consulting firms, and Caltrans.

Mike Kelly of the Friends and Jim Dice and Ronilee Clark of the Native Plant Society chaired the different sessions. We'll provide more detailed information on the problem of exotics in our next newsletter.

Grant for video project

The Friends have been notified that we will receive a $1,500 grant to produce a video on San Diego's bio-diversity in the North City area and the importance of greenways, i.e., open-space linkages, wildlife corrdiros, to link up Peñasquitos Canyon with Torrey Pines, Black Mtn. Open-Space and San Dieguito River Valley Park. The funds will also go towards funding a brochure describing the corridors.

An important focus of the video and brochures will be the incredible bio-diversity of Carmel Mountain. The Hi-8 Camcorder and Hi-8 Sony Editiing Deck (EVO 9700) and the Character Generator will all be made available by Mike Kelly and Chris Whitten. They produce medical videos for their business. Dave Hogan of the S.D. Biodiversity Project first conceived of the idea and will play a leading role in developing the video. Dr. Alan Pepper, the Friends' Conservation Chair and Friends Board member, Jeff Rundel will also be helping. Jeff also has video equipment and will be doing some shooting.

Friends of Peñasquitos Canyon April Events Schedule

Flower & Vernal Pool Excursions Habitat Restoration Projects & Endangered Plant Surveys Highlights of Month

After almost three months of the Preserve being closed due to unsafe trail conditions from storm damage we look forward to what will be a splendid flower season. In addition we'll be swinging into our endangered plant surveys and habitat restoration projects once again. Call the friends number if you want to be part of a team (see article in this issue). See below for dates, times and places.

Dave Hogan and Mike Kelly both will lead vernal pool walks in the Del Mar Mesa and López Ridge areas respectively. Dave is one of the most knowledgeable people in San Diego about the various habitats and species that make up the Del Mar Mesa.

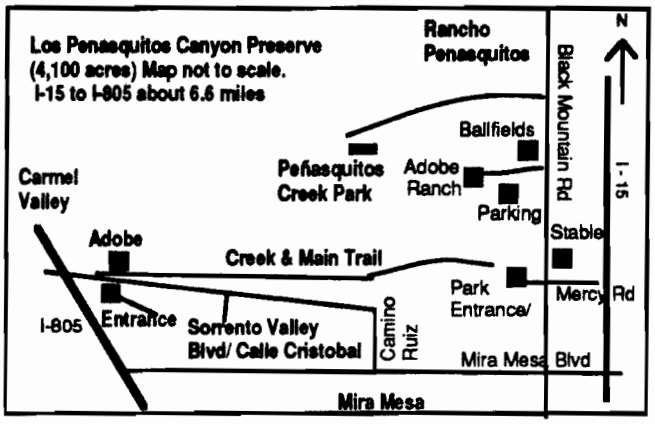
Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

MARCH

Del Mar Mesa Vernal Pool Walk
Sat., Mar. 27, 9 a.m. We'll hike on the Del Mar Mesa to visit Vernal Pools. A new preserve is proposed for this mesa as part of the Future Urbanizing Area Framework Plan. Good chance to see the area first hand. Time permitting we'll also visit the site of the Black Mountain fire of four years ago. The wildflowers and new chaparral growth have been fantastic since the fire. This is part of a series of visits during the spring to watch the succession of life in the pools. We may overlook Deer Canyon, one of the few relatively pristine canyons remaining in San Diego. Led by Dave Hogan of the S.D. Bio-Diversity Group. Meet at the western terminus of Carmel Mtn. Road in Rancho Penasquitos. From I-15 take the Carmel Mtn. Rd. exit west and follow the road as it twists and turns through Rancho Penasquitos. From Rancho Penasquitos or Mira Mesa find the intersection of Black Mtn. Road and Carmel Mtn. Road. Go west on Carmel Mtn. Road until it ends. Park on side streets near the barricades.

APRIL

Flower Walk at East End
Sat., April 3, 8 a.m. Meet at the Parking-Staging area off Black Mountain Road opposite Mercy. From I-15 take the Mercy Exit west to Black Mountain Road. Preserve entrance is opposite intersection. Les Braund will lead a leisurely two-mile loop walk. Should see wildflowers and learn about Native American uses of many plants. You'll also visit the controversial Caltrans mitigation site.



Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour
Sat., April 3, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Amost Full Moon Walk
Mon., April 5, 7:00 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. **Bring flashlight**. Learn moon lore and legendst. Look for deer and other nocturnal animals. Led by Will Bowen, Ph.D.

Spring Fling in Rancho Peñasquitos
Sat., April 10, If you'd like to help the Friends staff a table for an hour or two and cruise the event before or after call Mike at 566-6489. We'll be getting out newsletters, hike calendars, Park Day (May 23) flyers and selling t-shirts to raise funds for park day. We'll also be signing up new members. We need your help!

Vernal Pool & Burn Area Walk on López Ridge in Mira Mesa
Sat., April 17, 9 a.m. (about 2 hours). We'll visit the City's Vernal Pool Preserve on López Ridge and then the burn area from the fall fire that lies adjacent to the vernal pools. Wear old clothes you don't mind getting ash on. We should see some great vernal pool flowers, possibly the endangered Mesa Mint. In the burn area we'll see evidence of the biodiversity of plants typical of a recently burned area. From I-5 or 805 take Sorrento Valley Blvd. east up López Ridge through the intersection with Camino Santa Fe to Caminito Propico. Park in the cul-de-sac on the right or in the development on the left. From Rancho Peñasquitos, I-15 or Mira Mesa reach Mira Mesa Blvd. and proceed to Camino Ruiz. Go right (north) and continue around the curve where it becomes Calle Cristobal. Follow this west to Camino Propico. Led by Mike Kelly.

Endangered Species Survey: Mesa Mint López Ridge in Mira Mesa
Sat., April 17, 11 a.m. After the morning's walk through the same area (9 a.m.) we'll return to the vernal pools to survey for Mesa Mint and other rare or endangered species. Call Mike at 566-6489 for details.

Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour
Sat., April 17, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Bird Walk at East End
Sun., April 18, 8 a.m. (1-1/2 hours). Take Mercy Road exist off I-15 west to Black Mountain Road.Parking for Preserve is opposite. Bring bird book and binoculars. Led by Brian Swanson.

➡ p. 9 for more

(Walks cont'd)

Habitat Restoration: Artichoke Thistle Removal
Sun., April 18, noon (2 - 3 hours). Meetat the Adobe Ranch house at the east end using the Canyonside Park entrance off Black Mountain Road. Wear heavy pants and good boots since the thistle has thorns. Bring gloves. We'll be cutting and spraying the thistle west of the ranch house. Call Mike at 566-6489 to r.s.v.p.

Medicinal Plant Walk
Sun., April 18, 4:00 p.m. (2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Nature Walk/Peñasquitos Creek Park
Sun.., April 24, 9 a.m. Meet at Peñasquitos Creek Park on Park Village Drive in Rancho Peñasquitos. From I-15 take the Mercy Road exit west to Black Mountain Road. Right on Black Mountain Road and up the hill to the first light. Left here on Park Village Drive. Follow it about 1-1/2 miles to the community park on the edge of the Preserve on the left. Trinity Gabriele will lead a walk about 6–8 miles to the waterfall and beyond. Should see lots of flowers.

Earthfair at Balboa Park: Volunteers needed
Sun.., April 25, 9 a.m. All day. If you'd like to help the Friends staff a table for an hour or two and cruise the fair before or after leave a message at 484-3219.

MAY

I Love Mira Mesa Day
Sat., May 1. If you'd like to help the Friends staff a table for an hour or two and cruise the event before or after call Mike at 566-6489. We'll be getting out newsletters, hike calendars, Park Day (May 23) flyers and selling t-shirts to raise funds for park day. We'll also be signing up new members. We need your help!

Endangered Species: Mesa Mint Survey
Sun., May 2, 1 p.m. If you'd like to help the Friends survey vernal pools for endangered plants, call Mike at 566-6489.

Annual Peñasquitos Canyon Park Day (see article in this issue)
Sun., May 23. If you'd like to volunteer to help the Friends staff a tableor food booth or sell t-shirts or whatever for an hour or two and cruise the event before or after call Mike at 566-6489. We need your help! This will be a great day for children.

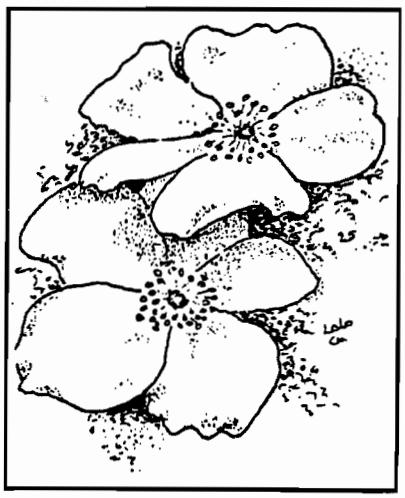
Friends Board of Directors, Committee Chairs and Hike Leaders

Officers
President: Mike Kelly 566-6489 (H, evenings)
Vice-President: Don Albright 271-9216 (H)
Treasurer: Rena Kerwin
Secretary: Les Braund 566-3958 (H, evenings)

Other Members of the Board of Directors
Trinity Gabriel
Tom Hopp
Bruce Martin
Alan Pepper, Ph.D.:
Jeff Rundle
Brian Swanson

Walks and Committees Leaders
Medicinal Plant, Sensory Awareness & Moon Walks: Will Bowen 452-7091
Fitness Walks: Dr. Jaya Perryman 549-7731 (H)
Nature Walk leader: Les Braund
Vernal Pools, Mystery Tree, Fire, Stage Coach & Dusk Walks: Mike Kelly
Kiosk Committee & Bird Walks: Brian Swanson
Wetlands Restoration Committee: Don Albright, Tom Hopp, Susan George, Marcus Spiegelberg, Trinity Gabriel
Newsletter Committee: Mike Kelly, Carla Scott, Trinity Gabriel
Newsletter Contributors: Barbara Zepf, John Northrop, Dave Hogan (S.D. Biodiversity Project), Claude Edwards
Hike Committee & Geology Walk Leader: Don Albright
Conservation Chair: Alan Pepper, Ph.D. 586-7123 (H, evenings)
Walkabouts: Trinity Gabriel
Plant Database: Bruce Martin
Message Center: Jeff Rundel

Rancho Santa Maria De Los Penasquitos Adobe Ranch Tour
Sat., May 1, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.



Wild Rose

Habitat Resotration Team Volunteers

Thanks go to Cindy Burruscano, Alan Pepper, Trinity Gabriele, Les Braund, Judy Stafford, and Mike Kelly for their ongoing efforts to remove Artichoke thistle from the Preserve.

A special thanks go to the Indian Guides from Rancho Penasquitos YMCA. About 25 kids and parents helped cleanup the riparian behind the ranch, weed the native grass plot at the ranch, and plant oak trees near the mystery trees east of the Equestrian Center.

Newsletter

Thanks to Carla Scott, Trinity Gabriele, and Mike Kelly,for helping get the newsletter out.

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
619-484-3219

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Apology for Newsletter Lateness

Several members called, worried that they missed a newsletter in February or March. There simply wasn't one produced. In the pass we have skipped a month and produced a "double" issue with a two month hike schedule so readers don't miss any activities. This happens because we're all volunteers, stretched too thin and other priorities crowd in. This time several other factors were responsible. The three month closing of the Preserve forced cancellation of almost all of our scheduled walks. In addition, Mike Kelly, who doubles as newsletter editor and President of the Friends, was quite sick for several months (he's now on the road to recovery).

Luckily, a new Friends' Board member, Bruce Martin, is computer literate, has a computer and the right software, the time and the interest to take over as editor from Mike and help prevent such delays in the future. We may switch to an alternating month's schedule of printing the Outings/Activities Calendar by itself one month and the full newsletter in the alternate month — which may be more realistic. Because of our occasional erraticness we have always been very lenient about newsletter renewal dates. Many of you have noticed that we don't stop sending the newsletter for many months after the renewal date has come and gone. We have also automatically extended renewal dates a month or two to make up for missed newsletters.

With Bruce at the helm and the continuing help of Carla Scott in typing articles into the computer and Trinity Gabriele, Mike Kelly and Don Albright putting on the labels and preparing the bulk mailing we should have greater consistency in the future. Thanks for your understanding.

Membership Application

Membership category? Circle below:
Senior (62) or Student $7.00 Individual $10
Family $15 Sponsor $25 Patron $100
Corporate $250 Life $1000
Contribution $ _____

I/We are interested in the following:

4/93

____ **Volunteer** to help the committee
____ Hikes
____ Indian Culture
____ Educational Workshops
____ School, Family, Youth Programs
____ Environment (Plants, birds, mammals, geology)

Other: _____

Name(s) _____

Address _____

City State Zip _____

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Thank you for your support! Your donation is tax deductible.
Call **484-3219** or **566-6489** for more information.

Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

May 1993
Volume 7 No. 7

Volunteers Still Needed

The First Residents: Park Day 1993

See the flyer enclosed in your newsletter for the exciting details of our annual Park Day. If you can volunteer about two hours of your time please give Mike Kelly a call at 566-6489 day or night. We need help in staffing our exhibit table, selling the Park Day Commerative T-shirts, staffing other booths and more. No experience needed!

News Roundup

Canyon reopens thanks to volunteers

As you know, the Preserve was closed for three months due to flood damage and the resulting unsafe conditions. The park finally opened the first week in April. Despairing of ever getting one of the City's own caterpillars and drivers to come and do the repair work, Park authorities turned to volunteers for help. Out of their very tight budget, the Open-Space Division rented a caterpillar for a weekend. Bob Peyton, a member of the Volunteer Patrol, operates heavy equipment for a living. He put in more than 20 hours repairing the trails. In addition, Jim Walls of the Rancho Peñasquitos Equestrian Center, also volunteered his front-end loader and time on several occasions to do repair work.

Best Wildflower Show in Years Continues

While Anza-Borrego disappointed many with the relatively poor wildflower display this year, Penasquitos Canyon won't. Flowers continue to bloom all over the Preserve. The single best display is in the burn area, the site of last September's 270-acre fire. Typical of a recently burned area, there are tens of thousands of wildflowers to see. Fire poppys, large-flowered phacelia, star lilies, lotus, snapdragons, blue dicks, golden stars, owl's clover, peninsular onion, morning

↳ p. 3 for more

Children's Ecology Club

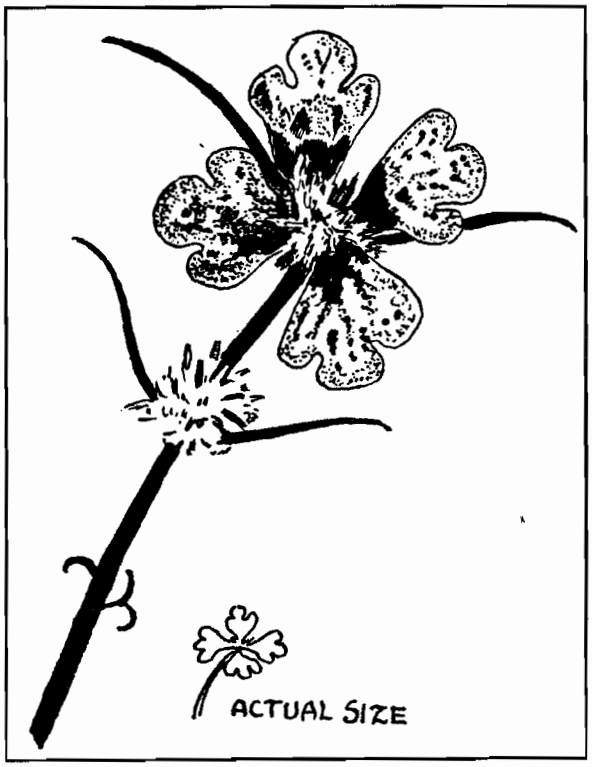
by Kathryn Wild, Ph.D.

"You can make a difference!" is the motto and motivation of the Children's Ecology Club. Formerly known as the Hickman Ecology Club, the club has members from five San Diego City schools, including Hickman Elementary, Challenger Jr. High, Wangenheim Jr. High, Mira Mesa High, and Encanto Elementary.

The four local Mira Mesa schools have "adopted" local endangered species from our vernal pool ecosystem. The club focuses on learning the finer details of select species, utilizing a holistic approach to the entire ecosystem and how it all fits into the global picture.

The children are proactive politically, taking advantage of San Diego's many environmental resources through university and military studies, as well as professional and local conservation organizations. Last spring

↳ p. 2 for more



Mesa mint (*Pogogne abramsii*)

Inside

Old Fossils Found North of Peñasquitos

by Dr. John Northrup, Registered Geophysicist

One day while hiking during the January rains, I literally stumbled over a rich find of invertebrate fossils in Orroyo Sorrento, north of the SDG&E sub station in Sorrento Hills (Across Peñasquitos Creek from the Ruiz Adobe). The well preserved macro fossils include both Ostracoda and Mollusca, some fully articulated (both shells present). On further investigation, I found the source of the fossils was a massive, gray sandstone layer about one foot thick that jutted out of the hillside above the original find.

Consultation with fellow geologist Don Albright confirmed that these fossils are indicative of the 100,000-year old Bay Point Formation, the same one that onlaps the west end of López Ridge in Peñasquitos Canyon Preserve. They represent a brackish water lagoonal environment during the Pleistocene period, similar to Peñasquitos Lagoon of modern times.*

Anyone wishing to visit the site should contact the author at 454-6570 or Don Albright (271-9216) for directions.

*"Paleonvironment Analysis of a Late Pleistocene Estuary in Southern California," by J. Phillip Kern, *Journal of Paleontology*, Vol. 45 #5, pp. 810-823 (1971).

Pack Rats in Our Midst

by John Northrup, Ph.D

When climbing up through the coastal sage scrub habitat on the north slope of Penasquitos Canyon and out into the chaparral covered mesa, one often encounters circular wood huts 3-4 feet high, much like beaver houses, hidden in the brush and wonders, what are they? Well, they're pack rat (Neotoma) dens.

Pack rats (or wood rats), though rarely seen (they're nocturnal), are really more like squirrels than rats, i.e. larger, with bushy tails, large limpid eyes, translucent ears, sharp teeth and very sharp claws (they can climb trees!). They have soft bluish-slate colored black fur and subsist entirely on the wood and bark of the ceanothus (California Lilac), manzanita and chemise (greasewood) bushes that make up the chaparral community. Though their huts are rough on the outside, the inside is floored with soft fur and the inside linings of young ceanothus branches and twigs.

Pack Rats are collectors

Called "pack rats" because they pack everything into their huts (especially shiny objects like eye glasses, jewelry, and coins) these "landlocked beavers' have few enemies; coyotes tear down the huts in spring to get at their young, but that's about all.

Old timers, it is said, used to tear apart the huts looking for precious metal. (Many a pack rat den in the sierra foothills was ransacked for this purpose). Since that doesn't happen around here, their dens are rarely destroyed and therefore, pack rats are fairly common on Del Mar Mesa. For example, there are dozens of huts on Carmel Mountain on the western end of the Mesa between Penasquitos Canyon and Carmel Valley, Some are rebuilt every year alongside the previous one which was torn apart by coyotes.

Some live in colonies

Looking at the "floor" of the wrecked hut, one can see it is littered with the small red iron concretions that constitute the Linda Vista Formation in that area . . . the pack rats packed them in! Other dens are built in groups, like apartment houses, while some are solitary. Trails through the understory of the chaparral can be seen leading to and from the huts.

Because the huts are made of sticks gnawed from the very bushes that surround them, they are well camouflaged and often missed by a casual observer. The lacy white blossoms of Ceanothus, which is blooming now (February), make a good clue when looking for pack rat huts. Simply take a trail to where the blossoms are thickest and look around on the edges of the path you're on; there's bound to be a pack rat den there . . . or thereabouts. Finding one is quite a thrill, somewhat akin to seeing beaver huts in the wilderness.

