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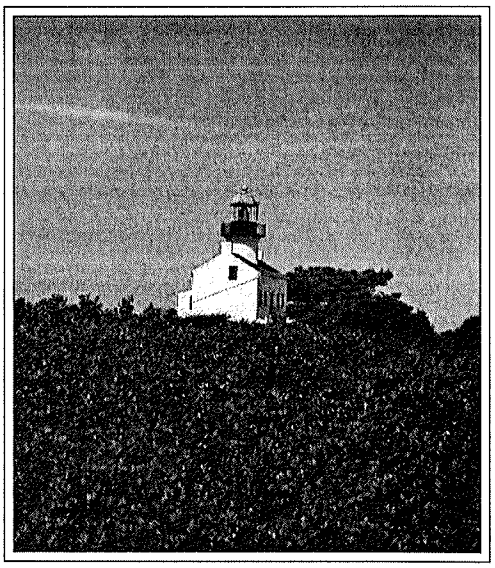
The EXPLORER

Newsletter of
Cabrillo National Monument
and the Cabrillo Monument Foundation

Facing Our Challenges

by Terry DiMattio,
Superintendent, Cabrillo National Monument

The major topic of this issue of *The Explorer* is "The Natural Resource Challenge for Cabrillo National Monument." You could interpret this topic several ways. For instance, there are numerous challenges facing us as we strive to preserve, enhance, and restore the increasingly sensitive marine and terrestrial natural resources on Point Loma. One challenge is to learn what is here, what condition it is in and how it might be changing over time. Another is how to control the exotic vegetation that has invaded the natural ecosystem on the peninsula and restore areas that have already been disturbed. And a third challenge is educating the public about the condition of the natural resources that have been entrusted to our care, and what we believe should be done to ensure that they survive—and thrive—into the 21st century and beyond.



Fortunately for Cabrillo NM, each of these challenges is addressed in *The Natural Resource Challenge: The National Park Service's Action Plan for Preserving Natural Resources.* I would like to share with you a few examples of how this relatively new program is benefiting our park.

The National Park Service has organized this program around the concepts of networks—groups of parks that share similar habitat types. We are in the Mediterranean Coast Network, along with Channel Islands National Park and Santa Monica Mountains National Recreation Area. Together with our sister parks, we inhabit a biome that, on a global scale, is among the most threatened and biologically diverse on the planet. Not coin-

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The Natural Resource Challenge:

Many of us take our natural world for granted. We forage within our environment, often using what we want and going where we wish. When there were only a few humans, this behavior worked to a degree, for another resource was always popping up to take the place of an overused one. As the world population increases, replacement resources are less available even through we are more capable of creating and manipulating what remains.

The question now is: How can we, as individuals, agencies, or nations maximize what we have? How can we create awareness of the fragile nature of our world? Read on to see a number of things that are happening within our park that addresses these issues.

This issue will try to explore the natural world of Cabrillo National Monument. We will be looking at the approach that we are using to inventory, monitor, and preserve the various parts of our resource, but we will try to include a bit of cultural information that will add depth to our understanding.

Thanks to all of you who sent notes and thoughts concerning our last issue. One long-time ranger, now working at another park, complimented the last few issues saying, "The articles get better with each issue. They often make me think and want to investigate. That tells me this publication is a success."

The success of any publication lies completely with the people that take time away from their other assigned tasks to write the articles. A great deal of praise needs to be heaped on each and every one of these individuals.

Emily Troxell,
Editor

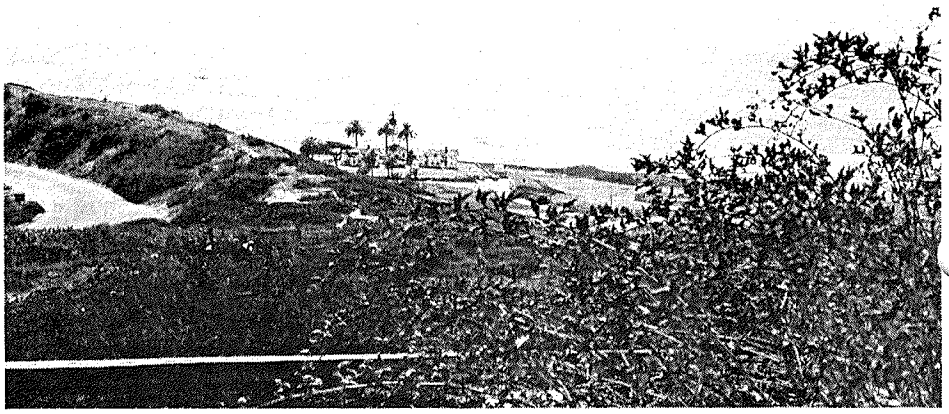
cidentally, it is also one that is among the most densely populated.

To address the first challenge, discovering what is here and how healthy, or ailing, it might be, our park staffs are working together to identify what information we need to acquire to ascertain the vital signs of the resources under our care. For our network, we have prepared an Inventory and Monitoring Plan to identify which species—plants, animals, reptiles, insects, birds, fishes—need to be inventoried and then monitored over the long term. Over the past few years, we have worked with partners to inventory the native vegetation, reptiles and amphibians, intertidal plants and animals, and breeding birds. We still need to inventory small land mammals, bats, and fish among other natural resources.This past fiscal year, FY01, we received funds through our network to begin preparing for an expanded monitoring program at Cabrillo NM. We hired two biological technicians, Becky Clark and Emily Jones, who have been learning how to conduct the herpetological monitoring program, expanding the I & M database, and use the Geographic Information System (GIS) to interpret the results of this research. The Bush Administration supports the Natural Resource Challenge. If all goes well our network could receive about $150,000 in FY02 to begin implementing our monitoring program in earnest.

There is another aspect of the Natural Resource Challenge that could greatly benefit the monument and the Point Loma Ecological Reserve. Strike teams have been established at several parks to deplo around the region to remove invasive exotic plants. For the past several years, we have been using rangers, Volunteers-In-Parks, Youth Conservation Corps (YCC), the San Diego Urban Corps, the National Civilian Conservation Corps (NCCC), and others to remove ice plant, acacia, eucalyptus, Russian thistle, and other pests from the peninsula. The trained and equipped strike teams are available to us to attack and remove exotic vegetation throughout the monument, especially in steep areas that may be too risky for some of our partners. Together with our partners, these plant teams can help us meet the challenge of containing exotic vegetation at an acceptable, manageable level.

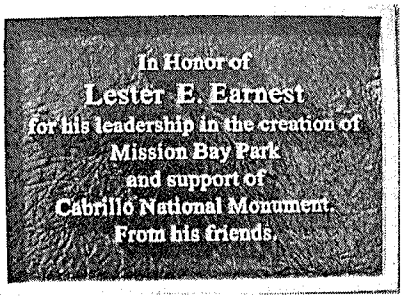
The Natural Resource Challenge will also help us meet the third challenge I mentioned above: educating our visitors about the nature and condition of the natural resources in th Mediterranean Coast biome of Southern California, and inspiring them to ensure that those resources are here for the enjoyment of future generations. Our network has been chosen to create a learning center. As envisioned, learning centers will be places where scientists conduct research into the natural, and cultural, resources of that network's parks. Here

. . .we inhabit a biome that, on a global scale, is among the most threatened and biologically diverse on the planet.



too is where we will educate students of all ages about these resources, their condition, and their role in the health and vitality of their ecosystem. We hope that here the researchers, rangers, and conservationists of the future will be inspired to pursue a career, or a life style, dedicated to the preservation of the microbes, fungi, macroinvertebrates, reptiles, mammals, plants, and birds that form the web of life on this planet and make it livable and worth living in. We have been working with our colleagues at Channel Islands and Santa Monica Mountains for almost a year on creating our learning center. Santa Monica Superintendent Art Eck has crafted a vision statement, and a position description for the center director is being written. While the primary campus will be located at Santa Monica Mountains, we have initiated discussions with the Navy about the possibility of sharing a facility on Point Loma, or building one on adjacent Navy land, for a San Diego campus. It is my hope that we can continue our discussion along this path this fall and winter.

