



CRUDE AWAKENINGS:



Could an Exxon Valdez Oil Spill
Happen in Southern California?

By Kristina Haddad AUGUST, 2000

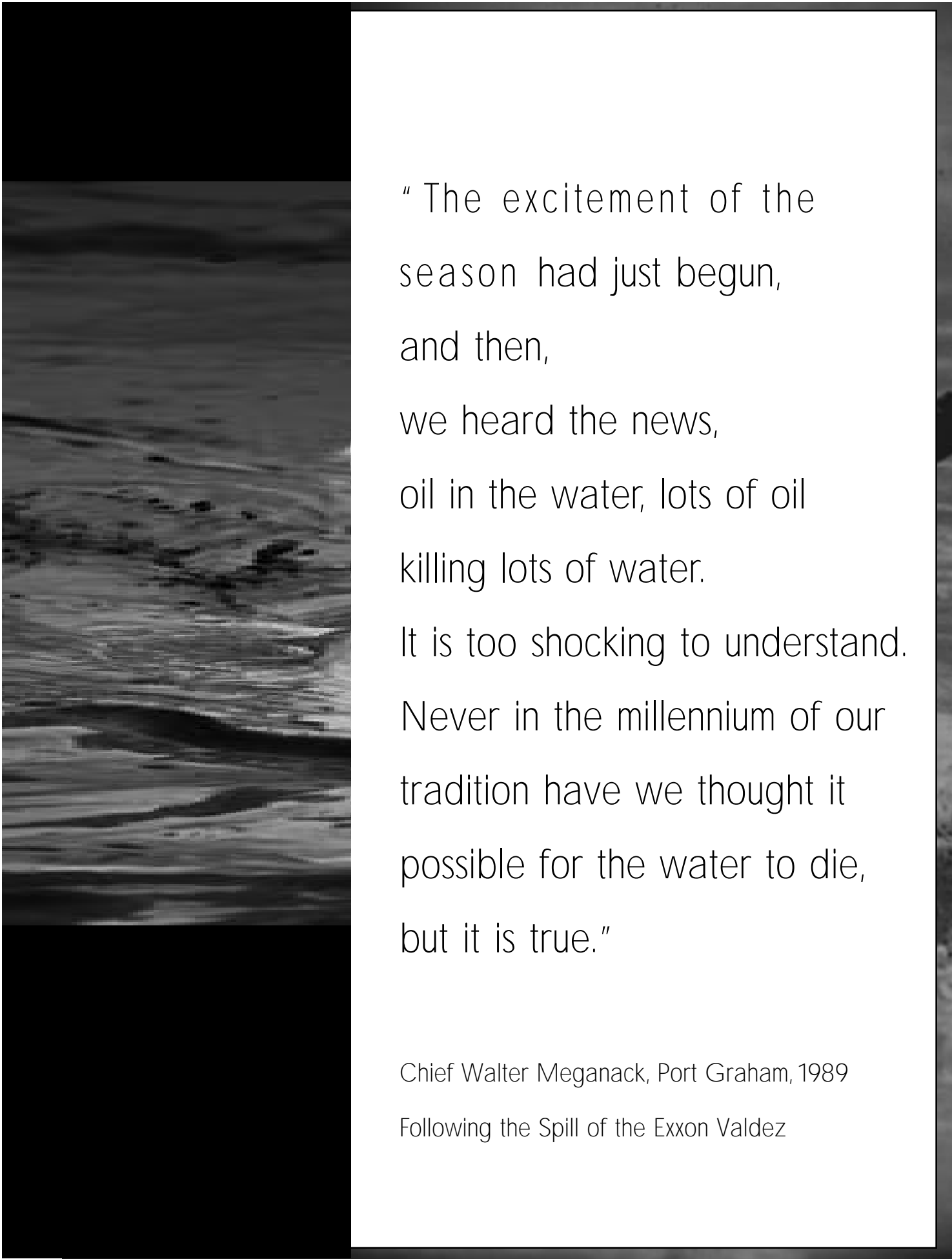
A Project of the Santa Monica BayKeeper
and Environment Now



The Santa Monica BayKeeper is a non-profit organization dedicated to protecting and preserving the Santa Monica Bay, San Pedro Bay and adjacent coastal waters.

Environment Now is a private foundation dedicated to protecting, preserving and restoring the environment of California.

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" The excitement of the
season had just begun,
and then,
we heard the news,
oil in the water, lots of oil
killing lots of water.

It is too shocking to understand.
Never in the millennium of our
tradition have we thought it
possible for the water to die,
but it is true."

Chief Walter Meganack, Port Graham, 1989

Following the Spill of the Exxon Valdez

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1. Introduction and Overview

Shortly after midnight on March 24, 1989, the Exxon Valdez ran aground on Bligh Reef in Prince William Sound, Alaska, spilling almost eleven million gallons of crude oil. It was the largest oil tanker spill in United States history.

In 1992, the U.S. Minerals Management Service (USMMS) created a formula to predict the likelihood of oil spills. The USMMS paper, entitled “Comparative Occurrence Rates for Offshore Oil Spills,” is based on the Oil Spill Risk Analysis model developed in 1975 by the Department of Interior.¹ In this model, the probability of an oil spill is determined by examining the total amount of oil moved through an area and the spill occurrence rate based on historical data.

! Utilizing that formula, it was calculated in 1992 that there was a 94% likelihood of an Exxon Valdez type oil spill in southern California waters sometime within the next 30 years.

In 1998, 704 tank vessels called on the Ports of Los Angeles/Long Beach², carrying approximately 5 1/2 million barrels of oil through the area (302,500,000 gallons of oil). Each of these tankers can carry between 55,000 and 33 million gallons of oil - triple the amount that was spilled by the Exxon Valdez.

If the Exxon Valdez had spilled its crude oil in southern California coastal waters, the oil spilled could cover the beaches from the initial spill area to hundreds of miles south of the Mexican border or an area that would stretch along the entire California coastline. (In the Valdez spill, oil reached shorelines 600 miles southwest of Bligh Reef.)³



What is being done to ensure that this tragedy does not occur along the shores of southern California? This is the question the Santa Monica BayKeeper and Environment Now posed at the onset of its investigation into the level of oil spill prevention and response in California and specifically the Santa Monica Bay. What was uncovered is unsettling to say the least.

The problems are vast and complex. To bring it into focus, we chose five key elements for presentation and analysis in this report.

- A discussion of the Valdez spill itself; what response took place; what remains of their efforts from that time.
- An analysis of the oil spill prevention/response capabilities of California's public agencies and the oil industry.
- A review of a recent spill in southern California waters, the American Trader incident. Like the Valdez analysis, we will review the response to the spill and the changes since then in terms of prevention and preparedness.
- An analysis of the spill prevention and response preparedness of the Chevron Marine Terminal at El Segundo, which is widely regarded as the “best” in these matters. It is the fourth busiest terminal in southern California and is the only open water terminal in the area, averaging 30 tanker visits a month, with an average of 165,000 barrels of crude oil passing through the terminal a day, representing about 70 percent of the amount of crude oil received at the El Segundo Refinery.⁴ In short, if this is the standard against which the oil transporting business is judged, then it is fair to assume that conditions at other facilities are no better, and indeed are maybe worse, than Chevron.
- Finally, to summarize our findings in a graphic format which can be updated as conditions change over time, for better or worse, we have created what we call the “Oil Spill Doomsday Clock”.

Chevron tanker at the El Segundo Marine Oil Terminal



OIL SPILL DOOMSDAY CLOCK



The doomsday clock theory postulates that if midnight were doomsday, on any given day we are somewhere on a clock depending on criteria that move us towards or away from that time.

For example, the assessment of a 94% likelihood of a spill in 1992 meant we were 94%, or 22.56 hours, of a 24-hour day toward a major spill, that is, 10:34 p.m.

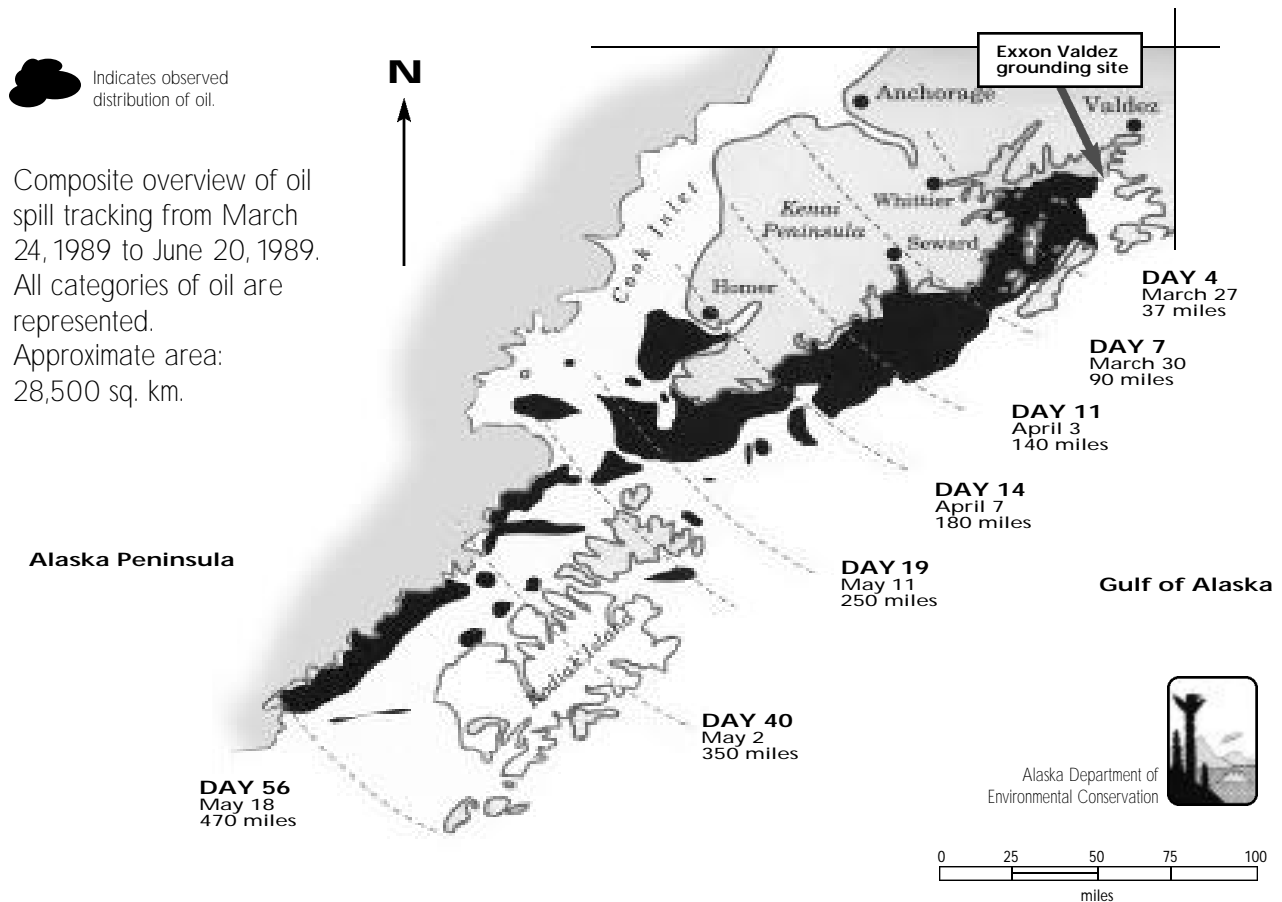
Based on our investigation we believe that oil spill prevention and response capabilities have deteriorated since that time and that, in fact, a spill is likely to occur at any time. **Accordingly, if we were to express the current level of risk on the Doomsday clock, it would be set at a minute to midnight.**

At the conclusion of this report we will outline the criteria that keep us at seconds from doomsday, and how by eliminating each of these risks we will move further away from doomsday, and towards safety from disaster.

2. Local & National Response To Valdez: Turning Back the Clock

The National Transportation Safety Board determined that the probable causes of the grounding of the Exxon Valdez were a result of⁵:

- The failure of the third mate to properly maneuver the vessel because of fatigue and excessive workload;
- The failure of the master to provide a proper navigation watch because of impairment from alcohol;
- The failure of the Exxon Shipping Company to provide a fit master and rested and sufficient crew for the Exxon Valdez;
- The lack of an effective vessel traffic service because of inadequate equipment and manning levels, inadequate personnel training, and deficient management oversight;
- The lack of effective pilotage services.



Oil from the spill moved across the coastline contaminating portions of the shoreline of Prince William Sound, the Kenai Peninsula, lower Cook Inlet, the Kodiak Archipelago, and the Alaska Peninsula. Impacted areas included a national forest, four national wildlife refuges, three national parks, five state parks, four state critical habitat areas, and a state game sanctuary. In total, an estimated 1,300 miles of shoreline were contaminated.⁶

As a result of the Valdez spill, the U.S. government, the state of California, and the oil industry were temporarily reawakened to the issue of oil spills and the devastating losses that can occur as a result.

Federal Government Response

The response by the Federal Government to the Valdez spill was to enact the Oil Pollution Act of 1990 (OPA), which set in motion many regulatory changes affecting the marine transportation of oil in the U.S. Among the requirements of OPA:

- **Planning for a spill:** The Act requires vessels and facilities to develop emergency response plans, identifying how they will respond to spills and what equipment will be available; and requires federal and state agencies to develop national and regional response plans.
- **Double hull requirement:** The Act specifies that by 2015 all tankers in U.S. waters will have double hulls.
- **Liability established:** In the event of a spill, OPA holds ship and facility owners and operators responsible for cleanup costs and damages to certain specified limits.
- **Trust fund use:** Using a trust fund maintained by a five-cent-per barrel fee on oil, the act allows use of the fund for responding to, mitigating, and cleaning up oil pollution and compensating for a variety of natural resource-related damages. This includes loss of natural resources and certain economic damages, such as loss of income and tax revenue due to damaged or impaired natural resources.

California State Government

In California, the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 was passed. This Act divided oil spill responsibilities between the California State Lands Commission and the California Department of Fish and Game's Office of Oil Spill Prevention and Response (OSPR). Under the State Lands Commission, the Marine Facilities Division was created to regulate and inspect all marine oil terminals, both offshore and onshore. OSPR was given the responsibility of overseeing contingency plans and prevention and response for the entire California coastline. Finally, the State Fire Marshal (SFM) was given authority over the major pipelines that transport crude oil from production fields or terminals to the refining centers in the Los Angeles Basin and San Francisco Bay area, as well as those that transport refined products (gasoline, diesel, jet fuel, etc.) from the refineries to storage terminals or across the state line. SFM regulated pipelines do not include those lines within production fields, marine terminals, refineries, the Pacific Outer Continental Shelf, or bulk loading facilities, which are regulated by the U.S. Minerals Management Service (USMMS), U.S. Department of Transportation (USDOT) Office of Pipeline Safety (OPS), the Division of Oil, Gas and Geothermal Resources (DOGGR), and the State Lands Commission (SLC).