Bulldozers will destroy their homes

Now is the time to look, because bulldozers are lurking in the background as developers' plans to cover the area with houses advance relentlessly through the labyrinth of City Hall . . . 2077 units in Pardee's North City West areas 8-10 alone! Wildlife corridors are planned through these areas for larger mammals, i.e. deer, but not for the lowly pack rat. They will be bulldozed into oblivion along with the last few remaining acres of undisturbed native chaparral in San Diego County.

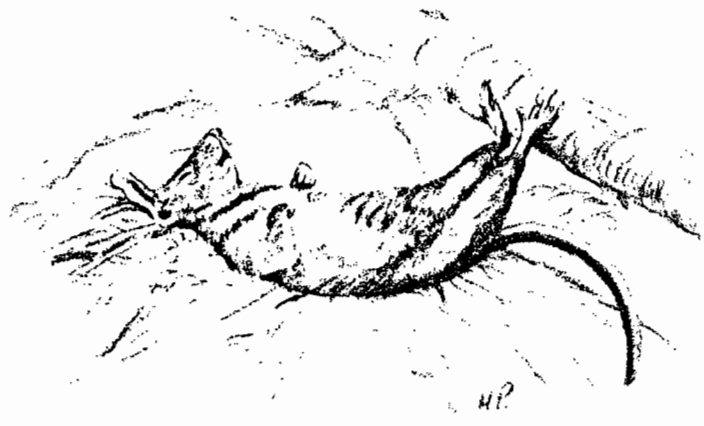


FIG. 114. Desert Wood Rat (*Neotoma lepida*) sleeping in its nest in hot weather.

(Club cont'd)

the members gathered over 500 "kid" signatures to send to local, state, and federal leaders advising them that "we're willing to give up a lot in order to keep our planet healthy."

Selected as "model school club" by the Department of Fish and Game, I chaperoned four club members to Sacramento as guests of the Audubon Society, April '92. Our club received two Resolutions and a Certificate of Recognition, met a number of senators, toured the capitol, and did some old fashioned lobbying. (If you missed our media blitz, it was because we were pre-empted by the more spectacular Harris execution and Rodney King verdict.)

When the children learned of the devastating effects of eucalyptus trees in our vernal pool area, we kept Nancy Gilbert of the Dept. of Fish and Game abreast of the situation, eventually forcing Fieldstone to remove all invasive trees (approx 350) from the pool area October '92. Fieldstone owns the property and although at first resistant, was not only cooperative, but offered to replant native trees and shrubs as soon as they hydroplant the slopes with native flowering groundcover.

One of our eighth grade members, Brian Parrish, discovered and reported an unmapped vernal pool area which was slated for development. Because of Brian's clear thinking, there is now an E.I.R. mandated for the area and very real possibility of getting a nature interpretive center located there.

Our club was nominated for the President's Environmental Youth Award last summer. Having submitted 90 pages of accomplishments, we earned 'runner up' and a representative from the E.P.A. presented us with the award at our February 25th meeting.

Special Species: A Children's Anthology on endangered Species by Barbara "Ms. B" Moran won the nationwide Challenge Award for environmental education, co-sponsored by Amway and Newsweek Magazine. Because our club has so many children writing for her book, she invited us to represent her at the awards ceremony held February 3rd at Hickman Elementary. Two of our club members and I accompanied Ms. B to a national environmental education conference held in Washington, D.C., March 24-28, as guests of Amway and *Newsweek Magazine*. Look for us in *Newsweek*, May 3rd!

March 29, 1993

Mr. Jesus Garcia
District 11, CALTRANS
2829 Juan Street
San Diego, CA 92110

Dear Mr. Garcia:

I am writing to file a complaint against the off-road vehicles that are inundating the Del Mar Mesa Vernal Pool Preserve. As I understand it, this preserve was established to mitigate for the loss of vernal pool habitat lost to Highway 52. I have been coming to study the plants and algae that inhabit the Del Mar Mesa for a couple of years, and have noticed a sharp increase in the (illegal) traffic due to motorcycles, dune buggies, trucks, and hot-air balloons this past year. The fences near the east entrance have all been torn down, and the vernal pool plants (such as Pilularia and Eleocharis), but these plants and the habitat they create cannot survive when the pools are drained prematurely from vehicular traffic. An inspection of the vernal pools on the east end of the preserve (behind fences, off of the main road) show that most, if not all, have ruts through the middle of them, and their water hydrology has been altered from motor vehicles. I have photographs depicting this deplorable state of the pools. These pools may need to be reconstructed in order to support the endangered species that should rightfully exist in this habitat, an infinitely more costly alternative to the proper maintenance of this mitigation project.

As a citizen of San Diego, I am outraged at the neglect that Caltrans has shown towards the maintenance of this national treasure. 97% of the vernal pools in San Diego have been lost due to development of the mesas and benign neglect on the part of the city. The plants and animals that grow in this habitat are unique in the world, and are valuable research and teaching resource for my class in Plant Systematics. At the rate that the pools are being destroyed in the Del Mar Mesa, it won't be long before this site is another casualty. Where will I take my students to observe the vernal pool flora then? How many sites have to be destroyed before the vernal pools become extinct altogether? Think about the ramifications to mankind if a cure for cancer of AIDS lies in Downingia or Pogogyne? Don't think it so unlikely--my Ph.D. is in the medicinal uses of plants, and some of the most incredible recent advances in medicine have come from local plants that have been previously ignored.

Please erect sturdy barricades to permanently deter the constant vehicular traffic that is destroying so many of these pools. Every time that I have brought groups or been out on my own to study the flora I have encountered drivers of off-road vehicles, some of whom are belligerent and have caused me bodily concern. this site is a national treasure, with species that cannot be found anywhere else in the world. San Diego is famous nationally for this model ecological community, and it deserves far greater protection that it is currently receiving. Please preserve this habitat for future generations to study and enjoy.

If I can be of any further assistance, do not hesitate to contact me. i expect a reply, outlining steps that will be taken to rectify this situation, by May 1, 1993.

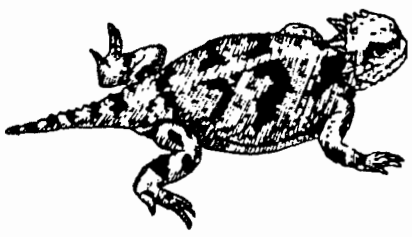
Sincerely,

Sheri P. Cole, Ph.D.
Instructor, University of San Diego

cc: Tim Vazquez
Chief, Environmental Analysis, CALTRANS

Kiosk Fund

Another generous donation from Don Steele brought our Kiosk Fund total to over $1700. Our appeal to raise funds for educational kiosks has raised enough money to allow the purchase of materians for two kiosks by Eagle Scout candidate Kevin Heinrich.



(News cont'd)

glories, California poppys, Mexican fringed pinks, and many others dot the blackened earth, offering a sharp contrast of death and regeneration.

The López Ridge vernal pools, some of which were also in the fire, are spendid. Magenta canchalaqua, carpets of downingia, patches of goldfields, pungent skunk weed and overpowering Mesa mint vie for your attentions.

Elsewhere in the Preserve you can see fields of purple bird vetch, large patches of purple, blue and white lupines, hillsides of yellow encelia giving way to the lighter yellow of black mustard, the firey red of Indian paintbrush and many others. Join us Sunday, May 2 (see schedule for details) and treat yourself to many of these plants. If you want to go on your own, here are some suggestions. To reach the burn area, find Sorrento Valley Boulevard/Calle Cristobal in Mira Mesa. Find Caminito Propico 1/4 mile east of the intersection of this road with Camino Santa Fe. Park on this street and walk back to the west on the north side of Calle Cristobal. Walk along the fence and look in at the vernal pool plants. Continue on past the fence and turn to the right and walk into the burn area and you'll be surrounded by flowers.

Alternatively, instead of turning into the burn area at the end of the fence, continue down the side of the street to the graded lots. Walk over to the canyon's rim and continue along the rim until you see a small trail going down into the burn area.

Heavy equipment needed for Preserve

The long delay in reopening the Preserve shows the pressing need for having a front-end loader or similar piece of equipment available for Peñasquitos Canyon Preserve and the other open-space parks in the City system. If you have any contacts or knowledge of a piece of equipment that could be donated to the Preserve, please give the Friends a call at 484-3219. As a 501 (c) 3 tax-exempt non-profit we can make such a donation a tax deductible contribution. In fact, such a piece of equipment could bring its owner a bigger tax deduction as a contribution than a sale (nobody's buying now) or a bankruptcy auction (low prices in today's depressed building market).

Habitat Resotration Team Volunteers

Thanks go to Cindy Burruscano, Trinity Gabriele, and Mike Kelly for their tremendous effort this past month in bringing the desert artichoke invasive weed under control.

Native Perennial Grass Establishment and Management

by Paul Kephart and David Amme

The purpose of this article is to review principles an practices which lead to successful and thriving native perennial grassland stands. Even with appropriate seeding and fertilizing techniques, seedings of perennial grasses need close attention and management during the first year. Unlike the annual grasses, most perennial grasses, both native and non-native, grow slowly the first year and take two years to develop into good stands. Week competition and drought can make or break a successful seeding. A thorough and detailed plan that includes scheduling and allocation of resources should precede native grass plantings.

Setting Goals

Determining the fundamental goals of seeding native perennial grasses is critical because management techniques will vary in scope, investment, and landscape description. Broad categories of goals are:

1) Grass seed production--objectives are a high seed yield, superior quality, and profitable grass seeding,

2) Range and pastureland improvement--objectives are a successful transition to perennial high quality forage, established with minimum mechanical, petroleum based technology and investment,

3) Roadside stabilization -- objectives are a low maintenance, California-climate-adapted ground cover that controls erosion, suppresses weeds, and provides ecologically sound management,

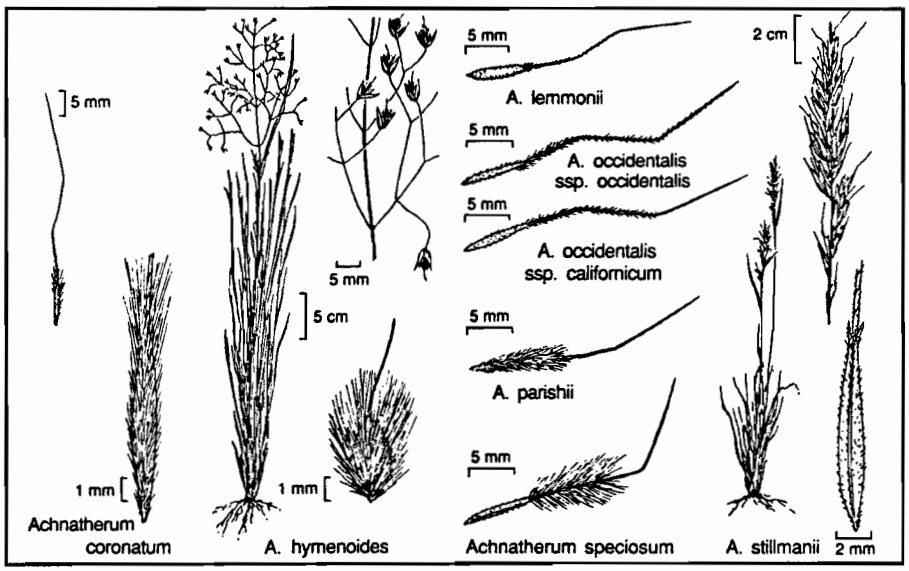
4) Habitat restoration -- objective are a biologically diverse plant and animal community and a foundation for natural processes and/or succession,

5) Urban landscape -- objectives are dependable and predictable growth and flowering characteristics for aesthetic design and low water use, and

6) A sustainable agricultural landscape -- objectives are low-maintenance buffer areas that serve as habitat to beneficial insects and wildlife.

Establishment techniques

Common perennial grass establishment methods include broadcast, drill, or hydroseeding and plug or liner planting. In a range setting where some native perennial grasses already exist, controlled grazing and prescribed burning are other methods of perennial grass establishment. Late fall to late winter are the best times to sow perennial grasses. Cool temperatures and periodic rains help retain soil moisture for seedling emergence and root development. Important objectives for successful perennial grass establishment include:



1) reducing the weed seedbank,
2) creating a firm seedbed,
3) burying seed at the proper depth,
4) providing adequate moisture during germination, and
5) controlling weed competition.

For sites that can be disturbed, mechanical and chemical (herbicide) treatments can be used to begin the process of weed seed ban reduction. Early fall rains or pre-irrigation causes annual grasses and weeds to germinate before perennial grasses are seeded. Annuals can be killed by light cultivation or application of a non-selective herbicide. If harrowing or disking is performed, it is important not to cultivate too deep or weed seed will be brought to the surface again. Cultivated or disturbed soils require rolling and compaction. A compacted, firm seed bed preserves moisture through capillary action and holds seed in place. Burying the seed just below the soil surface is the optimum seeding technique. A rule of thumb for planting is to plant seeds as deep as seven times the width of the seed.

Herbicide treatments

Broadleaf herbicide treatments help establish grasses and can play an important role in managing grass stands. Wicking or spot spraying are examples of specific plant applications. There is an arsenal of herbicides that kill annual grasses, broadleaf forbs, and specific plants. Certain chemicals will kill annual grasses without damaging established perennials. It is important to check with the local farm advisor or herbicide specialist for specific product information before deciding how to use the herbicides or whether or not herbicides are necessary to reach the landscape goal.

Where herbicides and soil disturbance techniques are not possible, higher seed rates and multi-species seed mixes have proven successful. This is best accomplished by using range or native grass seed drills. These drills plant seed just below the surface without soil tillage. Mechanical broadcast seeding with harrowing (lightly scratching the soil surface) is also successful, especially with complex seed mixes. However it is important to note that follow-up management either with mowing equipment or grazing animals is **essential** for controlling weed competition to insure perennial grass establishment when resident weeds cannot be controlled.

Broadcast seeding, drill seeding, hydroweeding and native straw mulches are successful methods especially on steep slopes and roadbanks where the erosion potential is great. Native grass hay that has been flailed contains as much as two pounds of seed per 100 pound bale. Crimping this hay into

banks or covering the hay with netting reduces erosion and suppresses broadleaf weeds.

Adequate irrigation or rain during early germination is important to prevent crusting of the soil surface. This is often the case with disturbed or cultivated soils. One technique employed to break crusting is a light ring rolling or harrowing prior to seedling emergence. On rangeland and non-cultivated sites, livestock impact simulates mechanical cultivation and aids perennial grass establishment. Excited animals disturb the soil surface and their hooves compress broadcasted seed into impressions where moisture collects. Native grass hay and seed supplement seed mixes can make four legged range improvers out of livestock.

Container planting either with grown plugs (liners) or dug rhizomes are effective in establishing native perennial grasses. However, the cost for plugs and rhizomes is much higher than seed. Cost varies upon the species grown, type of plug, and numbers of plugs grown, type of plug, and numbers of plugs grown. Plug and rhizome planting are often the best methods of introducing native perennial grasses for steep slopes, buffer strips, and small critical areas. Plug planting is especially applicable in urban landscape settings. Planting plugs of rhizomatous native grasses such as creeping wildrye (Leymus triticoides) can often pass cost-benefit analysis where the spacing of plugs are over two feet apart and closed stand is achieved the following year.

The use of fertilizers and their rates depends on soil type and fertility, species response, and performance goals. Soil testing should always precede a native perennial grass seeding. The goals and choice of the perennials to be seeded also has important bearing on the use of fertilizers. The faster growing native perennial grasses such as California brome (Bromus carinatus), meadow barley (Hordeum brachyantherum), blue wildrye (elymus glaucus), and slender wheatgrass (E. trachycalus) respond favorably to added fertilizer during the establishment phase. Slower growing native perennial grasses such as needlegrass and creeping wildrye show little improved response to fertilizer during the establishment phase. In low-input rangeland setting where annual grasses and weeds are dominant, fertilization during the establishment phase is clearly counterproductive. Nitrogen fertilizers stimulate the faster growing annual grasses and weeds, outcompeting the slower growing perennials. Second year fertilization programs are more beneficial in this situation because the perennial grasses are well-established and are able to utilize nutrients more efficiently. In an agricultural or irrigated pasture setting where the annual grasses and weeds can be more closely controlled, fertilizers are effective during the establishment period.

Management

Follow-up management of a seeded site is just as important (if not more important) to a successful perennial grass stand as is the careful attention paid to the actual seeding operation. The most important objective for a first year management program is to favor perennial plant cover over annual grasses and weeds. Carefully timed mowings, planned grazings, prescribed burns or a combination of these management practices is needed to achieve this objective. Annual grasses and weeds grow faster and reach reproductive maturity earlier than native perennial grasses. Precise timing of mowing events will alter the balance of reproductive success between the annuals and perennials. The timing, height, and frequency of a mowing schedule are designed to reduce direct competition from annual grasses and weeds and to stimulate tillering and root growth. The mowing season and frequency should be adapted to plant size and growth rates. Close mowing with the removal of residue (clippings) in the early spring greatly favors perennial grass establishment and prolonged vigor. Mowing reduces potential production of annual grass seed, provides a competitive edge for perennials, stimulates tiller production, and preserves available moisture in the soil.

Two or three mowings are needed during the first year after initial seeding. The most important mowing is the early spring mowing. Depending on the amount of rainfall and the wet season temperatures this is usually accomplished near the end of March. Late spring/early summer mowing usually results in the gradual expansion of noxious biennial weeds such as yellow star thistle. By the middle of June the perennial grasses should be allowed to dry out and go dormant. A fall mowing enhances perennial grass regrowth and provides light and space for emerging seedlings as well as reducing the potential fire hazard.

Grazing can be an important restoration tool for establishing and maintaining native perennial grass stands. When planning grazing frequency and intensity it is important to allow the native perennial grasses adequate time to recover after the grazing event. Overgrazing (chronic and sever defoliation) occurs when livestock stay in a pasture too long or return to a pasture too soon. The most severely stressed native perennial grass should be targeted for close monitoring to determine the grazing plan. Rest periods for pastures determines the grazing period. The more pasture units the better. Planned grazing allows the native perennial grasses to produce seed and aids in seed dispersal and planting. Temporary electric fences are indispensable for controlling livestock movement and degree of utilization. Planned grazing requires water and fence development but most importantly successful grazing requires dedicated managers who put extra time and money into managing livestock in an ecological and sustainable manner.

Prescribed burning promotes the spread of native perennial grasses. Fire reduces the cover and vigor of annual grasses and weeds, recycles nutrients and minerals retained in aboveground biomass, provides the optimum seed bed and conditions for perennial grass seedling establishment and renews old decadent bunchgrasses. Long-lived perennial grasses such as creeping wildrye, purple needlegrass (Stipa pulchra), nodding needlegrass (S. cernua), foothill stipa (S. lepida), pine bluegrass (poa scabrella), foothill melic (Melica imperfecta) and California melic (M. Californica) are known to respond well to the frequent use of late summer and early fall fires. Idaho fescue (Festuca idahoensis), western fescue (F. californica) and short-lived perennials such as California brome, meadow barley, blue wildrye, and slender wheatgrass, are more sensitive to frequent fires. Annual cutting of brush and weeds for a fire break defines areas for a burning and seeding program. Prior mowing or grazing reduces fire risks and provides optimum burning temperatures. The limiting factors when using prescribed fire is a lack of specific objective and the political and cultural backlash that sometimes accompanies proposed prescribed burns.

With preplanning and clearly stated objectives, establishment and management of native perennial grasses will lead to a rewarding, long-term, perennial grassland for the restorationist, land manager, and urban landscape designer.

Canyon Oasis BBS Online May 7

Beginning May 7, any of our members, with a computer and modem, can access our Electronic Bulletin Board System. Users should use 300, 1200, or 2400 baud, 8 bits, no parity, and 1 stop bit. Log in as a NEW user. Register with your first and last name only. Please use a password only you would know.

