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Oil Spills

A Public Official's Handbook

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The idea for a handbook to assist public officials in addressing the social problems following an oil spill derived from a social study, funded by the U.S. Coast Guard, of a major oil spill on the St. Lawrence River in 1976. I warmly thank the St. Lawrence River residents and public officials I talked to during that study and hope that they and others in a similar position can benefit from this handbook.

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Oil Spills A Public Official's Handbook

Introduction

Purpose of this Handbook

This handbook explains the social response to an oil or hazardous substance spill, particularly in water. The reactions of the victims and coastal residents of the impacted area are identified, and actions that may reduce social problems are suggested. The last section, "Suggestions for Planning and Response," may be consulted immediately in the event of a spill. An emergency checklist on the back cover addresses specific actions and guides the reader to appropriate sections of this handbook. The quick reference charts 1, 2, and 3 may serve as memory aids to the social context of particular problems.

Officials need to understand how the public will respond to the immediate crisis of a spill, what factors lie behind the responses, what problems the public is likely to encounter, and how best to meet these needs within the limits of their own position and the official spill contingency plan guidelines.

This handbook is an outgrowth of research indicating that spills do create social problems that demand some attention from all public officials in the affected area. The social problems can interfere with technological and environmental cleanup projects and have lasting effects for agencies or organizations involved. All parties will benefit from giving some attention to ameliorating these social problems.

This handbook is directed toward officials who are likely to be drawn, formally or informally, into contact with people concerned about a spill: elected representatives at all levels of government; fire, rescue, police, civil defense, Red Cross, Coast Guard auxiliary, and other emergency personnel; representatives of agencies stipulated as taking a role in local, regional, or national contingency plans for spill response; news reporters and public information officers; officials of community organizations in the impacted area, such as chambers of commerce, resident associations, sportsmen's clubs, and others; and the discharger of the pollutant and the insurance representatives of that discharger.

Officials should find this handbook useful in preparing for public meetings and news conferences, in conducting personal interviews while reconnoitering or administering in the impacted area, and in handling telephone and written requests for information or help.

The Social Effects of an Oil Spill

The impact of a major pollution accident on coastal residents takes many forms—direct and indirect, permanent and temporary, positive and negative. Most if not all of the following results have been identified in past spills and may be predicted for future ones. These effects influence each other.

- Damage to private and public property, often entailing a loss of income and local tax revenue and a temporary decline in real estate value.
- Danger to the health of humans, domestic animals and pets, and wildlife.
- Disturbance of the ecosystem, producing later effects that temporarily reduce the value of the area to residents.
- Interruptions in normal routines or valued activities associated with the water body.
- Psychological and physical stress as a consequence of changes in routines or of unusual and unplanned activities.
- Exacerbation of latent social conflicts and behavioral inconsistencies that normally remain beneath the surface of local life.
- Formation or collapse of local organizations and personal connections.
- Increased publicity about the impacted area.
- A massive influx of money, material, and people.
- Changes in the distribution of income in the impacted community

QUICK REFERENCE CHART #1

Causes of Negative Resident Responses after an Oil Spill

FACTORS

PUBLIC INFORMATION...
during event is inadequate, inconsistent, or incorrect

"OUTSIDER" AGENCIES...
increase activity, spending large sums of money, introducing large numbers of people, and exercising much power

SPILLED OIL...
has actual and perceived effects on health, property, and ecosystem

VICTIMS' FAMILIES...
do not provide psychological support during the period of stress

STRICKEN NEIGHBORHOODS...
fail to coordinate victims in agreement and action

LOCAL ORGANIZATIONS...
fail to bridge gap between victims and official response organization

LOCAL LEADERS...
do not arise or are counterproductive

RESIDENTS' PRESPILL UNDERSTANDING...
expectations and attitudes toward spill and subsequent response are incorrect

RESIDENT RESPONSES

ANGER

ANXIETY, RUMOR

APATHY, LOW MORALE

CONFLICTS AMONG RESIDENTS, OPEN COMPETITION for resources

CONFLICTS WITH HELPING AGENCIES

INEFFECTIVE ACTIONS
for protection, prevention, compensation, organization

QUICK REFERENCE CHART #2

External and Internal Variables in Community Response to an Oil Spill

EXTERNAL VARIABLES

OIL SPILL'S CHARACTERISTICS

1. The frequency of spills
2. Control over the spill accident
3. Cause of the spill
4. Predictability of the spill
5. Speed of oil's arrival in community
6. Length of forewarning
7. Duration of pollutant in community
8. Breadth of oil's impact
9. Destructive potential of material spilled
10. Timing of spill in day, year

OFFICIAL SPILL RESPONSE TEAM BEHAVIOR

1. Degree of interruption of local decision-making patterns and routine activities
2. Integration during event with impacted community
3. Amount of buck-passing and red tape
4. Clarity, uniformity, availability of cleanup and compensation funds
5. Identification of team with impersonal outsiders
6. Public information efforts

IMPACTED COMMUNITY'S RESPONSE TO OIL SPILL

INTERNAL VARIABLES

SOCIAL CHARACTERISTICS

1. Strength of family environment
2. Homogeneity or integration of impacted community
3. Density of local communication network
4. Active local organizations, local leaders

CULTURAL CHARACTERISTICS

1. Degree of community experience with oil spills
2. Knowledge of probable and appropriate events following spill
3. Reasonable expectations about spill and subsequent events

and in individual income-producing activities.

- A large increase in government presence and power, creating new authorities and communication networks within the impacted area.
- More legal actions, both by private citizens and government agencies.
- Greater political activity and consciousness among residents.

Evidence from the large spills in the last few years shows that the public claims certain rights in a spill emergency:

- A quick alert and a quick response to the initial accident.
- Careful adherence to an updated and thorough contingency plan.
- Abundant information supplied to the public, and especially to the impacted community.
- Swift investment of earmarked funds.
- Quick removal of the contaminant and minimum damage from the contaminant and the cleanup operation.
- Full restitution of losses by insurance or other means.
- Return of the physical environment to prespill or better conditions.
- Punishment of the discharger responsible for the spill.
- Legislative action to improve existing laws and spill contingency plans.

Weaknesses in any of the above features lead to inadequate or counterproductive responses from the affected population. Residents become more confused, anxious, and resentful. These feelings and actions are part of the social effects of the spill.

Oil Spills as Disasters

The point of labeling oil and hazardous substance spills as disasters is not to sensationalize them but to connect them to the literature on natural disasters, which have been studied more thoroughly than spills.

I discovered the usefulness of disaster sociology for understanding the social response to sudden pollution while doing fieldwork following the NEPCO 140 spill of June 1976 in the St. Lawrence River (Omohundro 1979). That spill, hereafter referred to as the NEPCO spill, discharged about 300,000 gallons of heavy oil along 60 miles of the U.S. shoreline from Alexandria Bay to Massena, New York. Over a four-month period, $8.5 million were expended to remove the pollutant and to restore the area. The NEPCO spill will be used as an example throughout this bulletin. Only two other oil spills have been examined by social scientists (Molotch 1970; Fricke and Maiolo 1978), and both studies found conditions similar to those described here.

