

Cultural Resources Protection and Oil Spill Mitigation

After the Exxon Valdez Disaster

The grounding of the Tanker Vessel *Exxon Valdez* ON MARCH 24, 1989, was an event of unprecedented magnitude in North American waters. Within hours of the spill, some 10.8 million gallons of North Slope crude oil had poured from the stricken tanker. Over the next several weeks the oil affected approximately 1,200 miles of coastline in Prince William Sound and the Gulf of Alaska. The oil struck three national park units—Kenai Fjords National Park, Katmai National Park and Preserve, and Aniakchak National Monument and Preserve—affecting resources along some 400 miles of U.S. National Park Service (USNPS) coastline. The scope of the damage inflicted upon natural resources has been well publicized. Most people, though, are unaware that the spill zone also contained significant cultural resources.¹ The spilled oil threatened or affected Alaska Native occupation sites, historic remains from Russian and American activities, and properties from the Second World War era. Coastal archeological sites were particularly vulnerable to the spill impact and subsequent clean-up effort.²

This article focuses on the efforts of the USNPS to inventory, protect, and mitigate the negative effects of the spill and its clean-up upon cultural resources under Park Service stewardship. Topics which are addressed include the role of pre-inventory activities, an assessment of direct and indirect impacts to cultural resources during clean-up, and the applicability of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to cultural resource restoration. In sum, the paper draws out several of the lessons which USNPS learned about an environmental calamity's implications for cultural resources.

Resource Management Priorities

More than 80 federal departments and agencies have some type of responsibility for environmental affairs. Each has its own distinct traditions and values, which, in conjunction with basic statutory mandates, define the collective conception of what the agency perceives its protection obligations to be. These concepts play an integral part in the

agency decision-making process, helping to shape, define, and assign urgency and importance to the various challenges federal resource managers encounter.

Most environmental calamities cross jurisdictional lines of state, local, and private-sector concerns as well. Getting things done when facing an environmental crisis requires unity of action among these various groups. Politics, competing agency missions, and strict adherence to lines of responsibility during an environmental tragedy all serve to prevent unity of action. Oftentimes this failure to cooperate at an inter-agency level will cause agencies to act according to their own narrow value orientations. When this occurs, hidden agendas and self-interests replace the consensual participation required to effectively meet an environmental crisis. That spill respondents adhered to their own priorities (arising from these orientations and mandates) became a point of repeated contention during the *Exxon Valdez* disaster. Overcoming these impediments was a decisive factor in successfully treating oil-damaged

cultural sites.³

Pre-Inventory

The Park Service, like the other respondents, was not prepared to combat a spill of the *Exxon Valdez*'s magnitude.⁴ USNPS had been in the process of completing a spill response plan for small-scale incidents at Kenai Fjords when the tanker ran aground. The process of formulating spill response plans at the two other parks affected, Katmai and Aniakchak, had not yet begun. Few USNPS employees had any prior hands-on training in spill response management. The Park Service likewise suffered because it did not know the full extent and value of coastal resources at the soon-to-be-affected park units (Lawrence 1989; U.S. House of Representatives 1989). This was partially the result of the bureau's traditional reluctance to embrace research as a priority. The parks in question were also relatively new. Kenai Fjords and Aniakchak were established under provisions of the 1980 Alaska National Interest Lands Conservation Act. Katmai was greatly expanded under this legislation. Compounding these difficulties was the chronic underfunding which has traditionally plagued Park Service operations. Both the Executive branch and Congress have shown a continual willingness to earmark funds for new capital projects in park units. In contrast, they have demonstrated a reluctance to appropriate sufficient funds to cover basic Park Service operation and resource protection needs. The USNPS Alaska Regional Office (ARO), to its credit, had made prior attempts to secure funding for baseline data gathering. These attempts largely failed to clear the federal budgetary process (Everhart 1983; Bane 1989; Haertel 1989; USNPS 1992). A good pre-spill baseline inventory would have served as a useful tool in determining special clean-up requirements for oil-damaged

beaches. It also would have helped the USNPS to more quickly target sensitive sites and would have freed up critical resources to focus on other tasks.