BBS.....695-1710
Help.....689-9916

Friends of Peñasquitos Canyon May Events Schedule

Last Chance: Flower & Vernal Pool Excursion Endangered Plant Surveys

May will be your last chance to enjoy the most spectacular wildflower show in many years. Come see the endangered Mesa mint and many other species on our various walks during May.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

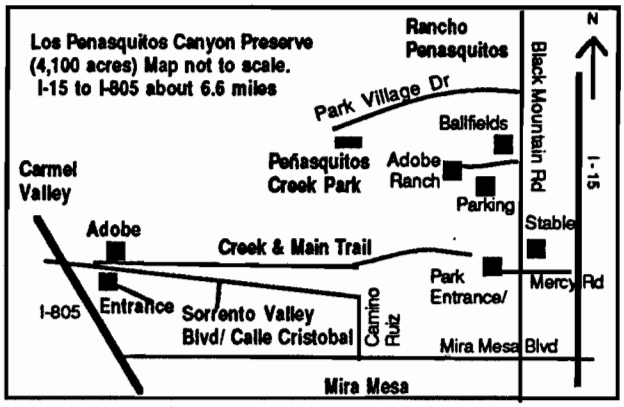
MAY

I Love Mira Mesa Day
Sat., May 1. If you'd like to help the Friends staff a table for an hour or two and cruise the event before or after call Mike at 566-6489. We'll be getting out newsletters, hike calendars, Park Day (May 23) flyers and selling t-shirts to raise funds for park day. We'll also be signing up new members. We need your help!

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., May 1, 11 a.m. and noon (45 min. each), S.D. County Archaeological Society. Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest resident, an historic adobe, settler and Indian artifacts.

Vernal Pool & Burn Area Walk on López Ridge in Mira Mesa
Sun., May 2, 9 a.m. (about 2 hours). We'll visit the City's Vernal Pool Preserve on López Ridge and then the burn area from the fall fire that lies adjacent to the vernal pools. You'll see the endangered Mesa mint and other great vernal pool flowers,. In the burn area we'll see evidence of the biodiversity of plants typical of a recently burned area. From I-5 or 805 take Sorrento Valley Blvd. east up López Ridge through the intersection with Camino Santa Fe to Caminito Propico. Park in the cul-de-sac on the right or in the development on the left. From Rancho Peñasquitos, I-15 or Mira Mesa reach Mira Mesa Blvd. and proceed to Camino Ruiz. Go right (north) and continue around the curve where it becomes Calle Cristobal. Follow this west to Camino Propico.Led by Mike Kelly.

Full Moon Walk
Thurs., May 6, 7:30 p.m. (2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Bring flashlight. Learn moon lore and legendst. Look for deer and other nocturnal animals. Led by Will Bowen, Ph.D.



Flower Walk
Sat., May 8, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. See wildflowers; learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Medicinal Plant Walk
Thurs., May 13, 6:30 p.m. - 7:30 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Bird Walk in López Canyon
Sat., May 15, 8 a.m. (1-1/2 hours). Meet in new Parking-Staging area off Sorrento Valley Blvd. , 1/2 mile east of Sorrento Valley Industrial Park. Park entrance is on right, going east. From Mira Mesa take Calle Cristobal to Sorrento Valley Blvd., entrance will be on left.Bring bird book and binoculars. Led by Brian Swanson.

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., May 15, 11 a.m. and noon (45 min. each), See May 1 listing for details. Geology Walk Sun., May 16, 9 a.m. (3 hours). Meet in Mira Mesa on Lopez Ridge. From I-15 or I-805 take Mira Mesa Boulevard to Camino Santa Fe. Go north on Camino Santa Fe to the intersection with Calle Cristobal. Right on Calle Cristobal to Caminito Propico. Bring water and wear hiking boots since a steep hill is involved. Learn about area geology and visit the Preserve's waterfall. Led by geologist Don Albright.

Peñasquitos Canyon Park Day
The First Residents: Native Americans in Peñasquitos Canyon
Sun., May 23. Call 484-3219 for a flyer for the event. If you'd like to volunteer to help the Friends staff a tableor food booth or sell t-shirts or whatever for an hour or two and cruise the event before or after call Mike at 566-6489. We need your help! This will be a great day for children.

Nature Walk with Barbara Moore
Sun., May 31, 11 a.m.(2 hours). Join Barbara Moore, co-author of Walking San Diego and coordinator at the Chula Vista Nature Center for a nature walk. Meet at the west-end Parking-Staging area off Sorrento Valley Blvd, 1/2 mile east of the intersection with Vista Sorrento in Sorrento Valley. From the east take Camino Ruiz in Mira Mesa north to Calle Cristobal; west on Calle Cristobal, which becomes Sorrento Valley Blvd. Entrance is on left side as you come down off the big hill and over the Lopez Creek bridge. Barbara's book will be available for purchase at the walk.

Endangered Plant Surveys & Habitat Restoration Projects
Call Mike at 566-6489 if you would like to help out on one of our many projects. No experience necessary!

Birding in Penasquitos Canyon

The House Wren

by Barbara Zepf

Nesting time

Spring is an exciting time for both birds and birders in Penasquitos Canyon. It's nesting time. Suddenly every tree seems to be filled with warbling, buzzing, screeching and screaming avian life. Many of these birds reside in the canyon all year long, but they are relatively quiet until spring when their mating urges heat up. Then they seem determined to spend every waking moment staking out their territory and attracting a mate.

Owls and hawks start their courtship rituals while it is still winter. I was so pleased to see that the Great Horned Owls accepted the nest that was moved during the mitigation work. They settled down to produce a new off-spring. After hatching, several of us thought we saw two young in the nest, but maybe we were mistaken, because only one is in the nest now. By the time you read this, the owlet will probably be out of the nest. I hope you all got a chance to see it. It was a real thrill. Both Red-shouldered and Red-tailed Hawks are on the nest now, and the Barn Owl has staked out her usual box.

Winter rains bring great spring

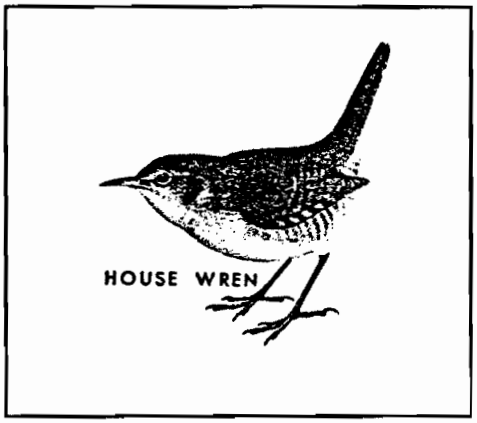
The prolific winter rains have made the canyon come alive this spring. There is more of everything -- water, prey of all kinds -- lizards, squirrels, pocket gophers, snakes, insects, et al. The flowers and plant life in general are spectacular. It should be a fantastic season for breeding birds. With the canyon closed for three months the animals had the place to themselves. I'm sure they enjoyed it. Now that the canyon is open to the public again, please use restraint when coming upon a nesting bird. Many birds have nested closer to the trails than in past years, because they were undisturbed for those few months. Too much attention to a nest can cause the parents to abandon it. Use you binoculars and observe from a distance. Many more nests are visible this spring than I have ever noticed in the canyon before.

A tireless singer

There is one bird that you can't help but see and hear in the canyon at this time of year -- the House Wren. They seem to be everywhere! For such a bird, their singing repertoire is astounding. Pound for pound, they are one of the most vocal birds in the canyon, seeming to sing during every daylight hour, delivering a clear, rapid, loud, bubbly trill that rises and falls in pitch. It sounds like "tsi-tsi-tsi-oodle, oodle, oodle."

The House Wren also gives a chattering, scolding note, either a loud "trrrr" or a harsh buzz. When singing, it often mounts a perch and points its usually cocked tail straight downward.

House Wrens are spring migrants, summer residents and uncommon to fairly common fall migrants and winter visitors to San Diego County. So you are apt to see one at



about any time of the year, although you may not always be seeing the same bird. They are highly inquisitive and can often be lured into view by "pishing" or squeaky noises. None of these lures will be necessary in the spring, though. They are quite visible right now and loudly proclaim their presence from every corner of the canyon.

One of the best places to see them is around the ranch house. Just sit at one of the picnic tables and you'll be surrounded by their cherry songs. They seem to love the pepper trees, both for nesting and feeding in their many nooks and crannies.

House Wrens require two things for breeding -- dense underbrush in which the birds can forage and take cover, and trees large enough to offer nest holes. They will also readily accept man-made next boxes. They're very opportunistic nesters and have been known to nest in tin cans, flower pots, old boots and even in the pockets of overalls hanging on a clothesline!

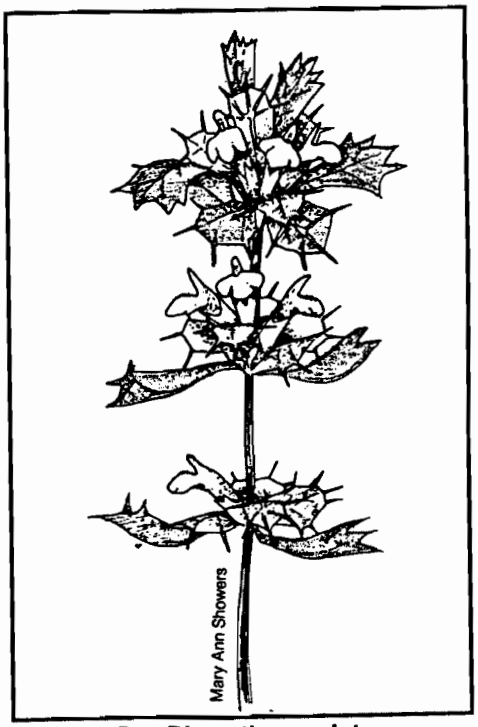
They're the plainest and most common wren in the United States. They're 4-1/2 to 5-1/4 inches long with a wingspan of 6 to 7 inches. They're unstreaked gray-brown above and pale gray below. They have narrow blackish bands on the wings and tail and often on the lower belly. There is a thin, light eye-ring and an indistinct, narrow grayish eyebrow stripes. House Wrens are chunky birds with slender, slightly curvey bills and uptilted tails. Juveniles appear much rustier with a scalloped look on the breast.

Mighty mites

House Wrens' aggressive territories defense belies their small size. I have even seen them drive off starlings who were competing for the same nest hole in a sycamore tree near the main trail. They usually nest from mid-April to mid-June. Adults return almost invariably to territory where they previously nested. The male arrives on the breeding grounds before the female and builds several stick nests in cavities. When the female arrives, she finally chooses one and lines it for her eggs. When the female arrives, she finally chooses one and lines it for her eggs. When the population of House Wrens is highest and competition for territories keen, some may puncture eggs or kill young of other wrens and songbirds in adjacent territories. House Wrens usually lay 6-8 white eggs speckled with brown. The eggs are incubated for 13-15 days and the young leave the nest 12-18 days after hatching. They may have 2 or 3 broods a season.

Their diet contains almost entirely of insects -- grasshoppers, ants, crickets, beetles, caterpillars, bees, wasps, flies, ticks, aphids; sometimes spiders, millipedes and snails.

House Wrens nest all across southern Canada and most of the U.S. In winter, they reside in the lower U.S. and farther south into Mexico. So we lucky Californians can observe these bubbling little wonders any month of the year -- enjoy!



San Diego thorn mint
(*Acanthomintha ilicifolia*)

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
619-484-3219

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Plant Database: Bruce Martin

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Membership category? Circle below:
Senior(62) or Student $7.00 Individual $10
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Contribution $_____

I/We are interested in the following:

___ **Volunteer** to help the committee **5/93**
___ Hikes
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Thank you for your support! Your donation is tax deductible.

Call **484-3219** or **566-6489** for more information.

Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

July 1993
Volume 7 No. 8

Drive Is Underway

Support the California Parks & Wildlife Initiative

by Mike Kelly, president

This summer, we'll be organizing the Friends' members to gather signatures and funds for the California Parks and Wildlife Initiative — CALPAW '94 — for the June 1994 ballot. **Please join us in this critical effort. We need your help in circulating petitions and in donations.**

CALPAW '94 would make it possible to acquire tens of thousands of additional open-space and wilderness lands all over the State of California. In addition, it includes funds to improve inner city parks and recreation centers.

Outside of the Forest Initiative (see article this issue), I can't think of a higher priority for anyone who is concerned about preserving California's bio-diversity, its wild areas and the many species inhabitating them than working on behalf of this ballot measure.

CALPAW '94 is an initiative to put before the voters throughout the state a bond measure to "acquire, protect and enhance parkland, wildlife habitat, agricultural lands, coastal areas, river habitat and other resources." To succeed in placing this on the ballot we must gather 650,000 valid signatures of registered voters statewide. Hundreds of thousands of dollars are also needed to organize the petition drive and inform the public about the future ballot proposition.

If passed by the voters in June 1994 this measure would allow the State to issue a little less than $2 billion in bonds to be paid back out of the general fund over 20 years. The cost per capita works out to about 50 cents per month for 20 years, or six dollars a year. This figure would go down as the population increases over that time span.

Why is CALPAW '94 critical for San Diego County — and Peñasquitos Canyon Preserve?

CALPAW '94 includes worthwhile projects all over San Diego County. Following are the San Diego City and County projects; I've put the projects that directly affect Peñasquitos Canyon Preserve first.

Del Mar Mesa — $10,000,000 to acquire coastal sage scrub and other sensitive habitat, about 500 acres, north of Peñasquitos Canyon Preserve. Proposed by the Friends and the City of San Diego.

Peñasquitos Creek — $300,000 for capital outlay projects to reduce erosion threatening water quality in Peñasquitos Creek and coastal wetlands in the watershed of Peñasquitos Creek.

San Dieguito River Valley — $10,000,000 for acquisition and restoration of additional natural lands.

Famosa Slough — $500,000 for restoration and enhancement of the slough.

Soledad Open Space Park — $1,000,000 for expansion

☛ cont'd p. 5

Inside

Initiative Fund Honor Roll

The following members have already made generous donations to help support the campaign to get CALPAW '94 on the ballot. Won't you add your name to the list?

Adeline L. Black
Dr. Sheri Cole
Claude Edwards
Ronald Getoor
Alice Greene
Mike Kelly
Dave Kreitzer
Louise Lodico
Herbert J. McCoy, MD
Tom Mullaney
Victor Munnecke
Marshall & Harriet Pellar
Mr. & Mrs. G. Reynolds
Helen Scantlin
R.J. Schmidt
Francisco M. Wong

Birding in Peñasquitos Canyon

Mallards

by Barbara Zepf

Canyon not an entity but a continuum.

Peñasquitos Canyon was not and should not be an entity unto itself. A healthy canyon needs continuous corridors to surrounding habitats to remain viable and diversified. Ideally, it should be a continuum, interconnected with other thriving habitats. A small herd of deer inter-breeding among themselves soon weaken the strain and may eventually die out. Isolated botanical stands have a hard time competing with non-native vegetation.

Peñasquitos Creek in a continuum also. It rises from a spring in the mountains behind Poway and eventually meanders its way to Peñasquitos Lagoon. There it empties itself into the ocean at Torrey Pines State Beach. Whatever harms the creek anywhere along its course affects the creek downstream. You may have notices signs painted on storm drains in San Diego with a picture of a duck on them that say "No dumping--I live downstream". Peñasquitos Creek is not only fed from its spring but from run-off all along its part. Fertilizer from yards, motor oil and anti-freeze from street all find their way into its waters. Please take care!

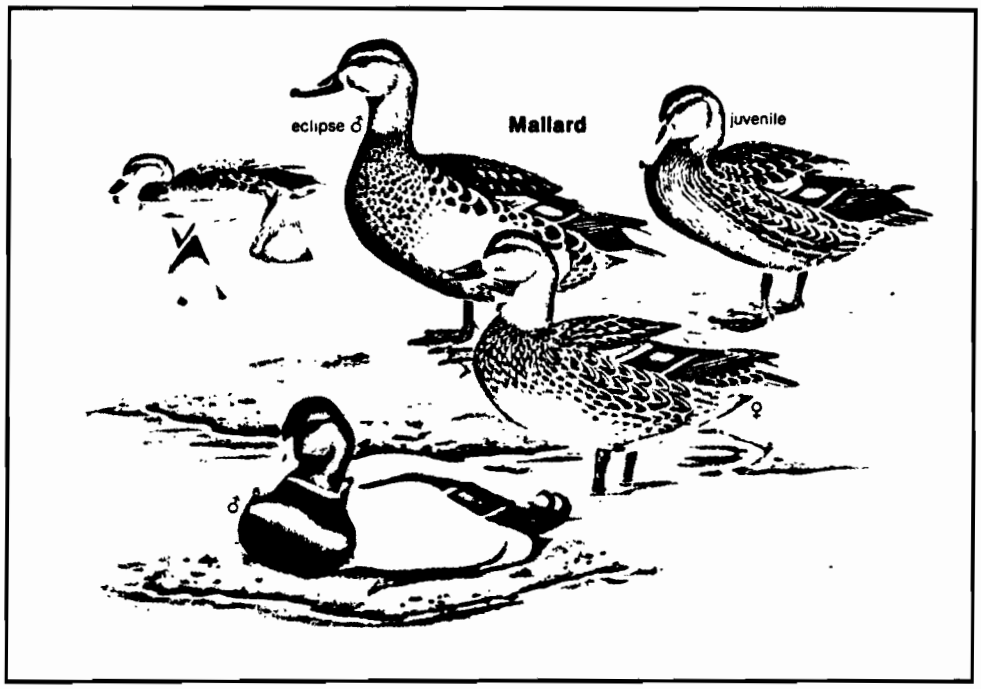
Bird can bridge habitats

Most birds can bridge habitats, as the air space above usually does not pose any barriers to travel. Water birds don't usually come to mind when we think of a canyon. But, because of its creek, many water birds can be seen in Peñasquitos Canyon.

One duck that can always be found in the canyon is the Mallard. The Mallard is the ancestor of all our domestic ducks except the Muscovy. Mallards are known to interbreed with just about anything that swims, so I have no way of knowing if the birds in Peñasquitos Creek are purebred or not. But I am assuming that they are because they are usually very skittish around humans, and they look like a "real" Mallard. Hybrids are usually bigger and heavier, and have varying amounts of white in their plumage. Whatever they are, I know they breed in the canyon, because I have seen the newly hatched chicks on more than one occasion. I once saw a mother Mallard with her brood of eleven new chicks tucked under her wings. I didn't even see her until I was almost on top of her. As she rose the move away, chicks scattered in every direction! I left the area quickly so that they could reassemble.

Mallards are found across the entire United States. In San Diego, they can be migrants, winter visitors, summer visitors (and breeders) or year-round residents.

Mallards are one of our larger ducks. They are 20-28 inches long with a wingspread of 30-40 inches. The male is larger. He has a glossy green uncrested head, a narrow white collar and chestnut breast. The upper parts are dark gray with the under part being paler. He has a white tail with central black feathers upcurled. The bill is yellow, and the feet are orange colored.



Most abundant duck

The Mallard is probably the most abundant duck in the United States. They are surface-feeding ducks or "dabblers". They are chiefly vegetarians, but they do eat some mollusks, insects and small fish. They will tip their rumps up in the air as they search for food underwater.

They are very agile fliers and can take off nearly vertically. Most do not dive, but young and molting adults will dive when in danger. In early summer, the males assume a drab "eclipse" plumage when they look similar to the females. After a second molt, they are restored to their usual colorful plumage.

The female is a mottled brown with white outer tail feathers. Her bill is orange splotched with black. Her feet are orange. The female has a dark cap and a dark strip through the eye.

Both male and female have a blue speculum bordered on each side with white and clear white wing linings which are conspicuous in flight. Only the female utters the "quack, quack-quack, quack, quack-quack". The male's call is quieter. It sounds like "raeb-raeb" or a low "kwek".

☛ cont'd p. 5

Trail Washouts at the West End of Peñasquitos Canyon — A Dilemma

by John Northrop, PhD, Consulting Geophysicist

For the last two years, floods caused massive washouts in the main trail near the confluence of López and Peñasquitos Creeks. These "holes," or swales, are deep enough to reach the water table, so they still have water in them and won't simply dry up. Last year, gravel was put there to fix the roadway, but it all washed away this winter, some being redeposited in the creek bed thereby causing it to overtop its banks even more.