Pollution emergencies share some basic characteristics with such natural disasters as tornadoes and floods. Both are caused by sudden, unintended, massive physical threats to human life, property, or the normal routine. The potential for destruction of the natural environment on which people depend is present in both. Most of the social effects listed above also occur in both.

There are, however, some important differences between spills and natural disasters. In most petroleum spills, other than volatile products such as gasoline, the threat to bystanders' lives is negligible. Hence the especially intense community cohesion that promotes cooperation after many natural disasters is absent in petroleum spills. If people *think* the spill is life-threatening, or if they see it killing wildlife, however, their reactions are similar to those following life-threatening disasters. A pollution emergency has more political implications than a natural disaster. Spills are often attributed to human error, misjudgment, and lack of adequate preparation or maintenance, as are accidents involving dams or nuclear reactors.

Taking these differences into account, we can derive many insights into the social effects of spills from the research on natural disasters.

The Social Response to a Spill

The response of a community polluted by a spill is a product of three factors: the characteristics of the pollutant as disaster agent, that is, as a provoker of a social disaster; the social structure and cultural resources of the community before the spill; and the behavior of the multiagency response organization and its relations with the area's residents.

The Pollutant as Disaster Agent

The social effects of spills are influenced by the following ten characteristics of the discharged pollutant (modified from Dynes 1970).

Frequency. Communities regularly threatened by spills are more organized in their responses, which frequently become more adaptive through trial and error experience.

Controllability. A threatened community has relatively high expectations of protection by human efforts and technology. After the NEPCO spill, many downriver residents were not prepared for contamination because they expected containment booms to be deployed across the entire river to restrain the oil.

Cause. People seek a culprit for

causing a spill because its source is man-made. After the NEPCO spill, residents agreed that the way the oil behaved in the water was "in the hands of God," but that the spill itself was an inexcusable human error.

Predictability. Oil and hazardous material spills, like all man-made accidents and some natural hazards such as tornadoes, are highly unpredictable. In fact, spills are not as seasonally predictable as tornadoes. Few residents on the St. Lawrence River before the NEPCO spill anticipated or prepared for an oil spill.

Speed of onset. Oil and hazardous material spills are usually very sudden, and this feature increases an impacted community's disorganization. The NEPCO spill, for example, began within minutes after the barge had run aground in the fast currents near Alexandria Bay, New York.

Length of forewarning. Because the spill is sudden, the length of the warning period is determined almost entirely by the spill's speed of spread and a potential victim's distance from the source. Some St. Lawrence River coastal residents' property was polluted within 45 minutes of the barge's accident; other residents downriver did not see oil for over 24 hours.

Duration. Spills can be among the most long-lived of disaster agents, involving the introduction of a foreign material that must be removed or allowed to decompose or dissipate. The duration of the visible or perceived pollution directly affects the degree of community disruption and is largely responsible for the social disruption caused by nonlethal spills, like the NEPCO accident. The NEPCO oil took four months to remove, and there was some disagreement between residents and officials at that time whether the river was clean or not.

Scope of impact. The territory a pollutant occupies is smaller than the area that is socially disrupted. The NEPCO spill, for example, changed the behavior of coastal residents whose property was not polluted. Also, the pollution response organization's activities themselves broaden the scope of impact. Finally, spills vary in the depth of impact in the ecological system.

Destructive potential. This is not identical to the impacted community's *perception* of a spill's destructive potential, but an increase in either factor results in greater social disruption. In the NEPCO spill, there were differences among residents, and between residents and the government, about what the spill had destroyed. Months after the spill, no group was certain how much damage the spill had wrought.

Timing of impact. Spills at different times in a community's seasonal or daily cycle can produce quite different impacts. The NEPCO spill occurred late at night, at the beginning of the spring tourist season, when the area's population was approaching its height, the ecosystem was fragile, and much private property was vulnerable to the spill.

The Community before the Spill

The community's character before the spill is suggestive of its behavior when impacted and the degree a spill will disrupt its normal existence. Characteristics of the community that affect its response to a spill may be considered under the headings of social structure and disaster culture.

Social Structure Following are the five most important social structural features that affect an impacted community's ability to mobilize quickly, cooperate, share a common definition of the situation, reduce conflict and competition, integrate with outside help, and reorganize for special tasks.

Degree of familism. Strong and extended family ties increase the speed of emergency communication and the amount of mutual help. When larger community ties are missing, however, strong families can be an obstacle to forming a community consensus and cooperating with outside help. Decentralized communities are quickly overloaded by emergency tasks.

Degree of community integration. Strong neighborhoods and social homogeneity improve communication, self-help, consensus, and emergency group formation and are less likely than strong familism to produce atomized groups of victims.

Strength of communication network. Communication is improved by strength in the above two factors. Mass media, when connected to disaster relief agencies and oriented to the impacted community's interests, improve communication. Good communications are also a product of experience in conversing across local organization boundaries and with outside agencies. Finally, key individuals or groups may emerge after a spill as information brokers.

Strength of local associations. Impacted communities with active, well-organized associations have the best chance of reducing social disruption caused by a spill. Organizational strength may enable the community to hold together and work efficiently with outside help. On the other hand, such strength may enable residents to create contingency plans and mobilize for self-protection and restoration.

Strength of local leaders. Local leaders are partly responsible for local organizational strength, but even if local organizations are useless, strong leaders may still arise. The "definer" type, for example, appears as a by-product of victims' urgent search for information and becomes a key information channel and thus instrumental in the group's definition of their situation. The "go-between" type acts as broker for local interests with outside agencies. The "organizers" mobilize new task-specific groups such as bird cleaning crews or political action lobbies.

Social structure and the NEPCO spill. Coastal residents

on the St. Lawrence River in the area of the NEPCO spill comprised a very heterogeneous population. Community integration was low in part because a large proportion of the population (the "summer people") reside on the river only three to five months per year. The year-round residents (the "locals") experience a depressed economy in the winter. Some businessmen in the tourist industry remain year-round with the local people, and some migrate like the summer people. Differences in status, interests, and values among these groups surfaced regularly but mildly before the spill.

Though overall social homogeneity is low, residents live in strong and often formally organized neighborhoods, focused around docks and marinas. For both local and summer people, familism is strong. Most businesses on the river are family operations, and families are the main social unit for summer recreation.

In such a region, which is relatively poor, sparsely populated, and dependent upon a large seasonal influx of money and people, local associations are weak. Except for fire and police departments, which are prepared for emergencies, one can anticipate that most local associations will buckle under the load of a major pollution emergency. Local associations that remained active after the spill were the waterfront associations, the chambers of commerce, the yacht clubs, and the Coast Guard auxiliary. Composed of people communicating similar interests, these groups most easily identified their needs and selected a course of action. Village governments were inactive, and town and county level groups varied greatly in their degree of involvement.

