



# HEAL THE OCEAN

Get Involved!

NEWSLETTER

Spring 2008

## HTO RECEIVES \$330,000 STATE GRANT TO STUDY WASTEWATER OUTFALL

Heal the Ocean has received a \$333,000 state grant for a revolutionary oceanographic and microbiological ocean outfall study that is tracking the travel of treated wastewater once it is discharged into the ocean.

The "Shallow Ocean Wastewater Outfall Source Tracking Project" (SOWOST) is one of the first research grants of its type ever awarded by the State Water Resources Control Board (SWRCB) – and gives a huge boost to our ever-growing investigation of treated wastewater disposal methods (sewers as well as improperly placed septic systems). While we have been able to apply high technology (DNA) to the issue of septic systems, we have not – until now – had the opportunity to apply high technology to the subject of shallow treated wastewater outfalls.

The SOWOST study is focusing on the Montecito Sanitary District outfall, which discharges into 35 feet of water, 1,500 feet off Butterfly Beach in Montecito. Paid for by a Proposition 50 Clean Beaches Initiative grant, this is a two-year project that began in November 2007.

The UCSB scientists contracted for the project are oceanographers Libe Washburn and Carter Ohlmann, as well as microbiologist Dr. Trish Holden and her laboratory team. During the first year, the scientists are visiting every week, by boat, the end of the outfall, where they deploy GPS drifters to computer-map where the wastewater effluent plume travels. Ocean-water samples are then taken from the spots where the drifters drift, and those samples go into Dr. Holden's lab at UCSB for DNA and bacteria analysis.

One hundred percent of the grant funding given to Heal the Ocean goes to the UCSB science work. We continue to raise funds to add more scientific dimensions to this important project. Thanks to generous donations from an anonymous fund of the Orange County Community Foundation, as well as the Ann Jackson Family Foundation and Brian & Laurance Hodges of WWW Foundation, we have been able to add testing for viruses, with this work conducted in the USC laboratory of Dr. Jed Fuhrman.

We are also raising funds (approximately \$25,000), to add more frequent PhyloChip analysis of the ocean-water samples. Developed by scientists at the U.S. Department of Energy's Lawrence Berkeley National Laboratory, the PhyloChip can scan for thousands of disease-causing microbes in a water sample and can determine definitively the presence or absence of human bacterial pathogens.



*Peter White launching GPS current-tracking buoy.  
Photo by Kirk Ireson*

Heal the Ocean believes this Shallow Outfall project, with its sophisticated technology, will significantly advance water quality research and understanding.

HTO policy analyst Priya Verma, a PhD student at UCSB's Bren School, is managing the project (we have Priya to thank for getting this grant – the paperwork was horrendous!). Priya is working closely with SWRCB staff, which came to Santa Barbara to pay a site visit to the MSD outfall site in September 2007. (Thanks go to HTO advisory board member Jeff Maassen for providing his boat

*...continued on page 15*

## RINCON HOMEOWNERS VOTE YES FOR SEWER

In October 2007, the majority of homeowners in Rincon, Sandyland Cove, Sand Point and Padaro Lane voted in favor of assessing their properties for a wastewater disposal upgrade from septic systems to public sewer.

Heal the Ocean has been working towards this great wave of approval for nine years, as have hundreds of surfers who approached Heal the Ocean in 1998 to ask for help to remove septic systems from their beloved Rincon.

For years we have anticipated victory, and for years we expected to be celebrating mightily when the homeowners finally got to vote on the septic-to-sewer project. However, the tallying of ballots during the October 16, 2007 Carpinteria Sanitary District (CSD) board hearing, where the results were announced, was a surreal scene of lawyers scrutinizing each ballot for discrepancies.

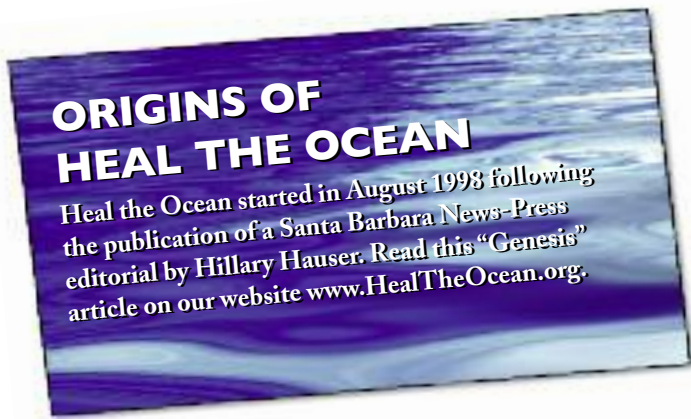
*...continued on page 4*

## IN THIS ISSUE

\$330,000 GRANT TO HTO	pg. 1
HTO FLAG BEARERS	pg. 2
HI FROM HILLARY	pg. 3
RINCON HOMEOWNER VOTE	pg. 4
HTO RESEARCH LIBRARY	pg. 5
USGS GROUNDWATER STUDY	pg. 6
FABULOUS FUNDRAISERS	pg. 8
WITH APPRECIATION	pg. 12
VIEW THE DRIFTERS!	pg. 15



Heal the Ocean flags are favorites of the State Street flag program.  
Photo by Hillary Hauser



## HOORAY FOR THE FLAG!

The happy dolphins are coming to State Street again!

They will be cavorting on Heal the Ocean's sea blue flags that will fly this year from August 15-29, 2008.

We will be celebrating our 10th birthday on August 19, 2008. Ten years! Hillary Hauser and Santa Barbara attorney Jeffrey Young co-founded Heal the Ocean on August 19, 1998 after Hauser's editorial in the Santa Barbara News-Press sparked a public protest over closed beaches in Santa Barbara. The organization has since affected ocean policy not only in Santa Barbara but the state of California – and even across the nation.

The Heal the Ocean logo, created by HTO founding member Chris Wilkinson of E-Wave, combines sun, mountain, river and ocean to indicate the interconnectedness of all things to the sea – and to the happy dolphins. The flag design was created by architect Steve Hausz from Wilkinson's original logo.

To join, visit HTO's website [www.healtheocean.org](http://www.healtheocean.org). ☀

### HTO FLAG BEARERS

Stephen & Maren Hansen Aizenstat

David H. Anderson

Paul & Susie Baerwald

Ron Baker

Dr. Diane Boss and Anton Vonk

Les & Zora Charles/  
Cheeryble Foundation

Dennis & Susan Chiavelli

Heather & Kelly Clenet

Rich & Krista Coffin

Gregory & Della Cook

Stephen & Jean Crossland

Chris & Natalie Cutler

Thomas & Cynthia Dabney

John & Nina Davies

Les Dayka

James G.P. & Deanna Dehlsen

Elizabeth B. Denison

David & Theresa Dolotta

Sylvelin Edgerton

Dan & Rae Emmett

Edward & Suzanne Eubanks

Graham & Sara Farrar

Doug & Tisha Ford

Georgia & Ted Funsten

Allyn McLerie & George Gaynes

Harry and Gail Gelles

Cliff & Nicola Ghersen

Laurie & George Glerum

Kenneth & Nancy Goldsholl

Eileen & Michael Haber

Brad and Julia Hall

Steve & Carole Halsted

Jean & Stanley Harfenist

Hillary Hauser

Rick & Kristin Hogue

Cindy & Bill Howard

Heather Hudson

Robin & Vikki Hunt

Sue Jamgochian

A. Kar

Kirsten & Robert Kemp

Richard & Suzzanne Knaub

Richard & Peggy Lamb

Robert & Kathleen Laurain

Mike & Laura Lodato

Monika McCoy, DC

Vince & Joy McGuiness

Judy McKee

Ronald Melville

Cornelius Mietus

Matthew & Malia Morphy

Emma & Mike Narachi

Andy & Yvonne Neumann

Gail Osherenko

William Otto, DVM

Francoise & James Park

Victoria Pauley

Joanne & Brian Rapp

Adam & Kara Rhodes

Allan Ghitteerman & Susan Rose

Richard & Thekla Sanford

Stephen Segal

Leslie Sinclair Von Wiesenberger

Wayne & Barbara Smith

Peter Sperling

Shawn & Paula Stussy

Shaun & Carla Tomson

Paul & Evan Turpin

Sander & Virginia Vanocur

Charles Vinick

Daniel Waldman

Steve & Chrissy Waterman

Cath Webb & Steve McLaughlin

Jim and Sharon Westby

Blair & Heidi Whitney

## HEAL THE OCEAN RECEIVES SANTA BARBARA BEAUTIFUL AWARD

Santa Barbara Beautiful has honored Heal the Ocean with the "Playa Santa Barbara" award, the first environmental recognition ever given by this civic organization! HTO executive director Hillary Hauser and HTO policy analyst Priya Verma accepted the award in September 2007 at the Lobero Theater in Santa Barbara, where we also received Congressional Recognition (presented by Congresswoman Lois Capps), and certificates of recognition from the California State Assembly, the county of Santa Barbara, and from Santa Barbara city mayor Marty Blum.

In presenting us with our award – a beautiful glass carving – noted environmentalist John B. Weller recapped Heal the Ocean's mission and accomplishments, and we were delighted to realize that the gathering together of concerned citizens has come so far. We are still thrilled that a beautiful, clean ocean has been recognized as vital to the quality of life in our coastal community as well as coastal communities all over the world.



Heal the Ocean receives Santa Barbara Beautiful first-ever "Playa Santa Barbara" Award. Left to right: U.S. Congresswoman Lois Capps, HTO executive director Hillary Hauser, HTO policy analyst Priya Verma, Santa Barbara mayor Marty Blum.



