Oil Spills:

A Coastal Resident's Handbook

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Cover photo by Stephen Brown shows a private dock near Ogdensburg, N.Y., affected by the 1976 NEPCO oil spill. In 1976, 33.8 million gallons of oil and hazardous materials were spilled in U.S. waters.

The idea for a citizens' bulletin grew out of a social study, funded by the U.S. Coast Guard, of a major oil spill on the St. Lawrence River in 1976. The residents of communities along that river encouraged my work and provided many of the suggestions herein. Research for this bulletin was kindly provided by Sea Grant Advisory Service specialists Stephen Brown and Donna Edgar. Further valuable information was supplied by Congressman Robert McEwen, the N. Y. Department of Environmental Conservation, the N. Y. Department of Transportation, U. S. Coast Guard offices throughout New York and the Great Lakes region, the U. S. Environmental Protection Agency, and the Federal Disaster Assistance Administration. Sally Willson, Sea Grant Media Specialist, was the generous and patient coach of my first attempt at a public information bulletin. Kimberly Carrier helped with the maps and diagrams.

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Oil Spills: A Coastal Resident's Handbook

Introduction

Who Can Use This Bulletin?

People living on or using the water bodies within and bordering New York State will find this bulletin valuable in case of a spill emergency. If you own property or enjoy water sports on Lake Erie, Lake Ontario, the Saint Lawrence Seaway, Lake Champlain, the Hudson River, the Barge Canal System, New York Harbor, Long Island Sound, or the Atlantic Ocean, knowledge of what can happen and what you can do in case of a spill emergency may save you needless confusion, anxiety, and loss or damage.

What Is a Spill Emergency?

Oil or a petroleum product can be discharged into coastal waters by a passing vessel or an onshore facility such as a storage tank. Large spills often pose a danger to lives, the environment, and property. If you or your property are near the spill, you may find yourself a spill victim, in the midst of a messy and upsetting business.

What Can I Do?

Studies of the responses of victims to the NEPCO 140 oil spill in the St. Lawrence River (1976), the Argo Merchant spill near Nantucket (1976), and the Amoco Cadiz spill in France (1978) show that people do—and feel—a lot of things. But because they responded without knowing what was going on, their actions were frequently inappropriate for the situation. And what they might have done to minimize damage remained undone.

The first half of this bulletin explains what happens in a spill and what official parties will do. The self-help advice in the second half of this bulletin may reduce your loss and damage from spills. Keep it handy as a reference in time of emergency.

What You Should Know

Federal and State Government Responsibilities

The Federal Water Pollution Control Act of 1972 ordered a National Contingency Plan and a network of Regional Contingency Plans to reduce the damage caused by spills. The Environmental Protection Agency (EPA) or the U. S. Coast Guard (USCG) activates these plans when a spill is or threatens to be large, expensive, or dangerous. The plans specify the "who, what, where, when, and how" of responding to a spill. We examine some of the features of those plans to help you understand what is going on around you after a spill.

Regional Response Team (RRT) and On-Scene Coordinator (OSC)

According to the National Contingency Plan, the nation is divided into 10 regions, each of which has a predesignated Regional Response Team (RRT) operating from a Regional Response Center (RRC). In New York, the RRC is—

For coastal spills near the Great Lakes and St. Lawrence River:

Commander,
9th Coast Guard District
1240 E. 9th Street
Cleveland, OH 44199

For coastal spills in central and southern New York State:

Commander,
3rd Coast Guard District
Governors Island
New York, NY 10004

For other New York spills (spills on land and nonnavigable waters):

Oil and Hazardous Materials
Spill Coordinator
Surveillance and
Analysis Division
U. S. EPA Region II
Edison, NJ 08817

The RRT is composed of primary representatives from five federal agencies (see illustration p. 3) as well as the New York Department of Transportation (NYDOT) and the New York Department of Environmental Conservation (NYDEC). The RRT focuses its authority in an On-Scene Coordinator (OSC), who takes advice from the RRT and ultimately answers to them for any actions taken. In smaller spills the RRT may not be activated, and the OSC may designate an on-scene representative to oversee work crews.

In New York, the predesignated On-Scene Coordinator is—

For coastal spills near the Great Lakes and St. Lawrence River:

Captain of the
Port of Buffalo
Marine Safety Office
Room 1111 Federal Building
111 W. Huron Street
Buffalo, NY 14202

For coastal spills near the ocean in southern New York:

Captain of the
Port of New York
3rd Coast Guard District
Governors Island
New York, NY 10004

For spills on Lake Champlain, upper Hudson River, and the eastern portions of the Barge Canal:

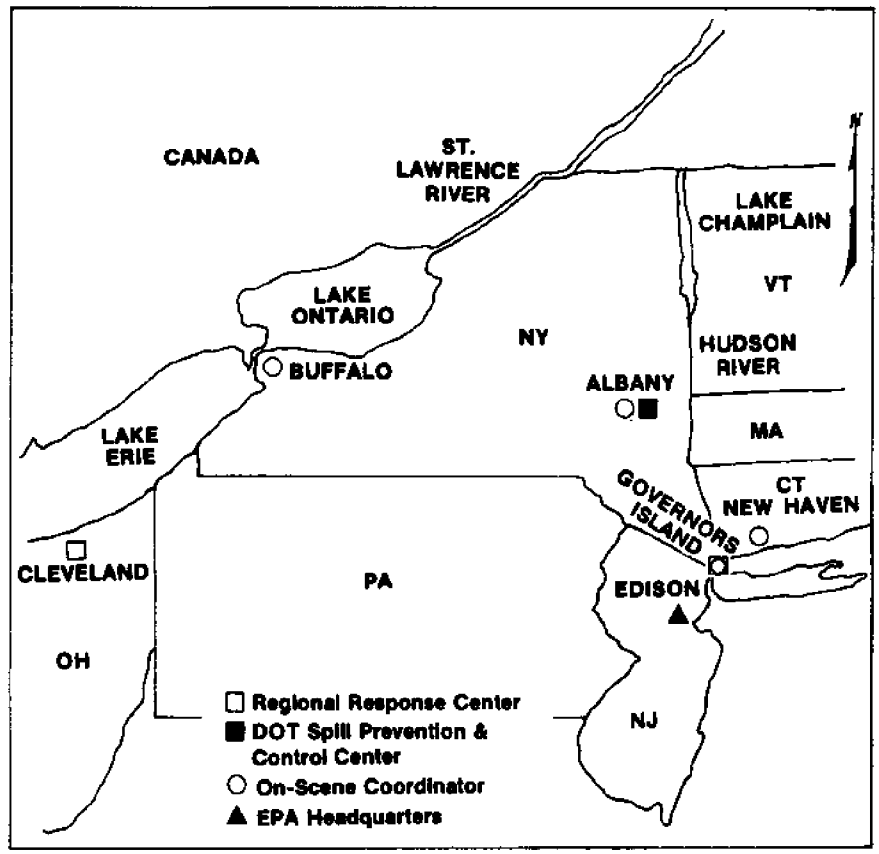
Captain of the
Port of Albany
Marine Safety Office
Leo W. O'Brien Federal Building
Clinton Ave. and N. Pearl St.
Albany, NY 12207

For spills in Long Island Sound:

Captain of the Port of New Haven
U. S. Coast Guard
120 Woodward Avenue
New Haven, CT 06512

For spills inland or on nonnavigable waters:

Oil and Hazardous Materials
Spill Coordinator
Surveillance and
Analysis Division
U. S. EPA Region II
Edison, NJ 08817



Oil Spill Response Headquarters for New York

The OSC coordinates advice, field reports, people, and money to contain and remove the oil. The OSC oversees a large field staff, which may include workers provided by the spiller, commercial pollution contractors, environmental groups and volunteers, and specialized teams of USCG, EPA, and DEC workers. Many spills are sudden, and there is an urgency to acquire information and make decisions; hence, the OSC headquarters at the scene of the spill resembles the headquarters of an army at war.