Overall, mass communications in the region are comparatively weak. The majority of summer people do not subscribe to the daily papers. Most people have radios and TVs, but a sizable number have no telephones in their simple summer cottages and island residences. Activities on the river frequently separate people from mass communications. Reliance is heavy on the informal grapevine of personal contacts, centering on the marinas and social clubs.

Most local leaders of the community response arose on an ad hoc basis, outside of community organizations, and created their own roles. The exceptions were the waterfront associations and chambers of commerce. Occasionally a mayor, a town supervisor, a county legislator, or a planning board stepped forward into the gap between the official cleanup campaign and the area residents. Some individuals with oil spill experience attempted to establish a bird cleaning station. Others formed an alliance of river interests for a citizens' action lobby. Marina operators, by virtue of their centrality in the communication networks and their vulnerability to the spill, were commonly "definers," "go-betweens," and "organizers."

Disaster Culture The second relevant feature of a prespill society is its "disaster culture," or "blueprint for individual and group behavior before, during, and after the impact of a disaster agent" (Dynes 1970:79). It is made up of psychological and behavioral norms, cultural values, specific knowledge, and technology. A community may acquire by experience or by learning from others some notions about the following:

- what types of disasters (in this case, spills) could threaten it;
- the likelihood of such spills;
- the possible effects of such spills;
- what it would feel like to experience a spill emergency;
- what one should do before, during, and after a spill;
- what others will do and what indications one would have that they were doing it.

Other components of a disaster culture involve a tendency toward either optimism or fatalism (about the chance of a spill or human ability to handle spills); the degree of receptiveness to the inevitable flood of information; estimates of the cost effectiveness of better prevention or control; comprehension of the way helping agencies work; and a self-consciousness about spills as psychological stress events.

A developed disaster culture can reduce the impact of a spill. When disaster is incorporated into a group's thinking, the group is able to define the new and strange situation. "The effect of these definitions is a substantial reduction of the impact of the disaster both emotionally and physically, and in terms of the value of property destroyed" (Moore et al. 1963:130).

To the end of improving coastal residents' disaster culture concerning oil and hazardous material spills in New York waters, a citizen's handbook has been prepared by New York Sea Grant Institute for general circulation (Omohundro 1980). Public officials and local leaders not normally involved in pollution issues will find it a valuable companion volume to this one.

Some common American attitudes and values run counter to those needed in an impacted community during a major pollution emergency. In general, Americans have excessive expectations of what technology, industry, and rationality can deliver in a pollution emergency. That spills are usually caused by human and technological failure increases people's surprise and impatience. Even spills aggravated by natural forces are deemed unacceptable because "American culture and more generally modern industrial culture emphasizes . . . the possibility of dominating natural forces" (Barton 1969:332).

Most people are unable realistically to calculate the risks entailed in human actions. Studies show that the average person's intuition is very misleading when basing actions upon chance phenomena (Slovic, Kunreuther, and White 1974). Consequently, coastal residents, for example, do not accurately gauge

the probability of an oil spill, and so their judgment of and preparation for the event are miscalculated.

Americans also have high expectations for technology to control and remove a spill. Coastal residents, for example, are usually dismayed to discover how little can be done to control the movement of petroleum in waters subject to winds, currents, and tides. They are also surprised at how greatly pollution cleanup relies on heavy and primitive manual labor.

Problems can also arise from the threatened community's proprietary feelings about the polluted water body. Coastal residents are inclined to see the neighboring water body as an extension of their backyard or their capital goods. Whoever pollutes it is threatening them personally and directly. Responding agencies which are judged outsiders (by a variety of objective and subjective criteria) are assumed incapable of knowing about or caring about the polluted water body adequately. Residents of the polluted area consider themselves victims; if agencies overlook this proprietary sense and this self-definition, they will not be able to anticipate and confront residents' problems.

Finally, Americans have expectations about what others will do for victims in an emergency. Wallace (1956) calls these expectations the "cornucopia theory." That is, victims of a disaster expect it to trigger a huge outpouring of services, money, and materials from the rest of our wealthy, generous country. What this outpouring lacks in efficiency or appropriateness it makes up for in sheer mass. If this outpouring does not materialize immediately, victims feel cheated. If, on the other hand, it persists too long, the outpouring itself is criticized as wasteful.

Disaster culture and the NEPCO spill. Neither experience nor instruction had fostered a disaster culture among residents near the St. Lawrence River. Four petroleum spills had occurred on the river in the previous ten years, but three had drawn little attention because they were localized or in the colder season. No government agency in the area had undertaken to inform coastal residents of what would happen in the event of a spill and how a resident should respond. Only a few people had experienced a spill elsewhere.

Residents accept many risks as the price of their residence on the river. Most people feel that the river is hazardous, both for the private citizen and for the large passing vessels. Nevertheless, both regularly run certain risks. For example, residents build on low islands or close to the shore and construct rigid, nonremovable docks. Winter ice, summer storms, and high water habitually punish these efforts.

The NEPCO accident, however, caught everyone by surprise. There was no mechanism for warning coastal residents; the commercial radio was of little use until breakfast time, over five hours after the spill. Word of mouth was fast, but lacked breadth. The strongest warning of the spill—its smell—was often misinterpreted as a furnace leak. The alarm spread so erratically that many downriver residents had no more lead time between notification and impact than those closer to the accident.

Most threatened residents did nothing or took the wrong action. Some drove their boats through the slick on inspection trips. Many tried to push the oil away and downriver, contaminating more shoreline. On the other hand, some residents improvised barriers to reduce the oil's impact.

During the long summer cleanup project, coastal residents were poorly prepared to interpret the events around them. Many were surprised by the limitations of vacuum trucks, containment booms, and manual labor.

A bias against "outsiders" developed from strong proprietary feelings about the river. The Coast Guard station that served as headquarters for the operation was physically isolated and poorly integrated into the community; residents labeled its personnel, who were not drawn from the local population and served short terms at the station, as outsiders who didn't know the river. These judgments were extended to the other Coast Guardsmen who arrived to manage the cleanup.

The cornucopia theory of coastal residents was dashed within weeks of the spill by reports and rumors that funds for cleanup were limited and that work would be cut back or stopped when those funds were exhausted. There was no common understanding between residents and officials about "how clean was clean" so that a task could be collectively defined as finished.

One instructive exception to these mostly ill-adapted responses occurred at a waterfront summer community that had been the center of a large spill just two years before. The alarm was spread quickly throughout the area, and groups of residents cooperated to remove all floating equipment and boats from the water. Absorbent material was quickly acquired from a pollution contractor and spread thickly along shorelines and docks. Communication with the spill control headquarters was centralized through one cottage that had served a similar function two years before. A resident loaned a steam hose for neighborhood children to clean soiled equipment much as a club would organize a car wash. A small (but ineffective) wildlife cleaning station was attempted.

