in February, the State Water Board finally adopted a comprehensive water recycling policy that the state desperately needs to heed. After five months of intense negotiations, a coalition of water supply agencies, water recyclers, sewage treatment agencies, the City of L.A. and environmental groups, including Heal the Bay, wrote the policy in response to a draft effort completed by the Water Board that was universally opposed. Since the coalition draft was completed, the State Board provided minimal modifications and the policy was approved.

Implementation of the policy lies in the hands of the Water Board, but it is critical for the Schwarzenegger administration, including Lester Snow, director of the Department of Water Resources, and Secretary Linda Adams from Cal-EPA, to use the policy as a springboard for a more comprehensive and integrated water policy for all of California. Although the economic crisis is California’s biggest challenge, dysfunctional management of California’s water supplies is probably the state’s next most urgent problem.

The water recycling policy makes a strong statement that California has entered a time of increasing water scarcity due to decreasing supplies because of climate change impacts and numerous water rights decisions, and increased demand due to continued population growth. In other words, the Governor, our senators, the legislature, and water agencies should end their feuds over drought declarations and just clearly acknowledge that we are living beyond our water means. In order to move toward sustainable water management, the policy contains clear numeric goals for recycled water use (2 million acre feet by 2020), the policy makes it clear that the water recycling projects are causing groundwater degradation, dysfunctional management of state water supplies is probably the state’s next most urgent problem. The policy mandates a great deal of give and take from the environmental perspective, the highlights were:

- The development of salt and nutrient management plans (focusing on salts and nitrogen-based nutrients, including local contaminants of concern that include monitoring and stormwater recharge components for every groundwater basin in California by 2016 at the latest. Water suppliers, treatment plants and recyclers will pay for plan development;
- A mandate for the use of recycled water that applies to water suppliers, recyclers and wastewater treatment plants. Although the mandate numbers are low (only 200,000 acre feet by 2020), the policy makes it clear that the water suppliers have to use recycled water when it is available at reasonable cost;
- A requirement to analyze recycled water for emerging contaminants (pharmaceuticals, new organic toxins, etc.) on at least an annual basis;
- The creation of an expert panel to work with the State Water Board to develop technical guidance on emerging contaminants by 2010.

In exchange, the water recyclers get:

- A streamlined process on the use of recycled water for irrigation;
- A streamlined process to determine if water recycling projects are causing groundwater degradation (anti-degradation analysis procedures);
- A commitment by all parties involved that we will push for an enormous increase in funding for water recycling projects;
- A monitoring philosophy that doesn’t require the drilling of a lot of new wells, except in high risk areas of the basins that are adjacent to receiving waters or high groundwater.

The policy negotiation resulted in the creation of a far-reaching water recycling policy that could act as a catalyst for increased water recycling, stormwater use and movement towards an enduring water management plan for California. In the L.A. region, look for a lot more city water recycling in the San Fernando Valley and near Griffith Park, while the Los Angeles County Sanitation Districts and West Basin Municipal Water District continue to expand their successful programs. Also, I hope the policy inspires the Metropolitan Water District to finally offer a significant financial incentive ($250 an acre foot or so) for capturing and using stormwater as a new source of water in the region. California leaders should seize the opportunity and move more aggressively on water conservation, including mandatory water metering statewide, water use reduction requirements for agriculture, plumbing code modifications and native planting requirements. We also need water rights reform, statewide impact assessment development requirements, wellhead treatment at contaminated aquifers, and management changes that better protect water quality, anadromous fish (salmon and steelhead), and coastal riparian ecosystems. There is no more critical issue for the state than moving quickly to a sustainable water future.
Mixed Greens

Connect With Us!
W
t to hear and see more about what we’re up to? Join us on our social networking pages. You can connect with other Heal the Bay members, view photos and get timely updates. Heal the Bay recently launched a new MySpace page that will include our Spanish language blog (www.myspace.com/healthebay). You can also view our photos on Flickr (www.flickr.com/healthebay), check out our videos and PSA’s on YouTube (www.youtube.com/healthebay) or follow our tweets on Twitter (www.twitter.com/healthebay). You can even keep track of our current work on our Facebook group and cause pages (www.causes.com/healthebay). Tell your friends too, we’re hoping to hit 5,000 friends on our Facebook cause soon!

SAVE THE DATE
Join us for our annual gala dinner, Bring Back the Beach! This year’s dinner is on May 28th at Santa Monica Airport’s Barker Hangar. Bring Back the Beach is an annual celebration of eco achievement toward cleaner coastal waters and watersheds. To learn more, visit www.healthebay.org/bbb.

IT’S EASY
Heal the Bay has a new online donation system via Network for Good. It’s simple to use. You can make a one time or recurring donation. Your donation can even be in honor or in memory of someone. It’s a great way to make a difference by donating without creating more paper waste, or bothering with stamps and mailing. Simply visit our homepage (www.healthebay.org) and click the Donate tab.