Other factors complicated the lack of information regarding the number and location of cultural sites. Many of the affected USNPS sites, particularly at Kenai Fjords, lay within the boundaries of land parcels which Alaska Natives had selected under provisions of the Alaska Native Claims Settlement Act. In these situations and those where Native human remains or sacred sites were affected, Alaska Natives had to be notified and brought into the spill management process (USNPS 1989).

The ARO decided to attack the spill as if it were a fire or similar resource threat. Plans were made to conduct a pre-inventory sampling of resources prior to spill impact. The protection of cultural resources, as defined in the National Historic Preservation Act, was deemed as important to the Park Service as natural resource protection.⁵ It was therefore decided to include cultural resource specialists on USNPS site assessment teams. The actual pre-inventory involved sending out small scientific teams, consisting of Park Service personnel and contractors, to select locations along threatened park unit coasts to conduct site surveys. This information provided baseline data on park resources for gauging the spill's impact, and gave the Park Service an idea of the resources lying in the spill's path.

Direct and Indirect Impacts

The failure of respondents to contain and deflect most oil away from threatened resources meant there would have to be an extensive clean-up effort. The actual clean-up operation carried two basic types of cost: direct and indirect. Direct costs included the labor, equipment, and other resources mobilized to combat

the spill. Indirect costs included the detrimental impact the clean-up had on resources, and the subsequent implications for restoration (Dunford et al. 1991).

Oil spill clean-up has been described as a continuum. On one end, natural cleansing is considered the least destructive means. Next comes other less intrusive methods, including cold-water washing, the extensive use of hand tools to remove oil, and bioremediation (chemical applications to enhance the presence of oil-eating microbes). At the far end of the scale are the more intrusive clean-up methods, such as hot-water washing, the use of heavy mechanized equipment to remove oil, and the application of harsh chemicals to break down the oil. In addition, resource disturbance from heavy foot traffic and the transportation of spill workers contribute to the indirect costs of clean-up. Eventually there comes a point where the costs of further clean-up outweigh the net benefits. Going beyond this point means greater overall resource restoration costs. The USNPS deemed the spill clean-up threshold to be very low for affected park resources. USNPS decision makers felt that in a majority of cases intrusive clean-up measures, accompanied by uncontrolled mechanized transport and foot traffic, constituted a greater threat to park resources than did the oil (Evison 1993).

One planning effort which paid significant dividends in limiting impacts during the *Exxon Valdez* clean-up was the participation of USNPS cultural resource personnel in pre-spill training exercises. In 1988 the Department of the Interior invited the ARO Cultural Resources Division to take part in a large-scale spill response exercise. People involved in the drill were at first uncertain of how cultural resources fit into a spill response plan. In working through the drill, Coast Guard, Interior, and other agency officials were made

aware of the significant number of cultural sites in Alaska's coastal regions. They began to understand how many potential impacts to cultural resources could be avoided through preventative measures during clean-up operations. This resulted in the creation of cultural sensitivity zones—that is, areas where restraint would have to be exercised in operating equipment, unloading supplies, and general clean-up. Thus, cultural resources protection was accepted as a legitimate facet of the clean-up process (Birkedal 1993a, 1993b).

When the *Exxon Valdez* spill occurred, cultural resource advisors were able to take advantage of this new understanding. USNPS cultural specialists, in cooperation with other federal agencies, Exxon, and the State Historic Preservation Office (SHPO), quickly developed and implemented a resource protection system. The resulting system—based upon Section 106 protection provisions of the National Historic Preservation Act—provided a “fast track” method of ensuring cultural resource protection during clean-up.⁶ The 106 fast track system consisted of three phases: identification, determination of effect, and mitigation. Identification of potentially oil-damaged cultural sites began with an examination of existing inventories maintained in SHPO records. The SHPO was responsible for determining whether existing data was sufficient for assigning appropriate clean-up constraints at affected sites. In cases where existing data on a site were deemed insufficient, an intensive survey was conducted to help determine clean-up restrictions. Specific clean-up restrictions were established during the determination-of-effect phase. Exxon's proposed treatments at cultural sites were reviewed by an interagency technical advisory group. The group approved or modified Exxon's work plans and passed them on for final

SHPO and federal approval. The efficiency with which this was accomplished resulted in turn-around times of less than 24 hours. Finally, a number of mitigation steps were taken during site treatment to protect cultural resources. Foremost among these was the avoidance of indirect impacts. Other mitigation techniques included on-site inspection and monitoring, site mapping, artifact collection, and cultural awareness education for clean-up workers (Exxon Corporation 1990; Bittner 1993).