The OSC can also draw on the advice and facilities of a National Response Team. Composed of federal representatives from the same agencies that staff the RRT, the NRT offers advice to those on the local scene, provides public information assistance, and lends its massive communications system. The NRT operates from the National Response Center (NRC):

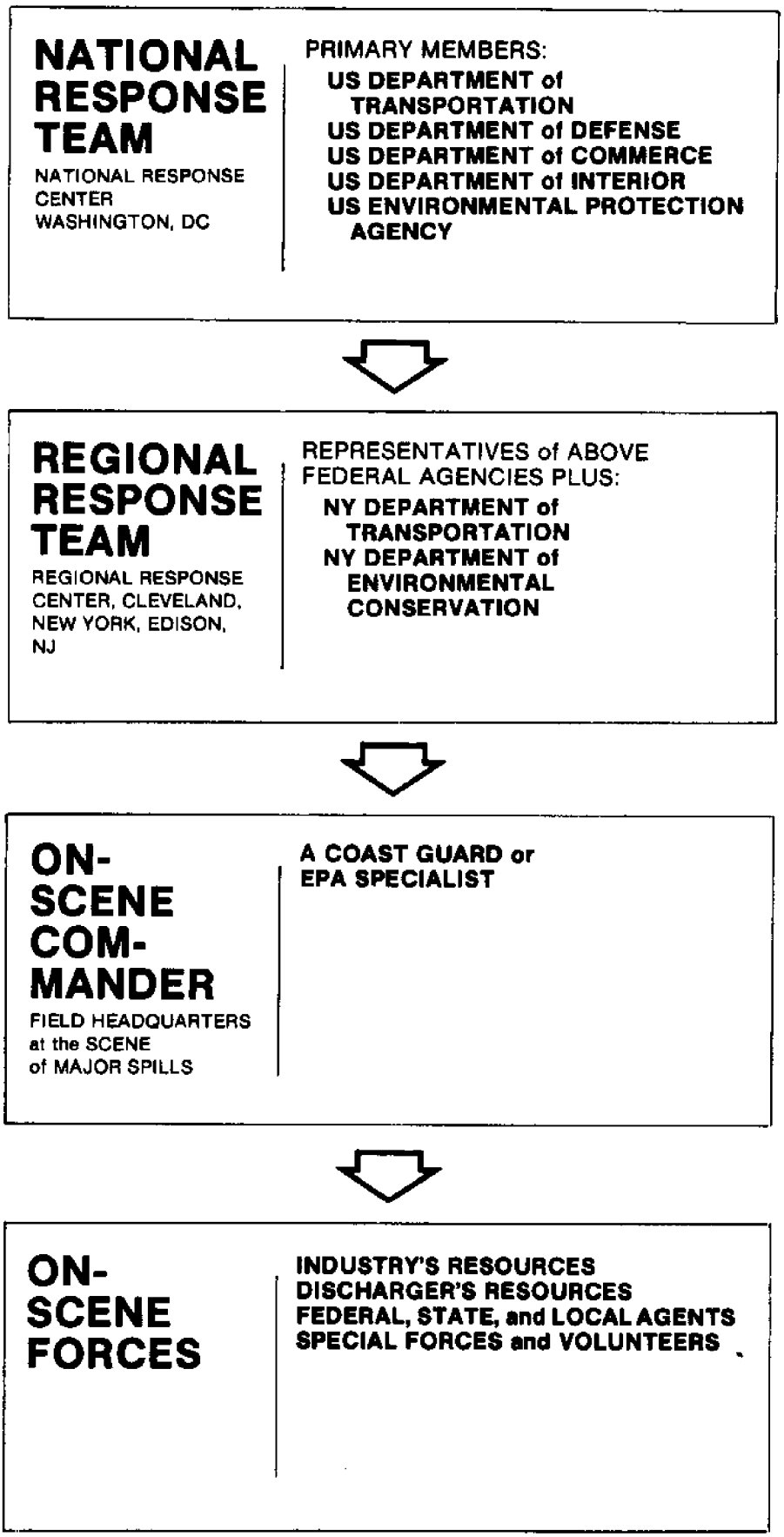
National Response Center
U. S. Coast Guard Headquarters
400 Seventh Street S.W.
Washington, DC 20590

Role of New York State

According to the New York Navigation Law of April 1978, the responsibility of containing, removing, and investigating spills in New York is shared by the NYDOT and the federal RRT. The NYDOT Oil Spill Engineer and the Emergency Oil Spill Network, composed of personnel and equipment from town and county highway departments, are available to assist the On-Scene Coordinator.

The DEC is responsible for immediate and continuing assessment of the environmental impact of a spill and for advising and assisting the OSC to minimize environmental damage. The DEC also provides personnel and equipment for the protection of threatened wildlife when necessary.

Organized Response to a Major Oil Spill



Spills Threatening Both U.S. and Canadian Waters

An international response plan called the Joint United States-Canada Oil and Noxious Material Pollution Contingency Plan designates a Joint Response Team (JRT) and an On-Scene Commander to deal with spills that threaten international waters in the Great Lakes and St. Lawrence River. In the Joint Plan, U. S. and Canadian agencies share membership on the JRT. The JRT functions like the RRTs of other regions. The country where the spill originates provides the OSC. Recovery of damages and cleanup expenses and enforcement of pollution laws are handled primarily by the country providing the OSC.

Laws and Liabilities

Paying for Cleanup

There are four ways that the expenses of responding to a spill can be covered.

- The preferred way is for the discharger of the pollutant to undertake the containment and cleanup at his own expense. If the discharger is unknown or refuses to pay for cleanup or is doing an inadequate job, the federal government steps in to organize and pay for the cleanup and later attempts to recover the costs from the discharger.
- When the federal government is in charge, the OSC draws on a Federal Revolving Fund to pay for containing and removing the pollutant. The fund can also be drawn on if there is imminent threat of a spill. The fund is maintained by congressional appropriations from the Treasury and by funds recovered from dischargers.
- Since 1977, New York State has maintained an Environmental Protection and Spill Compensation Fund (New York Fund). Accumulated from license fees paid by petroleum handlers, this fund may contain millions of dollars and is available to state agencies

that respond to a spill. This fund is also available to individual property owners for cleanup or the repair of damage from an oil spill.

- At the request of the governor of New York, the president can declare a major spill in the state to be a disaster or emergency. This frees money in the Disaster Relief Fund to help pay for the pollution response or to provide assistance to stricken communities through direct grants or small business loans. However, because of the high value of the New York Fund, a presidential disaster declaration would aid New Yorkers only under very special circumstances.

Punishing the Discharger

To spill a petroleum or hazardous substance, intentionally or not, is a violation of several federal and state laws. A discharger, whether a supertanker or a private citizen, must report the spill within 2 hours or face stiff fines and possible imprisonment. The discharge itself can result in fines and imprisonment.