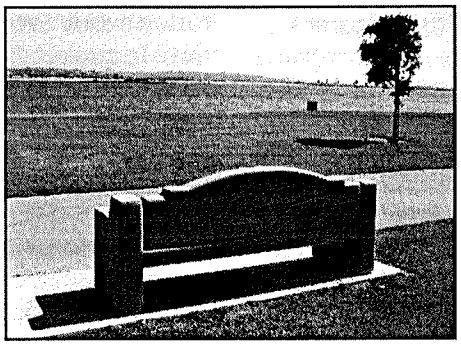
The Natural Resource Challenge is an exciting and critically needed program. It holds great promise for Cabrillo NM and is already producing benefits in our network and in networks across the National Park System. It is helping us meet the many challenges that confront us as we strive to ensure that the ecosystems under our care function properly and that these diverse natural resources are preserved so that future generations can enjoy them.



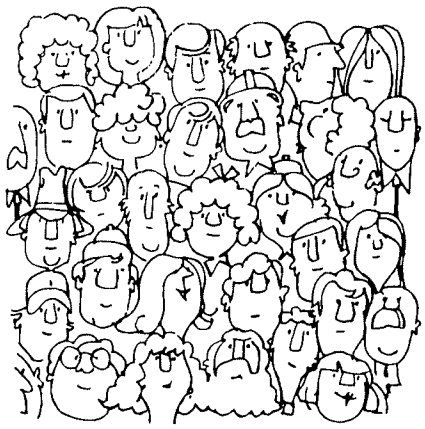
Remembering a friend

On September 12, 2001, friends and family of Lester Earnest dedicated a bench in his memory at Crown Point Shores in San Diego's Mission Bay Park. Representatives of Cabrillo National Monument, Cabrillo National Monument Foundation, and the City of San Diego were among those in attendance.

Les was active in the affairs of the monument for many years. He was a member of the board of directors of the Cabrillo Historical Association (now Cabrillo National Monument Foundation) from 1964 to 1979, serving several terms as chairman. He championed the cause of NPS cooperating associations throughout the country, and served on the national committee responsible for organizing the Conference of National Park Cooperating Associations.



On October 4, 2001, Secretary of the Interior Gale Norton announced that there would be free admission to all National Park Service areas on Veterans Day weekend, November10–12, to allow Americans the opportunity to seek solace and inspirationfrom the nation's parks, monuments and memorials.



Who are all these people, and what are they doing in my office?

by Samantha Weber
Chief, Natural Resource Science Division, CNM

Apparently, they are all employees of the Natural Resource Science division, much to my amazement. Suddenly the NRS division consists of four souls—three full-time and one part-time. Lately, to get around my formerly quiet, almost lonely, office, I've had to move around people, between chairs, step over new equipment, and talk over the ringing of phones. It's been quite a change.

Bonnie Becker, the Marine Biologist, and I are the old school representatives. The new kids on the block are biological technicians Rebecca (Becky) Clark and Emily Jones. They are here because of the Natural Resource Challenge, a big NPS program aimed at helping parks inventory and monitor their biological resources (vascular plants and vertebrates, in this round). Their biographies and photos can be found in the "Cabrillo People" section of this issue. Becky came to us with both small mammal and herpetology field and laboratory work under her belt. Emily had worked on shorebird and wild dolphin research. Becky likes power tools and Emily is a spider nut. Both are talented, dedicated, and great additions to the staff of Cabrillo National Monument.

The first thing Becky and Emily learned was the herpetology (reptile and amphibian) inventory work because, as Becky mentions in her article, we are moving into long-term monitoring. That means we will take over the work that Dr. Robert Fisher's US Geological Survey laboratory has previously handled. (Gulp!) That's a LOT of work. Fortunately, Dr. Fisher's lab has been a huge help, training us to use and program palmtops, teaching us how to repair and maintain arrays, and how to keep track of the tremendous piles of data which result.

After every inventory is completed (see below), a monitoring program is usually close on its heels, as is the case for the herpetology study. Unlike most inventories, monitoring is forever (ideally). That's LOTS of field time and equipment and training and LOTS of data to collect and manage and analyze.

We at Cabrillo National Monument are working with Channel Islands National Park and Santa Monica Mountains National Recreation Area in a group we call the Mediterranean Coast Network. The Natural Resource Challenge funds inventory and monitoring work for park networks that have formulated a scientifically sound inventory and monitoring plan. Fortunately, we are hooked up with great parks and have received funding for both. Good neighbors are a great thing.

Inventory work: What the heck do we have and where?

Loosely, biological inventories are scientific surveys which attempt to determine what species live in an area; where, and if possible, about how many (lots, few, 6, about 1,000, etc).

Some of the **inventory tasks accomplished** by the three parks in the last 12 months:

·identifying, collecting, and processing voucher specimens for vascular plants
·documenting bird species
·reviewing and compiling existing information on fish

·Inventory projects for next fiscal year (FY02):

·bat inventories
·surveys for threatened, endangered, and sensitive plants
·invasive exotic plant species surveys

The year after that (FY03), raptor surveys and intertidal fish inventories begin. This park is scheduled to get money for a small mammal inventory a year after that (FY04), but, nervous that money would run out by then, I jumped the gun. We got funding for our small mammal inventory this and next year from a different source. JUST in case, we are doing it now.

Monitoring: How is everything doing?

Monitoring projects for next fiscal year (FY02):

·Herpetology monitoring (new project)
·Vegetation monitoring (old, every 3-5 years)
·Air Visibility Monitoring (old, ongoing)
·Rocky intertidal monitoring (oldest, twice each year)

For Cabrillo National Monument, the limited monitoring money is being used to hire a biological technician. For the time being, that means both Emily and Becky. A big project is starting the herp monitoring, and we've been preparing for that for months. Another project is mapping the herpetology arrays and vegetation monitoring plots to link that information to the landscape. That way we can ask all sorts of interesting questions, and put the answers into a context that everyone can relate to—a map.

Some questions we have are what parts of Point Loma have the greatest herpetologic diversity, and what do those sites have in common? Do the rare species use some vegetation habitat types more than others? Given that we are getting more and more information as the Natural Resource Challenge progresses, we will

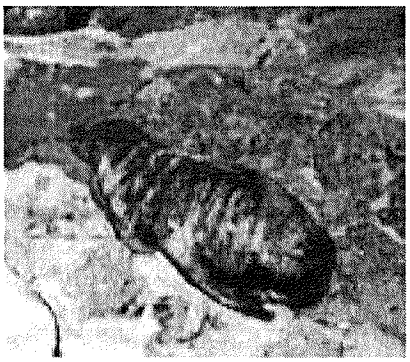
be able to ask lots more ecological questions like these. The more information we have on the biological and physical (soil, water, air) systems here, the better we can learn about and manage this ecosystem as a whole.

I guess that's the point of the whole thing. Learning about a park helps you preserve it. Studying how ecosystem components work together can clue us into how best to manage the landscape so that the park ecological systems are whole, and have their natural processes in place (fire, flood, etc.). The hope is that in the long run, the unique peninsula that is Point Loma will thereby support the most diverse and resilient ecosystem possible.

And that is a heck of a challenge!

What is it like to be a biotech?

by Becky Clark



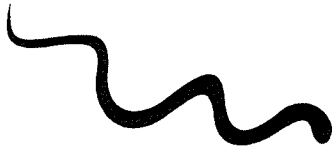
Samantha Weber, chief of the Natural Resource Science Division at Cabrillo National Monument was able to hire biological technicians (biotechs) for the first time in July. She needed biotechs because beginning in the next fiscal year Cabrillo NM will begin monitoring for the herpetology (herp) study that is being conducted on Point Loma. This means that the US Geological Survey will no longer be doing the study, so Cabrillo needs biotechs to complete the field work. Emily Jones and I began work on July 9, 2001. Although we both have our own unique talents, overall we perform the same tasks. Being a biological technician at Cabrillo National Monument includes many different duties, which are both ordinary and extraordinary.