California Department of Fish and Game Office of Oil Spill Prevention and Response	California State Lands Commission Marine Facilities Division	California State Fire Marshal	U.S. Minerals Management Service	Division of Oil, Gas and Geothermal Resources	USDOT Office of Pipeline Safety
Contingency Plans Oil Spill Prevention Oil Spill Response	Regulate and inspect all marine oil terminals both offshore and onshore, including pipelines which are on or part of marine oil terminals	Inspection and enforcement of Intrastate hazardous liquid pipelines	Regulation of oil and gas pipelines on the Pacific Outer Continental Shelf Regulation of spill prevention and response for all offshore pipelines including those in state waters	Oil Field Gathering Pipelines	Inspection and enforcement of gas pipelines in federal waters



Photo Courtesy of Timothy Treadwell

According to several sources, this division of responsibility has historically created competitiveness and a sense of animosity between the various agencies. One source, who requested anonymity, revealed that the people of California have been “ripped off” because of the politics inherent in overlapping agencies, and implied that employees of OSPR were not maritime professionals but “re-treaded bureaucrats” trying to keep their jobs. This high ranking government employee further contended that, not only does OSPR spend 85-90% of their time dealing with response (instead of prevention), but that their regulations are viewed as ineffective because they are written by regulation experts, not maritime experts. What's more, a representative from the State Fire Marshal's office revealed that indeed there have been circumstances where the “authority of these regulators does overlap.” He added that, at times, “this overlap has caused misunderstandings or friction between agencies.” As one source summed it up, “when there are too many cooks in the kitchen it escalates into inefficiency.”⁷

Jerry Aspland, the former head of Arco Shipping and current President of the California Maritime Academy, noted that this jurisdictional overlap and multiple agency participation needs major revamping. According to Aspland, a ship coming into port might have as many of 5 agencies monitoring the operation. Why is this a problem? In Aspland's opinion, too many distractions and interruptions can, in fact, result in an unsafe working environment.

Because of this overlap, however, some of the agencies in the past few years have initiated memoranda of understanding (MOU) with one another concerning jurisdictional issues. Specifically, these MOUs are designed to cut down on the jurisdictional overlaps and red tape. In fact, as this report went to press there was a major reshuffling occurring between OSPR and the State Lands Commission. The former head of the State Lands Commission office was temporarily promoted to head the OSPR. Accordingly, state personnel have been put in charge of conducting a fact finding mission to determine how both agencies will move forward to eliminate the contentious nature of the dual agencies.

Finally, in a recent Department of Transportation report to congress it was specifically noted that overlaps in the U.S. Marine Transportation System “create inefficiencies (such as redundant and conflicting regulations) that add costs to the system and its users.”⁸

Oil Industry Response

“Over a five-year period we are going to spend six billion dollars picking up oil. I doubt we've spent even one hundred million dollars on prevention.”

- Jerry Aspland, former President of Arco Marine⁹

That statement was made in 1994. In a telephone interview conducted in July of 1999, Mr. Aspland confirmed that indeed the same problem exists today. Money spent on oil spill response far outweighs money spent on prevention. Accordingly, the other weakness in terms of spill response and prevention are the oil companies themselves. What have they done since the Valdez spill to ensure that another major spill is prevented? How much money do they spend on prevention and response technology today?

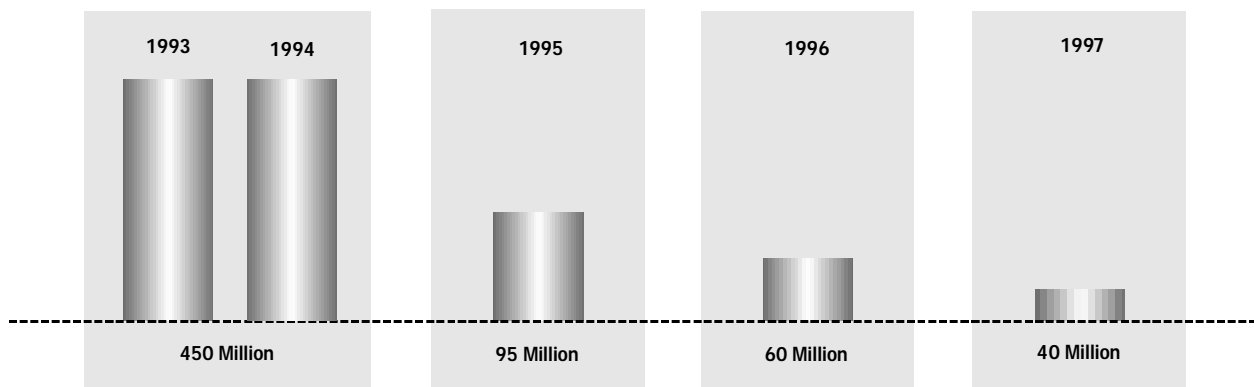
OPA requires that those who transport petroleum and petroleum products in U.S. coastal waters ensure that there are the resources necessary to respond to a “worst case discharge” to the “maximum extent practicable.” After the Exxon Valdez spill it became apparent to both the government and industry that there was not a mechanism in place to respond to large spills. In response to OPA, a group of oil industry professionals joined together to determine how to respond to the requirements of the new legislation. The oil companies formed a non-profit membership organization called the Marine Preservation Association (MPA) in order to subsidize oil spill response organizations. MPA's membership consists of companies engaged in the business of petroleum exploration and production, refining and marketing, transportation and shipping. Marine Spill Response Corporation (MSRC), a non-profit national spill response company, is one of several groups that receives funding from the Marine Preservation Association.

MSRC was started in 1990 and was divided into five national regions, including southern California. MSRC has contracts with the oil companies to provide oil spill response equipment and services when needed. Specifically MSRC offers response capability intended to satisfy the following response planning requirements:

- Worst Case Discharge
- Maximum Most Probable Discharge
- Average Most Probable Discharge
- Shallow Water Response Capability
- Shoreline Cleanup

Organizations like MSRC handle virtually all response to spills.¹⁰

Despite significant expenditures in the immediate post Exxon Valdez spill era, MSRC down-sized in May of 1996 and laid off a significant amount of personnel. According to an MSRC representative, MSRC did, however, maintain the same level of response equipment. To compensate for cuts they used contractors and subcontractors to work on spills. The downsizing was a direct result of cost cutting on the part of the oil company members. From 1990-1993, \$450 million was paid by the oil companies to start up the corporation. It cost \$95 million each year to operate the company until 1996, when their operating budget was slashed to \$60 million. By 1997, MSRC had been reduced to operating at \$40 million a year. According to our source, the cutback was a result of the oil companies wanting to eliminate the spill management services provided by MSRC.



Note: All figures are approximations and were taken from a phone interview with a MSRC representative in 1997. Requests were made to both the MPA and MSRC for financial information and we were told that this information could not be disclosed to the public.

Why the reduction in oil company expenditures for oil spill response? It points to the second major problem that is compromising the safety of our marine environment - a lack of commitment in terms of money and research on the part of the oil industry to plan for and respond to oil spills. The oil companies argue that cutbacks do not affect their effectiveness in cleaning up a spill, but the example cited later in this report, the Chevron Marine Terminal at El Segundo, suggests otherwise. And what about an Exxon Valdez size spill?

According to a report created by the Federal Office of Technology Assessment for an Exxon Valdez type of spill, the oil can spread over 6 square miles (almost 4,000 acres) during the first 12 hours following the spill.¹¹ The huge area encompassed by a large spill implies a substantial amount of equipment is required for an adequate response.¹²

Even more disturbing is the admission by oil company executives regarding their cost cutting measures. A statement from the Chairman of the Board of Chevron in the company's 1996 annual report said that 1996 was the best year in the company's history and that their earnings hit an all-time high of more than \$2.6 billion. The letter goes on to explain that "this level of investment would not be possible if we weren't continuing our diligent cost-cutting efforts" and "cost control is imperative to our success; we must continually reduce unit operating costs."¹³ In fact, despite record profits, Chevron cut environmental spending by \$1.2 billion in 1996 and 1997.¹⁴ An excerpt from Mobil Oil's 1998 Annual Meeting points in the same direction ". . . but growth is only part of the equation. We have a stretch target to reduce unit operating expenses by an average of 4 percent per year -- and that is not going to be easy. We will have to keep expenses relatively flat using initiatives to offset inflation and the higher costs associated with growing the business."¹⁵

In fact, most recently, the Wall Street Journal reported earnings at both Chevron and Unocal soared in the first quarter of 2000 to exceed Wall Street's expectations. Chevron, San Francisco, had a first-quarter net income of \$1.04 billion more than three times the year-ago earnings of \$329 million. Unocal reported net income of \$133 million, a huge jump from the \$7 million the company earned last year. Clearly the oil companies are not hindered economically.

What's more, as recently as July, 2000 it was reported that both Exxon Mobil Corp and Chevron, the two largest U.S. oil companies had second-quarter profits that more than doubled to record levels. The combination of soaring crude oil and natural gas prices lifted Chevron's earnings from its U.S. exploration and production business 168% to \$388 million. Clearly the oil companies are not hindered economically.

The concern for oil spill prevention is augmented by the findings of an American Society of Civil Engineers study entitled "The Emergence of Spill Prevention Concerns for Water Resources" which examines the need for a technological shift from clean-up to prevention. The paper exposed several findings that are worthy of mention. In the introductory paragraph of the paper it is stated:

In trying to address the problem of spills both in law and in practice nearly all the emphasis is placed on actions after spills occur; 1.) by attempts to clean up; which are too often not technically possible and 2.) punishing and fining the culprit. Neither are constructive nor successful. Neither show any evidence of reducing or preventing spills. Similar data indicates that there is also a serious problem of spills from hazardous wastes and toxic substances. Most of the nation's efforts regarding spills relate to procedures after spills occur. In many of these incidents, only a small fraction of the material can be recovered.

The paper goes on to summarize that:

Based on the available literature it is sad to report that not much progress appears to have been made in the field of spill prevention. The research activities are virtually non-existent. Databases are inadequate to even characterize the problems and identify possible areas that might lead to solutions. As a first step in any effort to this problem it is absolutely essential that meaningful data be obtained.

Finally, in his book “Tankers Full of Trouble” Pulitzer prize winning author Eric Nalder asked what state officials could do to hold the line against oil spills. In response, then Arco Marine President Jerry Aspland replied :

! “Keep the heat on. I mean it. You’ve got to keep the heat on. Keep asking the questions like you are doing. I just worry that three years from now nobody will be paying any attention and things will slip back to the way they used to be.”¹⁶



Photo Courtesy of Timothy Treadwell

3. What's Missing Today?

In order to answer the question of what is being done to prevent an Exxon Valdez spill in Southern California, we interviewed representatives from the various stakeholders; governmental agencies, tank workers, union members, spill response experts and a variety of individuals associated with the business of spill prevention and response. Additionally, we reviewed changes that were made by the federal government in order to help prevent an Exxon Valdez spill from occurring again in our waters.

With the information obtained, we analyzed the two components of oil spills: prevention and response, and from there drew our conclusions. In doing so, we identified two general problems:

- Overlapping jurisdictions and inadequate agency resources among the state agencies.
- A lack of commitment in terms of money and research by private industry to plan for and respond to oil spills.

A. INADEQUATE AGENCY RESOURCES AND OVERLAPPING AGENCY JURISDICTIONS

According to the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, both OSPR and the State Lands Commission are to try to achieve the “Best Achievable Protection” available with regard to spill prevention and response. Government Code Section 8670.3 (c) (1) of the Act states:

! ‘Best achievable protection’ means that the highest level of protection which can be achieved through both the use of the best achievable technology and those manpower level, training procedures, and operational methods which provide the greatest degree of protection achievable. The Administrator’s determination of best achievable protection shall be guided by the critical need to protect valuable coastal resources and marine waters, while also considering (1) the protection provided by the measures, (2) the technological achievability of the measures, and (3) the cost of the measures.

In light of this, the Santa Monica BayKeeper examined factors that are currently in place to see if indeed “Best Achievable Protection” is being realized in the Santa Monica Bay and adjacent Southern California waters. From our investigation we identified the following “Risks”:

Agency Risk 1: Insufficient Staffing of Marine Facilities Division

As previously indicated, the Marine Facilities Division of the State Lands Commission is charged with the responsibility to regulate and inspect, for the purposes of public health, safety, and environmental protection, all marine oil terminals, both offshore and onshore.¹⁷ Their role in oil spill prevention is crucial, which makes the following statistics troubling:

- In Southern California there is one field office to cover the entire area from San Diego to Monterey (450 miles).
- To cover this area, the office is equipped with only 7 inspectors.
- According to the State Lands Commission, in 1998 there were a total of 3,786 oil transfers at terminals in Southern California, 1,667 (less than 50%) of which they monitored.¹⁸

Rating System

The Marine Facilities Division has a priority determination system which determines which transfers will be monitored. Each transfer is rated according to criteria that are calculated to give the tanker and the facility a rating. Some of the criteria include terminal spill history, weather conditions, number of transfers, structural factors and the tanker's McKenzie rating. (The McKenzie rating is an industry rating that indicates the probability of how well a tanker will perform based on criteria including age of vessel, owner and location of vessel, casualty history and other pertinent information.) If either the tanker or the facility is rated as "priority one," i.e., having a high risk index, then an inspector is sent to monitor the transfer. But because there are only 7 inspectors, lower priority transfers are often ignored. The office does conduct an annual inspection and spot inspections, independent of and in addition to transfer monitors, at every terminal. This is done regardless of the priority number assigned to the terminal.

The effectiveness of the Marine Facilities Division could be significantly increased if given additional personnel to monitor the sensitive process of transferring oil.

Agency Risk 2: Vessel Traffic Service (VTS)

Vessel Traffic Service (VTS) is a surveillance and communications network designed to facilitate safe harbor navigation. In southern California, it is jointly operated by the non-profit Marine Exchange and U.S. Coast Guard personnel to provide assistance to large commercial vessels calling on the ports of Los Angeles, Long Beach and, most recently, El Segundo.

The establishment of the VTS was deemed necessary due to the increasing number of large vessels arriving in the area each year. According to the VTS, in 1998, 704 major vessels called on the Ports of Los Angeles and Long Beach. Several requests were made (repeatedly over a five month period) to Chevron to confirm for this report the number of vessels calling on the El Segundo Offshore Marine Oil Terminal, but Chevron failed to respond to these requests. However, according to the State Lands Commission, the terminal currently averages 16 to 18 vessels a month¹⁹, while the Chevron Environmental Impact Report (EIR) published in 1996 states that there are an average of 30 tankers a month that call on the El Segundo Terminal.²⁰ What's more, a recent report to Congress by the U.S. Department of Transportation addresses the problems arising from the growth of tanker size and usage in U.S. waters. The report states that "Larger vessels, growing congestion, and the anticipated increase in maritime traffic are raising the risks of accidents that harm the environment. In addition, the day-to-day operation of vessels continues to be a potential source of marine pollution and damage to the seabed."²¹

Navigation of large vessels, such as tankers, is a daunting task. VTS is an integrated radar and computer system that tracks ships to within approximately 100 feet of their actual location, helps avoid collisions between ships, and records raw data for later analysis in case of an accident or other mishap. **However, what VTS does not currently do is regulate the movement of these large tankers.** While airline air traffic control regulates and determines when a plane should land or take off to ensure a safe flow of traffic, VTS currently does not enjoy this critical authority.