The discharger is liable, within limits, for cleanup costs. The discharger pays for cleanup directly, or the government attempts to recover its expenses from the discharger. Both federal and state governments will seek to recover their expenses. To this end, vessels and onshore facilities are required to carry significant amounts of insurance. The liability limits for the discharger become void if it is shown that the discharge was due to gross negligence, willful misconduct, or gross violation of regulations and standards.

Pilots and vessel captains who are negligent may, upon administrative inquiry, have their licenses suspended or revoked.

For some corporate dischargers, protective of their public relations, the harshest punishment is public opinion. Such dischargers work hard to cooperate and provide good cleanup of their spill and restitution to victims.

Damage Compensation

Damage compensation is obviously most important to the coastal resident who becomes a victim of a spill. Although the laws are complicated, they deserve a close look. In general, claims coverage is much better than it used to be.

Until recently, the only course of action for spill victims who reject the small payments offered by the discharger's insurance agents was to sue for "trespass, negligence, and nuisance." This action, however, rarely met with success.

As of May 1979, only one federal law pertinent to portions of New York State coastal waters holds the discharger liable for both direct and indirect damages. This is the offshore drilling law. Coastal property damaged by an outer continental shelf spill is already fully covered by a fund of $200 million established by the Outer Continental Shelf Lands Act Amendments of 1978, Title III.

Although there is little compensation under federal law, the 1977 amendments to the New York Navigation Law provide relief for New York coastal residents. The law makes the discharger liable for the following:

- damaged property
- lost property income
- lost property value
- damaged natural resources
- loss of income or earning capacity due to property damage (if the loss is greater than 10% of income normal for the time period involved)
- loss by local governments of tax revenue due to property damage
- interest on loans obtained by victims for temporary reduction of spill damages.

New York encourages a settlement between the victim and the discharger first. If the claim is contested, the state convenes an arbitration board to make a final decision. If the discharger is unknown, the liability limits are exceeded, or the discharger cannot or will not pay claims, the New York Fund pays all claims and sues the discharger to reimburse the fund.

According to the New York Navigation Law, a victim must file a sworn claim with the administrator of the New York Fund not later than 1 year after discovery of the damage or 6 years after the spill. The extended time period allows for the possibility of discovering the damage long after the spill has occurred. Claims for damages resulting from the cleanup operation itself are to be filed with the On-Scene Coordinator and will be charged against the discharger, the Federal Fund, or the New York Fund.

Ultimately, however, the people who pay for spill damages are oil and chemical consumers, because the money for the state and federal spill funds comes from them. Seven-hundredths of one cent ($.0007) per gallon of petroleum is considered a just price to protect public health and welfare and to preserve the natural environment.

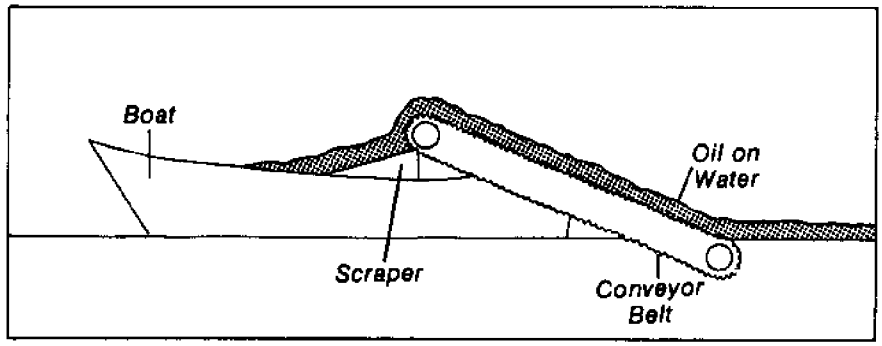
Should the federal government pass a uniform damage claims and liabilities law, the New York Fund will be replaced by a federal damage compensation fund.

Cleaning Up

What to Expect from a Petroleum Spill

Unfortunately, once petroleum is spilled, anything can happen. The U. S. Coast Guard has a saying to keep its personnel flexible in responding to a spill, "Every spill is different."

Some parts of the spilled material evaporate; others sink. Sometimes the spill breaks up into "pancakes," or islands of pollutant; at other times, it combines with water and floating particles to resemble chocolate pudding. The material spilled, its den-



The technology for containing and removing spills improves every year. Mobile "slick lickers" lift oil from water by an absorbent conveyor belt.

sity, the currents and winds, and the temperature of the air and water all affect the spill's behavior. The damage to the environment and the threat to you and your property depend on these factors, as well as the specific features of the environment and your property at the time of the spill.

There are many ways one can be victimized by a petroleum spill. Petroleum can soak into beach sand, ropes and buoys, wooden docks, and rock cribs under docks, from which it bleeds thin yellow streaks for a long time. It can sink offshore, drift along the bottom, and wash ashore elsewhere. It can foul the motors of boats and equipment in the water. Dissolved or sinking portions of pollutant can be drawn into your water intake. Only the greatest care can keep it out of your boat, house, and car. Your pets may contact it and become ill cleaning themselves. It can cause skin irritations, and, if the vapors are strong, nausea. The more flammable spills pose a fire danger until they dissipate. The pollutant can kill wildlife that contribute to the charm of your location. Even the cleanup campaign itself may cause some damage when trucks cross lawns and crews use private docks in the course of their work.

What to Expect during Cleanup

Federal and state contingency plans outline a five-step procedure for responding to spills.

1. Discovery and notification

Citizens can help in this step. Calling the emergency oil spill notification number (see back cover) activates a sophisticated national communications network.

2. Evaluation and initiation of action

Action begins as soon as a spill is reported. The Coast Guard and DEC and DOT employees and the predesignated OSC investigate the nature of the spill and the actions of the discharger, and marshall the forces needed to handle the spill. Predesignated general priorities are brought into effect and made specific to the particular spill. A computerized spill cleanup equipment inventory (SKIM) is activated to locate contractors and equipment. If the discharger of the pollutant is unknown, Field Oil Identification Laboratory (FOIL) units can be dispatched to "fingerprint" the spill by chemical analysis and thus identify the polluter.

3. Containment and countermeasures

This is the fast-paced and critical stage, lasting perhaps hours or even days, when the OSC attempts to shut off the source of the spill, control the pollutant already spilled, and save lives, property, and natural resources. This step may begin minutes after the spill and may continue for the duration of any official activity.

To respond to a large spill, the OSC establishes a communications and command post close to the action and directs the field crews from it. In such cases, the OSC establishes a public information center nearby to use in sending news releases, holding press conferences, and receiving messages from local residents.

4. Cleanup, mitigation, and disposal

This step is less desperate than the preceding but every bit as difficult. The pollutant must be removed from the environment and disposed of in a safe place or reclaimed. Many workers are likely to be required over an extended period and are the most visible part of the cleanup effort. Some specialized equipment or chemicals may also be used in this phase to remove the oil or reduce its annoying characteristics.

5. Documentation and cost recovery

In this final step, the technical, scientific, management, and financial reports are completed and the government sets out to recoup its expenses from the discharger. Also, the New York Fund solicits residents' damage claims, establishes an arbitration board, and administers compensation.

Closer Look at Cleanup

Intensive study of the 1976 St. Lawrence River spill and careful reading of the reports on spills since then reveal what actually happens after a spill in addition to what the law specifies.