CORRECTION
In our last edition of Currents we highlighted the underwater photography of our own Aquarium educator Nick Fash. (Dive Log, pg.12). Nick’s website was incorrectly listed. To view Nick’s underwater images, please visit his website at Fashpx.com.

WORD TO YOUR MOTHER
April is Earth Month and we know you’ll want to help out your Mother Earth. Here are some great events that we’d love to see you at:

Nothin’ but Sand Beach Cleanup
April 18, 10am-Noon
Santa Monica Beach
by the Santa Monica Pier

Earth Day at the Aquarium
April 18 & 19, 11am-6pm
The Santa Monica Pier Aquarium
Join us for special activities for the whole family. Call the Santa Monica Pier Aquarium for more information at 310.393.6149.

Stream Team Restoration
April 19, 9am-1pm
Malibu Creek State Park
To get more info and to RSVP, visit the Stream Team site at www.healthebay.org/streamteam

The Heart of the Aquarium

I
have always been of the opinion that every great aquarium has two common elements. A nifty gift shop and really, really clean bathrooms. Just kidding. What really makes an aquarium shine is found within its people and the equipment that keeps everything alive, because these two pieces make up the life support system. The science and technology behind a life support system, and the skilled staff to manage and operate it, are the principal elements behind keeping our many organisms alive. When you enter the Aquarium you’ll see hundreds of different animals living together in various exhibits. The animals are well taken care of; well fed and healthy. What goes on behind the scenes to make this happen? Hours of dedicated effort are needed on a day-to-day basis to keep everything alive and healthy. It’s far from easy.

The Aquarium displays marine organisms that are native to the Santa Monica Bay, so seawater is the main medium. The Aquarium’s life support system is a closed system, meaning there is a fixed amount of water available, about 10,000 gallons, and that water is filtered and recycled over and over. Every two weeks the Aquarium receives a new delivery of filtered seawater from the Catalina Water Co. This filtered seawater is trucked from Long Beach and is delivered to the underground holding tank in the Aquarium’s life support room. The water is the foundation of the system. The aquarium just completed an overhaul of the life support system with new energy conserving pumps, filters, and water chillers.

The animals that live in that water also require food and nutrients to survive. The Aquarium feeding and maintenance schedule is very meticulous and routine. Each day various types of feedings, filter and equipment checks and maintenance and even procedures to address parasites and disease take place. The animals have various nutritional needs. Live foods, algae, frozen foods and vitamin additives are all prepared throughout the week. Staff takes great care to feed the animals while observing behavior that may indicate acceptance of food, distress and even illness. During feedings some animals are very aggressive, making it difficult for smaller or more timid animals to successfully feed. Our staff is aware of these behaviors and makes adjustments in order to meet the needs of all the animals while not overfeeding. Overfeeding can cause many problems for the animals and for water chemistry. Unusual foods left in the exhibit will decay and increase highly toxic ammonia levels.

An unavoidable issue faced by all aquaria is that animals are constantly producing waste. The more food they eat the more waste they produce. The waste is in the form of nitrogenous compounds. Ammonia and nitrate compounds can be highly toxic to animals, even in very small concentrations. Over time nitrate concentrations will increase but can be easily reduced through water changes, disposing old nitrate-filled water with new nitrate-free water. Thus, it’s important for us to maintain a monthly schedule with our water supplier.

The chemistry of the water and the levels of various compounds that can adversely affect animal health are tested by the staff. Colorimeters and reagent testers are used to determine the concentration of pH, ammonia, nitrates, phosphates, dissolved oxygen, and other compounds. Temperature is determined daily and with the aid of a hydrometer and refractometer, specific gravity and salinity can be calculated. The dynamic changes in water temperature and chemical and gas concentrations can change water chemistry, in turn changing the behavior and health of the organisms.

So who are the wizards behind the curtain pulling all the levers and rods? None other than the dedicated and skilled staff members, interns and volunteers of the Santa Monica Pier Aquarium. The science and technology of aquaria maintenance and husbandry keep the exhibits looking clean and running smoothly. And most important, they keep the animals happy and healthy too.
New Year, New Challenges

2009 promises to be a busy year for Heal the Bay.

Heal the Bay's science and policy staff will have its hands full this year, taking on numerous issues that affect the health and safety of our local oceans and watersheds. Here's a look at some of the major initiatives in which we are actively engaged.