Repairing herp arrays is an ongoing task that is very important for a successful study of the reptiles and amphibians at Cabrillo. There are 17 sampling arrays, each consisting of a Y-shaped configuration of nylon drift fencing with five-gallon buckets sunk into the ground in the center of the Y and at the middle and ends of each arm. The lids of the buckets have three wooden pegs attached to the top. While we are sampling the lids are flipped over and the pegs act as feet, holding the lid open about two inches over the bucket. These arrays have been in place since July of 1995, so many repairs are needed to keep them in working order. Emily and I have been making new bucket lids to replace those that have cracked due to their constant exposure to the weather. We have also been driving new stakes into the ground to hold up the drift fence, using a staple gun to reattach the fence to existing stakes.

Some of the extraordinary things that Emily and I have done over the last several months include capturing a California legless lizard (*Anniella pulchra*), and helping to save a stranded sea lion. On our second day of sampling, Emily bent down to check a bucket and found the legless lizard. It was about six inches long, silver-beige above, and yellow underneath. Its skin looked shiny as if it had been polished. This was only the third of its kind to be caught on Point Loma over the last six years.

August 15th started out like any other day, but by midafternoon it had become my most exciting workday to date. A visitor to the park's tidepools called to report a stranded sea lion. Our whole division went down to check it out. The animal was lying on a cliff just above the water and it didn't look well. I was left at the tidepools to guard the sea lion while Samantha and Emily went to call Sea World. For over three hours I kept visitors away from the animal until Sea World officials arrived. They took one look at the sea lion and said that it was dehydrated and too young to be away from its mother. They threw a net that looked like a large metal hula hoop with a rope web attached over the sea lion and flipped it over so the animal was trapped in the bottom. Then I was asked to come down and help them carry it up the terraced rocks above the tide pools. It was strange how much smaller the sea lion was up close. After it was captured it was taken to Sea World where it recovered and has since been released.

The career of a biotech is not always as exciting as it was on August 15th. Many of our days our spent in the office organizing supplies and working on the computer. But we realize that it is necessary to complete both the ordinary and the extraordinary tasks to get the job done.



Vision and its consequences in jumping spiders

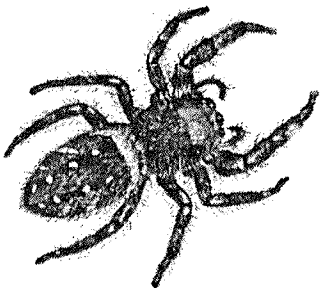
by Emily Jones

Catching a salcid, or jumping spider, (Order Araneae, Family Salticidae) in a field of ice plant is like catching a disobedient pet rabbit in a field of carrots. Each time you reach down to "outsmart" the salticid, he turns his body directly toward you to peer at you with his huge eyes. As your hand comes in to catch him, he jumps the opposite way to safety on an adjacent leaf. He detects every move you make from any direction and appropriately moves to safety. After thirty minutes in the bright sun, you are left with a sunburn, an empty vial and you have been "outsmarted" by one of the Salticidae.

As you walk anywhere in Cabrillo National Monument you are being watched. Jumping spiders love the nice, sunny days we have in San Diego and can be seen hunting on plants, the side of a building or literally anywhere. These spiders are small to medium in size with robust bodies and short legs. Their body is divided into two parts: the cephalothorax (head and middle region) and the abdomen. They are very hairy and either cryptic in color or sometimes iridescent. Some species are called "ant mimics" because of their resemblance to ants, even going so far as to wave their first pair of legs around in the air to make them appear to be antennae! Since nobody likes to be attacked by an ant it is a good choice for mimicry.

They have a distinctive eye pattern with sharp vision, which makes them excellent hunters. They do not weave webs and wait for an unfortunate victim; instead they actively hunt for their food. They approach a meal slowly, and then pounce. Just before this, however, they spin a silken dragline from their spinnerets in case they miss their target. After sinking their fangs into the unsuspecting insect and injecting venom and digestive enzymes, they basically eat their meals from the inside out. This venom, meant for an aphid or other small insect, would not do much to a human.

The visual capabilities of Family Salticidae have been compared to the vision of canines and felines of the vertebrate world. This is a big feat for a creature smaller than a feline eye. With eight eyes surrounding almost half of its carapace (hard dorsal covering), the jumping spider can detect motion from almost any vantagepoint and can, distinguish detail as far away as 20 times its own body length. The three pairs of secondary eyes surround the larger primary eyes, which are located in front. The combined field of view of the secondary eyes encompasses an area



nearly 360 degrees around and above the spider. The secondary eyes serve as "motion detectors," detecting movement in the surrounding environment but not used in the detection of stationary objects. The primary eyes use high resolution in identifying objects and provide color vision. Some salticid species can distinguish between different types of motionless prey, threats, and conspecifics (same species) from up to 300 mm away. Each primary eye can move independently, therefore salticids are able to detect two different objects at the same time.

Because of their outstanding vision, many particular behaviors and elaborate appearances have evolved in salticids. Since they see in color, many species exhibit bright colors and sexual ornaments to communicate to other conspecifics. Elaborate courtship dances with side-to-side body movements and leg waving are implemented for attracting mates. Exaggerated body parts like the huge jaws of the *Myrmarachne plataleoides* are thought to be used for mate attraction and territorial defense. Camouflage and trickery are exploited in Phyaces and Portia who use special tactics like mocking wind movement, debris mimicry, and aggressive mimicry to distract potential victims and/or potential predators. Visually choosing "better" routes to prey items hints at salticid "intelligence." All of these behaviors and unusual body parts have developed because of the jumping spiders' unique and highly developed sense of vision. Because they are cursorial by nature, unlike many "sit-and-wait" spiders, salticids have spread out into many niches all over the world—there are approximately 4,000 species worldwide.

Personal experiments on *Habronattus* using black film canisters as capturing devices have proven quite well the salticid ability to see, flee and even "outsmart" Homo sapiens sapiens.

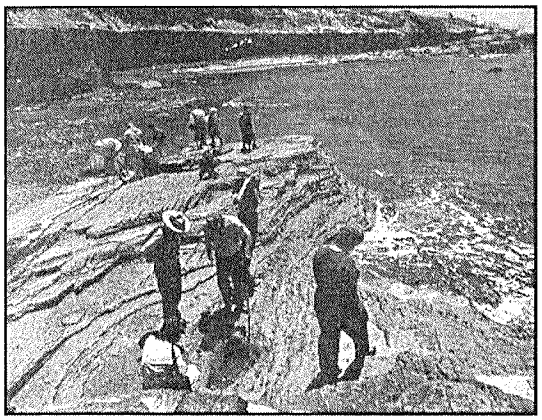
References

- Clark, David L. and Uetz, George W. 1990. Video image recognition by the jumping spider, Maevia inclemens (Araneae: Salticidae). In: *Animal Behavior*, V40, pp.884-890.
- Moffett, Mark. 1991. All eyes on jumping spiders. In: *National Geographic*, V180, No.3, September, pp. 43-63.
- Moffett, Mark. 1995. Why I like jumping spiders. In: *International Wildlife*, May/June, pp. 31-36.
- Pollard, Simon. 1995. Samurai Spiders. In: *Natural History*, March, pp. 44-47.
- Tarsitano, Michael S. and Andrew, Richard. 1999. Scanning and route selection in the jumping spider Portia labiata. In: *Animal Behavior*, V58, pp. 255-265.

Tidepool science season is coming!

(Although for some it never went away)

by Bonnie Becker



Most local tidepool aficionados know that tidepooling season in San Diego begins in October and ends in April. This is due to the fact that most of the low tides, which are necessary to visit the intertidal region on foot, occur at night during the summer. On October 15, we will have the first negative tide (below mean lower low water, a measure of average low tides) during daylight hours. This marks the first day of tidepooling season. That means that our marine science program will be gearing up as well.