According to the Coastal Protection Review produced by OSPR in 1998 and mandated by the Lempert-Keene-Seastrand Act there are many other areas in which vessel traffic within the state is falling short.²² The review identified the following troubling facts:

- Current shipping lanes used for approach and departure for San Francisco, Los Angeles/Long Beach Harbors encroach on existing marine sanctuaries of environmentally sensitive areas.
- The Los Angeles/Long Beach VTS should be expanded to include the Santa Barbara channel, since shipping in the Channel is at an elevated risk due to its narrow passages, numerous navigational hazards, and a complex vessel crossing pattern at its western end.²³
- The National Oceanic and Atmospheric Administration (NOAA) coastal nautical charts need to be updated to reduce the risk of spills caused by poor charting of navigational hazards.
- There is a need to establish a means of tracking oil tankers along the California coast. One such tool that would serve this purpose is the encoding transponder.²⁴

The Department of Transportation augments the concern by noting in its Report to Congress the following:

There is currently inadequate and inaccurate hydrographic and shoreline survey information depicted on paper and electronic nautical charts. NOAA is responsible for charting approximately 95,000 miles of coastline and 3.5 million square nautical miles of ocean. Today, more than 50 percent of all water depths in the most critical 43,000 square miles are based on pre-World War II data. One-third of the U.S. shoreline has never been mapped by NOAA, and the portion that has been mapped, one-quarter was mapped prior to 1970. Only about 10 percent of the shoreline data has been produced digitally.²⁵

A letter submitted to the NOAA from the Los Angeles/Long Beach Harbor Safety Committee (LA-LB HSC) on February 25, 2000 also reiterates concerns about mapping. The letter states that:

The amount of vessel traffic and tonnage has forced both ports to engage in extensive port expansion and channel-deepening dredging projects....over the next one to two years. These projects will significantly affect the accuracy of the charts required by the U.S. Coast Guard for the San Pedro Bay and the Ports of Los Angeles and Long Beach.... The LA-LB HSC believes that because of the impending changes to the geographical and waterways layout of the port complex, a serious navigational safety hazard will exist if the local charts are not updated in a timely manner.²⁶

NOAA's response to the LA-LB HSC letter was to assure the LA-LB HSC that they are committed to maintaining the nautical charts in the area but never gives a definitive answer to the concerns of the LA-LB HSC, except to say that "NOS (National Ocean Service) is operating under severe resource constraints that require careful planning and scheduling of nautical chart production to meet the needs of all users."

Close Quarters/Pilotage

In 1997, through a Memorandum of Understanding between the Governor of California, the Coast Guard Assistant Commandant for Marine Safety and Environmental Protection, and the executive directors of the harbors of Humboldt Bay, Port Hueneme, Los Angeles, Long Beach and San Diego, a Pilot Advisory Council was created. The Council was charged with the responsibility to "review local pilotage and assess the risks associated with safe piloting of vessels." In their first Annual Report, as required by the memorandum, pilot - master interface was cited as being an area in need of improvement.²⁷ The document states:

The Coast Guard, in fulfilling its waterways management responsibilities, would like the pilot to report any and all deficiencies, mechanical or otherwise, that might affect the vessel's safe passage. The pilots, on the other hand, are reluctant to act in an enforcement capacity which might make the Master less likely to divulge the same deficiencies, thereby compromising the pilot's ability to handle the vessel safely.

At that time the council recommended that “each pilot organization adopt procedures to ensure that each pilot provides specific, written notification to remind the Master of the legal responsibility to report any discrepancies in the navigation, steering or propulsion systems to the U.S. Coast Guard.” The Report further stated that “A year later it seems that the incident review and lessons learned component of traffic management remained a hazard.”²⁸

According to a 1998 memorandum to the Los Angeles/Long Beach Pilot Advisory Council from the Coast Guard, there is significant room for improvement in terms of near misses and the lessons learned. The memorandum states:

We in the maritime community have a long ways to go in this regard. Regardless of national efforts to deal with this issue, we must have local procedures to identify the best means by which we identify and take advantage of “our” lessons learned opportunities. . . The involvement of enforcement agencies tend to inhibit the full sharing of information. . . The air industry has found ways to deal with liability and accountability issues in order to open the information gates to lessons learned opportunities.²⁹

The memorandum also documented examples of incidents that occurred as a result of communication failure, namely:

- A tank vessel departing Long Beach across the flats enters Los Angeles Main Channel with dredge in place and swings out to go around the dredge; confusion over buoy placements and location eventually lead to an allision (a collision between a moving vessel and a stationary object, including another vessel) with the shallow-water habitat. Better sharing of information and inside traffic management were cited as concerns.
- Vessel grounding in Los Angeles while backing down in the turning basin; issues included the passing of information regarding the maneuvering capabilities of vessels so pilots can make more informed decisions.
- Several instances where anchors had to be let go to stop the vessel as the vessel either lost control (speed, stability) or lost power while approaching or within the port complex: issues included tug use, speed, air start problems, etc.³⁰

There were 7 “close quarters” incidents in the Los Angeles/Long Beach Harbor in 1998 according to the VTS. It should be noted that the terms “close quarters” and “near miss” are somewhat interchangeable; however, there is constant debate over the definition of these terms and there are no universally accepted definitions, nor anything in governmental regulations, that defines either term. However, a “Near Miss,” as defined by the Los Angeles/Long Beach Harbor Safety Committee, is an incident in which a pilot, master, or other person in charge of navigating a vessel, successfully takes action of a “non-routine nature” to avoid a collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment. VTS “close quarters” situations are described as vessels passing closer than 0.25 nautical miles (nm), usually occurring within the precautionary area. The VTS,

besides taking action to assist in preventing vessels passing too close together, documents and reports “close quarters” situations. Collecting “close quarters” data for incidents other than vessels passing within 0.25nm or outside of the VTS area is extremely problematic.

When a “near miss” or “close quarters” situation is not obvious to VTS, the incident may not be reported to the appropriate authorities. According to a high level member of the U.S. Coast Guard, pilots are often fearful of the legal action that might ensue as a result of the incident. They are often so concerned about liability that they don't want to make improvements in safety for fear that it may implicate that they had a safety problem in the past. By law, however, a pilot is not legally bound to report a “near miss” to the Coast Guard. It is the responsibility of the owner/operator or agent to make the report.

The fact remains that the two adjoining Ports of Los Angeles and Long Beach make up one of the world's largest port complexes, divided only by an invisible line of administration. The Port of Long Beach is, at present time, the busiest cargo container port in the United States.³¹ In 1998, \$80.4 billion in trade, more than the equivalent of 4.1 million 20-foot cargo container units, moved across Long Beach's wharves.³² The Port of Los Angeles is ranked second to Long Beach as the busiest port in the country.³³ With an anticipated doubling of cargo expected by the year 2020, the Port is completing its 300/400 Implementation Program, a \$600 million capital development program encompassing 24 separate, but related, projects. It is the largest capital improvement undertaking of any U.S. port and the Port's most ambitious program since its founding in 1907.³⁴ Consequently, this highly trafficked area points to the crucial need to develop an unprecedented degree of control in the movement of vessels in the waters of southern California.

What's more, when asked in a 1999 interview what area of tanker safety could be improved upon at present, Jerry Aspland commented that the oil companies spend a tremendous amount of money on response when they should be investing in research into improved systems of navigation and vessel traffic. A self-proclaimed “proponent of vessel traffic systems,” he emphasized that this is an area which can stand a tremendous amount of change. The Department of Transportation's report to Congress further supports this contention stating that “as the average size of today's commercial ships continues to grow, the margins between their keels and channel floor decreases. Maneuverability is increasingly restricted, raising the risk of oil spills and accidents involving other hazardous materials.” The Report emphasizes that “accurate and timely navigation information is a critical issue to ensure the continued safety of the Marine Transportation System.”

Technologies currently exist that could alleviate some of the navigational risks, but unfortunately these technologies are not utilized because neither industry nor government wants to be burdened with costs associated with implementation and maintenance. A disturbing example of this lack of responsibility is the recent dialogue between the Marine

Exchange of the Los Angeles-Long Beach Harbor, OSPR and the Ports of Long Beach and Los Angeles. Discussions were conducted between the parties with regards to establishing a Physical Oceanography Real-Time System (PORTS) in the Los Angeles/Long Beach harbor complex. PORTS is a navigational safety program that promotes navigational safety, improves the efficiency of ports and harbors and helps to ensure the protection of coastal marine resources. The system measures and disseminates observations and predictions of water levels, currents, salinity and many meteorological parameters (e.g., winds, atmospheric pressure, visibility, etc.) needed by the mariner to navigate safely. PORTS data, when combined with up-to-date nautical charts and precise positioning information, can provide the mariner with a clearer picture of the potential dangers that can threaten navigation safety. Full systems are presently installed in Tampa, New York, San Francisco, Houston/Galveston, and Chesapeake, (Virginia). In the San Francisco Bay an agreement was signed between the OSPR and National Ocean Services (NOS) in which OSPR assumed responsibility for the operation and maintenance of the system. In turn, OSPR commissioned the San Francisco Marine Exchange to oversee its local operations.

For the past two years OSPR has been negotiating the establishment of PORTS in the Los Angeles-Long Beach harbor complex but with little success. According to a letter submitted by OSPR to the Executive Director of the Port of Long Beach on February 25, 2000, OSPR has offered to pay for the purchase of the PORTS hardware, as well as cover installation costs, on the condition that their local partners in the complex find a party or parties to fund the ongoing operations and maintenance of the system. It was initially suggested by OSPR that the Los Angeles-Long Beach Marine Exchange fund the operation and maintenance of the system. The Board of Directors of the Marine Exchange declined the responsibility and suggested that OSPR contact the two port authorities (Long Beach and Los Angeles) directly to determine if a working contract might be developed with each of them separately to cover the operation and maintenance costs. According to a source at the Marine Exchange, there is little hope that either port will assume responsibility for payment of maintenance and the source stated that the project was “dead in the water.”

It should be noted, however, that as this report was going to press two promising developments recently occurred with regard to navigation and charting. On June 1, 2000, a Memorandum of Agreement for Vessel Traffic Management in the Los Angeles-Long Beach Approaches and Harbors was signed by the Coast Guard, the State of California, the Port of Los Angeles, the Port of Long Beach, Jacobsen Pilot Service, Los Angeles Pilot Service and the Marine Exchange. The purpose of the agreement is to provide the underlying framework to enable development of common procedures and information sharing practices between the parties to achieve the goal of seamless vessel traffic management. In addition, NOAA is working to update key charts and anticipates conducting an entire update of all the harbor charts for San Pedro Bay pending several regulatory packages concerning the Traffic Separation Scheme, Regulated Navigation Area, Pilot Boarding Areas and Aids to Navigation changes for the Los Angeles and Long Beach Harbor approaches.

Agency Risk 3: Pipeline Safety

Oil is moved from tankers to land-based facilities via pipelines. Both land-based and underwater pipelines pose a threat to the marine environment. Many oil spills occur as a result of old, unmaintained and unmonitored pipelines. An analysis by the Oil Spill Intelligence Report in September of 1997 noted that “Nearly 47% of pipeline spills have been caused by structural failures, including corrosion and defective pipes. Corrosion alone has accounted for 20% of pipeline spills. . . Nearly 33% of pipeline spills resulted from accidents with earth-moving equipment during construction or farming activities. . . due to lack of adequate mapping”.³⁵ In the March, 1998, Oil Spill Intelligence Report’s white paper on oil spills in US marine waters over the last 30 years, it is stated that pipelines accounted for 11.6% of all spills. In 1994, the National Research Council published a report titled “Improving the Safety of Marine Pipelines” which noted that:

! “The most widespread risks are not precisely quantifiable with the data available; however, they generally can be managed with available technology and without major new regulations, if enforcement of some current regulations is improved. Better coordination among operators and regulators in gathering safety data, assessing risks, and planning and implementing risk management programs is the most fundamental requirement.”³⁶

According to the Oil Spill Intelligence Report, there were an average of 117 worldwide pipeline oil spills larger than 10,000 gallons each annually from 1978 to 1997. That figure escalated to 128 pipeline spill incidents worldwide in 1998, resulting in total oil product spilled exceeding 22 million gallons.³⁷ Recognizing the inadequacies in pipeline safety, the States/British Columbia Oil Spill Task Force, (a task force formed in 1989 between the states of Alaska, Washington, Oregon, California and the province of British Columbia) approved a project in their 1997-1998 Annual Workplan to perform a West Coast regulatory review in order “to build a stronger foundation for a cohesive and efficient approach to spill prevention in petroleum pipeline operations.”³⁸ The review identifies several gaps in the area of pipeline safety. In California it was noted that “the need for improved interface among pipeline regulators also applies to the need for coordination between state and federal agencies with local governments, especially in California.”³⁹

According to the task force survey, the California State Fire Marshal (SFM) issued a report in 1997 which identified a number of jurisdictional conflicts and confusion. Although there was no perception of conflict among state agencies by the agencies themselves, there was a strong perception on the part of pipeline operators of conflict between state, federal, county and city agencies. The SFM report recommended that the State appoint a single lead agency and grant that agency authority over every aspect of the pipeline permitting process while also requiring it to integrate federal, state, and local policies for crude oil production and transportation of both crude and refined petroleum projects.⁴⁰ Likewise, SFM suggested that this lead agency should look for incentives for operators to report, replace or improve pipelines. The significance of this “conflict and confusion” identified by SFM is that the burden to pipeline operators of overlapping and differing regulatory requirements, especially where new permits are required, provides a disincentive to proactive replacement of aging pipelines. According to the task force report, the overlapping authorities “may also be perceived by operators in other states to be a burden which functions as a deterrent to spill prevention investments.” Workgroup members from Alaska and Washington noted that they did interface with local officials in some instances, but that “the issues had not been as volatile as in California.”⁴¹

Since that recommendation was made a single lead agency has not been appointed in this capacity. In fact, the oversight of pipelines in California remains scattered. In the past, the maintenance of certain pipelines has fallen through the cracks because of these overlapping jurisdictions in terms of which agency has authority over which pipeline. Currently, the State Lands Commission has jurisdiction over pipelines which are on, or part of, marine oil terminals, except those under the SFM’s jurisdiction. The SFM has jurisdiction over those outlined earlier in this report. The Division of Oil, Gas and Geothermal Resources (DOGGR) has authority over pipelines in the Production Field (Oil Field Gathering Pipelines). In fact, while researching the division of pipeline jurisdiction it was difficult to get a clear answer as to who has authority over what.

Section 51010 of the California Government Code specifies that “it is the intent of the Legislature. . .that the State Fire Marshal shall exercise exclusive safety, regulatory and enforcement authority over intrastate hazardous liquid pipelines. . .and may act as agent for the United States Department of Transportation. . .as to those portions of interstate pipelines located within this state. . .the State Fire Marshal has maintained its classification as an Interstate agent with USDOT since 1987.” Currently, SFM regulates approximately 8,000 miles of hazardous liquid pipelines within California.

In accordance with federal law, no state may regulate hazardous liquid pipelines unless their program is certified by USDOT’s Office of Pipeline Safety. SFM’s program has been certified since 1981. This certification assures that the program complies with minimum federal standards for inspector qualifications, program procedures, documentation and recordkeeping, inspector training and code enforcement.