VENTURA COUNTY MS4 PERMIT

Let's go back to 2007 for a moment. In January of that year, the Regional Water Board issued a draft version of a Municipal Separate Storm Sewer System Permit for Ventura County (an MS4 permit for short). The permit was issued for public comment. As the (ex- tensive) title suggests, the document regulates all of the municipal stormwater in Ventura County. Stormwater, or water that drains from the streets through the storm drain system, is our largest source of coastal pollution. Now, here we are at the beginning of 2009, and a tentative permit has still not been released by the Regional Water Quality Board. This much anticipated document will serve as a model for a Los Angeles MS4 permit, likely to be released soon after Ventura's is adopted. As such, Heal the Bay and the NRDC have spent the past two years advocating for a very strong permit in Ventura, one that would include positive components such as Low Impact Development.

The previous set of L.A. Region MS4 permits withstood legal challeng es. Instead of reissuing this previous permit, the Regional Board decided to draft a much more detailed permit. There are many positive aspects to the latest draft, including Low Impact Development (unlimited limits) and a new and re-development, structural treatment measure performance crite- ria, and also TMDL waste load alloca- tions (pollutant limits). Stay tuned, as Heal the Bay anticipates that a permit will come before the Regional Board sometime early this year.

A REMISS STATE WATER BOARD

Heal the Bay recently completed a de- tailed study that showed that the State Water Resources Control Board has al- lowed dischargers to spew millions of tons of toxic-laden effluents into Southland water bodies with virtual impunity over the past eight years. An extensive review of regulatory files by Heal the Bay's scientific staff revealed a nearly decade-long pattern of state officials shirking their responsibilities when public sewage treatment works and industrial facilities flout narrative and numeric limits for chronic toxicity in discharged wastewater. The study will take place at two locations. A field laboratory will once again be set up on Doheny Beach in Dana Point from Memorial Day to July 4th and also Surfrider Beach in Malibu (provided restoration testing conducted for discharges that attempts to estimate the biological ef- fects of the melting-pot of pollutants being discharged, functioning as the true safety net of the Clean Water Act. There have been over 900 instances of toxic-laden effluents into Southland water bodies with virtual impunity over the past eight years. An extensive review of regulatory files by Heal the Bay's scientific staff revealed a nearly decade-long pattern of state officials shirking their responsibilities when public sewage treatment works and industrial facilities flout narrative and numeric limits for chronic toxicity in discharged wastewater.

Heal the Bay concluded that the Board has failed to use effluent tox- icity testing as an effective regulatory tool. This toxicity testing is the only testing conducted for discharges that attempts to estimate the biological ef- fects of the melting-pot of pollutants being discharged, functioning as the true safety net of the Clean Water Act. There have been over 900 instances of toxic-laden effluents into Southland water bodies with virtual impunity over the past eight years.

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Yosemites of the Sea

HB staff is helping set boundaries for Marine Protected Areas.

by CHARLOTTE STEVENSON

T here is growing scientific con-
sensus that our oceans are in
crisis. The United Nations En-
vironment Program recently warned of
worldwide collapse of fish stocks
within decades.

Globally, fishermen are now catch-

ing fewer and smaller fish than what they
catched 20 years ago, and here in
Southern California, we have seen indica-
tions of our poor ocean health through
the drastic decline of eco-
nomically and historically important
species such as lingcod, cowabone, boc-
caccio, abalone and even our giant
dory. As a solution to this crisis,
Marine Protected Areas (MPAs) are increas-
ingly being used to protect bio-


Marine Conservation Areas:

1. No unprotected, non-extractive fishing
2. Some recreational fishing allowed with
   no commercial take
3. Commercial take for the purpose of
   releasing offspring

MPAs allow local fishers to feed, breed and thrive, and where hu-


What is a Marine Protected Area?

Marine protected areas, also
known as “MPAs”, are areas of
coastal ocean set aside as safe-
havens from fishing to protect and


The Marine Life Protection Act

(California) is now stepping out as a
leader by implementing 1999’s
Marine Life Protection Act which
called for the establishment of a net-
work of MPAs along the entire Califor-
nia coast that can function as a system
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lc participation, a Science Advisory
Team, a Blue Ribbon Task Force
to facilitate implementing the law, and
a Regional Stakeholder Group (RSG)
including divers, fisherman, con-


Fishing for Answers

Heal the Bay

Why were you interested in participating in the MPA-Pier Outreach project?

Maria Joaquin

I think it is very important to educate the angler community about new projects in places where they usually fish. Also, it is important to let them know how an MPA works and what the benefits would be. I was interested in working in this project because I was an intern at the USC Wrigley Institute, where they have an MPA at Big Fisherman Cove. I gained a good understanding of the importance of MPAs, the importance of the recovery of certain species, and the importance of allowing certain fish species to reach their reproductive stages. For instance, the halibut matures at about eight years old, so it would be helpful for this species to be in an MPA to be able to mature and reproduce.

What surprised you about the MPA-Pier Outreach so far?