I don't mean to imply that marine science has not been going on all summer. A few dedicated volunteers have been selflessly working, always before sunrise, to get our invertebrate-settler monitoring program established. The purpose of this program is to complement the information we have been collecting for over a decade through our tidepool sampling. We know a lot about the fluctuations of the populations of adult animals in the park, but it is difficult to determine the causes of these fluctuations. It is possible that they are due to changes in the number of microscopic babies, known as larvae, which get washed in with currents from the open ocean. The adult animals will eventually die of natural causes, and without recruitment of new juveniles, the population can not be sustained. It is difficult to track the larvae themselves, but we are keeping count of some of the new settlers (larvae that have metamorphosed into tiny mussels, barnacles, and limpets) in the park. An undergraduate research fellow at Scripps Institution of Oceanography, Jennie Navarro, has also looked at mussel settlers from nearby sites (La Jolla and Cardiff) to see how Cabrillo sites compare. It turns out we have about 10 times fewer juvenile mussels entering our park. It is possible that the crash in adult mussel populations we have seen since 1990 could be related to a lack of these juveniles coming to Cabrillo.

This settler-monitoring program will continue to give us valuable insight into the health of our park. But it will take a lot of help. My sincerest thanks to the field team—Sara Heintzelman (team captain), Bill Van Bonn, Kelli Van Bonn, Amy Van Bonn, Adrienne Huber, Jennie Navarro, and Lisa Tanner—for their early morning field work. In addition, our hard-working laboratory team has been sorting through the resulting samples; thanks to Peg Forte (team captain), the Van Bonns, Janet Croft, Sara Heintzelman, and Keith May. **The lab team desperately needs your help—we need more sorters. If you are interested in getting involved in this vital program, please contact me for more information.**

Now that the season is beginning, we will be initiating some of our continuing science studies. Bird and visitor censuses wil begin on October 15. Our biannual tidepool monitoring will occur from October 15 though 19, and November 14 through 17. In addition, we have an ongoing invertebrate-inventory program to document all of the species found within the park. This summer, we had a number of taxonomists helping us with this task. Our list of species is very impressive, and we are not close to done yet! In February, we will be doing some dye-release studies in order to learn more about the local currents off of Point Loma. Stay tuned for more results as they become available. **All of these studies are still accepting volunteers.**

DECEMBER 2001

		LOW TIDE				HIGH TIDE			
		AM	Ht.	PM	Ht.	AM	Ht.	PM	Ht.
		Sunrise 6:43		-PST-		Sunset 4:55			
1	Sa	2:27	1.8	3:55	-1.0	8:45	6.8	10:19	4.1
2	Su	3:01	2.1	4:38	-1.0	9:20	6.8	11:10	3.9
3	M	3:39	2.3	5:26	-0.9	10:00	6.7	----	----
4	Tu	4:26	2.6	6:20	-0.7	12:09	3.8	(10:46	6.3)
5	W	5:29	2.8	7:20	-0.4	1:17	3.9	(11:42	5.8)
		Sunrise 6:47		-PST-		Sunset 4:55			
6	Th	7:02	3.0	8:24	-0.1	2:30	4.1	12:54	5.2
7	F	8:52	2.7	9:27	0.1	3:34	4.5	2:24	4.7
8	Sa	10:26	2.0	10:25	0.4	4:27	5.0	3:58	4.4
9	Su	11:36	1.2	11:16	0.6	5:11	5.6	5:20	4.4
10	M	----	----	12:31	0.3	5:52	6.2	6:28	4.4
		Sunrise 6:51		-PST-		Sunset 4:56			
11	Tu	12:02	0.9	1:20	-0.4	6:30	6.6	7:26	4.4
12	W	12:44	1.2	2:04	-1.0	7:07	6.9	8:18	4.4
13	Th	1:24	1.4	2:46	-1.2	7:42	7.1	9:06	4.4
14	F	2:01	1.7	3:26	-1.3	8:17	7.1	9:51	4.3
15	Sa	2:37	1.9	4:05	-1.2	8:52	7.0	10:35	4.1
		Sunrise 6:54		-PST-		Sunset 4:58			
16	Su	3:12	2.2	4:43	-1.0	9:26	6.7	11:20	4.0
17	M	3:47	2.4	5:23	-0.6	10:00	6.3	----	----
18	Tu	4:24	2.7	6:04	-0.3	12:07	3.8	(10:34	5.8)
19	W	5:08	2.9	6:47	0.1	1:00	3.8	(11:12	5.3)
20	Th	6:10	3.1	7:34	0.5	2:00	3.8	(11:56	4.8)
		Sunrise 6:57		-PST-		Sunset 5:00			
21	F	7:43	3.2	8:25	0.9	3:00	4.0	12:55	4.2
22	Sa	9:36	2.9	9:18	1.2	3:52	4.2	2:22	3.7
23	Su	11:00	2.3	10:08	1.4	4:34	4.6	4:03	3.4
24	M	11:55	1.6	10:55	1.6	5:08	5.0	5:26	3.4
25	Tu	(12:38	0.9)	11:38	1.7	5:40	5.4	6:30	3.6
		Sunrise 6:59		-PST-		Sunset 6:03			
26	W	----	----	1:15	0.2	6:12	5.8	7:22	3.7
27	Th	12:18	1.8	1:52	-0.4	6:45	6.3	8:07	3.9
28	F	12:57	1.8	2:28	-0.9	7:19	6.6	8:49	4.1
29	Sa	1:35	1.9	3:06	-1.3	7:55	7.0	9:31	4.2
30	Su	2:15	1.9	3:46	-1.5	8:33	7.2	10:13	4.2
		Sunrise 7:01		-PST-		Sunset 5:07			
31	M	2:57	1.9	4:28	-1.5	9:14	7.2	10:58	4.2

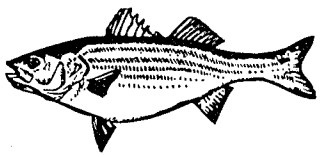
Marine Reserve proposal includes Point Loma