- A cleanup is only as fast as the manual work. The increasingly sophisticated technology of spill containment and removal will not replace the man or woman in rubber boots working with hand tools. Spill cleanup is hard, dirty, sometimes dangerous work, and the workers, or "muckers," cannot go beyond a certain speed in scouring contaminated shorelines. Residents who observe the crews may have expectations for effi-

ciency and speed that are unreasonable for crews of new recruits working in a strange locale, at the mercy of the elements and often dispersed over a broad territory.

• Priorities for protection and cleanup cannot be fully predetermined. After assuring the safety of human lives, the OSC has to weigh many factors, such as the nature of the spilled material, the locale, and the weather, in order to set additional priorities. For example, once human safety is assured, highly populated areas or sensitive environmental zones are generally given highest priority. In river spills, an area further downriver from the spill than another area will be given lower priority. Many of these decisions are made with the expert advice of members of the RRT, such as the federal Fish and Wildlife Service and the EPA. Once the priorities are established for a particular spill containment and cleanup, the OSC will execute the organized response in rather strict conformity with those priorities. USCG monitors in the field, observing the machinery and crews, have some leeway for interpretation, but have stiff guidelines as to "what to clean first" and "how clean is clean."

• Prevention is easier to improve than spill response. All officials involved in pollution response say that a dollar invested in prevention is a better investment than a dollar for cleanup. They know that in almost any spill some damage will occur and not all the pollutant will be recovered. Spills in fast rivers like the St. Lawrence or in stormy seas like those found in Nantucket Sound are disasters as soon as they happen. Any damage prevented or pollutant recovered in such circumstances is a tribute to modern technology and organization. On the other hand, a spill that is prevented saves people, money, and nature—but also goes unnoticed. The smart money goes into the dull tasks of safety regulations, inspection, and enforcement. Spills are visible and dramatic, but everyone is a loser.

• Outsiders are necessary. In a large spill, the amount of money, machinery, and tight organization needed demands a great deal of planning and expertise. People who you suspect do not know the river (lake, beaches) will be in charge. You will feel like a parent with a sick child who cannot rely on the family doctor: you have been referred to a strange specialist. That is the way it has to be, and one must live with it. The most important place for grass roots participation is not at the top but at the bottom. Pollution contractors recruit workers from the affected area because local people are knowledgeable, are committed to their coast, and work harder. A study of cleanup worker crews has shown this to be true.

What You Should Do

How to Be on the Alert

How to Report a Spill

The law requires prompt notification of a spill by the spiller. Prompt reporting of an unnoticed spill by a witness can save precious hours. If you have *any* reason to believe that a spill you have found has not been reported, and that the material is petroleum or other hazardous material—no matter where the spill or how small—follow these steps immediately:

CALL the 24-hour state notification number, (518) 457-7362

CALL the toll-free 24-hour national notification number, (800) 424-8802

IDENTIFY

- yourself and phone number
- the source of the spill
- the location of the spill
- the type of product spilled
- the quantity of product spilled
- any actions taken so far

ALSO

- Stay away from the pollutant. It could hurt you.
- Take some photographs, if possible.
- Collect names of other witnesses.

If your property becomes involved in a spill for a number of days, experience has shown that careful record keeping is valuable to science, the spill cleaners, and you in claims and legal matters. Keep a careful diary of the pollutant, your actions, and those of others. Take good photographs, recording time and place. If you take samples of the pollutant, make sure you get a written statement from a witness. If you give material evidence to other people, get a receipt.

Giant tankers are not the only bad spillers. If each year every American family improperly disposed of only a quart of petroleum or hazardous material, then an estimated 15 million gallons of harmful pollutants would be dumped into our environment. If you do not know how to dispose of poison, engine oil, cleaning fluids, or other hazardous materials, ask your community's sanitation engineer for the proper procedure in your area. Pouring them down your drains or the storm sewer may *not* be the answer.

Seeking Further Information during the Emergency

Only hours after a major spill, the U. S. Coast Guard or the Environmental Protection Agency will establish a central headquarters near the scene. A public information telephone number will be announced in the news. The National Contingency Plan requires the office of the On-Scene Coordinator (OSC) to provide prompt and accurate information on the spill—at least one news release a day—as long as public interest warrants it.

If you are in the middle of the spill, one report a day may not be enough. The types of questions that former spill victims have asked in the past are listed here along with the name of the office to call for answers.

Question	*Office to Call*
Where do I report that there is pollutant on our shore?	*The OSC's public information office*
I have a soiled pet or wild animal. What do I do?"	*The Department of Environmental Conservation or the U. S. Fish and Wildlife Service*
How can I clean my rug (car, clothes, boat)?	*The OSC's public information office or pollution contractor's office*
How can I clean up the pollutant on my own property?	*The OSC's public information office*
How can I offer my boat, dock, or services in the cleanup process?	*The OSC's public information office or pollution contractors*
How do I file a claim for spill damages?	*The spiller's insurance agent, who will establish and publicize a local headquarters. Failing this, write to the Administrator, N.Y. Environmental Protection & Spill Compensation Fund, c/o State Comptroller, Department of Audit & Control, N.Y. State Government, Albany, N.Y.*
What can I do to file a claim for damages due to cleanup activity?	*The OSC's public information office*
If I have a compliment (or complaint) about the response of participants, whom do I call?	*The OSC's public information office and your federal- or state-elected officials*
When will the cleanup workers get to my property?	*The OSC's public information office or the designated field supervisors*
Is the pollutant dangerous, flammable, or poisonous?	*The OSC's public information office, the Environmental Protection Agency, or your local fire department*

How You Are Alerted to a Spill

Except for seeing or smelling a spill, most potential victims learn of a spill through the grapevine. Although fast and valuable, the grapevine cannot always be trusted. The second fastest and more reliable source of information is the radio. Television is a little slower, followed by newspapers. But a potential victim who is liable to be hit by a spill a few hours later will appreciate the grapevine and should quickly pass the information on to others.

Because the agencies responding to the spill will be working overtime in a crisis situation, crucial questions such as Who spilled this? Why? Will they be punished? and Can spills be prevented? will interfere with the job of cleaning up. Learn what you can from the news, ask questions at public meetings, and lean hard on your elected representatives; but let the cleanup agencies alone so that they can handle the immediate problem. Write your inquiries to the Commandant of the Regional Response Center in charge of your particular spill.

News Dilemma

A spill draws news reporters to the scene quickly. Their reports, coupled with official news releases, are usually the sum total of what the public ever knows about a spill.

If reporters approach you for information or comments, you can respond in any number of ways:

— You may decline to say anything. If you are too angry or ignorant about the situation, you might prefer not to see your remarks in print later.

— You may report the facts as you understand them, but prefer not to interpret the situation.

— You may take the opportunity to reach a large audience of listeners or readers with your views.

Any of these responses might be right for you; but no matter which you choose, you must confront the news dilemma. The news dilemma exists when you and the members of the victimized community raise questions in order to reduce the likelihood and damage of spills in the future. But instead of attracting attention, it may be in your community's best interest to let the spill occur quietly. Your local area's economy could be hurt by excessive publicity about serious damage.

Freedom of the press demands a sense of responsibility toward the truth and the common good, but sometimes these two values may be in conflict. So you must ask yourself whether you should create publicity about the disaster and ruin your neighbor's tourist season, or whether you should keep quiet and reduce the public pressure to stop these spills. The decision is yours and should not be taken lightly.

How to Protect Yourself and Your Property

How to Protect Yourself

If you are alerted in time, you may be able to reduce damage by taking certain actions.