The Park Service was particularly aggressive in its on-site monitoring efforts. USNPS Resource Protection Officers were responsible for preventing negative impacts to cultural and natural resources from clean-up workers and enforcing all USNPS restrictions. Specific cultural resource concerns included the anchoring of booms, equipment placement, looting and vandalism by clean-up workers, and shoreline disturbance.

In retrospect, a conservative approach to clean-up appears to have been a wise decision for cultural resources. Unwarranted impacts during clean-up were kept to a minimum. At present there are no threats from residual oil. Current evidence likewise suggests that direct contact with oil had a negligible impact on artifacts. However, the long-term effects of residual oil contact on artifacts are unknown. Archeologists are concerned that long-term exposure to oil trapped in the substrata could skew signature methods used to chemically date artifacts. Methods will have to be developed to compensate for any skewing which may occur (Birkedal 1993a; Reger 1993:215-218).

Damage to several cultural sites from looting and vandalism also occurred during the clean-up. The potential for these activities may have been an unavoidable consequence of the spill clean-up. Clean-up efforts made known the whereabouts of previously undisclosed archeologi-

cal sites to hundreds of spill workers, thereby placing these sites at risk to future looting and vandalism. In retrospect, one thing seems clear. Some type of long-term monitoring will be needed to gauge future impact, and allow for the timely implementation of restoration to affected cultural resources where appropriate.

McArthur Pass: A Clean-up Case Study

The most intensive clean-up response work at a USNPS cultural resource site occurred at McArthur Pass, located on the outer coast of Kenai Fjords. On July 31, 1989, an Exxon shoreline clean-up assessment team, went ashore to survey a 262-foot band of mousse (emulsified oil and water) and oil-coated rocks on a narrow boulder-strewn beach. The team's archeologist identified the location as a site dating prior to European contact. The find was surprising because the location did not fit the typical profile for a coastal archeological site. Artifacts were found in the intertidal zone below the mean high-tide line, which was state land, and in the USNPS-managed uplands. Sections of the uplands in the site area were also under pending claims from the Chugach Alaska, English Bay and Port Graham Native corporations under provisions of the Alaska Native Claims Settlement Act (Betts et al. 1991). The jurisdictional difficulties which followed resulted in costly and time-consuming delays.

Exxon requested a delay in treating the site until 1990 to provide time for sorting out jurisdictions and developing a work plan. Work plan participants included Exxon, the SHPO, Chugach Alaska Corporation, and USNPS. Initial discussions questioned whether a clean-up should be conducted at the site given the high density of artifacts and potential for harm. Concern about the oil's impact upon natural resources and a conclusion that cultural resources

could be protected during clean-up, resulted in a decision to proceed. The decision to proceed generated some controversy within USNPS. Pitting natural and cultural resource protection priorities against each other threatened to cause dissension among ARO staffers at a time when unity was essential. To their credit, ARO decision-makers were able to balance competing self-interests and reach agreement. Reaching consensus was important for the purpose of implementing an effective site treatment. It also prevented Exxon from exploiting the situation to its advantage—namely, by ceasing clean-up because of internal agency strife—which some USNPS personnel suspected was Exxon's ultimate goal.

The work plan called for mapping intertidal artifacts and excavating upland test pits. Investigation of the upland area was curtailed after English Bay sought a court injunction to halt upland digging. The corporation argued it had not been consulted on the issue and should be consulted before any upland excavation could begin. Further problems erupted when Exxon and USNPS got into a dispute over the perceived size of subsurface testing. Exxon accused USNPS of pushing for the extensive excavation of undamaged areas at a cost of \$1.5 million to the company.⁷ The Park Service denied having ever made such a request of Exxon. Several USNPS personnel accused Exxon of trying to find another excuse for discontinuing clean-up at Kenai Fjords (Luthi 1990; USNPS ARO-Cultural Resources Division 1990; Birkedal 1993b). The issue was finally settled in August 1990, but not before attorneys from Exxon and the Department of the Interior became involved. The ensuing flurry of lawyer-generated paperwork and correspondence resulted in a conclusion that the squabble had been a misunderstanding (USNPS ARO-Cultural Resources Division 1990;

Exxon Corporation 1990).