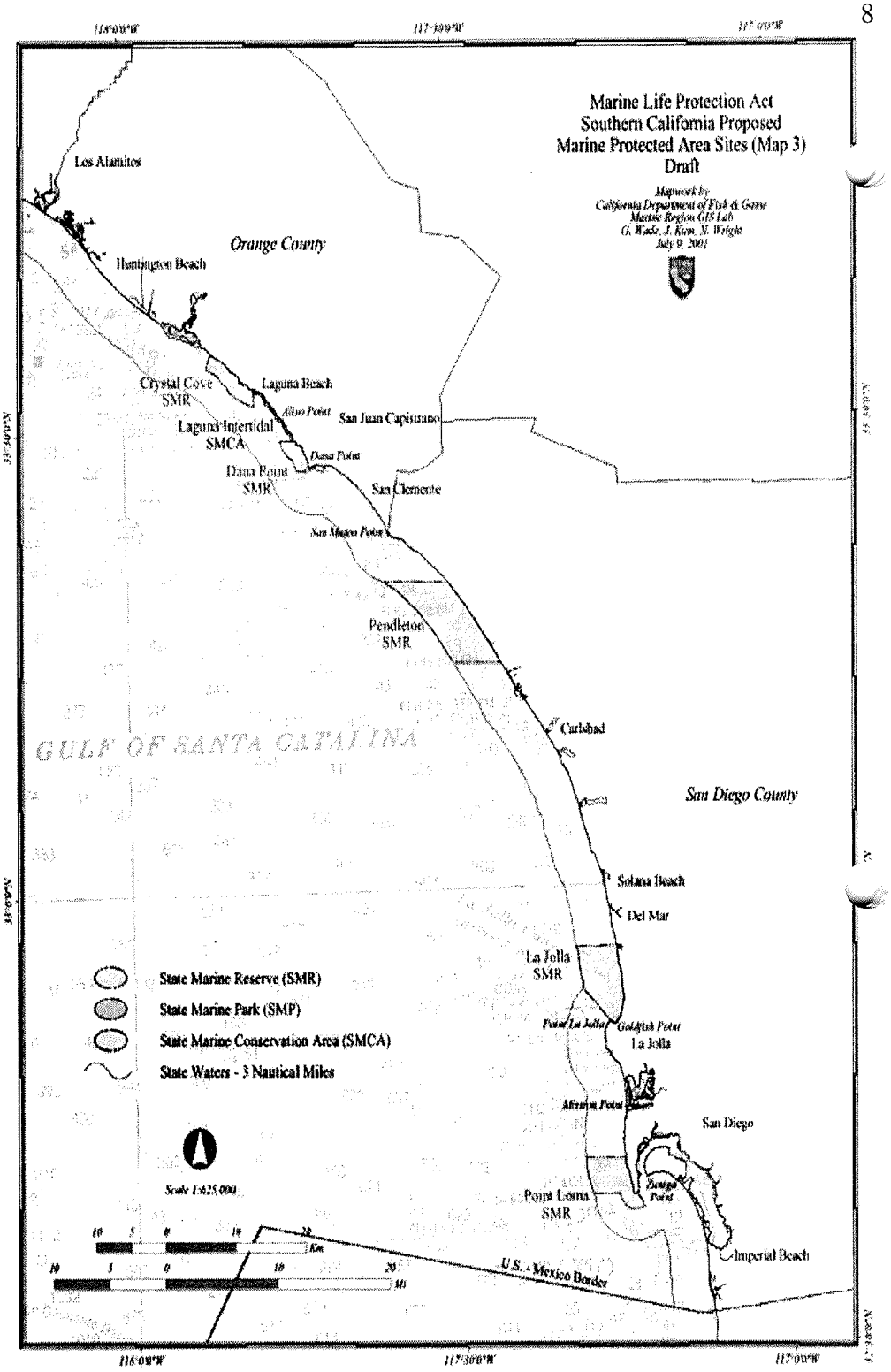
by Bonnie Becker

Our park has been in the news quite a bit lately. In accordance with the Marine Life Protection Act, the California Department of Fish and Game has proposed a network of marine reserves and parks along the coast of the state. One of those proposed sites is the Point Loma Kelp Forest, including the area within the boundaries of Cabrillo NM. Other designated sites in San Diego County include La Jolla and Camp Pendleton. As proposed, the new reserves would completely limit extractive uses (fishing, hunting, harvesting), although access would probably remain open.

Over the past two decades, many scientists and managers have suggested that marine reserves could provide an effective management technique by permanently setting aside a specific area to allow populations to replenish themselves. Many potential advantages of marine reserves have been identified, including enhancement of fisheries, preservation of biodiversity, increased tourism, and educational opportunities.

At the same time, there are a number of users that rely on these waters for their livelihood, and they will likely experience short-term economic losses from the plan. Consequently, this proposal is somewhat controversial.



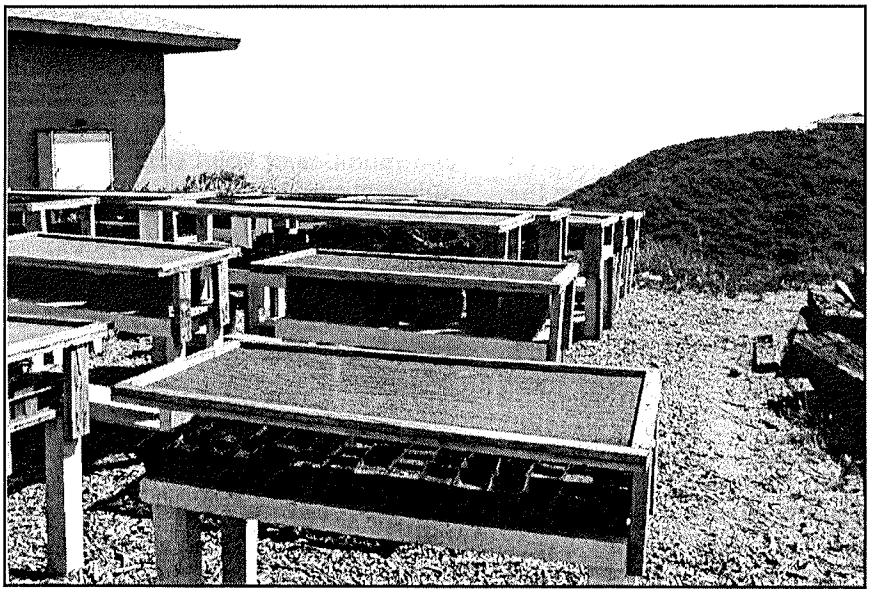


The California reserve network proposal is still in draft form and public comments are being accepted through public hearings and letters. If you would like to learn more about this proposal, you can find information at http://www.dfg.ca.gov/mrd/mlpa. As usual, feel free to ask me any questions.

Above is a map of proposed marine reserves for Orange and San Diego Counties:

The native garden

by Tonja Campbell



A recent Subject Report issued by The National Park Service Advisory Board recommends that the service, "...adopt the conservation of biodiversity as a core principle in carrying out its preservation mandate and participate in efforts to protect marine as well as terrestrial life." This is relevant to Cabrillo National Monument because the park's coastal sage scrub habitat is endangered. The best-known way to preserve a habitat is by setting aside protected lands where that habitat can remain undisturbed. Although we enjoy the special status of being a protected zone, our exotic vegetation and social trails attest to the fact that the native habitat has been disturbed. One strategy for preserving the rich diversity of native plant life in the park can be found in our Native Garden.

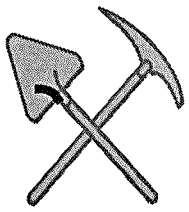
With the ultimate goal of turning all of Cabrillo National Monument's grounds into a native garden, our resource management rangers created and maintain a native plant nursery in the lower maintenance area. With conservation in mind and a great deal of ingenuity, rangers and volunteers turned an old pile of abandoned tables, wood, and screens into—quite literally—a greenhouse. Previously potted and later forgotten plants found a new home among the tables alongside flats of newly planted seeds. A drying rack was also fashioned for the purpose of drying some of our more beefy seeds like those of the lemonadeberry shrub. Finally, the leftover scraps of screen were sewn into bags used for the harvesting, drying, and storage of seeds. Continuing the ideal of conservation, the nursery salvages old pots and flats, makes use of the soil cultivated from the habitat itself, and harvests seeds from the thriving plants within the park.

At present the nursery is occupied by 104 potted plants along with 34 flats containing anywhere from 9 to 25 seedlings each. Lemonadeberry, bladderpod, black sage, sea dahlia, California buckwheat, dudleya, laurel sumac, giant wild rye, encelia, and deerweed are among the seedlings. Of especial interest are the seedling poppies, eight of which are part of an experiment especially requested by a volunteer who discovered what may be a new hybrid poppy in the tidepool region of the park. With parental care, abandoned plants are nursed back to health while new plants are nurtured into seedlings. Once the plants have three to four pairs of leaves and a strong root base they are released to their permanent "real world" setting throughout the park. The most recent seedlings to leave the nursery have found homes in the tidepool region and along the ocean view parking wall. Seedlings will continue to be sent out to battle the elements and evolve into flourishing plants that will in turn provide the seeds for yet another generation of seedlings.

The nursery plays a vital role in the progress toward our goal of restoring the coastal sage scrub habitat at Cabrillo National Monument. With hard work and good fortune this habitat will survive the threat of extinction.

