

Point Lobos Foundation

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The mission of the Point Lobos Foundation is to support interpretive and educational programs that enhance the visitor's experience, and to assist California State Parks in preserving Point Lobos State Natural Reserve.

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MESSAGE FROM THE PRESIDENT: A MAJOR COMMITMENT

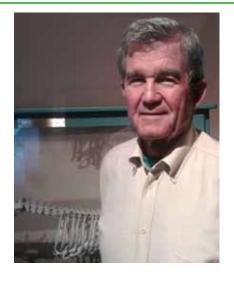
ost visitors to Point Lobos $m{1}$ are unaware that across Highway 1 from the Reserve is a large tract of land belonging to California State Parks. This piece of land consists of 1,312 acres, and is known as Point Lobos Ranch. Unfortunately, this large acreage has not been available for public enjoyment since its purchase by the State of California about five years ago. Trails cannot be developed nor other improvements made because it is not included in a California State Park general plan.

Additionally, there are conditions that need improving at both Carmel River Beach, including what is known as Monastery Beach, as well as on the Point Lobos State Natural Reserve itself that cannot be corrected without an up-to-date general plan. The existing general plan for Point Lobos State Natural Reserve and Carmel River State Beach was completed over thirty years ago.

As these areas are for the most part contiguous, the Monterey District of State Parks has recommended a new general plan be developed to include these beaches, the Point Lobos State Natural Reserve, and probably Hatton Canyon. It is expected such a plan would not change the designation of the Reserve.

We on your Board of Directors strongly believe that our mission must include a vision for the future of Point Lobos and the mostly contiguous areas listed here. Our vision includes opening the Point Lobos Ranch property to the public with an appropriate network of trails. The development of a general plan would also address problems associated with parking on both Highway 1 and in the Reserve itself, pedestrian crossings of Highway 1, and possibly even a visitor center on the Point Lobos Ranch to serve the entire area. We believe this is a window of opportunity that would ensure the responsible development of the lands in question, and preservation of them in a manner most suitable to future residents and visitors to our beautiful coast.

A comprehensive and well written general plan is costly. Because of the condition of the



California budget and its effect on the California State Parks budget, the Monterey District of State Parks has asked the Point Lobos Foundation for assistance in funding a new general plan. Accordingly, your Point Lobos Board of Directors has agreed to fund one-half the cost of a general plan, up to a maximum of \$250,000, whichever is less.

The development of a general plan will include a number of public hearings to solicit input. This input will be extremely important in determining what is included in the plan as well as what is excluded. We strongly recommend that you attend these hearings to let the developers of the new California State Parks general plan know your feelings and your recommendations. We will publish times and dates of the hearings on our web site, www.pointlobos. org. These dates will also be published in local newspapers.

Under My Brim

Ranger Chuck Bancroft

It's the middle of winter and we have clear blue skies, a calm ocean, temperatures in the low 60's, flowers starting to bloom, a dense carpet of green grasses, and more importantly, the sightings of some of our native birds.



The American kestrel has been performing its aerial acrobatics and perching

on top of pine trees, telephone poles, and fences. One pair perched nicely in a pine tree, saw me with camera raised, took off and allowed me an aerial shot.

Another day two white-tailed kites were sitting in a

Great blue heron

willow tree. One had a big gopher and was preparing for lunch when they saw me. I knew

as I stealthily approached, hiding behind another willow, that they would take off, and sure enough they did. But I was ready and got my shots.

Cathy Little noticed a bird flying into the oak tree next to the gate house fence. She continued watching and saw



another bird fly out. Upon closer inspection she saw it was a pair of



band-tailed pigeons. One of the adults was sitting on a nest. How wonderful! We'll be watching over the next three weeks to see if chicks appear. According to the *Breeding Bird Atlas of Monterey County* by Don Roberson, this is not unusual. Depending on their source of food, band-tailed pigeons can have a couple of broods each year. They are normally found in areas with good acorns and madrone berries. Thus they can be quite nomadic. In all my years here, this is a first. I've never seen a band-tailed pigeon nest even though we see the birds regularly.



The "0ther" Carbon Dioxide (CO₂) Problem

Unlike widely known climate change concerns, ocean acidification (OA) has only recently been identified as a threat to the world's oceans. Seawater is naturally alkaline (basic), not acidic. OA describes the chemical process of lowering ocean pH so that it becomes more acidic (less alkaline).