The 1990 work plan called for employing three treatments at McArthur Pass: manual removal of oil and debris, hot-water washing and cold-water flooding, and bioremediation. The effort would have to comply with stipulations of the National Historic Preservation Act and the Archeological Resources Protection Act. Because of overlapping jurisdiction between USNPS and the State of Alaska in the intertidal zone, Exxon was required to secure special land use permits from both entities (Betts et al. 1991). Clean-up workers were required to attend an artifact orientation class before they began work. Once the details were ironed out and clean-up began, things proceeded in good order. Exxon, USNPS, and Chugach archeologists worked together to ensure a well-managed site treatment. The cooperative effort resulted in minimal injury to cultural resources despite the intensity of the site clean-up. In total, over 13,000 pounds of oiled debris and sediment were removed. Forty-two artifacts had to be removed from the intertidal zone to facilitate the clean-up.

Cultural Resources and CERCLA

Gaining compensation and restoring injured cultural resources to pre-spill conditions represented a more daunting task than might be imagined. Together, CERCLA and the Clean Water Act (CWA) provide the authorization for establishing a legal framework for public land managers to protect affected natural resources. This is done through a damage assessment of injuries and the submittal of claims for damages from potentially responsible parties (42 U.S. Code 9601 et seq.; 33 U.S.C. 1321). Natural resources under CERCLA provisions include non-living resources, such as air, land, sediments, surface water, and groundwater, as well as living resources, such as fish, wildlife, and

other biota (42 U.S.C. 9601(16)). As such, CERCLA's definition of natural resources does not specifically mention historical and archeological resources. Despite this uncertainty, the *Exxon Valdez* draft damage assessment plan, which came out in August 1989, called for assessing the spill's impact on cultural resources. Threats to artifacts through direct contact with oil, and the loss of vegetation which could lead to erosion and the exposure of artifacts, would be determined. Dollar figures would be assigned based upon the extent of damage and the rarity of the affected cultural resources (Exxon Valdez Oil Spill Trustee Council 1989).

By 1990 it had become obvious that the cultural resources damage assessment study was not moving forward as originally planned. Department of Justice lawyers were of the opinion that CERCLA's definition of natural resources did not include cultural resources. If true, this meant that participating agencies would not get reimbursed under CERCLA or CWA for any cultural resources damage assessment work they did. Nor could they hope to use these provisions to collect compensation for cultural resource injuries. Participating agencies were divided on the issue and were reluctant to move forward with a cultural damage assessment (Department of Justice 1990). From a USNPS perspective this created a serious void in the damage claims process.

Support for moving ahead with the cultural resource study came from the United States Forest Service (USFS). Cultural resources on Forest Service land had also been affected. The USFS pushed for conducting the assessment even if it was not certain that government agencies would get reimbursed. Ultimately, a decision was made to go ahead with a cultural resources damage assessment study. Despite the precedent of this decision, questions still remain over the applicability of CERCLA provisions to cultural resources. At

no time were cultural resources formally recognized as falling under CERCLA provisions. Many cultural resource proponents had hoped that damage assessment revisions would be implemented to address this situation. A 1993 Department of the Interior damage assessment review recommended amending CERCLA to include injury to cultural resources in the definition of losses for which agencies may claim compensation (Department of the Interior 1993). To date, this has not been done.

Beyond Settlement

In the fall of 1991 Exxon reached a court-approved settlement with government plaintiffs. Exxon agreed to pay \$900 million in civil compensation for injuries inflicted upon public resources. Most of the money would be used to restore and rehabilitate resources lost or destroyed as a result of the spill, or for the acquisition of equivalent resources. The settlement recognized cultural resources as an injured resource requiring restoration. Restoring affected cultural resources, however, is not an easy task. Cultural resources do not reproduce. Once a cultural resource is destroyed it is gone forever. Artifacts exposed to weathering resulting from the destruction of protective vegetation or vandalism must often be placed in a museum to protect them from further degradation or theft (Birkedal 1993a). This carries additional costs. Furthermore, the reality that hundreds of clean-up workers—by the nature of their job—learned the location of remote archeological sites made many of these sites vulnerable to looting and vandalism. This is viewed as the greatest future threat to cultural resources in the impact zone.