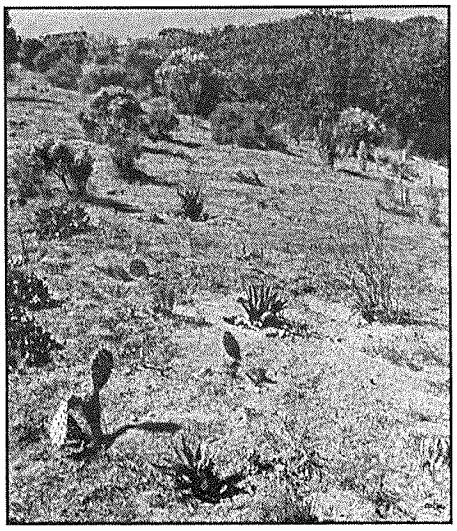
Ecological battles

by Carol Ann Vallee

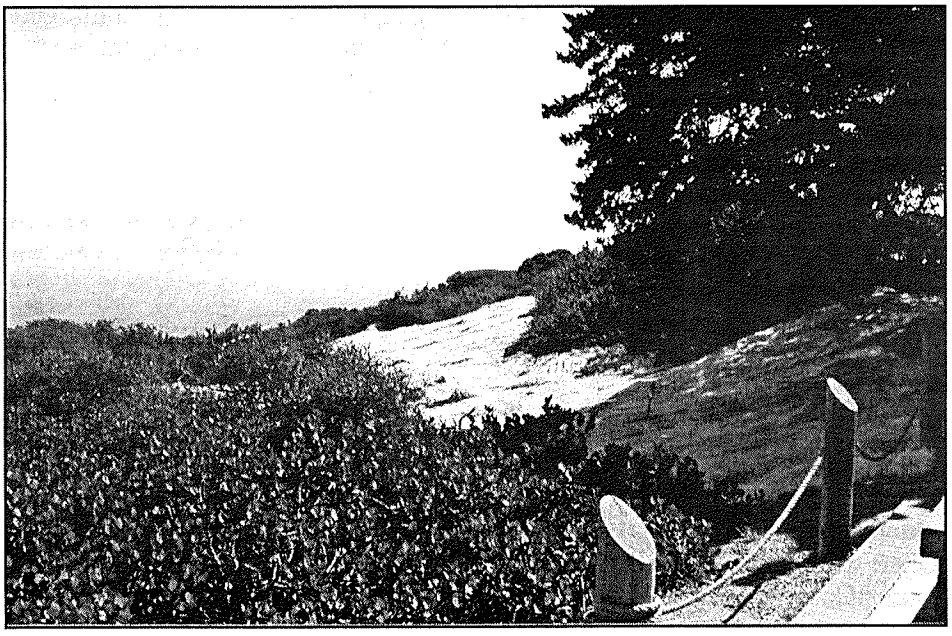


Waking before dawn on a summer morning, they crawl out of bed and head out to face the grueling day. When at last they arrive at Cabrillo National Monument, they are ready for action. They pull on their black high-top boots, don hard hats, slide on safety glasses and gloves, then double check their tools to make sure they are sharp and ready for use. They jump out from white vans, each grabbing an axe, pulaski, loppers, or trash can. They fight their foe in all weather conditions, from sweltering heat to drizzling rain. These young men and women from the Youth Conservation Corps are ridding the park of its daunting, invasive enemy: exotic vegetation. Several of these alien species spread rapidly, forcing slow-growing native plants to compete for limited habitat. More often than not, the non-native plants choke out native species. Our valiant teens are battling the intrusive plants in order to accomplish the goals of Cabrillo National Monument and the Point Loma Ecological Reserve's vegetation management plan. We are striving to reestablish and preserve the indigenous plant communities of Point Loma. This requires us to identify and eradicate non-native plant species and reintroduce those that are native to the area.

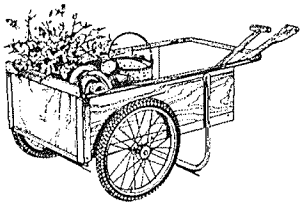
Before a busy summer of vegetation management by the Youth Conservation Corps begins, we in the Resource Management Division, strap on a camera, slather on sunscreen, grab a bottle of water, and head out in search of progress. We may encounter venomous snakes and treacherous terrain but our goal must be met. We take pictures of several locations throughout the park every year at established photo plots, and have been doing so since 1997. This way, we can compare and contrast the slides of the same photo plot over several years to see what is occurring at each site. What we hope to see is iceplant *(Carpobrotus edulis)*, tecalote, also called yellow star-thistle *(Tecalote melitensis)*, and other various intrusive plants eradicated, and native plants in the coastal sage scrub ecosystem such as bladderpod *(Isomeris arborea)* and coastal sage-



brush *(Artemisia californica)* prospering. By seeing the changes that have occurred over the years we can tell what actions need to be taken in order to promote a diversified, healthy native ecosystem: What plants should we plant? What plants need to be removed? Is the vegetation in each photo plot improving in health or declining? In most cases these questions can be answered by looking at the slides. Thanks in part to the efforts made by the Youth Conservation Corps, we are seeing progress throughout the park. You can see for yourself the startling changes that can occur in just four years!

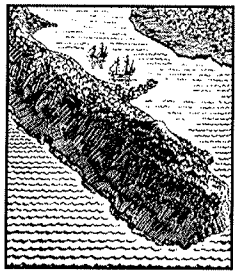


Photographs show areas of revegetation at Cabrillo NM.



An island called Point Loma

by Pierce Harris
CNM Volunteer



What is an island? Geologically an island is defined as: "A tract of land surrounded by a sea, swamp, marsh, alluvial land or isolated during floods."

Point Loma is bounded by the Pacific Ocean on the west and south, Mission Bay on the the north, San Diego Bay on the east; it is separated by the San Diego River and tidal and alluvial land from the mainland of California.

Thus Point Loma is by definition not a peninsula but an island. More precisely it is an estuarial island as it is located in the estuary of the San Diego River but it is an island nevertheless.

Before Point Loma was more or less permanently connected to the mainland by the Army Corps of Engineers in the late 1800s, access was dictated by the ever-changing channel of the San Diego River. The river would flow into Mission bay (then known as "False Bay")until silt build up or floods would divert it in to San Diego Bay then back again. This meandering of the river left Point Loma isolated by vast tidal mudflats. There is a map on the counter of the visitor center at Cabrillo NM dating from the 1850s showing the mouth of the river where Shelter Island is now located.

The early efforts of the Corps to control the river often failed in time of Floods, most notably in 1917–18. By 1958 the Army Corps had constructed stone levies on both sides of an artificial channel to contain the river in time of flood. This permitted Point Loma to be connected to mainland San Diego by three bridges, two main surface streets, and a causeway (I-8) above the south side of the flood control channel.

It is fundamentally easy to demonstrate by physical geology and geography that Pt. Loma is an island, but an island is more than a function of geography and geology. There are also biological and cultural considerations.

Biologically, Point Loma has many plants and animals—vertebrates and Invertebrates—that differ slightly from those found on the mainland. In the past we had deer that were very small, rather like the island deer of British Columbia. Dr.Robert Fisher's researchers from SDSU and USGS have found invertebrates that seem to differ from the mainland examples; they have also collected DNA samples from Point Loma's reptile population that may reveal other distinctions.

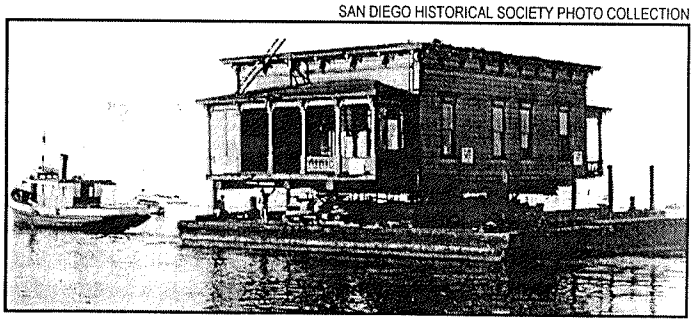
Culturally, island dwellers often do things differently than their mainland counterparts, compelled to do so by their relative isolation. I recalled reading a draft of a paper written by a graduate student in the department of geography at SDSU back in the late 1950s. The author stated that two of the oldest buildings on Point Loma, the San Diego Yacht Club and the grand old Romanesque house on the corner of Locust & Inglow Streets, were built on Coronado Island in the late 1800s and floated over to their present sites on a raft? Why would someone do that when there are perfectly good roads leading to both sites? The answer is there were no such roads then. Point Loma was then— and still is—an island, not a peninsula.

On Sept 25th of this year I visited the house at 1552 Locust to verify the location and thought to inquire of the occupants regarding the raft story. A gracious woman, Willa Mae Ward Heitman, answered the door. I introduced myself and told her I was gathering information for an article on Point Loma for one of the ranger staff at Cabrillo National Monument who had become ill.