Though not as badly polluted as some areas and not successful in all efforts, this example illustrates how confusion and damage can be reduced when residents have acquired a disaster culture. When coastal residents are prepared for a spill, understand what is happening to them, and take some collective action, their stress is reduced, their effectiveness is increased, and they are better connected to the federal cleanup effort.

The Effects of the Spill Team

The third and last factor influencing the social effects of a spill is the behavior of the official spill response organization, or spill team. Technically, the spill team is a "superorganization," that is, a joint enterprise of many public and private agencies called together temporarily to perform a discrete task—in this case, to contain, remove, and repair the effects of the spill.

The predesignated superorganization that responds to a spill in coastal waters is headed by an officer of the U.S. (or, under special circumstances, Canadian) Coast Guard, called the On-Scene Commander (OSC), who works with a Regional Response Team (RRT) representing numerous federal and state agencies. The OSC and RRT report to and are assisted by a National Response Team in Washington, D.C. The OSC and RRT supervise a rapidly assembled group of forces at the scene of the spill, including commercial contractors, government crews, and volunteers.

Some of the most pronounced social effects of a spill are actually caused by this spill team, which alters the region near the spill by a sudden imposition of authority. Local decision-making patterns are interrupted, and individual autonomy is reduced (Moore et al. 1963:139). For example, the ordinary conventions of privacy and private property are strained: uniformed officers and contractor's crews may enter private property to inspect or remove the pollutant.

Another problem facing the spill team is its integration with the impacted community. Immediately after a spill, the OSC and RRT are inundated with tasks that involve coordination within the superorganization, such as the placement and direction of workers at the scene of the spill. Preplanning predisposes this spill team to operate independently of spill area society. Thus the superorganization may fail to take advantage of local supplies, personnel, and experience. Conversely, the spill area residents may need the services of the spill team but have few channels for claiming them. Meanwhile, organizations in the impacted area, lacking a prearranged role, often impair the region's integration with the spill team by not defining the situation as one in which they need to act. Integration of the spill team with the public is, perhaps inevitably, one of the last tasks to be accomplished in an emergency and thus interferes with cleanup operations.

Some complaints that the public regularly directs at relief organizations in disasters also arise during oil and hazardous material spills.

First, the accident forces into strong relief the fact that federal, state, and local governments' jurisdictions are not neatly stratified, as in a layer cake, but intertwined, as in a marble cake (Nash, Mann, and Olsen 1972). The result is a diffusion of responsibility among agencies. Management of the pollutant itself is well centralized in the OSC, but the support from other agencies and the management of public needs are more diffused and vary from one spill emergency to another. Interagency antagonisms also interfere with their role definitions after a spill. The consequence of these conditions for the public is so-called "buck-passing" or "bureaucratic runaround." Some agencies are loath to become "mixed up in the oil business," which, given its political coloring, appears as a no-win investment for them.

Second, spill emergencies often generate unexpected conditions or tasks for which the superorganization lacks plans or staff. For example, the spill team had contingency plans to take over the expenses of cleanup when the discharger, NEPCO, admitted inability to pay for them; but it did not have plans to shoulder the outrage that victims felt toward the discharger. Similarly, the spill team members found themselves caught in the middle of regional schisms and conflicting demands, and they were exposed to many political pressures. Fewer experienced staff and less planning were available for these social and political tasks than for the engineering and accounting tasks.

Third, providing information to the news media and the impacted or threatened residents surfaced as a critical but difficult job after the NEPCO 140 and Argo Merchant spills (Mattoon 1977:141; Harwood 1978). Public affairs offices often have not been up-to-date on developments, or been adequately staffed, or had their roles adequately defined. News reporters are poorly prepared to cover such a complex event. The consequences for the public have been insufficient information, conflicting information, or incorrect referrals for information. The result is a decline in morale (Galdston 1958; Moore et al. 1963:109).

Fourth, when the spill's novelty and shock have dissipated and rehabilitation has begun, the presence of the spill team is felt even more keenly. The "Red Cross syndrome" develops in this atmosphere. The criticisms traditionally leveled at the Red Cross after emergencies have now shifted to its successor, the government, which since the 1950s has assumed an ever larger role in emergency response and disaster rehabilitation. The "Red Cross" criticisms are that lead agencies have oversold themselves as protectors and saviors and therefore cannot meet expectations in a crisis. Agencies are not informal enough with victims: disaster research has repeatedly shown that bureaucratic and emotionally neutral professionalism, because it contrasts with the victim's emotion, produces misunderstanding, widespread false rumors, and public hostility. People also complain that agencies must be sought out for service instead of providing an "outreach" program to victims. Finally, because the relief agencies are in

absolute control of who gets how much compensation, they are accused of arbitrary judgment or the use of biased criteria. Because the government has established precedents for fully compensating or even improving property damaged by disasters, the role of rehabilitator becomes increasingly important and troublesome.

Residents label agencies so criticized as outsiders and doubt their ability "to understand our lake (river, beaches, and the like)," which in part means "to understand us." "The determination of who is an outsider," writes Dynes (1970:100), "seems to be based on whether they appear to share the sentiments of the insiders," rather than whether they can or want to help.

Agencies that speak frankly, express sympathy, seek out and deal directly with victims, and are removed from the key financial decisions or long-term rehabilitation are received most warmly by victims, are believed most readily, and are obeyed most frequently.

Finally, assistance to communities in preparation for spills is inadequate. There are few public educational campaigns in spill-prone areas that discuss risk, prevention, and protection. Similarly, the failure to maintain close at hand in advance the necessary tools and materials for quick response is a target of criticism. Oil spill victims, like flood victims, demand evidence that preventive and early warning measures have been fully taken. Finally, the impacted residents' response to the spill team and its actions is greatly influenced by prior mutual dealings. The region's relations with the Coast Guard or Department of Environmental Conservation (DEC) before a spill, for example, create a pattern for their relations during a crisis.

Little research has been done on who reacts most strongly to the effects of the spill team. The NEPCO 140 oil spill data may serve here more as illustration than as a model for all spills. Those individuals physically closest to the operations of the spill team, such as impacted property owners who observed activities daily and those who suffered the greatest loss — or perceived loss — relative to their neighbors, were the most disturbed by the government's performance. "Disturbance" here means either that persons were openly angry and critical or that they accepted the spill team passively but showed indications of psychological and social stress. Those whose experiences with government agencies were negative before the spill or whose own sociopolitical positions were most drastically overshadowed by the appearance of the spill team were also disturbed. Finally, individuals or groups whose personal autonomy or private property were most transgressed by the operations of the spill team were disturbed. Molotch (1970) identified very similar causes of disturbance following the Santa Barbara spill in 1969.

The Stages of a Spill as a Social Disaster

Interaction among the threatened community, the pollutant, and the outside spill team produces a regular sequence of social events. A simplified scheme derived from disaster research and apparent in past spills comprises the following stages: warning; impact; therapeutic community; rehabilitation; and dismantling the rehabilitation system. In each of these stages the pollutant, the impacted residents, and the spill team are behaving in different ways. Working and making decisions in such an environment can be more effective if one is aware of the existing stage and its social and psychological characteristics.