*Executive Director*

Hillary Hauser

*Board of Directors*

Jean-Michel Cousteau  
Ned Doubleday  
Graham Farrar  
Steve Halsted  
Stan Harfenist  
Hillary Hauser  
Richard Lamb  
Francoise Park  
Charles Vinick  
Jonathan Wygant

*Honorary Board Members*

Sally Bromfield  
J'Amy Brown  
Julia Louis-Dreyfus  
Brian Hodges  
Jack Johnson  
Jane Maassen  
Adam Rhodes

*Advisory Board*

Mike deGruy  
Jeff Maassen  
Sam Scranton  
Ruston Slager  
Joel Smith  
Shaun Tomson  
Chris Wilkinson

*Policy Analyst*

Priya Verma

*Legal Counsel*

Marco Gonzalez,  
Coast Law Group, LLP

*Administration*

Jan Campbell

*Special Projects*

Ava Everett  
Ruston Slager

*Newsletter Editors/Writers*

Hillary Hauser  
Jane Maassen  
Jan Campbell

*Newsletter Design*

Michelle Perry/Graphic Traffic

Printed on recycled paper  
with soy based inks  
by Printing Impressions  
© Heal the Ocean 2008  
HEAL THE OCEAN

735 State Street #201  
Santa Barbara, Calif. 93101

Mail: P.O. Box 90106  
Santa Barbara, Calif. 93190

Phone 805/965-7570  
Fax 805/962-0651

E-Mail: info@HealTheOcean.org  
Website: HealTheOcean.org

## HI FROM HILLARY



Photo by Bob Evans

During the past few months, we have reflected back on the beginnings of Heal the Ocean and realized just how naive we were. We had set out to discover the source of Santa Barbara's ocean pollution during the first year and then we would clean it up the second year. We automatically

assumed our regulatory agencies would welcome our help and that the public – which so ardently embraced the plans we announced – would jump at the chance to upgrade, improve, and change the way human waste is handled. We were confident that once we produced cost feasibility studies and scientific reports that indicated wastewater infrastructure or septic systems as a source of ocean pollution, everyone would jump at the chance to change.

Very quickly we received our wakeup call! Regulatory agencies overseeing water quality issues in the state, county and city were not very receptive to our urgings to look at septic systems and wastewater handling. Why should they? State standards were being met. Then we discovered that almost everything with a price tag is met with opposition. Achieving our goals were clearly going to take more than two years and the sailing would not be smooth.

Nevertheless, we forged ahead, chipping away at the resistance with cost feasibility studies for upgrading wastewater plants and with high-tech methods (DNA) to determine whether or not septic systems were leaching into lagoons, creeks, rivers, groundwater and oceans. We tested, sampled, rallied and spread the word.

Today, nine years later, the regulation of septic systems is most definitely in the future for the state of California, and wastewater infrastructure is being upgraded almost everywhere. This, combined with the fact that Heal the Ocean now enjoys healthy and productive working relationships with our regulatory agencies, is enabling us to continue on our path towards a cleaner ocean.

A few of our past year accomplishments are:

The Regional Water Quality Control Board passed a resolution commending HTO, along with other project proponents, for their work on the South Coast Beach Communities (Rincon) septic-to-sewer project.

The State Water Resources Control Board, which oversees all nine regional boards in the state of California and gives Clean Beaches Initiative grants, has given HTO a \$333,000 to study the fate and transport of sewage once it is discharged into the ocean, in this particular case, off a beach in Montecito.

Santa Barbara residents have proven that they are willing to pay to change their wastewater ways by signing up for the city of Santa Barbara's Sewer Lateral Incentive Program (SLIP) to replace old,

impaired laterals, and in February 2008, the city council voted to invest another \$240,000 into the program.

In October 2007 the homeowners within the South Coast Beach Communities project, which includes Rincon, Sand Point, Sandyland and Padaro Lane, voted YES to pay the price for abandoning their septic systems and hooking into public sewer.

Again, these successes have not been without a price. Heal the Ocean has been subjected to many negative accusations and angry scrutiny this past year from those in opposition to what we fight for (specifically, the Rincon septic-to-sewer conversion). We have not allowed this to discourage us or lessen our efforts. Instead, we consider ourselves most fortunate for the continual outpour of community support, which exponentially outweighs our opposition. We cherish every kind word of encouragement that comes our way.

It is especially moving to receive these signs of support and appreciation from children in the cards, letters, pictures and donations they send in. The young students of Cold Springs School brought in a big donation collected from ticket sales to their talent show, and three months later these same students followed up with a whopping donation from a penny drive! We have pictures of a lemonade and cupcake stand accompanied with a love letter and donation, and we have a fabulous picture of the great kids of FUND (Families United for Nurturing Development) holding a big bake sale wherein "copious amounts of homemade pumpkin pies, brownies and chocolate chip cookies sold out in record time."

The photos of these youthful enterprises, held on our behalf, hang on our office walls, side by side with the youthful artwork and thank you cards we get – including one by six-year old Kayla, who made a pen and pencil drawing of a seabird dipping beneath an ocean wave into a school of little fish. These young people are our future, and every day, when we look at these pictures, artwork, cards and letters, our hearts are filled with renewed purpose. We share with you in the pages of this newsletter their wonderful industry and love.

And to all of you who have come forward with financial help, we are pleased to report to you that our Year End 2007 drive was the most successful in our history. The significance of this support is not only the tremendous gift of funds that enables us to continue with our goals, but it is your vote of confidence towards the work we promised you we would do and will continue to do for the children, and for you.

Thank you for helping,

Executive Director, Heal the Ocean





All eyes at the ready: Lawyers scrutinize ballots during the official tally of homeowner votes for the South Coast Beach communities septic-to-sewer project. Photo by Jon Shafer

Please see the actual results of this vote on this page. Ninety percent of property owners voted from all homeowner districts, and the required majority voted in favor of hooking up to the CSD sewer. Although in the Rincon the race was tight, the results represent a complete win and constitute the biggest step to date in moving the sewer project forward.

In keeping with the contentious, topsy-turvy nature of this project, the next – normally simple – procedural step fell into a giant fumble, created this time by Santa Barbara County Local Agency Formation Commission (LAFCO). In order to create a new assessment district, LAFCO has to approve annexation of county land into the Carpinteria Sanitary District. (This is a different proceeding from the actual homeowner vote to pay for the project.) LAFCO unanimously approved the annexation in August 2007, but in conducting the mandated Protest Hearing afterward, failed to properly notice the public about the protest hearing, which took place on October 9, 2007 at Carpinteria City Hall.

Surfers showed up for this hearing by the dozens, including world surfing champion (and “Bustin’ Down the Door” filmmaker) Shaun Tomson, who begged the Rincon homeowners, “Please don’t protest!” However, after all was said and done, the results of this hearing were thrown out because LAFCO failed to post a notice on its website as mandated by law, and also failed to send notice by mail to all the Ventura County residents (Rincon is straddled by the Santa Barbara-Ventura county line).

Another protest hearing was then scheduled for December 3, 2007. As Santa Barbara Independent writer Ethan Stewart put it, “This hang-up (allowed) those opposed to the conversion to circle the wagons, flesh out their legal challenges, and potentially derail the project.” By the time the next protest hearing was held, on December 3, 2007, the opponents of the project had mounted a massive re-registration of homeowners – and even though thirty (30) protest votes were invalidated because of improprieties, the residents opposing the sewer project managed to gather a 36 percent protest.

If over 25 percent of property owners or if over 25 percent registered voters within the proposed annexation area protest an annexation, the annexation issue goes to a special election, in which 51% of registered voters within the proposed area must approve the project in order for it to proceed.

This has pushed the annexation issue to a Mail-In Ballot election on April 22, 2008, in which 51% of legally registered voters in the proposed annexation area must approve the annexation. Heal the Ocean has, through the generous financial help of a group of Rincon homeowners, hired an elections lawyer (Fred Woocher, of the Santa Monica law firm Strumwasser & Woocher LLP) to help us through this election process. We are convinced we will win this long battle!

We have the support of the State Water Resources Control Board; the Regional Water Quality Control Board; Santa Barbara County Environmental Health; Santa Barbara County Public Health; and the boards of supervisors for both Santa Barbara and Ventura counties. The State Water Resources Control Board has approved a \$2.1 million state grant for the project from its Proposition 84 Clean Beaches Initiative funds, and on December 7, 2007, the Regional Water Quality Control Board passed Resolution R3-2007-0095, a “Resolution of Appreciation for the South Coast Beach Communities Septic to Sewer Project Proponents,” the text of which can be found on page 5 of this newsletter.

Heal the Ocean appreciates everyone who has helped logistically, emotionally and financially to make this project succeed. We are dedicated to our promise and we are especially dedicated to the hundreds of surfers who first approached Heal the Ocean in 1998 to ask for help in getting rid of the septic systems at the Rincon, their favorite world-acclaimed surf spot.



Shaun Tomson and HTO executive director Hillary Hauser at October 9, 2007 LAFCO protest hearing. Photo by Jon Shafer

## RINCON HOMEOWNER VOTE

RESULTS OCTOBER 16, 2007

The votes for the South Coast Communities Septic to Sewer Project are as follows:

Location:			(Assessed values)
1) Rincon	For:	41	56.9% (\$3,646,624)
	Against:	31	43.1% (\$2,757,204)
2) Sandyland	For:	29	96.6% (\$1,365,000)
	Against:	1	3.4% (\$47,070)
3) Sand Point	For:	12	66 2/3% (\$681,688)
	Against:	6	33 1/3% (\$340,809)
4) Padaro	For:	8	88.9% (\$387,838)
	Against:	1	11.1% (\$48,480)
TOTAL ASSESSMENT		For:	65.6% (\$6,081,117)
TOTAL ASSESSMENT		Against:	34.4% (\$3,193,563)

\*\*90% of all properties voted\*\*

# RINCON TIMELINE

Updated April 2008

**Pre-August 1998:** CURE (Clean Up Rincon Effluent) circulates petition among surfers complaining about getting sick after surfing at the Rincon, to present to County.

**August 1998:** Heal the Ocean forms.

**October 1998:** HTO initiates DNA testing of Rincon Lagoon, gets Santa Barbara County Environmental Health Services to collaborate (HTO funds \$23,500 lab work; EHS pays \$12,500 and performs in-field collection). Results show human fecal bacteria in the lagoon.

**November 1998-February 1999:** HTO coordinates Rincon homeowner association meetings to explain hookup to Carpinteria Sanitary District (CSD), researches state low-interest loans, introduces septic-to-sewer concept to Sandyland, Sand Point Road, Padaro Lane and Beach Club Road, a total of 175 homes.

**March 1999:** HTO writes \$9,000 check for sewer engineering study for Rincon; paid for by Surfers of the Rincon Clean Water Classic, CURE, Surfrider, Santa Barbara County's Project Clean Water, the Rincon homeowner association, and HTO. Funding help comes from Patagonia.

**August 1999:** Assemblywoman Hannah-Beth Jackson tours Rincon, goes back to Sacramento and authors Assembly Bill 885 to regulate septic systems throughout state of California, and secures \$2 million for S.B. County to combat septic system pollution problems.

**August 2000:** Price of sewer comes in at \$2.9 million, Rincon homeowners vote to levy their homes; 74% vote in favor of the project (51% needed to pass). Total price includes \$425,000 for the Environmental Impact Report (EIR) required for the project. Five Rincon homeowners sue to stop the project because EIR has to be performed before vote is taken. "Catch 22" situation emerges: such projects can't be done without EIR, yet there are no funds for an EIR until homes are levied.