Maria Joaquin

I have learned a lot from anglers, but there is a specific time that stands out when I got the chance to talk to a group of anglers at Pier J in Long Beach. This group of three older men has been going to Pier J for the last 35 years. They talked to me about how Pier J used to be, 35 years ago, before all the


The Marine Protection Act (MLPA) Process

California is now stepping out as a leader by implementing 1999’s Marine Life Protection Act which called for the establishment of a network of MPAs along the entire California coast that can function as a system to protect marine life populations and habitats. Over the past six years the process of implementing this law has faced many obstacles; however, the state has finally established a network that includes extensive public participation, a Science Advisory Team, a Blue Ribbon Task Force to facilitate implementing the law, and a Regional Stakeholder Group (RSG) including divers, fisherman, conservationists, and coastal residents who recommend locations for MPAs.

The state is taking a regional approach to implement MPAs along the coast. So far, 29 MPAs have been established in the central coast covering 18% of the coast in that region, and 22 MPAs were established in the north coastal, protecting 20.7% of that study region. The MLPA process now has officially moved to the south coast study region (Point Conception in Santa Barbara to the California/Mexico border). It is important to note that even after this network is complete, the vast majority of the coast will be left open to fishing.

Heal the Bay is a member of the south coast RSG, and will also participate through all levels of the process, working closely with other environmental and community members over the next year to ensure that Southern California’s marine resources receive adequate protection. One of the key elements of this process is public participation. All meetings are open to the public and allow for public comment on the process and later on actual MPA proposals.

One common misconception is that MPAs will make the ocean off limits to people. Quite to the contrary, all non-extractive recreational activities such as fishing, sailing, kayaking, swimming, scuba-diving, snorkeling, and surfing are permitted in all types of Marine Protected Areas. It is only activities such as fishing, which remove living things from the ocean, that are limited in MPAs.

MPAs provide places where fish can feed, breed and thrive, and where hu-


Angler Outreach project?

Maria Joaquin

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HBP so far?

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I have learned a lot from anglers, but there is a specific time that stands out when I got the chance to talk to a group of anglers at Pier J in Long Beach. This group of three older men has been going to Pier J for the last 35 years. They talked to me about how Pier J used to be, 35 years ago, before all the construction and all the heavy industrialization of the L.A. and L.B. port. They remember catching a lot of large fish and diving for abalone. They told me how they saw the whole gradual industrial change in Pier J and also in the marine life in the area. They were very positive about the possibility of MPAs and their ability to help replenish the fish populations near Pier J. They added that if the fish recovered, then the companies that make all the fishing poles and other fishing supplies would benefit as well.
Sands of Time

HTB’s policy staff has an impressive history of driving meaningful environmental change.

