Exxon Valdez Oil Spill, Cleanup, and Litigation: A Collection of Social-Impacts Information and Analysis

Final Report, Volume V:
Final Annotated Bibliography and Abstracts

Prepared for:

Michael Baffrey, Contracting Officer's Technical Representative
U.S. Department of the Interior
Minerals Management Service
Environmental Studies Section
949 East 36th Avenue, Suite 300
Anchorage, Alaska 99508-4363

Prepared by:

Impact Assessment, Inc.
2166 Avenida de la Playa, Suite F
La Jolla, California 92037

August 2001

BOOKS

CITATION[Abordaif, Faisal Hamzah. 1994. The development of an oil spill contingency planning evaluation model. Doctoral Thesis, George Washington University, 1994. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* oil spill is used as a case study, in an analysis which proposes a way of evaluating disaster contingency plans. The researcher finds that formal contingency plans are often abandoned in an actual disaster, and identifies the important factors that lead to divergence from the original contingency plan. A model for evaluating contingency plans is proposed.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska] EVENT_PHASE[spill] REMAINER[contingency plans]

CITATION[University of Alaska, Alaska Sea Grant College Program. 1995. Prevention, response, and oversight five years after the *Exxon Valdez* oil spill: proceedings of an international conference, March 23-25, 1994, Anchorage, Alaska. Alaska Sea Grant College Program report 95-02. Fairbanks, AK: University of Alaska, Fairbanks.]
ABSTRACT/ANNOTATION[This volume contains a number of papers and discussion sessions organized according to the topics of prevention, response and oversight. The section on oil spill response includes wildlife protection strategies and contingency planning, the protection of archaeological sites and cultural resources, an article on National Park Service lands, and a paper on the recreation and tourism industries. The paper on the Park Service, by Rick Kurtz observes that three parks were affected by the spill, the Kenai Fjords National Park, Katmai National Park and Preserve, and Aniakchak National Monument and Preserve. The paper indicates that the different mandates and organizational cultures of agencies made it somewhat harder to work cooperatively in spill response. Further, the Park Service had been less interested in potential threats that originated outside its purview, as for example in the oceans, associated with Coast Guard oversight. A paper by Nancy Lethcoe discusses the damage to and protection of resources associated with recreation and eco-tourism. The author differentiates between urban tourism, nature tourism and eco-tourism. Urban tourism (restaurants, gift shops) relies very little on the condition of natural resources. Nature tourism is characterized brief, multi-person visits (cruise ships, and bus tours), while eco-tourism involves more intensive use of the environment (sailing, kayaking, hiking sportsfishing, observing wildlife), and was most affected by the spill. The Alaska Wilderness Recreation and Tourism Association's database for 1993, indicates that around 150 eco-tourism businesses operate in Prince William Sound, and some beach areas generate hundreds of thousands of dollars. 'Lessons learned' from the spill included the following: 1) Unbalanced media coverage has a negative economic impact on nature and eco-tourism. 2) Since mapping of oil is done by air, lightly oil beaches important to tourism and recreation may not be mapped as oiled, and therefore not cleaned. 3) Agencies responsible for tourism did not have lists of tourist sites, contributing to a failure to protect some areas from oiling, while areas with the greatest public interest and advocacy received most care. 4) Cleanup workers and scientists spread damage to unaffected areas and were sometimes unfamiliar with laws regarding wildlife. 5) The tourism industry was denied legal recovery for damages. Estimations of lost value in the tourist industry should take into account that eco-tourism involves a few visitors who are willing to spend a lot of money, in contrast to the common

models of tourism. Among the planning recommendations, the author includes provisions for evacuation and notification.]
KEYWORDS: SOURCE_TYPE[book of conference papers] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, spill, post-spill, restoration] ECONOMIC_EFFECTS[economic loss] LITIGATION_EFFECTS[damage claims disallowed] OTHER_EFFECTS[tourism] REMAINDER[tourism, recreation, inter-agency relations hinders response, cultural resources, archaeology]

CITATION[Button, Gregory Vedder. 1993. Social conflict and the formation of emergent groups in a technological disaster: The *Exxon Valdez* oil spill and the response of residents in the area of Homer, Alaska. Doctoral Thesis, Brandeis University, 1993. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[Based on research in Homer, Alaska, this dissertation addresses the topics of social cohesion and conflict, and the formation of emergent groups. The dissertation disputes the idea proposed by some researchers that, while natural disasters promote social cohesion and thereby contribute to the formation of emergent groups, there is social conflict in the aftermath of technological disasters which limits the formation of emergent groups. The research finds that while there was considerable social conflict in Homer, there was also social cohesion sufficient to facilitate the formation of emergent groups. Certain factors contributed to both social conflict and the formation of emergent groups, including a widely experienced sense of "loss of control" and uncertainty about significant facts surrounding the oil spill and cleanup, including uncertainty about who was ultimately in control of the cleanup, and which cleanup technologies were most effective and most necessary. The dissertation argues that the formation of emergent groups is inevitable in circumstances in which there is a sense of urgency and the common perception that authorities were unwilling and unable to respond. The report concludes that local and disaster-response authorities should recognize the constructive role that emergent groups fill in the aftermath of disasters.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Homer, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFER[residents, authorities, cleanup workers] SOCIAL_EFFECTS[social cohesion, social conflict, emergent groups, social organization] CULTURAL_EFFECTS[sense of community, sense of place] PSYCHOLOGICAL_EFFECTS[loss of control, uncertainty] MUNICIPAL_EFFECTS[infrastructure, organizations]

CITATION[Cohen, Maurie J. 1993. Economic aspects of technological accidents: an evaluation of the *Exxon Valdez* oil spill on southcentral Alaska (*Exxon Valdez*). Doctoral Thesis, University of Pennsylvania, 1993. Ann Arbor, MI: University Microfilms, International.]
ABSTRACT/ANNOTATION[Prior research, according to the author, has argued that natural disasters often generate short-term economic benefits. This study investigates whether the idea of short-term economic gain applies to technological disasters by looking at the EVOS case. The study finds that there were substantial short term economic benefits to the community as a whole, though the short term economic gains from the accident were not evenly distributed across the communities in the region of the spill. Further, the short-term gain associated with the oil spill obscured a decline in the profitability of commercial fishing and intensified the decline of international market conditions for Alaskan fishery products. While acknowledging that impact analyses of complex systems are difficult to achieve, the analysis indicates that the

ex-vessel revenue impacts in 1990 from the EVOS were between $11.2 million and $44.9 million.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[southcentral Alaska] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, fishing industry] ECONOMIC_EFFECTS[economic gain, economic loss, ex-vessel value, international market, revenue impacts]
CITATION[Davidson, Art. 1990. In the wake of the *Exxon Valdez*: the devastating impact of the Alaska oil spill. San Francisco, CA: Sierra Club Books.]
ABSTRACT/ANNOTATION[The book includes a discussion of the spill and the events leading up to the spill, a section on response to the spill, and a final section on the aftermath of the *Exxon Valdez* event. In the first few days after the *Exxon Valdez* ran aground, representatives of local communities, Exxon, and state and local government met in public and private meetings to confer about the actions to take. After worsening weather began to spread the oil, local communities and organized Exxon response teams began efforts to contain and cleanup the oil. Organized response efforts promised more than they delivered, and birds, marine mammals, other sea life, and shorelines were damaged by the spreading oil. In the wake of the spill, communities throughout the region were affected by the spilling oil, the influx of outsiders, the potential threat to important natural resources, and the nature of the cleanup effort. In Native villages such as Tatitlek and Chenega Bay, concerns developed about contaminated resources used for subsistence purposes. Natives also perceived the effects of the spill through their own cultural views about nature. The effects of the spill have important implications for how oil is developed and shipped in the future.]
KEYWORDS: SOURCE_TYPE[popular book] GEOGRAPHY[Prince William Sound, Kodiak Island, Kenai Peninsula, Valdez, Cordova, Kodiak, Homer, Seward, Tatitlek, Larsen Bay, Ouzinkie, Kenai, Native villages] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, fishermen, VECO, U.S. Coast Guard, residents, cleanup workers, mosquito fleet, Exxon Corporation, National Park Service, Minerals Management Service, U.S. Fish and Wildlife Service, Alaska Department of Environmental Conservation, Multi-Agency Coordinating Group] SOCIAL_EFFECTS[social disruption, social conflict, emergent groups] CULTURAL_EFFECTS[sense of place, sense of community] ECONOMIC_EFFECTS[money spill, cleanup contracts, economic loss] PHYCHOLOGICAL_EFFECTS[stress, frustration, despair, emotional problems] MUNICIPAL_EFFECTS[influx of outsiders, population] SUBSISTENCE_ACTIVITIES[hunting, fishing, clamming, gathering, contaminated resources, contamination fears]

CITATION[Dennard, Floyd H. 1997. Long-term community impacts of a technological disaster: The Valdez oil spill (Alaska). Master's Thesis, University of South Alabama, 1997. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis argues that the impacts of technological accidents result not only from the event itself. Litigation following the event, and involvement in this litigation produce additional negative impacts, and these are discussed as secondary disasters that prolong the social impact of technological disasters such as the *Exxon Valdez* spill.]
KEYWORDS: SOURCE_TYPE[master's thesis] GEOGRAPHY[Cordova, Alaska] EVENT_PHASE[spill, post-spill, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[residents, litigants] LITIGATION_EFFECTS[litigation as secondary disaster]

CITATION[Dyer, Samuel C. Jr. 1991. Issue phases in attention cycles: a study of the *Exxon Valdez* disaster. Doctoral thesis, The University of Tennessee, 1991. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis set out to consider change in the way the media characterized the *Exxon Valdez* event over time. Two wire services are included in the study, which includes the year before and the year after the oil spill. Statistical analysis of data from content analysis of two wire services found that Exxon Corporation sources did not dominate AP Wire coverage at any point in the development of the story, and that Exxon's stance was generally reactive to statements from other sources.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[media, wire services, AP wire service, Exxon Corporation, journalists, journalistic sources] SOCIAL_EFFECTS[media coverage, Exxon's media response]

CITATION[Erickson, Kai. 1994. A new species of trouble: explorations in disasters, trauma, and community. New York, NY: W.W. Norton.]
ABSTRACT/ANNOTATION[This work, a collection of essays on a number of discreet events, focuses on the psycho-social impacts of modern technological disasters. It is proposed that these events, which are often associated with ill-understood technologies, have some special characteristics. These characteristics are that involve some human agency, they often involve toxic contamination, and their consequences may be both acute and chronic, with uncertainty about the nature, extent, and duration of the danger contributing to the trauma experienced. The first section includes articles on mercury poisoning in an Ojibwa community, a sense of betrayal following financial misdealings in a Haitian community, petroleum pollution in a Colorado community, Three Mile Island, and homelessness in America, and the second section reflects on Hiroshima and the proposed high level nuclear waste repository in Nevada.]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[United States] EVENT_PHASE[general] SOCIAL_OR_CULTURAL_IDENTIFIER[public, world community, Japanese] SOCIAL_EFFECTS[alienation] CULTURAL_EFFECTS[risk perception, sense of place]

CITATION[Frost, Helen and John Haines eds. 1990. Season of dead water. Portland, OR: Breitenbush Books.]
ABSTRACT/ANNOTATION[A compilation of poetry and short essays that express individual and community reactions to the oil spill and cleanup.]
KEYWORDS: SOURCE_TYPE[popular book] EVENT_PHASE[spill, cleanup] REMAINDER[poetry, essays, personal reactions]

CITATION[Gartner, Carrie Nell. 1990. The *Exxon Valdez* oil spill: a case study in institutional apologia. Masters thesis, California State University, Fullerton, 1990. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis argues that defensive statements by institutions, as well as individuals, can be analyzed as examples of apologia. It introduces a set of criteria for analyzing individual and institutional apologia, and concludes that Exxon's apology following the oil spill was unsuccessful, and suggests reasons.]