These banks, or more properly "levees", were built in the 1860s and '70s by Peñasquitos ranchers when they dug out the creek channel to drain the area for agricultural use farming. (The original creek bed meandered southward to the base of López Ridge where the sycamore trees are, then turned north, near the cattle holding pens, forming another meander across the creek from the Rufz Adobe). Over the years, the levees have been eroded out in several places, and the creek bed has become choked with sediment and brush, so the dug out creek channel no longer contains flood waters and they spill out into the wetlands eroding the roadway in the process.

It appears futile, as well as expensive, to try to repair the roadway by filling up the holes with gravel after every flood so other alternatives should be considered. Possible alternatives are:

1. Abandon that part of the trail/ roadway;
2. Enhance the old levee and build a new roadway on top of it; and
3. Build a holding dam upstream to prevent flooding. Each of these alternatives has its advantages and drawbacks which will be briefly discussed below.

Abandon the roadway

This is probably the simplest and cheapest alternative. However, the Water Utilities Department has to be able to service the manholes there, so a "service road" is required. Also, Park users should be able to walk to the Rufz Adobe from the Parking/Staging area.

Additionally, this alternative would restrict access of fire and emergency vehicles to the Black Mt. Road entrance only. Possible widening of the existing trail around the nose of López Ridge to accommodate emergency vehicles would remove this problem, and providing a hiking trail along the "wall" north of Sorrento Valley road would allow pedestrian access to the Rufz Adobe from the Parking Staging area. However, these modifications would still leave the Water Utilities Department without required access to the manholes.

Rebuild the levees

Rebuilding the levees with material dredged from the creek bed using modern machinery would be a lot easier than when it was originally done by men wielding with picks and shovels. The section needing repair, between the Rufz Adobe and the hang-gliding area, is only about half a mile long and the creek bed needs clearing out there anyhow. Caterpillar treads of the mechanized dredges making the levee would leave a roadway behind them for the Water Utilities Department roadway and culverts could be installed for López Creek to flow under the roadway into Peñasquitos Creek.

The only problem is how to pay for it. The City's strapped for funds and so is the County as well as the State of California. Conceivably, the Army Corps of Engineers could be approached for funding the enhanced levees because they have responsibility over inland waterways.

Construct a holding dam upstream

A cement dam could be built about a mile upstream from the hanglider area at "The Narrows" where Peñasquitos Creek has cut a 75-ft deep channel through igneous rock of the Santiago Peak Volcanics.

These rocks, of Jurassic age, are impervious to water and would provide a sturdy, leak-proof base for the dam. Once built, the dam would not only pond flood water during winter rains but also would provide a convenient water source for fire fighters during the dry season.

Funding for dam construction would be a major stumbling block for this plan as well as environmental considerations; water behind the dam would back up all the way to "Sycamore Crossing" (near last year's burn area) and flood parts of the main trail in between requiring it to be moved up onto the edge of López Ridge (there's and old wagon trail there that was once used when the lower road was flooded).

This winter's washout of the service road at the west end of the Preserve is a problem that the Friend's Wetlands Restoration Committee should look into.

[**Editor's note:** The Wetlands Committee Dr. Northrop refers to has examined this situation and expects to issue a report and recommendations by late summer.]

Newsletter Submissions

Since we have no paid staffers *Canyon News* depends on our readers for articles. Our articles run the gamut from news about the canyon to poems to animal observations to hard science about a species or habitat and letters. If you would like to submit something for the newsletter here's how to do it.

Ideally we would like to receive your article on a computer disk accompanied by a printout. We can accept either Macintosh or IBM disks, 5-1/4 or 3-1/2 inch. The word processing program you use isn't important.

Thanks Volunteers!

This spring and early summer we have been blessed by the participation of many volunteers who have contributed hundreds of hours to the Preserve. If your name isn't on the list, give us a call and we'll give you the opportunity to volunteer this summer!

Earthfair: Les Braund who organized the Friend's great exhibit that drew many hundreds of fairgoers; Will Bowen, Brian Swanson, Trinity Gabriele, Alan Pepper, Mike Kelly.

Winterwood Vernal Pool and Mesa Mint Surveys: Kathryn Wild, Mike Kelly, Bruce Martin, Cindy Burrascano, Alan Pepper, Trinity Gabriele.

San Diego Thorn Mint Surveys: Dave Howe, Mike Kelly, Don Albright, Trinity Gabriele, Carla Scott, and Les Braund. We'll share our findings on this State listed endangered plant in our next issue, including our recommendations for its future protection in the Preserve.

Desert Artichoke weed removal: Mike Kelly, Trinity Gabriele and Cindy Burrascano who finished off this weed just in time — before this year's blooms. We'll have an article about the ecology of this weed in our next issue.

June 1994 State Park Bond Initiative: Don Albright, Mike Kelly, Les Braund, Cindy Burrascano, Barry Martin, Monica Parker, Markus Spiegelberg, Garrett Beaumont, Dave Kreitzer, Hans Leenhouts,

Poway Mint Survey: Monica Parker, Cindy Burruscano, Mike Kelly, Alan Pepper, Vicky & Melinda Ausen, Rena Kerwin, Trinity Gabrielle, Carla Scott, Jocelyn ?, Ann Stevenson, Barry Martin, Joan Stewart. We'll also share our findings on this Endangered Plant in our next issue.

Thorn Mint Fencing Project: Mike Kelly, Les Braund and Barry Martin.

I Love Mira Mesa Day exhibit:

Mike Kelly, Janet and Alice Potter, Vicky and Melinda Ausen.

Park Day: Mike Kelly, Janet and Alice Potter, Vicky and Melinda Ausen., Carla Scott, Les Braund, Don Albright, Viola Sampson, Dave & Howe, Neil Bouscaren, Leslie Hastings, Rena Kerwin, Althea Church. Diane Morey.

Peñasquitos Spring Fling: Mike Kelly and Trinity Gabriele.

Carmel Mountain High School ASB Cleanup: 65 students from the High School volunteered a morning under the direction of Kim Lichtenburg, a leader of the ASB and our own Trinity Gabriele. They cleaned up a big part of the Preserve from the Black Mountain Bridge all the way to Peñasquitos Creek Park. In addition, one team removed the invasive Tamarisk trees from the Camino Ruíz wildlife corridor running north from Peñasquitos Creek Park.

Recollections of Ramon and Henrietta López

Herbert I. McCoy, M.D.

My children and I began riding in López and Peñasquitos Canyons in the early 1950s. We often visited with Ramon López and his sister Henrietta.

According to John Northrup in "Riding 'Round Penasquitos," the ranch had been owned by the López family for over 100 years. Ramon's father and mother and a sister afflicted with polio had died well prior to our visits. Ramon's father was said to have had legendary skill in the use of the lariat. In addition to roping cattle and horses, he was frequently called up by a local hog-raising family to assist in catching their elusive hogs. Ramon's father could lasso the hogs on the run by their hind feet.

The López family also raised horses. Ramon had the reputation of being a top cowboy. Mr. Norwood Brown — who grazed cattle in the canyons — recalls a tale about young Ramon. Apparently, when he was "busting" horses, Ramon would put a 5 dollar goldpiece between his boot and the stirrup. he would bet that after the horse quit bucking, the goldpiece would still be in place. He is said to have won most all of his bets.

Henrietta and Ramon took a fancy to our youngsters and would often invite us to enjoy some of the fruit in their orchard. Some of the same pear trees still bear fruit, as does the old quince tree. The apricot and peach trees have passed on.

In the 1920s and 30s, Ramon had dairy cattle as well. Mr. Paul Robinson remembers his bringing milk and cream out to the train stop in Sorrento Valley, twice weekly. It was then delivered to the dairy in San Diego.

We all remember his stubborn old Fordson tractor, vintage about 1915. It was always giving him trouble. When operating, it expelled billows of dark smoke. The tractor remained in the orchard near the creek for years after his death. It disappeared in the late 1960s, probably liberated by some antique collector.

On one of our rides, Henrietta told me that Ramon was quite ill. I knew that he had a relative who worked at the La Jolla Beach and Tennis Club. I seem to recall that his name was Romero. It was to him that I passed on Henrietta's message. He arranged for an ambulance to take Ramon to the then San Diego County Hospital. On horseback, I led the ambulance down the old road to the ranch house. Henrietta then left to live with relatives as Ramon died shortly thereafter. Soon after, I heard of her death, as well.

You may all remember the song about the old grandfather clock which stopped "when the old man died." Well, the large old tree next to the ranch house died when Ramon did! With the passage of time, the elements have claimed the old barn and the ranch house, leaving only a few of the fruit trees and many memories.

(CALPAW '94 cont'd)

San Elijo Lagoon Ecological Reserve/Escondido Creek Ecological Reserve — $10,000,000 for acquisition, restoration and enhancement of natural lands in and adjacent to these two reserves.

Anza Borrego Desert State Park — $16,000,000 for acquisition of inholdings and adjacent lands.

Palomar Mountain State Park — $1,000,000 for acquisition of the culturally significant Nate Harrison and other sites.

Rancho Cuyamaca State Park — $2,000,000 for acquisition of the Kuerbas Ranch to expand the Park and complete the trails system.

Sweetwater River Regional Park and Open Space Preserve — $5,000,000 for land acquisition, development and enhancement.

Encinitas Creek and Batiquitos Lagoon Watersheds — $6,500,000 for acquisition of sensitive habitat and lands important for the maintenance of bio-diversity, and links to other established habitat areas in the Encinitas and southern Carlsbad areas.

Rutherford Ranch at Pine Hills — $8,000,000 for acquisition of endangered Engelman oak woodland adjacent to the Cleveland National Forest.

San Luis Rey River — $5,000,000 for acquisition and restoration of natural lands along the River.

Santa Margarita River — $6,000,000 for riparian habitat and natural lands acquisition along the River.

Tijuana River Valley — $10,000,000 to acquire and restore wetlands, uplands, and archaeological and cultural resources.

Volcan Mountain — $10,000,000 for acquisition of natural lands.

Otay River Valley — $10,000,000 for acquiring and restoring of land with the Otay River Valley.

Lake Cuyamaca — $5,000,000 for acquisition of natural lands in vicinity of Lake Cuyamaca.

Carlsbad Multiple Species — $3,000,000 to acquire and preserve sensitive lands, including coastal sage scrub and California gnatcatchers in the City of Carlsbad.

Carrillo Ranch — $1,500,000 to restore the Carrillo Ranch as parkland in the City of Carlsbad.

As you can see, many sensitive lands with hundreds of different endangered species will be acquired and protected. New recreational opportunities will also be guaranteed if this initiative is successfully put on the ballot and approved by the voters. For our own Preserve the benefits are obvious. The acquisition of the Del Mar Mesa will protect the last undisturbed coastal mesa top in San Diego, as well as vital wildlife corridors north. These corridors will link us to Black Mountain Open Space, to the San Dieguito River Valley Park and to Carmel Mountain and through it to Peñasquitos Lagoon. Without these acquisitions, it will become very difficult to preserve a healthy, genetically diverse eco-system.

Here's how you can help.

Team Petitioning — Join the Friends for our own petitioning teams at area supermarkets and events. All we ask is one three-hour commitment. You'll always be part of a team. There's a place for shy people in this too, so don't hesitate. Our teams covered two full days at the Del Mar Fair and were very successful.

Individual Petitioning — Call us and we'll be happy to send you your own petitions for circulating among your neighbors and friends.

Donations — Please make a generous donation. If we can't collect enough signatures with volunteers, contributions will help pay for signature gathering. $100.00 is enough to gather 200 signatures. In addition, contributions will be used for the vital public educational campaign leading up to the June 1994 vote. Many people have already donated generously (see list in this issue).

Send donations to P.O. Box 26523, San Diego 92196 and please earmark them "CALPAW '94. Call 484-3219 and leave your name and address if you wish petitions sent.

Join this vital effort!

(Mallads cont'd)

Where's women's lib?

The Mallard's nest is usually on the ground among dead grasses or reeds near the water. Sometimes they will nest far from water on higher ground. They've even been known to nest in hollows of trees or even the fork of large trees. The female lays from 5-14 light green to white eggs. She does all the incubation for 26-30 days. As soon as the young are dry after hatching, they are led by their mother to the nearest water. They can fly 49-60 days after hatching. They are fast fliers, having been clocked from 40-60 mph.

So, the next time you're in the canyon, look up when you hear the "quack-quack" and feast your eyes upon one of the waterbirds that make it their home. Hope you have a "ducky" time!

Good Birding!

Massive Tire Cleanup Finished

Thanks to the efforts of Barry Martin, more than 1,200 automobile and truck tires were removed from the Mercy property during the month of June. Barry was ably assisted by Noel Boykin, a resident volunteer at the adobe ranch house and Bill Perkins, a member of the Citizens Advisory Committee. These tires were illegally dumped over several years by an unknown company.

The tires were adversely impacting the Preserve when they were washed down by the winter rains into the creek. In addition, they threatened the health of the oak woodland they were dumped in.

Barry Martin is a new member of the Board of Directors of the Friends and a founding member of the Volunteer Patrol in the Preserve.

News Roundup

Forest Initiative Victory

The inteprid Dungan McFetridge, organizer of the fight to save the meadows and ranchland inholdings in the Cleveland National Forest, has done it again.

Duncan's group, Save Our Forests and Ranchlands, has been battling on two fronts to save this wilderness area: on the ballot and in the courts. From past issues of this newsletter our readers know that the Initiative campaign was successful and the voters will get to decide the fate of the forest.

A little known second front in the courts has produced another victory. Duncan was concerned that development projects were being approved by the County Board of Supervisors for these inholdings prior to the voters having their say. He and other forest supporters went into court to challenge the Environmental Impact Report the County produced to justify this rezoning and development in the Cleveland.

To make a long story short, the friends of the forest prevailed. The courts agreed with the plaintiffs that the EIR was grossly inadequate and should be redone. The County isn't likely to be able to afford a new EIR prior to the ballot vote, so very little development should occur in the forest before then.

The Forest Initiative will appear on the November 1993 ballot. This is six months earlier than expected. This is due to Governor Pete Wilson's having called for a special election in November to vote on the 1/2 cent sales tax measure. Any measure anywhere in the State already qualified for the ballot had to be moved up from June 1994 to November 1993.

Next month's newsletter will have details on the campaign for a yes vote and how you can help.

Wish List

The following are items, big and small that the Friends need for conservation and other projects. Why not check your garage now? We'll be happy to send you a 501-(c)-(3) tax-receipt letter for the IRS.

Mac or IBM compatible, age not important. Keyboards, monitors, modems needed to. We just donated one system for use at the Adobe Ranch House. This system was the result of three donations!

Soil Testing Equipment

Self propelling mower for native grass restoration.

Horse drawn mowing, plowing equipment for native grass and tree planting.

Front end loader for erosion and siltation repair work.

San Diego Wildlife Run & Walk to benefit the programs of Project Wildlife.

Sunday, July 18, Balboa Park. 7:10 a.m.-2 Mile, 7:30 a.m.-10K. The entry donation is $16 and must be received by July 14. The proceeds will go to support the 7,000 wild critters helped by Project Wildlife each year. Call Lacye & Associates at 236-0842 for more information.

Rattlesnake Creek Cleanup

Thanks to the pressures of Mike Fry and other Poway activitists and public officials, a cleanup has begun of Rattlesnake. About two years ago it was discovered that fuel was leaking underground from the Quik Chek gas station on Poway Road. The fuel was travelling several hundred feet to the creek, from where it then fed into Peñasquitos Creek. The Environmental Protection Agency as committed some $220,000 to the effort, with an additional $85,000 being thrown in by the state Regional Water Quality Control Board.

As of this date the leak has been stopped from reaching the creek and a cleanup of the ground and old station, expected to take at least six months, is underway.

Fawn Unnecessarily Orphaned

A recent incident reminds us of the importance of how to treat wild animals.

☛ cont'd p. 8

Friends Board of Directors, Committee Chairs and Hike Leaders

Officers

President: Mike Kelly 566-6489
Vice-President: Don Albright 271-9216
Treasurer: Rena Kerwin
Secretary: Les Braund 566-3958

Other Members of the Board of Directors

Vicky Ausen
Trinity Gabriel
Tom Hopp
Barry Martin
Alan Pepper, Ph.D.:
Brian Swanson

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Medicinal Plant & Moon Walks: Will Bowen 452-7091
Fitness Walks: Trinity Gabriele 672-0229
Nature Walk leader: Les Braund
Vernal Pools, Mystery Tree, Fire, Stage Coach & Dusk Walks: Mike Kelly
Bird Walks: Brian Swanson 695-2209
Wetlands Restoration Committee: Don Albright, Tom Hopp, Susan George, Marcus Spiegelberg, Trinity Gabriel
Newsletter Committee: Mike Kelly, Carla Scott, Trinity Gabriel
Newsletter Contributors: Barbara Zepf, John Northrop, Dave Hogan (S.D. Bio-diversity Project), Claude Edwards
Hike Committee: Trinity Gabriel
Geology Walk Leader: Don Albright
Conservation Chair: Alan Pepper, Ph.D. 586-7123

Friends of Peñasquitos Canyon July Events Schedule

Cool Evening Walks Great in Summer

Summer evenings are the perfect time to join the Friends for a dusk, medicinal or full moon walk in Peñasquitos Canyon Preserve. Besides enjoying pleasant breezes and often beautiful sunsets we see creatures of the night, including deer, coyotes and owls. Join us for one of our walks.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

Endangered Plant Surveys & Habitat Restoration Projects
Call Mike at 566-6489 if you would like to help out on one of our many projects. No experience necessary!

JULY

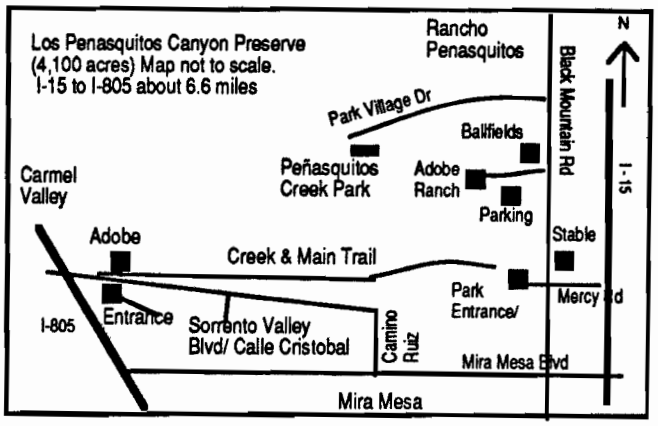
Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., July 3, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest residence, an historic adobe, settler and Indian artifacts.

Full Moon Walk
Sat. July 3, 8 - 9:30 p.m. (1-1/2 hours). Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Blvd. in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Bring flashlight. Learn moon lore and legends. Look for deer and other nocturnal animals. Led by Will Bowen, Ph.D.

Animal Tracking Walk
Tues., July 6, 6:30 p.m. (1-1/2 hours). Learn how to recognize the tracks of wild animals. Meet at Parking-Staging area off Black Mountain Rd. Take Mercy Road exist off I-15 west to Black Mountain Road.Parking for Preserve is opposite. Bring flashlight. Led by Barry Martin.

Bird Walk at East End
Fri., July 9, 6 p.m. (2 hours). Take Mercy Road exist off I-15 west to Black Mountain Road.Parking for Preserve is opposite. Bring bird book, flashlight and binoculars. Led by Brian Swanson.

Fitness Walk
Sun., July 11, 6 p.m. Join Trinity Gabrielle on brisk walk to the Kit Carson crossing and back. Bring water and flashlight. Take Mercy Road exist off I-15 west to Black Mountain Road. Go right and up hill, make first legal U-turn, back down hill and right into Canyonside Park entrance. Go past ballfields to white fence, left into new parking-lot.



Dusk Walk in Peñasquitos Canyon
Fri., July 16, 7 p.m. Good opportunity to see nocturnal birds and animals. Take I-15 to Mercy Road. West on Mercy to Black Mountain Road. Parking lot is opposite this intersection. Bring insect repellant and flashlight. Led by Mike Kelly.

Nature Walk
Sat., July 17, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., July 17, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest residence, an historic adobe, settler and Indian artifacts.