The problem stems from an increased level of CO_2 in the atmosphere, primarily from the burning of fossil fuels. Our oceans naturally absorb up to 30% of the CO_2 in the atmosphere. This has helped mitigate the impact of these higher levels of CO_2 on the other aspects of our environment. The flip side of this positive effect is that our oceans are now absorbing more than a million tons of CO_2 an hour.

Ocean Chemistry

Absorption of more CO₂ has generated higher concentrations of hydrogen ions (H+) in our oceans. Scientists such as James Berry, a senior scientist at the Monterey Bay Aquarium Research Institute (MBARI), have shown a resultant decrease in ocean pH from 8.2 to 8.1 since pre-Industrial Revolution times. While that seems like a small change, the pH scale is logarithmic, not arithmetic. A .1 unit decrease in pH represents a 30% increase in acidity.

Our oceans are therefore 30% more acidic than they were 200 years ago, an unprecedented rate of change for ocean chemistry. Further, this shift to a lower pH not only raises ocean

acidity, it also reduces the availability of carbonate ions (CO₃-2). Both changes have important repercussions for marine life.

Projections now show a pH fall of at least .3 more units by the year 2100 resulting in exponential increases in acidity. (For more details on ocean chemistry, see the sources listed at the end of this article.)

Impact on Marine Organisms

Current research on OA remains in the infant stage and has been limited primarily to studies in the laboratory, with few "real world" oceanbased studies. The research has found that:

- Organisms that use carbonate ions to build their shells and skeletons of calcium carbonate (CaCO₃) in a process called calcification, have less carbonate to do so. In most cases, this has led to thinner and weaker structures (though one study saw unexpected growth as a coping mechanism to higher acidity).
- Higher acidity can make seawater corrosive to calcium carbonate structures, and actually dissolve the shells of living organisms.
- Sea grasses thrive in more acidic water. This may benefit feeding and spawning sites for a variety of fish, but can have detrimental effects if key species in the food web cannot adapt.
- Variations of ocean pH can impact the internal pH of marine

- organisms, making them vulnerable to even a slight decrease in pH.
- Research at MBARI suggests that the sea absorbs less sound at a lower pH, essentially making the oceans noisier. How this affects mammals dependent on sonar remains to be seen.

An Uncertain Future

Calcifying plankton These tiny organisms play a critical role in the food web. They are a food source for animals as small as krill and as large as blue whales. Initial studies indicate the shells of some species have become thinner or deformed, compromising their survivability. The loss of phytoplankton (such as coccolithophores, see pg. 11) and zooplankton (such as pteropods, see pg. 5) has the potential of substantially changing current ecosystems.

Other calcifying animals Coral reefs, snails, sea urchins, starfish, oysters, mussels, shrimp and many other marine organisms not only depend on plankton as a food source, they also depend on calcification for survival. For example, an 80% decline in Pacific oysters in the Pacific Northwest has been traced to the impact of OA on juvenile oysters. The higher acidity and lower level of carbonate apparently impact their ability to construct and maintain their calcium carbonate shells.

Anemones, jellies, and other animals that depend on seawater pH to regulate their internal pH Even slight changes to internal pH can jeopardize the health and survival of such animals. Lower pH can lead to acidosis, which is the buildup of carbonic acid in cells. This can cause lowered immune response, metabolic decline, and reproductive difficulties.

Solutions

Currently, a feasible "ocean antacid" that will absorb the excess hydrogen in our oceans—the way a Tums® absorbs excess hydrogen in our stomachs—is not available. The cost, as well as unexpected consequences, effectively rule out the likelihood of success for such an approach. Ultimately, the root cause of the

problem—excess CO₂ in the environment—must be addressed. One step we can take today is to prevent CO₂ from entering the atmosphere in the first place. This means an immediate decrease in burning fossil fuels and use of non-CO₂ producing energy sources.

Summary

- Human activities are changing the ocean's chemistry at an unprecedented rate.
- Current research on OA remains in the infant stage and requires immediate attention, particularly with "real world" ocean environment studies.
- How marine organisms will ultimately adapt to lower pH levels is unknown. Initial research has identified a number of potential threats, particularly to a vital part of the food chain, calcifying plankton.
- As the Royal Society of the United Kingdom recently concluded, without significant action to reduce CO₂ emissions into the environment, there will be no place in the future for many of the species and ecosystems that we know today.