1985 Heal the Bay is founded.
1986 Consent decree requiring Hypothen Treatment Plant sewer system upgrades is approved by federal courts.
1987 Hyperion’s sludge is no longer dumped into the Santa Monica Bay. The Bay’s dead zone disappears in a decade.
1990 Heal the Bay first publishes the Beach Report Card, covering more than 60 monitoring locations in Los Angeles County from Leo Carrillo to Calabash. Heal the Bay now provides water quality information for over 500 beaches statewide through the Beach Report Card. Beachgoers can even have local beach grades sent to them instantly through SMS technology.
1991 Working together with the city of Santa Monica, Heal the Bay co-writes a groundbreaking municipal stormwater ordinance that requires runoff to be treated or infiltrated on site for new and redevelopment.
1994 Coastal Habitat Restoration programs are put in place. Thousands of volunteers restore Point Dume Headlands and 20 acres of the El Segundo Blue Butterfly Habitat Preserve.
1995 With USC, the Santa Monica Bay Restoration Commission, Los Angeles and Orange counties, Heal the Bay completes the first health effects study of people who swim in the polluted runoff of the Santa Monica Bay, finding that swimmers near storm drains are more likely to fall ill than those swimming at clean beaches.
1996 Heal the Bay, backed by a diverse environmental coalition, initiates the 40-Day Fight Campaign, a huge success in passing Los Angeles County’s first tough stormwater permit.
• The Los Angeles Regional Water Quality Control Board incorporates Storm Drain Pollution Mitigation Plans (SUSMP) into the L.A. County Stormwater Permit. The SUSMP requires certain environmentally sound design criteria for development and redevelopment projects.
1997 Heal the Bay and an environmental coalition successfully advocate for the Regional Water Quality Control Board to pass requirements for diverting wastewater discharge from Malibu’s Tapias Water Treatment Facility from April to November each year, which leads to a huge improvement in water quality at Surfrider Beach.
• Heal the Bay releases a study documenting eight years of effluent toxicity problems in the Los Angeles River.
1998 Heal the Bay launches SmartStream, a large scale volunteer project that gathers data and monitors the Malibu Creek Watershed and establishes baseline data for the sources of storm drain pollution and the locations of degraded habitat.
• Hyperion Sewage Treatment Plant reaches full secondary treatment.
• Heal the Bay releases “Osmosis Accomplished,” a report documenting the lack of a Los Angeles Regional Water Board enforcement program.
1999 Along with a coalition of other environmental groups, Heal the Bay settles a lawsuit with the EPA that requires the agency to develop enforceable cleanup plans for more than 150 polluted water bodies in Los Angeles and Ventura Counties by 2011.
• California voters pass Props 12 and 13, which together designate more than $2 billion for acquisition and improvements of urban parks and undeveloped state and local wilderness areas. $700 million is set aside for the county and city of Los Angeles, with $25 million for specific projects within Santa Monica Bay and $25 million for Ballona Wetlands protection.
• Settlement of Natural Resources Damages and Superfund cases for DDT and PCB contamination on the Palos Verdes shelf reached. The total settlement is about $154 million.
• Heal the Bay starts our Angler Outreach Program as a result of federally mandated improvements of urban parks and undeveloped state and local wilderness areas. $700 million is set aside for the county and city of Los Angeles, with $25 million for specific projects within Santa Monica Bay and $25 million for Ballona Wetlands protection.
2000 AB 885, the Septic System Standards Bill, which requires the development of statewide water quality standards for operations of onsite sewage treatment, is signed into law.
• California enters into an agreement with the EPA to make $78 million for projects to help clean up California’s most polluted beaches. Our Beach Report Card is used as a key tool to target polluted beaches.
2001 Heal the Bay, with a coalition of other environmental groups, wins a ruling at the Regional Water Quality Control Board stipulating that cities with storm drains that drain into the Los Angeles River will have 15 years to incrementally reduce and ultimately eliminate all trash entering the water body. This zero tolerance for trash in the Los Angeles River followed by zero tolerance for trash in Ballona Creek.
• The Clean Beach Initiative is signed into law, thus dedicating $78 million for projects to help clean up California’s most polluted beaches. Our Beach Report Card is used as a key tool to target polluted beaches.
2002 Propositions 40 and 50 pass, providing $5 billion for safe drinking water, clean beaches and coastal waters, park and air quality improvements and wildlife and open space protection.
• The Los Angeles County Sanitation District upgrades the Carson Sewage Treatment Plant to full secondary wastewater treatment. For the first time, both major sewage treatment plants in L.A. comply with the Clean Water Act. The result is a nearly 95% reduction in sewage solids to the Bay.
2003 After years of pressure from Heal the Bay and a coalition of environmental advocates, Washington Mutual agrees to sell Alhambra Ranch to the state of California, preserving 2,300 acres as parkland and ensuring a contiguous wildlife corridor from the mountains to the sea along Malibu Creek.
• California passes Heal the Bay-sponsored Education and the Environment Initiative (EEI), AB 1548, which authorizes comprehensive environmental education standards and curriculum in all disciplines for K-12 students statewide.
• After decades of pressure from environmental groups including Heal the Bay, the state purchases 200 acres of the Ballona Wetlands from Playa Vista, bringing the total size of protected lands to 500 acres.
2004 City of Los Angeles voters pass Proposition O, a measure to improve local water quality by keeping dangerous bacteria and toxic pollution from contaminating waterways. The $500 million bond aims to control pollution by advancing storm drain systems and creating community parks that also act as filtration for urban runoff.
2005 Heal the Bay, in partnership with the California Coastal Conservancy and National Park Service, removes stream barriers at Solstice Creek in Malibu, opening up stream habitat for the endangered steelhead trout.
2006 The Los Angeles Regional Water Quality Control Board incorporates Santa Monica Bay Beaches Bacteria Total Maximum Daily Loads (pollution limits) into the L.A. County Municipal Stormwater Permit. For the first time in the nation, every County beach must be clean and safe 100% of the time from April to October.
2007 AB 258 is signed into law. The bill requires all plastic products manufacturers to use best management practices, such as proper storage and clean-up procedures, to prevent spillage of preproduction plastic pellets.
2008 Los Angeles River Trash TMDL goes into effect. All cities that discharge to the river must ensure that no trash enters the river from their stormdrain by 2014.
• Heal the Texas Crossings in Malibu Creek State Park is completed, opening up over one mile of quality fish habitat that was previously blocked.
• Santa Monica voters pass Measure V: The Clean Beaches and Ocean Ballot Measure. The measure provides funds for projects that improve water quality, clean up beaches, recharge groundwater, collect and reuse water, restore the natural hydrological cycle, and control flooding.
2009 Heal the Bay releases “License to Kill,” a toxicity report documenting eight years of effluent toxicity problems in Los Angeles and Ventura Counties.
• The Ocean Protection Covenant adopts a Marine Debris Implementation Plan. The report from this five-member panel comprised of state leaders lays out an ambitious plan for eliminating plastic bags, polystyrene food packaging, cigarette butts and other harmful debris from entering the Pacific Ocean as a roadmap for statewide action to reduce and prevent marine debris.
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• The California Water Recycling Policy is approved by the State Water Board.
Malibu is undoubtedly one of the gems of the Pacific coastline. But despite the idyllic setting and the city’s relative affluence, the sad truth is that the area is tarnished by having its waters regularly tested as being some of the most chronically polluted in the state.

