Attachment 16

Stormwater Pollution Reports From the Stormwater Hotline

Stormwater Pollution Reports From the Stormwater Hotline
March 23, 2007 – March 22, 2008

Complaint Number	Received Date	Response Date	Time Spent	Resolution Time	Description	Type of Call	Resolution
5313	3-26-07	3-26 & 4-3	60 min	7 days	Unknown liquid to Estuary	Private	RWQCB took lead
5359	3-29-07	3-29-07	60 min	1 day	Report of RV draining sewage holding tank to beach – Oceano Dns	Private	Site inspection conducted, unable to confirm spill
5480	4-26-07	5-7-07	60 min	8 days	Diatomaceous earth to pool filter to storm drain	City of SLO	Handled by city
5481	4-26-07	4-30-07	60 min	3 days	Diatomaceous earth to pool filter to storm drain	City of SLO	Handled by city
5616	5-25-07	5-25-07	240 min	same day	Leaking sewer pipe in Pismo	Private	City to repair
5714	6-21-07	6-27-07	120 min	5 days	Report of RV's draining sewage holding tanks to beach – Oceano Dns	Private	Site inspections conducted, unable to confirm spills
5776	7-2-07	7-2-07	270 min	same day	Pressure washing underground gas tanks to storm drain	Anonymous	Cleaned up by station
5965	8-1-07	8-8 & 8-13	180 min	9 days	Washing vehicle that hauls hazardous materials	Via Public Works	Spoke w/ r.p. 2x & also referred to Code Enforcement
6085	9-4-07	9-4 & 9-5	270 min	1 day	Farm worker defecating in creek	Public Works	NOV issued
6179	10-1-07	10-1-07	120 min	1 day	Unknown substance dumped in SLO Creek	Private	On site insp. No evidence found
6180	10-1-07	10-1-07	30 min	same day	500 gal sewage spill into storm drain	City of Morro Bay	Cleaned up by City of M.B.
6200	10-15-07	10-15, 17 & 19	150 min	5 days	Less than ½ qt power steering oil into Santa Rosa Creek	Private	Cleaned up
6267	11-20-07	11-21-07	180 min	1 day	4000 gal raw sewage	City of Atas.	Cleaned up – None to waterway
6320	12-6-07	12-6-07	300 min	same day	20 gal diesel to creek	SLO City Fire	Fish & Game cleaned up
6323	12-6-07	12-6-07	none	none	Petroleum product floating in creek	Private	Referred to Fish & Game

Complaint Number	Received Date	Response Date	Time Spent	Resolution Time	Description	Type of Call	Resolution
6331	12-13-07	12-18-07	30 min	4 days	Carpet cleaning waste water into storm drain	Private	Spoke to responsible party
6367	1-15-08	1-16-08	90 min	1 day	Sewage spill at lift station – 5 gal/min	System operator	Cleaned up and repaired
6372	1-16-07	1-16-07	none entered	same day	Motel releasing sewage into bay	City of M.B.	City of M.B. handling cleanup
6382	1-23-08	1-24-08	60 min	1 day	500 gal sewage into storm drain	City of SLO	Area cleaned up and sanitized
6395	1-30-08	none	none	none	500 gal sewage	City of P.R.	Line unplugged, sewage cleaned up
Total = 20							

Attachment 17 Examples of Pet Waste Management Public Education Materials

WHEN YOUR PET GOES ON THE LAWN,

REMEMBER IT DOESN'T JUST

GO ON THE LAWN.

When our pets leave those little surprises, rain washes all that pet waste and bacteria into our storm drains. And then pollutes our waterways. So what to do? Simple. Dispose of it properly (preferably in the toilet). Then that little surprise gets treated like it should.

Pick up your pet's waste. Put pet waste and used kitty litter in the garbage. Do not flush it down the toilet.

Pick It Up

Prevent Pollution !

- Pick up after your animal by sealing its waste in a plastic bag and disposing of it in a trash can.
- Keep your dog on a leash when walking along creeks and wetlands.
- When dogs are allowed on trails, it's not an invitation to have them poop in the weeds. Don't try and hide it! When rangers "weed whip", the equipment scatters dog poop throughout the area.
- Dog waste contributes nearly 20% of bacterial contamination in urban watersheds.
- One gram of dog waste (the weight of a business card) contains 23 million fecal coliform bacteria, almost twice as much as human waste.
- E. coli, salmonella, and giardia, can be spread through the feces of dogs.
- Animal waste causes the release of nutrients and promotes algal growth, which can reduce oxygen levels and affect the health of fish and other aquatic organisms.
- Animal waste contains parasites such as roundworm and hookworm that will remain in the soil for many years. Hookworms may be transmitted from soil or feces to people walking barefoot.
- Never hose animal waste into the storm drain. All storm drains flow directly to local creeks, the bay, or ocean.
- Cleaning up after your pets is an easy way to promote a healthy neighborhood - and watershed.

Help Reduce Your Pet's Eco Paw Print and Stay Healthy!
Try these products.

DISPOZ-A-SCOOP®

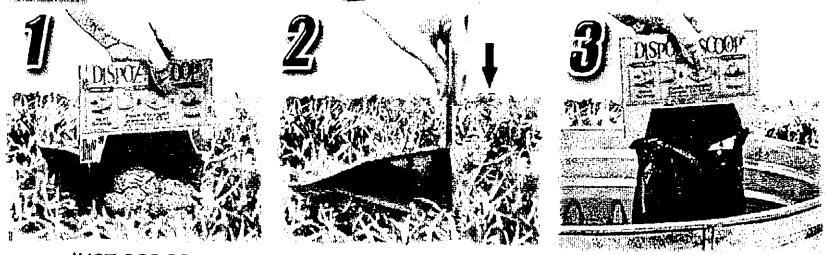
The Ultimate Pooper Scooper!™

Your Hands Have No Business Near Your Dogs Business!

- KEEPS YOUR HANDS AWAY!
- SEALS TO LOCK IN ODOR
- 99% BIODEGRADABLE

CONTAINS 24 SCOOPERS

EASY AS...



JUST SCOOP — PUSH DOWN TO SEAL — TOSS!

FOR DOGS UP TO 100 LBS

POOCH PICK-UP®

BIODEGRADABLE CORNSTARCH PET WASTE CLEAN-UP BAGS

Sacs ramasse-crotte

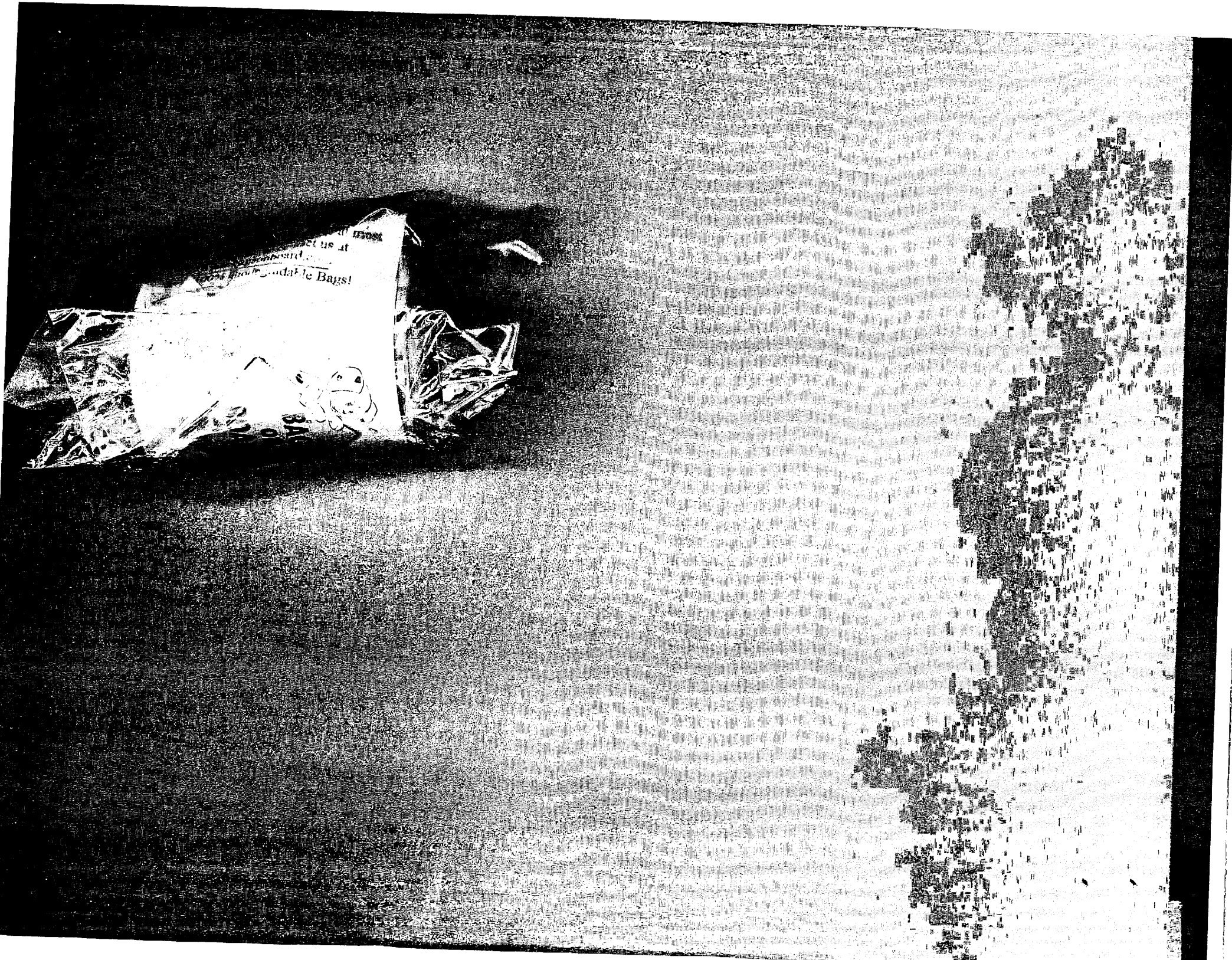
- Contains Cornstarch
- Quick Pick-Up
- Easy Tie Handles
- Economical for Daily Use

100 COUNT VALUE PACK

"PICK UP WHERE YOUR DOG LEFT OFF"

Contains 100 Unscented Bags

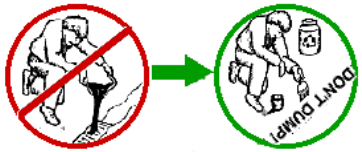
10"w x 10"h (25.5cm x 25.5cm)


most
et us at
dable Bags!

The Original
Palette
Palette

causing bacteria and parasites that can make people and other animals sick. Pick up your pet's poop and dispose of it in the trash.

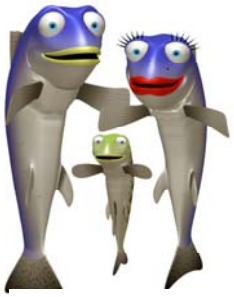
8. Maintain your car to prevent automotive fluid leaks and recycle your used motor oil.



9. **Hold on to your dirt! Vegetate bare spots in your yard so soil stays put and don't overwater.** Try capturing rainwater using rain gardens or rain barrels to conserve water and save $.

10. Wash your car at a car wash that recycles wash water or wash your car on your lawn instead of the driveway. Don't let your wash water run down the street and into a storm drain. Sweep, don't hose down your driveway and sidewalks. Sammy the Steelhead can't swim in your dirt and wash water.

For more information about Stormwater Pollution Prevention, call Sammy at **788-FISH** or check out the County Stormwater Pollution Prevention website at **http://www.slocounty.ca.gov/pw**

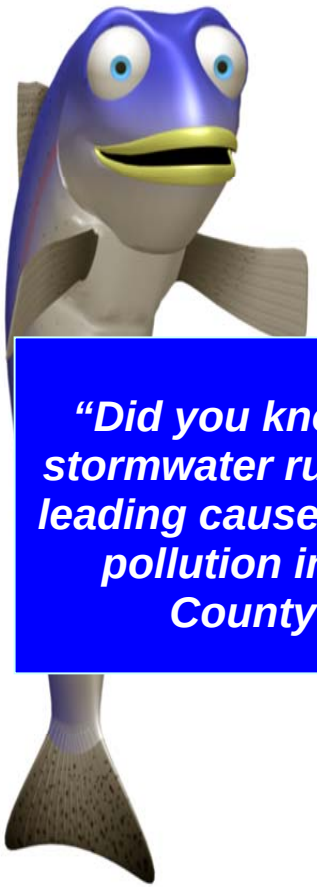


Remember:

"You are the solution to stormwater pollution!"

SLO County Partners for Water Quality

Sammy the Steelhead here



"Did you know that stormwater runoff is a leading cause of water pollution in SLO County?"

Help Prevent Stormwater Pollution and Keep SLO County Beautiful

This brochure contains tips on how you can reduce the amount of pollutants that enter storm drains, creeks, and the ocean. **Sammy says, *"You are the solution to stormwater pollution. Here are 10 things you can do to help."***

1. Never let anything except rain go into storm drains, gutters, ditches, creeks, or the ocean. Stormwater isn't treated so dirt, sediments, oil, pesticides, trash, and other pollutants left on the ground go directly into our waterbodies during storm events and dry weather flows such as over-irrigation.

2. Use less toxic household products and dispose of your household hazardous wastes at a County Household Hazardous Waste (HHW) Facility. Go green and save money too. See http://www.swrcb.ca.gov/nps/docs/fs_lates_use_less_toxic.pdf for recipes to make your own safe substitute cleaning products. Take your Household Hazardous Waste to any of the County's HHW facilities. **It's FREE!** For more information, see http://www.iwma.com or the Recycling section of the SBC Yellow Pages.

3. Eliminate toxic pesticides for a healthy home and garden. Use less toxic alternatives. See the ***Our Water Our World Program*** at http://www.ourwaterourworld.org/ for more information.

4. Don't Trash California! Keep a lid on trash and litter. Reduce, Reuse, Recycle. Just say no to disposable plastic shopping bags and food and beverage containers. Bring your own bags for shopping.

5. Reduce the use of fertilizers and don't fertilize just before it rains. Fertilizers contribute to high nutrient levels in our waterbodies. Try making your own compost or use slow release organic fertilizers instead.