For Further Study

- See www.whoi.edu/OCB-OA/FAQs and www.epocaproject.eu/index.php/FAQ.html (WHOI and EPOCA websites)
- www.pewclimate.org/docUploads/ocean-acidification-Aug2009.pdf (Pew Center website)
- "Chapter 14, Anthropogenic Carbon Dioxide Emissions and Ocean Acidification," William C. G. Burns authored chapter in *Saving Biological Diversity, edited* by R.A. Askins, et al. 2008.
- MBARI website, Ocean Acidification section of the Marine Chemistry page.
- Acid Test: The Global Challenge of Ocean Acidification, a half-hour film narrated by Sigourney Weaver available at www.nrdc.org/acidtest



Tany years ago my husband David told me IVI needed to keep walking. "It is good for you," he said, "one day you may not be able to walk these trails." Yeah right, I thought, I may not be in the best of shape but I can walk the trails at Point Lobos State Natural Reserve. We were still dating back then and I felt the need to trek along, keeping up with his long strides.

While dating we often visited Point Lobos—it is an amazing experience. The Old Veteran tree became our favorite spot, and David asked me to marry him there. We married August 15th, 2001, in the later years of our lives, and have never missed visiting our favorite spot to renew our love.

At the age of sixty-six, and following a series of illnesses, I came to understand the depth and meaning of what David told me all those years ago. In 2003 I had back surgery; in December of 2010 I had the first of seven falls (five at home) which left me using a cane, or for the longer trails, a walker. I now understand the crushing voke of losing mobility and being encumbered by handicaps; I used to get winded walking the trails at Point Lobos—and now I need another surgery to repair a portion of my back, which doesn't help matters.

There is a trail at Point Lobos offering a stunning view of the ocean. Last year, a friend of mine who is a docent at Point Lobos, told me she had never been up it. We set off from the handicapped parking near the Information Station and walked toward the ocean on the Cypress Grove trail (.8 mile). Surprisingly, my friend lagged a bit behind—I was actually faster, heading uphill with my walker at a slight run! When we arrived at the top we were greeted by an amazing view of low-flying turkey vultures and dramatic clouds swirling above. My friend was impressed. "Now I understand why people are always standing up here," she said. The trail goes in a circle and can be navigated even by those with disabilities. Bring water and rest along the way, you will be rewarded with extraordinary views and beautiful sights of animal life.

If you are apprehensive about getting onto the trails at Point Lobos you should not worry. Last year—through generous donations and hard work—the Carmelo Meadows trail and Granite Point trail were reworked to comply with the American with Disabilities Act. (Ed.– See article by Charles Schrammel in the Winter 2009 issue of Point Lobos magazine, available



online.) They are wide enough to accommodate wheelchairs, have bridges over drainages, and benches for rests. They can be easily accessed from the entrance station and the Whalers Cabin area of the Reserve. And don't forget your camera; it is a great resource for bringing you closer to areas where access may be limited.

While at Whalers Cove recently I saw a great white egret, it was the closest I had ever been to one and it made for a fantastic photograph. Remember, there is a lot to see—it is time to get out of the house and feel normal! \bigcirc





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FOR A FANTASTIC
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"Now I understand why people are always standing up here," my friend said.

OCEAN ACIDIFICATION,

Part 2: Understanding the Chemistry of Calcium Carbonate and its Potential Impacts on Point Lobos Jeff Johnson

The Concern

As we read in Dale Evan's article on page 5, marine scientists are becoming increasingly concerned about climate change and ocean acidification. The issue is carbon dioxide, which is both a greenhouse gas and a weak acid. The oceans may become warmer and more acidic faster than marine plants and animals can evolve. If so, then there may be serious consequences for the many species of marine plants and animals that support the diversity and abundance of the Point Lobos marine ecosystem.

Of particular concern is the impact on the phytoplankton species that have skeletons of calcium carbonate, CaCO₃ (for ex., phytoplankton, zooplankton, coralline algae [pink structure in image right], echinoderms [e.g., sea urchins; see right], crustaceans (e.g., crabs and shrimp), mollusks (e.g., snails and abalone), fish [bones]). All species of phytoplankton are concentrated at the sunlight-rich surface of the ocean where the acidity is increasing fastest. The concern is that the formation of CaCO₂-based skeletons will be hindered if the acidity of the surface seawater increases beyond the organism's ability to adapt.