KEYWORDS: SOURCE_TYPE[master's thesis] GEOGRAPHY[Valdez, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon Corporation] REMAINDER[corporate behavior, corporate credibility]

CITATION[Jorgensen, Joseph G. 1990. Oil age Eskimos. Berkeley: University of California Press.]
ABSTRACT/ANNOTATION[Most of the research for this book was completed before the *Exxon Valdez* oil spill, and it covers the period from 1981 to 1989. However, the book briefly discusses the implications of the spill for Alaskan Native communities. A number of researchers were involved in collecting the data analyzed in this work. The book is about the culture and the cultural ecology of three Alaskan Native communities, Unalakleet, Gambell, Wainwright, which are in the regions of the Bering Sea and the Chukchi Sea and are therefore beyond the geographic area of the spill. The book considers the factors that have shaped the communities, including the impact of the Alaska Native Claims Settlement Act (ANCSA) on Native communities and culture. The book contains detailed ethnographic material concerning subsistence uses of the environment, Native beliefs and attitudes about the environment, the economy and the subsistence economy in these communities, and the community social organization, kinship, and ideology. Native concerns about oil development of the Outer Continental Shelf are presented.]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[Unalakleet, Gambell, Wainwright, Alaska, Beaufort Sea, Bearing Sea, Chukchi Sea, Norton Sound] EVENT_PHASE[pre-spill, spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Natives, men, women, children, elderly, family, Minerals Management Service] REMAINDER[Alaska Native Claims Settlement Act]

CITATION[Keeble, John. 1991. Out of the channel: the *Exxon Valdez* oil spill in Prince William Sound. New York, NY : Harper Collins.]
ABSTRACT/ANNOTATION[This is a journalistic style book by an author first sent to Valdez, Alaska to cover the EVOS story for the Village Voice, and it includes reflections by many people associated with, and affected by, the spill and cleanup. The work considers a broad range of topics, such as the political, economic, and regulatory context of the spill, the 'normal' practices of oil transportation in Valdez, the corporate, governmental, and organizational entities and processes involved in responding to the spill, media coverage of the EVOS, and the environmental and social impacts of the spill and cleanup. It also considers the role of science in spill studies and provision of information to the public.]
KEYWORDS: SOURCE_TYPE[journalistic book] GEOGRAPHY[Bligh Reef, Block Island, Cordova, Cook Inlet, Kodiak Island, Knight Island, Seward, Seldovia, Valdez, Tatitlek, Tongass National Forest, Valdez Narrows, Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Chugach Native Corporation, British Petroleum, Alyeska, Exxon, VECO, U.S. Coast Guard, Earth First!, Alaska Department of Environmental Conservation, Environmental Protection Agency, Alaska Department of Fish and Game, Department of Fish and Wildlife, Homer Area Recovery Coalition, Department of the Interior, International Bird Rescue and Research Center, National Oceanic and Atmospheric Administration, National Transportation Safety Board, Native to Native Assistance Program, scientists, fishermen, Alaskan Natives] SOCIAL_EFFECTS[social conflict] ECONOMIC_EFFECTS[economic gain, economic loss] PSYCHOLOGICAL_EFFECTS[

stress] SUBSISTENCE_ACTIVITIES[decreased harvest] REMAINDER[restriction of scientific information].

CITATION[Lethcoe, Nancy R. and L. Nurnberger. 1989. Prince William Sound environmental reader. Valdez, Alaska: Prince William Sound Conservation Alliance.]
ABSTRACT/ANNOTATION[This book contains a selection of papers related to Prince William Sound and the *Exxon Valdez* oil spill. The first half of the volume contains a chronology of the first 72 hours of the spill event, a descriptive overview of Prince William Sound from a naturalist's point of view (with a preliminary indication of possible effects of the spill), and a selection of materials about oil dispersants, guidelines as to their general use and effectiveness, and their use on the *Exxon Valdez* oil spill. The second half of the volume contains sections describing the cleanup plan and its implementation, the mechanisms to establish priorities fro restoration efforts, and responses to
the restoration plan as it had occurred up to that point. A list of scientific studies which had been started that were associated with the spill was also included, as was a short description of the role of state and federal agencies in the response effort, and a transcript of the testimony of Fredericka Ott before the House Interior Committee (May 7, 1989).]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_EFFECTS[local resources, Multi-Agency Coordination Group, response organization] CULTURAL_EFFECTS[perceived risk, sense of place, lifestyle, dislocation]

CITATION[Lord, Nancy. 1992. Darkened waters : a review of the history, science, and technology associated with the *Exxon Valdez* oil spill and cleanup. Homer, AK: Homer Society of Natural History/Pratt Museum.]
ABSTRACT/ANNOTATION[This book was published to accompany an exhibition on the *Exxon Valdez* oil spill.]
KEYWORDS: SOURCE_TYPE[museum exhibition book] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup]
CITATION[McGill, Anthony D. 1994. Corporate public discourse: Exxon’s March 24, 1989 accounts following the Valdez oil spill. Doctoral thesis, Wayne State University, 1994. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[Public relations releases from Exxon Corporation were analyzed in terms of the style of apology used, and the researcher found that concession was much more common than denial in Exxon press releases, and that Exxon’s stance was generally reactive rather than taking the initiative.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] REMAINDER[public relations, press releases]

CITATION[McNally, Timothy S. 1997. Technological disaster and chronic psychological stress: an evaluation of the conservation of resources stress model. Master’s Thesis, 1997, University of South Alabama. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[Surveys sent to members of a commercial fisherman’s organization in Cordova are used to analyze the relationship between fishing losses, disruptions

in social support and social self-concept and the 125 respondents' psychological symptomotology, Data consisted of self-reporting by respondents.]
KEYWORDS: SOURCE_TYPE[master's thesis] GEOGRAPHY[Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Cordova District Fishermen United] SOCIAL_EFFECTS[social support] ECONOMIC_EFFECTS[economic loss, resource loss] PSYCHOLOGICAL_EFFECTS[self-concept, social support, anxiety, depression, post-traumatic stress disorder]

CITATION[Miller, Demond S. 1996. Psychological depression and economic loss among commercial fishermen during the aftermath of the *Exxon Valdez* oil spill. Master's thesis, Mississippi State University, 1996. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[Psychological tests with members of Cordova District Fishermen United found that those involved in litigation had higher levels of depression than those not involved in litigation, and found that those who had sold items because of economic loss had higher levels of anxiety than those who had not sold items to compensate for economic losses.]
KEYWORDS: SOURCE_TYPE[master's thesis] GEOGRAPHY[Cordova, Alaska] EVENT_PHASE[cleanup, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Cordova District Fishermen United] ECONOMIC_EFFECTS[economic loss, property loss] PSYCHOLOGICAL_EFFECTS[depression, anxiety] LITIGATION_EFFECTS[litigation as a stressor]

CITATION[Miller, Demond S. 1997. A construction of competing disaster narratives: media coverage of the distribution of risk following a technological disaster. Doctoral thesis, Mississippi State University, 1997. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[This thesis examines news coverage from different types of media in the aftermath of the *Exxon Valdez* oil spill. Network news, local print media, and local video interviews and town meetings provided data for qualitative analysis. It finds a variety of themes present in the media coverage, with themes representing different social groups and risk groups, and different phases of the event. Additionally, it discusses the therapeutic and corrosive impacts on the community due to the competing perspectives present in the community.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska, Southcentral Alaska, US] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[media, public, Exxon, U.S. Coast Guard] SOCIAL_EFFECTS[media coverage, corrosive community, therapeutic community]

CITATION[Mobley, Charles, M. B. Workman, and K.M. Workman. 1990. The 1989 *Exxon Valdez* cultural resource program. Anchorage, AK: Exxon Shipping Co.: Exxon Co., USA.]
ABSTRACT/ANNOTATION[In this volume, archeologists discuss the history, historic sites and antiquities in the region of the *Exxon Valdez* oil spill.]
KEYWORDS: SOURCE_TYPE[book] REMAINDER[historic sites, archaeology]

CITATION[Moore, William Henry J. 1993. Management of human and organizational error in operations of marine systems. Doctoral thesis, University of California, Berkeley, 1993. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The dissertation offers a quantitative modeling methodology to evaluate the impacts of human organizational errors in the operation of oil tankers and offshore

oil platforms. The author indicates that more than 80% of high consequence marine accidents are attributable to a compounding of human and organizational errors. The *Exxon Valdez* grounding and the Occidental Piper Alpha platform explosion are used as case studies.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[tanker crew, Exxon] REMAINDER[causes of spill]

CITATION[Nalder, Eric. 1994. Tankers full of trouble: the perilous journey of Alaskan crude. New York, NY: Grove Press.]
ABSTRACT/ANNOTATION[Written by a journalist with the *Seattle Times*, this book provides information about oil tankers, tanker personnel, and the tanker industry, woven into an account of the author's trip aboard the tanker-ship *Arco Anchorage*. Changes introduced in the tanker industry following the *Exxon Valdez* oil spill, and regulatory change are among the topics. Examples are given of the trade-offs made between safety and economic gain, such as the issue of double-hulled tankers.]
KEYWORDS: SOURCE_TYPE[book] GEOGRAPHY[Prince William Sound, Port Angeles Washington, Valdez, Vancouver Island] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, American Institute of Merchant Shipping, Alaska Oil Spill Commission, Arco Anchorage, U.S. Coast Guard, tanker crew] SOCIAL_EFFECTS[social organization of tankerships] LITIGATION_EFFECTS[litigation and scientific research] REMAINDER[regulatory change]

CITATION[O'Donoghue, Brian. 1989. Black tides: the Alaska oil spill. Anchorage, Alaska: Alaska Natural History Association.]
ABSTRACT/ANNOTATION[This short illustrated book provides a chronology of spill events and of the preliminary cleanup effort. It also reports the local perspective of damages from the spill, as well as of the overall management of the spill response and cleanup efforts.]
KEYWORDS: SOURCE_TYPE[popular book] GEOGRAPHY[Prince William Sound, Valdez, Chenega] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, cleanup workers, Alaskan Natives, local government] SOCIAL_EFFECTS[community stability, social disruption, social conflict, leadership, local resources, Multi-Agency Coordinating Group, response organization] CULTURAL_EFFECTS[sense of place, lifestyle, dislocation, disruption] ECONOMIC_EFFECTS[economic boom, economic loss, money spill] MUNICIPAL_EFFECTS[increased service demands] SUBSISTENCE_ACTIVITIES[clamming, contamination fears, contaminated resources]