The Malibu Civic Center area, for example, has been plagued with water quality problems for decades. Heal the Bay’s Stream Team, whose objective is to monitor and promote water quality and habitat conservation in the Malibu Creek watershed, has long documented the water quality impairments and corresponding human health hazards. Chronic fecal bacteria and nutrient pollution in the Malibu Creek Watershed, and especially Malibu Lagoon have long plagued ocean users, both residents and visitors alike.

Stream Team data show that a major source of bacterial pollution originates from the city of Malibu, stemming from nearby septic systems. Runoff from agriculture, horse ranches and onsite wastewater treatment systems throughout the watershed all add to the problem. Waters discharged from the Tapia Water Reclamation Facility remain the largest source of nutrient pollution to both Los Virgenes and Malibu Creeks, data show, but they only discharge from November to March. The high concentrations of nutrient pollution in the watershed have been shown to increase algal growth, which can be harmful to local fish and other aquatic species. The high percentage of impervious surfaces mapped in the watershed by the Heal the Bay’s Stream Team is shown also to have degraded both water quality and biological diversity.

World-famous Surfrider Beach continues to get failing grades on our Beach Report Card, serving as an embarrassing example of the direct effect of water quality impairments in the Malibu Creek watershed. Water from commercial septic systems in the area have been found so lethal into the nearby Malibu Creek and La- goon, adding to the already polluted waters coming from upstream, and then flows directly into the ocean.

Heal the Bay’s extensive water quality dataset has been used by the Los Angeles Regional Water Quality Board to help develop the watershed’s Total Maximum Daily Load (TMDL) requirements, which has placed limits on fecal bacteria and nutrient levels for the Malibu Creek watershed. The goal of this regulation is to make the streams and beaches comprising this watershed safe for human use and aquatic life which includes dramatically lowering the frequency of exceedances of water quality standards. The good news is that TMDLs are in place for cleanup; the bad news is that progress in implementing TMDLs to enter into a legally binding commitment for a centralized water treatment facility for the Civic Center area. Malibu raised $25 million to purchase the parcel and early conceptual plans for the 10-acre plot included a treatment wetland for stormwater and treated wastewater. Unfortunately, despite opposition from the environmental community, the final EIR for Legacy Park did not include an analysis for the proposed central water recycling plant. Malibu’s omission of the facility in the Legacy Park EIR is a stumbling block for the city’s sewage problems from existing development. But it’s not too late to take corrective action. So what specifically can be done to remediate all of Malibu’s sewage problems? It’s been 17 years since the City of Malibu incorporated, following Los Angeles county officials attempt to move forward a horrendous water treatment facility in undeveloped Corral Canyon. To date, little has been done to address the City’s sewage problems from existing development. But it’s not too late to take corrective action.

The Water Board and Malibu need to enter into a legally binding commitment for a centralized water recycling facility to be built by 2012 in order Malibu to solve its Civic Center sewage water management problems. The central water recycling community would provide at least filtration, denitrification (nitrogen removal), and disinfection. All of the commercial facilities in the Civic Center should be required to tie in to the treatment facility, and other sites should be phased in a few years later. Heal that Bay believes that this is the only way to meet our goals: ensuring that Surfrider Beach will be safe for recreation and Malibu Lagoon will be safe and healthy for aquatic life.

Additionally, solutions need to be forged to mitigate the problem of many non-regulated sources of pollution. Stormwater runoff, throughout the watershed, that discharge into local streams and stormwater drains, directly polluting our ecosystems and water bodies.

In the meantime, Heal the Bay’s Stream Team, with volunteer support, continues its efforts to monitor and document water quality and ecological trends and impairments in the watershed. Heal the Bay’s goal is that, through monitoring the state of the watershed and by advocating for regulations that protect human health and natural resources, we can move forward with cleaner water for all.
**Feeling the Heat**

Califonia ecosystems face a bevy of threats: polluted runoff, offal, marine debris, destructive fishing practices and harm to algal blooms. Talk about stress. Heal the Bay has been actively working to reduce these threats. We face another challenge to our ecosystem—once-through cooled power plants. Nineteen coastal power plants in California use outdated technology known as once-through cooling. Intake pipes, drawing in millions of gallons of ocean water daily to cool the plant, indiscriminately kill plankton, fish, invertebrates, and other marine life. Collectively, these power plants draw in up to 16.3 billion gallons of coastal water per day. Many are located on bays and estuaries that house sensitive fish nurseries and populations of numerous species, including ones that are important to the commercial and recreational fishing industries. The heated water released from these plants can also have negative environmental impacts, potentially upsetting the surrounding ecosystem by raising the water temperature and endangering marine life.