Some CaCO₃ Chemistry

CaCO₃ forms in the ocean only when the seawater contains sufficient amounts of Ca²⁺ (calcium ion) and CO₃²⁻ (carbonate ion). (An "ion" is an atom or molecule with an electric charge). One of the chemical reactions for the formation of CaCO₃ is:

$$Ca^{2+} + CO_3^{2-} \rightarrow CaCO_3$$

The concentration (amount per unit volume) of Ca²⁺ ions in seawater is considerably greater than the concentration of CO₃² ions. Because of this, the amount of CaCO₃ that can form depends on the CO₃²⁻ concentration. If the CO₃²⁻ concentration is less than a threshold value, then CaCO₃ will not form. This means that the growth of CaCO₃ based skeletons and shells of marine plants and animals may be hindered or stopped altogether.

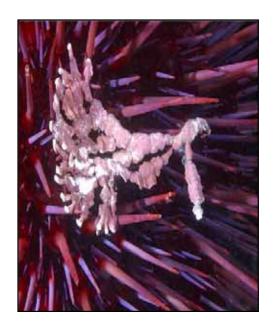
You can see this process with a simple experiment.

Assemble a glass, some water, an antacid tablet, and some vinegar.

- (1) Fill the glass half-full of water.
- (2) Add the antacid tablet. Observe that nothing happens to the tablet.
- (3) Add some vinegar to the glass and tablet. Observe that something definitely happens to the tablet!

Vinegar contains acetic acid, which means there are H+ (hydrogen) ions present. You are observing the reaction $CaCO_3 + 2 H+ \rightarrow CO_{2(g)} + H_2O + Ca^{2+}$ (where g represents atmospheric CO_2)

You can repeat this experiment using a seashell instead of an antacid tablet. This is what happens to shells and skeletons of dead



marine plants and animals in the relatively acidic deep ocean. Note that the acidity of the vinegar solution is many orders of magnitude greater than is likely in even the worst-case scenario for ocean acidification. The concern is not that the oceans will start bubbling with CO₂. Rather, the concern is that with ocean acidification, the formation of CaCO₂ based skeletons of phytoplankton

and zooplankton will be hindered.

386 384 PARTS PER MILLION 382 380 378 376 2007 2005 2006 2004 2008 2009 YEAR

RECENT GLOBAL MONTHLY MEAN CO.

Summary

Skeletons and shells of dead marine animals and plants dissolve as they descend into the deep ocean, where the increased acidity reduces the CO₃²⁻ concentration to a level sufficiently low that CaCO, dissolves. The concern for Point Lobos' marine environment is that the acidity of the surrounding surface seawater might increase. This would be a consequence of increased atmospheric CO₂.

The sequence of events is (*g* means air, *ag* means aqueous):

More
$$CO_{2(g)}$$
 \rightarrow More $CO_{2(aq)}$ \rightarrow More $H2CO_{3(aq)}$ \rightarrow More $H+$ \rightarrow Less CO_3^{2-}

The increase in surface ocean acidity will result in a decrease in CO₃²⁻ concentration. Decreasing surface seawater CO₃²⁻ concentration below the threshold for CaCO₃ formation may have at least two adverse effects:

(1) It may impede the formation of CaCO₃-based skeletons and shells, and (2) It may partially or totally dissolve CaCO₃-based skeletons and shells.

Ocean acidification is currently one of the primary research initiatives at the Monterey

Bay Aquarium Research Institute in Moss Landing. Of particular concern is the impact on the phytoplankton species that require CaCO₂. These microscopic plants not only constitute a major component of the of the food web, they also are responsible for a significant portion of the oxygen in the atmosphere. They would be missed!

We who love Point Lobos and appreciate its diverse marine ecosystem will follow this research with interest. It would be tragic indeed if several decades hence, ocean acidification has a negative impact on the marine ecosystem that makes Point Lobos such an extraordinary place.



Coccolithophores, a single-celled algae (phytoplankton) that is almost exclusively marine and found in large numbers throughout the surface of the ocean.



November 2, 2010: Ann and Art Muto The rain was threatening, which meant a quiet day in head was aligned with its beak. Then, a quick swallow—the egret distending his neck to accommodate the shape and size of the prey.

Even rainy days hold surprises at Point Lobos.

November 4: **Anne Mollet**

A visitor approached me at the Info Station

today because he had seen a hawk with something like a small metal rectangle on the back of its head. I wasn't was described, but thought it could be a hawk that had been rehabilitated at the local SPCA. So when I got home, I emailed the visitor what I felt was the most definitive expert answer (without a photograph) that he could get.