September 2000: **CSD withdraws** project. CSD manager John Miko (now deceased) locates state grant source for \$425,000 EIR funds.

**March 2001:** HTO begins lobbying for grant application to the State Water Resources Control Board.

**September 2001:** "South Coast Beach Communities Septic-to-Sewer" grant is awarded as "number one priority" by State Water Resources Control Board.

**January 21, 2003:** EIR work begins for Rincon, Sandyland, Sand Point, Padaro Lane and Beach Club Road projects.

**March 2004:** CSD certifies EIR.

**December 2004:** Three Rincon homeowners file suit vs. EIR certification and the project. HTO hires Marco Gonzalez of Coast Law Group, HTO forms Indemnity Fund to pay CSD's legal expenses, with fund financed by homeowners in the sewer project areas, HTO board members, singer Jack Johnson, surfers

of the Rincon Clean Water Classic, and other supporters.

**February 2005:** SB superior court throws out oppositions' complaint as "unintelligible." Complaint is revised and refiled.

**May 2005:** Opposition's revised lawsuit is thrown out of court as "unripe," because no sewer project has been approved by CSD.

**June 2005:** HTO establishes \$48K Supplemental EIR Fund, to have additional planning work done on Rincon portion of project before CSD approves project.

**October 2005:** Regional Water Quality Control Board (RWQCB) passes Resolution R3-2005-0016 supporting sewer project. Updated engineering starts on all communities in project (paid for by Santa Barbara County Environmental Health Services, which also funds annexation and assessment engineering).

**July 2006:** Supplemental EIR (SEIR) work completed on Rincon part of project; 30-day public circulation begins.

**September 19, 2006:** CSD approval of the Supplemental EIR.

**October 2006:** Assessment & Annexation engineering begins for all communities within project.

**August 2007:** 45-day balloting begins of homeowners within project.

**August 2, 2007:** SB Local Agency Formation

Commission (LAFCO) unanimously approves South Coast Annexation to the Carpinteria Sanitary District.

**October 9, 2007:** LAFCO protest hearing held.

**October 16, 2007:** HOMEOWNER VOTE ANNOUNCED: Total For: 65.6%; Total Against, 34.4% (Rincon, Total For, 56.9%, Total Against, 43.1%); 90% of all properties voted.

**November 1, 2007:** LAFCO voids results of October 9, 2007 protest hearing due to improper noticing. Schedules another protest vote & hearing for December 3, 2007.

**January 11, 2008:** Results of December 3, 2007 protest vote announced. Greater than 25% of registered voters within proposed annexation area voted No to annexation, (36%), requiring a confirmation election. 51% of registered voters within annexation area must now vote in favor of annexation for project to proceed.

**April 22, 2008:** CSD to run Mail-In ballot confirmation election for annexation.

*Next steps: If confirmation election is successful, CSD can proceed with selling bonds to pay for building of sewer project.*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION

RESOLUTION NO. R3-2007-0095

RESOLUTION OF APPRECIATION FOR THE SOUTH COAST BEACH COMMUNITIES SEPTIC TO SEWER PROJECT PROPONENTS

WHEREAS, the Central Coast Water Board's mission is to preserve, enhance, and restore the quality of California's water resources. The Central Coast Water Board achieves its mission by relying on traditional permitting, enforcement tools, as well as exemplary efforts of citizens and groups that benefit water quality. Accordingly, the Central Coast Water Board recognizes and appreciates the efforts of the South Coast Communities Septic to Sewer Project proponents; and

WHEREAS, the proponents coordinated stakeholder efforts with the affected communities of **Rincon Point, Sandyland Cove, Sand Point Road, and Padaro Lane**, Santa Barbara County in order to introduce the septic to sewer concept (a total of 175 homes); and

WHEREAS, in March 1999, Heal the Ocean, along with the Surfers of the Rincon Clean Water Classic, Clean Up Rincon Effluent group, Surfrider Foundation, Santa Barbara County's Project Clean Water, and the Rincon Homeowners Association provided approximately \$9,000 for a sewer engineering study; and

WHEREAS, Heal the Ocean in collaboration with the Santa Barbara County Environmental Health Services department initiated the *October 1999 Rincon DNA Study* to further investigate the contribution of septic systems to the adjacent Rincon Lagoon, Rincon Creek, and Ocean, at a cost of \$36,000; and

WHEREAS, Carpinteria Sanitary District and Heal the Ocean successfully lobbied to secure state grant funding for the South Coast Communities Septic to Sewer Project Environmental Impact Report (EIR) process; and

WHEREAS, Carpinteria Sanitary District certified the South Coast Communities Septic to Sewer project EIR in March 2004; and

WHEREAS, Proponents continued to move forward with the project despite legal challenges to the South Coast Communities Septic to Sewer Project EIR, which were rejected by the Santa Barbara County Superior Court; and

WHEREAS, Heal the Ocean established a \$48,000 Supplemental EIR fund to conduct additional planning work for the Rincon Point area before the final project was approved by Carpinteria Sanitary District; and

WHEREAS, Carpinteria Sanitary District approved the South Coast Communities Septic to Sewer project on September 19, 2006; and

WHEREAS, Carpinteria Sanitary District submitted an application to secure Clean Beach Initiative (Proposition 84) monies for project funding, which was unanimously approved by the State Water Board on September 4, 2007; and

WHEREAS, overwhelming support from various agencies and groups facilitated approvals throughout the decision making process, including Assessment District approval by a wide margin; therefore, allowing the Carpinteria Sanitary District to proceed with a project that will protect coastal resources including surface and groundwater.

THEREFORE IT BE RESOLVED, that the California Regional Water Quality Control Board, Central Coast Region, hereby expresses its utmost appreciation for the tremendous efforts of the South Coast Communities Septic to Sewer Project proponents who despite challenges at many steps along the way successfully facilitated the design, funding and approval of the sanitary sewer system.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on December 7, 2007.

*Roger W. Briggs*  
Executive Officer

Resolution of appreciation from the Regional Water Quality Control Board

## HTO LIBRARY

One of Heal the Ocean's important missions is to commission research and reports that can be accessed by other communities and decision-making bodies across the country (or around the world!). Visit our website: [WWW.HealTheOcean.org](http://WWW.HealTheOcean.org), and click on "Library." Here, you will find:

- Ocean Wastewater Discharge Inventory for the State of California (1st draft)
- Dangers of Swimming in Secondary Sewage (Kator Report)
- Lower Rincon Beach DNA
- Report on the Tajiguas Landfill
- Cost of Tertiary Wastewater Treatment for Santa Barbara
- Heal the Ocean Virus Report
- Water Reclamation Research



## SEWER LATERAL PROGRAM A SUCCESS!

Early in February 2008, the Santa Barbara City Council approved another \$240,000 to be moved into the city's Sewer Lateral Inspection Program (SLIP), which gives financial incentives to homeowners to have their laterals inspected and repaired.

In 2004, Heal the Ocean began lobbying the city to pass a sewer lateral ordinance requiring maintenance of private sewer laterals. We were motivated by reports from homeowners discovering that the pipes from their homes leading to the sewer main were in some places non-existent, a condition that allowed their wastewater to seep into the ground untreated.

There are more than 300 miles of privately owned and maintained sewer laterals that connect to the city's sewer mains. This is approximately 40 more miles of pipe than the main itself. Many of these homes are still utilizing old "orangeburg" laterals (an old style of pipe made from cardboard wrapped with tar paper) which desperately need replacing. Faulty sewer laterals are responsible for infiltration of rain water during storms, overloading the city sewer system, as well as the pollution of groundwater.

Heal the Ocean (and Channelkeeper) did not get the ordinance we fought for, but we did get the realtor association to include the condition of a home's sewer lateral in their disclosure forms, and the city initiated its SLIP program.

Initially, there was concern regarding the public reception of free lateral inspection due to the possibility of such inspection identifying an expensive problem to fix. The city conservatively estimated 100 requests for incentive payments per year.

However, during the first six months of the program, from July through December 2007, there were 156 applications resulting in 129 incentive payments (\$150 to \$3,452) during the first year, paid by the city for a total of \$314,707. The average cost to property owners for a lateral repair was \$5,700.

With requests coming into the city at an average 20 per month, it was determined that the program needed an additional \$240,000 for the remainder of Fiscal Year 2008 (December through June 2008).

Bravo to the city of Santa Barbara, and bravo to the public for taking advantage of this successful program! Once again, this is the type of infrastructure fixing HTO loves to see, because it directly benefits the ocean.



## USGS STUDY COMPLETED

Under the working title, "Forces of Fecal Indicator Bacteria in Urban Streams and Ocean Beaches, Santa Barbara, California," the U.S. Geological Survey has sent out for scientific review their study containing the results of a three-year investigation into the shallow groundwater beneath the city of Santa Barbara and around Mission Creek. The objective of the study is to see what pollution exists in the groundwater that flows into the ocean all year round.

The study, which will be submitted by USGS to scientific journals for publication later this year, was conducted in collaboration by the USGS, the city of Santa Barbara, UCSB, and Heal the Ocean. We persuaded the city into launching this study by offering city council the services of our grant writer, Stephanie Jamgochian, to raise contributory funds for the work and also by agreeing to participate in it.

Through the generosity of the locally-based Andrew H. Burnett Foundation, as well as an anonymous foundation of the Orange County Community Fund, we were able to raise \$60,000 to contribute to the project costs. The Ann Jackson Foundation then went further by donating an additional \$10,000, allowing us to add virus testing (done in the University of Southern California laboratory of Dr. Jed Fuhrman).

According to USGS senior hydrologist John Izbicki, who led this project, the study is groundbreaking for its focus on ocean-groundwater interchange, and particularly "of interchange of tidal water and bacteria in sands at the high tide line" which had "never been done...(but) now it's being done." It is exciting for HTO to be involved in such pioneering work because we truly believe that innovative study is crucial to our goal of a clean ocean and safe swimming beaches in Santa Barbara.

Some preliminary highlights of the Santa Barbara study:

There are high levels of fecal indicator bacteria (FIB) in urban streams and recreational beaches in Santa Barbara that exceed standards for recreational water, with Mission Creek pollution associated with point discharges from urban drain. Human-specific *Bacteroides* was present in all sampled drains.

*...continued on page 11*

---

## GOLETA SANITARY GOES GREEN

Continuing on its schedule to move its facility to full secondary sewage treatment levels, the Goleta Sanitary District has announced that the upgraded wastewater plant will use "green" design and building techniques wherever reasonable – including the use of renewable energy, such as solar energy.