In the task force report the question was asked of DOGGR whether oil field gathering pipeline spill prevention is “adequate in their jurisdiction, what efficiencies could be gained by more cooperation, coordination, delegation among agencies operating in your jurisdiction, and what barriers do they perceive, if any, to improved spill prevention in their jurisdiction.” DOGGR responded:

In a regulatory scheme as complex as the one in California, there is always room for improvements in coordination and communication between prevention and response agencies. The above-mentioned joint regulatory/industry committee recommended that the State Interagency Oil Spill Committee be used as a medium to improved interagency communications, but implementation of this recommendation has not been pursued aggressively.

Because of this intricate problem, a formal MOU was adopted in January, 1999, by the USMMS, the Office of Pipeline Safety (OPS), SFM, DOGGR and the State Lands Commission in order to reduce the regulatory burden on operators. They agreed on a list of “red flags,” as well as ways for the agencies to cooperate. One aspect of the agreement calls for coordination among the agencies before any unilateral decisions are made. This MOU is certainly a step in the right direction; however, the continual scrutiny of this process is needed to ensure that we continue to make meaningful progress.

It is noteworthy to add that the National Transportation Safety Board (NTSB) issued a safety report in May of 1999 which found that:

! “. . .the Research and Special Programs Administration and the US Coast Guard need to make a more concerted effort to develop and disseminate educational information on fatigue in pipeline and marine operations, respectively.”⁴²

Finally, according to the Task Force Final Report, the Project Workgroup noted that “its discussions and outreach over the last year have identified a relative lack of research and development focus on pipeline spill prevention in the U.S.” The Workgroup added that “it appears that federal agencies are focusing little or no R&D efforts on this area, although it was stated that the Office of Pipeline Safety is funding development of a “smart pig” capable of detecting longitudinal cracks and faults, but this was not verified. . . The Alaska Department of Environmental Conservation (ADEC) has put out RFPs (Request for Proposals) on pipeline corrosion and leak detection projects which are designed to help the agency make Best Available Technology (BAT) decisions. ADEC is required by regulation to require BAT, so the purpose of these RFPs is to identify what projects are available, what technology is proven, and what technology works best. These projects are funded with Exxon Valdez settlement funds, and were required to be completed this year.”⁴³ Additionally, the Workgroup could not confirm any R&D funding targeted at pipeline spill prevention by the American Petroleum Institute or by any other states.

Agency Risk 4: Frequency of Response Drills/Method Used for Response Drills

Because of the complexities of responding to a spill, response drills must be done frequently and with great precision. In fact, California Government Code section 8610.10(a) requires that the Administrator of OSPR “. . . shall periodically carry out announced and unannounced drills to test response and cleanup operations, equipment, contingency plans, and procedures. . . .”

Although this code was enacted in 1990 as part of the Lempert-Keene-Seastrand Act, the State did not exercise the mandate until October, 1999, when it announced that it would conduct unannounced drills. At that time, one of the firms, National Response Corporation, citing cost, refused to participate. As a result of the company’s defiance of the rule, OSPR conducted a series of meetings with the Oil Spill Response Organizations to develop guidelines for the unannounced drills. The guidelines were presented at a public hearing on March 14, 2000. These guidelines will now be subjected to a formal state rulemaking process. A letter was sent to all oil spill contingency plan holders advising them that over the next 12 months there will be an “unannounced drill” to test the response and performance capabilities of the oil spill response organizations.

The Center for Marine Conservation summarized areas of concern with regard to the State spill drill program in their recent report “Boom Not Promises, the Case for Real Oil Spill Drills in San Francisco” :

- ▶ **Lack of Adequate Public Process** - The guidelines for unannounced oil spill drills have been developed by OSPR in cooperation with an advisory committee comprised entirely of private Oil Spill Response Organizations (OSROs). These guidelines set forth how the OSROs will be tested in unannounced drills. Yet the committee that advised the State did not formally include any members of the public, local governments, or representatives of other natural resource trustee agencies. During their development, the draft guidelines were never presented to the public at large or to local governments, whose shorelines and economy would be affected by oil spills. To date, State officials have not indicated any commitment to modify these proposed rules, despite public testimony. This is not an appropriate process for developing public policies of such major significance.
- ▶ **Lack of Adequate Shoreline Protection** - The inadequate public process produced a wholly inadequate product. Protection of sensitive shorelines and wetlands is ignored in these rules. Any contractor approved by the State of California, to provide oil spill response services must be able to clearly demonstrate and prove their ability to protect sensitive, shallow water shoreline habitats in a timely manner required by spill plans. Yet, the current FINAL guidelines for testing oil spill response organizations include no evaluation of this critical and essential capability. This major oversight must be corrected before any unannounced oil spill drill guidelines are approved and implemented.

In late 1994, the Santa Monica BayKeeper participated in an oil spill response drill conducted by Chevron, in conjunction with numerous State and Federal agencies, at their marine terminal in El Segundo. Unlike a “fire drill” in a school, the oil spill drill was not conducted by surprise to test the real response time and ability of Chevron and its spill response contractors. Instead, it was carefully scripted and deviations were not allowed. The Santa Monica BayKeeper’s observations of Chevron’s performance included the following:

- During the 36-hour drill, the Santa Monica BayKeeper and others were invited to participate by calling the Incident Command Center with realistic questions, comments and scenarios. For example, we were asked to provide typical public input, such as sightings of oiled wildlife, questions about beach closures, etc. All of our input was met with “That’s not part of the drill; we can’t respond to that.”
- Even under these artificial, scripted conditions, Chevron’s own timetable showed that oil skimmer vessels of sufficient capacity were not able to arrive on scene for nearly six hours after the initial spill. The result? Even the “drill” had to rehearse oil being cleaned up from local beaches, similar to the real events of 1991, when a ship at the Chevron terminal was responsible for a major spill (20,000 gallons) which resulted in oil on Malibu beaches.
- Available personnel, vessels, equipment, and supplies was wholly inadequate to respond to a clean up of beaches and rocky coastal habitat in the Santa Monica Bay. Birds, sea lions, fish, and kelp beds would have been destroyed in significant numbers.

A de-briefing after the drill excluded the public. No public evaluation of the drill, by Chevron, the U.S. Coast Guard, or any other entity, was ever issued. In short, whatever lessons were learned from this “rehearsal,” they remain invisible to the public to this day.

The inadequacy of the drill procedure currently in place is further evidenced by the findings of OSPR in their 1998 Coastal Protection Review document.⁴⁴ Finding number 15 of the report states that:

Drills and exercises have shown that the Incident Command System (ICS) response organization used by industry may significantly differ from the California/Coast Guard District Eleven model which is the standard ICS with the Coast Guard. Intensive training is necessary to more effectively join different approaches to ICS and guarantee compatibility. If this cannot be accomplished voluntarily, regulatory action may be needed to mandate a uniform response organization in California. This must be compatible with the State Emergency Management System (SEMS) implemented by OES (Office of Emergency Services) and all other State local agencies.

In an Incident Report for a Northern California spill (the Cape Mohican), the Coast Guard made several observations:

- OSROs nationwide are operating with minimal crews while maintaining the same, if not more, equipment.
- Two important factors also made overall management of the response effort and efficient coordination of response equipment particularly difficult: a lack of complete equipment “systems” and a lack of trained personnel to run them.
- Local response resources are shrinking and there is a need to identify methods to more efficiently ‘cascade’ both equipment and personnel from outside the affected area.

More meaningful are the conclusions drawn in the recent California Research Bureau report “Drills for Responders.” The report concludes that “Alyeska, the marine terminal operator in the Valdez spill, could not mobilize resources in line with what their contingency plan required. To save costs, both responders and regulating government agencies had trimmed oil spill response efforts, in part due to the pressure from oil companies that fund much of these efforts.”⁴⁵ The report also states that there were important lessons learned from the Exxon Valdez spill and emphasizes the need for streamlined response capabilities:

- Major oil spills happen infrequently. Between spills, complacency can take hold, resulting in pressure to reduce the resources devoted to spill response.
- The resources and requirements spelled out in contingency plans need to be ready and available to perform, as the plan requires.
- Drills are a very good way to test the readiness of responders. Unannounced drills help ensure that the responders can respond quickly to unforeseen events.
- Oil spill response can be looked at as a system. As a system, the weakest link will reduce the effectiveness of the rest of the system.
- Some centralization of power and authority is necessary during a response.

Agency Risk 5: Regulation of Navy Vessels

According to the Coastal Protection Review and Coast Guard statistics of oil spills from 1992 to 1997, the U.S. Navy led the way in spilling oil into southern California waters. The Coastal Protection Review found that “past spill statistics have shown that over one half of the total number of reported spills occurred at facilities operated by the Navy” Some questions remain as to whether Federal facilities are covered under the Lempert-Keane-Seastrand Act. Due to exemptions, an Executive Order has required such facilities to come into compliance with all applicable State regulations. Coastal Protection Review finding number 18 states:

! “Based on a review of oil spill history for the State of California for the past five years, it would appear that the Navy, its various facilities and vessels located throughout California, constitutes the largest single source of spilled petroleum products into California marine waters, both from a standpoint of frequency and volume.”

Accordingly, the review recommends that:

Although the Navy has already begun to work with the Administrator on a series of initiatives to help reduce the risk of oil spills into California marine waters, the Administrator and the Director should work directly with the Commander, Naval Base San Diego, toward the development of a comprehensive MOU to address further the remaining issues related to oil spill prevention and response.

Clearly the need for action in terms of regulating Navy operations is of the utmost importance when considering their poor environmental record.

Agency Risk 6: Second Pilot Channel

As mentioned previously in this report, as the Ports of Los Angeles and Long Beach become increasingly busy, communications within the harbor areas need to be improved. Foreseeing this need, the Los Angeles/Long Beach Harbor Safety Committee (HSC) in 1995 approached the Federal Communications Commission (FCC) with the request to have a second VHF-FM channel designated for communications between the pilots aboard ships and the tugs assisting them to maneuver and berth in the harbor areas. The request was necessitated by a continuing marine safety problem related to the availability of only one VHF-FM channel for that purpose, and the resulting potential for confusion when more than one ship is maneuvering with tugs.

According to Captain Manny Aschemeyer, the Executive Secretary for the LA/LB Harbor Safety Committee, the pilot-tug frequency in recent years has become very crowded and congested because it is utilized by two pilot organizations (Los Angeles Pilots and Jacobson Pilots, the two pilot organizations that work within the Los Angeles and Long Beach harbors, respectively). Unfortunately, until recently, the need for this additional safety tool has fallen on deaf ears in Washington D.C. In May of 1998, after numerous futile attempts to secure a second communication channel from the FCC, the HSC sought congressional support to locate the second channel and move it along to approval. Over a year later in July, 1999, Aschemeyer received a call from an FCC representative who explained that he and his colleagues were “working on” getting an assigned frequency for use at Los Angeles/Long Beach Harbor for tug-pilot communications. Aschemeyer related to the FCC that the HSC had been in contact with the FCC for over two years, attempting to resolve the matter. According to the FCC this was a “new request” that had just been sent over to them in the last month or so. This sudden acknowledgement of the request most likely stemmed from the letters the FCC received from two U.S. Senators and two local Congressmen who recently intervened on behalf of the HSC.

According to Aschemeyer their request fell “into a big black bureaucratic hole” whereby the HSC had to start the process from square one. Finally, however, as this report was going to press, the FCC agreed to formalize the second VHF-FM frequency for use by the pilots and tugs. This dangerously irresponsible delay, (nearly three years), on the part of the Federal government is inexcusable and highlights the dangers of the bureaucracy which jeopardizes both the safety of human life and our environment.

B. Inadequate Oil Industry Commitment

The Chevron El Segundo Offshore Marine Oil Terminal lies off the southern California coast in the Santa Monica Bay less than 1.5 miles from shore at a depth of only 80 feet. The Santa Monica Bay is an abundant source of marine life, from tiny microscopic plankton to garibaldi, sea lions, sea birds and dolphins. The average amount of crude oil passing through the terminal is about 165,000 barrels per day,⁴⁶ exemplifying the amount of oil transfer activity that occurs at this location.

The Lempert-Keane-Seastrand Act directs that the administrator (OSPR) provide not only for the “Best Achievable Protection” for the state but also for the “Best Achievable Technology.” As stated above, Section 8670.3 (d) of the Act states explicitly:

! “Best Achievable Technology” means that technology which provides the greatest degree of protection taking into consideration (1) processes which are being developed, or could feasibly be developed anywhere in the world, given overall reasonable expenditures on research and development, and (2) processes which are currently in use anywhere in the world. In determining what is best achievable technology, the administrator shall consider the effectiveness and engineering feasibility of the technology.”

As one can see from the following, both “Best Achievable Technology” and “Best Available Protection” has not been implemented by industry in any reasonable interpretation of the definition.

Industry Risk 1: Lack of Pre-Booming at the Chevron El Segundo Marine Terminal & Slow Spill Response Time

One measure used to prevent damage if a spill were to occur during an oil transfer is to pre-boom the immediate area. Booms are floating barriers used to prevent the spread of oil and corral it so it can be recovered by equipment such as skimmers and pumps before it causes widespread fouling of the environment. A boom consists of a long cylindrical shaped float and a skirt that hangs from the core into the water. Chevron does not place booms in the water around the ship as a simple preventative measure when oil is being transferred at its offshore oil terminal. It is, however, a practice that is required during all oil transfers in the Los Angeles/Long Beach Ports and is in fact mandated by the State regulations.⁴⁷ It should also be noted that tankers are boomed in Valdez while they are being loaded.

Why then would it not be enforced at El Segundo, an ecologically sensitive area in the open ocean where risk to the environment is at a greater level and more likely? When questioned about this issue Chevron rebutted in their Environmental Impact Report (EIR) that pre-booming was deemed unnecessary by the State Lands Commission Marine Facilities Division. The justification given was that pre-booming in the open ocean requires many boom tenders to make sure the boom is a safe distance from the boat as well as keeping the boom at the proper tension to prevent oil from escaping under or over the boom in rough water. The report claims that by having the boom in a stand-by position at the berth they have the capability of deploying the boom to a specific oil spill area effectively within 20 minutes. But why should there be a delay, when it’s not necessary and can be avoided?



High speed response vessel executing a "U configuration" boom response near Juneau in May, 1994.
Alaska Department of Environmental Conservation.

Because the Santa Monica BayKeeper patrols Santa Monica Bay on a regular basis we are familiar with its varying conditions. From our patrols and site inspections, the Santa Monica BayKeeper has concluded that the predominant weather and wave conditions would not render pre-booming ineffective or difficult to deploy. Moreover, adjusting booms already deployed would obviously take less time than waiting for a spill to occur, then deploying and adjusting the boom. In fact, if there was a location where pre-booming would be most needed it would be in open areas such as the Chevron El Segundo Oil Terminal. Furthermore, as a member of the Harbor Safety Committee, the Santa Monica BayKeeper can testify that the Committee receives monthly reports of spills in the harbor, which were kept from becoming ecological and economic disasters due to this simple, inexpensive requirement.

A recent incident reported by the United States Coast Guard to the Harbor Safety Committee (HSC) exemplifies the importance of pre-booming. On April 17, 1999 during a fuel oil transfer between a tanker and barge in the Los Angeles/Long Beach harbor, five (5) barrels of fuel oil were discharged into the water during a misguided transfer operation. Both the barge and the vessel had been pre-boomed prior to the transfer. All oil discharged into the water was contained by the boom.⁴⁸ There have been numerous such examples cited by the Coast Guard in briefings to the HSC of spills within the harbor area that have been mitigated because a boom was deployed prior to the oil transfer.