CITATION[O'Meara, Jan. 1989. Cries from the heart: Alaskans respond to the *Exxon* Valdez oil spill. Homer, Alaska: Wizard Works.]
ABSTRACT/ANNOTATION[This work is a collection of short pieces (essays, poems, drawings) conveying some individual Alaskans' experiences of and reactions to the *Exxon Valdez* oil spill. The great variation in the nature of the material makes generalization difficult, but the overall tone is one of loss and how personal relationships with/perceptions of Prince William Sound have changed. Most of the contributors are non-Native, but Walter Meganack, Sr. of Port Graham contributes a powerful summary of how his community was affected.]
KEYWORDS: SOURCE_TYPE[popular book] GEOGRAPHY[Prince William Sound, Port Graham] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[

fishermen, cleanup workers, Alaskan Natives, local government, subsistence resource users] SOCIAL_EFFECTS[local resources, response organization, alienation] CULTURAL_EFFECTS[perceived risk, sense of place, sense of community, lifestyle, ethics, dislocation, disruption]

CITATION[Owen, Bruce, M. et al. 1995. The economics of a disaster: the *Exxon Valdez* oil spill. Westport, CT: Quorum Books.]
ABSTRACT/ANNOTATION[Written by economists who are interested in the question of legal liability following a disaster, this volume proposes an economic model for calculating economic losses that might be recoverable in a lawsuit. Therefore, they are interested in 'economic loss' according to a specific legal definition. They develop and test their model in relation to the *Exxon Valdez* oil spill, and a possible decline in salmon prices. They examined the price effects from the spill on salmon prices, and while there was a decline of prices in 1989, they found an absence of change caused by the EVOS.]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[Alaska] EVENT_PHASE[pre spill, spill, cleanup] ECONOMIC_EFFECTS[Alaskan fisheries, price impacts]

CITATION[Picou, J. S. , D.A. Gill, and M.J. Cohen eds. 1997. The *Exxon Valdez* disaster; readings on a modern social problem. Dubuque, IA: Kendall/Hunt Publishing Co. *(NOTE: individual chapters of this volume are already annotated).*]

CITATION[Rice, S.D. and R.B. Spies, D.A. Wolfe, and B.A. Wright eds. 1996 Proceedings of the *Exxon Valdez* oil spill symposium. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[This edited volume focuses primarily on biological aspects of the *Exxon Valdez* event, but there are several chapters that address social and cultural issues, including subsistence. There is a single chapter discussing cultural resource issues which argues that these resources were damaged primarily by vandalism during the cleanup period of the EVOS. There are four chapters that directly address social issues including subsistence uses during and after the spill and their sociocultural consequences and biologically oriented discussions of the presence of contaminants in subsistence resources. Two chapters describe and analyze social and psychological impacts related to the oil spill and cleanup. One chapter focuses on the relationship between psychological distress and community disruption during and following the oil spill. The other chapter describes "chronic psychological" stress among commercial fishermen and the community context of the stress experienced by this occupational group.]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[Prince William Sound, Gulf of Alaska, Kenai Peninsula, Alaska Peninsula, Cordova, Petersburg, Native villages] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, residents, Alaskan Natives] SOCIAL_EFFECTS[social disruption, community resources, subsistence-based community] CULTURAL_EFFECTS[sense of community, risk perception] PSYCHOLOGICAL_EFFECTS[PTSD, depression, anxiety, chronic psychological stress] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, clamming, decreased harvest, contamination fears, contaminated resources] CULTURAL_SUBSISTENCE[enculturation, sharing, symbolic expression of culture]

CITATION[Ross, Wallace Alan. 1993. The rhetoric of identification in business discourse. Doctoral thesis, University of Illinois at Chicago, 1993. Ann Arbor, MI: University Microfilms, International.]
ABSTRACT/ANNOTATION[Theories concerning public rhetoric are the concern of this thesis. The concept of rhetorical identification is examined for relevance using the example of the *Exxon Valdez* oil spill. The public relations releases of Exxon, and the rhetoric that appeared in newspapers relaying information about the spill, are examined in order to understand the process of persuasion.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska, US] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, public, journalists, interviewees] REMAINDER[rhetoric, public relations, corporate behavior]

CITATION[Sadowitz, March. 1992. Corporate tax policy: a factor in environmental decision making. Master's thesis, State University of New York at Albany, 1992. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis considers how corporate tax laws can affect the actual cost of corporate payments for environmental incidents, cleanup, and non-compliance with environmental law in incidents such as the *Exxon Valdez* oil spill. The ability of corporations to legally deduct for non-conformance penalties, for legal fees arising from environmental lawsuits, and for environmental fines and penalties are analyzed as perverse environmental tax incentives. It argues that the laws permitting deductibility of cleanup costs should be clarified but not eliminated. Congressional and state proposals for changing environmental corporate tax laws are outlined.]
KEYWORDS: SOURCE_TYPE[master's thesis] GEOGRAPHY[Alaska, US Congress] EVENT_PHASE[cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[corporations, taxpayers, Congress, courts, IRS] LITIGATION_EFFECTS[tax deductibility of corporate litigation] REMAINDER[legislative change, tax code change, incentives to pollute, corporate behavior]

CITATION[Sims, Grant. 1994. Leaving Alaska. New York, NY: Atlantic Monthly Press.]
ABSTRACT/ANNOTATION[The author, who was a faculty member at the University of Alaska, reflects on his stay in Alaska and his decision to leave. The book contains descriptions of places and associates in Alaska, the State's attractions, and his reasons for leaving. The author covered the EVOS as a journalist for Outside magazine.]
KEYWORDS: SOURCE_TYPE[book] GEOGRAPHY[Alaska, Beaufort, Arctic National Wildlife Refuge, Kaktovik, Brooks Range, Anaktuvuk Pass, Cordova, Kodiak Archipelago, Fairbanks, Valdez, Chugach Mountains] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Eyak Native Corporation, Inupiat Eskimo, Exxon, National Oceanographic and Atmospheric Administration, Arco, Alaska Department of Natural Resources, Alaska Department of Environmental Conservation] SOCIAL_EFFECTS[population increase, social disruption] PSYCHOLOGICAL_EFFECTS[alcoholism, domestic violence]

CITATION[Smith, Conrad. 1992. Media and apocalypse: news coverage of the Yellowstone forest fires, *Exxon Valdez* oil spill, and Loma Prieta earthquake. Westport, CT. London: Greenwood Pub. Group.]
ABSTRACT/ANNOTATION[Written by an former journalist and current academic, this volume is an examination and critique of the way journalist report unusual major events. One

chapter is devoted to media coverage of the *Exxon Valdez* spill, and other chapters examine reporting of the Yellowstone fires and the Loma Prieta earthquake, while the conclusion suggests general problems with coverage and possible solutions. The author found that most journalists covering the *Exxon Valdez* oil spill were unfamiliar with Alaska or with the process of oil transportation, they relied on readily available official sources (from the oil company, the Alaska Department of Environmental Conservation, the Coast Guard, the Bush administration and environmental groups, but very rarely independent scientific sources), and they tended to produce stories with a limited and uniform perspective. In general, television images define the story for the other media, and few journalists wander from story others are telling. Superficial aspects of a story, including conflict and drama, are the elements that draw most attention. News coverage of the *Exxon Valdez* spill (EVOS) focused on a small number of culturally resonant themes, and these few themes were repeated many times. Themes in early news stories were 1) the ineffectiveness of Exxon's clean-up efforts; 2) the anger of local residents, and; 3) alcohol consumption by the captain as a possible cause of the accident. Minor themes were the possible protection offered by double hulled ships and whether the spill contingency plan was capable of handling a disaster of this size. Later themes were the continuing spread of the oil, the damage to the fishing industry, beaches, wildlife and the cost of wildlife rescue, criticisms of Exxon's cleanup, the impact on oil prices, and the possible effect of the disaster on plans to drill for oil in the Alaska National Wildlife Refuge. Themes ignored by most, but explored in award-winning journalism, were contextual factors such as the declining regulatory controls and expenditures and declining safety standards in the period between the inception of the pipeline and the *Exxon Valdez* spill. The imperative to provide appealing video images meant that wildlife less affected by the spill, particularly sea otters, appeared more often than did birds, which died at higher rates.]
KEYWORDS: SOURCE_TYPE[academic book] GEOGRAPHY[Alaska, U.S.] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[journalists, editors, media, Alaska Department of Environmental Conservation, U.S. Coast Guard, Bush Administration, scientists, Alaskan Natives, Exxon] SOCIAL_EFFECTS[media coverage] CULTURAL_EFFECTS[risk communication] ECONOMIC_EFFECTS[price impacts] SUBSISTENCE_ACTIVITIES[subsistence activity] REMAINDER[media coverage, media sources, coverage of wildlife, coverage of Alaskans]

CITATION[Sparling, M. Beverly. 1993. Factors influencing environmental investment from social issues to government mandates: a historical perspective. Doctoral Thesis, Rensselaer Polytechnic Institute, 1993. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis concerns finance and investment, and the influence of environmental activism on corporations. It analyzes a trend in the arena of environmental activism to seek corporate influence through the use of proxy resolutions. Public pension funds represent an important source of activism. The thesis also examines three incidents involving corporations, the *Exxon Valdez* oil spill, the Union Carbide gas leak in Bhopal, India, and the tainting of Tylenol capsules. The influence of activism on corporate policy, and the affects of negative events on stock prices, and the potential for investors to take advantage of unexpected negative incidents are the topics examined.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[investors, corporations, environmental groups, public pension funds] REMAINDER[finance]

CITATION[Spencer, Page. 1990. White silk and black tar: a journal of the Alaska oil spill. Minneapolis, MN: Bergamot Press.]
ABSTRACT/ANNOTATION[This book is a personal journal by an ecologist and Alaskan resident employed by the National Park Service. It reflects her professional observations and the physical and emotional stress she experienced in response to the spill and its impact on the ecology of southcentral Alaska.]
KEYWORDS: SOURCE_TYPE[book, personal journal] GEOGRAPHY[Kenai Fjords National Park, McCarty Fjord, James Lagoon, Quartz Bay, James Lagoon, Harrington Point, Montague Island, Knight Island, Glacier Bay] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[National Park Service, ecologist, Exxon] PSYCHOLOGICAL_EFFECTS[stress]

CITATION[Walden, W. Darrell. 1993. An empirical investigation of environmental disclosures analyzing reactions to public policy and regulatory effects. Doctoral Thesis, Virginia Commonwealth University. Ann Arbor, MI: University Microfilms International.]
ABSTRACT/ANNOTATION[The thesis examines changes in the environmental disclosure policies of corporations, as reflected in annual reports, subsequent to the *Exxon Valdez* oil spill. Content analysis was conducted on annual reports from 53 companies between 1988 and 1990. The thesis found changes in the years 1988 to 1989, and from 1989 to 1990, and that company size and industry membership made a difference in the degree of change in disclosures. Theoretical implications are discussed.]
KEYWORDS: SOURCE_TYPE[doctoral thesis] GEOGRAPHY[Alaska, U.S.] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[corporations] REMAINDER[corporate behavior]