Medicinal Plant Walk
Mon., July 19, 7 p.m. - 8:30 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Friends Monthly Business Meeting
Wed., July 21, 7 p.m. at Rancho Santa Maria de los Penasquitos. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preservesign and new parking lot. Walk up to adobe ranch house.

Geology Walk
Sun., July 25, 9 a.m. (3 hours). Meet in Mira Mesa on Lopez Ridge. From I-15 or I-805 take Mira Mesa Boulevard to Camino Santa Fe. Go north on Camino Santa Fe to the intersection with Calle Cristobal. Right on Calle Cristobal to Caminito Propico. Bring water and wear hiking boots since a steep hill is involved. Learn about area geology and visit the Preserve's waterfall. Led by geologist Don Albright.

Sat., July 24: Archaeology Summer Evening Program at the Ranch
The San Diego County Archaeological Society is once again presenting its summer evening at the Ranch programs. The Ranch is located in the east end of Peñasquitos Canyon Preserve.
, Dr. Lynne Christiansen, of San Diego State University and an expert on the Ranch, will speak on recent research she has done at the Ranch. There is a free tour of the grounds at 6 p.m. Visitors are welcome to bring a picnic dinner and dine in the courtyard of the adobe. The talk/slide show begins at 7:30 p.m.

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
619-484-3219

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(Fawn cont'd)

The week of June the 26th a mule deer doe and her fawn were scared up out of the canyon into adjoining back yards of homes on the canyon's rim. Aknowledgeable homeowner called the Fund for Animals in Ramona for help. Unfortunately, as Chuck Traisi at the Fund was explaining that the animals shouldn't be approach, children at the one home were approaching the mother deer. She was spooked into jumping the fence and left her fawn behind.

The fawn is now at the Fund's center, housed with two other fawns and should do well. It should be releasable in the near future. Here are the phone numbers to call for help when you encounter a wild animal that is injured or orphaned. Fund for Animals: 789-2324 or Project Wildlife: 225-WILD (9453).

Special Notice to First-Time Readers

If you signed our mailing list on a recent walk or other activity, but aren't yet a member, this newsletter is a free sample. To keep it coming with its outings schedules, educational articles, and information on how to defend Peñasquitos Canyon Preserve, join the Friends of Los Peñasquitos Canyon Preserve, Inc. by filling out the coupon below.

Membership Application

Membership category? Circle below:
Senior (62) or Student $7.00 Individual $10
Family $15 Sponsor $25 Patron $100
Corporate $250 Life $1000
Contribution $ _____

I/We are interested in the following: **7/93**

____ **Volunteer** to help the committee
____ Hikes
____ Indian Culture
____ Educational Workshops
____ School, Family, Youth Programs
____ Environment (Plants, birds, mammals, geology)

Other: _____

Name(s) _____

Address _____

City State Zip _____

Home Phone _____

Please make checks payable to:
Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196

Thank you for your support! Your donation is tax deductible.
Call **484-3219** or **566-6489** for more information.

Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

August 1993
Volume 7 No. 9

Petitioning Continues

Parks & Wildlife Initiative

by Mike Kelly, president

As we go to press we can report that more than 250,000 signatures have been collected by volunteers statewide for the California Parks & Wildlife Initiative (CALPAW 94). This is an excellent pace according to state coordinators. About 670,000 signatures are needed by October to qualify this critical initiative for the June 1994 ballot.

Please join us in this critical effort. We need your help in circulating petitions and in donations.

If passed by the voters this Park Bond measure will help expand or acquire new open-space parks through San Diego County. These include: Del Mar Mesa, Peñasquitos Creek, San Dieguito River Valley, Famosa Slough, Soledad Open Space Park, San Elijo Lagoon Ecological Reserve/ Escondido Creek Ecological Reserve, Anza Borrego Desert State Park, Rancho Cuyamaca State Park , Sweetwater River Regional Park and Open Space Preserve, Encinitas Creek and Batiquitos Lagoon Watersheds, Rutherford Ranch at Pine Hills , San Luis Rey River, Santa Margarita River, Tijuana River Valley, Volcan Mountain, Otay River Valley, Lake Cuyamaca , Carlsbad Multiple Species, Carrillo Ranch.

Team Petitioning — Special events, Supermarkets and other locations are good for petition. We ask our supporters for just one three-hour commitment. We've found petitioning for this initiative to be the easiest we've ever mounted.

Individual Petitioning — Call us

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Gnatcatcher Survey Seeks Volunteers

by Brian Swanson

The federal government listed the California Coastal Gnatcatcher as an endangered species March 25, 1993. This controversial decision followed years of debate between development interests and environmental groups. The root of the problem is the burgeoning population of Southern California and its impact on habitat, particularly the flat or gently sloping coastal areas — where developers prefer to build. Unfortunately, the rapid development of these areas has resulted in a rapid decline in numerous plants and

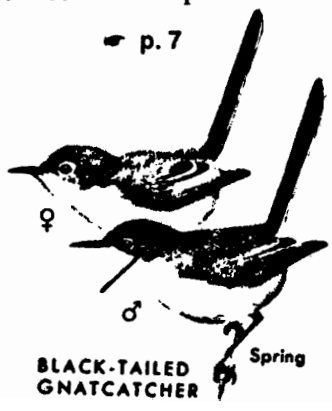
☛ p. 7

Developer Bulldozes Gnatcatcher Habitat

by Mike Kelly, president

Erreca Construction Co., working for Shea Homes, bulldozed a road size swath through pristine Coastal Sage Scrub and California Gnatcatcher habitat on the north rim of Peñasquitos Canyon just a short distance from the Carson Crossing. The Swath was cut to allow placement of a sewer line from the westernmost part of the Park

☛ p. 7



Inside

Seed Collecting Workshop

In place of the Friends' monthly meeting there will be a special workshop for volunteers who work with the Friends in restoration projects. Wednesday, July 18 at the adobe ranch house. See outings schedule and map on p. 8. for details.

Initiative Fund Builds

Since our last newsletter report several more members have made generous donations to help support the campaign to get CALPAW '94 on the ballot. Won't you add your name to the list?

Louise Eifert
Linda Hunter
John & Diane Remick
Mary Toomey
Susan Weinberg-Harter

Birding in Penasquitos Canyon

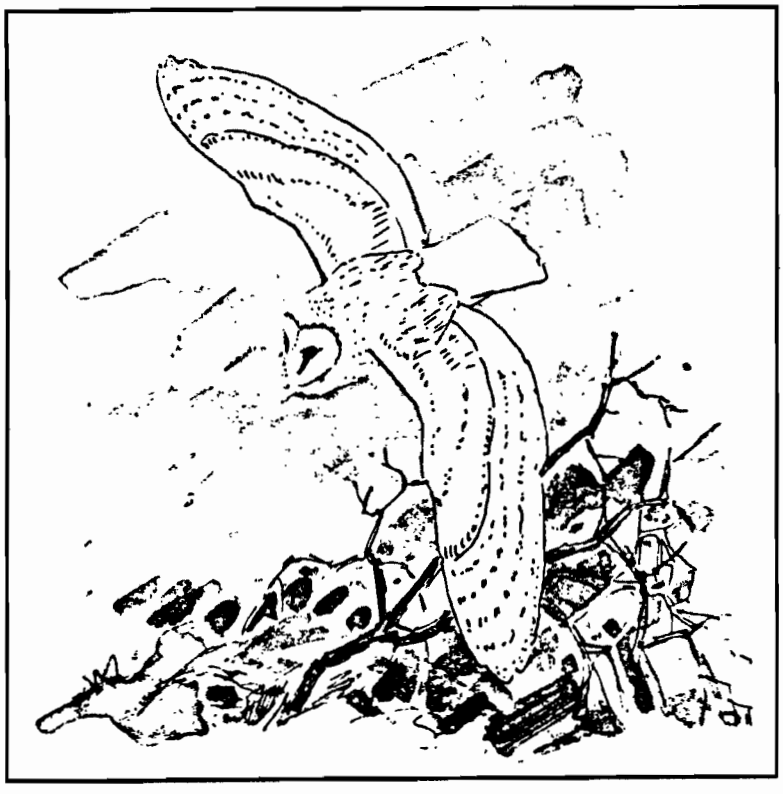
The Barn Owl

by Barbara Zepf

This will be my last regular monthly column. I've been writing this column for three years, and I feel it's time to move on to something else. I've learned a lot writing this column, and I hope you've learned something reading it. If nothing else, I hope you've realized that there is a beautiful, colorful, soul-satisfying world out there, just waiting for you to explore.

Ways to look at a bird

It has been said that there are four ways to look at a bird. The first way is "shoot." Years ago, before the advent of good binoculars and people like Roger Tory Peterson, this was the way most people viewed birds — in the hand. Except for game birds, this is illegal in most respects now. But some people still practice this method, especially in the case of large raptors. I'm sure most of these people are not interested in seeing these birds up close, but merely enticed by the thrill of the kill. Hopefully, none of us will ever be in this category.



The second way to look at a bird is to say "What a beautiful bird. I wish I could keep it in a cage at home." But wild birds belong in the outdoors. There are enough legal birds that can be kept in a cage.

The third way of looking is to say "Look at that good, fantastic bird." This is the way most bird watchers view the species. There's always the thrill of finding a new "life" bird or of seeing a particularly striking bird. But, all birds, even the LBJs (little brown jobs), have something to offer us. Watching the behavior of birds is fascinating in even the most common species.

The ultimate goal

The fourth and final way to look at birds is to simply say "o-o-o-h." I hope this happens to all of you someday. It has happened to me on more than one occasion — coming over the crest of the hill at the waterfall, and suddenly seeing a red-shouldered Hawk five feet away at eye level; my first view of a Rose-breasted Grosbeak; the first Hooked Oriole that ever came to my backyard feeder; the first time an Anna's Hummingbird built a nest in my plum tree. These are special rare instances.

I hover somewhere between numbers 3 and 4. But, ideally, it would be nice if we all could reach the ultimate #4 level, at least once in our lifetime. The birds and ourselves will be the richer for it.

The Barn Owl

I started my first regular column describing one of the most common birds in the canyon — the Mourning Dove. I would like to write this last regular column about one of my favorite birds down there — the Barn Owl.

The Barn Owl resides in the canyon all year. It usually nests between mid-January and early June. Barn Owls used to nest in the barn at the ranch until they screened off the openings. Now they use some of the nest boxes in the preserve, and they nest in tree hollows. One year a pair nested in the caretaker's shack near the tennis courts. They had to be removed because they wouldn't let the workers near the place. They're very defensive at their nests, uttering loud, hissing noises. They lay from 3-11 eggs, usually 5-7. Last year my husband and I watched a pair raise 4 young in one of the nest boxes. The eggs are incubated for 32-34 days by the female only. The male helps guard and feed the young. Incubation begins when the first egg is laid, so the owlets vary considerably in size. The larger ones don't seem to pick on the smaller ones, but in a scarce prey year, the smallest may die of starvation.

Causes of death

Some owls are hit by cars because they fly low across highways at night. Some are shot by humans. Some are eaten by Great Horned Owls, and some starve in low prey years. Otherwise, they usually live from 10-15 years. They live across the entire United States except for the very northern states where it is too cold for them.

They eat mostly moles, mice, shrews, rats, gophers, ground squirrels and rabbits. Occasionally they eat bats or birds. Through experiments, it has been proven that they can hunt in total darkness, relying on sound alone.

They have many vocalizations — a shrill, rasping hiss or snore, a loud screech, and a "tick-tick-tick-tick" sound which they make when they're

hunting. It almost sounds like someone using a small tack hammer. They don't hoot like other owls. One night my husband and I were scared out of our wits by a blood-curdling raspy scream. At the time we didn't know what we were hearing, and we weren't sure we wanted to know!

The Barn Owl hunts almost exclusively at night, but you can often see them at dawn and dusk. A good place to see them in Peñasquitos Canyon (we see them almost nightly) is around the ranch. They roost in the palm trees near the ranch and just at dark, they will come out to hunt. You can see them along the road leading to the ranch. In a class by itself

The Barn Owl is in a class by itself in North America, because of structural differences from the typical Owls. The Barn Owl is about 14-20 inches long with a wingspread of 43-47 inches. It's a long-legged, knock-kneed, pale, monkey-faced owl. It has no ear tufts. Its white, heart-shaped face is ringed with cinnamon or tan. Its back is light tan or cinnamon with fine pearl gray streaks. It's white below (sometimes with a pale cinnamon tinge.) It sits upright on long white feathered legs. It has a peculiar habit of lowering its head and moving back and forth. Immatures resemble the adults.

Females are usually darker and larger than the males. Barn Owls have dark brown eyes and a long, narrow, light-colored bill. They have a short square tail. Other owls have rounded tails. The Barn Owl flies lightly and silently with a mothlike flight, not swiftly. Like all owls, the leading edge of the first primary feather has a saw-toothed edge which reduces flight noise. The wings are long and pointed, folding beyond the tail when at rest. Its claws are very long and sharp.

Although Barn Owls generally live alone or in pairs, a few colonies have been found in the desert. On those summer days, when it's too hot to go birding during the day, take an evening stroll through the canyon. It's a whole different world. In addition to the owls and Lesser Nighthawks, it's also the best time to see deer, bats, bobcats, coyotes and the ubiquitous skunks.

Enjoy! Good Birding!

"Little Lath Barn" Restoration Project

by Fred Buchanan

[**Editor's note**: The Lath Barn referred to in this article is on the grounds of the historic adobe ranch house in Peñasquitos Canyon Preserve. Tours of the ranch house are led by trained docents the first and third Saturdays of every month, at 11 a.m. and noon. This article is taken from the newsletter of the San Diego County Archaeological Society (SDCAS)].

In the summer of 1990, Don Lyons, the SDCAS Governmental Liaison Chair, and Dr. Susan Hector of County Parks decided that something should be done to save what was then called the "Victorian Chicken House." Don contacted Fred Buchanan, and temporary bracing was put in place to prevent complete collapse.

Fred made a detailed record drawing of the structure, documenting how it was built and the size, location, and condition of every piece. The roof had completely deteriorated, the frame needed replacement, and siding boards were missing or decayed. Fred consulted with Mac MacDonald, pooling their construction experience, to add restoration plans and a cost estimate.

The plan was submitted to and approved by the county via Dr. Susan Hector. Special sizes of heart redwood were ordered. (In the 1800s, a 1" thick board was 1" thick, not 3/4", and a 4 by 4 was 4" by 4".) Square nails were ordered from the Tremont Nail Factory in Wareham, Massachusetts, where they have made square nails since 1819.

In the summer of 1991, SDCAS volunteers removed the deteriorated roof and shored the four walls so that Dr. Lynne Christenson and her field class could safely excavate the interior floor area. The excavations uncovered a wooden floor!

The reconstruction began in March of 1992 and was completed on March 11, 1993. This project could not have been accomplished without the dedication of the following members of SDCAS who contributed time, tools, and expertise from June 1990 to March 1993 and brought the restoration to a successful conclusion:

Project Concept:
Dr. Susan Hector;
Don Lyons

Archaeology: Dr. Lynne Christenson

Design and Direction:
Fred Buchanan;
Mac MacDonald

Field Crew:
Gil Boggs; Mary Buchanan; Penny Buchanan; Todd Caffo; Al Douglass; Al Evans; Dick Gadler; Lloyd McGill; Mike Nabholz; Jim Richards; Jim Royle; Howard Schwitkis; Kimmel Solway; Alan Willis

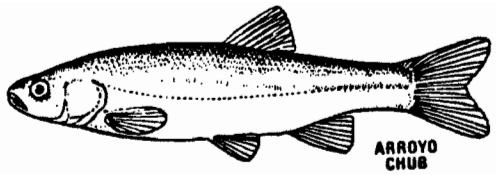
[At a ceremony held at the ranch house to celebrate the restoration the "Little Lath Barn" was dedicated to the memory of George and Estefana Johnson and place it in the care of San Diego County Parks for all to enjoy. The Johnsons owned and lived at the ranch during the 1860s and 1870s.]

Join Dig at Ranch

If you've ever wanted to be part of an archaeological dig, now's your chance. San Diego State University and the San Diego County Archaeological Society will again mount a joint excavation in Peñasquitos Canyon Preserve. The excavation will take place every Saturday between September and December. If you would like to volunteer, call Dr. Lynne Christenson for details at 286-6797.

Fish of Peñasquitos Creek

by William M Bowen, PhD



Biologist Maggie Loy observed four species of fish in Peñasquitos Creek in her comprehensive study of the Canyon undertaken 1978-79. This author has also noted the same species during the last year. these species are the mosquito fish, bluegill, green sunfish, and largemouth bass. None of the species are native to the creek. All were introduced into California waters during the period 1874-1922.

More research needs to be done to learn about native species that may have occurred in Peñasquitos Creek and other freshwater rivers and creeks in San Diego prior to European Contact. According to Peter Moyle (1976:23) there were no true native freshwater fish in our local area of Southern California prior to introductions by man. According to him, the closest native fresh water fish is the arroyo chub which is indigenous to the Santa Margarita and San Luis Rey rivers. However, Samuel M. McGinnis, author of *Freshwater Fishes of California*, believes that Cujo Salmon and Steelhead Trout were historically found in all the major rivers along the coast of Southern California all the way into Baja California. (1984).

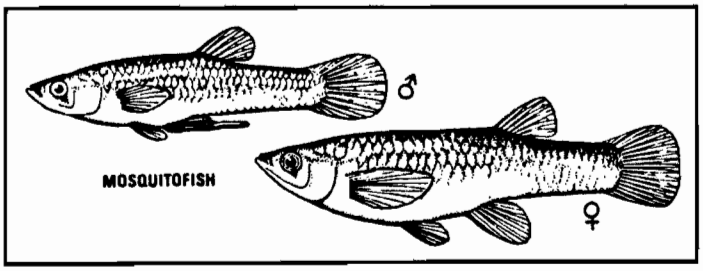
Since fishing with a license is legal in the canyon and there are currently no state or local size, bag, or seasonal limits imposed, it's important to consider how these resources should be managed and protected (Fish & Game 1993, personal communication). There is added importance owing to the vision of altering the creek, the wetlands restoration projects which are planned, and the potential for increased fishing pressure as more people use the canyon.

What role do or should fish play in the current ecology and the future vision of the creek? What kinds of fish should be there? How should their health and relative populations be best managed? These are the questions that need to be addressed.

The first step is gathering information about the ecology and species constitution of the creek through a literature search, field observation, and expert advice. This paper contributes to this mission by offering information on the fish currently inhabiting Peñasquitos Creek. A preliminary set of guiding questions is proposed, and a call is made for all interested parties to become involved in a decision making and management program. Further information on other inhabitants of the creek including crayfish, insects, and plants, as well as general riparian ecology will be forthcoming.

Mosquito Fish
Gambusia affinis

The Mosquito Fish is the most abundant fish in Peñasquitos Creek and can be spotted along almost any of its bank line. It's guppy sized, rarely exceeding two inches in length, and native to the southern Midwest. It was introduced into California inland waters in 1922 as a means of mosquito control. It may now be the most widely distributed and numerous of all freshwater species in the whole state.



The Latin term *Gambusia* comes from the Cuban work "Gambusino" which signifies "nothing," carrying the idea of a joke or farce. Thus one says they caught a *gambusi* meaning they caught nothing.

Mosquito fish thrive in shallow stagnant areas, especially where predatory fish are absent, and may live up to fifteen months. They engage in constant courtship and food getting, feeding on mosquito larvae, filamentous algae, and diatoms. In overcrowded conditions they may become cannibalistic.

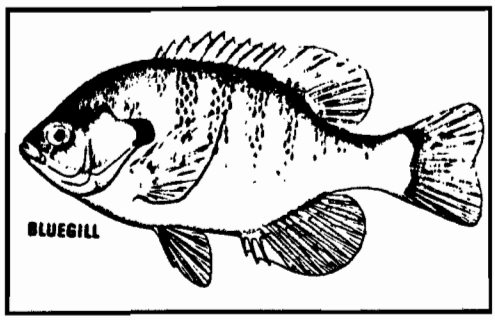
Mosquito fish were chosen for mosquito control because of their fecundity (up to 330 fry — young per birth sequence) and because they have the ability to tolerate unfavorable water conditions, including high levels of pesticides. They can survive water temperature up to 37.3°C (97.3°F), as well as extreme daily fluctuations in temperature. Low oxygen levels also pose few problems because in such cases they will swim near the surface of the water to breath diffused oxygen.