Finally, Chevron's judgment and history of local environmental protection is questionable when you consider the following:

- In April 1998, Chevron agreed to pay \$100,000 toward the purchase of Malibu's Solstice Canyon as the final settlement of a Sierra Club lawsuit over illegal pollutant discharges into Santa Monica Bay. The settlement, which follows an earlier record agreement to pay \$1.5 million in civil penalties, concluded nearly two years of litigation over what had been repeated pollution discharge violations at Chevron's El Segundo refinery.
- In 1991, Chevron pleaded "no contest" to one misdemeanor violation of state law from a 20,000 gallon oil spill near El Segundo on March 16, 1991, when a ship's anchor punctured Chevron's marine pipeline. A Chevron spokesman, however, claimed that only 8,000 gallons of oil were spilled during the incident.⁴⁹
- In September 1993, the EPA notified Chevron that construction at its El Segundo refinery violated the Clean Air Act because Chevron failed to get a construction permit from the South Coast Air Quality Management District. The EPA believed that the action gave it an unfair advantage over other companies which were following the rules to protect human health. Separately, the EPA proposed a \$17 million fine against Chevron Chemical Co. for alleged failure to report data about hazardous chemicals.⁵⁰
- In 1997, investigations conducted by the Los Angeles Regional Water Quality Control Board revealed that up to 20 feet of liquid hydrocarbon was present on top of the Old Sand Dune aquifer beneath the Chevron El Segundo Refinery. The oil leakage from their facility resulted in 252 million gallons of oil leaking into the groundwater. It will take approximately 100 years to clean up the aquifer.

Chevron's poor record is exacerbated by their unwillingness to answer to the public, as evidenced by the research conducted for this report. In preparing this report, two requests for information were made on separate occasions to the Chevron's Public Affairs Department. In both instances, responses to the requests took several weeks and in one instance, several months. Request #1 was made on February 26, 1997 and was responded to on June 24th, 1997. Several phone calls were made to follow up on the request. Request #2 was made on June 22, 1999 and, after leaving several follow-up telephone messages, has yet to elicit a response. It should be noted that both requests were made for basic information that, one would assume, would easily be available to their public affairs officer.

Industry Risk 2: Job Cutbacks/Automation/Long Hours

According to several sources, understaffing and inordinate amounts of over-time for terminal workers pose a dangerous threat to both the safety of the terminal/refinery worker and the environment. The oil companies are structured to maximize their return to the stockholders. The only method to do this is to either raise the price of the commodity or lower the cost of producing the commodity. It is commonplace for the industry to conform to the latter. It was revealed by one union source, who wished to remain anonymous, that the oil industry relies heavily on the “Salomon Report” published by Salomon Smith Barney, one of the leading investment firms in the United States. The report ranks refiners in terms of their profits and losses.

The need to be “first” creates a vicious cycle where the bar is driven higher and higher by industry and workers are driven to fatigue. An average shift for an oil industry worker runs 12 hours a day, some workers commonly work 15-16 days in a row.⁵¹ This source described a meeting with an oil company executive who noted that he could not negotiate with the union because his company was in the second quartile of the Salomon report and they wanted to be in the first quartile. The question must be asked: what is the oil industry willing to risk for their shareholders and the bottom line?

Another menacing element confronting the environment and worker safety is the reliance on automation. Although automation is not necessarily problematic, it should be viewed as a tool, not a substitute for human beings. The issue of displacing workers for the sake of the bottom line is a common thread in the industry. It was revealed in our investigation that in 1995, Chevron division management discussed the possibility of relocating the marine terminal operator at the off-shore oil terminal at El Segundo to an area away from the terminal where the terminal operator’s view of the oil transfer would be obstructed. Management proposed that the operator could operate by remote control away from the terminal. Also, according to our source, management wanted to make cutbacks in staffing so that when a ship wasn’t at berth there would be no one on duty at the facility. During “downtime” the facility would operate on “Auto Pilot.” The general sentiment was that management was determined to reduce the staff and combine jobs. Accordingly, one source stated that the Oil, Chemical and Atomic Workers Union threatened to have a press conference where they would expose the potential job cuts and the risks inherent in the cutbacks. The threat worked. Division management retreated and abandoned their cutback plans.

Unfortunately, the trend to understaff has not dissipated. What is perhaps most alarming is the culture that exists within the industry to keep the operation running, at all costs. According to a representative from the union there is a pervading message that you are a hero if you keep the wheels turning. “Nobody wants to explain why they had to shut down” the source revealed, adding that there needs to be a change of behavior on the part of the employers for this culture to shift. Often employees will try to repair equipment while the equipment is in operation rather than shutting down. This dangerous practice is the standard within the industry according to our source and resulted in an explosion and subsequent deaths of four employees of a Tosco refinery in northern California on February 23, 1999.

The explosion at the refinery was just the latest in a string of accidents at the plant which has the worst safety record among refineries in the San Francisco Bay Area. Tosco officials remained “tight-lipped” about what caused the accident while the California Occupational Safety and Health Agency (CAL OSHA) announced at a press conference that their investigation revealed there were severe problems with management culture that pressured the workers to keep the unit running while cutting open a pipe. Sixteen of the alleged violations were classified as “willful” signifying that the employer committed an intentional and knowing violation or was aware that a hazardous condition existed and made no effort to eliminate it. The penalties for willful violations total \$730,000. Thirteen of the alleged violation were classified as “serious,” indicating there was a substantial probability that death or or serious physical harm could result from a condition that existed of which the employer knew or could have known. These serious violations carried penalties of \$76,000.⁵²

The Department of Transportation’s report to Congress is in accord with these concerns over worker safety. The Report states that “Human resources are an important element of the Marine Transportation System. While technology has grown in importance, people remain the primary element in making the Marine Transportation System run smoothly, as well as being a key factor in maintaining the safety and environmental integrity of the Marine Transportation System. Well-trained, multiskilled employees will be needed to operate equipment and information systems, both on land and at sea.”⁵³ According to the California State Lands Commission, human error can be attributed as the cause of 72% of marine oil spills, though other estimates attribute human error as the cause of 85-90% of marine oil spills.⁵⁴ The question must be posed - what causes workers to err? Did they just finish their eighth 12 hour day in a row? Were they trying to be a hero and keep the operation running in spite of potential disaster? As the Exxon Valdez evidenced, human error played the major role in the cause of the nation’s most destructive spill.



Industry Risk 3: Single Hull Tankers

In order to lessen the risk of oil spills, oil-carrying containers must be structurally sound. Single hull tankers are not. Most experts consider double hulls to be the most effective structural method for reducing spills from tankers due to collisions or groundings. In fact, it's been estimated that if the Exxon Valdez had had a double hull, the size of the spill would have been reduced by more than half.⁵⁵ How many other spills could have been prevented or reduced if they had been double hulled?

Double hull tankers and tank barges (vessels that are towed) are constructed with double bottoms and double sides. The space between the inner and outer hulls remains empty or is used for ballast (water carried to maintain the stability of the vessel) or other permitted cargoes. In collisions or groundings that involve penetration of the outer hull only, a spill is prevented. If the inner hull is also penetrated, some of the escaping oil will probably be contained in the space between the hulls, and the outflow of oil into the marine environment will be slowed or limited.

The Oil Pollution Act of 1990 addresses this problem by requiring new vessels carrying oil in U.S. waters to have double hulls. In addition, the Act requires phasing out single hulls on existing tankers and barges starting in 1995 and continuing through 2015.

Under-Keel Clearance

As an interim measure, an under-keel clearance requirement was put in place by Coast Guard and State Lands Commission regulations, while double hull tankers are phased in (through 2015). Under-keel clearance is the minimum clearance between the deepest point on a vessel and the ocean floor in still water.⁵⁶ These regulations require that the tank master review the under-keel clearance circulations with the pilot in order to ensure that a valuable exchange of relevant information occurs prior to transit. This rule also ties the owner or operator into the decision-making process. According to the regulations, "if owners or operators influence the master to enter port with under-keel clearances that are imprudent or not in line with pilot safety guidance, the vessel owner or operator may risk the loss of the limits on liability if the vessel grounds during transit."

The Coast Guard, however, only boards certain ships to see that these regulations are being implemented. Further, according to State Lands Commissions regulations, the tank vessel or barge should have a net clearance of at least 6 feet from the sea floor or other known obstructions. Is this sufficient clearance and who is there to ensure that the clearance requirements are followed? (Typical tankers displace 60 feet of water so a margin of safety of 6' is only 10%.) According to the regulations, the master and pilot, acting as advisors, must review the anticipated clearance.

Partnerships and other civic groups all assist the Coast Guard in its effort to make the industry safe; however, owners and operators continue to ignore cooperatively developed safety practices when profits are at stake. In fact, oil spills have occurred because tank vessels enter port with drafts too deep for the facility and then “find” an anchor or rock as they unintentionally ground at the facility. Clearly, the margin of error is less than satisfactory when you consider the above.

This danger points to the urgency in phasing in double hulled tankers. The benefit of double hulls is no better evidenced than by a tanker collision that occurred in the waters off southwest Louisiana. A Conoco tanker’s double hull design was credited with preventing a major spill. On October 31st, 1997, the tanker “Guardian” sustained a 100 foot-by-4 foot gash during a collision with a tug-and-barge flotilla. The 800-foot tanker, however, did not release any of its cargo of 550,000 barrels of crude oil, because of the ship’s outer protective hull. Coast Guard officials told reporters that the collision would have created a major environmental incident if the Guardian had not been a double hulled vessel.⁵⁷

The reluctance of the oil industry to phase in these tankers is evidenced by the following comment published in the Lloyd’s List News in which the American Shipbuilding Association argues that “without investment incentives, construction of double hull tankers will be postponed until absolutely required by law, and our marine environment will be subjected to increased risk from spills.” Accordingly, since the regulation was put in place only 26% of tankers that are in operation internationally are double-hulled.⁵⁸

As evidenced by this statistic, three-quarters of the oil tankers in use today have a single hull. This means that a single sheet of metal about one inch thick separates the oil inside the ship from the ocean. If the ship hits a rock or collides with another ship, the oil is easily spilled. A double-hulled ship, where the hull consists of two sheets of metal separated by an empty compartment ten feet high, has a 75-90% smaller risk of an accidental oil spill.⁵⁹ Adding an extra hull to a ship the size of the Exxon Valdez would increase the cost of building the ship from \$125 million to \$137 million,⁶⁰ and would also reduce the amount of oil that the ship could carry. It has been estimated that making double hulls mandatory on all oil tankers would increase the cost of each gallon of gasoline by only one cent.

Finally, in May of 1999 several oil companies asked the Coast Guard if they could gain an extra five years on the double hull requirement by reconfiguring their cargo and ballast tanks and loading sea water along the ship sides to create “a kind of double skin.” This method of loading oil achieves some, but not all, of the benefits of double hull tanker construction. Exxon warned at that time that it might not have enough qualified tankers in the future to handle shipments, which could slow oil production. Fortunately, the Coast Guard denied the request.

C. Industry Risks = Environmental Disaster

The Exxon Valdez spill may be the most publicized oil spill disaster, but it is by no means unique as evidenced by the following spills:

- The Torrey Canyon, off England, March 1967. In March 1967, the 118,285-ton supertanker, Torrey Canyon, carrying oil from Kuwait stranded on the Seven Stones in the Scilly Isles. Pressure to beat the tide at Milford Haven led the ship's master into a catastrophic impromptu decision to steer between the Seven Stones and the main islands. Confusion and bad judgment put the ship on the rocks, it broke open, 35 million gallons of crude oil leaked out, and the beaches of Cornwall and Brittany were fouled. An estimated 25,000 birds died as a result of the Torrey Canyon spill because the incident coincided with their northerly migration.⁶¹ The Torrey Canyon was a single hull tanker.
- Amoco Cadiz, off Portsall, France, March 1978. The Amoco Cadiz tanker was driven ashore by gale force winds on the northern shores of Brittany in March 1978. The Cadiz was a state-of-the-art vessel, built for safety. Just off the coast, the ship's steering was lost. A large tug came to help, but heavy swells snapped the towing cables from the tug and the ship drifted onto rocky shores twelve hours later. A total of 68.7 million gallons of crude oil was released into the ocean. At that time, the Cadiz resulted in the largest loss of marine life ever recorded from an oil spill.⁶² Diving birds constituted the majority of the nearly 20,000 dead birds that were recovered. Two weeks after the incident millions of dead mollusks, sea urchins and other bottom dwelling organisms washed ashore.⁶³ The Amoco Cadiz was a single hull tanker.
- Sea Empress off Milford Haven, Wales, February 1996. On February 15, 1996, the 147,000-ton tanker Sea Empress went aground at Milford Haven, Wales, near some of Britain's most treasured wildlife sanctuaries. After running aground, the Sea Empress was battered by high seas and gale force winds and over 24 million gallons of oil eventually leaked into the sea.⁶⁴ The Sea Empress was a single hull tanker.
- The Treasure, Cape Town, South Africa, June 25, 2000. The 17-year-old Treasure sank after developing a hole in its hull, which had either rusted or cracked from age or stress. The South African Maritime Safety Authority estimated that 400 tons of oil were released. Though environmental damage is still being assessed, the Robben Island nature reserve, home to about 14,000 endangered adult jackass penguins and 6,000 chicks was hit badly. The Treasure was a single hull tanker.

4. The Aftermath: Response to a Spill

It's 1:00 PM on a Saturday afternoon in the Santa Monica Bay. An oil transfer is taking place in typical fashion. Then something goes wrong. Suddenly a black sheen begins to stretch across the Bay. The lifeguards and fire department start receiving calls from local residents. A smell of noxious fumes pervades the air. The fire department conducts an aerial investigation of the area and discovers that a crude oil spill of major proportions is headed towards the shore.



Oiled bird - result of Exxon Valdez

Is there proper equipment and personnel in place to deal with such a scenario. If this were to happen today where would we stand? Our investigation revealed that, in fact, there are several critical areas of response that are lacking.

To better understand why certain elements of response are critical, we will now look at an actual oil spill incident, the American Trader spill, in which what happened after the spill was just as critical as what led to the spill itself. We can and should again pose the question - are we better off today than we were at the time of the spill?

The following information was taken from the City of Huntington Beach's American Trader Oil Spill Report, referenced on the following pages as the "report".⁶⁵

A. American Trader Spill: An Overview

On February 7th, 1990, at approximately 4:00 p.m., the oil tanker “American Trader” passed over its own anchor while attempting to berth at the offshore marine terminal located off the Huntington Beach coastline. Two holes were torn in one of the forward cargo tanks, and within a matter of minutes, approximately 400,000 gallons of North Slope Alaskan crude oil spewed into the waters around the ship. At approximately 6:20 p.m. a state of local emergency was declared. Around 9:00 p.m. the first known oiled bird, a Western Grebe was picked up off the beach. At 7:35 p.m. on Day Two, heavy oil was first reported on the shoreline at the area of the Newport Beach Pier. By Day Three, oil had found its way onto the shores of Huntington Beach.