CITATION[Wells, Peter G., James N. Butler, and Jane Staveley Hughes, (eds.). 1995. *Exxon Valdez* oil spill: fate and effects in Alaskan waters. Philadelphia, PA: ASTM, Series title: ASTM special technical publication; 1219.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* oil spill in Prince William Sound prompted many studies on the fate, transport, and effects of the oil on biota in Alaskan waters, as well as on archaeological sites. This book consists of 25 research papers presented at an ASTM symposium in April 1993. There were five main sessions: “Chemistry and Fate of the Spill” (six papers), “Shoreline Impact of the Spill” (six papers), “Impact Assessment for Fish and Fisheries” (four papers), “Impact Assessment for Wildlife” (eight papers), and Impacts on Archaeological Sites” (one paper). An introductory paper summarizes the topics and the highlights of these papers.]
KEYWORDS: SOURCE_TYPE[book] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, cleanup, restoration] OTHER_EFFECTS[ecological recovery] REMAINDER[archaeology]

CITATION[Wheelright, Jeff. 1994. Degrees of disaster: Prince William Sound, how nature reels and rebounds. New York, NY: Simon and Schuster.]
ABSTRACT/ANNOTATION[The ecological impacts of the *Exxon Valdez* oil spill, and the impacts of remediation efforts in Prince William Sound are explored in a journalistic-style work by a science writer. Interviews with scientists, politicians, lawyers, Alaskans, volunteer workers

and agencies, media accounts and the author's observations of the area provide the data. The author argues that naturally occurring processes did a better job of clean-up than did human efforts, and that the response to the spill on the part of volunteers, clean-up crews, etcetera, caused additional damage to the Sound. He argues that remediation efforts were driven by legal, political, and media influences rather than by scientific knowledge. He proposes that the greatest wildlife impacts were suffered by the otters, and that human impacts were most pronounced in Alaskan Native communities, because their subsistence activities, and the social life surrounding subsistence, were seriously disrupted. Human impacts are not discussed at length, with the exception of the grief suffered by volunteers treating wildlife, but there is specific discussion of the way petroleum degrades in the environment, and acute and chronic biological effects of contaminants on wildlife species and the food chain. The environmental and social changes preceding the spill are also described, to suggest that this disaster occurred within a context of ongoing change.]
KEYWORDS: SOURCE_TYPE[book] GEOGRAPHY[Prince William Sound] EVENT_PHASE[1964 earthquake, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaskans, scientists, media, federal government, state government, volunteers] PSYCHOLOGICAL_EFFECTS[grief] MUNICIPAL_EFFECTS[influx of outsiders] SUBSISTENCE_ACTIVITIES[subsistence activity] REMAINDER[impacts of cleanup]

CITATION[Wilson, Alexander. 1992. The culture of nature : North American landscape from Disney to the *Exxon Valdez*. Cambridge, MA : Blackwell, 1992.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* has only a brief mention in this academic book, which is a general overview of the ways modern North American culture conceives of nature. With chapters on tourism, nature education, landscape design, nature movies and television, theme parks, the modern relations of city and country such as industrial agriculture and indoor urban malls with nature areas, nature parks and zoos, and some of the large scale energy-use technologies of the twentieth century, this work provides an introduction to a topic that has become of growing academic interest in recent years. With respect to the *Exxon Valdez* spill, the author declines to call it an accident, because he argues that accidents of varying scale and the careless, accretive, disposal of small amounts of oil are commonplace in modern society's use of petroleum.]
KEYWORDS: SOURCE_TYPE[academic book] CULTURAL_EFFECTS[cultural and social constructions of nature]

CHAPTERS IN BOOKS

CITATION[Bittner, Judith E. 1996. Cultural resources and the *Exxon Valdez* oil spill: an overview. In Proceedings of the *Exxon Valdez* oil spill symposium, eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 814-818. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[Archaeological resources were damaged during the cleanup more than during the spill. Vandalism and the cleanup process were the major causes of damages to archaeological resources. Lessons from the damaged caused by cleanup activities can be applied to preventing damages to any future events similar to the *Exxon Valdez* event.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Native villages, Prince William Sound, Kodiak Island, Alaska Peninsula] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Exxon, U.S. Coast Guard]

SOCIAL_EFFECTS[vandalism] REMAINDER[Archaeological Resources Protection Act, National Historic Preservation Act, impacts of cleanup]
CITATION[Bolger, M., S.A. Henry, C.D. Carrington. 1996. Hazard and risk assessment of crude oil contaminants in subsistence seafood samples from Prince William Sound. In "Proceedings of the *Exxon Valdez* oil spill symposium," eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 837-843. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[The Oil Spill Health Task Force requested a study of the potential health risks of the consumption of fin-fish and shellfish by subsistence users. Studies indicate that long term risks for cancer from consuming fin-fish and shell fish are so low that they cannot be calculated.] KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Kodiak Island, State of Alaska, Windy Bay] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, U.S. Coast Guard] OTHER_EFFECTS[risk assessment, health effects, cancer risk] SUBSISTENCE_ACTIVITIES[seafood contamination, subsistence consumption, shellfish, fin-fish, contamination fears]

CITATION[Brown, D.A. and nine coauthors. 1996. Survey of Alaskan subsistence invertebrate seafoods collected in 1989-1991 to determine exposure to oil spill from the *Exxon Valdez*. In Proceedings of the *Exxon Valdez* oil spill symposium, eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 844-855. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[Alaska Natives had fears about contamination of subsistence resources from the *Exxon Valdez* oil spill. A study was initiated to examine contamination of subsistence resources from 80 different locations. The results found various levels of contamination of molluscs and other shell fish. A small number of samples were classified as "moderately" or "highly" contaminated by aromatic compounds.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Kodiak Island, Alaska Peninsula, Tatitlek, Windy Bay, Chignik, Old Harbor, Chenega Bay] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaska Department of Fish and Game] SUBSISTENCE_ACTIVITIES[seafood contamination, subsistence foods, shellfish, chitons, mussels, clams, contamination fears] REMAINDER[aromatic contaminants]

CITATION[Clarke, Lee. 1997. Supertanker politics and the rhetorics of risk: the wreck of the *Exxon Valdez*. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 55-65. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[Sociopolitical choices concerning Alaskan and Canadian economy and politics regarding pipelines and supertankers are important background for understanding the *Exxon Valdez* oil spill. Different "rhetorics of risk" by government, private citizens, and industry have structured pre and post-spill choices and debates about oil transport in general and the *Exxon Valdez* spill in particular. Some of this debate has equated oil production with the "National Interest" but this needs careful analysis and consideration within the context of risk debates.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska State] SOCIAL_EFFECTS[social conflict] CULTURAL_EFFECTS[rhetoric of risk] REMAINDER[national energy policy, supertanker, Alaska Pipeline, risk, political economy, National Interest]

CITATION[Clarke, Lee. 1992. The wreck of the *Exxon Valdez*. In "Controversy: politics of technical decisions" (third edition), D. Nelkin (ed.), 80-96. Newbury Park, CA: Sage.]
ABSTRACT/ANNOTATION[This is an article in an edited volume that considers some of the controversies surrounding technology and society. The article is part of a literature on risk perception and 'risk objects', and how accidents occur in complex systems. Considering the *Exxon Valdez* oil spill, the article argues that priorities were implicitly set between economic and environmental trade-offs or values, and technology and regulatory framework implemented those priorities: it argues that while blame for the accident was directed at the captain and the issue of alcoholism, an accident of this size was likely. The decision to place the pipeline in Alaska rather than through Canada (which has less seismic activity), the reliance on huge tankers which are harder to steer but cheaper to operate, the period of de-regulation of oil tanker transport during the Reagan administration and lower funding for surveillance during the Bush administration, and so forth, are examined as the real causes of the spill. The personalization of the issue (in the form of the captain) and the moralization of the event (in relation to alcohol use) are characterized as deflecting public attention from the public decisions that were made.]
KEYWORDS: SOURCE_TYPE[academic book chapter] SOCIAL_EFFECTS[political decisions, regulatory oversight] CULTURAL_EFFECTS[risk perception, technological risk]

CITATION[Cohen, M. J. 1997. Economic impacts of the *Exxon Valdez* oil spill. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 133-160. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The regional economy of Southeastern Alaska was differentially affected by the *Exxon Valdez* oil spill. The overall and specific economic effects are estimated using a "with" and 'without" event analytic framework. This framework shows that specific sectors within the commercial fishery generally showed adverse economic impacts. However, oil spill employment and other economic consequences of the spill showed short term economic gains for other sectors of the economy.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Southeast Alaska, Cordova, Kodiak Island, Kenai Peninsula, Southeast Alaska] ECONOMIC_EFFECTS[regional economy, regional economic impacts, commercial fishing, price impacts, economic diversification, basic economic activities, nonbasic economic activities]

CITATION[*Exxon Valdez* Oil Spill Trustee Council. 1997. Recovery of injured resources and services: 1996 update. In The *Exxon Valdez* disaster: readings on a modern social problem, eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 121-128. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The Oil Spill Trustee Council has been responsible for initiating efforts to restore biological, archaeological, and subsistence resources affected by the *Exxon Valdez* event. Biological resources have been assessed to have varied success in recovery. Archaeological resources damaged during the spill are being restored by the Alutiiq Archaeological Repository. Twenty communities whose subsistence resources were affected by the spill have been studied by Alaska Department of Fish and Game. Other studies of clams and intertidal resources have also been examined.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Kodiak Island, Prince William Sound] EVENT_PHASE[cleanup, restoration]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alutiiq, Alaskan Natives, Oil Spill Trustee Council,

Alaska Department of Fish and Game] CULTURAL_EFFECTS[archaeological resources] SUBSISTENCE_ACTIVITIES[subsistence resources] REMAINDER[Sound Ecosystem Project]

CITATION[Fall, James and L.J. Field. 1996. Subsistence uses of fish and wildlife before and after the *Exxon Valdez* oil spill. In "Proceedings of the *Exxon Valdez* oil spill symposium," eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 819-836. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[In the year following the oil spill, the 2200 residents of 15 native Alaskan communities reduced their harvest of subsistence resources as well as the variety of resources harvested. In 10 villages harvests decreased by about 77% because of fears about oil contamination. In response to community concerns, the Oil Spill Health Task Force initiated a study of subsistence foods (fin-fish, invertebrates, and marine mammals) for aromatic contaminants. Findings indicated invertebrates were the most susceptible to contamination. Efforts to communicate findings to Native communities met with mixed results. Two and three years after the spill, contamination fears persisted, although subsistence harvests increased.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Larsen Bay, Old Harbor, Ouzinkie, Perryville, Port Lions, Port Graham, Kodiak, Chenega Bay, Tatitlek, Nanwalek, Karluk, Lake, Port Graham, Ivanoff Bay, Akhiok, Chignik Lagoon, Kodiak Island, Prince William Sound, Alaska Peninsula] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Aleut, Alaska Department of Fish and Game, Oil Spill Health Task Force] SOCIAL_EFFECTS[subsistence-based community] CULTURAL_EFFECTS[risk communication, risk perception] OTHER_EFFECTS[health risks] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, clamming, decreased harvest, contamination fears, contaminated resources] CULTURAL_SUBSISTENCE[enculturation, sharing, symbolic expression of culture] REMAINDER[aromatic contaminants]