6. If you have a septic system, inspect and maintain it on a regular basis.

7. Pick up after your pet. Would you like to swim in or drink water that is contaminated with pet poop? Pet poop contains disease

Prevent *Toxoplasma gondii* infection

- Cook meat to an internal temperature of 151ºF or until all appearance of pinkness has disappeared.
- Wash meat preparation utensils and cutting boards with hot, soapy water.
- Feed your cat dry or canned cat food, or cook fresh meat thoroughly before feeding it to your cat.
- Rinse vegetables to be consumed raw thoroughly with tap water before eating.
- Avoid drinking water from creeks and streams.
- Wash your hands after gardening and soil contact, taking care to clean dirt from under your nails.
- Wash your hands thoroughly with warm, soapy water after cleaning out the cat litter box.
- Clean out your cat litter box daily—it generally takes about 24 hours for the oocyst to become infective.
- To prevent spread of oocysts in soils near your home, place cat feces collected from the litter box or your yard in plastic bags, and dispose of them in your garbage. DO NOT flush your cat litter down the toilet or deposit it outdoors.

Protect your environment

Keep water going to sewage treatment plants or septic systems *T. gondii*-free. Cat feces in your yard can also reach oceans and rivers in storm runoff.

Current methods of sewage treatment may not destroy all of the oocysts in cat feces. Throwing cat litter down the toilet or outdoors could put *T. gondii* oocysts into our water treatment systems, and ultimately into our rivers and oceans.

- Dispose of all cat feces in plastic bags in your trash can.
- Remove cat feces found in your yard. The oocysts are very hardy, may accumulate in the environment, and are spread by water and insects.

Following these guidelines will help prevent *T. gondii* infections in humans and their pets.

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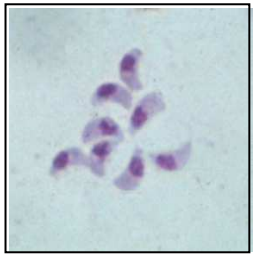
One Shields Ave.
Davis, CA 95616
Web-based version at:
www.seaotterresearch.org
under publications

Toxoplasma gondii

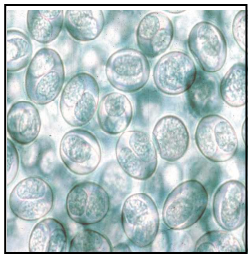
What everyone should know

Toxoplasma gondii

- *Toxoplasma* is a small, single-celled parasite (left) with a complicated life cycle that infects some birds and most mammals, including humans. The egg-like stage of the parasite is called the oocyst (right).



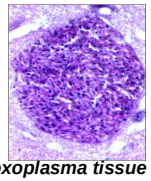
Toxoplasma tachyzoites



oocysts in cat feces

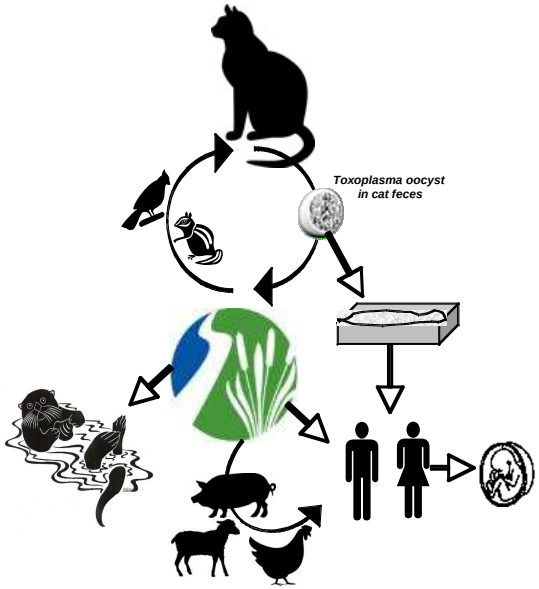
- Only cats and members of the cat family, including mountain lions (center) and bobcats (right), shed *Toxoplasma* oocysts in their feces. After initial infection, cats may shed millions of oocysts in their feces over a 7-14 day period.

- Infective stages of the parasite spread to tissues and cause tissue cysts in places like the lung, spleen, eye and brain of cats and other hosts.



Toxoplasma tissue cyst

How do cats and humans become infected?



Infection may occur by:

- Eating raw or undercooked meat containing the tissue cyst stage of the parasite - cats are often infected by ingesting infected birds and rodents.
- Drinking water contaminated with oocysts.
- Ingesting or inhaling oocysts while gardening or playing in soil contaminated with infected cat feces.
- Ingesting or inhaling oocysts while removing feces from the cat litter box.
- If a pregnant woman is infected for the first time during pregnancy, the parasite may be transmitted to the baby in the womb.

Recent studies suggest shellfish (mussels, oysters) can uptake oocysts from contaminated water. Therefore, shellfish, like other meat, should be cooked.

.

Symptoms of infection

Toxoplasma rarely causes fatal infections in humans or their cats.

Most cat owners will never know their cat has been infected with the parasite, but studies show that 40-80% of cats in the U.S.A. have been exposed to *Toxoplasma* at some time in their lives.

Symptoms of infection in humans can last about 2 weeks and may include:

- Fever
- Headache and muscle aches
- Sore throat and cough
- Flu-like symptoms
- Swollen lymph nodes, especially in the neck

Many people have such mild symptoms, they don't know they were ever infected.

Severe disease may result if a person infected with *Toxoplasma* undergoes immunosuppressive or chemotherapy, or becomes HIV-infected. In these situations, parasites encysted in tissues may become reactivated and cause encephalitis (brain inflammation),

Infection of an unborn child may cause birth defects, blindness and brain damage.

If you think you may have been exposed to *Toxoplasma* and might be infected, consult your doctor.

Attachment 18 Anti Plastic Litter - Marine Plastic Debris Public Education and Outreach Campaign

The County promotes the use of reusable beverage containers at public events instead of plastic bottles.

The County gives away EcoSacs, reusable cotton shopping bags to reduce the use of plastic shopping bags.

Algalita Marine Research Foundation

148 N Marina Drive
Long Beach, Ca 90803
Phone: 562-598-4889
Fax: 562-598-0712
www.algalita.org

Algalita Marine Research Foundation is a 501 (c)(3) nonprofit corporation

PLASTICS

We drink out of them, eat off of them, sit on them and even drive in them. They are durable, lightweight, and can be made into virtually anything. But it is these useful properties of plastics which make them so harmful when they end up in the environment.

Plastics, like diamonds...

ARE FOREVER!

- Only 3.5% of plastics are recycled in any way.
- 63 pounds of plastic packaging goes into landfills in the US per person per year.
- Broken, degraded plastic pieces outweigh surface zooplankton in the Central North pacific by 6 to 1.

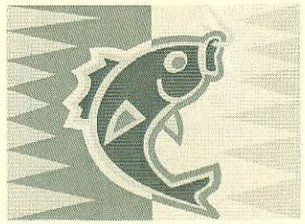
Why is plastic in the ocean a problem?

Because plastic does not biodegrade. When something biodegrades, naturally occurring organisms break down natural materials into their simple chemical components. Paper, when it breaks down, becomes carbon dioxide and water. But plastic, a synthetic material, never biodegrades. Instead, plastic goes through a process called photodegredation, where it is broken down by sunlight into smaller and smaller pieces, all of which are still plastic polymers. Even this degradation process can take a very long time. Estimates of 500 years for a disposable diaper, 400 years for a plastic six-pack ring and 450 years for a plastic bottle have been made. The more plastic we produce, the more we have to live with...forever!

The ocean is especially susceptible to plastic pollution, because:

1. It takes longer for the sun to break apart a piece of plastic in the ocean than a piece of plastic on land. This is because the ocean water cools the plastic piece and prevents heat build-up and limited UV light exposure.
2. Plastics are carried by currents, which can concentrate the plastic in certain areas and prevent it from washing onshore. Circulating currents in the ocean caused by stable weather patterns are called "gyres". When plastic is flushed out of a gyre by storms and washes ashore, or when rain sends plastics down rivers to the sea, much of it is mixed into beach sand and can never be recovered.

Some fish mistake plastic "nurdles" for food.



But plastic pollution doesn't just look bad:

Plastic pollution is bad for the billions of animals that inhabit our ocean waters and for the people who fish, swim and recreate there.

Many marine Birds and animals mistakenly eat pelagic (free floating) plastic.

- Often these animals cannot distinguish plastic from food. Plastic, because of its high molecular weight and the nature of its chemical bonds, can never be digested. It provides no nutrients. Eating plastic can cause animals to feel full and not hungry even though they are not actually consuming food. In birds, it has been shown that ingestion of plastics can prevent migration, reproduction and eventually cause starvation and death. In turtles, plastic has been shown to block intestines and make the animals float so that they cannot dive for food.

A plastic bottle takes 450 years to degrade.

- Toxic chemicals in plastics can make marine birds and animals sick. Over 80 species of seabirds have been found to ingest plastic. Sea bird chicks are especially vulnerable as they receive high levels of pollution from the yolk sac and subsequent doses in their food.
- 90% of Laysan Albatross chick carcasses and regurgitated food boluses contain plastic.
- Marine birds and animals can become entangled in plastic nets and fishing line. An estimate of 100,000 marine mammal deaths per year in the North Pacific has been made.
- Chemicals used to make plastics can escape into the atmosphere during the manufacturing process. Fourteen percent of the toxic airborne chemicals nationally are from "plastics sector" releases. These chemicals can be toxic or carcinogenic, and harm both people and animals.

The Plastic future looks grim

►Virgin plastic pellets are released into the environment by thousands of consumer plastics manufacturers and are the most common contaminant on some beaches.

►Scientists predict a 10 fold increase in ocean plastics by year 2010 bringing the ratio of surface plastic zooplankton in the North Pacific Central Gyre to 60:1 by weight.

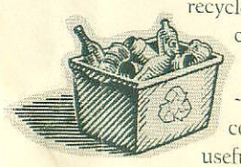
What are the facts about plastic?

The magnitude of our plastic problem is enormous.

- The American people weigh approximately 50 billion pounds, but 100 billion pounds of plastic resin pellets (the raw materials for consumer plastics) are produced in the US annually.

- 63 Pounds of plastic packaging goes to landfills in the US per person per year.

- Only 3.5% of plastic is recyled in any way. Reheating plastic gives it a "heat history" which reduces its flexibility. Reheating temperatures are too low to burn off contaminents, therefore, very few plastics are recycled into the same type of container or product that they were originally.



- Usually, recycled merely means collected not reprocessed into useful products.

Only 3.5% of plastics are recycled in any way.

-The "chasing arrows" symbol only denotes type of plastic. Otherwise it is meaningless. Plastics manufacturers adopted the symbol over the protests of environmentalists and are now being challenged by several cities in court over its implications.

Six Misconceptions about plastic promoted by the spokesmen for this powerful industry, The American plastics Council and The Society of the Plastics Industry.

1. Plastics that go into curbside recyling bins get recycled - FACT - most do not.
2. Curbside collection reduces the amount of plastic landfilled - FACT - it does not.
3. Packaging resins are made from petrolium refinery waste - FACT - nearly all are made from virgin petroleum & natural gas.
4. Plastic recyclers promote its' recyclablity - FACT - plastic resin pellet producer pay for recycling ads to promote the sale of plastics.
5. Using plastic containers conserves energy - FACT - most of the energy costs of plastic are incurred by the manufacturer and virgin glass uses an equal amount of energy, while recycled glass uses far less than either virgin plastic or virgin glass.
6. Our Choice is limited to recycling or wasting - FACT - source reduction is key, and quite simple.

How are plastics getting in the ocean?

Approximately 100 million containers are shipped annually over the world ocean. Shipping across the North Pacific Ocean from Asia to North America is along great circle routes in the West Wind Drift current at the northern edge of the Central Pacific Gyre. Frequent severe storms along this route cause the loss of hundreds of containers overboard each year contributing among other plastics: tens of thousands of shoes and millions of plastic shopping bags made in Asia.

Only about 20% of ocean pollution is due to activities at sea. Activities on land contribute most of the remaining 80%.

Because of their buoyancy and persistence, plastic items contribute disproportionately to the overall impact of marine debris. Most of the debris that either entangles animals or is found in their stomachs is made of plastic.

The majority of the plastic that ends up in the Central Pacific Gyre (an area the size of Africa) has been shown to circulate there for at least twelve years, and debris lost in the Bering Sea or the western portion of the Subarctic Gyre will end up there in 3 to 6 years.

Not all plastic floats on the surface. Approximately half of plastics are negatively buoyant. They therefore do not receive sunlight to facilitate the photodegredation process that breaks then into smaller pieces. This debris accumulates on the bottom of the ocean or "benthos". There the particulates are used by polychaete worms to make their dwelling tubes and some are eaten by flounders and lobsters. The nets, traps and lines that do not photodegrade continue to "ghost fish" (catch fish without a fisherman) and entangle fish and mammals.

1869: John Wesley Hyatt invents celluloid, the first plastic product given a trade name

1909: Bakelite is introduced to the Chemist Club in NY as the "first thermoset plastic". Meaning once set, it was set for life.

1939: Nylon stockings debut at the World's Fair.

1946: Earl S. Tupper produces a 7-ounce polyethylene tumbler, the first of many products available form Tupperware Home Parties, Inc.

1955: The Corvette is the first car to use plastic for body panels.

1957: Monsanto's House of tomorrow opens at Disneyland completely made of plastic. The Hula Hoop creates a surge in demand for polyethylene.

1983: Microwave ovens open up a new market for plastic packaging.

2000: In the US, pre-production plastics reaches 100 billion pounds of virgin resin pellets per year.

The History of Plastics...

What we do know about the North Pacific Ocean

Scientists have been studying the problem of plastic floating pollution in the area since the 1970's. These are some of their findings over the last few decades:

- In a recent study, the North Pacific Central Gyre was found to contain six pounds of plastic for each pound of surface zooplankton.
- The results of studies done in the 1980's indicate that the quantity of plastic has tripled in the last ten years from maximum densities of 320,000 particles per square kilometer to 1 million particles per square kilometer.
- The filter feeding animals in this area, mucous web feeding jellies and salps, were found to be heavily impacted by plastic fragments. The smaller the fragments, the fewer of them were found to be free floating, indicating that filter feeders had caught them.
- Filter feeders are at the lower end of the food chain, and fifty species of fish and many turtles are known to eat them, thus accumulating plastic in their stomachs.
- Plastic materials accumulate and concentrate organic chemicals and environmental pollutants up to one million times their concentration in the surrounding sea water. Many of these chemicals are called "endocrine disruptors", and can be released when the plastics are ingested. The endocrine system produces hormones in humans and animals.

  → Hormones are amazingly potent. Estradiol, The body's key estrogen hormone, operates at a concentration in the part per trillion range. One part per trillion is equivalent to one drop of water in 660 rail tank cars - a train 6 miles long.

  → Effects of hormone disruption on humans run the gamut from enlarged prostates and cancer to early puberty in young girls, even mental retardation and propensity to violence. In fish it can cause males to become female or fail to produce sperm.