One potential solution to the problem of looting and vandalism is starting a site stewardship program. These act as deterrents principally against recreational "pot hunting"

and vandalism. A successful program focuses on community involvement. Enlisting local volunteers as site stewards has the added benefits of making people aware that looting and vandalism are illegal, and can contribute to community condemnation of these activities (Birkedal 1993a). Still, implementing such a program is not always easy. Volunteers must be enlisted and trained. During the aftermath of the *Exxon Valdez* disaster, some restoration decision-makers objected to such a funding proposal, calling it impractical in the remote coastal impact zone.

Conclusions

The 1989 *Exxon Valdez* oil spill caused injuries of almost unimaginable magnitude. Studies have estimated that the spill affected, in total, upwards of 276 cultural resource sites (Dumond 1993). Direct oil damage, however, was not the greatest threat posed to cultural resources. Injuries during clean-up activities were a source of greater concern. This damage was ultimately much less than what it could have been. The participation of USNPS cultural resources personnel in spill drills held before the disaster significantly enhanced their response ca-

pabilities. This pre-spill interaction served as a forum for understanding and mitigating cultural resource clean-up concerns. It facilitated the timely development and implementation of the fast-track 106 protection process. Exxon and the Coast Guard deserve credit for their commitment to cultural resource stipulations. The cultural resource contractors Exxon employed were of the highest professional quality. Such preparedness and cooperation resulted in injury levels significantly lower than what could have been given the number of affected sites. This cooperation did not, however, eliminate all problems. The political battle which waged at McArthur Pass reflected a larger legal struggle which periodically affected cooperative efforts in the field.

Perhaps the most frustrating lesson to come out of the *Exxon Valdez* spill has been the issue of injury compensation. As it currently stands, CERCLA's compensation provisions do not apply to cultural resources. The restoration of spill affected cultural resources—despite their inclusion in the settlement provisions of the *Exxon Valdez* disaster—will continue to be hampered unless CERCLA is amended to address this inadequacy.

Endnotes

¹Cultural resources, according to Title 36 of the Code of Federal Regulations (CFR) 61.2, are defined as: any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource.

²Many of the affected archeological sites had subsided into the intertidal zone as a result of periodic tectonic disturbance. These sites were often subjected to repeated contact with oil during tidal shifts.

³The terms "treatment" and "clean-up" were used interchangeably to describe oil removal activities along the affected shoreline. Technically speaking, however, the terms implied two different things. The State of Alaska, in particular, objected to Exxon's use of "clean-up" to describe sites where oil removal efforts had been completed. To the State, this use of "clean-up" implied that all oil had been removed and the site restored to pristine pre-spill conditions. This was generally not the case. Therefore, the State insisted upon the use of the term "treatment," by which it meant that oil removal ac-

tivities had occurred, without acknowledging that a total clean-up had been effected.

⁴A May 1989 Department of Transportation-Environmental Protection Agency Report to the president said the various response plans—covering in whole or in part the Gulf of Alaska and Prince William Sound impact zones—were inadequate and incompatible. For a more in-depth discussion of this subject see U.S. General Accounting Office, *Report to Congressional Requesters: Adequacy of Preparation and Response to Exxon Valdez Oil Spill* (October 1989).

⁵The National Historic Preservation Act, augmented by the Archeological Resources Protection Act and the Alaska Historic Preservation Act, set forth the basic cultural resource protection stipulations utilized during *Exxon Valdez* clean-up operations.

⁶Section 106, as implemented through 36 CFR 800, requires that any federal agency having jurisdiction over a federal or federally assisted undertaking take into account the effect upon National Register Historic Sites or sites deemed eligible for Register inclusion.

⁷The actual costs of testing and associated archeological work at McArthur Pass amounted to less than one-tenth of this amount.

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Rick S. Kurtz

National Park Service, Alaska Regional Office, 2525 Gambell Street, Anchorage, Alaska 99503