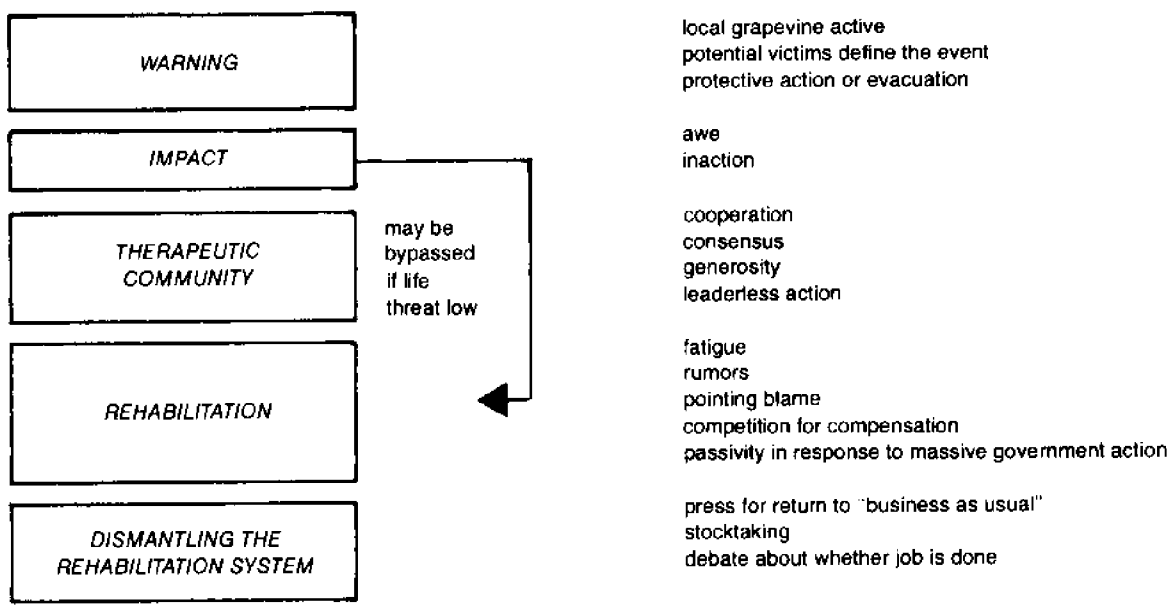
Warning

At the first threat of a spill, the official emergency communications network of New York State and the federal government is activated. At the same time, though frequently independently, the mass media and informal communications networks become active for the threatened community. The informal network increases exponentially as residents spread the word, seek validation of their original message, and attempt to form a group definition of the situation—for example, "Is it bad?" and "Are we endangered?" The warning period also generates individual and group evaluations of protective resources: first, "Can we protect ourselves?" then "How shall we protect ourselves?" and finally, "Is it worth it?" Insufficient or contradictory information, which is typical in the warning period, raises the level of panic and anxiety and multiplies the extreme responses, that is, both the responses of doing nothing and of overprotection or evacuation.

Within an hour after the NEPCO spill began, for example, the U.S. Coast Guard had notified the volunteer fire department of Alexandria Bay Village to inspect for fire danger. A false fire alarm, prompted by the smell and the foggy night, brought some residents to the village docks, and by this means, and the increasingly strong odor, the villagers began to guess at their predicament. Most of these people returned to their beds; the word did not then spread downriver, except as the Coast Guard telephoned some

QUICK REFERENCE CHART #3

Stages of Community Response to an Oil Spill



marina operators in the area. Most residents learned of the spill by breakfast time, when a walk or a telephone call from friends confirmed their suspicions. Some downriver residents did not learn of the spill until midday; even those who knew were unsure if the oil would reach them. By dawn the villagers gathered again at the docks to observe the oil and the containment booms being placed and to discuss their predicament. The phones of the marina operators began ringing nonstop. Newsmen were aware of the accident almost as soon as residents were. Local radio stations, notified by the Coast Guard, broadcast frequent bulletins about the spill beginning soon after the accident.

The vast majority of coastal residents in the immediate vicinity of the accident took no protective actions because the oil was already upon them or because they considered the placement of containment booms a sufficient safeguard. The majority of coastal residents downriver were unaware or unsure whether the oil would reach them; consequently, some residents did not even remove their portable equipment from the river. Marina operators were almost the only residents to attempt some defense. Many improvised protective log booms or evacuated boats to sheltered water, with some success.

Impact

After most spills, one portion of a community is already impacted and at this stage of response, while another portion is still threatened and thus in the warning stage. The warning period may continue long after impact, for example, when an imperceptible noxious chemical is already present in the water or air. The victim's response at impact is often one of awe and inactivity. People gather in public places simply to stare at the pollutant.

The impact of the NEPCO 140 crude oil was immediate in the vicinity of the accident, but continued for several days as winds and currents moved the oil downriver and onto the shore for another 60 miles. Some residents had no lead time, and others had more than 24 hours. Some areas initially bypassed by the oil were later contaminated because of weather changes or the handling of oil upriver by containment booms, residents, and work crews. The reaction of one resident typifies the feelings of river residents at impact: "There was virtually no boat traffic on the river for about four days. The appearance was weird, like a horror movie: too quiet. Just the strong smell and the sound of helicopters overhead. And the windless, perfectly flat water."

Therapeutic Community

After the initial numbness of confronting one's fate, the period of an urgent need to act, to "do some-

thing," begins. While direct and ad hoc efforts to rescue people, wildlife, and property are vigorous, there arises an unusual sense of community, called the "therapeutic community" or "altruistic community." A consensus emerges about the priority of values within the community. People's time perspective narrows to the immediate present. Social schisms of prespill times are overridden. People perform generous acts for their neighbors or community. In a pollution emergency, the key factors making a therapeutic community are the perceived and actual magnitude of threat to human life and ecological health. Other influential factors are the degree to which victims talk about their loss and know about others' losses, a sympathetic identification with other victims, and the absence of any reason to blame victims (see Barton 1969:216–72).

If a spill is seen only as a "mess" and a threat to private property, the altruistic community will be abbreviated or absent, and the social response to the spill will move directly from the warning period to the rehabilitation period.

If the therapeutic community does form after a spill, it inevitably begins to disintegrate when direct, ad hoc, small group actions are insufficient to the tasks and fail to restore the prespill conditions or, worse, are actually counterproductive. Fatigue and frustration set in. Confusing commands, dramatic news coverage, and contradictory information in the grapevine add to the disorganization of the therapeutic community and increase anxiety. People become more fatalistic and passive. Morale drops in the impacted area, and social conflict reappears.