As illustrated by this case study, the spill could have been avoided or the risk substantially minimized if:

- The vessel was double-hulled
- The under-keel clearance requirements were higher
- Pre-booming was in place

None of these elements are uniform or adequate to this day.

What happened to the water and wildlife? What happened to the beach area, one that attracts tourists from around the world? What was the impact of this disaster on the community? An analysis of the spill revealed the unsettling answers to these questions.

Who’s in Charge?

What was cited as being the biggest lesson learned in the aftermath of the American Trader incident was the issue of response. Primarily, the complications arose as a result of multi-agency response. Who was in charge? The U.S. Coast Guard, the California Department of Fish & Game, British Petroleum (who agreed to financial and cleanup responsibilities) or the local jurisdiction? It was finally determined that the U.S. Coast Guard would take the lead in the incident. However, determining who was in charge and not having an integrated, well-rehearsed response plan, where each of the parties took the appropriate position, resulted in the loss of valuable cleanup time.

Specifically, the City of Huntington Beach had not been integrated into the process which, according to one city official who was there at the time, did not prove to be prudent. No one knows the local geography and resources like the city. In the report it was cited that one of the initial concerns was to decide who was in charge of the incident and who would approve the cleanup plan, something that clearly should have been determined in advance.

The Cleanup

There was no lack of community volunteers; however, only a small number were able to help in the actual cleanup of the beach because the others lacked the training needed to cleanup the toxic oil that had washed up on their shores.

On Day 4 of the spill, major cleanup of the Huntington Beach coastline first began. Cleanup of oil was predicted to take 2-3 weeks. On Day 5 representatives from Federal OSHA enforced safety requirements for the level of training necessary to work in the oil cleanup. As a result, British Petroleum reported low numbers of workers due to the requirements imposed. That same day it was reported that heavy amounts of crude oil had been deposited on the beach which only exacerbated the complication of worker turnout. Many contacts were made to British Petroleum in an attempt to augment work forces by the Coast Guard; yet, no increases were seen by the end of the day.

Most disturbing were the reports made on Day 6. Personal observations and departmental reports revealed a major spill impact on the beach that day, a day when the need for volunteers was impeded by poor planning. Even after the private contractor had placed hundreds of workers on cleanup operations the results proved to be slow and the amount of work to be performed staggering.

In terms of cleanup efforts, Day 7 proved to be even more frustrating. High winds developed in the afternoon to the point where workers had to be removed from the beaches. Skimming operations also had to be halted due to the ensuing rough sea conditions. The amount of lifeless oiled birds recovered rose dramatically. At this stage there was considerable discussion of how to best clean the oil off the beach. British Petroleum recommended an active skip loader beach sand skimming operation. The local demand was to hand clean the beach with shovels. The technique was to lightly scoop the oil and contaminated sand into bags, collect them with the skip loader and dump the material into trucks. Again, on Day 8, adverse weather conditions severely impeded cleanup efforts. Workers were unable to remain on the beaches, as clean sand was blown over the oil deposits on shore, creating a layering effect described as looking like “zebra stripes.” Once again, skimming activities had to be halted due to the rough ocean surface. Finally, hazards created by the numerous aircraft in the spill area prompted the FAA to restrict their air space.

For several days after the spill, weather conditions continued to restrict cleanup activities. By Day 12 storm runoff dumped debris into the harbors and flood control channels, which resulted in large amounts of oil soaked debris being deposited on the beaches. It was obvious at this point that the task of cleaning up an oil spill was a monumental process which requires maximum planning on the part of all parties.

The Media, Security and the Public

Still other issues that were not considered prior to the disaster became problematic. For example, security became a major problem as the City Emergency Operations Center (EOC) went from 25 city employees to about 60 persons within 2 hours. A police officer was placed at the door for security but he had no way of knowing who belonged and who did not. A coordinator attempted to have all guests and employees sign in but as the EOC became more crowded it became impossible. Hundreds of news media personnel and volunteers called for information. Published EOC phone numbers were constantly busy.

The media impact and need for public information was extremely demanding. The appearance of free lance writers and photographers added to this impact. The severity of public and media attention was evident on Day 2 when an unannounced press conference required five police officers for crowd control. Press conferences and traffic control at the beach area required an additional three officers for crowd control. The American Trader report also noted that it became imperative for the government officials to discuss organizational relationships among other agencies and the massive news media impact on the city. It became clear, according to the report, that the mayor would have to play a major public and political role for this emergency. From a local standpoint it became obvious that world attention was on the city and only the mayor's position would satisfy the public and news media demand for information and multi-organizational stability. Unfortunately, the city was not an integral part of the response nor had the city planned to respond to such an emergency, making the challenges presented by the spill all the more overwhelming.

When Do You Reopen the Beach?

Yet another point illuminated in the American Trader case was the question of "when is it safe to open the beach?" This too could have been determined in advance with standards in place. Who determines and what determines what is clean? Is there a known baseline? If a city plan had been in place would these critical questions have been resolved at the onset? After several days of discussion a "Post Cleanup and Health Risk Evaluation Committee" was formed with the mission of establishing final standards for the reopening of the beaches. The consensus was that the beaches must be cleaned to a level deemed acceptable to the local agency and to specific limits established by the Orange County Health Officer. By Day 18 the Post Cleanup and Health Risk Evaluation Committee met and reached agreement on standards for beach cleanup by Med-Tox, an environmental and occupational health services group. An Orange County Health Care Agency representative adopted the plan as the official criteria for reopening beaches affected by the oil spill. Basic elements of the approved criteria were: (1) An audit team survey with no detectable traces of oil; (2) Sand sampling at approximately five hundred foot intervals with laboratory analysis of the samples; (3) An average hydrocarbon content of tested section could not exceed 100 parts per million.

By Day 21 the Coast Guard was pushing hard for a standard which stated that if the beach looked clean, felt clean when touched and did not smell of oil, then it was acceptable for public access. The city, on the other hand, felt that the public health and safety was too important not to have a measurable standard, and, therefore, stood fast for a scientific standard requiring Orange County Health Officer approval.

On Thursday, March 1, 23 days after the spill, the mayor hosted a special press conference to officially announce the reopening of a portion of the beach. Test results from that portion of the beach showed an average concentration of total hydrocarbons of 30 parts per million. This completed all requirements set for the reopening of this section of beach. The Orange County Health Care Agency, U.S. Coast Guard, the California Department of Fish and Game and the City of Huntington Beach approved use of the beach by the public. At the conclusion of the ceremony, a group of surfers scrambled into the ocean waters.

Relying on Luck

Luck prevented the spill from having an even more devastating impact, rather than careful planning and preparation. According to city officials, the disaster could have been much worse than it was due in part to a set of well-timed circumstances.⁶⁶ For example, a significant amount of response equipment had been stockpiled following the Valdez spill and was sitting in one location in Alaska. It was immediately transported down to southern California for use in the cleanup. Also, that particular February, the weather was mild and the water warm, with the exception of high winds. As such, a good portion of oil stayed off of the beach and dissipated into the air.

The Final Impact

Unfortunately cleanup efforts and lessons learned could not erase the impact this disaster had on the ecosystem and the community as evidenced by the following facts:

- At least 1,000 sea birds known dead; however, probably several hundred more died. This figure includes sixty-eight Brown Pelicans, an endangered species and diving bird that became completely coated by oil while diving through the surface of the water to feed.
- 618,000 beach-users affected at an estimated \$13.19 a day value each.

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- At least \$12 million paid by British Petroleum (BP) just after the spill for cleanup costs and to compensate private parties who suffered losses. In addition BP paid \$9.1 million for programs to restore and protect wildlife habitats, establish a fish hatchery program, and reimburse public agencies for some of their cleanup costs.
 - On December 8, 1997, nearly eight years after the incident, a jury awarded state and local governments (plaintiffs in the case) \$18.1 million.
 - \$12.8 million was for lost use of public beaches. The jury found that the ship owner Attansco should pay \$5.3 million in fines for violating California Water Code Section 13350 - damage to small marine life along the 15 miles of beach and coastline. BP America, Golden West Refining & APLF had already settled for over \$11 million.
 - The spill closed Orange County beaches (notably Huntington and Newport beaches) for five weeks. Huntington Beach City officials have noted that the spill had a “significant impact on the city” and commented that the worldwide media coverage of the incident propelled a severe loss in economic revenue. When potential tourists were alerted that the once pristine beach community was now bathed in oil, they took their tourist dollars elsewhere.
 - Ten years after the spill, government officials now have a plan to allocate the \$11.6 million legal settlement. Most of the money, about \$8.4 million, will be used by the cities of Newport Beach and Huntington Beach for a series of projects ranging from improvements to the Balboa and Newport piers to Huntington Beach’s ongoing plans to upgrade its south beach.



B. Did We Learn Enough From American Trader?

Are we better off today? From the lessons learned (and cited above), have we implemented the changes needed to avoid the same mistakes at all levels?

Risk: Are Coastal Cities Prepared?

As evidenced by the American Trader spill, city involvement is a critical and necessary part of oil spill response. The City of Huntington Beach learned their lesson the hard way, and as a result, now has in place through the County the 450 page “Orange County Operational Area Marine Oil Spill Contingency Plan.” Part one of the plan is the “Marine Oil Spill Contingency Plan,” while part two is a “Biological Characterization” study which establishes a baseline for the local beach and habitat.

Currently, none of the cities located on the Santa Monica Bay have a clear plan in place to deal with an oil spill catastrophe. Although the various fire departments are charged with the authority to mobilize forces and be ready for cleanup activities, there is not a document that outlines a specific plan.

- **County of Los Angeles:** According to the County of Los Angeles, their emergency plan has not been updated since 1988. Although the State Office of Oil Spill Prevention and Response has been pushing the county to create an oil spill contingency plan, there has been little done on the part of the county to see that the project is realized. It would require extra work that, according to a County source, no one is willing assume. Subsequently there has not been any official participation. The local cities, including the county, have acquiesced to Chevron and believe that they will lead the way should a major spill occur. It is, according to one County official, a “very low priority.” This official added that, even with so many small cities that share the coastline, everyone is simply “comfortable” with Chevron’s oil spill contingency plan.
- **The City of El Segundo:** El Segundo has a system that incorporates responses to hazardous material incidents. The Sanitized Emergency Management System is a mechanism that dictates how they should request assistance or direct work to be conducted during an emergency. This generic system, however, does not specifically account for how the city would deal with an oil spill catastrophe should that occur. An El Segundo city official mentioned that the County of Los Angeles was supposed to have a more specific plan for which they are to be getting funding, but have not as of yet. When asked about the availability of volunteers trained to handle hazardous materials, it was pointed out that Chevron has available volunteers, upon which the city would rely if needed.

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- **Santa Monica:** The city does not have an oil spill contingency plan. When we contacted the Emergency Services Coordinator, we were referred to the County of Los Angeles.
 - **Manhattan Beach:** The city has a more generic emergency plan in place, but nothing that deals specifically with oil spills. If a spill were to occur they would notify the Coast Guard and the lifeguards and then get instruction from them. According to the Manhattan Beach Fire Department, they do not have the capacity to do anything. They added that, because the Los Angeles County is in charge of the beaches, it would be the County's responsibility to manage a spill.
 - **Malibu:** The city does not have an oil spill contingency plan and also referred us to the Los Angeles County.

In sum, none of the cities along the Santa Monica Bay have an oil spill contingency plan. They are instead relying upon a County of Los Angeles plan that is over 10 years old.

Risk: Are Response Assets Adequate?

Advanced Equipment: Oil companies have contracts with cleanup cooperatives that are designated with the job of responding to an oil spill. These cooperatives, such as Clean Coastal Waters and Marine Spill Response Corporation, have available oil spill response vessels that are equipped with systems for the effective containment of oil. Some are equipped with skimmers, booms, oil/water separators, dispersant chemicals, absorbent materials and other technologies used to recover oil.

Clean Coastal Waters is located at the Port of Long Beach while Marine Spill Response Corporation is located approximately 40 miles north of Los Angeles in Pt. Hueneme, California. If a spill were to occur in the Santa Monica Bay at the El Segundo Marine Terminal it would take many hours for this advanced and crucial equipment to be on the scene. The response time from Long Beach to the El Segundo Terminal is approximately 3 hours. Within three hours significant damage can occur in and around the spill area. This leads us to the question of what response capabilities are actually available for the Chevron Terminal?

The Case of El Segundo/Redondo Beach Response Boats

Chevron maintains 4 response vessels and 3 Boston Whaler Boats which are located at King Harbor in Redondo Beach (located 6 miles from the Terminal). Two additional Boston Whaler boats are located at Chevron's Oil Spill Warehouse located at the Refinery.⁶⁷

The equipment that currently exists is wholly inadequate in terms of providing effective assistance if a large oil spill were to occur as evidenced by the following:

- None of the boats have skimmer capability. They are each equipped with a boom which in the case of a major spill, would not be sufficient.
- All of the boats are located deep within King Harbor which adds crucial time getting out of the Harbor. Even in the case of an emergency, the speed restrictions within the harbor would restrict the vessels from traveling at a fast speed, which would hinder a speedy response.



Chevron Oil Spill Response Vessels, King Harbor, Redondo, (9/99)

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- King Harbor is located approximately 6 miles from the El Segundo Offshore Oil Terminal, whereas the docks located at Marina del Rey are 3 miles from the Oil Terminal. Relocating the vessels or providing additional vessels in Marina del Rey would save valuable time in the event of an emergency.
 - Prevailing winds in the Santa Monica Bay most often generate surface currents that would drive oil toward Marina del Rey. As such, the response boats in Marina del Rey would be in a better position to respond and head off a stream of oil as a result of a spill.

What's more, Finding #12 of the Coastal Review states that:

! “Mechanical oil spill response technology has undergone little advancement in the past few years. Open ocean and shallow water response methods utilizing boom, vessels and techniques are in need of update and improvement and subsequent use in drills and exercises.”

The Coastal Review also goes on to recommend that OSPR should join forces with the Coast Guard and the response community to support programs to promote research and development, particularly as it relates to shallow water response equipment. Any improved or new technology should be utilized in ongoing drills and exercise, to test their true capability.

Finding #15 of the Coastal Review points to another oversight. There are currently no universal mutual aid agreements between private industry and response companies to share response equipment and/or personnel in an oil spill emergency. This mutual aid, if it existed, would be extremely conducive to a quick and coordinated emergency response.

5. What If...?

What will happen if we choose to ignore the risks both in prevention and response?

Past is Prologue: The Exxon Valdez.

On April 29, 1989, 260,000 barrels (nearly 11 million gallons) of North Slope crude oil was spilled into Prince William Sound, just south of Valdez, Alaska. The impact and enormity of the spill is reflected by the following facts:

- 150 eagles, unknown numbers of river otters, 3,500 sea otters, 350 harbor seals, 300,000 sea birds, 14 to 22 killer whales, unspecified numbers of harlequin ducks, marbled murrelets, pink salmon, sockeye salmon, pacific herring and others were killed.
- At the height of the response, more than 11,000 personnel, 1,400 vessels and 85 aircraft were involved in the cleanup which cost \$3.5 billion.

Prior to the Valdez spill, Alaska had no consistent management structure for spill response and, more telling, no trained volunteers. As witnessed in the American Trader incident, lack of training among volunteers created a cleanup disaster.