I asked Mrs. Heitman if she knew the origins of the house. She informed me she had lived there for the 81 years since the house arrived on Point Loma and that the house was originally built by a lumber baron named Cole at the corner of 10th and C streets in San Diego, not on Coronado Island. She said Mr. Cole's wife wanted to move to the then more fashionable Mission Hills so in 1923 Cole sold the house to Mrs. Heitman's mother, the actress Edith Ida Ward. From its site on C street the house was moved to where the Star of India is now moored, loaded on a Navy barge and floated across the bay to the foot of Hugo Street on Point Loma. Mrs. Heitman said she and the children of the area all ran down to the beach to watch her house arrive. Edith Ward had a concrete foundation prepared and waiting for the house where it now stands. She said there is a picture in the San Diego Historical Society's collection of her home on the Navy barge in the middle of the bay on its way to its new site on an island called Point Loma.

An island is more than a function of geography and geology. There are also biological and cultural considerations.

SAN DIEGO HISTORICAL SOCIETY PHOTO COLLECTION



Working at Cabrillo National Monument

by Martin Lane

The Youth Conservation Corps (YCC) is a federal government work program designed for youths 15 to 18 years of age. The YCC people earn minimum wage while improving, and learning about, their environment. Cabrillo NM has participated in this program for a number of years; during the last five years Cabrillo has partnered with the Navy in an effort to improve the natural resources in the Point Loma Ecological Reserve.

In past years, the YCC program had concentrated on removing as much acacia, and tree tobacco as possible. This year we focused on eradicating acacia, tree tobacco, fennel, castor bean, eucalyptus, iceplant, yellow star thistle, garland chrysanthemum, and pampas grass from the Point Loma Ecological Reserve. Removing all nonnative plants in each of the project areas allows native species to regrow in a less competitive environment, increasing the health and vigor of the unique coastal sage scrub habitat.

An important part of the program is environmental education. By law, the program is designed to give participants environmental education and other fundamental job skills. One day each week is set aside for this educational component. Participants visit natural and cultural areas in San Diego to learn how various agencies preserve their resources. After each field trip, they write a one-page report on their learning experience.

Participants also learn some basic job skills, such as use of hand tools, word processing, team building, problem solving, and conflict resolution. Part of each day is set aside to addressing issues arising during the day's activities. The education day includes a representative from the San Diego City School District who meets with the group and provides basic job-related education through the work education program. Topics include résumé writing, job interviewing, and employer expectations. For their effort in the educational part of the YCC program, students earn one unit of high school credit. Participation in the corps often brings about unexpected results. Here is how the program resulted in growth and change for one crew member, Tristan Lamb:

Working at Cabrillo National Monument has made me achieve goals faster than I would ever have imagined. Coming into Cabrillo at the age of fifteen was an early start to a successful career. I began working as a crew member doing the basic job of removing exotic vegetation. Throughout the whole summer, I worked as hard as I possibly could.

I never expected to be called back the next summer, so when the letter came in the mail asking if I was interested in working another summer, I was surprised. I returned to the monument in a crew-leader position. Little did I know what an interesting year was ahead of me. Right off I realized that I was the youngest member of a team of 10. I felt as if it was time for me to step up and take control early. To be a crew leader you have to distribute a tremendous amount of leadership, friendliness, patience, and very good listening skills. This is about five percent of the skills I developed at Cabrillo during the eight weeks of work in 1998. Problem-solving was another skill I learned. At times I found myself alone with the crew, which meant I had to be a self-starter, to show initiative, and get the crew working. (It is not easy being 16 and trying to get a group of 18-year-olds to work.)

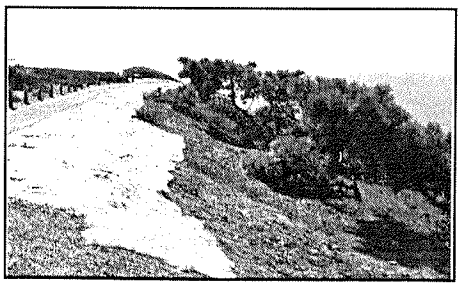
During the summer of 1999 I improved my computer skills. Although I had some experience working with the computers in previous years, this year was different. I spent many hours at the administration office learning programs like Adobe and Photo Maker. These skills became important to me in order to produce a travel booklet for the crew members writing about their experiences while on the educational field trips. Part of my job was to merge photos taken during the trip with the written work of each crew member.

Another assignment was to produce a plant-identification photo booklet for the Youth Conservation Corps. I had learned the names of many of the plants form previous years, but now I had to photograph and describe them so other teenagers could distinguish each species. I took many photos and did lots of research on native and non-native plants. The computer skills I mastered became invaluable to me. I did not realize how valuable until a year later. I now have a job working for Sprint PCS as a Support Service Specialist

I am very grateful for all the skills I obtained while employed at Cabrillo. I would like to thank the whole staff there for putting their trust in me, educating me on the computer, and especially for making me aware of the environment around me. Learning about plants may seem pointless if you are not going into that line of work, but it is a good feeling when you drive down the highway and you can name which plants are residents to San Diego and which plants escaped from other parts of the world.

Working at Cabrillo opened my mind to a lot of things. I am now 19 years old. I graduated in June 2000. Today I am making $45,000 annually plus bonus. I am attending school and someday I plan to have my own business. THANK YOU CABRILLO!

When we work with young people, we never know what impact we will have upon their lives. We hope that each one takes away an awareness of the world around them, and that they will, during their lives, remember that our world needs tender loving care in order to remain healthy.



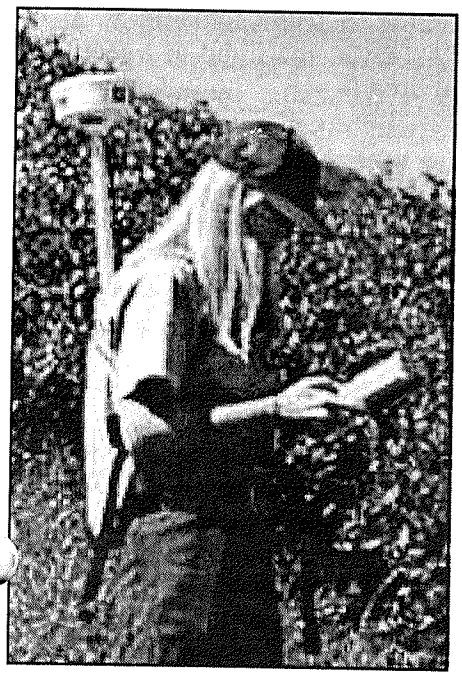
Cabrillo people

by Chris Anderson

Once again it is time to formally welcome new faces to the Cabrillo family. Without further ado, may I introduce Emily, Rebecca, and Patricia.

Emily Jones hails from Phoenix, Arizona, but she has called San Diego her summer home for many years. Her parents, who still live in Phoenix, invested in a summer home on Coronado. This summer, she began her first job with the park service as a biological technician in our Natural Resource Science division. Emily graduated from Arizona State University with a bachelor of art degree in photographic studies/art history. She then enrolled at San Diego State University to earn a second Bachelor of Science degree in cell and molecular biology. With one year left at SDSU, Emily looks forward to graduate school, where she will study entomology. When asked what her favorite bug is, she says she is fond of the jumping spider.

When not attending classes or labs, Emily enjoys swimming with the masters in Coronado, going to the beach, and surfing. Another is photography. In fact, she enjoyed it so much that she started her own company, specializing in black and white photography.



Emily Jones

When asked about her career plans, she says she has a strong interest in forensic entomology.