A problem that has been overlooked is that any small fish or the fry of larger fish will feed on mosquito larval. Since mosquito fish compete with other species whose fry also occupy the same habitat, they may put pressure on the survival of other fish in the creek (McGinnis 1984:186, Moyle 1976:268). Perhaps it would be wiser to stock other fish (game of other California natives) as a means of mosquito control (*ibid*).

Bluegill *Lepomis macrochirus*

The bluegill was introduced into California from the East and South of the United States in 1908. The name "bluegill" is derived from the common blue flap on the operculum (gill cover). This hardy fish has the ability to reproduce and survive under a wide variety of environmental conditions, including murky water with low oxygen content. However, optimal water temperature for rapid growth is 15-25°C (59-7°F).

The Bluegill, which can be spotted in pond-like areas of the creek west of the waterfall in the canyon, are highly opportunistic feeders and will take whatever animal food is in abundance, including larvae of aquatic insects. If such food is unavailable, they will feed on algae and other aquatic plants,



though they can not support themselves nutritionally for long on such a diet. Feeding usually reaches a peak in the mid-afternoon and just after dark.

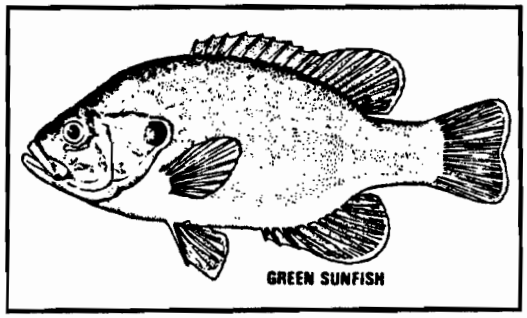
The bluegill displays great flexibility when the food supply diminishes. Though they retain their population numbers, individuals grow only to a stunted size, and need less to sustain themselves thus avoiding large die offs.

The body of the bluegill is adapted for hovering and darting and they can live in a limited restricted area. Their chief predator is the large mouth black bass which is the main check or control on their population size. Fishing by humans seems to have little effect on population owing to their high reproductive rate.

The male bluegill constructs a nest by fanning a depression 320-30 cm in diameter and 5-15 cm deep on bottom in gravel, mud, or sand. Nests are built in close proximity to each other. The male defends the nest and later the eggs. Females, who swim together in schools, approach the male nests and attempt to court the largest males. Spawning occurs with males and females swimming side by side, accompanied by a distinctive grunting sound. Each male spawns with several females in succession. Approximately 2000-18000 eggs are laid in each nest. The young (fry) hatch in 2-3 days and swim to plant cover. There is a high mortality rate of hatchlings even though adults offer excellent nest and fry protection.

Green Sunfish *Lepomis cyanellus*

The Green Sunfish was introduced into California fresh waters in 1891. The general opinion is that it was an unfortunate decision because this fish is of little value as a food source and offers a great deal of competition to other more valuable species. Luckily, it's seldom able to establish large populations and we often find only a small number of individuals in any one water source. The natural behavior of this fish supports the theory of overall selection for aggressiveness. It's a very aggressive lie-and-wait hunter, staking out a restricted territory and defending it vigorously. Smaller sunfish, who are unable to compete with their larger bothers for a territory, are quick to colonize any new areas which may become available.


GREEN SUNFISH

The green sunfish is remarkable in that it is a hardy survivalist that can tolerate waters which are warm (over 36°C [96.8°F]), low in oxygen content (less than 3 ppm), and high in alkalinity (2000 mg/l). They may be sole inhabitants of streams disrupted by people and will take over where native fish populations have been decimated. Even in the heat of the summer it's possible to see green sunfish darting about in the stagnant standing water at the west end of the canyon under the sycamore trees.

Like the bluegill, the green sunfish will maintain a high population level but grow to a stunted size when the food supply diminishes. Their chief diet is insect larva, crayfish, and their own young. Like the bluegill the green sunfish builds a nest in the sand and sets up a defense perimeter. Females attempt to get past the male defense and are mated with, sometimes two at a time, by grunting males. During spawning, females turn on their side, vibrate, and release eggs while the male releases sperm. Sometimes young bluegill males will dash into the foray and release milt, leading to hybrid fry. The sunfish males guard the nest 5-7 days until the eggs hatch and the young swim for cover near the shore line.

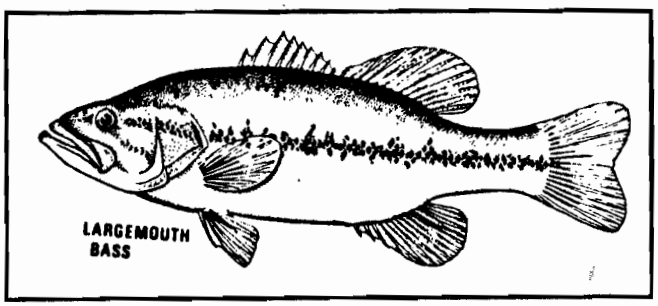
Largemouth Bass *Micropterus salmoides*

The large mouthed black bass which inhabits Peñasquitos Creek has the distinction of being the most popular game fish in North America. It was introduced into California in 1874 and is the top predator in its food chain. Several of this type of bass have been spotted in the creek at the west end of the canyon.

Large mouth bass display highly variable growth patterns which are more influenced by environment than heredity. In such a small creek as Peñasquitos it's likely they grow only to a stunted size. When possible, they prefer large pools with heavy aquatic growth. Adults are solitary hunters who establish a home range, only to move on to a new range in new territory, after the passage of a certain period of time.

Largemouth bass are dawn and dusk feeders with a peak foraging at dusk. The rest of the day they are rather inactive. They have highly variable food choices, including aquatic insects, crayfish, tadpoles, frogs, bluegill, and their own young.

Largemouth bass build a solitary nest, like the green sunfish, but do not defend it with as much vigor. It's easily possible to overfish the largemouth bass and it's susceptible to competition from other species.


LARGEMOUTH BASS

Some Preliminary Questions

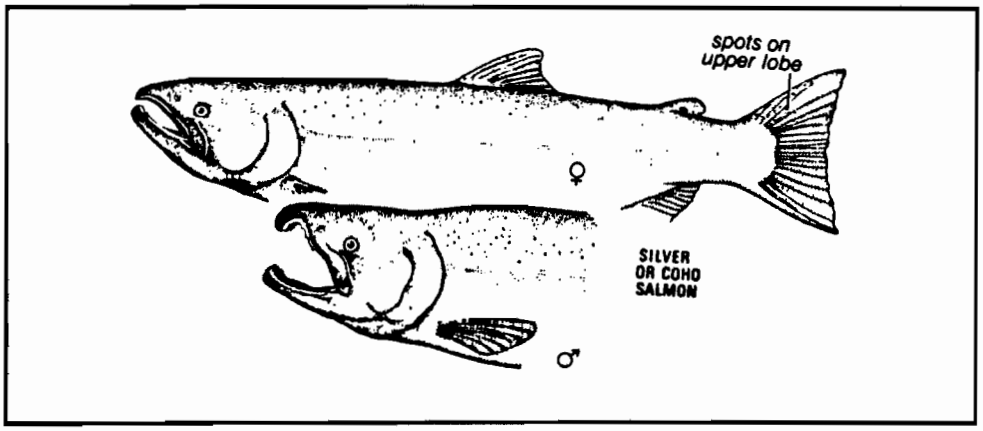
1. What is the approximate numbers of each of the fish in the creek? What are the male/female ratios? By what methods should population figures be determined? Is the current population adequate or appropriate? How many are taken by fishing on a monthly or seasonal basis?
2. What are the ecological relationship of the fish to the creek, each other, and other species? Do they exist in an appropriate homeostatic balance or do they impinge on each other in a deleterious manner? Are any suffering stunted growth due to size of the creek or population levels?
3. Are fishing limits as to size, number, or season needed? What should

☛ p. 6

(Fish cont'd)

they be?

4. Should any of the fish be periodically restocked?
5. Are these the fish we want in the creek? Would we like non-local but native fish indigenous to other areas of Southern California, such as the arroyo chub, speckled dace, Santa Ana sucker, or the three spined stickleback? Could they survive here? In other words, could Peñasquitos creek provide a habitat for rare or endangered native species? Were there native species which still exist elsewhere which could be reintroduced (steelhead?)?



6. Would game fish or natives offer better mosquitoes control than the mosquito fish?
7. Will altering the creek or wetlands restoration projects impact the current inhabitants of the creek? How should they be considered in determining any wetlands restoration projects?

Conclusion

It's apparent that Peñasquitos Creek and its inhabitants need to be considered in the development of management and restoration plans for Peñasquitos Canyon. Any persons having expertise in this area or information about fish they have caught or seen in the creek are respectfully requested to inform the author, the Wetlands Committee of the Friends, or Ranger Bill Lawrence. Such information would be most welcome and undoubtably of value in helping develop a sound conservation and management program for the Canyon's riparian habitat.

Reference

Department of Fish and Game San Diego Office 1993 *Personal Communication*

Loy, Maggie 1987 *Biological Survey Report: Los Peñasquitos Canyon Preserve San Diego, California.* Report on file, Friends of Peñasquitos Canyon Preserve Library.

McGinnis, Samuel M. 1984 *Freshwater Fishes of California*, UC Press: Berkeley.

Moyle, Peter B. 1976 *Inland Fishes of California.* UC Press: Berkeley.

(CALPAW '94 cont'd)

and we'll be happy to send you your own petitions for circulating among your neighbors and friends.

Donations — Please make a generous donation. If we can't collect enough signatures with volunteers, contributions will help pay for signature gathering. $100.00 is enough to gather 200 signatures. In addition, contributions will be used for the vital public educational campaign leading up to the June 1994 vote. Many people have already donated generously (see list in this issue).

Send donations to P.O. Box 26523, San Diego 92196 and please earmark them "CALPAW '94. Call 484-3219 and leave your name and address if you wish petitions sent.

Join this vital effort!

Volunteer Patrol Recruitment Opens

The Joint City and County volunteer patrol of bicyclists, hikers and equestrians is once again recruiting new members. Duties of patrol members include providing visitors with information on canyon facilities, trails, points of interest, and rules and regulations. The presence of a patrol in the Preserve promotes improved public respect and care for the Preserve and provides a rewarding experience for patrol members.

Patrol members also summon ranger assistance in the event of accidents or other serious problems, and educate the public on the ecology of the canyon. Members are 18 years of age or older and work a minimum of two four-hour shifts per month.

Support is provided by the County and City in the form of workers compensation while on patrol, ranger backup, and training. The training, which is mandatory, includes: rules and regulations; public relations; first aid; canyon ecology and history; and interfacing with County, City, and San Diego Police Department staff.

The volunteers provide their own horses, bicycles, hiking shoes, and prescribed clothing. The park provides first aid kits, radios, informational brochures and identifying insignia.

If you would like to apply for the patrol, call Supervising Park Ranger Reneene Mowry at 484-7504 or Senior Park Ranger Bill Lawrence at 533-4067.

Exotic Pest Plant Symposium Date Set

The California Exotic Pest Plant Council will hold its second annual symposium in Westlake Village, California Oct. 8 - 9, 1993 (driving distance from San Diego.) For more details write Sally Davis at 448 Bello St, Pismo Beach, CA 93449 or call 805-773-2828 or call the Friends of Penasquitos Canyon at 484-3219.

(Gnatcatcher cont'd)

animals who call the coastal sage scrub community home, including the California Gnatcatcher, one of the two gnatcatchers (the other being the Blue gray gnatcatcher) found in Peñasquitos Canyon Preserve.

Coastal sage scrub is one of the plant communities found in the Preserve. [California sagebrush, flattop buckwheat, black sage and other species are the main plants in this community. This habitat is found on slopes, generally facing the south sun. The Friends are undertaking a project to survey and map California Gnatcatcher populations for several reasons. Since the California gnatcatcher is one of a number of sensitive species found within or adjacent to our preserve, the survey falls within the mission of the Friends to preserve, to restore, and to educate in the two-canyon Preserve.

It's hoped that inventorying our Gnatcatchers will allow planners to design placement of facilities including trails in a more sensitive manner. Prescriptive burns will be undertaken only with an awareness of what plants and animals will possibly be affected. This survey will provide baseline data, allowing biologists to monitor population changes through time. Possibly future Friends projects may involve enhancing the habitat by expanding our coastal sage scrub.

As project manager I have spoken with US Fish & Wildlife Service and California State biologists to solicit input. There was a recent Gnatcatcher conference at the Ranch House which brought many local environmental leaders together to work on developing greater cohesion among the groups. There is a lot of energy being generated by this small bird.

It's important to realize that this bird is vulnerable. It's harmful, even illegal, to damage its habitat (trail building, road widening, even bush-whacking off trail) in any way. Federal penalties are prescribed. Actions by good hearted but uninformed admirers can really hurt this little bird.

Did you know that predators often watch people approaching nests or follow their scent trail to nests, thus finding a free meal? Also, playing of bird tapes disrupts the birds' natural behavior, causing them to waste valuable energy in responding to the perceived threat to their territory. Scrub jays or brown headed cowbirds will depredate the nests if given an opportunity. This is one of the reasons why it is important to resist the urge to wander off trail in the preserve. With the numbers of people using the preserve, it only takes one set of footprints to eventually become a well used trail.

If you have would like to volunteer to assist the Friends with the California Coastal Gnatcatcher Survey please contact myself (695-2209) or Mike Kelly (566-6489).

This project will be ongoing, lasting at least until summer 1994.

(Gnatcatcher bulldozing cont'd)

Village Development. The sewer line cut is about 20 feet wide by 720 feet long. Brian Swanson, the Friends' project manager for our Gnatcatcher survey, and I visited the site with local reporters July 31 to inspect the damage. It was an area I had personally visited several times this spring to admire the wildflower show. It was in wonderful condition at the time.

Neither Erreca nor Shea pulled a right-of-entry permit from the City's Parks Department or an endangered species permit from U.S. Fish and Wildlife Service. If they had tried to obtain the right-of-entry permit, the City Ranger would have first inspected the route and could have advised them of the federally protected nature of the sensitive habitat.

Compounding the problem is the lack of a revegetation program by the developer. This same company has bulldozed other sewer line cuts in the Preserve — one as recently as a year ago — and not revegated afterwards, leaving an empty scar of land to erode. It's been difficult up to now to get the City's Engineering and Development Department, which has jurisdiction over developer activity adjacent to the Preserve, to do anything about these incursions.

The Friends intend to file a formal complaint with U.S. Fish and Wildlife Service under the Endangered Species Act, to at least force the developer to restore the damaged habitat.

News Roundup

Cleveland Forest Moratorium

The July 20 1993 meeting of the County Board of Supervisors was a milestone for the Cleveland National Forest Initiative. At the meeting a majority of the Board voiced strong support for the Initiative and for a moratorium on building should it pass in November. Until this meeting it was not known if Diane Jacobs would support the Initiative or not. The Initiative is now officially on the November 2, 1993 ballot.

Friends' In-kind Wish List

The following are items, big and small that the Friends need for conservation and other projects. Why not check your garage now? We'll be happy to send you a 501-(c)-(3) tax-receipt letter for the IRS.

Chain Saw for weed tree removal.

Mac or IBM compatible, age not important. Keyboards, monitors, modems needed too. We just donated one system for use at the Adobe Ranch House. This system was the result of three donations!

Become Ranch Docent

Anyone who is interested in becoming a docent (interpretive tour leader) at the Los Peñasquitos Adobe Ranch House is invited to sign up for the next training session.

The next session begins September 11, 1993. The docent organization conducts tours of the historical site, organizes and participates in special events, and educates the public about early southern California history.

Monthly meetings are held the first Saturday of each month for several months. All the necessary training to lead tours of the ranch is provided.

For additional information call the San Diego County Archaeological Society at 538-0935.

Thanks Volunteers!

The pace of volunteer work hasn't slackened a bit despite the heat of summer. Here are our summer heroes to date. Want to help? Call Mike at 566-6489 for August projects.

Kiosk Project Finished: Kevin Heinrich, Eagle Scout candidate, had been working for eight months on building two interpretive kiosks for the west end entrance to the Preserve. Sunday, August 1 the kiosks were dedicated. His family, including his grandmother, were present at the dedication. All helped him in the project. Friends' Secretary Les Braund lent his construction expertise during the many weekend sessions Kevin spent cutting the wood, hammering nails and screwing in bolts. City Ranger Bill Lawrence provided overall direction and vital help and inspiration at key junctures.

Mike Kelly, Vicky Ausen, Chris Whitten and Brian Swanson prepared interpretive displays for each of the four panels. Similar kiosks are planned for other entrances to the Preserve.

Be sure to visit the kiosks and let us know your ideas for future displays since we'll want to rotate some of them.

If you would like to help fund a future kiosk please give Mike Kelly a call at 566-6489.

Church of Jesus Christ Latter Day Saints López Canyon Cleanup: More than 40 volunteers from the church led a great cleanup of a two-mile section of the middle of López Canyon July 17. Friends leader Trinity Gabriel helped coordinate the cleanup with church leader Jeff Winter. Several truckloads of trash were removed, including one truck load of appliances that were hauled directly to the Miramar landfill. Certain slug elements of society have been in the habit of dumping their appliances and other trash off the Camino Santa Fe bridge over López Canyon.

Waterfall Overlook Project: Boy–scout Steven Gaither and his buddies have been working with Mike Kelly and Barry Martin to cut sufficient eucalyptus trees to provide the rails and posts necessary for his project. He will be fencing off a sensitive part of the wetlands at the waterfall. This area is on the northeast side of the falls and is heavily impacted from people, bikes and horses. As part of the project he will be constructing a new trail outside the sensitive wetlands that will bring people to the central part of the falls. He'll also be constructing an overlook above the falls that will include an interpretive display.

Waterfall Wetlands Project: Another boyscout, Jeremy Cooper is also hard at work preparing for a similar project on the south side of the waterfall. He and his mom, Friends' member Chris Cooper (also an Archaeology Society docent at the ranch) have been helping Mike and Barry harvest additional eucalyptus fencing material.

State Park Bond Initiative: Thanks to Francisco Wong, Marilyn Kollendar, and Chris Cooper for circulating and returning petions already. Also to Rena Kerwin and Christine Ohanian who staffed our table at this community event and collected signatures for the CALPAW 94 Park Bond Initiative.

Newsletter help: Carla Scott, Mike Kelly, Vicky and Melinda Ausen.

Tamarisk Bashing: Cindy Burrascano and Mike Kelly

Pampass Grass Eradication: Mike Kelly and Trinity Gabriel

Cicada

Friends Board of Directors, Committee Chairs and Hike Leaders

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President: Mike Kelly 566-6489
Vice-President: Don Albright 271-9216
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Fitness Walks: Trinity Gabriele 672-0229
Nature Walk leader: Les Braund
Vernal Pools, Mystery Tree, Fire, Stage Coach & Dusk Walks: Mike Kelly
Bird Walks: Brian Swanson 695-2209
Wetlands Restoration Committee: Don Albright, Tom Hopp, Susan George, Marcus Spiegelberg, Trinity Gabriel, John Northrop
Newsletter Committee: Mike Kelly, Carla Scott, Trinity Gabriel
Newsletter Contributors: Barbara Zepf, John Northrop, Dave Hogan (S.D. Bio-diversity Project), Claude Edwards
Hike Committee: Trinity Gabriel
Geology Walk Leader: Don Albright
Conservation Chair: Alan Pepper, Ph.D. 586-7123

Friends of Peñasquitos Canyon August & September Events Schedule

Beat the Heat — Dusk Walks

In August the best times to hike are early morning and dusk. Why not enjoy a cool evening breeze on a dusk walk with us. We have a number to select from. Besides enjoying pleasant breezes and often beautiful sunsets we see creatures of the night, including deer, coyotes and owls.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.