- If the spill involves a noxious gas, like chlorine, *EVACUATE* all breathing creatures—animals, people—immediately.
- If the spill is flammable, like gasoline, it too may have a gas cloud around it that is highly explosive. *QUENCH* all open flames, *ELIMINATE* conditions that could produce a spark, and *EVACUATE QUICKLY.*
- If the spill is not particularly poisonous nor flammable, like heavy oil, your immediate concern is property.

PULL OUT your boats, buoys, and lines away from the shore or high tide.

RESTRAIN your pets and animals.

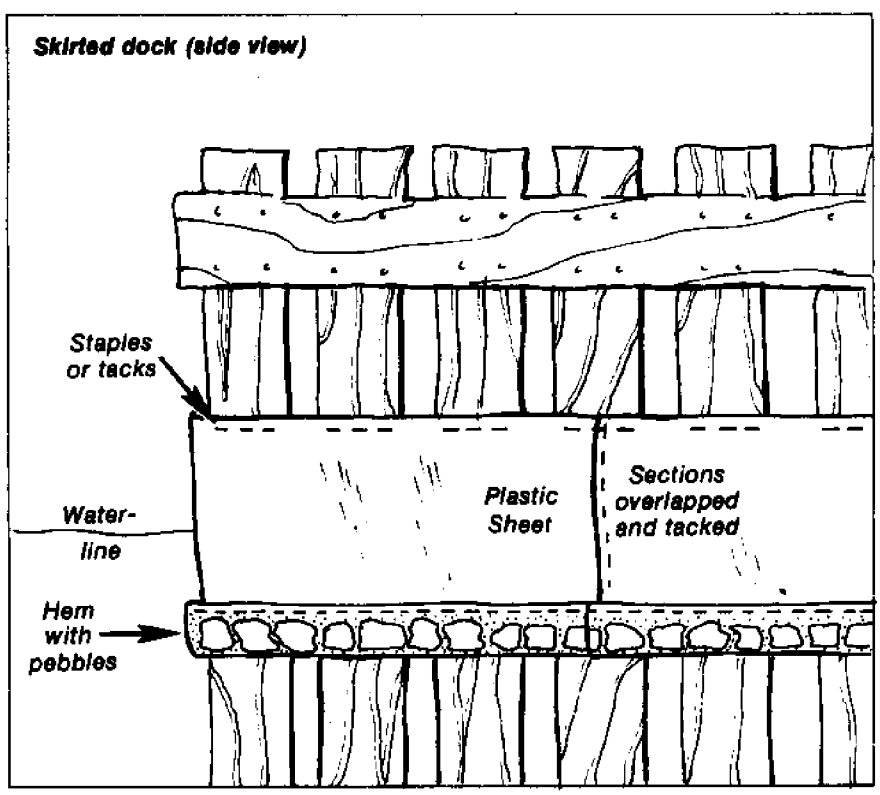
SHUT OFF your water intake from the water body that contains the pollutant.

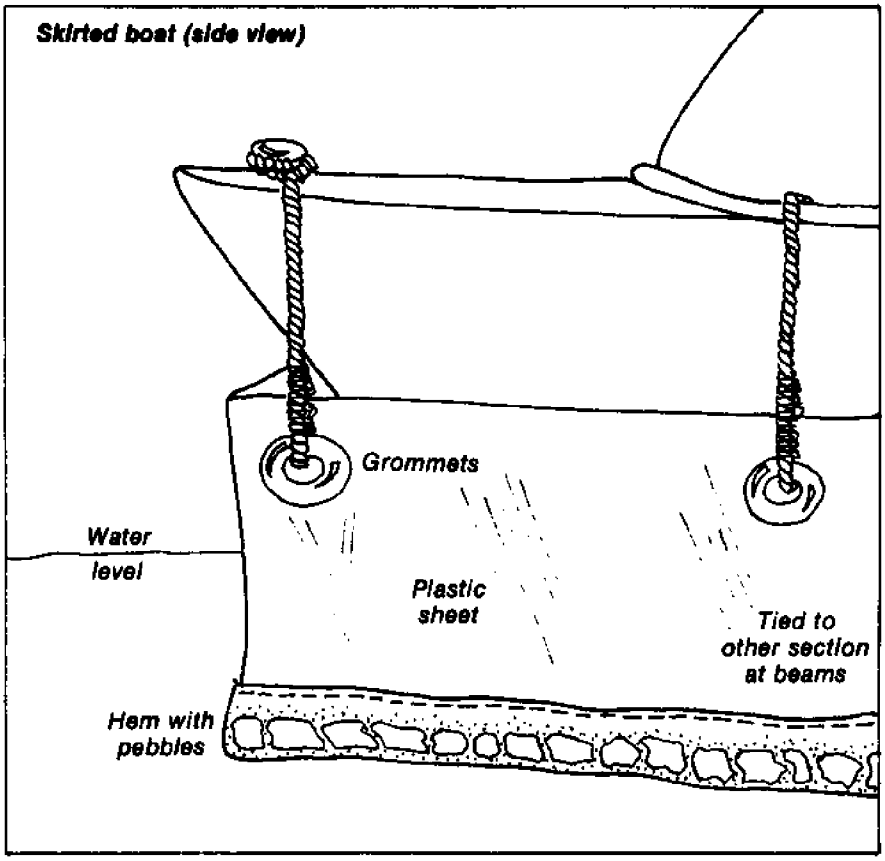
SKIRT your dock cribs and boats that cannot be pulled out of the water. With advance planning, lead time, and common sense about the weather and your own physical fitness, you may be able to reduce the damage to your dock and boats. But be sensible. It could be a stormy night when you have to go out. Some oil pollution is better than a drowning, heart attack, or broken limb. If discretion says, "Forget it," perhaps you can arrange in advance for someone to act for you. All the materials mentioned in what follows are available at hardware or building supply stores or from farmers.

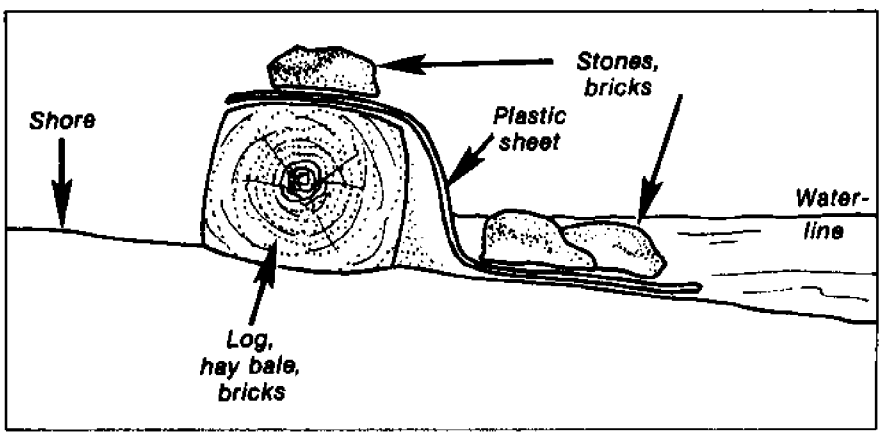
Skirting Your Dock

To skirt your dock, you will need heavy mil plastic sheets, at least 3 feet wide and long enough to go all the way around the dock. You can tack it down with a large-headed, short tack, or you can staple it down with a staple gun. The skirt should be attached half way above and below the water level. Coastal residents on Long Island Sound and the Atlantic must take the tides into consideration: the sheet should be at least 18 inches below the low watermark and 18 inches above the high watermark. This may require the use of two levels of sheeting and, thus, a little more time and money to install.