As part of GSD's November 2004 settlement agreement with the Regional Water Quality Control Board, a settlement Heal the Ocean legally worked for, GSD continues on schedule, with the final goal of November 2014 being the date of full compliance with secondary requirements. In 2008, GSD will accomplish the following:

March 31, 2008. Complete final plan for project design;

June 30, 2008. Complete final facilities plan;

June 30, 2008. Complete and circulate the draft CEQA document for plant redesign;

June 30, 2008. Initiate design.

By December 31, 2008, GSD will have completed 30% of the design necessary for the plant to meet full secondary specifications. It will then take a little less than two years to reach the full design. Construction is scheduled to begin three years from now, by April 30, 2011.

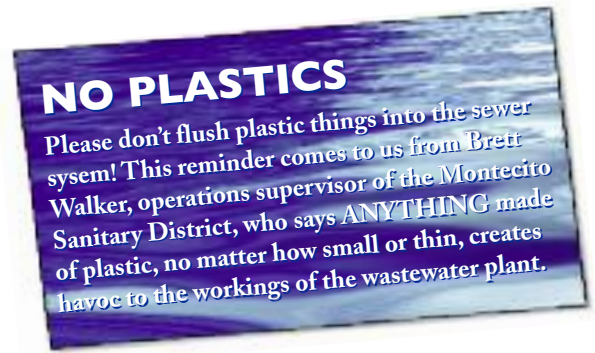
In 2002, Heal the Ocean defeated GSD's application for another five-year 301(h) waiver, which would have allowed the wastewater plant to continue discharging a blend of primary and secondary-treated sewage into the ocean off Goleta Beach. It took us two full years of legal work, we attended many hearings at local, regional and state levels, and finally we were able to overturn GSD's appeal of the secondary upgrade ruling at the State Water Resources Control Board in Sacramento.

We have since been very pleased to see the progress of this important upgrade. GSD is conducting a major public outreach from now until June 2008, and public hearings will be held to review and refine the proposed design. We applaud the district for going "green."





HTO policy analyst Priya Verma meets with Matt Jimenez of Fruit Growers Lab (FGL) during our testing of the Laguna Channel for trichloroethylene (TCE), benzene and tuolene, which are among the chemicals found in monitoring wells in Santa Barbara's waterfront area. We are still investigating. Photos by Hillary Hauser.



## ODDS & ENDS...

After a number of Braemar Ranch/Yankee Farm homeowners approached us in 2003 requesting our help, HTO started working on finding funds for a conceptual plan for sewer main extension to approximately 100 homes on septic systems in the Braemar Ranch/Yankee Farm area. That conceptual plan has finally been completed by the city of Santa Barbara, and if homeowners want to proceed, the full engineering plan can be completed for an estimated \$4 million project (roughly \$40K per home)...When HTO policy analyst Priya Verma was successful in landing the \$330,000 Proposition 50 Clean Beaches Initiative grant for HTO's study of the Montecito outfall, we sent her down to the Carpinteria Sanitary District, where she successfully completed CSD's \$2.1 million grant application to the state for the South Coast Beach Communities septic-to-sewer project... HTO continues to work with Santa Barbara County officials on how to best implement the provisions of the county's NPDES (National Pollution Detection & Elimination System) storm water permit. Since 2002 we have been working with other environmental groups to get this important law into place, and during the county's recent one-year review at the Regional Water Quality Control Board (RWQCB) we requested stricter measures on runoff control. We've met with county Planning and Development officials on their new guidelines for construction and post-construction runoff detail, and we continue to work with county Project Clean Water on toughening up their approach to storm water runoff in general.



A well-marked storm drain in Santa Barbara at the Yanonali Bridge near West Beach. Photo by Hillary Hauser

## TESTING...TESTING...

When Heal the Ocean learned about the city of Santa Barbara replacing sewer lines in the industrial waterfront area and was required to haul the excavated soils to a toxic waste facility, HTO policy analyst Priya Verma began to investigate. By doing so, HTO discovered that a Class II unlined landfill exists within the waterfront area of Santa Barbara. Priya also learned that monitoring wells in the area are regularly checked for trichloroethylene (TCE), benzene, tuolene, and other chemicals, which may be the leftovers from former gas stations and other industries.

For the past three years we have been meeting regularly with scientists from the U.S. Geological Survey (USGS) who have been in Santa Barbara studying groundwater transport of pollutants (a study HTO has contributed funds to). We decided to research the traveling of these compounds from the groundwater in the monitoring wells to other nearby bodies of water such as the Laguna Channel, a polluted stream that flows to West Beach, near Stearns Wharf. Matt Jimenez of Fruit Growers Laboratory (FGL) was contracted to test the waters of Laguna Channel for the compounds and thus far, the tests have been negative.

Priya continues to research the potential pollution problems of abandoned dumps (especially unlined ones), and the problem of groundwater transport of pollutants from such landfills or other industrial sites where such pollutants have entered the ground and groundwater.



## GSD CONVERSION SCHEDULE

A. Preliminary Activities	Date of Completion	D. Financing	Date of Completion
1. Submittal of Detailed Conversion Plan and Timeline to Owners of Capacity in District's Plant	1/1/05	1. Complete Draft Plan for Project Design and Construction Financing	1/30/07
2. Coordination of Conversion Concepts w/Owners of Capacity in District's Plant	6/30/05	2. Complete Final Plan for Project Design	3/31/08
3. Send Requests for Environmental and Consulting Engineering Proposals	12/31/05	3. Submit Proof that all Necessary Construction Financing has been Secured, incl./Compliance with Proposition 218	12/31/10
4. Award of Environmental and Consulting Engineering Contracts	6/30/06	<b>E. Design and Construction</b>	
<b>B. Facilities Planning</b>		1. Initiate Design	6/30/08
1. Complete Draft Facilities Plan	12/31/06	2. 30% Design	12/31/08
2. Complete Final Facilities Plan	6/30/08	3. 60% Design	11/30/09
<b>C. Environmental Review and Permitting</b>		4. 90% Design	3/31/10
1. Complete and Circulate Draft CEQA Document	6/30/08	5. 100% Design	9/30/10
2. Certify Final CEQA Document	1/31/09	6. Issue Notice to Proceed to Contractor	4/30/11
3. Submit Applications for all Necessary Permits	1/31/09	7. Construction Progress Reports	Quarterly
4. Obtain all Necessary Permits	1/31/11	8. Complete Construction and Commence Debugging and Startup	4/30/14
		9. Full Compliance w/Secondary Requirements	11/1/14

## THE SOLUTIONS FOR DREAMERS FESTIVAL



*Solution for Dreamers – the grand finale, with confetti!*

In February – the SOLUTIONS FOR DREAMERS FESTIVAL – conceived by Oniricon Records, supported by Simple Shoes, and brought to life with rock and roll, jazz, fish puppets galore, an unending array of talent on the Arlington stage that surged into higher and higher heat as the evening progressed... Jack Johnson flying on the red-eye from Hawaii and accompanying fellow musician Adam Topol and Culver City Dub... then the fishes, jellyfish, and toothy prehistoric sea animals filling the air... Matthew McAvene in a sea of jungle masks and



*Matthew McAvene, in the SFD lineup, creates a jungle scene & groovy rhythm!*



*Michael Franti/Spearhead brings the house down at SFD Festival!*

rocking beat, followed by 19-year-old Danny Riley bringing the house down with his soulful “Through Their Eyes” (Danny passed away only a few months later)... then back to a rocking set by Zach Gill & his Animal Liberation Orchestra and iridescent hula hooping... and then... war siren, military camouflage – and Michael Franti – Spearhead – “Hello, Bonjour!”... jump & shout, and what, there is Jack Johnson again, all the way to a fantasmagoric finale, costumed dancers on stage and confetti raining down from the Arlington ceiling... whooie!

## TALENT SHOW AND PENNY THE PIG AT COLD SPRING SCHOOL

Right about the time Spearhead and Jack Johnson were on the stage at the Arlington in the Solutions for Dreamers festival, the student council at Cold Spring School in Montecito put on their annual Talent Show... and sent all those ticket proceeds to Heal the Ocean... and followed that with “Penny the Pig” – a fundraising drive where the kids brought in change and bills – for a total donation to HTO of... of... you would be surprised!

**Dear Heal the Ocean.**  
My name is Will Howard and I sincerely love your cause because I spend a lot of my time enjoying our beautiful coast. Every week I go out on my paddle board with my dad as I catch a glimpse of a dolphin popping up to say hello or a seal barking at me as I pass by. Since I love your cause so much I wanted to contribute to it. I knew that Oprah Winfrey, who lives down the street from me, was having a fund raiser for presidential candidate Barack Obama. This area was very busy so I know I'd make a hefty profit. But I didn't want to keep it; I wanted to give it to Heal the Ocean.  
My friends, Francesca Kusserow, Michaela Gradstein, Jack Burgess, Mian Laurain and myself went to that busy corner and sold lemonade made by my mom and cupcakes made by my mom and Serena and Marina Kusserow. We held up a sign that read, “Lemonade and cupcakes 75 ¢ - proceeds go to Heal the Ocean.”  
As I predicted, we made a terrific profit of \$75. We sold much of our inventory to stars such as Julia Luis Driffus. I'd like to thank Jack Burgess, the Kusserow family, Michaela Gradstein, Mian Laurain and everybody who bought a cupcake or lemonade.  
**Love,**  
**Will Howard**

## LEMONADE & CUPCAKES!....

Look at these young enterprisers!... here comes presidential candidate Barack Obama to Oprah's home for a campaign fundraiser... aha!... there will be people, and people are customers... Will Howard and friends go to the street where all the people will pass by, put up a table of cupcakes and lemonade + sign for Heal the Ocean – and sell out immediately...



*Will Howard and his enterprising friends.*

## RINCON CLASSIC BENEFITS HEAL THE OCEAN

Surfers from all over Southern California gathered at the Rincon for the 2008 Rincon Classic in March – to surf waves and raise funds for a few Santa Barbara causes, including Heal the Ocean. Chris Keets, of Surf Happens, who organized the event, says HTO was included in this year's list of beneficiaries because, “Heal the Ocean actively cleans and protects local waters. They are doing something I can see, rather than talking about the possibility of something happening.” Thanks, Chris! Thanks, all you surfers!



## F.U.N.D. KIDS HAVE A BAKE SALE FOR HTO

A pre-Thanksgiving bake sale for Heal the Ocean in Montecito Village, where homemade pumpkin pies, brownies and chocolate chip cookies sold out in RECORD TIME!