Endangered Plant Surveys & Habitat Restoration Projects

Call Mike at 566-6489 if you would like to help out on one of our many projects. No experience necessary!

AUGUST

Dusk Fitness Walk

Wed., Aug. 11, 6 p.m. Join Trinity Gabrielle on brisk walk to the Kit Carson crossing and back. Bring water and flashlight. Take Mercy Road exist off I-15 west to Black Mountain Road. Go right and up hill, make first legal U-turn, back down hill and right into Canyonside Park entrance. Go past ballfields to white fence, left into new parking-lot.

Nature Walk

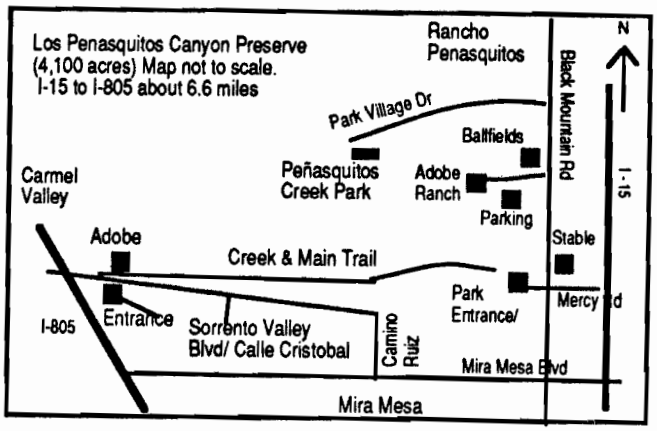
Sat., Aug. 14, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Medicinal Plant Walk

Tues., Aug. 17, 7 - 8:30 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Seed Collection Workshop

Wed., Aug. 18, 7 p.m. at Rancho Santa Maria de los Peñasquitos. Instead of our monthly meeting we'll learn how to collect seed from native plants. Alan Pepper, Ph.D. will demonstrate collection techniques and identify common species in the ranch vicinity. Seed collection is done by special permit from the City Parks Dept. and will be used in restoration projects in the Preserve. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preservesign and left into new parking lot. Walk up to red barn.



Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour

Sat., Aug. 21, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest residence, an historic adobe, settler and Indian artifacts.

Nature Walk with Barbara Moore

Sun., Aug. 22, 9 - 11 a.m. Meet at the east end parking-staging area off Black Mountain Road opposite Mercy Road. Take Mercy Exit off I-15 west to Black Mountain Road. Parking lot/entrance is opposite. Barbara Moore is the co-author of the book Walking San Diego.

Dusk Walk in Peñasquitos Canyon

(from Penasquitos Creek Park)

Thurs., Aug. 26, 7 p.m. Good opportunity to see nocturnal birds and animals. Take I-15 to Mercy Road. West on Mercy to Black Mountain Road. Go right on Black Mountain Road to first light at Park Village Drive. Left and all the way down to intersection with Camino Ruiz. Park there. Led by Mike Kelly.

SEPTEMBER

Medicinal Plant Walk

Thurs., Sept. 2, 6:30-7:30 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour

Sat., Sept. 4, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. See San Diego's oldest residence, an historic adobe, settler and Indian artifacts.

Dusk Walk in López Canyon

Thurs., Sept. 9, 6:30 p.m. Good opportunity to see nocturnal birds and animals. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Led by Mike Kelly.

Deer Canyon & Deer Lake Walk

Sat., Sept. 11, 9 a.m. Deer Canyon is one of the few good coastal canyons left in San Diego. We'll end up at Deer Lake in agricultural area. Leaving from Rancho Peñasquitos. Trail gets a bit rough in spots, wear good hiking boots, bring plenty of water. About 6 miles round trip. **Call for meeting place 484-3219 week of Sept. 6th.** Led by Trinity Gabriel.

Nature Walk with Barbara Moore at West End

Sun., Sept. 12, 1-3 p.m. Meet in west end parking lot off Sorrento Valley Blvd., 1/2 mile east of I-5. Bring binoculars, sun protection, water. Barbara Moore is the co-author of the book Walking San Diego.

Bird Walk in Lopez Canyon

Fri., Sept. 17, 6 p.m. (1-1/2 hours). Meet in west end parking lot off Sorrento Valley Blvd., 1/2 mile east of I-5. Bring bird book, flashlight and binoculars. Owl time! Led by Brian Swanson.

☛ back cover

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Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., Sept. 18, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. See Sept. 4 listing for details.

Geology Walk
Sun., Sept. 19, 9 a.m. Join Geologist Don Albright for a walk through time, including the Preserve's waterfall. Meet at Caminito Propico and Calle Cristobal in Mira Mesa. From the west take Sorrento Valley Blvd. east. It becomes Calle Cristobal as it passes Camino Santa Fe. The next street is Propico. From the east, take Mira Mesa Blvd. to Camino Santa Fe. Right on C. Santa Fe, then right on Calle Cristobal to Propico. Steep trail. Bring water, sun protection.

Sabre Springs Dusk Walk
Wed., Sept. 22, 6 p.m. (2 hours). I-15 to Poway Road, Poway Road east to Sabre Springs Parkway. Right on Parkway, park on the right about 100 yards down. We'll visit a spillway, pond, creek and the old stage coach road. Some stream hopping. Led by Mike Kelly.

Nature Walk
Sat., Sept. 25, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about plants the Indians and settlers used while living in canyon. Visit a mitigation site and see the restoration of native trees and shrubs in place of exotic eucalyptus in progress. Learn about the concept of bio-diversity. Led by Les Braund.

Membership Application

Membership category? Circle below:
Senior (62) or Student $7.00 Individual $10
Family $15 Sponsor $25 Patron $100
Corporate $250 Life $1000
Contribution $ _____

I/We are interested in the following: **8/93**
____ **Volunteer** to help the committee
____ Hikes
____ Indian Culture
____ Educational Workshops
____ School, Family, Youth Programs
____ Environment (Plants, birds, mammals, geology)

Other: _____

Name(s) _____

Address _____

City State Zip _____

Home Phone _____

Please make checks payable to:
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P.O. Box 26523, San Diego, CA 92196

Thank you for your support! Your donation is tax deductible.
Call **484-3219** or **566-6489** for more information.

Canyon News

Friends of Los Peñasquitos Canyon Preserve, Inc.

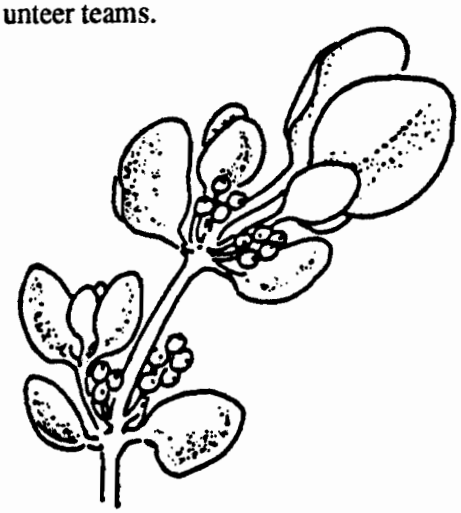
November/December 1993
Volume 7 No. 10/11

CalPAW '94 Initiative Successful

The California Parks and Wildlife Initiate '94 (CalPAW '94) has succeeded in collecting more than 670,000 signatures statewide to qualify this important initiative for the June 1994 ballot. More than 86,000 signatures were gathered in San Diego County. Here and statewide, all were gathered by volunteers. This stands in sharp contrast to many other efforts where it has been necessary to use paid petition circulators to get the necessary signatures.

This volunteer drive bodes well for the future of the ballot measure, reflecting as it does the tremendous enthusiasm for adding tens of thousands of acres to our parks and open space statewide. If the ballot measure is approved next June it will allow the floating of about $2 billion in park bonds.

Congratulations to Dan Hammer, the San Diego coordinator who did such a great job of organizing the volunteer teams.



Mistletoe

Shea Will Revegetate

Shea Homes has agreed to revegetate coastal sage scrub habitat they bulldozed last summer. This habitat is at the westernmost extant of the Park Village Development that runs west from Black Mountain Road. At first Shea Homes denied they had done anything wrong when they failed to gain a right of entry permit from the City Park and Recreation Department to bulldoze a sewer line easement granted as part of their development maps. If they had requested the permit first it might have been possible to choose a less sensitive habitat to put the easement through. Coastal sage scrub habitat is the home of the California Gnatcatcher. This bird was recently listed as threatened by the Federal Government under the endangered species act. The agreement of Shea to revegetate is due to the diligence of Ranger Bill Lawrence and the City's Open-Space Division of the Parks and Recreation Department.

Newsletter Schedule

Been wondering whether you missed any newsletters? You didn't miss any because none were published since August. Due to a lingering illness, our newsletter editor and President, Mike Kelly, was unable to bring out the newsletter on time. Computer problems made it impossible for other folks who volunteered to pinch in to get any issues out. Almost fully recovered now, he is working with a new volunteer who has agreed to put them together. We hope to return to at least a bimonthly schedule. Thank you for your understanding.

Inside

Wildlife Activity Study

Dedicated Volunteers Needed!

by Barry Martin

If you have an interest in tracking and studying wild animals this may be just the thing for you. We are currently organizing a study of wildlife in Peñasquitos Canyon and need volunteers to assist in this important project.

The goals of this study are:

- to derive counts on major wildlife groups in the preserve;
- determine activity patterns of these wildlife groups;
- establish a database for potential use in local, state, or federal animal survey animal programs.

Basic methodology

The Preserve will be divided into zones. Within each zone will be stations where periodic checks of tracks, scat counts, vegetation being consumed and other environmental data would be recorded.

Two or three volunteers per zone would be ideal (great family or school activity). Weekly checks would be made of each station, training in basic track and sign recognition will be given prior to launching this study. Target date for commencement of the study is January 1994.

The benefits of this undertaking are

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The Ecology of Crayfish

by William Bowen, PhD

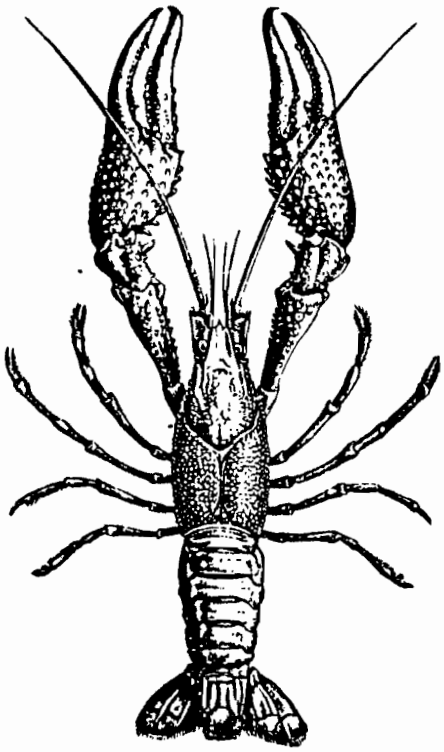
Introduction

Recent observations of the taking of large numbers of crayfish by trappers in Peñasquitos Creek has lead to the need to consider their status and role in terms of the riparian habitat of Pensaquitos Canyon. While fishing for crayfish in California is currently legal and year round without any limits as to number or size (Fish and Game regulation 5.35), it's apparent that this stance for Peñasquitos Canyon needs to be reconsidered.

Although not native to this area, the red swamp crayfish (*Procamburus clarki*) has come to play a unique and valuable role in the ecology of Peñasquitos Creek. They serve as the Creek's ecological rubbish collectors, helping to keep the waters clean by feeding on waste and decomposing plant and animal matter. Furthermore, they convert this waste into protein which is fed upon by species further up the food chain. Thus, waste is recycled back into the system. Birds such as egrets, great blue herons, crows, occasionally owls and hawks, fish, including bass and green sunfish, frogs, turtles, nymphs of dragonflies, water bugs and beetles, opposoms, and raccoons all prey upon the crayfish (Goldman 1983:421; Holdich & Lowery 1988:130,241,251). This makes the crayfish a highly important member of the food chain of Peñasquitos Canyon.

When food supplies for local species are dwindling due to developments surrounding the Canyon, it's important that we protect and offer stewardship to a species, such as the crayfish, which can provide such a dependable and substantial supply of food. In addition, crayfish deserve our attention because of their suitability as a heavy metal, pollutant, or pesticides indicator species, by which, through periodic testing of their flesh, we could monitor the ecological condition of the Creek.

Since the crayfish is an excellent tasting and highly nutritious food item, it might be appropriate for individuals with a fishing license to catch them in limited numbers for private consumption. However, care must be taken that too many are not taken. For although the crayfish is a prolific breeder, is's possible that they could be trapped in such large numbers as to negatively impact the current population. The person to worry about is the individual who would trap crayfish to sell them to bait and tackle outlets or biological supply houses, a potentially lucrative



undertaking which could net a handsome profit. There appears to be one such individual doing just this now. Again, the problem is not only the loss of crayfish per se, but the loss of a important food item for other species.

Classification, habits, and habitat

The crayfish is known by various names throughout the world, including, crawdad, ecrevisse, flusskrebs, gambero, rak, krafta, koonac, orambato, or yabby. Other knicknames include "tailor" or "bootmaker". The modern English name "crayfish" derives collectively from the old English crevis or crevice, the French ecrevisse, and the low Dutch crevik.

Crayfish are freshwater decapod crustaceans--members of the phylum Arthropoda (joint footed animals). They are characterized by an armored body, called the exoskeleton, composed of chitin — a complex chemical compound imbued with calcium salts. To grow or increase in size the crayfish must periodically shed its exoskeleton through the process of molting or ecdysis. This cycle of growth and molting dominates the crayfish's life. When a crayfish is young it sheds its exoskeleton often. As it grows older the process is occurs less frequently, until molting takes place only about once a year, usually in midsummer. Molting is a critical period for the crayfish because this is when it's most vulnerable to predation, and cannibalism by its own kin — which is the chief cause of death.

Crayfish grow to about 3-4 inches long and may live several years. They're more active in the evening and night and during the summer months. They locomote by walking on the bottom of the creek. If alarmed they'll swim or dart backwards. Our variety, the red swamp crayfish, has even been known to climb out of the water and travel overland if the air is humid enough to prevent drying out. In additon to their eyes, crayfish utilize antennae to feel and smell their way about in their world. They protect themselves with two large claws, which are often lost in battle with other crayfish.

Crayfish are found most frequently in moderately flowing streams and standing water. They have three distinct habitats: (1) lotic, or streams; (2) lentic, or standing water; and (3) hypogean, or mud burrow.

Crayfish mostly feed on plant detritus, which is decomposing plant material and associated bacteria, especially the fungal and bacterial organisms involved in the decomposition process. Perhaps their favorite food is leaf litter, or decomposing leaves (Holdich & Lowery ibid:145), but they'll also consume mollusks, insect larva, worms, tadpoles, small fish, other crayfish, and whatever decaying organic matter

they can find. Because of their diet, the crayfish can be thought of as the ecological garbage collector of the Creek (ibid:129), helping keep it relatively clean. But the most important role of the crayfish in the ecology of our Canyon is in transferring energy to higher organisms who can't make use of decaying matter or plants. They do this in their role as a staple in the diet of birds, frogs, fish, insects and mammals.

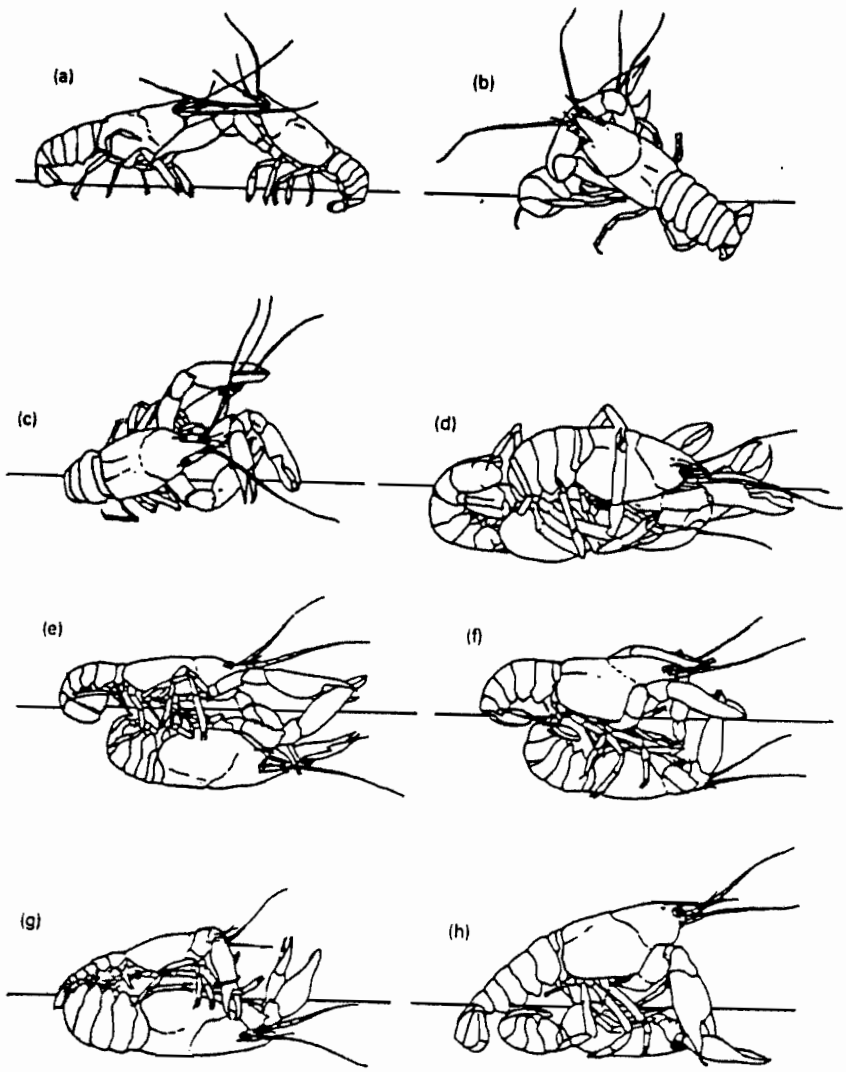
The particular type of crayfish that resides in our creek is the Louisiana or Red Swamp Crayfish (*Procamburus clarki*). They're an introduced species not native to this region. They have been here since at least 1959 when J. Riegel identified them as part of his Master's Thesis sponsered by UC Davis. Currently, the red swamp crayfish has a range of San Diego to Tehama county (Goldman ibid:418), and has undergone an amazing proliferation since their introduction (ibid:426).

Reproduction

Mating in crayfish occurs in May and June when the female is receptive to the male. The female digs or enters an already constructed mud burrow (these can be seen in wetlands just west of the sycamore trees at the west end of the Canyon). The male enters the burrow and throws the female on her back and deposits his sperm in an external receptor on her body. The female carries the sperm around until she is ready to lay her eggs in late summer or early fall. After the eggs are laid the female fertilizes them with the sperm she has been carrying. Once fertilized she attaches the eggs to her tail with a sticky substance known as "glair". Since the eggs are attached to the underside of her tail and look like little grapes or berries, she is said to be "in berry". The eggs are carried over the winter and hatch in the following summer. The young may remain attached to the female for months, hiding under her tail. Once they have gone through several moltings they will fair on their own.

History as a food

Crayfish have long been an important food item and are considered to be a delicacy similar in texture and taste to lobster. Crayfish meat is highly nutritious, being high in protein (17.3%), low in fat (732 cal/kg), and rich in B vitamins and calcium, potassium, and magnesium. Crayfish should always be cooked because this will kill any harmful bacteria they might be carrying.



Crayfish mating

The eating of crayfish by humans dates back to our primitive ancestors who resided alongside streams and rivers where they foraged for crayfish and fresh water mussel. Modern day primitives in the New Guinea highlands, aborigines of Australia, and the Maori of New Zealand make crayfish a major part of their diet.

Crayfish have been considered a delicacy in Europe for many hundreds of years. Crayfish were so highly valued in the 15th century Austrian Hapsburg empire that Emperor Maximilian instituted a management program through popular laws governing size limits. The minimum size for crayfish was burnt into the oars of fishing boats and stiff penalties were imposed for violations.