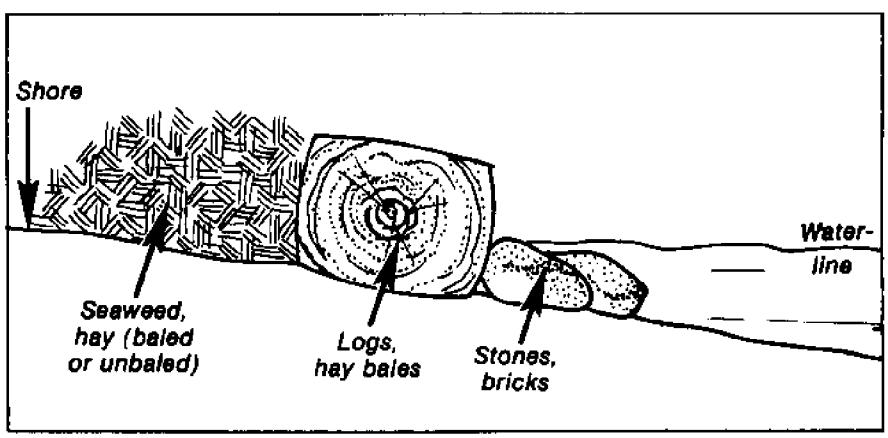
If you attach weights to the bottom of the sheets, you will be able to put the skirt on without getting off the dock. One way is to make a 3-inch permanent "hem" in the bottom of the sheet, put pebbles in the hem, and staple the hem securely. Also, make your skirt in sections, overlap the sections, and staple or tack them closed. See illustration on this page for how the skirt should look.







Two Styles of Shoreline Protection. Above, *apron-style barrier (end view).* Below, *absorbent-style barrier (end view).*



Skirting Your Boat

To skirt a boat that cannot be drawn out of the water easily, you use a modification of the dock skirt, with lines instead of tacks at the upper edge. But make the skirt in two pieces, to be tied together at port and starboard beams (see illustration on this page).

Defending the Shoreline

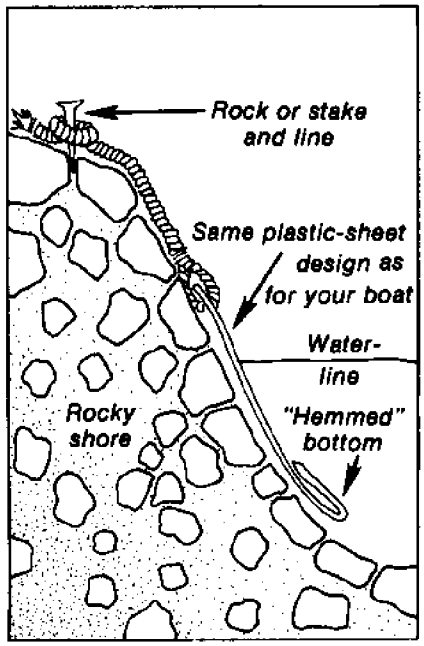
Assuming there is still time before the spill affects your property, you might try to protect your favorite inlet or swimming beach. Although it is difficult to measure success, people who have taken these steps during past spills are convinced their efforts prevented some damage. Concentrate on a small area first. To carry out any one of the following three protection methods, you will need to decide in advance which part of your shoreline is worth the money and trouble to protect.

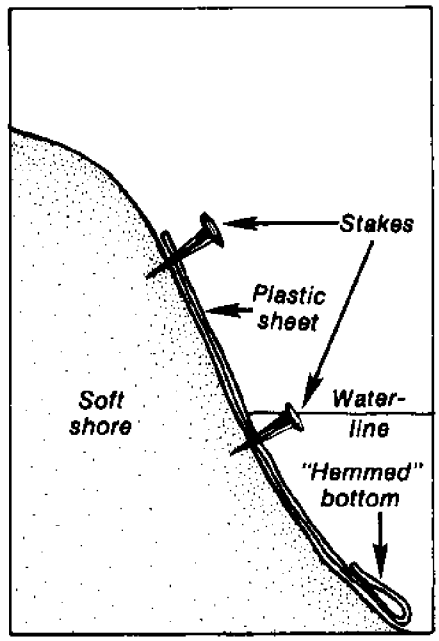
Coastal residents on Long Island Sound and the Atlantic Ocean, who experience daily tides of 3 to 6 feet, will have to invest more time and money to be successful in the following measures. They may, however, achieve some success by adopting these measures to protect only the high tide areas; that is, if the sea runs 20 feet up a sandy beach in a tidal cycle, concentrate on the last 6 or 10 feet of that run. Such action may be of more value than it sounds, because the tide is likely to deposit a large proportion of its polluted debris at the high tide mark.

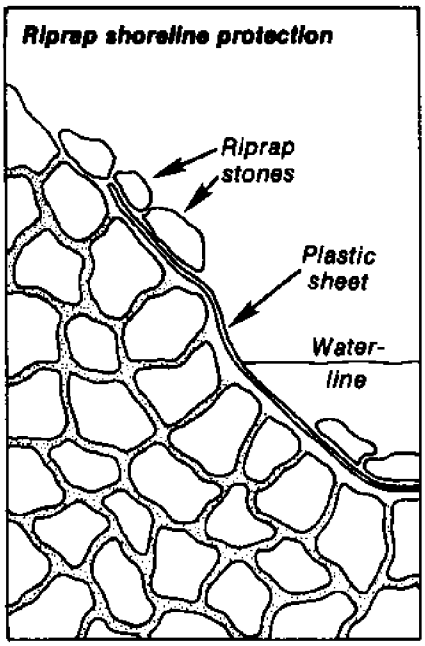
Sandbagging. Flat, sandy beaches, especially ones with little or no tide, should be "sandbagged" with either heavy plastic or absorbent material like hay or seaweed. After studying the illustrations on this page, you may want to design your own method. But keep in mind that the protective structure should always be in shallow water. Do not let it be subjected to more than about 5 inches of water, or waves and tides will dismantle it.

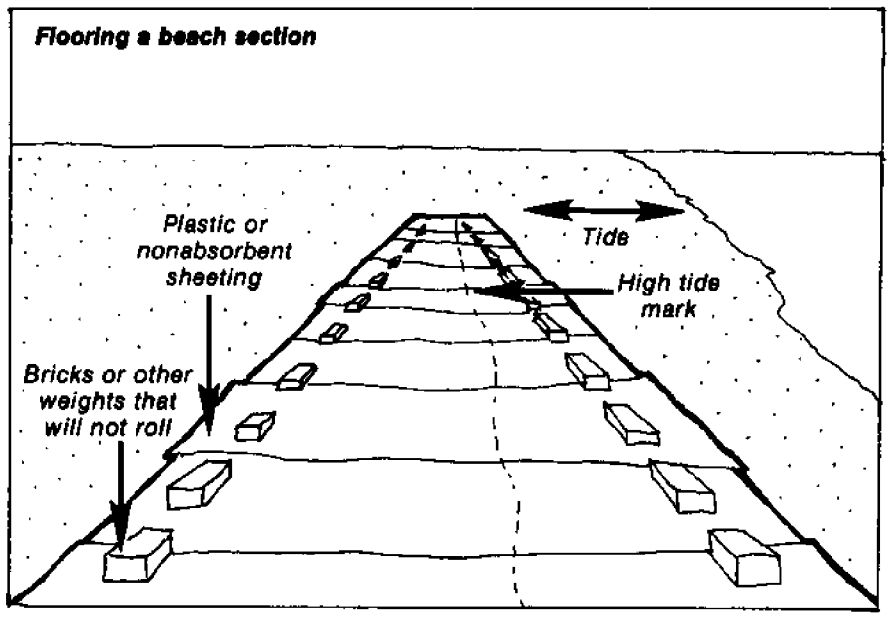
Two Styles of Steep Shoreline Protection. Left, *rocky shore barrier (side-view).*