November 5: Celie Placzek

When I arrived Friday afternoon at two o'clock for my guided walk, two young Taiwanese men were waiting. One of them was visiting his friend, who works as a programmer for Google in Mountain View. The other five people couldn't wait and took off ahead of us. In time, we all met up beneath a beautiful hawk perched in a

Quotes from the Docent Log Elephant seals, sea palms, raptors, and the exquisite perfection of nature

the Reserve. After our shift at the Whalers Cabin, we joined a group being entertained by an otter mother and pup less than ten feet from the road. As usual, the pup wanted to play, while the mom was trying to get a few winks in the calm waters. About a foot away from the otters, a great egret stood patiently, seeking a meal. Suddenly, the egret held up a fish. For the next few minutes, the egret kept slowly positioning it, until the fish's

sure what it could be and so I asked him to fill out a question card with his email address. This is what he wrote: "Saw a red-tailed hawk—through the binoculars it appeared the hawk had a rectangular marking resembling a chip. Did I see a tracking chip or was it a particular marking?" A while later Ranger Chuck stopped by. I asked him what he thought about the visitor's query. He had never seen what

nearby cypress tree. "What is it?" I heard someone ask. My mind went blank. I knew it wasn't a familiar red-tailed hawk, but I couldn't come up with the name. That's when the man from Chicago pulled out his iPhone and googled it until finally my brain released the name just in the nick of time. "Red-shouldered hawk" I blurted out as the young programmer from Google looked at me and then flashed a satisfied-looking smile.



November 16: Paul Reps

During my shift at the Info Station, I met a couple from San Antonio who wanted very much to see some sea otters at the Reserve. To their dismay, the seas were rough that day and the critters were nowhere to be found. I said that I had the next best thing, a photo of one taken earlier, and I showed it to them. Well, they were so excited at how cute otters are that I said I'd send them the image, so there we were at the Info Station, using our iPhones to transfer the photo. Mission accomplished.

November 17: Carol Bloner

Unusual sight at Bird Island this beautiful day: two peregrine falcons. One was on the high point, and the other just below. Hoped to witness some interaction, but they just sat comfortably together.

November 21: Celie Placzek

At Moss Cove

a carcass of twisted kelp like a ball of knotted yarn lies on the beach with its holdfast still attached it looks like it has just been yanked from the bottom of the sea by a strong surf that continues to pester and nudge rolling it over and over before pulling out and leaving it alone at last. I climb down to the beach and pay my respects from this angle and from that awed by its beauty.



November 28: Fred Brown

We discovered a new visitor to the Reserve—a young elephant seal resting on the beach in Sea Lion Cove. The ranger posted signs to keep curious visitors from getting too close, and she seemed comfortable on the pebbly shore. She appears healthy and probably just decided to escape the chaos at Año Nuevo State Park, since she seems

to be too young to mate.

December 2: Paul Reps

I met a woman and her mother on the Bird Island trail. They said they were disappointed that there wasn't more to see that day. So I asked if they had seen the great blue heron below, the sea otter rolling in the kelp, the hauled-out harbor seals on the rocks over there, and the four snowy egrets trying their luck fishing. They were thrilled, seeing so much that they hadn't seen.

December 4: Celie Placzek

A minus 1.3 tide drew me down to Weston Beach, and lured me out into a forest of kelp-covered rocks. They looked like giant haystacks sitting below a dark bathtub ring on the surrounding rock walls. I could hear but couldn't see the waves slapping against the outer

rocks. It made me feel giddy as if I were somewhere I shouldn't be... but I was; and as if I were seeing things I shouldn't see...but I was. There were views up under overhanging

rocks that made you feel as if you were looking under a lady's skirt.

Countless species of kelp glistened in the spattering rain. Everywhere I looked took my breath away. Later I climbed back up the pebbled beach and stopped next to a huge pile of knotted kelp to look more closely at some donut shaped mold forming on the blades. I looked closer, then sat down to look even closer. The intricately delicate design reminded me of how perfect, how exquisitely perfect, nature is. (Celie noticed encrusting bryozoans, which are colonial marine invertebrates that *commonly cover kelp blades.–DK)*

December 5: Terry Tellep

Curtains of rain blowing in the wind outside Whalers Cabin. A young mother visited with her family. As they looked at the cast iron stove in the corner, she said to her two young girls, "Can you imagine cooking the waffles you made me this morning on that woodburning stove?" I sensed it was a special day - turns out



it was mom's birthday. Her daughters had surprised her with waffles "with bananas!" She had chosen Point Lobos as the place she'd most like to

spend her birthday, as she had been visiting here with her family since she was a young girl. She reminisced with her daughters about her "amazing adventures at the Reserve...You never know what might happen!" They went off excitedly to explore the

tide pools at Weston Beach.