For more information regarding this issue please view our video "Synthetic Sea: Plastics in the Open Ocean" available from AMRF for $10 per copy.

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Algalita Marine Research Foundation

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Fax: 562-598-0712
www.algalita.org

PAPER or PLASTIC? NEITHER!

When you use just ONE reusable **cotton** shopping bag:

1. You can use it for 20 or more years! (even with weekly washings)
2. You are saving HUNDREDS of plastic bags each year*
3. You are saving a 15-20 year old tree each year
4. You are helping to protect our oceans from plastics
5. You are helping to protect wildlife and sea-life
6. You are saving non-renewable resources like oil & trees
7. You're *not* using "polypropylene" bags that last just 1 yr.
8. You are using a renewable, recyclable resource
9. You'll be a great "role model" for your children & others
10. It pays for itself when a store gives a 5-10¢credit (and hopefully lowering prices stores pass along to you when they have to provide bags for you)

* An average family uses 60 bags in just four shopping trips

Facts about Consumption of Plastic Bags

- Each year, an estimated 500 billion to 1 trillion plastic bags are consumed worldwide. *That comes out to over one million per minute.* **Billions end up as litter each year**
- According to the EPA, over **380 billion** plastic bags, sacks and wraps are consumed in the United States each year.
- According to The Wall Street Journal, the U.S. goes through 100 billion plastic shopping bags annually. (*Estimated cost to retailers is **$4 billion***)

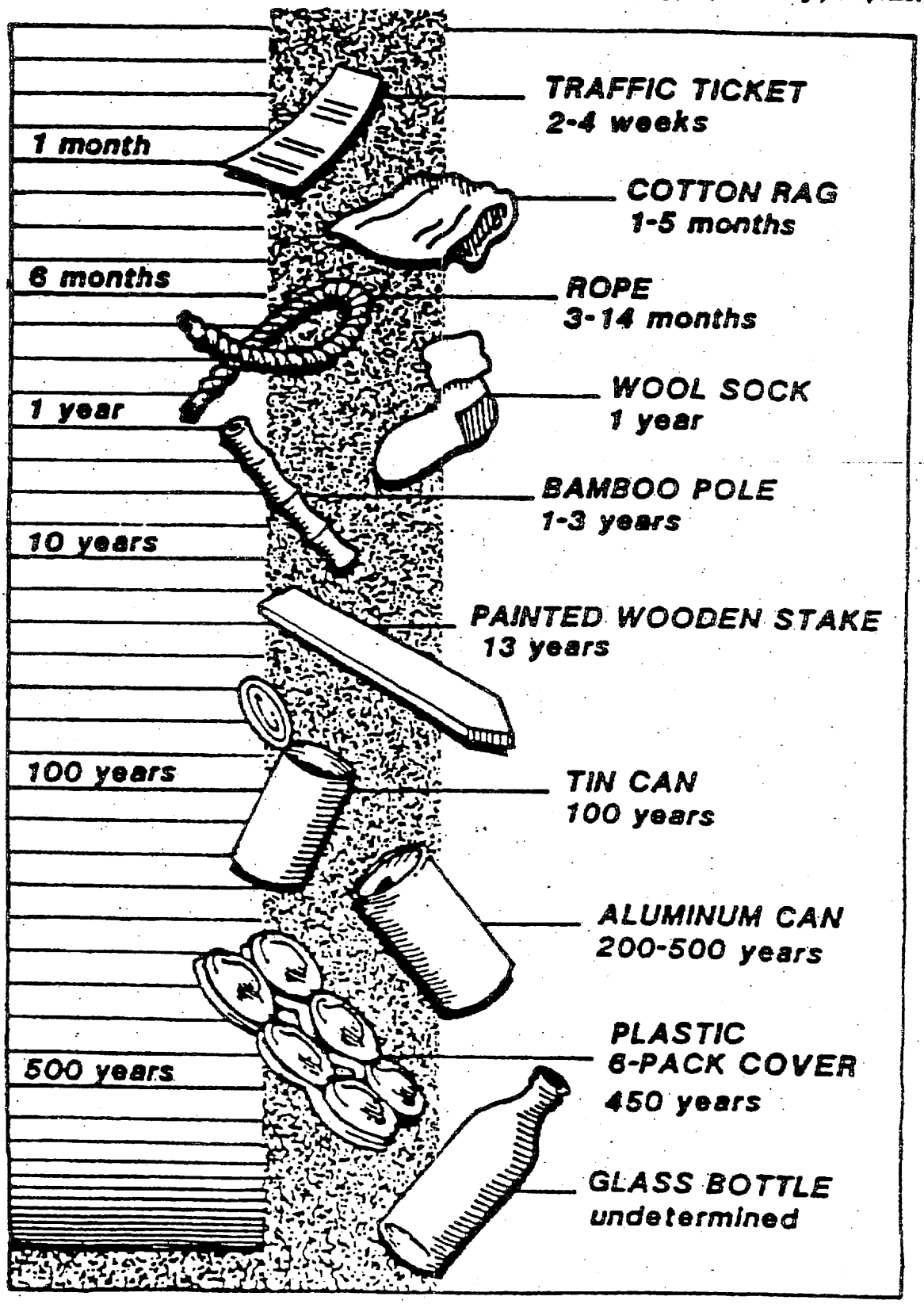
Facts - Environmental Impact

- Hundreds of thousands of sea turtles, whales and other marine mammals die every year from eating discarded plastic bags mistaken for food.
- Plastic bags don't biodegrade, they photodegrade—breaking down into smaller and smaller toxic bits contaminating soil and waterways and entering the food web when animals accidentally ingest.
- According to David Barnes, a marine scientist with the British Antarctic Survey, plastic bags have gone "from being rare in the late 80s and early 90s to being almost everywhere from Spitsbergen 78° North [latitude] to Falklands 51° South [latitude].
- Plastic bags are among the 12 items of debris most often found in coastal cleanups, according to the nonprofit Center for Marine Conservation.

SMALL PLANET

Enduring Litter

Litter at the roadside is ugly. How long it will stay before decaying may be an ugly surprise.



Name 3 ways you can keep plastic out of the ocean and receive a FREE reusable ECOSAC!

THE OCEANS' PLASTIC PLAGUE

EILEEN ECKLUND

A huge mass of debris, mostly plastics, piled up behind a boom in Ballona Creek after a rain in February.

FAR OUT IN THE Pacific Ocean, about halfway between California and Hawaii, air and ocean move together in a huge clockwise spiral known as the North Pacific subtropical gyre. A phenomenon caused by the heating and subsequent cooling of air as it moves from the equator toward the polar regions, the gyre (one of five major subtropical gyres in the world) has been avoided by sailors for centuries because there is very little wind within it. It contains one of the regions known as "horse latitudes," reputedly named by Spanish sailors who were frequently becalmed there and forced to throw their livestock overboard. Gyres are also known for having few fish, particularly top predators, because of their low levels of nutrients—they are sometimes referred to as "ocean deserts."

One thing the North Pacific subtropical gyre has plenty of, though, is plastic. Plastic debris swirls with the current for miles and miles, brought here from around the Pacific Rim. In 1999, researchers from the Long Beach–based Algalita Marine Research Foundation discovered six pounds of plastic for every pound of zooplankton floating in the surface waters of the gyre. This included not only such ubiquitous debris as plastic bottles and bags, but also hundreds of tiny plastic fragments floating in what Algalita founder Charles Moore describes as a "plastic-plankton soup." Plastics don't biodegrade, but in the ocean they do break down from exposure to sunlight and wave action into "microplastic debris"—what one scientist describes as "plastic powder."

Many people understand the damage that larger pieces of plastic trash can do to ocean life, having seen countless pictures of turtles trapped in abandoned fishing nets, fish maimed by six-pack rings, and birds asphyxiated by plastic bags. But in the long run, it may be small bits of plastic that do the most harm. Seabirds often mistake

PLASTIC BY THE NUMBERS

HAVE YOU EVER WONDERED where the plastic container you threw in the recycling bin actually ended up? And do those plastic shopping bags you dutifully haul back to the supermarket bin get recycled, or thrown into a dumpster? Unfortunately, there are no easy answers: it depends on where you live, the current markets for plastics recycling, and other factors. The state of recycling in the United States is confusing, vague, and far from transparent to users. That's one of the reasons, experts say, that recycling rates remain so low: people get frustrated and just give up.

Many people believe that any plastic container with a "chasing arrows" symbol on it is recyclable, but the symbol is meaningless. Only the number inside the arrows, which indicates the type of plastic resin that was used to make the container, will tell you whether it's recyclable or not. Currently only the resins numbered 1 (PET or PETE) and 2 (HDPE) are recycled to any great extent; for various reasons, it's not cost-effective for most communities to collect the other types for recycling. Some municipalities do recycle other numbered plastics, though, so check with yours before tossing that container in the trash—most provide a list of the items they will and won't accept.

Even for PET the U.S. recycling rate is only around 23 percent, even though demand for both PET and HDPE is very high—much greater than the supply. Around the country, communities—and plastics recyclers—would like to see plastic recycling rates, especially for PET and HDPE, grow significantly, and are experimenting with different types of curbside recycling strategies. But because single-use containers make it so easy to consume on the go, a lot of plastic gets tossed away from home—in parks, sports arenas, cars, at the office, on the street—where there's little opportunity to recycle. More recycling bins in public places would help, activists say, and so would financial incentives. The Container Recycling Institute's Pat Franklin is among those who would like to see bottle bills—which require a minimum refundable deposit on beverage containers—adopted nationwide.

There are legitimate environmental concerns about recycling plastic. It isn't truly recyclable in the way that nonsynthetic materials are. Plastic bottles can't be recycled over and over again into new plastic bottles (although some plastic bottles contain a percentage of recycled plastic). Instead, most are converted into other products, such as carpets and other fibers, or plastic "lumber," most of which can't be recycled again. Some of the plastic collected for recycling in developed countries ends up being shipped all the way to developing nations that have strong markets for recycled plastics but less environmental regulation and enforcement. And there's some evidence that when people think products are being recycled, they use more of them—after all, why not buy that single-serving plastic water bottle if it can be recycled? It's better, environmentalists say, to reduce the amount of plastic we buy—by using cloth bags for groceries, for example, and carrying reusable coffee cups and water bottles—and reuse plastic items as much as possible before discarding them.

But while reducing and reusing may be the most effective ways to cut the amount of waste plastic, it's nearly impossible to avoid using plastic altogether, and recycling is a better option than throwing it out. Biodegradable plastics—even edible substitutes for plastics—are being introduced on a small scale. Some day, recycling technologies that "close the materials loop" (see p. 30) may solve the problem of the plastic plague, but for now, here are a few things you can do to reduce the amount of plastic waste you generate:

1. Buy reusable cloth bags and take them with you every time you shop. To help yourself remember to bring them along, leave them in the car or by the door. You can also buy lightweight cloth bags for individual produce items, or reuse thicker plastic ones.
2. Buy in bulk, or in the largest size you can, and avoid single-serving products.
3. Carry a metal or durable plastic water bottle with you, and a reusable coffee cup.
4. Buy biodegradable products, such as cornstarch packing peanuts, as much as possible.
5. Check to see if a product is recyclable before throwing it away. Even if your curbside recycling program doesn't take it, you may be able to find a local recycler that will, through Earth 911 (see box p. 31) or another organization.

—*EE*

Looking downstream across plastic debris caught behind the boom in Ballona Creek

BILL DONALD

OCEAN CONSERVANCY

Top: Volunteers cleaned up a Maryland wetland on International Coastal Cleanup Day, 2004.

Bottom: Marine pollution and trash pile up on T'au Island, American Samoa, where trash disposal and recycling are inadequate.

smaller plastic bits for food and eat them, or feed them to their chicks. The plastic takes up space in the chicks' stomachs and can cause them to starve to death. A 1994–95 study of 251 dead or injured albatross chicks on Midway Atoll, near the northwestern end of the Hawaiian archipelago, found only six that did not contain plastic.

Microplastic debris is small enough to be ingested by a wide variety of marine life, including barnacles, lugworms, and zooplankton, a key link in the food chain. Japanese researchers recently found that these tiny fragments floating through the ocean act as sponges for toxic chemicals that are not water-soluble, such as PCBs, DDE, and PAHs—known or suspected carcinogens and endocrine disruptors (substances that may have adverse affects on the developmental and reproductive systems). Very little research has been done on what effects, if any, microplastic debris has on marine organisms, but its potential for introducing endocrine disruptors and other toxins into the food chain—which ultimately includes humans—is disturbing.

More and More and More

EACH YEAR, MORE THAN 50 million tons of plastic resin (the raw material used to make plastic products) are produced in North America alone; a record high of 57.5 million tons was produced in 2004, according to the American Plastics Council. The U.S. Environmental Protection Agency reports that in 2003, of the 26.7 million tons of plastic that made it into the municipal waste stream, less than four percent (1.4 million tons) was recycled.

The amount is growing all the time, in part because of a phenomenal increase in plastic packaging, particularly disposable single-use containers. "People are consuming more of everything, they're consuming more stuff on the go, and for many of those products, plastic has become the packaging of choice because it's lightweight and durable," says Pat Franklin, executive director of the Container Recycling Institute. For example, about 3.3 billion small (less than two liters) units of non-sparkling water—a product that essentially didn't exist before the 1990s—were sold in the United States in 1997 (the first year for which figures are available), mostly in plastic bottles. By 2003, more than six times that much was sold and now, Franklin estimates, around 25 billion plastic bottles of water are purchased in this country in a year. That's an eight-fold increase in less than ten years.

Online purchases are another growing source of plastic waste. Businesses that ship products directly to customers, rather than in bulk to stores, use more protective material and filler, according to Fritz Yambrach, professor of packaging science at the Rochester Institute of Technology.

An unknown, but significant, amount of the plastic produced never makes it to the

RYAN BINNS, MARINE PHOTOBANK

landfill or the recycling plant, landing as trash along roadways, in parks, on beaches, and in the ocean. A sizeable amount never even makes it into products: Algalita's Moore estimates that fully ten percent of the microplastic loose in the environment comes from the tiny pellets used to make plastic goods. Commonly called "nurdles" (legend has it they were named years ago by southern California lifeguards), these pellets are the most common contaminant found on Orange County beaches, Moore says. In three days of testing in 2005, Algalita collected 236 million pellets from the Los Angeles and San Gabriel rivers. Algalita has been working with some plastics manufacturers in southern California to identify where they're losing pellets and what they can do to stop the loss.

Nesting amid trash on Midway Atoll, this confused albatross thinks a plastic ball is an egg.