Our sensitive marine ecosystems are at stake. Heal the Bay has joined a coalition of groups that includes the Ocean Protection Council, the State Lands Commission, and the State Water Resources Control Board to develop a policy on once-through cooling for California. The draft policy calls for a shift from anti- and environmentally harmful technology to new, greener alternatives, namely, closed-cycle cooling. This technology uses radiator-style coils to disperse heat to air passing over the coils, resulting in dramatically reduced water use and the elimination of thermal discharge into waterbodies.

Some members of the industry are moving forward with greener alternatives without any state requirements. For example, El Segundo Power recently petitioned the California Energy Commission to repower a portion of its plant using closed-cycle cooling, thereby retiring two of its once-through cooled units. We support their efforts. We are starting to see progress in California, but there is risk of a separate industry prolonging the use of these ocean intakes. There have been many recent proposals to co-locate desalination plants with existing coastal power plants.

At first, the idea might seem on the surface—providing two uses for a single intake of ocean water. But in reality, with the pending state policy, and past Federal Court rulings against once-through cooling, it’s likely that most coastal power plants will shift to alternative technologies in the near future. Co-location of desalination plants would simply prolong the indiscriminate take of marine life through these ocean intakes. Alternative sources of fresh water, including water conservation, innovative capture and use, and water recycling should be tapped before considering the expensive, energy-demanding, and environmentally destructive alternative of desalination. Heal the Bay also recommends that alternative intakes for desalination, such as beach wells or subsurface intakes which would have minimal impacts on fish and plankton, be investigated before relying on co-location with coastal power plants.

Ocean intake has recently been put on the agenda of the state legislature. State Sen. Ellen Corbett (D-San Leandro) introduced a bill (SB 42) that would prohibit the co-location of desalination with existing once-through cooled plants and phase out the use of once-through cooling altogether. Heal the Bay will follow this bill as it moves through the legislature, as well as the state policy deliberations. We encourage the state to update Once-through cooling remains one of our priority coastal issues.

For more information on once-through cooling, please visit www.healthebay.org/currentissues/powerplants/default.asp.

For more information on desalination, please visit www.healthebay.org/currentissues/desalplants/default.asp.

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**Learning on the Job**

Heal the Bay helps budding scientists link academic study and choosing a career path.

By RANDI PARENT

It’s well known that the Santa Monica Pier Aquarium educates future generations to be appreciative caretakers of the marine environment. But besides making young visitors aware of stewardship, the Aquarium is also a training ground for budding scientists on the brink of making career decisions.

We always talk about creating stewards of the environment, but in fact we are also creating scientists,” said Santa Monica Pier Aquarium director Vicki Waverich in a recent conversation. Indeed, with five training programs in place, for many local students, the Aquarium is a nexus between academic study and choosing a career path.

The Aquarium offers internships in aquaristics, shark education, marine mammal science, and public programs. "The internship program gives me an opportunity to mentor you as you adults while you’re doing your internship,” says Jose Bacallao, senior aquarist. “It’s a unique learning experience for them and I get great fulfillment from that teacher/mentor role.”

Three Aquarium internships are available on our website at www.healthebay.org/internships/default.asp.

**For Heather Peterson there was no other career goal, ever.**

“I’ve known since I was really little that I wanted to be a marine biologist,” says Heather, who received her degree in marine biology last year. “I was in kindergarten when a man came to the classroom with buckets of brittle stars and I thought it was the coolest thing,” she remembers. “I had this book called. You Can Be A Woman Marine Biologist.”

Growing up in Santa Monica and attending public schools here, Heather came to the Aquarium several times on class field trips. “I always wanted to do something with the ocean, but I thought I wasn’t really smart enough to do it. I knew I wanted to study marine biology, but I wasn’t sure what I would do with it.”

Heather started as an education and public programs volunteer in 2005. “I decided to volunteer to see where it would lead. I found I really liked doing behind the scenes stuff. I wanted to take care of the animals and their tanks so others would have the opportunity to learn about what lives in the ocean and they would come to appreciate the ocean and the animals in it.”

When senior aquarist Jose Bacallao had an opening in his internship program, Heather applied to work with him, and she found her niche. “I really like the aquarist side. There’s so much involved. I had no idea. It’s hard to learn this in the classroom, and it’s hard to know what your options are. There aren’t many opportunities to try out a career. She’s currently applying for aquarist positions in several aquariums.

**For Smitha Srinath grew up in Buena Park,** knowing from an early age that she would eventually go to veterinary school after watching a neighbor’s dog go blind and deaf. “I knew from the beginning that I wanted to work in the sciences. I’ve known that I wanted to be a veterinarian since 5th grade.”