CITATION[Gill, Duane A. and Steven Picou. 1997. The day the water died: cultural impacts of the *Exxon Valdez* oil spill. In The *Exxon Valdez* disaster: readings on a modern social problem, eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 167-187. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The subsistence lifestyle of Native Alaskans predisposed them to effects of the *Exxon Valdez* oil spill and cleanup. The direct effects of the oil spill included: emotion distress and disruption, threats to subsistence activity and consumption because of contamination of fears, and disruption of harvesting because of cleanup participation. The cleanup also directly affected the cultural complex that is subsistence in Native Alaskan communities. These effects included: influx of outsiders into Native communities, destruction of historical/archaeological sites, racism, disrupted family activities, psychological stress, and substance abuse. The effects of the spill and cleanup have been ongoing to the time of publication of the article, including decreased consumption and decreased harvesting. The cultural activities associated with subsistence have also suffered. Litigation has not addressed the cultural impacts associated with the spill and cleanup because of the focus on non-economic damages.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska Native Communities, Tatitlek, Chenega Bay, Larsen Bay, Port Graham, Akhiok, Karluk, Ouzinkie, Old Harbor, Nanwalek] EVENT_PHASE[spill, cleanup, restoration]

SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Chugach Natives]
SOCIAL_EFFECTS[social disruption, population increase, therapeutic community, racism]
FAMILY_EFFECTS[family disruption, kinship, role relationships] ECONOMIC_EFFECTS[subsistence economy, value of subsistence losses, money spill]
PSYCHOLOGICAL_EFFECTS[PTSD, chronic psychological stress, post-traumatic stress disorder, anxiety, depression] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, decreased harvest, harvest disruption, contamination fears, contaminated resources]
CULTURAL_SUBSISTENCE[sharing, elders, enculturation] REMAINDER[ANCSA, Alaska Native Claims Settlement Act, Oiled Mayors Study]

CITATION[Gramling, Robert and William R. Freudenburg. 1997. The *Exxon Valdez* oil spill in the context of U.S. petroleum politics. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 71-87. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The sociopolitical context of oil in America and in Alaska is essential to understand the occurrence of the *Exxon Valdez* oil spill. This context is influenced by "stratified power" among federal and state governments and the interests of capitalists, the military, and the American public at large.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska State, Prince William Sound] EVENT_PHASE[pre-spill, spill, cleanup] REMAINDER[systemic power theory, federal oil policy, Outer Continental Shelf Lands Act, ANCSA, trans-Alaska Pipeline]

CITATION[Hirsch, William B. 1997. Justice delayed: seven years later and no end in sight. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 271-303. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[Federal Maritime Law structured the plaintiffs and the types of damages that could be brought against the Exxon corporation. The application of Maritime Law resulted in most of the litigation taking place in Federal courts where Judge Holland was more sympathetic to Exxon's position. Judge Holland applied the *Robbins-Dry Dock* decision which effectively limited the liability of plaintiffs to those who were physically touched by oil. The application of Maritime law also preempted other claims in state courts. Exxon's well funded legal efforts also resulted in creating a mandatory punitive damages class which worked to the advantage of the defendant. The procedures of the trial and appeal have prolonged the overall resolution of the case against Exxon.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Kodiak Island, Kenai Peninsula] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Exxon Corporation, Judge H. Russell Holland] LITIGATION_EFFECTS[class action, Robbins Dry Dock, settlement, punitive damages, trial process]

CITATION[Hom, Tom and five coauthors. 1996. Assessment of exposure of subsistence fish to aromatic compounds after the *Exxon Valdez* oil spill. In Proceedings of the *Exxon Valdez* oil spill symposium, eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 856-866. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[This study reports on the presence of aromatic compounds in the fish resources of Prince William Sound.]

KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Kodiak Island, Kenai Peninsula] SUBSISTENCE_ACTIVITIES[seafood contamination, fish contamination, contaminated resources] REMAINDER[aromatic compounds]

CITATION[Keeble, John. 1997. The imaginary journey of captain Joseph Hazelwood. In The *Exxon Valdez* disaster: readings on a modern social problem, eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 23-34. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The actions on March 24, 1989 of Captain Joseph Hazelwood of the *Exxon Valdez* must be placed within the context of shipping company pressures to increase effectiveness and reduce crew size. Interpretations of Hazelwood's actions should consider the effects of these pressures on how he acted before and after the spill.]
KEYWORDS: SOURCE_TYPE[academic book chapter] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Captain Hazlewood, oil industry, U.S. Coast Guard] REMAINDER[double hull tankers, contingency plans]

CITATION[Lord, Nancy. 1997. Oil in the sea: initial biological impacts of the *Exxon Valdez* oil spill. In The *Exxon Valdez* disaster: readings on a modern social problem, eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 95-105. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[Oil in a natural ecosystem has widespread effects because of its effects on a broad range of biological processes. Birds, marine mammals, fish and especially salmon were affected by the *Exxon Valdez* spill. Longer term effects of the spill are yet unknown.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska State] REMAINDER[ecological impacts]

CITATION[National Response Team. 1997. The *Exxon Valdez* oil spill and response preparedness: a report to the President. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 39-50. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[In the month following the spill certain response actions and the overall state of preparedness was affected by pre-existing plans of federal, state, and private entities. The overall adequacy of contingency planning for Alaska ports and elsewhere is called into question by the events in the month following the *Exxon Valdez* spill.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska State, Port of Valdez] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Regional Response Team, Alyeska, U.S. Coast Guard] REMAINDER[contingency plans]

CITATION[Picou, J.S. and D.A. Gill. 1996. The *Exxon Valdez* oil spill and chronic psychological stress. In "Proceedings of the *Exxon Valdez* oil spill symposium," eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 879-893. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* event produced patterns of chronic stress that are directly related to natural resources damages by the spill. Cordova and Valdez residents measured higher on the impact of events scale, a measure of psychological stress, than did residents of a control community, Petersburg, in Southeast Alaska. Residents of Cordova, a resource dependent community, measured higher than residents of Valdez, a more economically

diversified community. Commercial fishermen measured higher than other occupational groups. The study indicates that residents of resource dependent communities exposed to the effects of the *Exxon Valdez* event are consistent with other findings about stress in technological disasters.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Southeast Alaska, Cordova, Valdez, Petersburg] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen] SOCIAL_EFFECTS[natural resource community] PSYCHOLOGICAL_EFFECTS[chronic psychological stress, stress, impact of events scale] REMAINDER[survey, longitudinal study]

CITATION[Picou, J.S., D.A. Gill, and M.J. Cohen. 1997. The *Exxon Valdez* oil spill as a technological disaster: conceptualizing a social problem. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 3-17. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* oil spill can be conceptualized within the theoretical framework of a social problem similar to other technological disasters such as Love Canal and Three Mile Island.]
KEYWORDS: SOURCE_TYPE[academic book chapter]
SOCIAL_OR_CULTURAL_IDENTIFIER[Regional Citizen's Advisory Council]
SOCIAL_EFFECTS[therapeutic community, emergent groups] CULTURAL_EFFECTS[risk perception, technological risk] REMAINDER[natural disaster, technological disaster, social problem theory]
CITATION[Picou, J.S. and D.A. Gill. 1997. Commercial fishers and stress: psychological impacts of the *Exxon Valdez* oil spill. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 211-232. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[A new paradigm in disaster research indicates that technological disasters produce different types of social and psychological effects that may require longitudinal study to fully appreciate. This discussion examines the psychological impacts on commercial fishermen from the EVOS to examine the hypothesis that threats, actual or perceived, to natural resources upon which fishermen depend constitute a stressor sufficient to cause psychological impacts. A mail survey was sent to residents of Valdez (63), Cordova (163), and Petersburg (59, a "control" community) to measure stress using the Impacts of Events Scale. Levels of stress were reported to be higher in Valdez and Cordova than in Petersburg and higher among fishermen than non-fishermen.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Southeast Alaska, Cordova, Valdez, Petersburg] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen] SOCIAL_EFFECTS[natural resource community] PSYCHOLOGICAL_EFFECTS[chronic psychological stress, stress, impact of events scale] REMAINDER[survey, longitudinal study]

CITATION[Picou, J.S. and D.A. Gill and M.J. Cohen. 1997. Technological disasters and social policy: lessons from the *Exxon Valdez* oil spill. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 309-315. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[As an example of technological disasters, the *Exxon Valdez* event shows the complexity of the interactions among governments, private industry, and

individual citizens and their communities. It also raises issues of how responsible parties should prepare for and respond to such events. The Coalition for Environmentally Responsible Communities (CERES) has suggested 10 principles as a code of conduct for action in the wake of the *Exxon Valdez* event. However, local communities have also assumed new responsibility to prepare for future events and provide oversight to the transport of oil nearby to their communities.]
KEYWORDS: SOURCE_TYPE[academic book chapter]
SOCIAL_OR_CULTURAL_IDENTIFIER[Regional Citizen's Advisory Council]
REMAINDER[CERCLA, CERES, technological disaster]

CITATION[Piper, Ernest. 1997. The *Exxon Valdez* oil spill government settlement and restoration activities. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 255-256. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[The State of Alaska and the Federal Government each had interests, in some instances potentially conflicting, in legal proceedings against Exxon. Initial legal negotiations for a plea agreement between Exxon and the Federal Government were not necessarily in the State's best interests. Subsequently, this agreement dissolved, resulting in the State and Federal governments working to establish a settlement for publicly owned natural resources. Eventually, the terms of the settlement called for Exxon to pay 150 million dollars in criminal penalties and 900 million dollars in civil penalties. There was some public opposition to the settlement, in part because scientific studies about spill effects were not publicly available. A Trustee Council composed of state and federal officials was established to oversee the administration of restoration work that would be funded by funds from the Exxon settlement.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Alaska State]
EVENT_PHASE[spill, cleanup, restoration, litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Oil Spill Trustee Council, Exxon Corporation, Public Advisory Group] LITIGATION_EFFECTS[court settlement, maritime law, Clean Water Act, negligence, Rivers and Harbors Act, Migratory Bird Act]

CITATION[Rodin, Mari, Michael A. Downs, John S. Petterson, John C. Russell. 1997. Community impacts of the *Exxon Valdez* oil spill. In "The *Exxon Valdez* disaster: readings on a modern social problem," eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 193-205. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[Twenty two communities from Prince William Sound to Kodiak and the Alaska Peninsula were studied to determine the social, psychological, and economic effects of the *Exxon Valdez* oil spill and cleanup. Native and non-Native communities differed in their responses to the spill based on the availability of leadership and other community resources. Communities experienced increased demands on social services, an influx of outsiders, and other social disruptions. The nature of the cleanup by Exxon and VECO resulted in differential effects in communities depending on pre-event resources and disaster plans. Seward and Kodiak appeared to fare better than other communities because they had effective response organizations, access to external resources, and pre-existing disaster plans that were suited to this event.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Prince William Sound, Kenai Peninsula, Alaska Peninsula, Kodiak Island, Seward, Kodiak, Larsen Bay, Port

Lions, Tatitlek, Native Communities, North Pacific Rim] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon Corporation, Seward Life Action Council, deckhands association, VECO, Multi-Agency Coordinating Group, Oiled Mayors] SOCIAL_EFFECTS[social disruption, kinship, alienation, emergent groups] FAMILY_EFFECTS[unsupervised children, children] MUNICIPAL_EFFECTS[service demands, government services] REMAINDER[Oiled Mayor's Study]