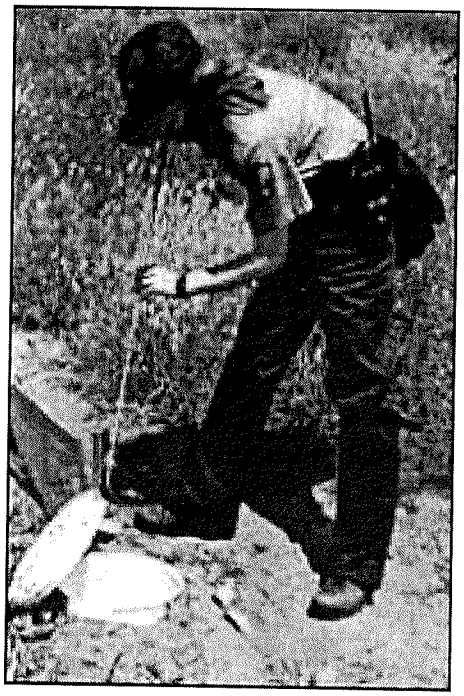
Rebecca Clark is another new addition to the Natural Resource Science division. Rebecca was born in Havre de Grace, Maryland and grew up in Conowingo, Maryland. She attended Murray State University, where she earned a Bachelor of Science degree in wildlife biology.

This summer marks not only Rebecca's first park service job, but also her first visit to California. When asked why she left the East Coast, her family and husband of two months and headed west, she simply replies she was in search of herpetology experience. Don't worry, she is still married. Her husband, Tim, is currently finishing up his master's degree at MSU.

When not working, Rebecca enjoys hiking, camping, and watching movies. She is a self-proclaimed "movie buff."

Patricia Scaler is a new employee of Cabrillo National Monument Foundation. She is a La Jolla native, but called San Jose, California home for most of her life. She moved back to San Diego to escape the crowds of the Silicon Valley and to be closer to family, who are scattered throughout southern California. Educationally speaking, Patricia earned her associate of arts degree from De Anza College in child development and is currently attending City College, where she is studying art.

Her primary duty is staffing the CNMF bookstore. Patricia has worked in other bookstores, but says she enjoys working at Cabrillo because it allows her to attend school and she says it is a great location. When not working and attending classes, she



Rebecca Clark

enjoys making mosaics, cooking, and shopping. She especially enjoys boogie boarding at the beach, but she warns us to watch out for jellyfish; during one of her many visits to the beach she accidentally stepped on one.

When asked about her future plans, she replies she would like to do something creative, maybe along the lines of interior design.

As you see these news faces (as well as the familiar ones), please stop and say hello. In light of recent events, we are once again reminded that those around us play important roles in our lives. So please take advantage of every moment and live life to its fullest.

The Open House at Cabrillo National Monument is the highlight of the annual Cabrillo Festival, attracting several thousand visitors each year. This one-day event requires weeks of preparation by the entire park staff. The job of setting up the stage for the entertainers, assembling the bleachers and food booths occupies the maintenance staff for a large part of the week before and after the festival. In the photos below,Mark Mattivi, Nello Jefferson, Joe Wilson, and Russ Williams are hard at work on the preparations.

Think: A natural resource challenge

by Joe Wilson

Yesterday I took a picture of a spider web. It was wet with silver droplets. Washed with foggy mist, lathered with sunlight. I could not resist its photographic appeal.

In the parking lot, what from a distance appeared to be a cigar butt turned into a tailless lizard. When I got near, it scooted away. No tail but you have a life. That thought crossed my mind; the lizard crossed the parking lot.

"Little things mean a lot," proclaimed a song of the '50s. Cabrillo has lots of little things. The ash trays are filled with fresh sand. Add mist, wind, dew and birds, mix in the morning sunlight, then ponder the footprints.

Birds, lizards and spiders all eat insects: beetles, flies, bees, butterflies, termites, ants and roaches—pests with attitudes working, working. All that work and no appreciation. I wonder. I am amazed.

The balance of life is reflected in the insects, reptiles, and birds. They depend on the plant community we have at Cabrillo. As we remove trees and plants, we change their community. They may move to ours: ants in the kitchen, termites in the wood, roaches in the restrooms, and to no one's surprise, a bird here and a lizard there. What do we do—kill or capture? Both!

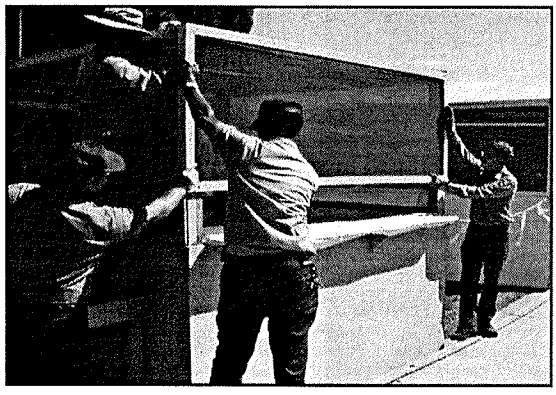
How we look at our plants, both native and exotic, is a challenge. Before adding or taking any away, should we should consider the insect? Do we consider a time in history? Should we consider the future?

Plants create oxygen. Insects—some not all—remove decaying materials. "Little things mean a lot."

Think about that ant, spider, roach, bee, fly, lizard, or snake before you kill it. What is it doing for you, and where does it fit in your food chain?

Think about breathing. Remember the trees. Recycle, reuse and retain: actions that save trees—trees that make oxygen.

The challenge is here. We must recycle materials: papers, boxes, etc. Reuse products: cups, plates, glasses, etc. Retrain people to conserve energy, recycle and reuse materials. We must remember to THINK RESOURCE: A CHALLENGE rewarded in beauty and breath.



Cabrillo National Monument Foundation

SUPPORTING THE NATURAL RESOURCE CHALLENGE OF CABRILLO NATIONAL MONUMENT

Whereas Cabrillo National Monument has the challenge of preserving and protecting the natural resources at the park, Cabrillo National Monument Foundation's challenge is in its Mission Statement. It states that we support the historical, educational, and scientific programs of the National Park Service at CNM and inspire the public to actively support the preservation of the monument.

To support CNM's natural resource challenge, the Foundation has funded a five-year monitoring project to assess visitor impact on the tidepools, donated over $5,000 towards a herpetology study, $15,000 for a breeding bird survey, and just recently, $5,610 for a reptile and amphibian survey as well as research on the rosy boa.

In the 2002 fiscal year, the Foundation will fund a dye-tracking program in the Point Loma kelp beds, a Point Loma vertebrate species preservation and identification program, an identification and inventory of Point Loma macroinvertebrates, development of a larval-tracking method in the tidepools, and a workshop for intertidal monitoring review.

Your membership is important in helping us provide the funds for these and many other projects.

Karen Eccles, Executive Director

Be sure to remember the bookstore in the visitor center view building at CNM when doing your holiday shopping. We have many calendars of San Diego, the national parks, lighthouses, marine mammals, birds, and other subjects. There is a model of the Old Point Loma Lighthouse as well as pictures, posters, and a very attractive Christmas tree ornament of the lighthouse—and books, of course! All purchases benefit the park by supporting its interpretive, scientific, and educational programs.

The EXPLORER

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Emily Troxell, Editor
Jim Nauman, Production

1800 Cabrillo Memorial Drive
San Diego, California 92106
(619) 222-4747
www.CNMFKaren@aol.com

CALENDAR

The Moonwalk originally scheduled for October 2 has been postponed until **November 30, 2001.** Members will be receiving invitations and further information shortly.

November 15 is the 146th anniversary of the first lighting of the Old Point Loma Lighthouse. The tower will be open to visitors from 10AM until 4 PM.

The annual Cabrillo Festival, a major interpretive and cultural event at the park, is funded in large part by Cabrillo National Monument Foundation. In addition to providing the funds, the Foundation undertakes responsibility for their distribution to all the various groups and individuals participating in the festival.

New Members

We welcome these new members who have joined CNMF since June 29, 2001

Bill and Carolyn Doherty
William and Virginia Ferguson
Susan and Carlton Griffin
Michael and Marilyn Kelley
Charles and Ann Lucius
Otis Scott
Dan Stewart
Ray and Anna Stits
Gary Thomas
Virginia Weber &
Cory Laskowitz

The EXPLORER

Cabrillo National
Monument Foundation
1800 Cabrillo Memorial Drive
San Diego, CA 92106