STEVEN SIEGEL, MARINE PHOTOBANK

Sixty to 80 percent of all marine debris—any manmade, solid material that ends up in coastal waters, estuaries, and oceans—worldwide is plastic. Some comes from spills at sea: containers falling off cargo ships, waste thrown overboard from passenger and commercial ships, and gear lost from fishing boats. Plastic pellets can come from containers lost at sea, but many are lost during transport on land or at industrial facilities and make their way into streams and waterways. According to the EPA, 80 percent of marine debris is from land-based sources, including landfills along the coast, urban runoff and stormwater overflows, and beach litter.

Moore, a third-generation Long Beach resident, has been sailing the Pacific since childhood, when his father, an industrial chemist and avid sailor, took him and his siblings on voyages to remote locations. Moore did volunteer water monitoring before founding the Algalita Marine Research Foundation in 1994 to expand his efforts into ocean monitoring, research, and restoration. Over the years he had seen plastic debris in the ocean proliferate, but nothing prepared him for what he and the crew of his research vessel, the *Alguita*, encountered in 1997 on their way back from a Los Angeles–to-Hawaii sail race, when they decided to cross the North Pacific subtropical gyre. The plastic garbage patch they found there went on without a break for the week it took them to cross. "I knew I had to go back and quantify it," he says.

In 1999, his surveys in the gyre led him to the conclusion that plastic outweighed the zooplankton by six to one in its surface waters. After he presented the results of his study at a meeting of the American Cetacean Society in 2000, independent filmmaker Bill Macdonald, who was in the audience, approached him with a proposal to make a documentary on the subject. *Our Synthetic Sea* drew worldwide attention to the problem. "The study was explosive," Moore says, "and the video brought it to the attention of John Q. Public."

You Can't Vacuum the Ocean

THERE ARE PILOT PROGRAMS that have successfully removed large quantities of derelict fishing gear—a particular threat to marine life and habitats—from the ocean (see *Coast & Ocean*, Autumn 2005). But cleaning out all the plastic simply isn't

possible, especially when it comes to microplastics. Moore points out that plastic is thoroughly mixed into the water column, not just floating on the surface, so even if it were physically possible to vacuum 1.3 billion cubic kilometers of water, you'd end up vacuuming out all the plankton as well.

Hauling trash out as it accumulates on beaches is one approach. In 2004, people from 88 countries around the world took part in International Coastal Cleanup Day. The first coastal cleanup day in this country took place in Oregon in 1984. In California, the Coastal Commission has organized an annual coastal cleanup day every year since 1985. It is now the largest volunteer event in the state and reaches up into the watersheds, capturing trash before it can reach the coast. In 2005, 48,250 volunteers picked up a total of 971,047 pounds of debris along 2,029 linear miles of shoreline. "We know we're getting a lot of stuff from Asia and Hawaii—areas around the Pacific Rim," says Eben Schwartz, outreach manager for the Coastal Commission. "But probably about 80 percent of it comes from inland areas."

"What beach cleanups do very well is raise awareness," Moore says. "But you can clean out four days later and the tide will have deposited more trash. What we have now is a geometric increase in the amount of plastic; it's just not realistic to think you can clean it all up. Do no more harm: stop putting it in."

That's the approach southern California is trying to get a handle on. As early as the 1980s, Los Angeles County, spurred by the amount of trash washing up on area beaches, installed booms on the Los Angeles River and Ballona Creek to capture some of the debris before it reaches the coast. More recently, following a lawsuit by environmental groups, county and city governments within Los Angeles County were ordered by the Los Angeles Regional Water Quality Control Board to completely eliminate all trash runoff into the watershed by the end of 2012.

That requirement has forced local governments in the county to reassess municipal waste and water policies and practices (for example, how much trash escapes during city trash collection?) and spurred installation of improved storm drain screens and catch basins, as well as development of better screen technologies and designs. It has also led to new permitting systems for municipal and manufacturer

WHAT PLASTIC IS AND HOW IT'S MADE

PLASTICS ARE AMONG the most widely used manufacturing materials on the planet, and we all use them in so many ways every day that we rarely stop to think about what they are, how they're made, and where they come from. They tend to exist just below our normal threshold of awareness, except when supermarket cashiers ask us to decide between "paper or plastic." This may account for their rarely being included in discussions about gasoline prices or the coming crisis of "peak oil," the prediction that productivity of world oil reserves soon will be depleted at a rate faster than can be balanced by discovery of new reserves. Not many people realize that nearly all the plastic products we use come from petroleum.

Crude oil—petroleum as it comes from the earth—is a complex blend of chemicals made up mostly of hydrocarbons, organic molecules containing hydrogen and carbon that occur in a variety of forms: short or long chains, chains with branches, or rings of atoms. To be of use as fuel or other materials, the many kinds of hydrocarbons must be separated; this is primarily done by distillation, a process reliant on the fact that the various hydrocarbons all have their own boiling points. Petroleum is heated to a gaseous state and released into a distillation tower equipped with trays at calculated intervals. As the vapors rise and cool, each type of hydrocarbon, as it reaches the temperature at which it again condenses into a liquid, accumulates in the tray at that level. These petroleum "fractions"—gasoline, kerosene, naphtha, various oils, tars, waxes, and other chemicals—are then subjected to other refining methods to remove impurities.

In the 1920s it was discovered that hydrocarbon molecules are polymers, that is, large molecules made up of combinations of smaller molecules (monomers). Understanding the structures of polymers enabled chemists to find ways to manipulate and combine monomers into new configurations, which led to the birth of the synthetic plastics industry.

Fractions of petroleum such as propane and ethane can be "cracked," by heating or mixing with chemical catalysts, into smaller molecules like propylene and ethylene, then recombined into new polymers such as polyethylene and polypropylene—long molecules that can be tailored to have particular desired properties: in short, plastics.

The word "plastic" is derived from the Greek *plastikos*, meaning "formed" or "capable of being shaped into various forms." The ease with which synthetic plastics can be extruded or molded, shaped and reshaped into an endless variety of forms, is what makes them so useful for manufacturing.

The two main types of synthetic plastics are thermosets and thermoplastics. The former are hardened by heat and cannot usually be reshaped or recycled; the latter are softened by heat, so they can be reshaped or recycled again and again. Thermosets are especially suited for making things like auto parts, rigid cases and housings, protective shields, electrical plugs and switches, shoe heels, and toilet seats. Thermoplastics are used for a vast range of products, from disposable coffee cups to medical implants to sealed food packaging to imitation leather to squeeze bottles to garbage bags to skateboard wheels.

A significant, though little noted, effect of the petroleum shortages caused by last fall's Gulf Coast hurricanes was the rise in the cost of plastics, especially of packaging materials. A wide range of businesses have had to reconsider the costs of what for years had been the cheapest packaging option. What will we do if petroleum shortages cause plastic prices to spiral out of control?

—*HMH*

OCEAN CONSERVANCY

A boy drags plastic debris off a beach in Thailand for International Coastal Cleanup Day, 2004.

facilities, greater enforcement efforts against illegal discharges, and the targeting of trash "hot spots." Under the water board's plan, government agencies are also required to undertake public education and outreach to cut down on litter and encourage people to reduce, reuse, and recycle.

In Orange County, the Earth Resource Foundation in 2004 launched a "Campaign Against the Plastic Plague," with the goal of eliminating single-use throwaway plastic containers, particularly plastic bags. Students in 16 high schools have formed Earth Resource youth clubs to tackle environmental projects that include cleaning up their campus. The Newport Harbor High club got its school to eliminate polystyrene foam (often referred to as styrofoam) from the food service; now students are working to convince nearby cities to ban polystyrene. "We're teaching environmental responsibility where you live, work, and play," says Lindsey Payne, the group's campaign coordinator.

"The public is way, way out in front of the government on this one," Moore says. "If the people lead, the leaders will follow, but we've got a lot of leading to do."

On another front in the growing citizens' war against plastic is Californians Against Waste, an environmental research and advocacy group that spearheaded the passage of California's bottle bill, which imposed a deposit fee on beverage containers and has reclaimed nearly 200 billion containers since its passage in 1986. "We're encouraging manufacturers to play a greater role to reduce waste from plastic bags and containers," says executive director Mark Murray. The group is asking manufacturers and retailers to commit to cutting plastic waste in half by reducing the amount of plastic produced and by recycling.

Monetary incentives are also being tried, and some have proven effective in reducing use and encouraging recycling. Ireland levied a 15-cent tax on plastic bags in 2002 and within the first five months saw their use cut by 90 percent as people switched to reusable bags. In California, a statewide fee on plastic bags and disposable cups was proposed in 2003, but the bill, by Assemblyman Paul Koretz, never made it out of committee. In San Francisco, the Department of the Environment in 2002 proposed a 17-cent-per-bag fee, to be paid by shoppers, but when that met with strong objections, the city signed an agreement with sever large supermarket chains to reduce the number of all grocery bags distributed by 10 million a year by the end of 2006. If this target isn't reached, the city will reconsider the bag fee.

Some governments have banned plastic bags or expanded polystyrene containers altogether. The Cities of Malibu and San Juan Capistrano, and also Ventura County, have all passed some form of polystyrene ban to help them comply with the zero-trash mandate for their watersheds. San Juan Capistrano also started a curbside plastic bag recycling program and has now collected more than one million bags. Plastic bags of certain types have been banned in South Africa, Rwanda, and in parts of India and Bangladesh, where they were clogging gutters and drains and contributing to severe flooding.

Moore believes that industry ultimately holds the key to solving the plastics problem, by designing products that can be recycled back into the same products over and over again—so-called "closed-loop" recycling. "I deal directly with industry, and I tell them that they have to design f recycling, to create new pathways back into production" for the materials they produce.

The European Union, Japan, Korea, and Canada have adopted or are in the process of adopting laws that require manufacturers to take back or pay for the disposal of some types of products and product packaging. In Maine, a new law took effect in January that requires manufacturers to pay for recycling old TVs and computer monitors, and a number of other states are considering similar legislation.

In California, a 2003 law requires consumers to pay a recycling fee when they purchase a TV or monitor. This, however, puts the burden on consumers and retailers, rather than where it belongs, says Barbara Kyle of the Computer Takeback Campaign. "We want producers on the hook for costs, to give them incentives to design their products better and make them less toxic," she says.

Looking at the Big Picture

AS HAS HAPPENED MANY times before the cumulative impact of citizens and loc... governments seems to be building toward

STEVEN SIEGEL, MARINE PHOTOBANK

Midway Atoll is one of the largest albatross rookeries in the world. Many of the birds now must nest in piles of plastic debris.

more comprehensive approaches. In September 2005, the Coastal Commission, the Algalita Foundation, and the State Water Resources Control Board held a conference that brought together representatives from government agencies, academic and research institutions, environmental protection groups, and the plastics industry to share information and discuss the range of possible solutions to the plastics plague.

An action plan is being developed, to be presented by the Coastal Commission at a meeting of the Ocean Protection Council in April. (After its presentation, the plan will be online at www.plasticdebris.org.) "Our goal is to keep the action plan and the dialogue about marine debris moving forward toward implementation," says Miriam Gordon, the Commission's plastic debris project coordinator. "The Commission is in the process of determining the next steps."

For Moore, the next step is to head back out on the ocean: he's planning another trip around the entire North Pacific gyre in 2007–2008. He and his crew will spend 11 months tracking, collecting, and tagging trash so they can follow its progress as it makes its way around the gyre (in general, he says, it takes a piece of trash about six years to make the entire trip around its edge). He's also planning studies to find out what pollutants are in the plastics, as well as to see if very tiny bits of plastic are being consumed by marine organisms. "Pieces smaller than one millimeter just disappear from the system, and they shouldn't," he says. "I want to know where they go." ■

SOME ORGANIZATIONS AND RESOURCES

Algalita Marine Research Foundation: (562) 598-4889, www.algalita.org

Californians Against Waste: (916) 443-5422, www.cawrecycles.org

California Coastal Commission Coastal Cleanup Day and Adopt-A-Beach program: (800) COAST-4U, www.coastal.ca.gov/publiced/ccd/ccd.html. This year's event is on September 17.

Container Recycling Institute: (202) 263-0999, www.container-recycling.org

Earth Resource Foundation: (949) 645-5163, www.earthresource.org

Earth 911: 1-800-CLEANUP, earth911.org. Nationwide information network where you can find the nearest recycling/reuse facilities for a wide range of household and construction products, check current water quality at area beaches, and get information about local events and programs.

National Green Pages: www.coopamerica.org/pubs/greenpages. Shop for environmentally friendly products at this website.

Plastic Debris Rivers to Sea Project: www.plasticdebris.org. Information about California's action plan to reduce marine debris will be available here.

StopWaste.org: A website created by Alameda County with information on where, what, and how to recycle, plus information on buying environmentally friendly products.

Attachment 19 – Refer to Attachment 14 & 15 for this information

Attachment 20 Focus Group and Public Workshop Feedback

Excerpts From the Sammy the Steelhead Focus Group Feedback Report

Two separate focus group sessions were conducted on May 22, 2007 using a total of nineteen City of San Luis Obispo residents. Nine respondents were interviewed in Group 1 and 10 in Group 2.

***Methodology**:* All participants were prescreened over the telephone to ensure that they were:

- residents of San Luis Obispo city for at least five years,
- between the ages of 25 and 45,
- regular voters in local elections and thus committed to the community,
- not employees of the City of San Luis Obispo.

Major findings:

- Water conservation is important to people. While it does not rank at the top of people's lists of environmental concerns, it ranks very near the top and is on people's minds. In fact, people described efforts in their homes which indicated that some are quite proactive about conserving water and are aggressively searching for new ideas about how to save water.

- Sammy is clearly gaining recognition as the spokesfish for water conservation and stormwater pollution prevention. **More than half** of the participants had seen the conservation TV spot and nearly two-thirds were familiar with the print ads. In Group 1, Sammy was mentioned spontaneously when respondents were asked if they were familiar with any water conservation campaigns. Group 2 respondents were less aware of Sammy than were Group 1 respondents.

- At this point, ratings of Sammy and his family were only **mediocre**. Ratings were almost exactly at the midpoint of the 9-point scale—indicating more **indifference** than either strong like or dislike. This may change over time as people become more familiar with Sammy and his family.

- The Sammy campaign was in fact criticized on a number of points:

    - Some people feel that the Sammy messages are too juvenile—that the cartoon icon is more appealing to children than to adults. Some feel this approach should be supplemented with messages geared more to adults.

    - Others feel the graphics are amateurish and low tech. One woman made the point that 'the figures look plastic and stiff rather than fluid.' Another woman observed that the TV spot's low tech quality made it appear to be 'a cheap ad created locally.' And another said that Sammy is more like Disney's original Snow White while the rest of the world is use to Shrek-style animation.

- Some are offended by Sammy's voice.
- Several found that the characters on the TV spots spoke too quickly making them difficult to understand.