As I left Point Lobos later that afternoon, a vividly hued rainbow arced through the grey clouds—I hoped the birthday girl saw it, too. Wishing her a glorious year.

January 6: Rick Pettit

Though it's only January, our spring is not far away; the Monterey pines are "candling" (sprouting new growth), and the male cones are swelling, getting ready to toss their pollen to the wind.

January 7, 2011: Carol Bloner

Walking from Whalers Cove parking lot to the cabin today I thought I was in Alaska. Tiny "burger bites" of marshmallow foam dotted the water, and arctic wind blew against me.

January 16: Jeff Johnson

On a sunny day I led a group of eleven high school seniors from Sebastopol on quite a hike. Our walk included several trails: Cypress Grove, North Shore, Old Veteran, and Carmelo Meadow.



I showed them my favorite rock—the "sperm whale rock" on the Cypress Grove Trail. I showed them my favorite kelp species—the sea palm and explained how I find inspiration from a plant that is continuously knocked flat and then immediately bounces back up for more. I showed them my favorite tree—the Old Veteran. I pointed out my favorite artifact in the cabin the weaning device used by the dairy farmers. And I showed them the fabulous sample of



humpback baleen outside the Whaling Station Museum.

I was a little apprehensive about this student group, since they were high school seniors. But it was wonderful. They were attentive, polite, and didn't even complain about the physical as well as mental workout I gave them. School walks rock!

January 26: Rick Pettit

A warm, clear, and calm morning —perfect whalewatching conditions. Seaward from the Sea Lion Rocks gray whale pods surface repeatedly in their slow, deliberate rhythm, then rise a bit higher, show their flukes, and descend. Approaching Sand Hill Cove, I turn the corner and am surprised to see a juvenile redshouldered hawk sitting on the trailside fence, glaring at my intrusion. Later, on the verge of the road, a spotted towhee rakes the leaf litter with its both-feet-at-a-time motion; nearby, a California thrasher works the same area with its massive, curved bill. A pert Bewick's wren makes a brief

appearance on top of the sage. And over the parking lot, enlivened by the sun, monarch butterflies zig and zag.

January 27: Stan Dryden

Walking past the Pit, I noticed some visitors



looking intently at the ground, and one of them told me that a "burrowing creature" was pushing dirt out of a hole. Sure enough, with a little patience I was treated with the sight of a gopher (thankfully not in my yard) bulldozing a bit of dirt to the surface. And a very accommodating gopher it was, returning with another load every minute or so. Photo-op!

The visitors moved on, and soon a woman from Australia showed up and asked if I had seen a sea otter. I had not, and offered the gopher as a substitute. She was interested, and said that they don't have gophers in Australia (lucky them!), but thought it was a

poor substitute for an otter. sI gave her some suggested places to look and she hustled off to join the rest of her family, who she feared would gloat that they had seen an otter and she had not.

January 28: Celie Placzek

It was quite a morning at Point Lobos, beginning with a young elephant seal hauled out at Weston Beach. At first it was found up on the trail, and then, by the time I happened on the scene, it had moved down onto the rocks. Aside from a cut in its lower lip, it appeared healthy. Later, I was relieved to find it had returned to the water.

I headed on over to Gibson Beach. Making my way down the steep stairs to



the beach, I was noticing the wide sweep of sand without any footprints, when all of a sudden, a frightened sea lion came bounding from my left, making its way in front of me to the water on the right. I'm not sure whom—the sea lion or me—was the more frightened.

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Point Lobos Foundation



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ANNOUNCEMENTS (%)







Scan to visit our website, archived magazines, or to register for Summer Adventures.

You can download a free reader for your device at www.i-nigma.com/
Download i-nigmaReader.html

We need your help in our invasive plant mitigation program. If interested, please contact Carl Voss, the current Foundation board member in charge of the program, at 831-442-0964 or by email CarlFVoss@aol.com

Summer Adventures is presented by State Park staff and based out of Point Lobos State Natural Reserve. Kids 8-13 years old will have the opportunity to have fun outdoors in California State Parks.

Summer 2011 Dates

- Session 1 June 20 thru July 1
- Session 2 July 11 thru July 22

Both sessions are held daily from 9:00-3:00. Cost per session is \$250

Have questions about the Summer Adventures program or the application process? If so, call Jerry Loomis, Summer Adventures Program Coordinator, at 831-624-3494, or email Jerry Loomis jloomis@parks.ca.gov