*L to R: Isabelle Doubleday, Austin Jackson, Bryce Jackson, Hilary Doubleday, Serena Doubleday and Trey Jackson.  
Photo by Susan Jackson.*



## 3RD ANNUAL HTO BENEFIT CONCERT – TAJ & JACK!

The 3rd HTO Benefit Concert, on September 29, 2007 was sold-out 1 1/2 months in advance...the big surprise – who was to perform? TAJ MAHAL, the legendary blues artist, together with JACK JOHNSON. What a jam session! What a night! Thanks to Julia Louis-Dreyfus, who was our honorary chair and fantastically funny hostess! And thanks to Matt McAllister for being again our auctioneer...to Michael Haber for your wonderful film about the sea...and there is no way this event, or any before them, could have taken place without out the love and fabulousness of Laura Lodato.



Great artists, old and new, on stage at QAD in a historic celebration for HTO!

**HTO BENEFIT '08**  
Mark your calendars for August 29, 2008! Wait 'til you see what we have planned for you next! A surprise! Please stay tuned!

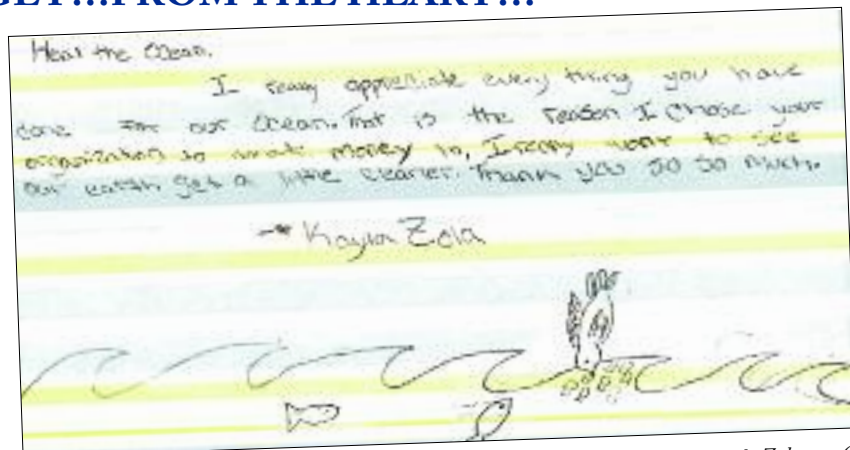


Julia Louis-Dreyfus welcomes party-goers with her wonderful wit.



The Big 16 Committee – the girls who planned this sold-out event for 9 full months, left to right: Tiffany Doré, Heather Clenet, Nicola Gbersen, Heather Hudson Crummer, Aleya Dao, Committee Chair Laura Lodato, Karen Kelly, Dana Golden, Cece Morton, Pat Kelley, Paula Stussy, Jules Allen, Eileen Haber, and Tamara Jensen (I.D.O.). Not pictured: Hilary Doubleday, Gianna Marcyan.

## THE LETTERS & CARDS WE GET...FROM THE HEART...



From Kayla Zola, age 6.

## SPECIAL THANKS...

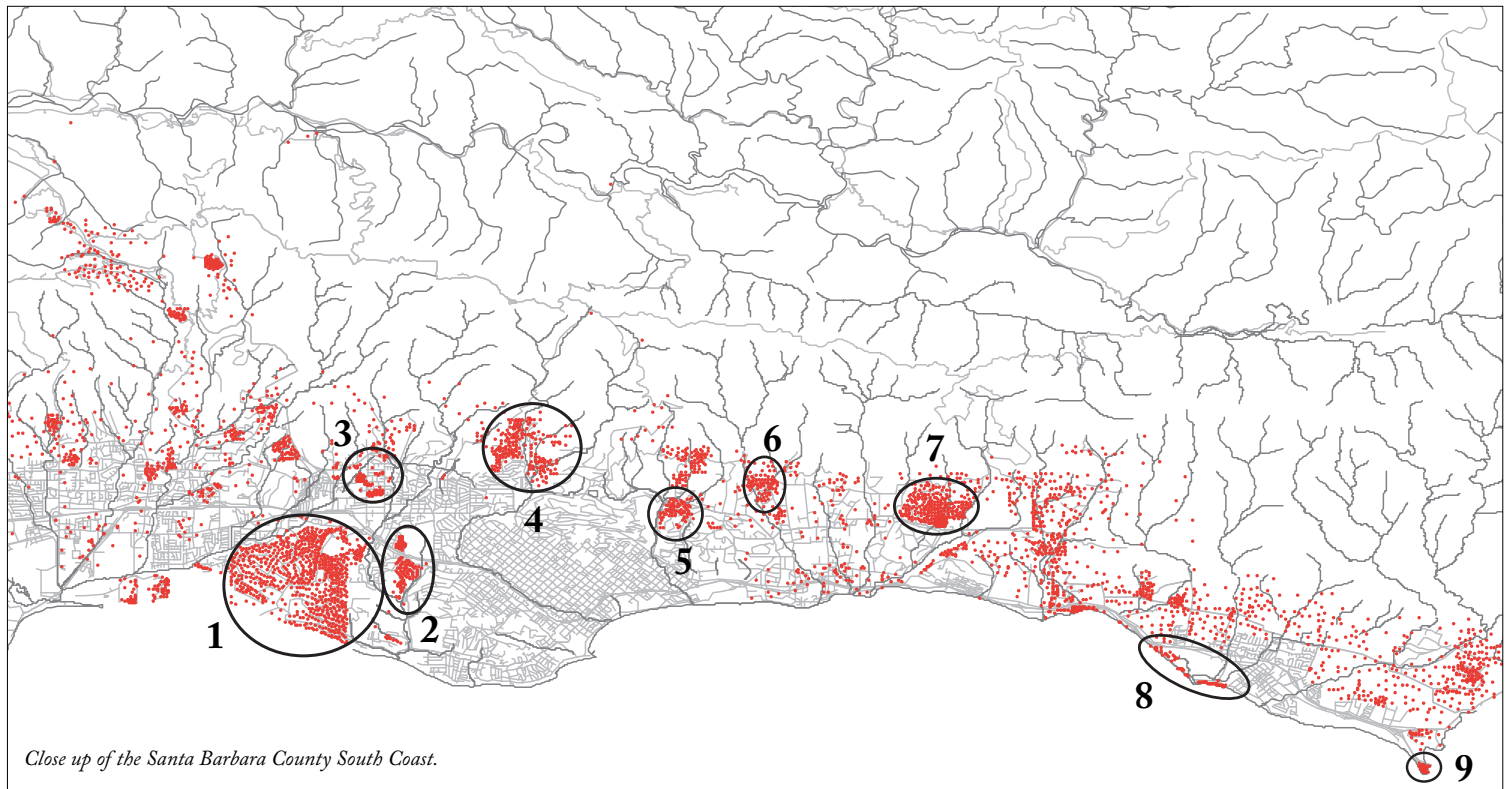
Heal the Ocean is indebted to all the people that tirelessly give their time and energy to our cause. Our volunteers and members are core to what we do and every one of them – and you – are essential for us to continue with our mission.

We are grateful to **Mike and Laura Lodato**, who gave to us phenomenal energy, time and talent during their three-year stint on HTO's Board of Directors. As chair of the annual Heal the Ocean Benefit Concert, Laura introduced Heal the Ocean to a brand new level of fundraising with three straight years of sold-out dinner concerts at QAD that featured fabulous high cuisine, camaraderie and top-flight entertainment. We simply cannot thank Mike and Laura enough for all that they gave during their time with us. (And thanks for continuing to manning HTO's dog mitt box (biodegradable bags) at the head of Hammonds Trail and the Miramar Beach steps)!...Huge thanks go out to **John Robinson**, too, who was with HTO from its inception and who applied his incredible scientific mind to the ocean pollution problems we are working on. John formed a company that took GIS mapping to new levels and applied that technology to the creation of the septic system map you see in this newsletter. It was a revolutionary day when he presented this map to the County Board of Supervisors – and the very first time this county knew who was on septic system, who was on sewer, and where the probable problem areas lay. John also designed our website and pulled in sewer engineers needed for studies. We will never be able to thank him enough for all he did while he was with us...Thank you **Jacob Tell** of Oniricom Records for keeping our web site updated, our e-mails running, and benefiting us with your Solutions for Dreamers Festival....Thank you, **Santa Barbara Art Association** for your annual November ocean art show at Gallery 113 benefiting Heal the Ocean; **Manny Lopez**, you are the best for organizing this – and so are all of you wonderful artists who put forth your exciting art works in water color, oils, and other mediums...Thank you, **Peggy Oki**, talented artist, for continuing to provide us your beautiful sea cards with Heal the Ocean information imprinted on the back. We love using these cards!...Thank you, **Jan Campbell**, for keeping our office and accounting and interface with the public running so smoothly. Yes, it is your job, but you always go beyond the call of duty...Thank you, **Gus Johnson**, manager of the Balboa Building where our beautiful offices are – for finding us a nice room in the Balboa Building basement for safe and spacious storage for our shirts and hats, our files and archives, and thanks, too, for initiating recycling in the building. And finally, thank you, thank you, thank you to **Jack Johnson** for sticking with us through thick and thin, singing for us at all our events, we are forever grateful for your unending generosity.

Thanks, one and all!



# HEAL THE OCEAN CONTINUES WORKING ON SEPTIC PROBLEMS



*Close up of the Santa Barbara County South Coast.*

*This septic system “clusters” system map, created by former HTO Board member John Robinson in 1999, shows the problematic areas for septic system use, which are targeted for sewer engineering or wastewater management plans.*

During the torrential rains of January and February 2008, some of Santa Barbara’s Riviera residents were surprised to find water spouting from their lawns with definitive water paths trickling down stairways, driveways, and trails. This provided clear insight into how creeks and rivers may have traveled down the mountains above Santa Barbara prior to development.

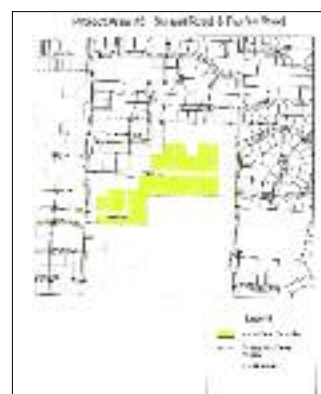
It also revealed what happens to septic system leachfields that unfortunately do still exist in various high-groundwater areas like the Riviera scene described above. These leachfields are essentially underground gravel beds installed in backyard areas for the processing of wastewater. When high groundwater gushes to the surface, it has to take the wastewater surfaces with it, resulting in the “daylighting” of sewage.