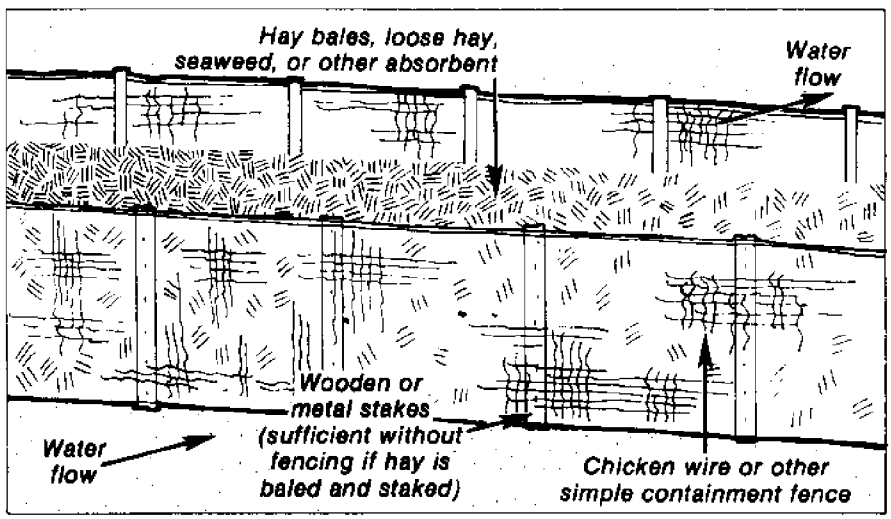
Right, *soft shore barrier (side-view).*











Protecting an Inlet

Skirting. For steeper shorelines and riprap shores, you need to use a combination of "hemmed" plastic sheets, stones, and stakes (illustration p. 10).

Flooring. Pollutant that soaks into soil or sand on a beach can resurface to haunt you for months or years unless totally shoveled out. To avoid this major chore, you may reduce the soaking by flooring a section of lawn or beach. Again, use plastic sheets or other material that cannot be penetrated by the pollutant. Anchor thoroughly at the edges with stakes or heavy weights that will not roll in tides or waves. A suggestion for a shallow sandy beach up which a tide runs for about 10 feet is illustrated (p. 10).

Protecting an Inlet

In the past, shoreline property owners have constructed wooden beam or log booms to constrain moving oil. Such booms are less effective than the special booms used by the contractors, but may be useful in certain conditions. But suppose you have an inlet and you want to limit the oil that gets in. What can you do?

The best solution is to acquire a length of absorbent boom from a pollution contractor before a spill or when he or she arrives to clean up during a spill. String the boom across the mouth of the inlet. If the inlet is shallow, you can try one of the "sandbagging" techniques. If you have the resources, enough lead time, and the proper conditions, you can build a structure like the one illustrated (p. 10). Be careful not to create a hazard to navigation. This hay bale structure is also useful for protecting beaches.

Precautions until Complete Cleanup

Oil is smelly, messy stuff. From the time the oil affects you to the time it is cleaned up, you will need to take precaution not to spread it. You can do this by covering the top of your dock with absorbent pads, frequently issued by cleanup contractors. Remember that the footwear and clothes you wear while cleaning up the pollutant should be kept out of your house and car. You will also need to restrain your pets. If you have to run your boat in polluted water, remember you might damage it, to say nothing of the cleanup job afterwards.

Cleaning Your Own Property

If your property is affected by a spill, there are several reasons why you might want to clean part of it yourself:

— You are in a hurry to reduce the mess, and the cleanup crews will not be arriving in your area for a while.

— You feel you can do a better job of the manual work, with less damage on your own property, than the contractors' crews could do.

There are also several reasons why you might *not* want to clean your own property:

— Oil spills require hard manual labor.

— Cleanup work by contractors will be paid for by federal or state contingency funds, and you do not have the equipment necessary for a good job.

Therefore, the decision to clean or not to clean depends upon your own circumstances. But if you do decide to clean up the oil, you must avoid using cleanup procedures that may make the situation worse.

• *DO NOT ADD* any detergents or cleaners to the pollutant, the ground, or water. Most detergents or cleaning fluids do more harm to the environment than the pollutant itself.

• *DO NOT PUSH THE POLLUTANT AWAY.* In a spill, the cleanup crew wants the material to come to rest, where it can be cleaned up more easily. If you just push it around, you will slow down the entire operation and, quite possibly, contaminate a larger area to the dismay of your neighbors.

• *DO TRY TO CONTAIN THE POLLUTANT.* Once you are hit, accept the fact and try to be useful. Bag it, bucket it, barrel it. Depending on the type of pollutant and the amount that hits you, you may be able to speed up the cleanup by gathering up the floating pollutant and light contaminated debris and putting them into throwaway containers.

• *DO PROTECT* yourself with gloves and proper clothes. Avoid much exposure to your skin and lungs. Remember, some pollutants are poisonous to breathe, whereas others, like oil, irritate skin and mucous membranes.

• *DO NOT TRY* to clean any animals except your own pets that are slightly contaminated. If they are heavily contaminated, seek professional advice. Report soiled wild animals to the Department of Environmental Conservation or one of their local cleaning stations, and follow their instructions. Cleaning polluted animals is a major operation, and a low survival rate of heavily contaminated animals is considered normal by most cleanup experts.

Security during the Emergency

A major spill in your area will draw hundreds of experts, workers, hangers-on, and sightseers and countless tons of equipment, worth thousands of dollars. Under such circumstances, security is important. Contractors and spill monitors will need to keep watch over their materials. For these reasons, it is wise to stay away from work and storage areas.

Likewise, in the heat of an emergency, people may appropriate your own equipment for the cause or for themselves. Line, gas tanks, tools, and other materials often disappear. So your own possessions should be well secured.

Getting the Best Work Done

During the peak of a spill crisis, everyone works desperately and with a strong sense of purpose. But nature's unpredictability, the complexities of bureaucracy, and the slow, back-breaking, frustrating job of getting rid of the pollutant often wear down everyone's patience. Remember this when you confront anyone involved in the cleanup operation.

Almost all victims of a spill will have direct contact with cleanup crews and spill monitors. Do not miss the opportunity to bolster morale and to help get the job done right around your property. Studies show that where yelling and threats fail, a favor from local residents almost always succeeds. Provide coffee or snacks, and you will be appreciated more than you can know. You will also get a better job done.

Your justifiable anger about the spill will not help the crews work better. Vent your outrage at the proper authorities. If you have legitimate complaints about the crews, direct them to the supervisor, spill monitors, or the On-Scene Coordinator's office.

How to Get Organized In Advance

The government has adopted the policy that emergencies must be planned for. Spill contingency plans are made more precise and sophisticated every year. For example, contingency planners are recognizing now that spills are also social problems and that the victimized community can be a help or a hindrance. The push is now under way for local contingency planning to involve the victimized area.