CITATION[Russell, John C., Michael A. Downs, John S. Petterson, and Lawrence A. Palinkas. 1996. Psychological and social impacts of the *Exxon Valdez* oil spill. In "Proceedings of the *Exxon Valdez* oil spill symposium," eds. S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright, 867-878. Bethesda, MD: American Fisheries Society.]
ABSTRACT/ANNOTATION[This article uses quantitative and qualitative interview data from the Oiled Mayors study of 22 communities of Prince William Sound, the GOA, Kenai Peninsula, and The Alaska Peninsula to describe psychological and social impacts. Survey data are analyzed to describe the relationship between exposure measures and selected outcome measures including: family and child relations, social disruption, subsistence activities, depression, anxiety, post-traumatic stress disorder, substance abuse, and domestic violence. Analysis of the survey data indicates correlations between exposure to the oil spill and increased outcome measures. The interview data describe the social and community context of the psychological impacts, particular the relationship between the non-therapeutic community and social/psychological distress.]
KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[Kodiak Island, Prince William Sound, Kenai Peninsula, Native Communities] EVENT_PHASE[spill, cleanup, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Aleuts] SOCIAL_EFFECTS[social disruption, social cohesion, social conflict] CULTURAL_EFFECTS[sense of place, sense of community, moral discourse] FAMILY_EFFECTS[family relationships, children, domestic violence] PSYCHOLOGICAL_EFFECTS[anxiety, depression, post-traumatic stress disorder, stress, substance abuse, therapeutic community] SUBSISTENCE_ACTIVITIES[decreased subsistence activity, sharing, decreased use of subsistence foods] CULTURAL_SUBSISTENCE[sharing, enculturation, meaning systems] REMAINDER[exposure index, Oiled Mayor's Study]
CITATION[Steiner, Rick. 1997. Probing an oil stained legacy. In The *Exxon Valdez* disaster: readings on a modern social problem, eds. J.S. Picou, D.A. Gill, and M.J. Cohen, 111-114. Dubuque, IA: Kendall/Hunt Publishing Co.]
ABSTRACT/ANNOTATION[Since the oil spill there is a "new silence" in Prince William Sound that indicates the biological damage caused by the oil spill and its aftermath. Restoration has had mixed results, but there have been some notable improvements in the oil transport system. The ongoing American demand for oil continues to put places such as Prince William Sound at risk.] KEYWORDS: SOURCE_TYPE[academic book chapter] GEOGRAPHY[State of Alaska] EVENT_PHASE[spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Regional Citizens Advisory Council] REMAINDER[oil transport system]

POPULAR ARTICLES

CITATION[Alaska's Wildlife. 1993. Map of *Exxon Valdez*, Alaska, oil-spill's effect on people. Alaska's Wildlife. Formerly Alaska Fish and Game 25(1):26.]
ABSTRACT/ANNOTATION[This special issue is devoted to the biological effects of the *Exxon Valdez* oil spill. Included is a discussion of subsistence, terrestrial mammals, birds, marine mammals, habitat, shellfish, and fish. There is also a map of the oil spill's effect on people. The section on subsistence, by James Fall of the Alaska Department of Fish and Game, presents information on the level of subsistence use in Native communities, and the contamination of wildlife.]
KEYWORDS: SOURCE_TYPE[article] GEOGRAPHY[Alaska, Alaska Peninsula, Tugidak Island, Kodiak Island, Afognak Island, Katmai Coast, English Bay, Cook Inlet, Kenai, Anchorage, Kenai Peninsula, Kenai Fjords National Park, Chenega Bay, Knight Island, Herring Bay, Naked Island, Prince William Sound, Bligh Reef, Valdez, Tatitlek, Cordova, Copper River Delta, Kayak Island] EVENT_PHASE[spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaskans, fishermen, hunters, Exxon, Alaska Department of Fish and Game] ECONOMIC_EFFECTS[economic loss]
SUBSISTENCE_ACTIVITIES[contaminated resources]

CITATION[Chatterjee, Pratap. 1992. Squabble over how to spend Exxon's Valdez compensation. New Scientist 134(1816):10.]
ABSTRACT/ANNOTATION[This popular article in a science magazine indicates that environmentalists and scientists disagree about how more than $1 billion from Exxon should be spent. The scientists want more research into the long term effects of the spill, while environmentalists propose to buy a nearby forest to save it from logging.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska, Prince William Sound, Kenai Peninsula, Kodiak Island] EVENT_PHASE[restoration, litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, University of Alaska Department of Forestry, Prince William Sound Conservation Alliance, National Park Service]
ECONOMIC_EFFECTS[use of funds] LITIGATION_EFFECTS[compensation, spending of compensation]

CITATION[Davidson, Art. 1990. Valdez reflections. Sierra 75(3):42 (10 pages).]
ABSTRACT/ANNOTATION[This popular article presents reflections on the *Exxon Valdez* oil spill and cleanup a year after the spill. It notes that lingering impacts on beaches and wildlife, but anticipates that wildlife will recover. Social impacts are also mentioned, including a sense of vulnerability in those living near tanker operations. Native Alaskans depend on the sea for subsistence, and hunting and fishing are an important part of their cultural identity. Part of the article is concerned with assigning responsibility for the spill, and suggests that Exxon and other entities, such as the Coast Guard and the State of Alaska, share this role while Exxon bears ultimate responsibility. The response by Exxon was more rapid than the State of Alaska or the federal government. It concludes that current technology is inadequate to deal with a spill, especially one of this size, and that the oil companies and the Department of the Interior were not sufficiently forthright with the public and the Congress about the difficulty of recovering spilled oil.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prince William Sound, Kodiak, Katmai] EVENT_PHASE[pre-spill, spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaskans, U.S. Coast Guard,

Exxon, oil companies, Congress, Alaska State, Department of the Interior, Minerals Management Service, Alaska Legislature, Alaska Department of Environmental Conservation] SUBSISTENCE_ACTIVITIES[contaminated resources] CULTURAL_SUBSISTENCE[cultural identity]

CITATION[Dayton, Leigh. 1989. *Exxon Valdez's* human toll is still unknown. New Scientist 123(1677):23.]
ABSTRACT/ANNOTATION[This article in a popular science magazine reports that the human health risks from the *Exxon Valdez* spill are unknown. Lack of advance planning by officials and scientists are faulted, and it is noted that no plans were in place for a study of health risks in advance of the spill. In consequence, data was lost. Studies of the weathering and toxicity of oil are beginning to be reported, but the results are inconsistent.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prudhoe Bay, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Swedish Environmental Research Institute, Alaska Department of Environmental Conservation, U.S. National Institute of Environmental Health Sciences, Exxon, Alaska State, Alaska Department of Labor, National Toxicology Program of the NIEHS, Mount Sinai School of Medicine] REMAINDER[health risks]

CITATION[Drew, Lisa. 1990. Truth and consequences along oiled shores. National Wildlife 28(4):34 (9 pages).]
ABSTRACT/ANNOTATION[This popular article represents an overview of local efforts to respond to the oil spill by Alaskans, including some inventions to aid in cleanup, and the formation of organizations.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prince William Sound, Valdez, Homer, Bligh Reef, Cordova, Mars Cove, Kenai Peninsula] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Exxon, Oil Reform Alliance, Alaska Oil Spill Commission, fishermen, U.S. Coast Guard, Homer Area Recovery Commission, Alaskan Natives] SOCIAL_EFFECTS[crime, emergent groups, disruption of Native communities, subsistence-based community] ECONOMIC_EFFECTS[spillionaires] PSYCHOLOGICAL_EFFECTS[substance abuse, mental health services] SUBSISTENCE_ACTIVITIES[contamination fears, food storage]

CITATION[Graham, Frank, Jr., Leslie Ware, and Jon R. Luoma. 1989. Oilspeak, common sense, and soft science: the industry's high-powered blend of politics, public relations, and plenty of dollars obscures our knowledge of oil's environmental effects. Audubon 91(5):102 (10 pages).]
ABSTRACT/ANNOTATION[This article in a popular journal mentions the public relations efforts by oil companies, but argues that they failed to prepare and had insufficient scientific knowledge to deal with the *Exxon Valdez* spill (EVOS), especially given the special problems presented by Arctic oil spills. Previous oil spills are detailed, including Amoco Cadiz, Torrey Canyon, and Atlantic Express. Also mentioned are the effects of the spill on the environment, wildlife and the food chain.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prince William Sound, Kenai Fjords National Park] EVENT_PHASE[spill, cleanup, restoration]

SOCIAL_OR_CULTURAL_IDENTIFIER[Congress, Exxon, oil companies, National Oceanographic and Atmospheric Administration]
CITATION[Hodgson, Bryan. 1989. Alaska's big spill: can the wilderness heal? National Geographic 177(1):5-43.]
ABSTRACT/ANNOTATION[This popular article offers the author's observations of the oil spill (EVOS) and cleanup on the eighth day and five months later. The fears of locals over recovery, the extent of recovery, and questions about the duration and efficacy of the cleanup are mentioned. The article includes a detailed map of the region, and the spread of the oil. There are also sections on the technologies used for cleanup, the impact on wildlife, degradation of oil in the environment, and public entities involved in response to the spill.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Columbia Glacier, Chugach National Forest, Katmai National Park and Preserve, Prince William Sound, Evans Island, Kodiak, Alaska Peninsula, Knight Island, Herring Bay, Tugidak Island, Kenai Peninsula, Barron Island, Cape Chiniak, Sand Point, Busby Island, Green Island] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, National Oceanographic and Atmospheric Association, scientists, fishermen, U.S. Coast Guard, Alaska Department Of Fish and Game, Alaska Institute of Marine Science, Governor Steve Cowper, Division of Environmental Health, National Park Service, University of California at San Diego, Department of the Interior, National Transportation Safety Board, Pacific Area Coast Guard Strike Team, Cordova District Fishermen United, Alyeska, National Science Foundation, Environmental Protection Agency] SOCIAL_EFFECTS[emergent groups] REMAINDER[inventions]

CITATION[Matsen, Brad. 1996. The once and future spill: in the wake of 1989's *Exxon Valdez* oil spill disaster, has anything really changed? Audubon 96(4):116 (Column).]
ABSTRACT/ANNOTATION[This article in a popular magazine argues that while litigation has proceeded, little has changed to prevent a future occurrence of a similar disaster. The author argues that oil companies find loopholes in existing regulations and delay updating their technology, and regulations, for example those requiring double hulled tankers, are so vague they make enforcement difficult, and there has been no change in energy consumption practices or policies.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[oil consumers, author, oil companies, oil tankers, regulators, legislators] LITIGATION_EFFECTS[litigation as deterrent]

CITATION[Munk, Nina. 1994. We're partying hearty! Forbes 154(10):84 (5 pages).]
ABSTRACT/ANNOTATION[In this article in a popular magazine, the author argues that lawsuits have turned the oil spill into an economic bonanza for the state of Alaska, law firms, and 15,000 plaintiffs, while Exxon shareholders have lost value of their stock. The fisheries and coastline have recovered, and the author cites a book by Wheelright to the effect that some of the damage was done by the cleanup rather than the spill. This case is discussed as an example of deep pockets litigation, and examples are given of the kinds of calculations that are made to figure economic losses suffered by the plaintiffs, and the damages and punitive damages Exxon should pay. The article specifies the amounts Exxon and Alyeska have been ordered to pay to various parties and entities, and suggests that many of the claims were of questionable nature, and indicates the normal volatility of harvests and prices in the salmon fishery.]

KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska, Prince William Sound, Canada, Cordova] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[federal government, Alaska's Attorney General, fishermen, fish processors, litigants, Exxon, Alyeska, Alaska State government, Native Alaskans, Native Corporations, Kodiak Island Borough, landowners, cannery workers, municipalities, business owners, fish hatcheries, author Jeff Wheelwright, U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, Salmon Market Information Service, media] ECONOMIC_EFFECTS[economic gain, shareholder losses, Exxon losses, Alyeska losses] LITIGATION_EFFECTS[punitive damages, compensatory damages, cleanup, assessment studies, plaintiffs, defendants]

CITATION[Pain, Stephanie. 1989. Alaska has its fill of oil. New Scientist 123(1677):34 (7 pages).]
ABSTRACT/ANNOTATION[This article in a popular science magazine indicates the various scientific and technical efforts associated with cleanup of the oil spill. A computer program tracks movement of the oil and the boats, and tells Exxon how to proceed with cleanup. However some of the cleanup efforts are low-technology. The article describes the geography of the spill's spread, affected fish and wildlife, the varied approaches to cleaning beaches of oil, and describes scientists' attitudes as angry, frustrated, challenged and intrigued.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Valdez, Prince William Sound, Prudhoe Bay, Alaska, Bristol Bay, Arctic National Wildlife Refuge, Bligh Reef] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Alyeska, U.S. Coast Guard, Department of Environmental Conservation, National Oceanographic and Atmospheric Administration, University of Washington College of Fisheries, U.S. Fish and Wildlife Service, National Marine Mammal Laboratory, University of Alaska, Environmental Protection Agency]

CITATION[Raloff, Janet. 1993. Native Alaskans eschew this oily diet. Science News 143(7):110.]
ABSTRACT/ANNOTATION[This brief article in a popular science magazine considers the impact of the oil spill on the Native Alaskan diet. The Native Alaskan diet at the time of the spill included consumption of between 200 to 500 pounds of subsistence foods per person annually in villages considered in a particular study, which included mostly Alutiiq Natives. This compares to an average purchase of 220 pounds of meat, fish and poultry annually for an average American family. After the spill, there was a steep drop in subsistence harvests in the ten villages most affected. Fear of food contamination was the main reason given for avoidance in a survey of 403 homes. Subsistence includes a combination of marine mammals, fish, shellfish, birds, land mammals, and wild plants. The decrease in subsistence activities is seen to threaten Natives' nutrition, local economy, and the cultural fabric of Native Alaskan society.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Oil Spill Health Task Force, Exxon, National Oceanographic and Atmospheric Administration, Alaska Department of Fish and Game, Native Alaskans, Alutiiq] SUBSISTENCE_ACTIVITIES[marine mammals, fish, shellfish, birds, land mammals, wild plants, amounts consumed, contamination fears, decreased harvest] CULTURAL_SUBSISTENCE[culture, society]

CITATION[Shao, Maria. 1990. Everybody cleaned up: that's the problem. Business Week, n3173:24D (2 pages, column).]
ABSTRACT/ANNOTATION[This news-magazine article, a 'letter from Valdez' by the correspondent, presents a number of observations about impacts of the oil spill. As the base of a $2 billion cleanup operation, Valdez had many 'spillionaires,' from boat rentals, gasoline sales, etc. There were also losses, to civic pride, sense of tranquility, as the area was besieged by oil company workers, government bureaucrats, job seekers, and "destitute toughs." The population rose from 3,200 to 10,000, and remained larger, at 4,100, a 28% increase. Some of the increase was due to the permanent siting of spill response crews by Alyeska. Crime increased, and the arrest rate was 60% higher than pre-spill, while tourism declined 20% in 1989. Counseling centers were diagnosing post traumatic stress, and there was a ten-fold rise in cases at women's shelters.]
KEYWORDS: SOURCE_TYPE[newsmagazine article] GEOGRAPHY[Valdez] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, boat owners, Alyeska, cleanup workers, bureaucrats, residents] SOCIAL_EFFECTS[population increase, crime] CULTURAL_EFFECTS[sense of place, sense of community, civic pride, tranquility] FAMILY_EFFECTS[women's shelters] ECONOMIC_EFFECTS[spillionaires, economic loss] PSYCHOLOGICAL_EFFECTS[post-traumatic stress disorder, PTSD] MUNICIPAL_EFFECTS[traffic, crime, arrests, mayor]

CITATION[Shao, Maria. 1990. Caught in the wake of the *Exxon Valdez*. Business Week, n3172:74 (3 pages).]
ABSTRACT/ANNOTATION[This newsmagazine article discusses some of the regulatory and technological problems facing the Alyeska Pipeline Consortium in the period after the oil-spill and cleanup. The Consortium, which includes Atlantic Richfield, Exxon, Amerada Hess, Mobile, Phillips, and Unocal is facing increased regulatory distrust because of the view that their response to the spill was delayed, and because of their dispute with the Alaska Department of Environmental Conservation concerning regulations on dumping untreated ballast water from the oil tankers. The pipeline's earnings decreased 11% from the year before and are expected to decrease 4% in the current year (1990). A new Alyeska president has offered to make some consortium records available to a citizen's environmental oversight organization, and to provide funding to the organization. Alyeska's major problem is that corrosion is wearing away the 48" diameter pipes, and the company has found 827 anomalies which are mostly due to failure of the pipes' epoxy coating. An eight and a half mile section of pipe that runs through the Atigun tundra is badly affected by corrosion. (Also includes related article on Alaska's dependency on oil production).]
KEYWORDS: SOURCE_TYPE[newsmagazine article] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Alyeska president Hermiller, Alaska Department of Environmental Conservation] SOCIAL_EFFECTS[distrust, regulatory oversight] CULTURAL_EFFECTS[distrust, ethics, future risk] ECONOMIC_EFFECTS[Alyeska losses]

CITATION[Wohlforth, Charles P. 1989. Black gold: the second Alaska oil boom. New Republic 201(12-13):20 (2 pages).]
ABSTRACT/ANNOTATION[A brief overview of effects of the cleanup effort on Valdez, Alaska is provided in this popular article. The cleanup effort's effect on the economy is

compared to the economic boom during construction of the trans-Alaska pipeline. It notes that the Alaska unemployment rate, which was among the highest in the nation, fell in the two months after the spill to the lowest it had been since the 1976 pipeline construction. At the time of the spill, cuts had been made in State government, and the collapse of real estate prices had put most State banks out of business, but that the cleanup had infused an anticipated $1.2 billion into the economy. Among other impacts, it mentions increased traffic and crime, increased population, discord among co-workers about the division of financial awards, Native Alaskans concerns about the contamination of subsistence food, and the disruption of traditional society as Native Alaskans adults left the village to take part in cleanup. It mentions that the main contractor for the cleanup, Veco Inc. was guaranteed a percentage of the profit on everything spent on cleanup, and concludes that many Alaskans will look back on the cleanup with nostalgia.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Valdez, Alaska] EVENT_PHASE[1976 construction, pre-spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaskans, unemployed, fishermen, VECO, Exxon, police, Alaska State Government, bankers] SOCIAL_EFFECTS[crime, social conflict, social disruption, population increase] CULTURAL_EFFECTS[cultural persistence] FAMILY_EFFECTS[adult absence] ECONOMIC_EFFECTS[economic gain, economic loss, unemployment, distribution of cleanup money, banking industry, fishing industry] MUNICIPAL_EFFECTS[police overwhelmed, traffic] SUBSISTENCE_ACTIVITIES[contamination fears]

ACADEMIC ARTICLES

CITATION[Barinaga, Marcia. 1989. Alaskan oil spill: health risks uncovered. Science, 245(4917):463.]
ABSTRACT/ANNOTATION[This brief article in a popular and academic magazine indicates that while there has been much attention to the impacts of the oil spill on wildlife, much less attention has focused on the impact on human health, according to toxicologists and health officials at a scientific conference. Health risks to cleanup workers from fumes and contact with oil are mentioned. Further, Native subsistence fishermen generally rely on seafood for 80% of the protein in their diets, and if they continue to eat seafood it is projected they may face an increased risk of stomach cancer. The article also notes that some scientists find a discrepancy between policies adopted to ensure the safety of commercial Alaskan seafood and policies directed at Native Alaskans and their use of subsistence foods.]
KEYWORDS: SOURCE_TYPE[academic conference news bulletin] GEOGRAPHY[Prince William Sound, Alaska] EVENT_PHASE[spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Laborers International Union, Occupational Safety and Health Administration, Food and Drug Administration, Alaska Area Native Health Service, University of Alaska, National Oceanographic and Atmospheric Administration, Congress] OTHER_EFFECTS[health of cleanup workers, seafood safety policy] REMAINDER[health risks, health policies]

CITATION[Bowen, Michael and F. Clark Power. 1993. The moral manager: communicative ethics and the *Exxon Valdez* disaster. Business Ethics Quarterly, 3(2): 97-115.]

ABSTRACT/ANNOTATION[This journal article considers the business ethics surrounding the decisions made in the period leading to and following the *Exxon Valdez* oil spill. The information that managers had to make decisions, and the uncertainty of circumstances in which they were operating should be taken into account.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, spill, cleanup] REMAINDER[business ethics]

CITATION[Carson, Richard T., R.C. Mitchell, M. Hanemann, R. J. Kipp, et al. 1995. Contingent valuation and lost passive use: damages from the *Exxon Valdez*. Discussion Paper 95-02. San Diego, CA: Department of Economics, University of California, San Diego.]
ABSTRACT/ANNOTATION[This academic paper considers the validity of the 'contingent valuation' approach in the estimation of the passive use value of natural resources. Contingent valuation is a survey method for determining the economic value people assign to the availability of a resource when there is no clear market for determining the economic value. It provides people with a scenario and then asks about their willingness to pay for changes (for example resource protection) or their willingness to accept compensation for degradations in the resource. This paper reports on a project that attempted to design the best possible contingent valuation survey of the lost passive use of natural resources, taking into account and addressing criticisms that had been leveled against the methodology. The project was conducted for the State of Alaska in preparation for *Exxon Valdez* oil spill litigation. The paper reports in depth on the study design and implementation, and briefly outlines its findings. Three different methods for figuring the mean willingness-to pay are used to yield three different numbers, which represent the survey's willingness-to-pay estimate multiplied by the number of English speaking households in the U.S. These numbers are $2.75 billion (using the parametric point estimate of the median), and $4.87 billion (using a conservative estimate of the mean consistent with the density estimates of the nonparametric Turnbull estimator), and $8.83 billion (using the parimetric Weibull estimate of the mean), and are designed to represent the public's willingness to pay to prevent another *Exxon Valdez* oil spill, given the scenario posed to them.]
KEYWORDS: SOURCE_TYPE[academic paper] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, State of Alaska, economists, public] ECONOMIC_EFFECTS[lost passive use] LITIGATION_EFFECTS[litigation research, contingent valuation, lost passive use] REMAINDER[research methods]

CITATION[Cohen, Maurie J. 1993. Economic impact of an environmental accident: a time-series analysis of the *Exxon Valdez* oil spill in south-central Alaska. Sociological Spectrum, 13(1):35-63.]
ABSTRACT/ANNOTATION[This is an academic article on economic impacts of the *Exxon Valdez* oil spill. The article concludes that the overall impact of the event was economically beneficial, and compensated for a sharp reduction in the profitability of commercial fishing, though the benefits were not evenly distributed in all areas of Southcentral Alaska. The author notes that Native communities were not included in his analysis. The area of Petersburg was used as a control in the analysis.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Southcentral Alaska, Cordova, Valdez, Kenai, Petersburg] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[non-Natives, fisheries, consumers]