In 1999, Heal the Ocean created a “Laundry List” of septic cluster areas that appeared problematic for high groundwater and other issues like poor soils, proximity to creeks, aging systems (see above map). By 2003, the county of Santa Barbara Environmental Health Services (EHS) had commissioned a \$250,000 Questa Engineering study that identified septic problem areas, many of which concurred with HTO’s laundry list.

The cost of the Questa study came out of \$2 million in state funds brought into Santa Barbara County by former assemblywoman Hannah-Beth Jackson during fiscal year 2000-2001 for septic-to-sewer and wastewater improvement. HTO has been working with EHS on the expenditure of these funds ever since. It has been slow going, but we are pleased to report progress!

In 2007 the Montecito Sanitary District (MSD) received HBJ funding for an engineering survey for the Eucalyptus Hill/Barker Pass area (#5 on the septic map), as well as Cold Springs Road and Parra Grande. This survey work was done in cooperation with the city of Santa Barbara, which would most likely serve most of these areas if sewer were to be elected by the homeowners. It has been determined that if given a choice, a gravity (downhill) system is superior to a system of pumps.

HBJ funds were also spent on the South Coast Beach Communities (Rincon) septic-to-sewer project for annexation and assessment engineering reports, which helped move this project for 147 beachfront homes into a homeowner vote in October 2007 (#8 & 9 on the septic map).



*West End Sewer Master Plan Areas*

Then, in February 2008, the city of Santa Barbara initiated a conceptual engineering design of the “West End Sewer Master Plan,” which is now laying out the engineering and annexation issues for the Veronica Springs Area (#2 on the septic map); Northview Road & Vista Vallejo; Sunset Road & Fairfax Road; and the Calle Cita/Carol Avenue/Russell Way area (#3 on the septic map)

These “pockets” are unincorporated areas surrounded by the city not currently hooked into the city’s wastewater system. The Master Plan is preliminary to the actual sewer design, and necessary due to some of the areas being better serviced by the Goleta Sanitary District than the city’s wastewater plant (such as Calle Cita/Carol Avenue/Russell Way), and the plan will tackle annexation and other unresolved issues.

HTO is both pleased and relieved to see something finally beginning for these “city pockets,” as many residents in these areas experience plumbing problems during heavy rains. We are also happy to see pro-activeness on the part of the city of Santa Barbara (public works official Rebecca Bjork and the city’s new wastewater manager, John Schoof), who have pushed this plan forward without waiting for funding help. All engineering proposals for the project were due into the city by February 19, 2008, and the winning proposal goes to the Santa Barbara city council in March 2008 for funding.

When the West End Master Plan is completed, HBJ funding can help defray the expense of the actual sewer design. Heal the Ocean’s role in all of this activity is to lobby for the HBJ funds to help move the project forward, and to act as a facilitator and disseminator of information between homeowners, government agencies, EHS and wastewater managers.

Most significant to wastewater management in Santa Barbara County is the Regional Water Quality Control Board (RWQCB)’s revision of its Basin Plan, currently under way. This Basin Plan revision will target wastewater problems throughout the Central Coast, especially as they impact groundwater and EPA 303(d)-listed impaired water bodies. EHS director Rick Merrifield has stated that Santa Barbara County can expect pressure from the state to adopt a wastewater management plan for the county and that HBJ funding will help develop such a plan.

Therefore, during the 2008-2009 fiscal year (which starts in June 2008), \$273,000 of HBJ funding will go into the county budget: \$190,000 for a preliminary engineering design for a Septage Treatment Facility in the Santa Barbara south county (because septic waste is so heavily concentrated, septic waste haulers must currently take pumped material to Ventura or Santa Maria); \$70,000 for sewer extension engineering studies; and \$13,000 in area-specific wastewater management plans.

There will still be \$900,000 in HBJ funds available for the county to develop a wastewater management plan for areas identified in the Questa Engineering report, or for septic “clusters” such as Hope Ranch (#1 on the septic map), or areas targeted in the RWQCB Basin Plan revision.



#### CAPTIONS FOR MAPS

#### *Project areas outlined in the City’s West End Master Plan*

*Project Area #1: Veronica Springs*

*Project Area #2: Northview Road & Vista Vallejo*

*Project Area #3: Sunset Road & Fairfax Road*

*Project Area #4: Calle Cita/Carol Avenue/Russell Way*

## USGS STUDY COMPLETED...continued from page 6

FIB concentrations in urban streamflow varied over the course of a day, as a result of small variations in streamflow from increased urban flows.

Streamflow in Mission Creek “abruptly” increased at about 6 a.m. and “abruptly” decreased at 9 a.m., with the possible contributions being “leaking pipes or sewer lines, lawn watering, or other outdoor uses,” as well as nuisance discharge from urban drains and discharge from dewatering wells.

FIB concentrations varied similarly – higher during the day, “especially in the early morning after the onset of urban flow, when contributions from point sources such as urban drains, runoff from lawn watering and other outdoor uses contributed to streamflow.”

A three-fold contribution of FIB occurred in the evening beginning around 5 p.m., about the same time as increase inflows to the wastewater treatment plant. (For some reason the USGS scientists assume the two are not “probably” directly related because increases in WWTP inflows earlier in the day did not result in increased streamflow or increases in FIB concentrations.)

Groundwater discharge to West Beach was a concern because of proximity of the sewer line inland from the beachfront. Low levels of human-specific Bacteroides were detected in water from a well in the area after a south swell drove water into the beach; FIB concentrations in water from another well adjacent to the sewer line beneath West Beach and in other wells to the east of West Beach near the Mouth of Mission Creek were higher than in another well near the high tide line.

There is bi-direction exchange of groundwater with sea water in coastal areas around the world, and in Santa Barbara the scientists found increased levels of water levels in the wells near the beach, as well as increased levels of water infiltrating into the sand that “probably discharged rapidly to the ocean...and the sewer line may have intercepted at least some of this water.”

During dry periods, the sewer line intercepted shallow groundwater from inland areas that would have otherwise discharged at the beachfront. “This seepage may increase after precipitation when water levels near the sewer increase.”

Groundwater discharge was greater during the low tides associated with the spring tide, with net discharge of water from the beach sands to the ocean continuing until the neap tide when the sequence of tidal cycles reversed.

Radon-222(Rn) data measured groundwater discharge to the ocean, and along West Beach Rn activity increased during the daily low tide, and high groundwater discharge occurred during drainage of ocean water from beach sands by wave action during a south swell. FIB concentrations varied “by as much as 2 orders of magnitude during the sampled ebb tides.”...But FIB concentrations initially decreased with the onset of the ebb tide and increased groundwater discharge.

High levels of human-specific Bacteroides were found in the Haley Drain and from near-shore ocean water at West Beach.

Nearshore ocean water at West Beach and extracts from kelp and sand and water from Mission Creek lagoon are similar.

Kelp and beach sand on West Beach contain high concentrations of FIB and are potential sources of fecal bacteria, but more bacteria may be contributed to nearshore ocean water from the beach sands than from kelp that has accumulated near the high-tide line.

Although many of the observations in the USGS study do not lead to hard and fast conclusions, Heal the Ocean is pleased to note that as a result of the USGS work, the city of Santa Barbara has taken proactive measures in re-sleeving the sewer main along the waterfront, and diverting polluted stormdrain flows (such as the Haley Drain) into the El Estero wastewater plant. These proactive measures are the “real stuff” of infrastructure work that HTO believes have a direct and very positive effect on ocean water quality.



## *With Deep Appreciation*

Heal the Ocean sends its sincere thanks to these contributors who have helped assure the success of our campaign for a clean and healthy ocean. This roster records donations made from January 2007 to the present. If your name has been omitted, we sincerely apologize, and ask that you please call (805) 965-7570 so that we can correct our records.

### **\$25,000 and up**

Anonymous Foundation/  
Orange County Community  
Fund  
Brian & Laurence  
Hodges/WWW Foundation

### **\$20,000 - \$24,999**

Caruso BSC Miramar LLC  
Danny & Stephanie Kwock/Salt  
Optics

### **\$10,000 - \$19,999**

Ann Jackson Family Foundation  
Anonymous  
Julia Louis-Dreyfus & Brad Hall/  
Hall Charitable Fund  
Jack & Kim Johnson  
Adam & Kara Rhodes/WWW  
Foundation  
Thomas & Barbara Stevens

### **\$5,000 - \$9,999**

Anonymous  
James & Sarah Argyropolous/  
California Community  
Foundation  
Sasha Globa/  
California Statewide Certified  
Development Co.  
Capital Groups Companies  
Charitable Foundation/  
James & Wendy Drasdo  
matching  
Marcy Carsey  
Tom & Ruth Crawford/  
The John G. Braun Charitable  
Annuity Trust  
Chris Foreit  
Abby Turin & Jon Gans  
Jean & Stanley Harfenist  
Cindy Pitzer & Bill Howard  
Jodie Ireland & Frank Louda/  
LOJO Foundation  
Hughes & Cece Morton/  
Del Mar Properties/H2O  
Water Services  
Patagonia Production Department  
in memory of Ken Harbaugh

Francoise & James Park/Geopark  
Stanley & Cheryl Tomchin  
Daniel Waldman/  
Forester Communication, Inc.  
Henry & Roberta Wilson

### **\$3,000 - \$4,999**

David & Lyn Anderson  
Anonymous  
Cy Pres Fund  
Frank & Bonnie Burgess  
Francesca Cava  
Yvon Chouinard  
Victor Coleman/  
Hudson Capital  
Brian & Rosario (Chari) Coryat/  
Coryat Family Foundation &  
Seacoast Yachts  
Roy E. Crummer Foundation/  
Keith Hudson & Heather  
Hudson Crummer  
Thomas & Cynthia Dabney/  
Christopher Foundation  
Jim & Gunilla DeArkland  
Edward & Hilary Doubleday  
Rick & Cia Fisher  
Robert Gelber  
Steve & Carole Halsted  
Mark Jones  
Kathryn Lodato & Steve Parrott  
Rabobank  
Francesca Cava & John Robinson  
Gordon & Karen Seabury

### **\$2,000 - \$2,999**

James Andelman/Rincon Venture  
Partners  
Anonymous  
Anonymous  
Bank of America  
Larry & Wendy Barels/  
JP Morgan Charitable  
Giving Fund  
Kelly & Jessica Smith/  
Certis Capital Management  
Roger & Sarah Chrisman/  
The Schlinger Chrisman  
Foundation