This is where you come in. Just reading, understanding, and sharing this bulletin with your neighbors are a good start. Studies show the ignorant victim is the hardest hit. He or she is most surprised, confused, anxious, and unable to help.

Suggestions for what your community can do to begin planning in the event of a spill in the future follow.

Alert Systems for Early Warning

A prearranged alarm system is a faster way than the radio, TV, or local grapevine to alert citizens to action. It requires, however, a little pushing on your part and a little planning in your area.

A special alarm signal broadcast by marinas, volunteer fire departments, or mobile loud hailers notifies all area residents to tune in their local radio stations at once. On the radio accurate details and suggestions can be reported regularly through bulletins. The greater speed of warning and number of people contacted are valuable because an hour or two lead time before a spill hits can be crucial for citizen self-protection.

Your area's fire and emergency services coordinator or Civil Defense head is the person to contact. Local radio stations will also have to be briefed on their key role. Efforts must be made to publicize the new signal. This entire warning network then needs to be connected to the Regional Response Team or its local representatives so that as soon as a spill is formally reported, the warning system can be activated.

Predesignated Local Observer

Government agencies that are responsible for supplying the On-Scene Commander and the Regional Response Team (RRT) may be willing to accept a predesignated local representative to act as an observer on the RRT if and when a spill occurs. In this case, the observer provides continuous up-to-date information for other local citizens. If the observer is an expert in the local area, he or she can also report to the RRT on the reactions of the community and provide the RRT with knowledge about local talent and resources. Sometimes, too, only an old hand in a community knows the local names of the streets, neighborhoods, and back bays that make up a threatened area.

If you are able to arrange for an observer on the RRT, that volunteer will be very valuable and very busy. He or she must be selected with great care and must recognize the great responsibility of the role.

Volunteers

Volunteers can be useful, but only in certain situations. Without special training, insurance, and legal protection, volunteer fire departments and other emergency organizations are less useful in controlling a spill than in contending with fire and other life-threatening hazards. But a local fire department, civil defense group, or even the Scouts can provide useful workers for immediate protective response. They can acquire materials like hay bales from farmers or absorbent pads from pollution contractors, distribute useful supplies, protect public and private areas, and show residents the best way to use available materials to protect themselves.

In a waterfront spill, the local Coast Guard Auxiliary can spread the alarm, warn boats, patrol boom placements, and distribute information such as this bulletin.

Local experts who know the water intimately, such as channel pilots or sports guides, can be helpful to pollution contractors and regional contingency planners. Whether they work with or without pay depends on the local situation. They must step forward before a spill emergency, however, to make arrangements for their involvement.

Volunteers are not likely to be assigned to cleaning up the pollutant. Area residents who want to help clean should seek employment from the pollution contractors who, in a large spill, need many workers fast.

Volunteers can help agencies like the Department of Environmental Conservation. Though cleaning wildlife, especially birds and mammals, must be left to trained professionals, volunteers may be asked to "haze" wildlife away from polluted areas, gather contaminated wildlife for cleaning, and do a variety of needed chores around the cleaning stations.

If you belong to an organization that wishes to offer its equipment, personnel, or skills during a spill, contact the nearest regional office of the New York Department of Transportation (DOT), the Department of Environmental Conservation (DEC), or the Regional Response Center for your area. They will refer your services to the On-Scene Coordinator, who has the authority to place all resources in the field.

Local Contingency Plans

If your area is already organized into a waterfront association, your organization may consider creating a contingency plan to benefit all members. Because spills occur when some residents are not home and because some people cannot undertake heavy work, a neighborhood contingency plan can protect everyone. Instead of acting as individuals, the group carries out the suggestions made earlier in this bulletin. But because of the private property involved, you should seek legal advice. Damage or injury resulting from these actions on someone else's property could be liable to civil suit unless special arrangements are made.

Your local contingency plans may also include efforts to protect local public and private areas, such as parks, village docks, and marinas. Your plan may be complex, involving a whole village, or it may be just an informal mutual agreement among neighbors.

Whatever plan you do create, it is essential that you coordinate with your representatives on the RRT. Besides judging the legality and effectiveness of your plans, they may also be able to offer advice.

How to Get More Information

Keeping Abreast of Developments

Progress in preventing and removing spills is made every year. Law, technology, and organization are almost constantly being modified toward greater efficiency and less pollution. If you are interested in keeping up with developments in this field, write for the information on the following recommended reading list. Write, also, to the offices of your state representative in Albany and to your representatives in Washington and explain that you want to keep up with breaking news in this field. Ask that your letter be forwarded to other agencies or nonprofit organizations that publish newsletters on the subject. Such a procedure also lets your representatives know you are concerned.

Recommended Further Reading

Environmental Protection Newsletter. A quarterly published by the U. S. Department of Transportation (U. S. Coast Guard), 400 Seventh St. SW, Washington, DC 20590. Bulletins on spills, laws, organizational developments, and spill technology. Write and ask to be placed on the mailing list.

Marine Environmental Protection. Coast Guard Mission Series CG-378-5. A look at Coast Guard resources to deal with spills. Available from the Department of Transportation, Public Affairs Division, U. S. Coast Guard, 400 Seventh St. SW, Washington, DC 20590.

Oil Spills and Spills of Hazardous Substances. U. S. Environmental Protection Agency. One of the best and most complete public documents on the handling and environmental effects of spills. Available from Environmental Protection Agency, Region II, Industrial Environmental Research Laboratory, Edison, NJ 08817; or for sale from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

A Primer on Oil Spill Cleanup. How the federal agencies control and remove a spilled pollutant. Available from the American Petroleum Institute, 1271 Avenue of the Americas, New York, NY 10020.

Reducing the Problems of the Public After an Oil Spill: A Case Study of the NEPCO 140 Oil Spill in the St. Lawrence River, June 23, 1976. By John F. Omohundro. The social impact of a New York spill and the residents' responses. Available from National Technical Information Service, Springfield, VA 22151.

Emergency Telephone Numbers

TO REPORT A SPILL: Call one or both of these 24-hour numbers:

1-518-457-7362	New York State emergency
1-800-424-8802	Washington, D.C. toll-free number

NEW YORK STATE SPILL RESPONSE HEADQUARTERS

1-518-457-7360	N. Y. Dept. of Environmental Conservation, Division of Pure Waters
1-518-457-1187	N. Y. Dept. of Transportation, Oil Spill Prevention and Control Bureau
1-716-846-4168	U. S. Coast Guard predesignated On-Scene Coordinator, for spills on the Great Lakes or St. Lawrence River
1-518-472-6110	USCG predesignated On-Scene Coordinator, for spills in eastern portions of the Barge Canal, the upper Hudson, and Lake Champlain
1-212-264-8753	USCG predesignated On-Scene Coordinator, for spills in the Atlantic, New York Harbor, and lower Hudson River
1-203-432-2464	USCG predesignated On-Scene Commander for spills in Long Island Sound
1-201-548-8730	Environmental Protection Agency predesignated On-Scene Coordinator, for spills on land and nonnavigable waters
_____	On-scene public information center established after a spill in your area (fill in)
_____	Your local NYDEC headquarters (fill in)
_____	Your local NYDOT headquarters (fill in)

WILDLIFE CLEANING STATIONS — established after a spill

_____	For reporting or delivering endangered wildlife in your area (fill in)

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