The first instance of crayfish aquaculture or farming in Europe dates to the Marquis de Selve (1864-70) who maintained crayfish in his castle waterways at the Villiers sur Essonne. The European immigrants to America of the 1700's, especially those settling in Louisiana, harvested the species native to this continent. The Louisiana settlers noted that the local Indian tribes called the Attakapur and Houmas harvested crayfish. Indeed, the crayfish figured in their tribal lore and mythology, even serving as the war totem for the Houmas tribe.

Today crayfish farming and harvesting is a 5 million dollar business in Louisiana. In Europe, France, Sweden, and Spain are top consumers. Califor-

☛ p. 4

(crayfish cont'd)

nia has a growing crayfish industry which centers around the Signal Crayfish (*Pacifastacus leniusculus*), a species introduced into Northern California in late 1800s from the Pacific Northwest. Our crayfish, Procamburus clarki, is also being studied as a potential major industry for California (Goldman 1983:418). Fully 85% of the world's crayfish production is based on this species (Holdich & Lowery ibid:4).

Use in folk medicine

Crayfish have figured in the folk medicine of olden times. The gastroliths, or crabs eyes, which are small bumps found on the sides of the stomach in the summer months, were once collected in vast number and used as a remedy for all sorts of disorders, including gall stones (Huxley 1880). Since the gastroliths consist of carbonate of lime and a little phosphate of lime they are equivalent to chalk or carbonate of magnesia and may have had some physiological effect on sufferers who consumed it. The actual function of the gastroliths for the crayfish is storage of calcium that will be used for remineralization or shell hardening after molting. The gastroliths provide, however, only approximately 10% of needed calcium. The rest must be absorbed from calcium in the water. This is why water high in calcium content is needed for crayfish abundance.

Optimal physical conditions for crayfish

There are optimal physical conditions that should be regularly checked to insure that the crayfish population remains viable. Water can be tested at randomly selected areas along the bank.

1. Optimal water pH is 6.5--8.5.
2. Water hardness should not exceed 50 mg/l.
3. Maximum water salinity tolerable is 8 p.p.t.
4. Optimal water temperature is 64-68 degrees. At about 80 degrees (the temperature of standing water during midsummer days) crayfish will start to die off.
5. Optimal disolved oxygen (DO) concentration is 8.0-10.0 mg/l. DO should not fall below 3 mg/l. Since Crayfish are the first to respond to lack of oxygen in water they are a good indicator of this variable. When DO is low they will go to the water surface along the bank but this makes them more prone to predation.
6. The dissolved calcium levels need to be high for the crayfish to grow to optimum size. If the crayfish constant (see below) falls below national averages, egg shells or bone can be added to the Creek to insure proper growth.

Population estimates should be made. Counts are best made during the burrowing season when crayfish are most often found in their mud burrows.

To asses the overall physical health of a population based on sampling of individuals a crayfish constant is utilized (see Goldman ibid:156). The formula is:

$$K = \frac{\text{Body weight}}{\text{overall length X carpace length X carpace width}}$$

Crayfish burrowing and erosion

There is some conjecture as to whether the crayfish contributes to erosion of the banks of the Creek. Erosion would be chiefly caused by seasonal burrowing. Burrows range from a few inches to more than a yard deep. They are inhabited during the low water of dry spells and during their reworking following seasonal rains (Goldman ibid:524). During the winter one may find a female and a male and 4-10 immature crayfish in a burrow.

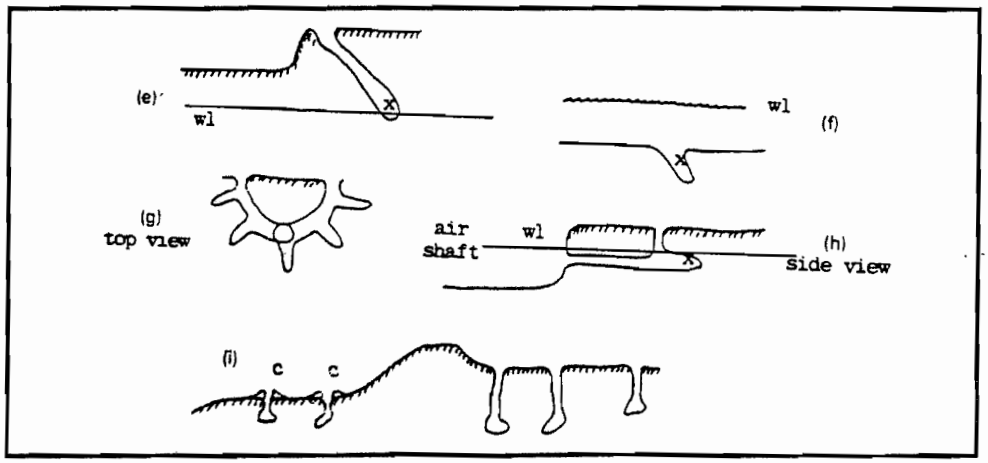
The largest crayfish burrowing habitat known to this author is in a mud pit in the wetlands of the West End. Many crayfish can be found here, as the rains are drying out, with their claws sticking out of the burrow doorway in the black mud. Crayfish have caused structural damage to dikes, levees, water containment structures, and the banks around ponds. However, it does not appear that they have caused any discernible damage to the banks of our creek, which could stand some widening as is's!

Conclusion and recommendations

The red swamp crayfish is well suited to the intermediate flooding and drying that characteristics Peñasquitos Creek, and they have come to play an important role in the current ecology of the Canyon. Crayfish help keep the Creek clean and are an important food supply, converting waste matter into protein to feed species higher up on the food chain. They also offer the potential of serving as sentinel for monitoring pollution and pesticides levels.

Although in other contexts they have wrought damage to dikes, levees, water control structures, and pond embankment through their seasonal burrowing, their impact on bank erosion in Peñasquitos Canyon appears minimal. Nor has their population exploded to such high levels so that they have become a pest. Whatever drawbacks their presence might present is far outweighed by the contribution they make.

Although crayfish are prolific breeders, their population may be diminishing in our Canyon. According



Crayfish burrows

(crayfish cont'd)

to Dr. John Northrop, Norwood Brown, a cattle man of the old Canyon ranching days, is reported to have said that crayfish were so abundant that the drovers used to "just scooped them up and steamed them after roundups". While other reports indicate a population explosion of crayfish in the last 20 years in Southern California, we may be watching our numbers lessening. Currently there are individuals setting traps for crayfish in the Canyon (Ranger Bill Lawrence 1993, personal communication). These traps cannot be over three feet at the widest point (Fish and Game Regulations 1993). Any traps over this size should be immediately confiscated. While our crayfish is not known to be plagued by any severe disease problems, they should be boiled to kill any bacteria by anyone thinking of eating them. Since crayfish can accumulate pesticides easily, they should also be periodically tested to see if they are even fit for consumption (Goldman ibid:427; Holdich & Lowery ibid:241,260).

Please help care for the ecology of the Canyon and its riparian habitat by using temperance when considering taking any species out of the canyon. Your involvement in monitoring and conservation projects involving crayfish and other species is sorely needed and most welcome. Contact the Friends of the Canyon through the phone numbers given in this newsletter to see how you can participate.

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Huxley, T.H. 1880 The Crayfish. New York: D.Appleton & Company.

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Northrop, John PhD 1993 Personal Communication.

Peñasquitos Canyon Has Oldest Sedimentary Rocks

by John Northrop, Ph.D.

A recent (10/17/93) article in the North County Blade-Citizen states that "The oldest sedimentary rocks in the county are in Peñasquitos Canyon." Members wishing to see where these ancient rocks outcrop should look on the north side of the creek below the falls. The layers of marine sedimentary rocks exposed there dip sharply to the west and, indeed, form the roadbed of the water utilities trail that goes around (north of) the steep "pipe & walkways trail" close to the creek. One thick layer of Jurassic shale, about 130 million years old, was metamorphoed (changed) into baked shale by lava flows that formed sills above or below it after deposition on the ocean floor. This accounts for the shale being black where exposed, making it readily identifiable. Some unusual plants, including cholla cactus, thrive there and can be seen growing along the edge of the trail.

As shown in the accompanying figure, the layers of shale are interbedded with lava flows, one of which forms the Falls. The rocks, which have been dated by the marine invertebrate Belemnoides and Buchis Fossils found therein, are part of the Santiago Peak Volcanics.

References

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Northrop, J. "Geology of Peñasquitos Canyon," Windsor Assoc., P.O. Box 90282, San Diego, CA 92109-9189.

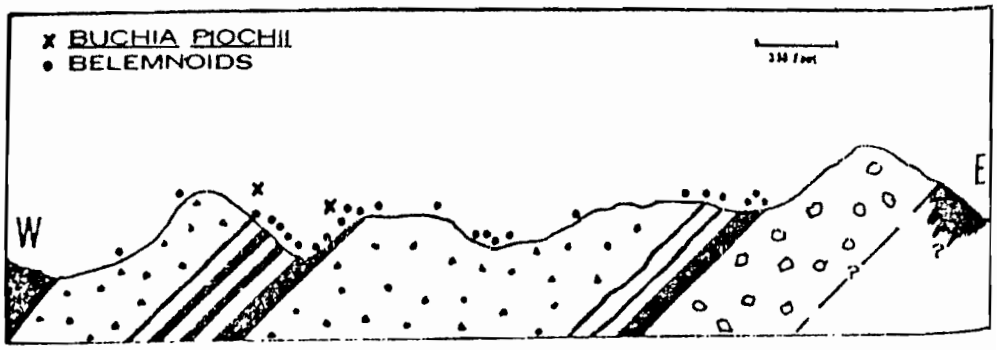

Figure . Cross section of the Santiago Peak Formation on the north side of Peñasquitos Creek below the falls showing the relationship between the black shales, volcanic breccias, sandstones and fossil locations. From Fife, et al, 1967.

(Spider cont'd)

eyes, and know what to look for.

To obtain food the spider holds up the door by her abdomen, and pounces on a luckless sow-bug. The door automatically drops shut as she retreats down into her burrow to enjoy her feast of the juices of her victim, Uneaten parts will be brought to the surface and cast outside.

After her home construction is completed, the architect-builder rests in her silk-lined home. Here she will spend her entire life, never allowing her door to close behind her — leaving her on the outside of her burrow. She is now ready to begin her duties of motherhood. Her newly-hatched spiderlings will remain with her for eight months and are released after the winter rains — to start their own burrows.

The Trap Door Spider has one deadly enemy — the Spider Wasp. This intruder will sometimes dig through the door and enter the burrow where it overcomes the spider by stinging and paralyzing it. The wasp then deposits an egg in the body of the spider. The egg will hatch two days later. The wasp grub has a ready-made dinner as it consumes the spider. It leaves the spider's body to construct a cocoon, and later emerges as an adult Spider wasp.

Some Trap Door Spiders live to be seven years — if fortunate enough to outwit the Spider Wasp.

(Adapted from an article by Lee Passmore and F.E. Beck)

(Wildlife Study cont'd)

obvious from Environmental Impact Reports (EIRs) inputs to making the case for wildlife corridors. You can play a vital role in a hands-on way, gathering important information that will be used to protect and preserve what's left of a very sensitive and biologically diverse area. At the same time you will be afforded the opportunity to learn more about animal tracking, observation, and awareness in the outdoors.

If the prospect of becoming involved in this meaningful study and outdoor experience appeals to you, please contact Barry Martin via the Friends' hotline at 484-3219 (leave your name and number and the best time to track you down on the recorder) or write to Barry Martin at 12774 La Tortola, San Diego, CA92129-3071.

The Trap Door Spider

by Dr. Elberta Fleming

The Trap Door Spider of California, one of Los Peñasquitos Preserve's residents, is an architect and construction worker of great skill. The female spider shows great ability in breaking ground for her nest. First, she usually selects her homesite on a little knoll — so that water from winter rains runs downhill.

Next, she breaks ground for her home. In the preparation she tears away all the moss covering her special spot, pulling the moss up by the roots, and storing it away for later use.

In excavating her burrow she uses her two sharp fangs, her palps, and front legs for tools. With her front legs she flicks away small stones and pellets of earth to a distance so as to leave no sign of the construction work. Her underground home is a little more than an inch in diameter and about eight or ten inches deep.

After digging the burrow to the proper depth, she indents the soft soil inside with the rounded part of her fangs to make the inner walls of the earth below her door. Now she is ready to spin a silken web to cover the interior walls of her home, as well as the underside of her door. The door has a perfect water-proof seal and can resist the heaviest of the California winter rains.

The silken lining of her home is protected from dampness, and the sheen of her silken web makes the walls of her nest have a painted appearance.

The door to her home is ingeniously designed with a hinge. To make the hinge she uses the earth taken from the borrow, builds it up into a disk shape in a vertical position. It's held together by a web, applied to the underside. When the door is nearly large enough to cover the burrow opening, the spider will pull down on the partly finished door, causing the earth farthest from the rim at the top to break. The web prevents the separation of the lid from the outer edge of the burrow — the break forms a straight line.

A perfectionist, the spider pushes the pertly-made door back into a vertical position and adds more earth and webbing until the door is slightly larger than the opening to the nest. She lays webbing on the underside of the door — so that it will swing open again. The door can be held up by the abdomen of the spider. Near the top of the lid she makes fang marks, placed to give her leverage when forced to hold the door against an intruder.

The door is beveled to conform to the outer rim of her burrow. While it's flexible, the spider opens and closes the door many times to make a tight fit. Now she brings back the pile of moss and decorates the top lid of the door to make it fit into the environmental background. This camouflage makes it very difficult to discover a trap door spider nest. One must have very sharp

➡ p. 5 for more

Friends Board Directory

Officers

President: Mike Kelly 566-6489
Vice-President: Don Albright 271-9216
Treasurer: Rena Kerwin
Secretary: Les Braund 566-3958

Other Members of the Board of Directors

Vicky Ausen, Trinity Gabriel, Tom Hopp, Ph.D., Barry Martin, Alan Pepper, Ph.D., Brian Swanson

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Bird Walks: Brian Swanson 695-2209
Conservation Chair: Alan Pepper, Ph.D. 586-7123
Geology Walk Leader: Don Albright
Hike Committee: Trinity Gabriel
Medicinal Plant & Night Walks: Will Bowen 452-7091
Nature Walk leader: Les Braund
Newsletter Committee: Mike Kelly, Carla Scott, Vicky Ausen
Tracking Walks: Barry Martin
Vernal Pools, Mystery Tree, Fire, Stage Coach & Dusk Walks: Mike Kelly
Wetlands Restoration Committee: Don Albright, Tom Hopp, Susan George, Marcus Spiegelberg, Trinity Gabriel, John Northrop

Thanks Volunteers!

Volunteer projects this fall have focused on the various Eagle Scout fencing projects, five to date, with a little pampass grass weeding thrown in. Call Mike at 566-6489 to help.

Endangered San Diego Thorn Mint Project: Two boyscouts, Jared Jurgensmeier and Brad McBrerty have almost finished fencing projects a northwest of the waterfall. These fences will help protect the San Diego Thron Mint from people, horses, bikes or vehicles wandering off the road and destroying this state-listed endangered species.

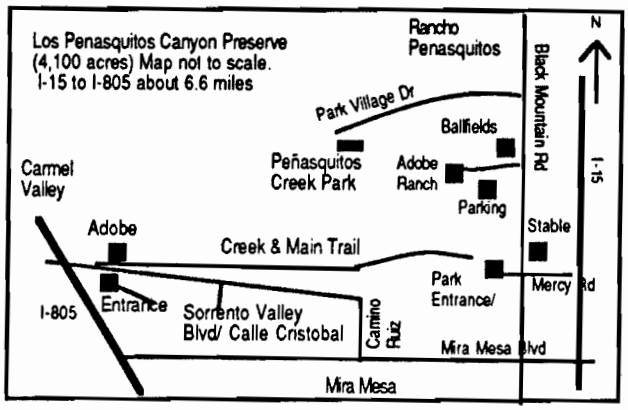
Many of volunteer hours have been put into these projects. Helping to cut the eucalyptus posts and rails were Mike Kelly, Barry Martin, Les Braund, Brad, Bill, Debbie and Luke McBrerty, John Brough, Taylor Goates, Vince and Janet Berryman, Bryce Selloney, Jesse Barton, Bryan Landris, Daniel Pierce, John Butler, Jared & Larry Jurgensmeier, Terry Chau, James Manganaro, Miles Hirsch, Chis and Jeremy Cooper.

Friends of Peñasquitos Canyon December Events Schedule

Winter Comes to the Preserve

November in the Preserve heralds the beginning of winter — such as it is in San Diego. It's a quieter time in the Preserve as short days cut the numbers of people visiting, especially during the week. This gives the critters a chance to relax and roam areas they avoid during the lighter summer evenings. It's also the time for the rains that will rejuvenate the Preserve, starting the new cycle of birth and life for both plants and animals. After a rain is an excellent time for doing some animal tracking.

Outings are free. Wear sturdy shoes; bring water for longer hikes. Rain cancels. For more details or to organize group hikes, call 484-3219 for recorded information.



DECEMBER

Bird Walk from East End
Sat., Dec. 4, 8-9:30 a.m. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Bring bird book and binoculars. Many different birds. Led by Brian Swanson.

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., Dec. 4, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. Take Mercy Exit off I-15 west to Black Mountain Road. Right on Black Mountain Road, make first U-turn, right into Canyonside Park past ballfields to Preserve sign and new parking lot. Walk up path to ranch. See San Diego's oldest residence, an historic adobe, settler and Indian artifacts.

Geology Walk
Sun., Dec. 5, 9 a.m - noon. Join Geologist Don Albright for a walk through time, including the Preserve's waterfall. Meet at Caminito Propico and Calle Cristobal in Mira Mesa. From the west take Sorrento Valley Blvd. east. It becomes Calle Cristobal as it passes Camino Santa Fe. The next street is Propico. From the east, take Mira Mesa Blvd. to Camino Santa Fe. Right on C. Santa Fe, then right on Calle Cristobal to Propico. Steep trail. Bring water, sun protection.

Mystery Tree Walk
Sat., Dec. 11, 9 a.m.-1 p.m. Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. Learn about the1833 legend of the mystery trees and buried treasure in the Preserve. Visit an Indian grinding rock and learn about Indian uses of plants in the Preserve. Led by Mike Kelly.

Nature Walk with Barbara Moore — Lopez Canyon
Sun., Dec. 12, 11 a.m.-1 p.m. Bring binoculars, sun protection, water. Meet in the west-end parking lot off Sorrento Valley Blvd, 1/2 mile east of intersection with Vista Sorrento. From Mira Mesa take Calle Cristobal west until it becomes Sorrento Valley Blvd. At the bottom of the big hill the entrance to the west end parking lot is on the left. Barbara Moore is the co-author of the book Walking San Diego. She often has copies available for purchase and autographs.

Medicinal Plant Walk
Sun., Dec. 12, 3-5 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Learn about plants our Indian and settler ancestors (and people today) used for medicinal purposes. Led by Will Bowen, Ph.D.

XMas Nature Walk
Sat., Dec. 18, 8 a.m. (2 hours). Take Mercy Exit off I-15 west to Black Mountain Road. Parking for Preserve is opposite. See Mistletoe and California Holly. Learn about plants the Indians and settlers used while living in canyon. See fall colors. Learn about the concept of biodiversity. Led by Les Braund.

Rancho Santa Maria De Los Peñasquitos Adobe Ranch Tour
Sat., Dec. 18, 11 a.m. and noon (45 min. each), led by docents from the S. D. Archaeological Society. See Dec. 4 listing for details.

Night Walk
Tues., Dec. 28, 7-8:30 p.m. Meet in parking lot by La Cantina bike shop on north side of Sorrento Valley Boulevard in Sorrento Valley, 1/2 mile east of intersection with Vista Sorrento. Join Will Bowen, Ph.D and learn about the nighttime in the Preserve — when its mammals are most active. Bring flashlight and dress warm.

Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523, San Diego, CA 92196
619-484-3219

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