Elizabeth B. Denison/  
The Denison Family  
Foundation  
Georgia & Ted Funsten  
John Maienza & Gregg  
Wilson/Black Point  
Brett Mathews & Ginger Salazar/  
Mathews Salazar Imagitas  
Foundation  
Robert Davis and Kate  
McMahon/KATE  
Henry Nevins/  
Nevins/Lewbel Property  
Mgmt.  
Patagonia/Great Pacific Ironworks  
Howard & Nan Schow/  
Schow Foundation

### **\$1,000 - \$1,999**

John J. Abraham/ Redspin  
Kent & Brier Allebrand/  
Turpin Family Foundation  
Christina Allison  
Anonymous  
Anonymous  
Anonymous/  
in memory of David &  
Martha Shiffman  
Kathy Odell & Charles Bischoff  
Donald & Noelle Burg  
Capital Group Companies  
Charitable Foundation/  
Ron Morrow matching  
Irwin & Marilyn Carasso/  
For The Giving Foundation  
Zora & Les Charles/  
The Cheeryble Foundation  
Carrie & Brian Chee  
Heather & Kelly Clenet  
Hillary and Tooy Courtemanche  
Mark & Shannon Crane-Flores  
Michael & Mimi deGruy  
Mark & Kathy DiRado  
Paul & Tiffany Doré  
Reece & Suzanne Duca/  
La Centra-Sumerlin  
Foundation  
Mary Lynne & Ken Drake

Roberta & Stan Fishman  
Mr. & Mrs. Greg Fowler/Fowler  
Property Acquisitions  
Ron & Peggy Gouger  
Eileen & Michael Haber  
Diana Miller & Brian  
Hershkavitz  
Jed & Kathy Hirsch  
Jaime Jenks Foundation  
Brian & Patricia Kelly  
Richard & Peggy Lamb  
Naila & Peter Lewis  
Michael & Laura Lodato  
Melissa Matovich/Matovich &  
McLean  
Judy McKee  
Patagonia/employee matching  
program  
Ron & Stacy Pulice  
Ned & Carolyn Quackenbush  
Harry Rabin  
Craig & Laura Shelburne  
Gary & Diana Simpson  
Peter & Stephanie Sperling  
Margaret Staton  
Shawn & Paula Stussy  
Susan Venable & Charles Vinick  
Steve & Chrissy Waterman/  
The Waterman Foundation  
Wells Fargo Foundation  
Tom and Cynthia White  
Fredrick Herzog/Zog Industries

### **\$500 - \$999**

Stephen & Denise Adams  
Peter & Rebecca Adams  
Jules Allen  
Ron Baker  
Philip & Leslie Bernstein  
Hans Brand/B&H Flowers  
Ella & Scott Brittingham  
Steve & Christine Brown  
Dennis & Susan Chiavelli  
Stephen & Jean Crossland  
Christopher & Natalie Cutler/  
in memory of Tim Cutler  
Aleya Dao  
Asha & George DeMarco

Eric Davis/Pacifica David & Theresa Dolotta/ Dolotta Family Charitable Foundation Cox Communications Families United in Nurturing Dreams (FUND) Jack Finnegan Mr. & Mrs. Doug Ford/D.D. Ford Construction Nicola & Cliff Ghersen Mark & Dana Golden Brett & Marissa Grimes Anne & Houston Harte Hillary Hauser Susan & Palmer Jackson, Jr. Daniel & Marilyn Johnson William Kerstetter & Valerie Cavanaugh Stan Laband/FLIR Systems Marcia Leland/ in memory of Gordon T. & Sharon McCloskey Martin & Deborah Lynch Samantha Mackey Jim Main Emmett Malloy Mike & Amy Mayfield Maria McCloskey/McCloskey Ranch Ronald Melville Ronald B. Morrow Susan Muise Lionel & Doris Neff Devon Geiger Nielson/ B&B Foundation Kevin & Nancy O'Connor Cathy Osmialowski/ in memory of Glenn E. Miller Brent & Lizzie Peus Marla Phillips Joel Quaid & Nicole Steward Elizabeth & Jonathan Raith John Rapp Ted Rhodes & Joan Pascal Santa Barbara Art Association Nancy Sheldon Mark & Jo Shields Daryl & John Stegall Rachael & David Stein Travis Turpin/ Turpin Family Charitable Foundation Gebb Turpin/ Turpin Family Charitable Foundation	Sander & Virginia Vanocur Diane Boss and Anton Vonk Fred & Katie Williamson Paul Witt/La Grange Management Jonathan Wygant  <b>\$250 - \$499</b> Anonymous Anonymous Victor K. Atkins, Jr. Sara Blunt Jeanne & Fred Bradley Judith "Sammy" Case Kevin Contreras Aubert & Pamela De Villaine Edward Emerson Cinda Wheeler Erdman Edward & Suzanne Eubanks Dr. Joshua & Karen Feuer Gary & Hermione Gallup Andrew & Konnie Gault, Jr. Debra P. Geiger and Eliot Crowley Erin C. Goligoski Tim Harper Kathlynn & Gay Hendricks PhDs Leonard & Melanie Judson Howard & June Kambach Kasey Kersnowski Stan Laband Marilyn & Frank Magid Trish Reynales Allan Ghitterman & Susan Rose Rotary Club of Montecito Peter & Nini Seaman Stephen Segal Ryan & Angela Siemens Virginia Sloan Randall & Roxanna Solakian Sam & Sandra Tyler Jim & Sharon Westby Gordon Wright Harriette & Albert Zukas  <b>\$100 - \$249</b> Fred & Roxana Anson/ Pasadena Community Foundation MJ & Brad Bakove Ward Bayly John & Mary Blair Norman & Rita Blau Roger Bookwalter Sally Bromfield Gay & Ernie Bryant	John & Gail Campanella/ in memory of Eric Brown John E. Cheim Juneal M. Chenoweth/ in memory of Corinne and Davis Mullin Heidi Clever Martha Clyde Gregory & Della Cook Thomas & Nancy Crawford Michael Crookston/ in memory of Milton Crookston Anne Dahlgren & Neal Graffy Dean Miller & Margaret Dawson Connie & Dennis Doheny Rick & Wendy Drewry Ilana Eden Jettie Edwards Ronald J. & Carole A. Fox / Jewish Community Foundation Randy Freedman & Jennifer Freed John & Elizabeth Gerig Steve & Adele Goggia Andrew & Penelope Gottlieb Eric Wittenbach & Cameron Green/ in memory of Roger W. Green Richard & Lois Gunther Frances Halpern David Harlin Bob Hanson MacDuff Everton & Mary Heebner/ in memory of Clyde Everton Leslie & Gary Hollister Heather & Keith Hudson Hannah-Beth Jackson & George Eskin Ken & Stephanie Jamgochian L Robert Johnson & Lisa Reich Johnson Glenn Jordan Joseph and Mary Kennedy Richard & Suzzanne Knaub John Lyon Peter & Jeppe Madsen Frank & Mary Ann Malinowski Robert & Patricia Mayer Maurie McGuire/ in honor of Eric & Wendy Frances McK Armstrong Holly McKenna M.O. Conoley & K.L. Mead Kent & Nancy Mixon William & Cynthia Mobraaten	Mitchell Morehart Beverly Morgan Kevin Osburn, M.D. William & Carol Palladini George & Marlene Riemer Nanci Robertson Family/ Balboa Building Cathy Rose John & Ruth Rowe/ in honor of Princess Grace, our beautiful cat Scott Rowland/ in memory of Win Swint Bob Saunders/ in memory of "Busted" the cat Jessica Scheeter Christiane Schlumberger Dr. & Mrs. A.H. Schuyler Jerry Shalhoob James & Ingrid Shattuck Shubin & Donaldson Architects, Inc. Leslie Sinclair Von Wiesenberger Tracey St. Johns Mary Jane & Ronald Steele/ in honor of Nancy Steele & Peck and John Euwer Rob & Pru Sternin Bob Stout Rosalind Stubenberg Sigrid Twomey/ in memory of Eric Brown Santi & Gayla Visalli Lawrence & Bettine Wallin Cath & Steve McLaughlin Webb/in honor of Matt Harris Bernice & Louis Weider David & Julie Wexler Jay Winford Kayla Zola  <b>to \$99</b> Heidi Head Albert/Cajé Café Lesley Alexander Lance Anderson Robert & Durga Andre Chandler & Sandy Armstrong Rose Baldwin Eva Barberi Mr. & Mrs. Marvin Bauer Norrine Besser Jude Bijou Cynthia Billings Doris Blethrow Marianne Bloom Travis & Debra Bower
--	---	--	--

Michael S. Brown & Laura Malakoff  
 Sharon Brownnett  
 Eleanor Caldwell  
 Peggy and Bill Callahan  
 Christa Carter  
 Zoe Cass  
 Robin and Reid Cederlof  
 Barbara Chaney  
 Ashlyn Clark/  
 in honor of Sasha Porinsh's 1st birthday  
 Carnzu Clark  
 John & Joy Clark  
 Alex & Anne Cole/  
 in memory of Dr. Jim Carey  
 Gretchen Conroy-Heine  
 Kathleen Corcoran  
 Ann Crawford  
 Kathy & Bill Crevier  
 Douglas Cummings  
 Victoria Dillon  
 Marsha and John Elleston  
 Neil Elliott  
 Hyla Fetler & Tracy Fernandez  
 Celia Foss/  
 in memory of Gates Foss  
 Amy Frease/  
 in memory of Andy Frease  
 Christopher & Kathy Gallo  
 Inge Gatz & Steven Gilbar  
 Gary Gleason  
 Laurie & George Glerum/  
 in memory of Shirley Tanner  
 Joe & Barbara Godley  
 Paul Greene Family  
 Dr. Mark Hansen  
 Andree Harmer/  
 in memory of Don Harmer  
 Russell Ghitterman & Julie Harris  
 Roy & Barbara Harthorn  
 Sarah Hearon  
 Daniel & Geneva Hicken  
 David & Nancy Hill  
 Barbara Hoelscher  
 Frank Lee Hood  
 Edward & Annemarie Horner  
 Will Howard & friends  
 Kelsey Howarth  
 Brian Howlett  
 Roberta Issaris/  
 in memory of Steve Issaris  
 Craig & Eve Johnson  
 R.B. & Connie Kennelly