- Despite these criticisms, people believe that Sammy's message is important. Most expressed opinions that the City should continue using Sammy as a spokesperson.

- Parents with young children seem to be most receptive to Sammy. Respondents without children were the most critical of Sammy.

- The addition of Samantha and Sammy, Jr. to the campaign makes sense to people. Respondents had little to say about Samantha (other than to note her long eyelashes). Several commented on Sammy, Jr's in-your-face posture. While a few disliked his antics, most found them believable.

- People are beginning to look to the Sammy campaign for new ideas on how they can reduce water usage and waste and how to protect our current water supplies. It is very important that these ideas be changed and updated periodically so that people continue to think of the Sammy spots and print ads/ postcards as sources of new information about water conservation.

- In addition, several people suggested that the Sammy icon should be included on other pieces.

- People want more information about how to conserve and about reasons why conservation is necessary. People are generally more interested in conserving water (and saving money) than they are in keeping the storm drains clean.

- Respondents talked in depth about the importance of having a web site devoted to information about water conservation. Group 1 respondents felt that a web site should be the cornerstone of the campaign, that every Sammy TV spot and print ad/postcard should refer viewers to the web site rather than to a phone number. Several people commented that they were much more likely to go to a web site than to make a phone call to get more information.

- People found the last few seconds of the TV spots confusing and cluttered. Respondents were not sure what exactly was being conveyed at the end of the spot and why two phone numbers were shown. They found the reference to the Atascadero Water Department (or something similar) distracting and confusing.

- The TV spot highlighting storm drain clean up (shown second in each group) was believed to contain more information and was therefore considered more helpful and informative.

- The swirling drain was a very effective image according to several respondents.

- People had mixed reactions to the Sammy mascot costume. While people overall liked the idea that Sammy would appear at local events and Farmer's Market, they suggested that the costume incorporate some kind of emblem that would more clearly identify Sammy as a spokesperson for water conservation. Several did not recognize the costume as a fish.

- Other ideas:

    - Create other pass along such as refrigerator magnet, sticker that could be placed in shower or on bathroom mirror over sink,
    - Create a Sammy bath toy or bathtub faucet cover,
    - Post image on billboard and shopping carts—try to use less paper to get ideas across.

- The Tribune is by far the most used source of news. Eighty-three percent of respondents (16) frequently or sometimes read The Tribune. The SLO Journal is also popular. KSBY Evening and Early News and FXNC-Fox are watched on a regular basis by over half of the respondents. KZOZ-FM is the most listened to radio station among those listed on the questionnaire. When asked where they get the majority of their news on a daily basis, the largest group of respondents said newspapers. TV ranked second and the Internet, third.

Recommendations:

- By all means, continue using Sammy and his family. The characters are clearly gaining recognition as messengers of important information. Parents of young children most strongly support the use of Sammy.

- Over time, as the characters further evolve, you might consider softening the characters' appearance. Perhaps more high tech animation can be incorporated in the TV spots.

- Develop a web page and make it the cornerstone of the campaign. Refer to it often in other materials, update it constantly.

- Develop a more adult component and incorporate it on the web page.

- Do more to link Sammy to the City of San Luis Obispo and to people's water bills. Incorporating the Sammy icon on the bill will help remind people of who Sammy is and what his message is about.

- Clean up end of TV spots, make them less cluttered.

- Continue developing other add-ons—refrigerator magnet, etc.

- Utilize the City's newsletter to a greater extent. Incorporate color if financially feasible and include a Calendar of Environmental Events.

- Update conservation ideas constantly in all materials.

REACTIONS TO SAMMY CAMPAIGN

Q: Before this evening, had you seen this TV spot or a similar one?
Q: Had you seen any of the other materials presented to you?

	Group 1	Group 2	Total Seen
TV spot (conservation)	78%	40%	**58%**
Print ads	89%	40%	**63%**
Postcards	56%	20%	**37%**
Newsletters	89%	80%	**84%**
Sammy, mascot	44%	40%	**42%**

****

MEDIA USAGE

Q: How often do you read, watch or listen to….?

	Frequently/ Sometimes
<u>Local magazines</u>	
The Tribune	**83%**
SLO Journal	64%
SLO City News	47%
<u>TV Stations, Channels</u>	
KSBY Evening News	**58%**
KSBY Early News	53%
FXNC-FOX	53%
History Channel	48%
KSBY Late News	41%
MSNBC	30%
Food Network	24%
OLN	18%
ESPN	12%
TNT	12%

Radio Stations

KZOZ-FM	**47%**
KSTT-FM	30%
KKJB-FM	6%

MEDIA USAGE (continued)

Q: On a daily basis, what are your main sources of news?

Newspapers	**74%**
TV	**68%**

May 22, 2008 Public Workshop Results

Seven very dedicated County residents attended a two hour public workshop to review and assess the effectiveness of the first year of SWMP implementation. See the Public Workshop presentation attached.

The seven participants resided in the following towns/cities:

Los Osos – 2 – no children living in household
Cayucos - 1 - no children living in household
Oceano – 2 – no children living in household
City of SLO – no children living in household
City of Pismo Beach – no children living in household

The participants reviewed the Sammy the Steelhead TV and Radio Stormwater Pollution Prevention TV and Radio PSAs, the County Stormwater Management Program public education and outreach print materials, classroom education program, public events, volunteer programs, IDDE program, and an overview of the construction, post-construction, and municipal operations programs.

Here are some of the recommendations from the participants.

TV PSAs:

Keep Sammy PSAs (Sammy PSAs ranked about 7 out of 9) – 5 of the 7 participants recognized Sammy - recommended more air time and to add Rubber Duckies PSA for more adult appeal. Several participants do not watch TV at all.

Radio PSAs:

The average ranking for the radio PSAs was about 6. Participants did not like Sammy's voice. Some described his voice as too baritone, too strong, and too gruff. Some

suggestions were to make his voice more eco friendly sounding by using Sammy Jr's voice or by changing Sammy's voice to a surfer sounding voice.

Print Materials:

Sammy trifold – good color but needs something more engaging on front to compel potential readers to open it – font too dense – add point to disconnect downspouts to rain garden – try using bullets to break up density
Hotline – short & sweet, too vague on what to call about
OWOW – overall good –except newsletter excerpt – pocket guide too small
HHW – good - perhaps add a magnet – reduce to a smaller size

Overall recommendations – use less paper - use recycled paper and soy inks – reduce to smaller sizes such as pocket or refrigerator magnet sizes so these items might get saved rather than trashed

Website:

Car washing tips – too buried on website, too hard to find – try adding these to TV PSA – no good link to resource – skeptical that people would follow these tips – tips too lengthy, try to shorten them, stress the pollutant problem associated with car washing more

Not familiar with County's website – use government channels to advertise website
Should be linked to environmental group websites to bring more traffic to the site
Need easier ways for people to find it

Lots of information – fairly easy to navigate
A bit too cumbersome…too many layers
Easy Sammy site for kids

Classroom Ed and Kids Materials:

Classroom Ed presentations – Average rank 8.5 out of 9. Participants said that these were good at any age but need constant reinforcement as the kids get older
Sammy's Activity Book – good, but could use some more graphical clean up

Pet waste/Feral cats

More Mutt Mitt Bag and trash pick up locations especially in all park settings
More education – education programs and materials in all pet stores – seminars for pet store employees who will be the link to pet owners. Information to be provided with every dog adoption.
Education…Education…Education…shaming people into being viewed as negligent f they don't pick up after their pet.
Tax dog and cat food

Send information home with pet registration – notify pet owners of potential fines or other enforcement actions. Or provide incentives for collecting pet wastes. Post signs at trail heads and unofficial dog walk areas alerting people of problems and solutions…
More signs at cat colonies specifying "Do Not Feed Cats" including the reason why ….help prevent pollution and be part of the solution [protect sea otters]
Low cost neuter and spay programs

Hotline

3/4 participants were not familiar with the Stormwater Pollution Reporting Hotline until he Workshop
Many participants recommended adding the Hotline to the PSAs and running it on Channel 21 –include with all literature and add to emails

Public Events and Displays
Good way to have fun with education – leaving a positive attitude toward compliance and positive behaviors – they appear to be an effective way to get the message out and increase awareness – not sure how effective or practical it is -

Should County Ban Plastic Bags?

Yes – 7 All participants

Ban is more effective than promoting the use of reusable bags – also charging for bags like in Europe for encourage the use of reusable bags
Net bags seem less desirable than others

Behavior won't change until they are banned.
It will take time for business owners to adjust.

Outreach to Tourists

Put brochures in hotel rooms
Information at tourist information centers with map of area
Signs in highly visited areas and enforcement
Signs in parking lots, restaurants
PSAs on in hotel room TV stations

Participation in Volunteer Programs

At least 1 – 5

New to area and have not participated yet – would like to but need to know where to find information about local stormwater events

Creek Day and Coast Clean Up – good – would like to do more

Want to participate

How can the County increase public participation?

Advertise more
Bribe with food
More workshops like this one – perhaps at a more central location like the library
Increase awareness, education
Provide incentives like music festival afterwards
Start when they are kids in school
Advertise testimonials about how much fun it is and how good it makes you feel and the benefits of picking up so much trash, etc.

How can the County prevent illegal dumping?

Use a specific message – Got a Sofa – Do X-Y-Z….Got an Old XYX – do this!
A lot of the problem is not knowing what to do or go.
Ask CHP/Caltrans/Roads for recommendations/observations
Continue to provide free access to free household hazardous waste and other free disposal access.
Education and good alternatives for proper disposal
There are many repeat offender sites – install portable cameras and have the fines increased to cover the costs. Finders fees for people reporting violators.
Along with the illegal dumping signs, advertise where to take the stuff and the proper disposal process. Install solar powered video surveillance equipment similar to call boxes that record license plates for vehicles with dump items near major intersections/junctions.
Come up with a sticker phrase and signage like “Don’t Mess with Texas”, “Illegal Dumping is Dumb”

County of San Luis Obispo

Stormwater Management Program

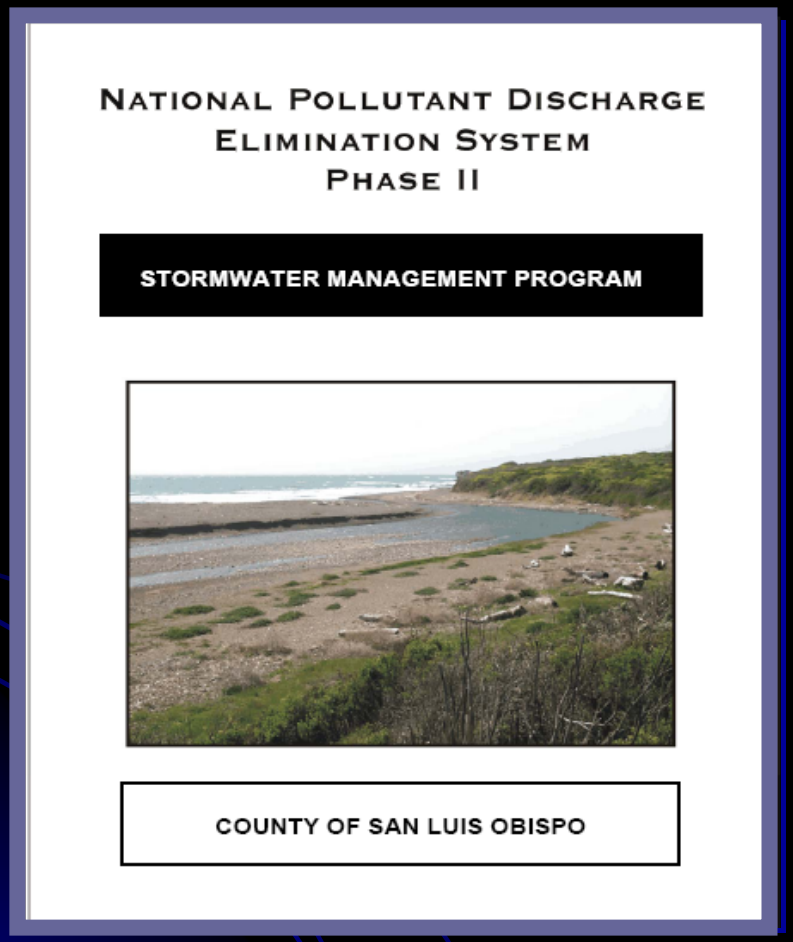
1st Annual
Stormwater Management Program Effectiveness Review Workshop

May 22, 2008

Workshop Objectives

- Review effectiveness of 1st year of program implementation
- Obtain input on improving the program
- Share volunteer opportunities
- Share learning opportunities