A shark education intern at the Aquarium for the past two years, Smitha is currently applying to veterinary schools. In addition to her work at the Aquarium, she is a veterinary assistant at an animal hospital/clinic and also works as a biology and math tutor at Fullerton College.

“By working at the Aquarium, I think I have learned information about different animal species that I’ll remember for a long time, probably longer than what I learned from my classes in college because rather than stopping at learning for an exam, we teach the information to other people, and get to hand on to the animals.”

Smitha goes a weekly shark presentation at the Aquarium, an experience, she says, that has helped her “become a better public speaker and to be more creative.”

“One way that the Aquarium has influenced the way I want to run my (veterinary) practice as well, by putting such a great emphasis on environmentalism.” Smith also plans to volunteer as a wildlife veterinarian in the future to help rehabilitate and release injured wildlife.

**Know someone interested in becoming an intern at the Aquarium? More information is available on our website at www.healthebay.org.”**
How We Work

Research, education, community advocacy and legislation drive Heal the Bay.

Have you ever wondered how research informs the policy we advocate for at the local and state levels? How our education and volunteer programs help guide these efforts? Each of these components connects. Below, we take a look at one of our biggest causes—eliminating single use plastic bags—and how the works of our various departments dovetail to effect meaningful change.

IDENTIFYING AN ISSUE

Heal the Bay Science and Policy staff meet on a regular basis to brainstorm ideas for legislation. While developing our issue areas we look at the current research available and determine whether or not there are improvements needed in existing government programs to address the problem or if legislation is the only way to address the problem most effectively.

RESEARCH AND DATA GATHERING

Heal the Bay identifies the problem of plastic bags in our environment through existing research and observation in the field using data gathered from our beach and inland cleanups such as Coastal Cleanup Day and Nothin’ but Sand. We also rely heavily on outside research support from other scientists, research foundations and government agencies.

POLICY DEVELOPMENT AND LEGISLATION

Once the issue is identified, Heal the Bay staff tackles the problem in the form of recommendations to be translated into legislation and/or policies developed by state and local agencies and officials. We share this information by meeting with officials and testifying at state and local regulatory hearings. In the case of plastic bags, the Ocean Protection Council (OPC) is responsible for improving the protection and management of California’s coastal and ocean resources. In November, the OPC issued an implementation plan to reduce marine debris. One of the recommendations made was statewide legislation to impose a pollution fee on all single-use plastic bags. Heal the Bay took this policy recommendation, drafted bill language and contacted state elected officials to author a bill. An author is found, Assemblymember Julia Brownley, the bill gets introduced and assigned a bill number, AB68. Heal the Bay begins lobbying other members of the legislature to win support for the bill and starts building a support base utilizing letter writing campaigns and media outreach to get the public to contact their elected officials.

A Case Study in Plastic Bags

BUILDING COMMUNITY KNOWLEDGE AND CAPACITY

Even before legislation is introduced, Heal the Bay must begin the monumental task of engaging the public through our various programs to develop a base of knowledge about the problem and provide tools for capacity-building. For example, when a local city council is going to take action on plastic bags, Heal the Bay meets with community leaders and elected officials to discuss the issue, mobilizes efforts on the ground to get community members to attend the hearing and/or participate in related demonstrations to address the problem of plastic bags in their communities. Our communications team engages editors, reporters and bloggers to provide perspective and tip them about community events and upcoming legislation.

PROGRAMS AND EDUCATION

On an ongoing basis, Heal the Bay must communicate the message to the public, encouraging change in their daily lives. For example, we conceived and launched the “Day Without A Bag” promotional and giveaway program to encourage holiday shoppers to use reusable bags. The partnerships made with businesses and communities help build a knowledge base about the problem and encourage people to start reusable bag programs in their communities. Outreach to youth is a critical piece in reinforcing our connection to the environment. For example, we created a plastic bag exhibit at our Santa Monica Pier Aquarium which compares bags floating in the ocean to sea jellies, a common sea turtle food.
ALISON LIPMAN is the new Stream Team Manager at Heal the Bay. She earned her Ph.D. in ecology this year at the Odum School of Ecology at the University of Georgia. In 2007, she spent much of the past 10 years conducting conservation research projects in South America, where she lived and worked forging connections with local communities in Bolivia and Brazil.

Corporate and business sponsors can look forward to working with Kerri on Bring Back the Beach, Coastal Cleanup Day, and other cause-marketing opportunities throughout the year.

The following list represents gifts from September 1, 2008 through December 31, 2008. The following list represents gifts from September 1, 2008 through December 31, 2008.
Macy’s and Heal the Bay Invite you to join us for “One Good Turn”
Saturday, April 25, 2009

Purchase a $5 coupon from Heal the Bay for special in-store discounts, including $5 off any purchase of $15 or more, and up to 20% off most items.

All proceeds from tickets purchased at www.healthebay.org/specials to benefit Heal the Bay.