T.C. & M.M. Kenney  
 Mike Kenny/in honor of Hilly  
 Roy Kuklinsky  
 David & Sharon Landecker  
 Robert & Mary Ann Latham  
 Lori Lenz  
 Steve Levin  
 Patricia Lobenberg  
 Michael & Sylvia Lodato  
 Family Trust  
 Barbara Loebman  
 Christine Loker  
 Lenore Los  
 Gilbert Loustalot, Jr./  
 in memory of Kevin Sears  
 Greg Mahaffey  
 Virginia Mariposa  
 Ria Marsh  
 Richard Martin  
 Kerry Methner  
 Horia & Jane Metiu  
 Gary & Gerda Meyer  
 Cornelius Mietus, OD  
 Dianne Miles  
 Jim Mitchell  
 William & Cynthia Mobraaten  
 John & Jenna Motola  
 John & Tamra Murphy  
 Dennis & Carolyn Naiman  
 Andy & Yvonne Neumann  
 Clare Montana PhD & Warren  
 Newswanger MD  
 in memory of Eunice Early  
 Joanna Bard Newton  
 Michael & Lisa O'Connell  
 John Oesterle  
 Cecilia Ordonez, DDS.  
 Ryan Patronymk/ Cajé Café  
 Rex & Elsa Pay  
 Mr. & Mrs. Hank Pitcher & sons  
 Bill, Pam & Lily Poehler  
 William Prindle  
 Keith & Fran Puccinelli  
 Scott & Malinda Putnam  
 Alan & Marsha Roberson  
 Rita Rubin  
 Arlene Russin  
 Sheldon & Alice Sanov/  
 Sanov Family Trust  
 Fernand & Ingrid Sarrat  
 David & Connie Schott/  
 in memory of Craig Schott  
 Carol Houck Smith  
 Donald P. & Maida L. Smith

Bob & Tomi Sollen  
 Rick & Sheila Starnes  
 Geoffrey Stearns/  
 in memory of Charles Stearns  
 Lynn Stewart  
 Sally Stout  
 Nicole Strasburg  
 Hugh & Kim Sutherland  
 Teri Taylor  
 Michael Towbes/The Towbes  
 Group, Inc.  
 Eloise Uranga  
 John & Pamela Van Atta  
 Amy Varbel/  
 in honor of the birth of Kai  
 Edward Tautrim and his  
 namesake "The Sea"  
 Nancy Vaughan  
 Phillip & Sarah Vedder  
 Nancy Vogel  
 Wassily Von Biskupsky  
 Rick Vopatek  
 Lois Waldref  
 Virginia Wardwell  
 Harold & Louise Wayne  
 Andre & Beverly Weckstrom  
 David Weider  
 Tracey Willfong  
 Dean & Susan Wilson  
 Susan Yates/  
 in memory of Brandon Yates  
 Donald & Carolyn Young  
 Cynthia Ziegler

***In Kind Donations***

***\$5,000 and above***

I.D.O. Events  
 Le Grand Bleu Yacht Charter  
 QAD - Pam & Karl Lopker  
 Michael Haber Photography, Inc.  
 Mr. & Mrs. Charles Munger  
 & the Channel Cat Crew

***\$3,500 - \$4,999***

Robin Behrens  
 Jeremy Harper  
 Mondial Catering  
 Eric Zener  
 Melville Winery

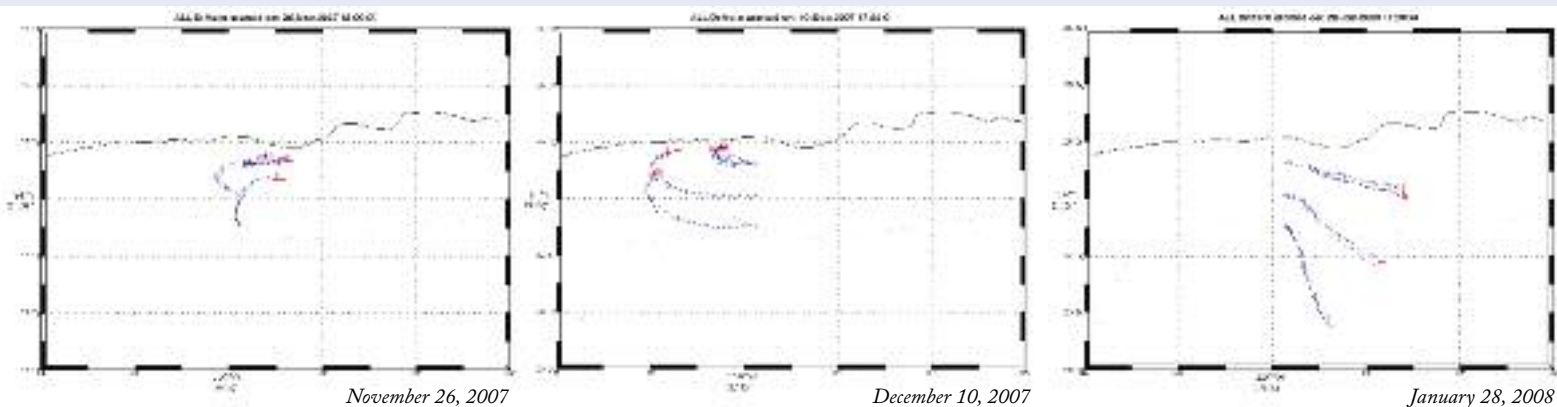
***\$1,000 - \$3,499***

Jules Allen Cashmere  
 AutoSport West  
 Babcock Winery  
 Classic Party Rentals  
 Elements Restaurant  
 Hollister Brewing Company

***to \$999***

Rob & Sam Holcombe/  
 A-Frame Surf Shop  
 Peter Work/Ampelos Cellars  
 Billabong  
 Fred Brander/Brander Winery  
 Fletcher Chouinard Designs  
 Dick & Jenny Doré/Foxen  
 Winery  
 Steve Epstein/Coldwell Banker  
 Fusion Dance Company  
 Graphic Traffic/Michelle Perry  
 Mark Heitman  
 Chris Jensen/  
 Jensens Music of Santa  
 Barbara  
 Thatcher Brown/Jumeirah  
 Essex House  
 Jack & Kim Johnson/  
 Kokua Foundation  
 Matt McAllister  
 Cornelius Mietus, OD  
 Montecito Frame  
 Monterey Bay Aquarium  
 Monterey Plaza Hotel  
 Hughes & Cece Morton  
 John Murphy  
 Peggy Oki/Peggy Oki Designs  
 Peets Coffee  
 Larry Powell  
 Maria Ofria/Sunburst Printers  
 JP Garcia/Santa Barbara  
 Seals Surf School  
 Sex Wax  
 Gary Simpson  
 Joyce Vigneaud/  
 Village Frame & Gallery  
 Rachael and King Williams

## VIEW THE DRIFTERS!



To view live computer drifts from the Montecito Outfall, log on to: <http://www.icess.ucsb.edu/drifter/MSD/index.php>

Click on “Deployments” to view computer-drift maps of various dates (listed on left hand side of screen); click “anim,” to watch the motion of the drift on any of those dates; click “Google map” for detailed shore location relative to the track of the MSD wastewater plume.

On most Mondays, sometimes Tuesdays, you can view the “Real Time” drift throughout the day (log on to the ICES site above), and click on “Real Time.”

Note: The confluence of drifter sites closest to shore is the actual end of the MSD outfall with the + marks at the ends of the various

trails indicating the sites where the drifters were picked up. The two launch sites farther offshore are 500 meters and 1,000 meters farther out from the end of the outfall where the oceanographers are deploying drifters to get a more comprehensive mapping of ocean currents in the area.

## HTO OCEAN WASTEWATER SURVEY

In California, from the Oregon border down to San Diego/Tijuana, there are at least 38 direct-to-ocean wastewater outfalls discharging into the Pacific Ocean. As authorized by the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) permit program was created to control water pollution by regulating point sources, such as wastewater outfalls, that discharge pollutants through pipes into the waters of the U.S.

In California, regional water boards regulate wastewater pollutants through the issuance of waste discharge requirement (WDR) permits. The WDR permits contain limitations on the quantity or concentration of pollutants that a facility can discharge along with requirements for periodic monitoring of the pollutants contained in the wastewater. In an effort to measure the amount of wastewater discharged into the Pacific Ocean off the California coast, Heal the Ocean has been collecting the WDR permits from all wastewater plants, together with self-monitoring data and compliance information. This survey is being conducted by HTO policy analyst Priya Verma and, once complete, this compilation of data will be the first of its kind collected in one place, accessible to others.

The objective of this survey is to compile and calculate the effluent characterization data for each of the wastewater treatment plants, thus enabling a comparison between facilities. The objective will be accomplished in three steps: 1) A data management system is developed; 2) Annual average flows and mass emissions of pollutants from wastewater treatment plants are calculated using a standard methodology; 3) emissions from treatment plants can be compared, to gauge the relative significance of each of these sources. Priya has already collected effluent data from monthly annual discharge self-monitoring reports from the individual wastewater treatment plants. She is currently analyzing the compliance reports from each facility on file with the respective regional water quality control board.

A preliminary analysis of these compliance reports reveals that many municipal facilities on the coast of California are discharging more pollution into our waterways than their CWA permit allows. Using information provided by the U.S. EPA and the regional water boards, Heal the Ocean will be analyzing all of the discharges for permit exceedences and will ascertain the type of pollutants discharged.

## STUDY OF WASTEWATER OUTFALL...continued from page 1

for this trip to the outfall with state officials, UCSB scientists and HTO staff!)

The computer-drift mapping (test run began on November 16, 2007) and the full suite of water collection and sampling ten days later, can be viewed on-line at <http://www.icess.ucsb.edu/drifter/MSD/index.php> (see instructions in inset, on this page of the newsletter). Among the data compiled by the UCSB oceanographers are treated effluent discharge rate and temperature (provided by the Montecito Sanitary District); drifter tracks in 10-minute increments; the water depth at each drifter position; the time rate of change of water depth; total velocity; east and north velocity components; and along-shore and across-shore velocity components.

During the second year of the project the scientists will be compiling the data and producing a report. In tandem with this phase, Priya will be wrapping up HTO's Wastewater Discharge Survey.

We thank the Montecito Sanitary District for its help and cooperation on this project, and we are deeply grateful to the state of California for entrusting us with this most important research! We are convinced that the advanced oceanographic technology and state-of-the-art water quality analytic techniques being used for this study are important steps toward the ultimate goal of sound wastewater management in the State of California.



**Heal the Ocean**

P.O. Box 90106  
Santa Barbara, CA 93190

RETURN SERVICE REQUESTED

NON-PROFIT ORG  
U.S. Postage **PAID**  
Santa Barbara, CA  
Permit No. 233

*Paper made from 100% Recycled Post Consumer Fiber made with  
Windpower and Green Seal Certified.* ♻️



Heather Hudson Crummer, a Rincon regular as well as HTO supporter, takes off on a blissful day.

*Photo by Jon Shafer*