The NEPCO 140 spill did not generate a widespread or long-lasting altruistic community because the spill was not threatening to human health—a view widely established soon after the accident—and because few people had any idea how to respond to the feeling that they should do something. Nevertheless, there were some indications of such a stage. After receiving the warning, some people risked damage to their boats by motoring to spread the alarm to residents without telephones. Neighbors cooperated to remove boats and gear from the water. Some people moved immediately to wildlife areas to assess the impact and consider protective actions. Others aided the field crews of the DEC to capture and evacuate Canadian geese from endangered areas. Volunteer fire department members in one village attempted to protect the downtown shore with log booms.

The therapeutic community lasted two or three days after the spill. During this time, the news coverage was extensive, but the victimized residents were still unsure who was in charge, how work would proceed, and whether the spill had ruined the river's health, their summer business, or their vacation season. By the third day after the spill, when its full scope became evident, many coastal residents were already physically and emotionally drained by the event. They only too willingly relinquished the problem to the federal spill response team that was forming.

Rehabilitation

This stage is characterized by organized rather than extemporaneous response to the pollution emergency: the superorganization coalesces and moves into action. The pollution emergency usually undergoes a redefinition at this point, as expert views and more careful looks at the spill are taken. This official, organized response to the spill establishes priorities for action and elaborates the emergency activities. Some actors in prior stages of the emergency drop out or are supplanted, new connections among actors and organizations are made, and new actors step forward or are inserted into the burgeoning organizational picture. Finally, and momentously, money and equipment flood the impacted area.

By this time, local government and resources have been found unable to cope with the overload of problems caused by the spill. The spill team will have a tendency to supplant, rather than incorporate, these local facilities and authorities. This will reduce the spill team's exposure to the region's special characteristics and hurt relations with the impacted community.

During rehabilitation, social and value conflicts reappear within the polluted community. These conflicts are partly due to actions of the spill team, especially its allocation of limited money and equipment. In turn, local conflicts affect the operations of the spill team; for example, opposing groups publicize their differences, lobby with team agencies, and assume opposite stances in their evaluation of the spill team's work.

Loss-sharing arrangements within the impacted community are the most common source of conflict in the rehabilitation period. Residents of an impacted community must choose from several strategies for disaster relief, each of which has its costs and benefits. They may choose a self-help approach, which minimizes dependence on government bureaucracy. Or they may choose a minimum compensation approach, whereby basic needs are paid for only after a victim's own resources have been exhausted. The latter approach is opposed by the well-to-do, who claim they would be relatively deprived because they must spend more than anyone else before receiving any compensation.

In New York, since the 1977 amendments to the Navigation Acts, compensation according to loss is the most common approach to spill damage. Within limits set by law, the discharger's insurer operates this way, as does the New York Pollution Compensation Fund if the discharger refuses a claim. This approach involves the most elaborate government intervention and ex-

penditure. Suspicions arise among victims that their fellows are inflating damage estimates in order to profit from the emergency and that excess government spending and poor money management are occurring.

Conflict within a polluted community usually arises because there is no consensus for supporting one of the above strategies. Factional pressures add to the conflicts over loss-sharing arrangements: some residents want to return quickly to prespill conditions, while others use the emergency as an opportunity to make basic social or environmental changes.

By the fourth day after the NEPCO 140 spill, for example, the organized phase of the emergency had taken shape. A federal spill control headquarters was established in Alexandria Bay, and residents and reporters recognized it as the source of virtually all public information about the spill. Pollution contractors had been selected and were at work around the clock. Priorities for cleanup were established, and the techniques for cleaning were publicized. By the fourth day, it was known that the federal Pollution Revolving Fund would pay for the cleanup, but compensation for damages was to be meted out only in limited amounts by NEPCO's insurance agent.

Also by the fourth day, roles and responsibilities changed. The St. Lawrence Seaway Development Corporation, from nearby Massena, which had assumed leadership immediately after the spill, withdrew to the position of pollution contractor in the Massena area. Similarly, local Coast Guard personnel withdrew from top positions in the organization as the formal RRT coalesced and dozens of Coast Guard personnel arrived from offices throughout the Third and Ninth Coast Guard Districts. For the next week, the superorganization continued to grow in size, and large quantities of special equipment arrived at the polluted river. The rehabilitation system continued at this level for over a month.

Formal links did not grow between the emerging superorganization and local authorities. Village and town governments and planning boards, lacking contingency plans or invitations to assist, did not develop links to the spill team or roles in their own communities. Ad hoc organizations or roles were the most successful means of relating to the superorganization. Two examples stand out. In Alexandria Bay, the mayor created a role as local observer on the RRT and acted as broker to his village. Downriver, concerned residents formed a lobby group (Group Against Seaway Pollution, or GASP), to which the OSC felt obligated to respond regularly. As a consequence of these ad hoc actions, residents were better informed and connected to the superorganization than they otherwise would have been.

Schisms within the impacted community appeared most vividly during this rehabilitation period. Upriver tourist business concerns and downriver environmentalist concerns adopted conflicting strategies toward publicity. Upriver residents, decontaminated first, sought a quick return to the prespill ambiance and hence campaigned against negative news coverage in order to save the critical summer tourist season. Downriver residents, living on shores more difficult to clean, chose actively to protest the spill, Seaway traffic safety, the laws, and damage compensation procedures. Even within a community, antagonisms often arose among residents as they selected alternate strategies for coping with the oil: punishing, by civil suit; recouping losses, by damage claims; or cashing in, by finding lucrative jobs and contracts in the cleanup effort. Selection of a strategy opened people to accusations of profiting from someone else's disaster or of damaging the area's vital reputation as a natural attraction.

By the restorative period, too, any altruistic feeling had disappeared, and this, coupled with only a vague understanding of cleanup strategy, led to a pandemic fear of relative deprivation. That is, many became convinced that "the money was running out" and that "the squeaky wheel was getting the grease," meaning that the one who complained loudest and longest to spill control headquarters got the earliest and best oil removal. The fear was partly due to residents' inability to comprehend precisely how the cleanup was progressing, which in turn was due to a paucity of detailed news releases on the subject. Undoubtedly, too, the spill team's actions were sometimes erratic. Also involved, however, were mutual suspicions among resident groups. Small shoreline residents held that "rich islanders with big connections" were wielding unjust influence; conversely, summer people felt that natives had better contacts among the contractors and crews. In general, social differences and a lack of prior community bonds among small groups scattered along the river deepened the inevitable "brickbat stage" (Moore 1958) during restoration.

Dismantling the Rehabilitation System

This stage begins when the pollutant is considered by authorities to be removed or cleaned up as much as possible. The On-Scene Commander dismantles the headquarters at the scene, and the multiagency spill team is deactivated. Pollution contractors cease work. Virtually all residents have returned to their ordinary tasks and residences. Prespill decision-making and executive powers in the area return to prominence. Stocktaking begins again, as it did after impact, but this time the perspective is broader: "How badly has this hurt us?" "What have we learned?" "Will things be better in the future?" "What, after all, has really changed?" The initial steps are taken to "get ready for the

next time," although frequently these actions are not carried through because the cost of preparedness is high and pressing matters of business-as-usual intervene.