Stormwater Management Program



March 23, 2007

YEAR ONE IMPLEMENTATION

March 23, 2007 – March 22, 2008

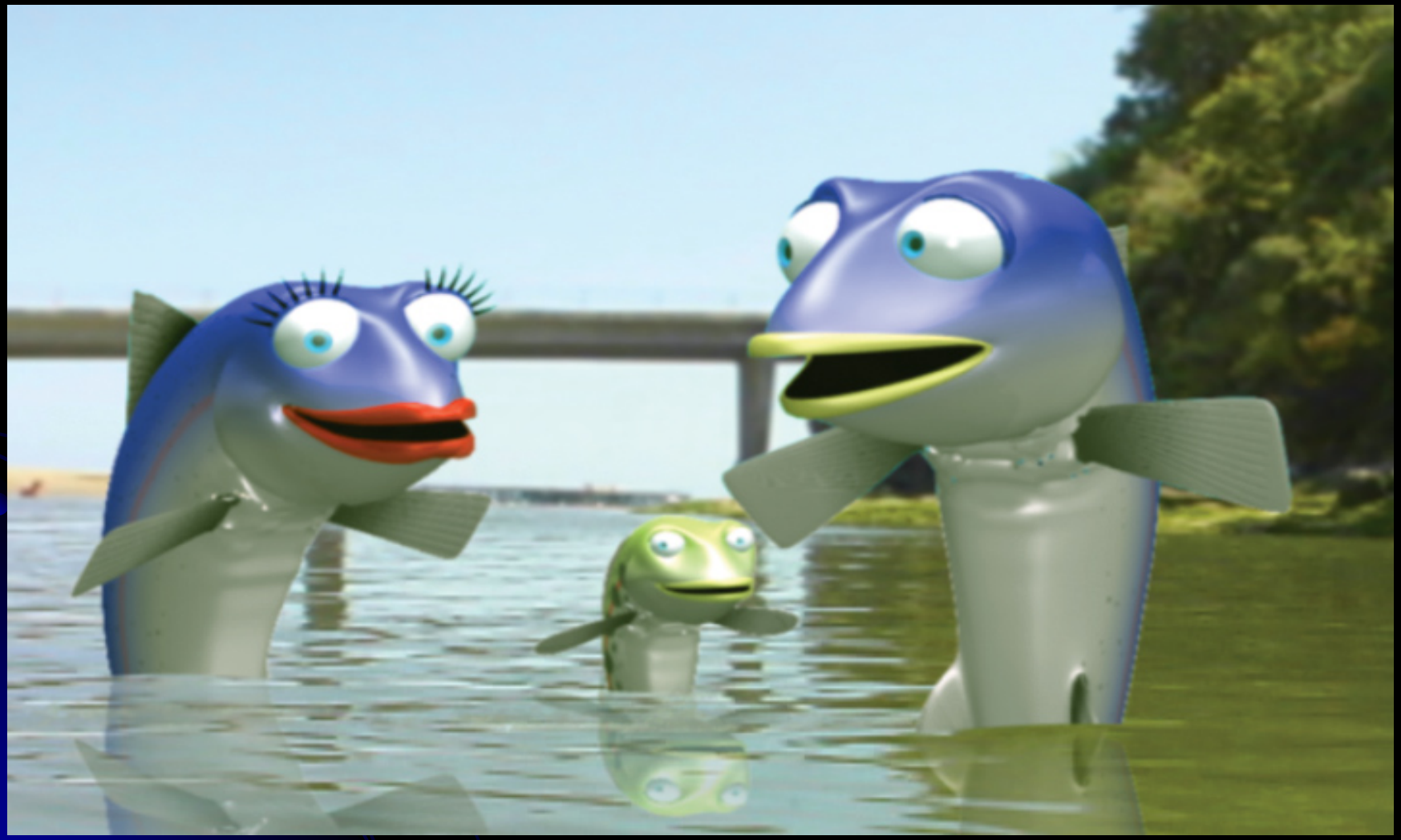
Annual Report

- Public input
- Evaluate effectiveness
- Submit to RWQCB on June 8, 2008

Public Education & Outreach

- Reaches 180,000 individuals via TV PSAs
- Reaches 60,000 individuals via Radio PSAs
- Reaches ~25,000 individuals via Public Events
- Reaches ~ 1,000 children per year via Classroom Education programs
- Print Materials and Give Away items distributed

Do you recognize these fish?



Before tonight about how many times have you seen this TV spot or a similar TV spot?

CAR
WAS
HOUR

How effective are these TV spots in communicating the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective

What is your reaction to Sammy the Steelhead Trout and his family?

1 = dislike a lot, 9 = like a lot

Please comment on the features you like or dislike.

What is your reaction to the SLO County Partners for Water Quality Logo and Slogan?

1 = dislike a lot, 9 = like a lot

Please comment on the features you like or dislike.

How effective is the Rubber Ducky TV Spot in communicating the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective

Which TV spots do you prefer: the Sammy the Steelhead TV Spots or the Rubber Ducky Spot?

Why?

How effective are these Radio spots in communicating the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective

How effective are these print materials for residential audiences in communicating the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective

Do you wash your car at home?

Are the Enviro-Friendly Car Washing Tips on Our Website Helpful?

1 = not effective at all, 9 = very effective

SWP2 Classroom Education Program

- In-classroom interactive presentation by credentialed educators provided by Science Discovery
- Aimed at Grades 4-6
- 24 classrooms (~600 students) in Year 1
- Program aligned with State standards
- Employs 3D model of residential setting demonstrating relationship of behaviors at home, storm drains, and the creek

DUMP NO WASTE

CREEK
ADVISORY
AVOID WATER CONTACT
ACTIVITIES

School Assemblies

Science Fairs/Expos

After School Programs

Preschool Program

- Storytime, *All the Way to the Ocean*
- Sammy Coloring Page
- Sammy Activity Book

How effective are these classroom education programs in changing behaviors that contribute to stormwater pollution?

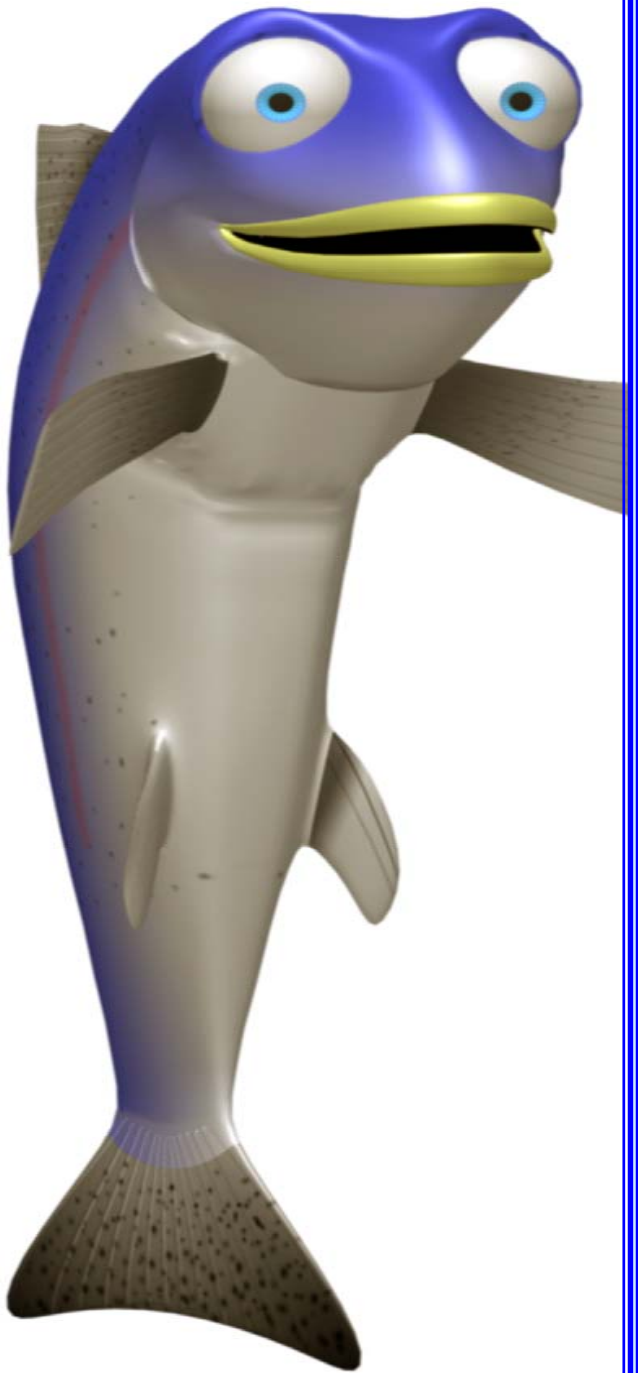
1 = not effective at all, 9 = very effective

From what you know about the problem of pet waste and stormwater pollution, how can the County regulate pet waste?

From what you know about the problem of feral cats and stormwater pollution, how can the County regulate feral cats?

How effective is the County's SWP2 website in providing information about the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective



Please report Stormwater Pollution

SLO County Pollution Reporting Hotline

781-5544

For more information about the Stormwater Management Program

Call Jill Falcone at 788-2767

Email: jfalcone@co.slo.ca.us

Stormwater Pollution Prevention Website

www.slocounty.ca.gov/pw/stormwater

How familiar are you with the County's Stormwater Pollution Reporting Hotline?

Ideas for improvement?

1 = not familiar at all, 9 = very familiar

Public Events and Displays

- Coast Clean Up & Countywide Creek Day
- Earth Day
- WaterFest
- Central Coast Home and Recreation Show
- Coastal Discovery Ocean Fair
- Healthy Gardening Workshops
- Farmers Markets
- Mid State Fair Workshops
- Government Offices and Workshops

Earth Day, 2007

Central Coast Home & Rec Show

Coastal Discovery Ocean Fair

Have you attended any of the County sponsored/promoted environmental public events?

About how many?

How effective are the County sponsored/promoted environmental public events in providing information about the problem of stormwater runoff pollution and what people can do about it in their daily life?

1 = not effective at all, 9 = very effective

Solving the Problem of Plastics in the Ocean

Is giving away reusable shopping bags an effective way to encourage people to stop taking plastic shopping bags at retail stores?

1 = not effective at all, 9 = very effective

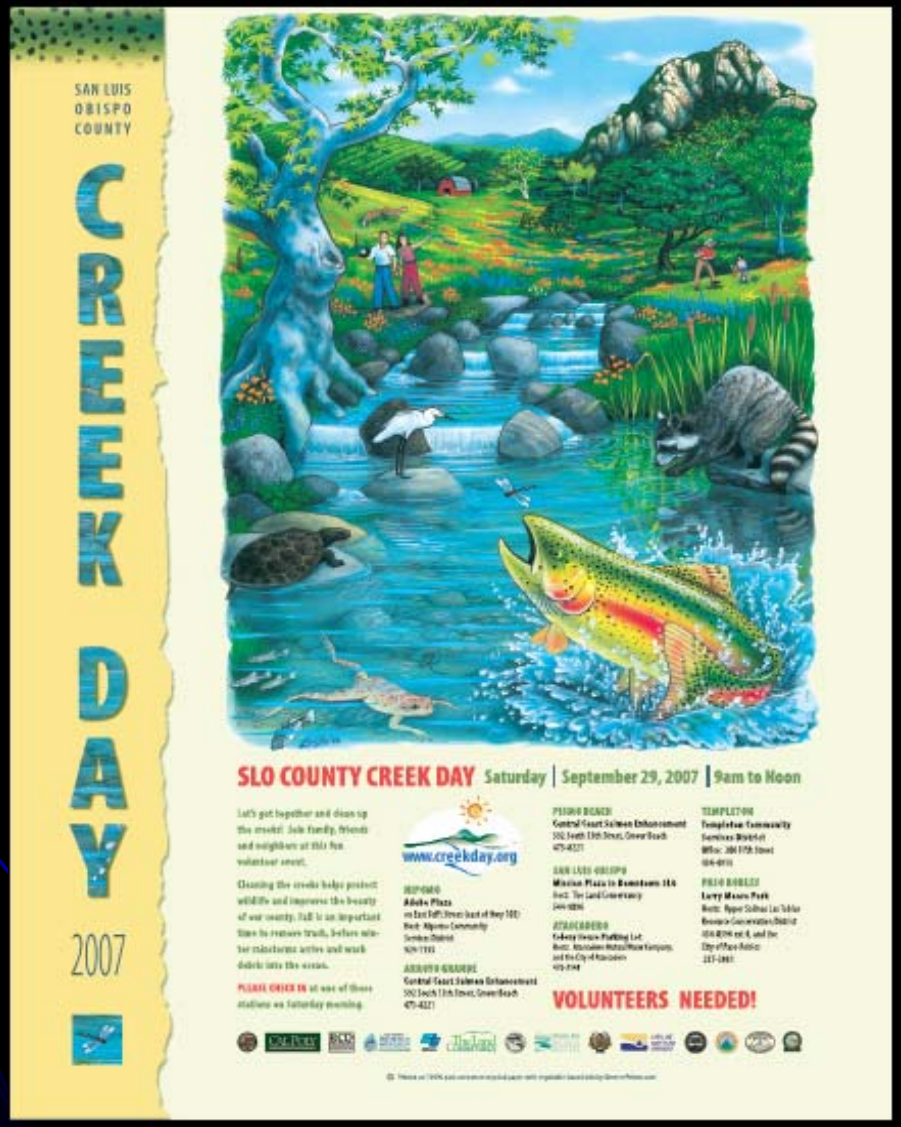
Should the County consider banning plastic shopping bags at some point in the future?

How can the County reach out to tourists to provide stormwater pollution prevention information?

Public Participation & Involvement

1) Coast Clean Up
2) Countywide Creek Day
3) Adopt a Road Program
4) Volunteer Water Quality Monitoring
5) Storm Drain Marking Program

Countywide Creek Day



“Stick It To Stormwater Pollution”

Storm Drain Marking Program

Snapshot Day Water Quality Monitoring

Have you participated in any of the County sponsored/promoted volunteer programs?

How many?

Would you like to?

How effective are the County sponsored/promoted volunteer programs in getting the public involved in helping solve the problem of stormwater runoff pollution?

1 = not effective at all, 9 = very effective

How can the County encourage more people to get involved?

Illicit Discharge Detection & Elimination

1) GIS Map of Storm System
2) Stormwater Pollution Reporting Hotline
3) Littering and Illegal Dumping
4) Stormwater Inspection Training

How can the County prevent illegal dumping?

Construction Site Runoff Control

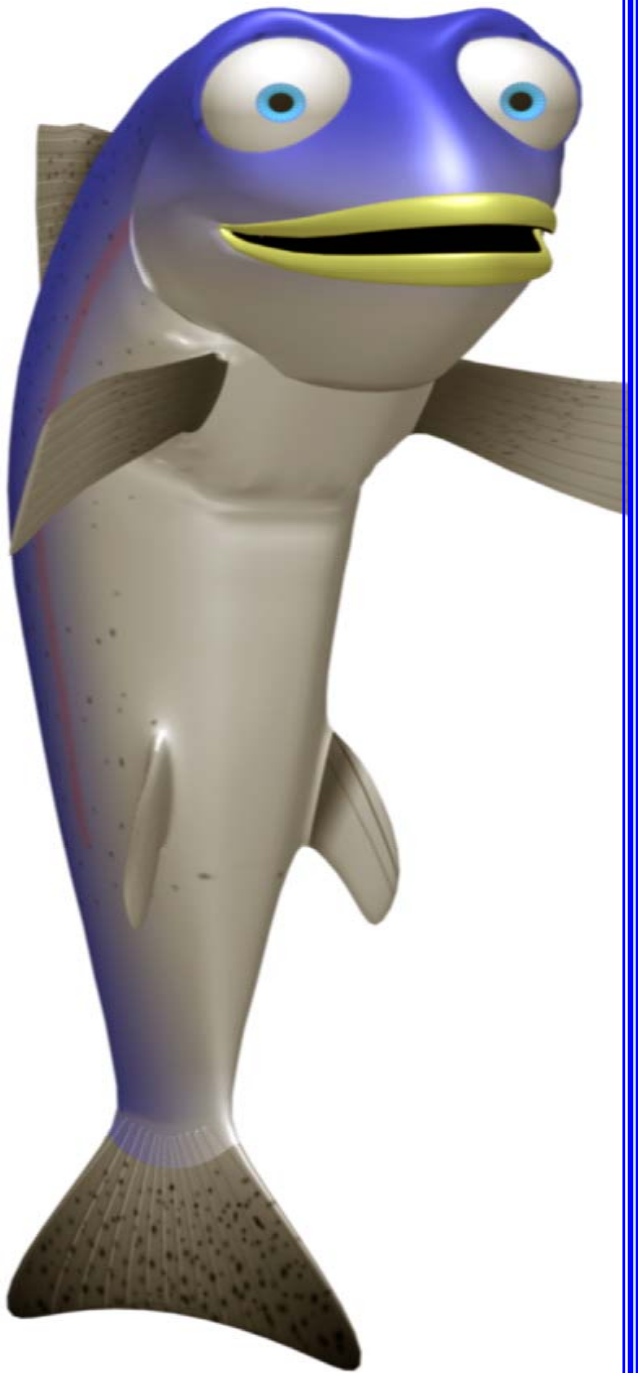
1) Site plan reviews
2) Inspection procedures
3) Public education and outreach
4) Reporting hotline

Post-Construction Stormwater Management

1) Development review
2) Public education and outreach
3) Low Impact Development (LID)

Municipal Operations

1) >250 Employees Trained in Public Works, Planning & Building, General Services, and Environmental Health
2) 45 County Facilities Inspected
3) Road and bridge inventory and maintenance procedures



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Attachment 21 Examples of Employee Newsletters and Training Communications

Note the excellent articles on LID, Green Building, Erosion and Sediment Controls, and opportunities for participation in watershed stewardship events. Additional employee training communication newsletters, emails, and meetings occurred but they were too numerous to mention here.