As a result of the Valdez spill and the shortcomings witnessed in the cleanup aftermath, Alaska now has a detailed response plan, an intensive drill program and spill response equipment placed near sensitive areas.

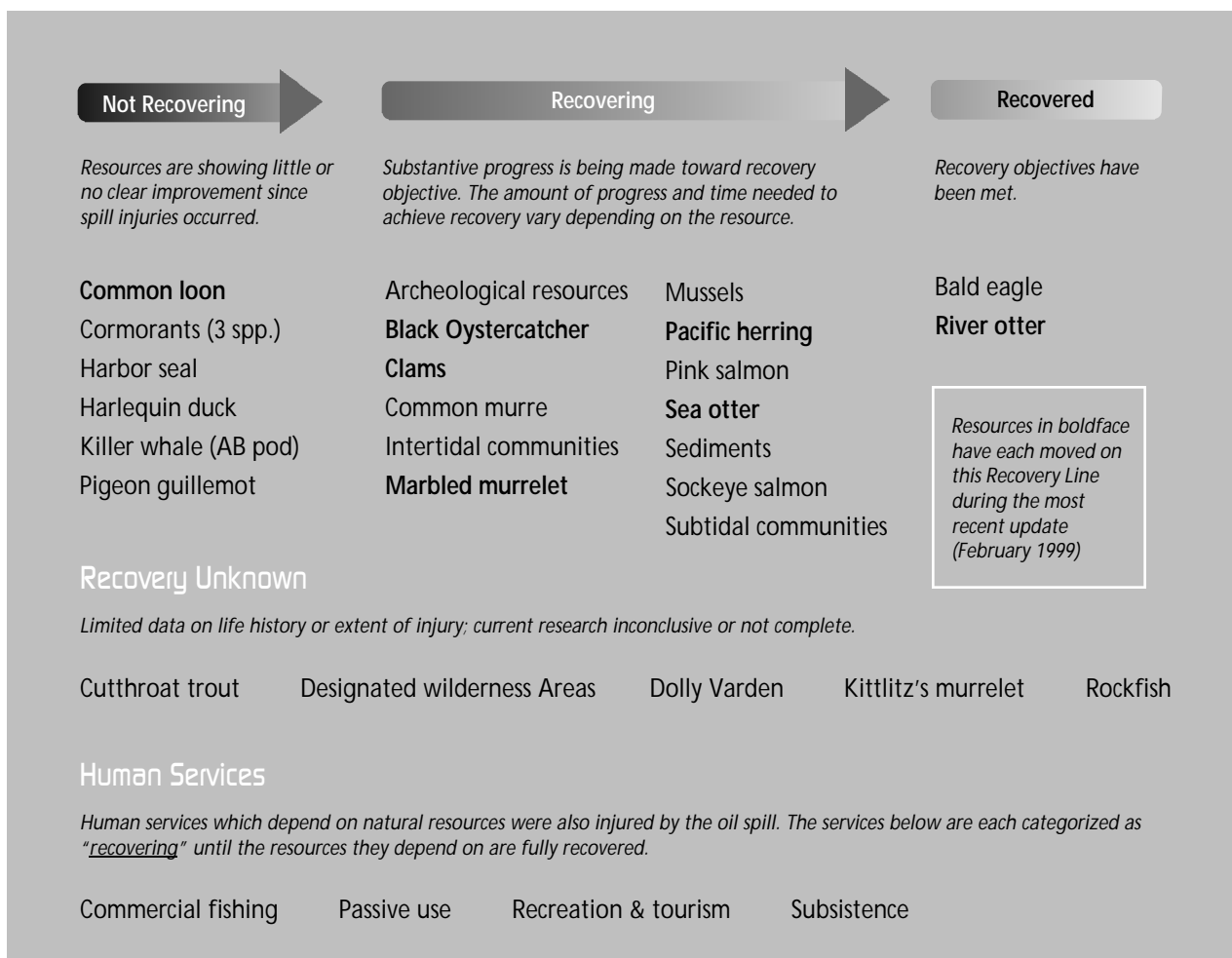
Unfortunately, it took a disaster of Valdez proportions to bring about these changes. Are we in the Santa Monica Bay destined to suffer the same devastating results? Ironically, just hours before the Valdez disaster, local residents had gathered at the city council chambers to discuss the impact of oil on their community. When the conversation turned to response to a major spill, Riki Ott, a fisherwoman and toxicologist from nearby Cordova said, "It's not a matter of what if, but when."⁶⁸ Unfortunately, her words ominously rang true as evidenced hours later.

As mentioned earlier, the loss of wildlife in this pristine area of the globe was overwhelming. The wildlife could not fight back against the oil toxins as noted below:

- Otters and other mammals lose their insulation when coated with oil and suffer hypothermia, and lung, liver and kidney damage.⁶⁹

- When a seabird or waterfowl lands in a gasoline spill and flies away it will preen or clean itself and ingest the petroleum product. Minute amounts of petroleum on bird eggs can destroy the egg.
- There are cumulative impacts to sensitive shoreline organisms (e.g., clams, crabs, and other invertebrates) which die or bioaccumulate the toxic components of petroleum products and this toxicity moves up the food chain to cause reproductive effects, and increased mortality in larger animals.

Resources and Services Injured by the Exxon Valdez Spill



Despite the horrifying effects of the Exxon Valdez spill, oil companies continue to take risks even in this highly regulated area. Only three of the two dozen tankers that call Valdez home are double-hulled, according to Leslie Pearson of the Alaska Department of Environmental Conservation. And even more disturbing is the fact that Exxon wants to add another single-hulled tanker to Alaska's waters: the repaired Exxon Valdez, now named the SeaRiver Mediterranean. The massive tanker is too big for East Coast ports and is losing money in the Mediterranean, claims Exxon. Although the Oil Pollution Act bans the U.S. built ship from Alaskan waters, Exxon is challenging the ban.⁷⁰

Equally disturbing is that ten years after the Valdez spill we have learned that the residents, the economy and the wildlife of communities in Prince William Sound have not recovered. Time has not healed the wounds, nor has it tempered the anger of local residents who have suffered the loss of their livelihood and what was once a pristine environment. The fishing town of Cordova went from being the ninth leading port in the nation for commercial fish harvest in 1987 to the 51st in 1993, according to National Oceanic and Atmospheric Administration figures.⁷¹

In 1995, between 50 and 65 percent of the fishermen in Cordova told surveyors they had medical and emotional problems, but only 10 percent reported seeking help. More than 40 percent of the men had symptoms of severe depression six years after the spill, one researcher found.⁷² What's more, man-made disasters throw into question the way community residents "deal with each other and stretch the bonds that hold them together," according to Kai Erickson, Yale University professor and author of "A New Species of Trouble," a book on disaster trauma.

Based on scores of studies, the state-federal Exxon Valdez Oil Spill Trustee Council lists only bald eagles and river otters as recovered among the 28 damaged species and resources. Pink salmon eggs may still be dying in streams that remain oiled. Along certain bays, sea otters and other species have yet to rebound.⁷³ Most alarming of all, a multiyear investigation by federal biologists found evidence that fish can be harmed by crude oil in much smaller doses than previously suspected.

In particular, federal scientists at the National Marine Fisheries Service lab in Juneau have found that certain long-lived components of weathered oil-polynuclear aromatic hydrocarbons, or PAHs - are 100 times more toxic than previously believed, capable of killing or genetically damaging young salmon and herring at concentrations of less than one part per billion.

The investigation results were dramatic and startling - eggs that died, deformed spines and jaws among those that hatched, and significantly fewer returns from the sea. According to the study biologist Ron Heintz of Auke Bay Laboratory, in Alaska, "The lesson is, oil is way more toxic than we thought."⁷⁴

Prince William Sound Oil Spill Prevention and Response, Then and Now:

The table below explicitly illustrates the lack of preparedness that existed in Valdez prior to the spill and the subsequent measures taken following the spill. Note that pre-booming is a regulatory requirement during all oil transfers in Valdez.

PREVENTION	MARCH 1989	MARCH 1999
Tanker Escorts	Limited ship escorting tug through Valdez narrow	Ship escort system (SERVS) in place, with operating zones for approaching and transiting Valdez Narrows and Prince William Sound to Hinchinbrook Entrance. Two largest-in-the-world tractor tugs for tanker escort.
Support vessels	No support vessels	An ocean rescue tug stationed at the Sound's entrance since 1997. Three highly maneuverable Prevention and response Tugs will begin replacing the existing Escort Response Vessels 1/2000
Tanker support	No requirement for double hull tankers.	Requirement for phase-in of double hull tankers by the year 2015.
Pilot training	No extra training required of tanker officers, tug officers and marine pilots	Advanced training for tanker officers, tug officers, and marine pilots
Ship tracking	Ship tracking limited to near Bligh Reef.	U.S. Coast Guard controlled ship tracking system throughout Prince William Sound (PWS) and 60 miles into the Gulf of Alaska
Planning	Basic oil discharge contingency plan developed by Alyeska (a conglomerate of oil companies that have an interest in oil production and transportation in Valdez) was inadequate, and implementation was not timely for the Exxon Valdez spill.	Detailed oil discharge prevention and contingency plans developed by individual shippers and Alyeska and approved by DEC. Alyeska must respond in the Sound.
State oversight	Limited state oversight of Valdez marine terminal and tanker operations by three Department of Environmental Conservation (DEC) generalists in Valdez.	Comprehensive State oversight of marine terminal and tanker operations, with seven DEC regulatory and spill prevention and response specialists located in Valdez.

RESPONSE	MARCH 1989	MARCH 1999
Equipment on hand	Less than five miles of containment boom in Prince William Sound	Approximately 34 miles of specifically selected types of oil boom.
Oil recovery	<p>13 oil skimming systems with a combined recovery capacity of over 27,800 barrels of oil in 72 hours.</p> <p>One barge with 12,000 barrels of on-water storage for recovered oil stationed in Valdez.</p>	<p>Over 60 skimming systems, with a combined recover capability of over 300,000 of oil in 72 hours.</p> <p>Seven barges with 818,000 barrels of on-water storage for recovered oil strategically located throughout the Sound. 52 smaller barges for near shore work.</p>
Trained responders	Limited number of trained spill responders.	Dedicated trained spill response teams and Ship Escort/Response Vessel System (SERVS)
Hatchery protection	No salmon hatchery protection plans or prestaged spill response equipment at hatcheries.	Hatchery protection plans for all five PWS hatcheries
Citizen involvement	<p>No organized citizen involvement in plan development and oversight</p> <p>No plan to involve local fishing vessels in a response to a spill.</p>	<p>Prince William Sound and Cook Inlet Regional Citizen Advisory Councils created.</p> <p>A program to train fishing vessel personnel in Prince William Sound, lower Cook Inlet and Kodiak, and incorporates vessels into a response strategy (there are currently approximately 300 pre-contracted fishing vessels in the region).</p>
Wildlife rescue	No established wildlife rescue programs.	Wildlife response plan and rehabilitation equipment in place.
Practice drills	No major spill drills conducted	Major spill drill conducted annually, with frequent smaller drills.
Managed response	No consistent management structure for spill response.	A Unified Command Incident Command Structure adopted by DEC, Coast Guard, SERVS and shippers for response to oil spills.
Communications	Limited state radio communications for spill response command in PWS	Fixed radio repeater system with communications capability to cover PWS and Cook Inlet, with some reach into the Gulf of Alaska

Alaska Department of Environmental Conservation Spill Prevention and Response Division, March 1999

The Santa Monica Bay:

What would the effects be of a major spill? A few facts -

- **A diverse ecosystem:** The Santa Monica Bay habitats are home to a number of rare, threatened, or endangered species, among them:
 - **Mammals:** California sea lions, California gray whales, bottle nosed dolphins, and harbor seals.
 - **Birds:** California brown pelican, the California least tern, snowy egrets, Belding's savannah sparrow, peregrine falcon, and the California gnatcatcher.
 - **Fish:** kelp bass, California halibut, white seabass, California halibut, California spiny lobster, the northern anchovy, and abalone.



Photo Courtesy of Timothy Treadwell

Fishing:

Fishing is one of the fundamental human uses of the Santa Monica Bay. It includes sportfishing from boats, pier fishing, scientific collecting, and limited commercial fishing. While sport fishing is allowed throughout the Bay, commercial fishing has been prohibited (east of a line between Malibu Point and Palos Verdes Point) to protect local fish populations which could be depleted by a combination of both commercial and sport fishing. Although statistics are not available for the Santa Monica Bay alone, 5.5 million sport fishing trips were made in southern California in 1989. In 1991-1992, the Bay's sport fishery was dominated by chub mackerel, barred sand bass, and kelp bass. California spiny lobster is an important invertebrate also frequently caught.

The sport fishery catch has some economic value as food, but fees paid to charter operators and other onshore expenditures have a much greater impact on the local economy. Expenditures on saltwater fishing in Southern California totaled \$536.3 million in 1989 -- 16 percent spent on licenses and gear, 23 percent on boat-related expenses, and 61 percent on trip-related expenses. Los Angeles County residents accounted for 37 percent of that total. According to the Santa Monica Bay Restoration Project, about 465,000 of the 6.1 million households in Southern California coastal counties included at least one member who went sport fishing in 1989.

Tourism:

“Tourism, commercial fishing, and other related industries contribute over \$11 billion to the California economy. We cannot afford to compromise.”

-California Assembly Member Bruce McPherson in a statement opposing offshore oil and gas leasing proposed by Congress.

Tourism is the Los Angeles region's second largest industry, with 392,000 full- and part-time jobs. It contributes \$3.6 billion annually to the region's payroll. In 1991, 25.3 million people visited Los Angeles County, contributing \$7.2 billion in direct expenditures. Many of these visitors flock to the region's primary recreation resource, the Santa Monica Bay. In the City of Santa Monica alone, 85 percent of the tourists (more than 2.1 million people a year) visit the beach.

Tourist facilities and activities are abundant around the Santa Monica Bay. Hotels, motels, weekly rental apartments, restaurants, shops, and conference facilities all cater to local and out-of-town visitors. In addition, Los Angeles International Airport funnels a large percentage of its 48 million annual passengers into the Santa Monica Bay area for at least a portion of their stay. In Santa Monica, specifically, figures are rising dramatically as evidenced by the following:

City of Santa Monica - Impact of Tourism

Total Tourist Spending	\$ 516 million (1997)
	\$ 357 million (1994)
	\$ 288 million (1989)
Hotel Tax Revenues	\$ 14.5 million (97/98)
	\$ 7.6 million (93/94)
	\$ 5.2 million (89/90)

Source: Santa Monica Convention & Visitors Bureau 1997 Economic Impact of Tourism in Santa Monica; Laren Schlau Consulting in conjunction with CIC Research April 1998

How would a spill affect these numbers? No one can accurately say, but these figures show clearly that much of our local economy is at risk. A new \$800,000 study is currently being conducted by a team of economists, scientists, and environmentalists to pose the question of how people use beaches in Orange and Los Angeles counties and what the experience is worth to them in dollars and cents. According to one of the researchers, Linwood Pendleton, an assistant professor of economics at USC, "When our beaches are empty, many businesses suffer, and our quality of life can be adversely affected as well." The recommendations that follow will provide relatively inexpensive insurance against catastrophic losses.