Three months after the NEPCO accident, expenditures for cleanup were strictly reduced, most contractors were let go, and the spill control headquarters was disbanded. According to the Coast Guard, the river was as clean as practicable. Some residents challenged this judgment, and three years later some residents were still claiming that the oil removal job was unfinished. Residents taking stock reached a consensus that this had been the river's worst oil spill, that it was not handled as well as the spill in 1974, but that it was pretty well cleaned up and that it was not as worrisome as another river problem, the appearance of the insecticide Mirex in game fish. A few town highway departments, county planning boards, and citizen groups worked to make preparations with the authorities for a better response to the next oil spill. Many individual residents who had taken little or no protective or political action during the NEPCO spill said in questionnaires and interviews that they would be more active after the next spill. Most also said they had a much better idea of what would happen in a spill and therefore they would be less confused next time. In other words, the NEPCO accident and ensuing events created a more developed disaster culture among river residents. Some people changed their businesses to be in a better position to help in (and to profit from) another spill. A few, interpreting the spill as an omen of the declining health of the river, were prompted to sell their businesses or recreational properties and leave the area. All in all, there was no uniform response during this dismantling stage, except that all actions taken were justified in some way by allusion to the recent spill.

Suggestions for Planning and Response

If an oil spill were to occur in the region for which you have a responsibility, do you know what you should do? For persons already predesignated as actors in the spill contingency plans, this handbook on social problems provides an important dimension to a task already begun. Persons without official roles in contingency plans are also likely to become involved after an oil spill on behalf of their impacted region. Therefore, some advance study and active preparation would be valuable. One must understand, for example, the official spill contingency plans as well as the social processes described in this handbook.

Connections to the Regional Response Team

One of the most important tasks that must be delegated to more than a few individuals is the integration of the impacted region with the official spill team's activities before and after a spill. If many people are involved, the work of the spill team on scene will not unnecessarily disturb the local area, access to local talents and resources will be improved, and the spill team will remain more responsive to the social effects of the spill and cleanup.

The task of those *not* predesignated in spill contingency plans—for example, mayors, police departments, or the average resident—is to provide support for the On-Scene Commander. The National Pollution Contingency Plan calls for state and local government and private interests to "participate in regional planning and preparedness functions" before a spill; further, "regional contingency plans should provide for coordination with local government organizations such as county and city or town governments" following a spill. For example, some officials on the Regional Response Teams serving New York State have expressed an interest in having predesignated local observers with the team after a spill to act as liaison to the impacted community. Clearly, more can and must be done to connect an actual or potential spill region to the official spill team.

Complementarily, volunteers can provide support services to the OSC. The National Contingency Plan encourages industrial groups, the academic community, and others "to commit resources for removal operations." The plan also urges regional contingency plans to "establish procedures that will result in organized and worthwhile employment of [volunteers]." Volunteers cannot be used in some roles, but prior planning between localities and the RRT can specify suitable roles for them. The National Contingency Plan suggests "beach surveillance, logistical support, bird and other wildlife treatment, and scientific investigations." These volunteers must, of course, be informed and prepared for such work. As we shall see, some tasks arising from suggestions in this handbook could be performed by volunteers.

Public Information

The National Contingency Plan considers prompt, accurate, and continuing public information programs after spills to be imperative

"to obtain the understanding from the public, ensure cooperation for all interested parties, and to check the spread of misinformation." To this end, the national and regional response centers are staffed with professional public information officers and are empowered to oversee all public information activities.

Other groups also need a preplanned public information program. The discharger, local government, citizens' groups, and public officials not designated by the contingency plans need public information programs because they may have a message to transmit in connection with their official responsibilities and because the public may seek them out for information.

The best public information advice comes from the *Oil Spill Control Course* (Texas A & M Research Foundation 1975). Select and train the group spokesperson in advance; define the kinds of information and the types of audiences the spokesperson will be dealing with. Specify procedures for passing on information and publicizing the existence of your public information program. Know precisely to whom referrals can be directed for information that you do not have.

The most common questions asked by spill area residents after the NEPCO spill, and the recommended referents, are in the boxed insert to the right.

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; 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. If unsuccessful, write to the Administrator, New York Environmental Protection & Spill Compensation Fund, c/o State Comptroller, Department of Audit & Control, New York 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 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

Experience from several large spills that drew intense public response leads to additional suggestions First, as Harwood (1978) noted after the Argo Merchant spill, reporters approach complex pollution emergencies in nearly total ignorance. News reporters in spill-prone areas are often eager for pre-spill instruction in various aspects of spills. Persons intending to operate a public information program through news reporters after a spill would benefit from advance work with such persons.

Second, the "news" of a spill is not the same as a public information program aimed at residents of an impacted area. The residents need a great deal of both background and emergency information that cannot merit the space or time in most news media. The two remedies for this problem are to cultivate locally oriented news bureaus to take a larger role and to create new vehicles for public information.

Local newspapers must be encouraged to maintain a "spill bulletin" column for regular information to impacted residents beyond the headline-making events. Radio stations should increase their public service bulletins for area residents, providing substantive information on the progress of cleanup and advice to residents.

New channels to spread public information can be provided by "spill bulletin boards" in marinas and area stores carrying regular progress re-

ports, announcements, or maps. Such local establishments can hand out printed materials. Temporary portable "news kiosks" manned by a trained person under direction of the OSC's public information officer can move throughout a spill area, collecting information about resident concerns as well as distributing information.

The public information officer working with the OSC should recruit volunteers from the impacted community to help staff a public information desk. The local volunteers at the desk are valuable because they are familiar with the local society and geography and because they add a humane tone to this public information service for their fellow residents. Others at that desk should include a representative of the DEC or Environmental Protection Agency (EPA) to respond to ecological queries, elected officials' representatives to field political-legal inquiries, and a representative of the discharger's insurer to handle claimants' questions. This public information desk, separated from the OSC's office and accessible to the public, will free the technical personnel to do their work. The public information officer in charge could conveniently operate a press room in tandem with this information desk.

Finally, as suggested in the *Oil Spill Control Course*, all officials involved in a spill emergency should keep detailed daily logs of their activities and observations. Such logs are invaluable for your own post-crisis evaluation and are an essential tool for reconstructing your observations or interviews with residents if you offer help to the official spill team.

Improving the Disaster Culture

Experience with spills is a more thorough reformer of disaster culture than an educational campaign. Nevertheless, if local interest or anxiety about spills is high enough, some people can be influenced by such an educational campaign to transmit the information more widely and boost the area's disaster culture. Such informed people are usually the key individuals who become active after a spill, and thus their effective importance is greater than their numbers.

Agencies and officials can improve their public relations while performing a community service by educating spill-prone coastal communities about spill crises. Now that a damage compensation fund exists in New York State, those who report the progress they have made in coping with spills will be the bearers of good tidings. Further, the education campaign opens more communication channels between the residents and an official's office.