San Luis Obispo County Department of Planning & Building

March 2008

The Planning Network

Here Comes The Sun…

By John McKenzie

The sun has been here for billions of years, and will be here for billions more, well after the last drop of fossil fuel is used up. As far back as 1876, selenium (later becoming silicon) was found to produce electricity and so began humanity's harnessing of the sun's energy. The last big push for advancing solar power in America on a larger scale was during the energy crisis back in the '70's. The experimental Arco Solar plant (photovoltaic) constructed on the Carrizo Plains back in the mid 80's was the county's first and only such effort. Due to a great extent of oil prices decreasing, the plant operation costs were too great and the plant was decommissioned.

With oil prices on the rise, there has been a renewed interest in developing solar power plants on the Carrizo Plains. In addition to the existing 230 kV transmission line running through the Plains (connecting to California power grid system), Carrizo Plains has other unique, beneficial elements for solar plants, such as a high percentage of sunny days over the course of a year, large tracts of undeveloped land, and relatively clean and cool air.

There are two types of solar power plants that are likely candidates – thermal and photovoltaic. Both systems need large areas of land to be cost effective. Similar to trees, these "plants" maximize efforts to be efficient "sun interceptors" and tend to cover most of the land on which they are placed. Power output from each plant is likely to be over 150 megawatts per year (1 megawatt (MW) provides enough power for about 750 homes).

The recent proposal receiving the greatest attention is a thermal solar power plant (Carrizo Energy, LLC/ Ausra). The 177 MW thermal plant will likely include arrays of rotating, reflective mirrors on the ground focusing upwards to heat central points (e.g., fluid-filled tubes), which in turn will achieve high enough temperatures to become steam and turn turbines to generate electricity. Due to the nature of this type of system, 75 employees (3 shifts of 25 employees each) are required full-time to keep such a plant in good working order. From a permitting perspective, solar thermal power plants are permitted exclusively through the California Energy Commission (CEC). The next step is for CEC staff to complete the draft environmental document and then receive public input on this document.

Continued on Page 2

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The Planning and Building Department's Mission Statement:

Promoting the Wise Use of Land

Helping to Build Great Communities

We're on the web!
WWW.SLOPLANNING.ORG

Meet the Staff — Nancy Orton

Every quarter, a different staff member will be featured.

Hi – I'm Nancy Orton. I've worked for the Planning and Building Department for almost 18 years, most recently as a Supervising Planner for the Coastal Team. Throughout the years, I've had the opportunity to move around the department and have worked in the environmental division, long range planning division and the permit center. Prior to working for SLO County, I was employed by the City of Carlsbad and also worked for two consulting firms in the San Diego area.

Here's a little background about me:

Born and raised: Wilkes-Barre, Pennsylvania

Childhood memories: family gatherings with my 30+ cousins, Barbie dolls, bike riding, ice skating on frozen ponds, building snowmen, reading every Nancy Drew mystery book from the local library

High School memories: Parades, proms, football games. Rebellion, insecurities and "can't wait to get 'outa here!"

First car: 1970 Camaro

College memories: working my fingers to the bone to put myself through college, but loving San Diego! Graduated from San Diego State University with a BA in Public Administration with an emphasis in Urban Planning

First planning job memory: our secretary used to type Environmental Impact Reports on a typewriter (giving her corrections was not good)

Price of first house: $70,000. (in San Diego – boy, what a deal!) It included a studio rental

Places traveled: East coast (a lot!), Europe (Austria, Switzerland, Italy, Greece), Asia (Japan, Hong Kong), Canada, Mexico

Hosted Exchange Students from: Italy, Korea, Russia (twice), Hong Kong

Volunteer Activities: Court Appointed Special Advocate (CASA), American Cancer Society

Current Interests: Spending time with family and friends, bike riding, yoga, and gardening

PG&E Local Government Partnership Program

The County has entered into an agreement to participate in Pacific Gas and Electric Company's (PG&E) Local Governmental Partnership Program to pursue energy savings and rebates for County operated facilities. This was considered and unanimously approved by the County Board of Supervisors on December 18, 2007. The Local Governmental Partnership program provides financial incentives to local governments for developing energy efficient public facilities. The County has a past history of successfully implementing a number of energy savings public projects. This has the benefit of significantly reducing the operating costs for public buildings and participation in the program will provide for up to triple the normal financial incentives provided by PG&E.

Here Comes the Sun… (continued from page 1)

The other type of solar plant is based on photovoltaics (PV). This type of system is what most people think of when they hear "solar power", where flat panels with black, silicon-based sheets are grouped into arrays. In many cases, these arrays track the sun during the day to maximize their optimum solar exposure. Silicon, when exposed to light, has the ability to generate electricity directly. The electricity from each panel is collected and sent to the transmission line. When compared to a solar thermal plant, there is much less maintenance required with a smaller permanent work crew of between 6 and 10 employees. On permitting, a PV plant will be subject to the county-permitting process.

Solar plants are considered "emission-free" clean energy sources, and will contribute to the reduction of greenhouse gas emissions (which is in line with the passage of recent state legislation to reduce such emissions).

If oil prices continue to remain high, or go higher, and solar power production costs continue to drop, larger solar power plants will continue as potentially competitive energy sources.

WATER – OUR MOST PRECIOUS RESOURCE

By James Caruso

Many resources are needed to maintain our communities here on the Central Coast of California. Air quality, flora and fauna, good soil for agriculture and our cultural history are some examples of resources that contribute to the character of our county. Together, these are the reasons why many of us choose to live here. However, there is one resource that stands above all others in importance: **Water**. We rely primarily on groundwater that is found either in great groundwater basins such as the Paso Robles, Los Osos and Santa Maria groundwater basins or in fractured rock that are not groundwater basins. We also have four man-made reservoirs, Nacimiento, Whale Rock, Santa Margarita and Lopez Lakes that supply impounded surface water to some of our urban areas.

Our groundwater basins are under great stress with four of five at a Level of Severity III meaning they show signs of overdraft. With the cost of bringing new water supplies to the people at unprecedented levels, we must look toward water conservation in order to continue to enjoy the resources of our county. The Planning and Building Department is working on water conservation measures that will reduce indoor and outdoor water use. It's past time when we all need to recognize that we live in an area where green lawns and lush landscaping are no longer affordable in our arid climate.

Average water use in our communities varies widely due chiefly to lot size, outdoor water use and microclimate. In the table below, you can see where your community stands on average water use per water connection. We can and must do better to preserve our most valuable and irreplaceable resource. Communities must do better!

	SLO	Templeton	Morro Bay	Pismo Beach	Nipomo	Golden State (Nipomo)
# connections	14425	2490	5449	4776	3968	1480
Acre-feet/yr	6001 AFY	1395 AFY	1211 AFY	1927 AFY	2674 AFY	1164 AFY
Use per Connection (AFY)	0.41 AFY	0.56 AFY	0.22 AFY	0.40AFY	0.67 AFY	0.78 AFY

Saving Energy Can Pay Off In More Ways Than One!

We all know construction is expensive, especially with today's material cost. Wouldn't you like to save a few dollars on your Construction Permit? The following will be an easy way to save a few dollars if you are building an addition or a new single family dwelling. You will also save money in the long run by having a house that is more energy efficient. If your new dwelling design exceeds California Energy Code requirements by at least 15%, the County will provide a credit of up to 25% of the building permit fee, not to exceed a total credit of $250.00. That is $250.00 in your pocket!!! There are two ways to qualify: Title 24 Energy compliance must be verified by one of the approved computer programs, and the total heat loss and gain shown on the C-2R form must be at least 15% less than that which is allowable. PG&E has a similar program for primary residences only. The PG&E program reimburses applicants $400.00 for exceeding Title 24 by 15% and $600.00 for exceeding it by 20%. Anyone interested in this program should call 1-800-342-7737. If your energy package does not show the percentage amount, please see the following example to verify if you comply.

Once you divide the Total Standard Design by the lowest margin this will give you the percentage by which your energy requirements surpass the minimum requirements. If you have any questions please contact Sylvia Aldana, Plans Examiner at 781-4671.

Example:

Energy (BTU/sf-yr)	Standard/ Design	Facing Margin North		Facing Margin East		Facing Margin South		Facing Margin West	
Space Heating	15.41	10.19	5.22	10.40	5.01	11.75	3.67	10.35	5.06
Space Cooling	1.37	1.12	0.24	1.25	0.12	0.35	1.01	0.48	0.89
Domestic hot water	12.68	10.60	1.48	10.60	1.48	10.60	1.48	10.60	1.48
TOTAL	28.85	21.91	6.94	22.24	6.61	22.70	6.16	21.43	7.42

6.16 / 28.85 = 21%

GUEST CORNER

"What Is This Thing Called GREEN?"

By Ken Haggard

As sustainable design becomes a larger part of planning and building, new terminology is introduced.

1. Energy Conserving Building
A building that doesn't waste energy, regulated by Title 24.

2. Passive Solar Building
Use of the sun to heat a building instead of using mechanical devices. For example, windows oriented south allowing solar gain on high thermal mass interiors.

3. Passive Building
Progress has allowed the passive approach to include other functions such as cooling, ventilation, daylighting, and photovoltaic (PV) power production. Passive buildings:

- Use on-site energy production.
- Rely on natural energy flows with minimal moving parts.
- Integrate energy production and use as part of the building's form.

Passive solar design has reached enough sophistication to create zero energy buildings.

Passive buildings are energy producing as well as energy conserving. Natural lighting from an optimally designed aperture in building is production similar to burning coal and importing electric energy for artificial light; except, the former is healthier, more aesthetically acceptable and without line losses.

Passive design must first be energy conserving, but achieving this prerequisite does not necessarily make a building 'passive'. For example, Title 24, largely an energy conserving code, does not credit passive elements like night vent cooling, thermal mass walls, or integrated photovoltaics. A passive building can exceed Title 24 standards by 40-80% (see illustration).

4. Green Building
A building designed to create more livable, healthier communities, using energy wisely, and conserving resources.

5. Passive Green Building
Resource concerns are part of passive design. Passive approaches to water and waste promise to reduce the high costs of community infrastructure. Water conserving buildings utilizing rainwater catchment, waterless or low-flow fixtures, and on-site biologically based waste treatment systems are passive designs similar to energy oriented passive buildings.

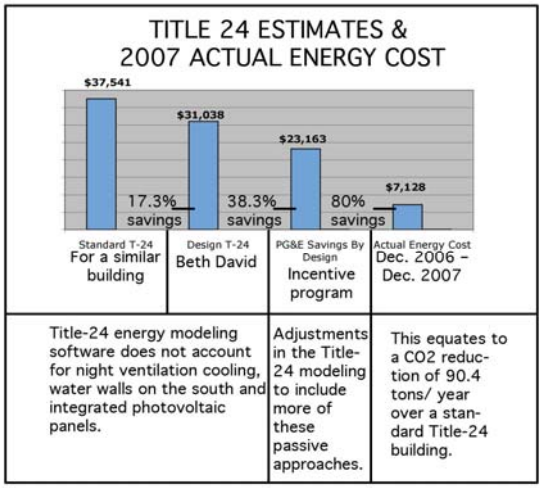
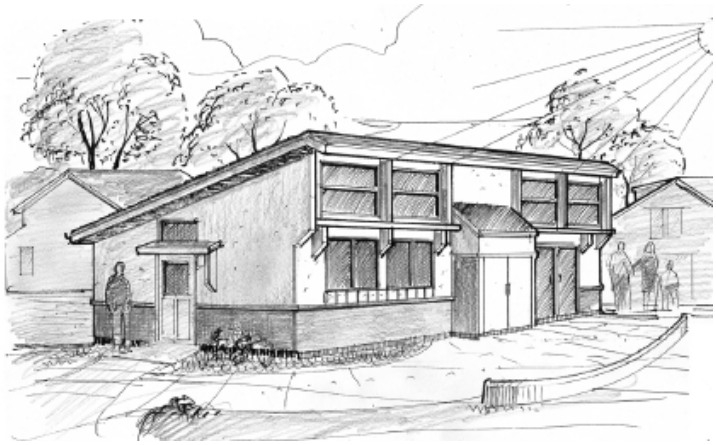


Fig. 1 Energy modeling and actual performance data for Congregation Beth David synagogue, a passive solar assembly building completed in 2006.

These are some of the terms planning and building officials will have to embrace in our transition from a scientific/ industrial era to an information/sustainable era.

Ken Haggard is a local architect, a member of the board of SLO Green Build and a Fellow in The American Solar Energy Society.

Build a Green Secondary Dwelling!



Designed by: San Luis Sustainability Group

One of the eleven approved secondary dwelling stock plans is an energy efficient "green" secondary dwelling available free of charge for qualifying properties in the unincorporated areas and towns in the County. This plan is 575 square feet in size with 85% passive heating and 100% passive cooling. Air quality is improved by using natural lighting and ventilation as well as green materials. Energy efficiency is obtained through proper orientation to the south.

Interested in obtaining this free stock plan to build a green secondary dwelling? Visit www.sloplanning.org for more information, call 781-5601, or visit the permit center. Other secondary dwelling stock plans and program information are also available on the website.

Inspection Tips

New Anchor Bolt Requirements In the California Building Code

There are many changes we will all have to become familiar with in the new Codes. Among them are the anchor bolt and washer requirements for anchorage of wood frame walls. The washers are the change that will garner the most attention for obvious reasons.