6. Recommendations: Prevention and Response

The concerns raised by this report are very real, immediate, and, if changes are not made, will lead to certain economic and environmental disaster. The following recommendations should therefore be considered as minimum starting points, not the ultimate protections.

Urgent Actions

1) Oil Skimmer Vessels and Other Spill Response Equipment Must Be Located with Sufficient Trained Personnel at the Marine Oil Terminals Where Oil Transfers Occur.

Marine oil terminals must be required to maintain spill response vessels, including skimmer and booming vessels with adequate crews, of a size and capacity capable of adequately responding to the maximum volume of oil likely to be discharged by a spill from the tanker vessels which typically call on that terminal. Such vessels and crews should be on scene (within 1/2 nautical mile of the tanker) and prepared to respond immediately at all times that tankers are loading or unloading. Until such assets are required and in service, companies which operate marine oil terminals must enter into “universal mutual aid” agreements to ensure all available response assets are promptly utilized in a spill disaster.

2) Oil Tankers Must Pre-Boom”to Contain Spills.

Offshore marine oil terminals must comply with the same basic, low-cost safety precaution that is required inside our sheltered harbors. Marine oil terminals must be required to “pre-boom” - that is, deploy floating booms, on the side of the oil transfer, around all tanker vessels. The booms must be sufficient to restrict the flow of oil on the surface of the water to the area within the booms. Such deployment should be completed prior to commencement of any transfer activity and remain in place until such transfers are completed.

3) The State Must End Agency Conflict That Could Lead to Disaster.

The State Fire Marshal issued a report in 1997 which concludes that the state should appoint a single lead agency and grant that agency authority over every aspect of the pipeline permitting process while also requiring it to integrate federal, state, and local policies for crude oil production and transportation. We concur with this recommendation and believe it must be extended to the transport and transfer of all petroleum products in our coastal waters, whether by pipeline or tanker vessel.

The confusing, overlapping, and sometimes contradictory responsibilities of the State Lands Commission, the Department of Fish & Game (Office of Oil Spill Prevention & Response), the State Fire Marshal, and the Division of Oil & Gas constitute a major threat to oil safety on our coast. The Governor should appoint an independent Commission to review these jurisdictions and make recommendations for combining them under the authority of one agency.

This Commission should also:

Examine the role of the U.S. Coast Guard, the Minerals Management Service, the Department of Transportation and any other federal or local agencies with respect to oil safety in coastal waters and determine if state-federal-local communications and regulation can be improved. It should also determine if the state is placing sufficient emphasis on prevention, as opposed to response, especially with respect to annual budgetary priorities.

4) Expand the Range of the Vessel Tracking System

The Los Angeles/Long Beach Vessel Tracking System “VTS” should be expanded to cover coastal waters from Pt. Conception to the Mexican Border, from the coast to 50 nautical miles offshore. Participation in the VTS must be mandatory for all commercial vessels and be available to all non-commercial vessels on a voluntary basis. All commercial vessels should be equipped with an Automated Identification System “AIS” or other encoding transponder system to ensure timely and accurate communication of information to the VTS.

5) ALL Tankers Must Have Double Hulls

All tankers carrying petroleum products within 50 nautical miles of the California coast should be double hulled by 2004.

6) Coastal Cities & Counties Must Prepare for Oil Spill Disasters

Spill response plans should be prepared by each coastal county and city. Coordination of these plans should be the responsibility of the U.S. Coast Guard. Spill response drills should be conducted in each region by these coordinated entities, including any marine terminals, at least every two years. Drills must include representatives of the public and press in the planning, execution, and post-drill evaluation. Moreover, the U.S. Coast Guard District 11 Incident Command System and that used by Chevron and other oil companies should be inte-

grated and standardized. Since few cities have spill response plans and most have never participated in drills, special emphasis should be placed on assisting municipal agencies and elected officials to understand their role in spill response using the American Trader incident (and the lack of preparedness by the City of Huntington Beach) as a learning tool.

7) More Research & Development of Spill Response Equipment

As suggested by the Coastal Review, OSPR should join with the Coast Guard and others in the response community to support programs to promote research and development of improved oil spill response technology, especially as it relates to shallow water response equipment.

8) The US Navy Must Do Its Part

The Commission (see 3) above) should determine methods of improving cooperation by the U.S. Navy with spill prevention and response protocols. As recommended by the Coastal Protection Review, the State should work with the Navy for the “development of a comprehensive MOU to address further the remaining issues related to oil spill prevention and response.”

9) Human Error at Marine Oil Terminals Due to Fatigue Must Be Eliminated

To help prevent tragedies caused by human error due to worker fatigue, the Commission (see 3) above) should examine the staffing practices of marine oil terminals and set limits on the number of hours which terminal employees may work in any 24 hour period or in any 7 day week. Rules should also be set as to the minimum number of hours between shifts.

10) All Hazardous Tanker and Oil Terminal Transfers Must Be Supervised

The Marine Facilities Division of the State Lands Commission must be funded to adequately perform its duties. At a minimum, this must include a staff of inspectors of sufficient number and training to inspect every transfer at each marine terminal in the state, along with at least one annual inspection of the terminal itself.

11) Dollars Spent on Prevention and Response Must Be Increased to Adequately Meet the Risk.

Given the enormous value that the coast contributes to the California economy, adequate funding must be made available. In the long-run money spent on adequate prevention and response will be far more economical than the damage would otherwise be to our coast.

12) Creation of a Citizen Advisory Committee

Recently, the California Center for Marine Conservation and other advocacy groups suggested that California should adopt the Alaska model for citizen participation in oil spill policy. We concur with this recommendation and suggest that either a Regional Citizens Advisory Council be instituted by the State or the Harbor Safety Committee add citizen representatives to its membership.



Photo Courtesy of Timothy Treadwell

7. Summary and the Current Time on the Oil Spill Doomsday Clock

One of the major lessons of the Exxon Valdez oil spill was that the spill prevention and response capability in Prince William Sound was fundamentally inadequate. Ten years ago, 11 million gallons of oil spread slowly over open water during three days of flat calm seas. Despite the opportunity to skim the oil before it hit the shorelines, almost none was scooped up. A response barge maintained by Alyeska Pipeline Service Company was out of service and unavailable for use. Even if it had responded, there were not enough skimmers and boom available to do an effective job. And even if enough skimmers and boom were available, there was not enough storage capacity for the recovered oil and water mixture. At that time one could speculate that Valdez was somewhere close to midnight on the “Oil Spill Doomsday Clock.”

Out of a twenty-four hour day we are down to the last seconds to Doomsday. By acting on the recommendations summarized in this report we can move ourselves further away from the current hour of danger into one of safety so that we may protect the ocean resources that all inhabitants of the planet so keenly rely on. Accordingly, if we assign two hours to each of our twelve recommendations and multiply them out we have a twenty-four hour period. This system of measurement will allow us to utilize a yardstick for change. If, for example, one of the twelve recommendations is implemented in the coming year, we will move further away from midnight. If, however, we remain stagnant, our risk level will remain, as it is now, dangerously close to disaster.

This report was peer reviewed by the Prince William Sound Regional Citizen's Advisory Council. The California Department of Fish and Game Office of Spill Prevention and Response had the opportunity to peer review the document but upon repeated requests did not submit their comments to us for consideration and inclusion into the report.

The facts contained in this report are accurate and current as of the date of the printing to the best of our knowledge based on the sources cited. Conclusions and recommendations are the opinions of the authors based on this factual research.

Terms of the Exxon Valdez Settlement - Total \$ 1 billion

Criminal Penalties

- For violation of provisions of Clean Water Act, Migratory Bird Treaty Act and Rivers and Harbors Act:

	Fine \$150 million
<u>Paid:</u> \$25 million paid:	
\$12 million to North American Wetlands Conservation Fund	
\$13 million to Victims of Crimes account	
<u>Remitted:</u> by the court due to Exxon's cooperation	[\$125 million remitted]

- Criminal restitution:

	Restitution \$100 million
\$50 million to state government	
\$50 million to federal government	

Total paid for criminal liability:	\$125 million
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Civil Penalties

To state and federal governments over 10 years for natural resource damages

Total \$900 million

(The largest dollar settlement of its type in United States history.

The money goes into a trust held in U.S. District Court. A state-federal Trustee Council decides how the money is spent, then the court releases funds according to plan.)

Within 10 days of acceptance of settlement terms in 1991	\$90 million
December 1, 1992	\$150 million
September 1, 1993	\$100 million
September 1, 1994	\$70 million
September 1, 1995	\$70 million
September 1, 1996	\$70 million
September 1, 1997	\$70 million
September 1, 1998	\$70 million
September 1, 1999	\$70 million
September 1, 2000	\$70 million
September 1, 2001	\$70 million

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- ² Personal communication. Lawrence Hope, Supervisor, State Lands Commission, July 6th, 1999
- ³ Alaska Department of Environmental Conservation, Exxon Valdez Final Report, June, 1993
- ⁴ Chevron Marine Terminal at El Segundo, Final Environmental Impact Report , S.2. Description of Marine Terminal and its Operation, June 1996
- ⁵ National Transportation Safety Board Report: Grounding of U.S. Tankship Exxon Valdez on Bligh Reef, Prince William Sound Near Valdez, AK March 24, 1989. July 31, 1990.
- ⁶ Exxon Valdez Oil Spill Restoration Plan, Exxon Valdez Oil Spill Trustee Council, November 1994.
- ⁷ Note that in the processes of obtaining information for this report the author encountered several instances where those that were being interviewed conveyed reticence and fear about expressing their opinion about the state of oil spill prevention and response in southern California. As a result, many of the interviewees requested anonymity. This culture of fear points to the contentious and troubling relationship between the various stakeholders that results in the compromising of safety for both humans and our natural environment.
- ⁸ U.S. Department of Transportation Report to Congress, "An Assessment of The U.S. Marine Transportation System" September 1999
- ⁹ Tankers Full of Trouble, by Eric Nalder, Grove Press, 1994
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- ¹² Ibid
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- ¹⁴ Chevron Annual Reports, 1996, 1997
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- ¹⁶ Tankers Full of Trouble, by Eric Nalder, Grove Press, 1994
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- ²² Coastal Protection Review, California Department of Fish and Game, Office of Spill Prevention and Response, 1998
- ²³ OSPR has a statutory mandate (Gov. Code Section 8670.21 [c]) to provide for vessel traffic services in the Santa Barbara Channel. Although discussions and preliminary work has been done in terms of developing a plan for VTS, as of the publication of this report, VTS has not been implemented in the Channel. The problem stems from who is willing to fund the expansion. In a letter dated May 19, 1997 to the Administrator of the OSPR from the Chairman of the Board of the Marine Exchange funding is cited as an issue that needs to be resolved. The letter states "From recent discussions we've had with several major oil companies (including Texaco and Chevron), it is unlikely they will agree to funding a VTS operation in the Santa Barbara Channel . . ." According to a member of the Harbor Safety Committee the user fee for the addition of the VTS would be as low as \$75 per shi per passage.) User's Fees and Limitations of Liability were stated as the other two issues of concern. According to the letter "As things currently stand, the Board of Directors cannot support an additional application of user's fees upon the Southern California scene to fund a Santa Barbara Channel VTS, as this would render our ports financially disadvantaged when compared to other West Coast ports. . . Additional legislation would have to be considered, and passed, in order to cover whatever liabilities might be incurred in the operation of a VTS for Santa Barbara Channel. Obviously, with the impact of numerous oil rig platforms in the vicinity of shipping lanes, this situation provides serious concerns that our Board of Directors must deal with prior to making any decision to participate in such project." (Correspondence from May 19, 1997, From Mr. Leslie Bennett, the Marine Exchange to Mr. Pete Bontadelli, the Office of Spill Prevention and Response)
- ²⁴ In Prince William Sound, all tankers are required to have a transponder that sends a signal up to a satellite that sends a message back to the Coast Guard so they can track their exact position (out to about 70 miles offshore). This Automated Identification System (AIS) sends out a coded query and a transponder then responds with the geographic position, speed and vessel type. AIS is currently not used in California waters and is not required to be used. The Marine Exchange is beginning to look into utilizing it for ferries and tugs, but currently not for tankers.
- ²⁵ An assessment of the U.S. Marine Transportation System, A Report to Congress, September, 1999. U.S. Department of Transportation, p. 44.
- ²⁶ Correspondence from Mr. Robert M. Barker, Los Angeles/Long Beach Harbor Safety Committee to Mr. David B. MacFarland, NOAA. February 25, 2000.
- ²⁷ Los Angeles/Long Beach Harbor Pilot/Advisory Council, Annual Report, February 24, 1998

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- ²⁸ Ibid
- ²⁹ Memo to the Los Angeles/Long Beach Pilot Advisory Council from the U.S. Coast Guard, April 21, 1998
- ³⁰ Ibid
- ³¹ Port of Long Beach On-Line (www.polb.com)
- ³² Ibid
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- ³⁴ Ibid
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- ³⁶ Ibid
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- ⁴⁴ Coastal Protection Review, California Department of Fish and Game, Office of Spill Prevention and Response, 1998
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- ⁴⁷ California Code of Regulations, California State Lands Commission, Marine Facilities Division.
- ⁴⁸ United States Coast Guard Briefing to the Los Angeles/Long Beach Harbor Safety Committee, June 6, 1999.
- ⁴⁹ Wall Street Journal, May 21, 1993
- ⁵⁰ Oil & Gas Journal, October 3, 1993
- ⁵¹ Personal communication with labor representative. Anonymity requested.
- ⁵² California Department of Industrial Relations' Division of Occupational Safety and Health on-line: www.dir.ca.gov/dirnews/1999/ir99-09.html
- ⁵³ An Assessment of the U.S. Marine Transportation System. A Report to Congress, September, 1999, U.S. Department of Transportation.
- ⁵⁴ Phone interview, Ray Salmons, California State Lands Commission, August 24, 1999
- ⁵⁵ Exxon Valdez Oil Spill Trustee Council on-line: www.oilspill.state.ak.us/prevent/prevent.htm
- ⁵⁶ United States Coast Guard Regulations (33cfr 157.455).
- ⁵⁷ Conoco on-line: www.conoco.com
- ⁵⁸ Tanker Advisory Center, Inc. Clarkson Research Studies Tanker Register as of 1/1/99. This figure does not includes tankers with either double bottoms or double sides and bulk oil and ore vessels. There are 3294 tankers, 876 are double hulled, 403 are double bottomed, 106 are doubled sided. 139 are bulk oil carriers while 18 are ore oil vessels.
- ⁵⁹ "Double Hull Tankers - How Effective Are They?", 1993 Oil Spill Conference Proceedings, by Virgil F. Keith.
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- ⁶⁴ Ibid
- ⁶⁵ American Trader Oil Spill Report prepared by the City of Huntington Beach Emergency Services Office, 1992
- ⁶⁶ Personal communication. Huntington Beach Deputy City Administrator Richard Barnard and City Councilmember Peter Green, April 1, 1997
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“ The Ocean is the
bloodline of our world.

It’s the life that
surrounds us and
gives us promise
for our future.”

Mati Waya,
Ceremonial Leader,
Turtle Clan,
Santa Clara River Valley
Chumash



Photo Courtesy of Timothy Treadwell