Bringing residents of a coastal community together to consider spill emergencies promotes a modest increase in community integration — at least on the subject of pollution — that will increase the adaptiveness of the residents' responses after a spill. In the calmness of prespill conditions, citizens could attempt to reach a shared definition of their hypothetical situation and could discuss their strategies for coping with it. This preparation would prove valuable when a spill occurred.

The U.S. Coast Guard, the Environmental Protection Agency, and the New York Sea Grant Institute have produced literature that can supplement this educational campaign (see Recommended Reading). In addition to distributing printed materials, educators should assume a cautionary role, advising coastal residents against reliance on technology, rationality, and large sums of money as panaceas to prevent all future spill damage. They also should assist residents to become more aware of a spill crisis as a psychological stress event. Finally, residents' expectations about the "cornucopia theory" (that the crisis will trigger an influx of huge sums of aid and sympathy) must be discussed; if the public and the official spill team do not share perceptions about the flow of aid, conflict will result. The cornucopia theory is worth validating only in the earliest stages of action after a spill. After the initial crisis periods of warning, impact, and rescue, efforts must be made to justify a shift to more calculated management during the rebuilding period.

Building a region's disaster culture also includes aiding coastal residents to prepare early warning systems and self-protective measures. These ideas are discussed at more length in the citizen's bulletin on spills (Omohundro 1980). Although in that handbook residents were exhorted to help themselves, your assistance as a facilitator is needed. When mobilized after a spill, residents will be able to carry out the community's plans without major outside assistance: during a spill crisis, a threatened community must be able to do something for itself.

Rehabilitation Problems

One question public officials raise very soon after any emergency begins is, "Should we press for a presidential disaster or emergency declaration?" Such a declaration will draw much attention to the impacted area—attention not all your constituents may want—but may add very little tangible help after a spill. The 1977 amendments to New York's Navigation Acts award compensation—either from the discharger or from the state's damage compensation fund—for damaged property, lost property income, lost property value, damaged natural resources, loss of income or earning capacity due to property damage, loss of local tax revenues due to property damage, and interest on loans obtained by victims for temporary reduction of spill damages. A presidential declaration could provide little additional aid. In addition, some services of the Federal Disaster Assistance Agency are available without the presidential declaration. Seek advice in advance as to which services are needed beyond those offered by the spill damage compensation fund; for example, do tourist businesses not on the polluted shore have adequate recourse?

While the official spill team copes with the pollutant, the agency or official who helps victims to use the claims procedure will contribute greatly to reducing the residents' distress. This task is not to be performed simply by issuing a news release soon after the spill, but by conducting a continuing campaign throughout the rehabilitation period. Experience has shown that some victims are very slow to discover that damage compensation is available to them.

The constellation of problems labeled the "Red Cross syndrome" needs attention after a spill. The origins of these problems, which have to do with the relations between victims and helpers, are embedded in direct personal contacts between victims and helpers. The helper's awareness of the social processes described in this handbook will help reduce some problems. Prior experience or training in dealing with citizens in crisis is also helpful. As one St. Lawrence River resident and elected official said, "Public agencies should be more straightforward and should assume a higher intelligence of the public at large." Good relations before a spill between an agency and the residents—fostered perhaps by a prespill educational campaign — also reduce problems.

A structure that attenuates the absolute "we/they, insiders/outsiders" line between residents and official spill team will eliminate some "Red Cross syndrome" difficulties. Local observers to the RRT and the use of volunteers, where appropriate, contribute to this end.

Outreach efforts, which have earned agencies high esteem in other types of disasters, need to be developed for spills. The public information desk or the traveling "information kiosks" mentioned above represent this type of outreach. Working to spread the news about claims and responding to victims' invitations to inspect property are other valuable outreach efforts. Residents have also expressed a need to know the daily timetable of cleanup work. Spill team officials agree that, within limits, it is possible to sketch out and publicize such a schedule so residents can prepare for cleanup on their property.

Finally, spill area residents are dismayed by the rough transition from the crisis stage to the slower rehabilitation period (Library of Congress 1974:54) and again from rehabilitation to postspill conditions when the official spill team leaves and work ceases. Efforts must be made to justify and publicize the shift into the rehabilitation period and to remedy its more grievous extremes. Further, when the rehabilitation system is dismantled, officials responsible for the region can take up the slack by assuming an active role in the "stocktaking." Residents are eager to put behind them the difficulties of the spill. Before returning to business as usual, however, they require some encouragement to rework their disaster culture and to formalize such recent changes as the creation of new groups or renewed interest in cooperative and government actions. In other words, the impacted community must have the last word on their recent crisis.

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Recommended Reading

Environmental Protection Newsletter. A quarterly published by USDOT (U.S. Coast Guard), 400 Seventh St., S.W., Washington, D.C. 20590. Bulletins on spills, laws, organizational developments, spill technology. Ask to be on the mailing list.

Oil Spills and Spills of Hazardous Substances. U.S. Environmental Protection Agency. Available for New York from Region II, Industrial Development Research Lab, Edison, N.J. 08817, or from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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Emergency Checklist

For Addressing Social Problems after an Oil Spill

Is Your Constituency Knowledgeable about Oil Spills? pp. 5–6

- ☐ What resources might you offer your constituents for spreading information during the spill events? pp. 4, 8–9, 13–14
- ☐ What resources for spreading a warning? pp. 8, 14
- ☐ What resources for self-protection? pp. 8–9
- ☐ Is your public affairs officer handling up-to-date, accurate information about the spill? pp. 7, 12–14
- ☐ Have you conducted an educational campaign among your constituents, or are you distributing literature following the spill? pp. 5, 8, 14
- ☐ Have you cultivated knowledgeable news reporters in the mass media? pp. 4, 7, 13
- ☐ Can you predict the range of questions your constituency will ask you? pp. 11, 13
- ☐ Can you predict the actions your constituency will expect from you? pp. 2–3, 5–6
- ☐ Are you keeping a daily log of your involvement and observations after the spill? p. 14

What Role Are You Playing after Spills?

- ☐ Motivating or acting as local leader or organization? pp. 4, 12, 14
- ☐ Declaring a disaster or emergency? p. 15
- ☐ Clarifying the compensation procedures to victims? pp. 10–11, 15
- ☐ Smoothing the public's acceptance of transitions in the cleanup work? p. 15
- ☐ Defining the events during and after cleanup to promote resident cooperation and consensus? pp. 4, 9–10,11–12
- ☐ Bridging the gap between residents and the official response organization? pp. 4, 6, 7–8, 10, 15
- ☐ Volunteering services, personnel, expertise, material to official response organization? pp. 12, 14
- ☐ Promoting the flow of information among residents? (see above list)

Price per copy $1.00.

Cooperative Extension, the New York State College of Human Ecology, and the New York State College of Agriculture and Life Sciences, at Cornell University, Ithaca, N.Y., and the U.S. Department of Agriculture, cooperating. In furtherance of Acts of Congress May 8, June 30, 1914, and providing equal opportunities in employment and programs. Lucinda A. Noble, Director

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