Washer size increased:

A 0229" X 3" X 3" washer is now required on foundation anchor bolts, per section 2308.12.8.

Anchor bolt sizes:

In seismic design category D, ½" diameter bolts **may** be used with the required 7" minimum embedment into concrete or masonry, per section 2308.6.

In seismic design category E, 5/8" diameter bolts **must** be used with the same 7" minimum embedment, per section 2308.12.9.

Take a moment to consider how difficult it may be in the field to place the anchor bolt in just the right location to center the 3" washer on a 3 ½" sill plate. There is only a ½" tolerance to work with and cutting off any part of the washer to make up for an error in placement will not be acceptable. This may be a good time to consider using 2X6 exterior walls. The bolts would not have to be placed so precisely and R-19 insulation in the walls would be a long term benefit to the owner in reduced energy costs and a desirable feature in the marketing of the home or building.

Low Impact Development—Ideas For Around the House

Did you know that you can make simple changes around the house to reduce erosion caused by stormwater run-off, increase groundwater infiltration, conserve valuable resources, and make your yard more attractive? Here are a couple of ideas you may consider next time you have the urge to get out in the yard and have some fun.

Create a Rain Garden - A rain garden is a natural or man made shallow depression designed to capture and soak up stormwater runoff from your roof or other impervious areas around your home such as driveways, walkways, and even compacted lawn areas. A rain garden is a garden which takes advantage of rainfall and stormwater runoff in its design and plant selection. Rain gardens are typically small gardens which are designed to withstand the extremes of moisture and concentrations of nutrients, typically nitrogen and phosphorus, which are found in stormwater runoff. Rain gardens are sited ideally close to the source of the runoff and serve to slow the stormwater as it travels downhill, giving the stormwater more time to infiltrate and less opportunity to gain momentum and erosive power. They are a particularly good way for individual homeowners to enhance their landscaping while protecting water quality. More information on rain gardens is available at: http://www.healthylandscapes.org/raingarden.htm

Information on plants compatible for use in a California rain garden is posted at: http://www.bbg.org/gar2/topics/design/2004sp_raingardens.html

Install a Rain Barrel – Rain barrels are low-cost, effective, and easily maintainable retention devises which can store rainwater for later reuse in landscape watering. Collecting rainwater for use during dry months in rain barrels or other depositories is an ancient and traditional practice. Historical records show that rainwater was collected in simple clay containers as far back as 2,000 years ago in Thailand. Besides helping the environment, an obvious reason for harvesting rainwater is to save money. Depending on the size of your house and the amount of rainfall in your area, you can collect a substantial amount of rainwater with a simple system. Did you know, for every inch of rain that falls on a catchment area (roof) of 1,000 square feet, you can collect approximately 600 gallons of rainwater. Ten inches of rain falling on a 1,000 square foot catchment area will generate about 6,000 gallons of rainwater! That's right, 6,000 gallons! More than you were expecting? More information on rain barrels is available at: http://rainbarrelguide.com/

Written by Murry Wilson

Climate Solutions Act

By Chuck Stevenson

AB32, the "Climate Solutions Act", and the Governor's Executive Order S-01-07, put in place in California a comprehensive set of regulations to reduce the effects of greenhouse gases and global warming. Most global climate scientists working on the subject believe that the contribution of human-induced global climate change is significant. The intensification of hurricanes, earlier melting of ice in California, and the melting of glaciers and parts of arctic regions are indications that climate changes are occurring and these events may increase as the global population increases. Here at home, California is a big contributor of global greenhouse gases as it is the second largest contributor in the United States and the sixteenth largest in the world. The major source of greenhouse gases in California is transportation, contributing 41% of the state's total emissions. Electricity generation is the second largest source, contributing 22% of the state's GHG emissions.

Scientists believe it will take many years to reach serious levels if current trends continue; however, future global population estimated to increase to 8 billion by 2030 may negatively influence that time frame. Increased automobile use is also a global climate change contributor. Currently there are about 700 million cars worldwide. Thirty years ago, there were 300 million cars. The level of pollutants being generated from increased population and auto use is very large.

AB 32 sets an ambitious goal: it says that by 2020, California will reduce its greenhouse gases to the level of 1990. However, it's not a quick process. AB 32 doesn't go into effect until 2012, and may take until 2020 before certain goals are accomplished. Currently, efforts are being started throughout California and here in San Luis Obispo County to reduce greenhouse gas emissions through the local planning process of updating General Plans. New land use policies and green building practices are being recommended that will help residents reduce their dependence on automobiles for all trips. Recommendations include making communities more compact so they are walkable, helping public transportation operate more cost-effectively, reducing vehicle miles traveled by locating jobs close to housing, protecting ag lands needed to produce food so less long-distance trucking of produce is necessary, and utilizing renewable building materials and energy efficient appliances in new homes that use less electricity to operate.

"LEED, What is it and who is using it?"

By Ryan Hostetter

A lot of us have heard about a little program called LEED. "LEED" stands for Leadership in Energy and Environmental Design, and was brought to us by the US Green Building Council (USGBC) which is a non-governmental, non-profit organization formed in 1993. The program is basically a rating system that allows projects to gain a certain number of points or credits for how green they are. For example, "certified" projects must generate at least 26 points from the rating system. For buildings to be certified as "silver" they would get 33 to 38 points, a "gold" project must generate at least 39 to 51 points, and for a "platinum" project it must generate at least 52 points. Currently there are about six different LEED rating systems which include New Construction, Commercial Interiors, Core and Shell, Existing Buildings, Homes, and Neighborhood Development (still in pilot).

The project registration and certification process really is a team effort comprised of designers, architects, mechanical and structural engineers, construction managers, interior designers, and landscape designers/architects (to name a few). The point system really goes through the projects entire design from conception to completion. Therefore, the project team will be working on filling out their own piece of the rating system throughout the entire design and construction process of the project (or a project manager will get all the info and fill it out for them).

The LEED for "New Construction" rating system contains basically six different rating or "credit" *categories* (actually five with one bonus category) which include: Sustainable Sites, Water Efficiency, Energy & Atmosphere, Materials & Resources, Indoor Environmental Quality, and the bonus category of Innovation and Design. For each of these five "categories" listed, a project can obtain "credits," which are tallied during the project's design and/or construction process. Currently, the design team working on filling out the forms can do all of this online so that all of the credits can be tallied and saved online. Some of the information could even be submitted to the USGBC for review in separate pieces while the project is being worked on rather than a large package at the end of the project. Projects "register" themselves first while filling out the online credit forms and wait for actual certification pending the results of the USGBC's review of all the information submitted for the project.

Who is using LEED? Currently, this rating system is being used throughout the country and many jurisdictions mandate the use of this system. The state of California is mandating all new and renovated State owned facilities be certified at a minimum of LEED Silver. Also included are at least 20 states and other agencies, such as the military and many municipalities throughout the country. While San Luis Obispo County currently does not mandate projects meet the LEED rating system, there are projects where the design team and owners have opted to register their projects. These projects include Congregation Beth David and the San Luis Obispo Botanical Gardens. Hopefully, we will be hearing about those projects when they become certified!

What Does Green Build Have To Do With Storm Water Management?

by Elizabeth Szwabowski

If you recall, the County has an approved Storm Water Management (SWMP) Program, which contains six elements of Best Management Practices (BMP's). Two of those elements deal with Low Impact Design (LID) and Construction site run off which affect Green Build concepts. One of the tasks required in the SWMP by the County is to promote green build. Ryan Hostetter in the Planning Department is the individual responsible for promoting our Green Build program.

"using coconut hair lined swales has been working really well on slopes greater than 15%"

What is Green Build?

Green Build consists of cost-effective suggestions to minimize construction-related waste, create healthier and more durable buildings, reduce operating costs for owners and support resource efficient materials and techniques. Green Build is just applying good practices to construction in ways we may not be doing now.

So how does Low Impact Design (LID) relate to Green Build?

If a project utilizes good construction practices (i.e., Green Build concepts), then it is important to utilize smart design for grading & drainage. We call this Low Impact Design measures.

Often, Civil Engineers do this as a standard level of the service they provide to owners, but others do not. Low Impact Design is the way of the future. One of the basic concepts of Low Impact Design is to leave undisturbed as much of the natural vegetation as possible.

Contacts:

Slogreenbuild.org – Alex Rothenberg, 805-215-6196

Private property projects - Low Impact Design – County Planners – Murry Wilson, Jay Johnson.

Public Property projects - Low Impact Design – Frank Honeycutt, Public Works.

Sedimentation and Erosion Control tip:

A local Engineer shared his recent experience on a construction project he is monitoring. What he found was "***using coconut hair lined swales has been working really well on slopes greater than 15%.*** "

Photo courtesy of Harry Hamilton

"What is SLO County Doing About Being Green?"

By Ryan Hostetter

On January 23rd the Board of Supervisors adopted a Memorandum of Understanding with "SLO Greenbuild," which is a non-profit organization comprised of local builders, architects, engineers, landscape architects, planners, and other members of the community. SLO Greenbuild provides educational resources for anyone in the public interested in learning how to incorporate greener building techniques into their project. Check out the kiosk in the permit center that includes samples of green materials, brochures, pictures, and simple ideas for incorporating greener building techniques in your project.

Available Now: Anyone can sign up for a FREE peer review of their project by SLO Greenbuild. The peer review will incorporate suggestions and a checklist for including green technology into your project. This service is available to anyone in the public. To sign up please email peer-review@slogreenbuild.org or check out www.slogreenbuild.org for more information.

SLO Green Build

SLO Green Build
LEARN • BUILD • SAVE

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Upcoming Events…

March 25, 2008 —March 28, 2008
AEP/NAEP conference, OMNI Hotel in San Diego
April 27, 2008 — May 1, 2008
100th National APA Planning Conference, Las Vegas, Nevada

Newsletter brought to you by the Communications Team of the Department of Planning and Building

Please submit ideas for the next issue to
Jennifer Jimenez
jjimenez@co.slo.ca.us

Did You Know. . .

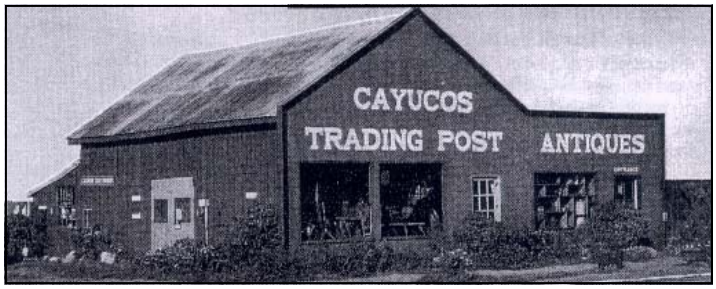
When Cayucos was "Little Italy?"

Cass House 2006, photo by John Busselle

Cayucos was founded in 1867, when James Cass arrived from New England via San Francisco. Cass discovered the small coastal town called Old Creek, California, but upon moving his family here, chose to rename it "Cayucos," after the Native American word for canoe.

Captain James Cass was a major contributor to the growing community of Cayucos, not only serving as its banker, but also building both the town's church and its bustling wharf. Hoping to create a port, he built a 900-foot pier and warehouses. The wharf opened up the coast to markets north and south.

In the late 1800s, Italian-Swiss families settled to dairy-farm; stores with flat wood fronts and tiny cottages from that era remain along Ocean Avenue. The Cayucos Trading Post building dates back to at least 1895, when it was a blacksmith's and the small attached building to the south was a woodworking shop. By the 1870's, Cayucos was a bustling market center and shipping hub for the dairies and farms that dotted the nearby coast and valleys. Italian-speaking Swiss dairymen, most of whom had emigrated from Canton Ticino, worked on or owned the majority of these dairies. On "steamer day," they thronged into town to ship their butter, to have farm equipment repaired, and to buy supplies. The second generation continued speaking Italian, and often it was the only language heard on the streets.



Cass House 1990

The James Cass home stood empty, as weathered as driftwood, on a prime bit of real estate catty-corner from the pier. The Cass House was abandoned for 20 years until Gary and Nancy Bagnall purchased the house and spent 12 years meticulously restoring it to its original beauty.

If you prefer to receive this newsletter by e-mail, send a message to Planningnetwork @co.slo.ca.us with "newsletter" in the subject line.

Online Fee Payment

You may now use a credit card to pay Building Permit second installment fees, land use or code enforcement fees online. You can go directly to our Online Fee Payment page, or use our Permit Status Lookup to view your permit (if you have fees that can be paid online, a link will automatically appear in the Permit Status Lookup screen). Visit our E-Services page at http://www.slocounty.ca.gov/planning/eservices.htm for information about all of our online services.

New Spanish Language Information on our Website!

We've added information about Affordable Housing, Building Inspections, and Code Enforcement to our website. Visit sloplanning.org and click on "Servicios de Internet y documentación en Español" to view the information.

Jill Falcone/PubWorks/COSLO
04/18/2008 09:15 AM

To PW_Staff
cc
bcc
Subject Want to Have Some Fun & Help the Environment Too?

Happy Friday!!!

Earth Day is coming soon. Would you like to have some fun and help the environment too?

Our Stormwater Pollution Prevention Program has some great volunteer opportunities that are fun and educational for you and your family.

Would you like to volunteer for any of the following activities?

- Central Coast Home and Rec Show, Paso Robles Event Center, Next Saturday and Sunday, April 26 and 27 Talk to folks about water conservation and how to use less toxic gardening products (the Our Water Our World Program) in the Partners for Water Conservation and Partners for Water Quality Booth
- Earth Day in Mission Plaza, San Luis Obispo, next Saturday, April 26
  Talk to folks about how they can prevent stormwater pollution. Demonstrate the watershed model. Give out reusable shopping bags. Demonstrate how to wash a car in an environmentally friendly manner. And the greatest experience of all - be *Sammy the Steelhead*.
- WaterFest 2008, Sunken Garden, Atascadero, Saturday, May 3
  All the same opportunities as above with the additional chance to work with kids and ladybugs and pet poop....the fun and personal rewards here are truly indescribable. You really have to experience a Sammy fish hug and the look in the kids eyes to understand this fully.
- For those interested in science or engineering or who want to grow up to be scientists and engineers (we need more of these to solve our problems!!!).... please consider our volunteer water quality monitoring effort in the Salinas River area on Snapshot Day, May 3. Three teams will go out to sample and test water quality in the Salinas River watershed. Training will be provided.

Please RSVP to me and I can fill you in on the details for any of these activities that you or any of your family members might be interested in. These are great activities that you can do together as a family unit. Kids learn by doing and they will see that you really care.

Don't worry - I'll provide the training and any of the materials that you will need.

Give me a call if you are interested.

Thanks

Jill X2767

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