ECONOMIC_EFFECTS[economic gain, commercial fisheries losses, regional economic impacts]

CITATION[Cohen, Maurie J. 1995. Technological accidents and natural resource damage assessment: an evaluation of the *Exxon Valdez* oil spill. Land Economics, 71:35:63.]
ABSTRACT/ANNOTATION[This academic article presents an economic analysis of the effect of the oil spill on the fisheries of Southcentral Alaska. The author observes that fisheries provide the economic foundation for many small communities. According to the economic model used, the upper limit of the cost to the fisheries was $108 million in the first year, approximately 27% of ex-vessel value, and second year effects may have been as high as $47 million. The author states that it is unlikely that actual costs to the fisheries were this high. At the same time, there was an economic boom, and wages remitted in Valdez increased 300% over the previous year. Southcentral Alaska has three regulatory areas, Prince William Sound, Lower Cook Inlet, and Kodiak Island, and each has many fisheries, as defined by locality, species, and gear group. The five species of Pacific salmon are the most valuable fish product, representing 40% of production and 66% of ex-vessel value. The spill had different impacts on different salmon species. The economic model depends on estimating harvest volumes and ex-vessel prices for the region's fisheries that would have occurred in the absence of the accident, and the author mentions other economic and ecological factors that might have affected the fisheries.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Southcentral Alaska, Prince William Sound, Lower Cook Inlet, Kodiak Island] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fisheries, Exxon] SOCIAL_EFFECTS[natural resource community] ECONOMIC_EFFECTS[economic gain, economic loss, ex-vessel prices, harvest volume, Japanese yen, exchange rate]

CITATION[Daley, Patrick. 1991. Sad is too mild a word: press coverage of the *Exxon Valdez* oil spill. Journal of Communication, 41(4):42-57.]
ABSTRACT/ANNOTATION[News coverage of the *Exxon Valdez* event is analyzed by examining the thematic narratives in three news papers: The Anchorage Daily News (ADN), the Boston Globe (BG), and the Tundra Times (TT). The analysis argues that the political and economic concerns of dominant American society are emphasized in the ADN and BG, but subsistence concerns of Alaskan Natives are generally under-reported. Narrative themes in the ADN and BG express a disaster theme that portrays the public as victims, a "naturalization" of the event, and the paradoxical dependence of Alaskans on oil that has now resulted in disaster. Although there is a minor environmental theme, the preponderance of coverage reinforces the political and economic interests of the oil industry. In contrast, coverage of the TT emphasized subsistence issues, but it also indicates Native Alaskan's perceived Exxon's cleanup effort as more public relations rather than actual cleanup.]
KEYWORDS: SOURCE_TYPE[academic article] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, residents, public, oil industry] SUBSISTENCE_ACTIVITIES[subsistence concerns] REMAINDER[media coverage]

CITATION[Dyer, Christopher L. 1993. Tradition loss as secondary disaster: long-term cultural impacts of the *Exxon Valdez* oil spill. Sociological Spectrum, 13(1):65-88.]
ABSTRACT/ANNOTATION[This academic article looks at social and cultural impacts of the *Exxon Valdez* oil spill on Native Alaskan communities. The author argues that the cultural

impacts from the spill can evolve into a loss of traditions in Native communities, and emphasizes the importance of studying cultural effects. Observed changes include a decline in sharing and social support networks, a decline in subsistence activities, and disruption of the communal controls of natural resources. The author proposes that culture and tradition loss can be the outcomes of technological disasters, and that understanding cultural impacts is important given the expansion of First World technology into Third World settings. The researcher found that Native Alaskan communities are economically oriented toward utilizing sustainable resources, sharing subsistence resources, and communal protection and enhancement of local resources, and that these are symbolized in festivals, religion, and family and community obligations. The loss of subsistence resources caused breakdowns in cultural patterns of resource use and cooperative work and the sense of stewardship of the environment, and led to increased domestic violence, alcoholism, social dysfunction, drug abuse and child abuse.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Cordova, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] SOCIAL_EFFECTS[social support, subsistence-based community, sharing, community obligations, cooperative work] CULTURAL_EFFECTS[culture loss, cultural persistence, festivals, sense of community, sense of place, stewardship of the environment, religion, subsistence traditions] FAMILY_EFFECTS[domestic violence, child abuse, stress, role relationships] ECONOMIC_EFFECTS[commercial vs. traditional economy] PSYCHOLOGICAL_EFFECTS[substance abuse, child abuse] CULTURAL_SUBSISTENCE[culture, religion, festivals, tradition loss, stewardship of the environment.]

CITATION[Dyer, Christopher L., Duane A. Gill and J. Stephen Picou. 1992. Social disruption and the Valdez oil spill: Alaska Natives in a natural resource community. Sociological Spectrum, 12(2):105-126.]
ABSTRACT/ANNOTATION[This academic article presents a conceptual model for understanding the cultural impacts of the oil spill on Native Alaskan communities, and also presents results of a community survey conducted in 1989 and again in 1990. A natural resource community, according to this model, is a population living in a bounded area whose primary cultural existence is based on the utilization of renewable natural resources. In Cordova, commercial fisheries include salmon, herring, razor clams, halibut, crab, shrimp, rockfish, and sablefish, and subsistence involves harvest of berries, marine invertebrates, vegetation, and wild game. The article cites another report (Stratton 1989) that in a 1985 survey, 402.7 pounds of resources per household were harvested, and salmon constituted a large portion of the overall harvest. The survey found that in 1989, 58% of respondents reported disruptive changes in family relationships, many linked to the breakdown of normal family routines associated with commercial fishing and subsistence, while in 1990, only 25% reported family disruption. In 1989, 52% of respondents indicated a change in future plans, but by 1990 that number had decreased to one third. In contrast, work-related disruption increased over time, from 25% in 1989 to 50% in 1990. The increase in work-related disruption may be because some people left usual work for cleanup employment and did not return to their normal jobs the next season. The proportion of respondents who perceived change in the Cordova community increased from 3% to 75%.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Cordova, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] SOCIAL_EFFECTS[natural resource community, sharing, alienation, kinship]

CULTURAL_EFFECTS[subsistence traditions, traditional knowledge] FAMILY_EFFECTS[family relationships, family routines] ECONOMIC_EFFECTS[cleanup employment] PSYCHOLOGICAL_EFFECTS[sense of the future, alienation, stress] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, clamming, salmon, marine invertebrates, vegetation, wild game] CULTURAL_SUBSISTENCE[culture]

CITATION[Dyer, Samuel Coad, Jr., M. Mark Miller, and Jeff Bonne. 1991. Wire service coverage of the *Exxon Valdez* crisis. Public Relations Review, 17(1):27-36.]
ABSTRACT/ANNOTATION[In this academic article, stories in two media wire services are analyzed a year before the oil spill and a year after the spill, with an interest in organizational planning for crisis communications. They included 51 press releases from Business Wire and newscopy from 2091 pieces from the Associated Press. The content analysis identified terms associated with legal, environmental, and economic issues, and these were coded for frequency using a computer content analysis system, and analyzed with log-linear analysis.]
KEYWORDS: SOURCE_TYPE[academic article] REMAINDER[media coverage]

CITATION[Goldberg, Victor P. 1994. Recovery of economic loss following the *Exxon Valdez* oil spill. Journal of Legal Studies, 23:1-39.]
ABSTRACT/ANNOTATION[This academic article provides a discussion of the legal issues and arguments surrounding legal liability for damages suffered from the *Exxon Valdez* oil spill. It considers who should be able to sue for damages, and specifically outlines decisions in Robins v. Dry Dock and subsequent decisions. The author proposes that, as in the Amoco Cadiz case, the government should act as the surrogate owner of the lost access to a public resource, rather than lawsuits being pursued by individuals and groups. The government would provide relief to injured parties and sue the company for recovery of funds distributed. It suggests that the law's protections of some parties (fishermen) and not others should be seen as a political decision to provide relief.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, fishermen, litigants, federal government] LITIGATION_EFFECTS[Robins Dry Dock and Repair Co. v. Flint, Union Oil Co v. Oppen, State of La ex rel. Guste v. M/V Testbank]

CITATION[Gramling, Robert. 1992. Oil spills and policy: the *Exxon Valdez* and US petroleum energy policy. American Sociological Association.]
ABSTRACT/ANNOTATION[This is a virtually identical version of the article published in Industrial Crisis Quarterly.]

CITATION[Gramling, Robert and William R. Freudenburg. 1992. The *Exxon Valdez* oil spill in the context of US petroleum politics. Industrial Crisis Quarterly, 6(3):175-196.]
ABSTRACT/ANNOTATION[The article argues that the causal elements involved in the *Exxon Valdez* oil spill were included actions of governmental institutions as well as actions of the tanker crew and Exxon corporation. They suggest that there is in some sense a profit motive for government agencies in promoting oil extraction, and that there is a governmental interest in encouraging domestic rather than international oil extraction and use. Additionally safeguards placed on the pipeline development eroded once public attention was no longer focused on the issue.]

KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska, Valdez] EVENT_PHASE[pre-spill, spill] REMAINDER[causes of spill]

CITATION[Harrald, John R., R. Cohen, W.A. Wallace. 1992. "We were always re-organizing...": some crisis management implications of the *Exxon Valdez* oil spill. Industrial Crisis Quarterly, 6(3):197-217.]
ABSTRACT/ANNOTATION[The article takes as its starting point the organizational confusion that occurred after the *Exxon Valdez* oil spill among those charged with response. The article outlines the organizational structure that was supposed to come into play in the event of an oil spill, and describes the way these contingency plans quickly fell apart and were replaced by other organizational structures after the spill. The contrast between contingency plans and actual response patterns and organization is outlined. The important and problematic role of emergent organizations in the *Exxon Valdez* response are discussed. Recommendations are made for improving the ability to prepare for disaster response.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[U.S. Coast Guard, Exxon, Alaskan State Government, interest groups, emergent groups, federal government] SOCIAL_EFFECTS[emergent groups, response organizations, breakdown of organizational planning] REMAINDER[disaster planning]

CITATION[Holland, H. Russel. 1996. Letter. American Indian Culture and Research Journal. 20(3): 167-170.]
ABSTRACT/ANNOTATION[In this letter, Federal District Judge Holland replies to Professor Joseph Jorgensen's article, "Ethnicity, Not Culture? Obfuscating Social Science in the *Exxon Valdez* Oil Spill." Holland indicates that the decision against Native Alaskans' claims for damages was not based on social science, but rather the legal framework that defines who is eligible to seek damages. The Native claims were not granted under maritime public nuisance laws because they did not show that they suffered damages "different in kind" from the general public, since all Alaskans have the right to lead subsistence lifestyles. Claims for private nuisance were rejected because the Native Alaskans did not have a "possessory interest" in the land oiled by the spill. Further, the court decision held that even if Native Alaskans could prove their claim for nuisance, it would not be relevant, since nuisance claims under federal common law and maritime law are, in the judgement of this court, preempted by the Federal Water Pollution Control Act. The letter also disputes Jorgensen's discussion of attorneys' fees and Native versus non-Native damage awards.]
KEYWORDS: SOURCE_TYPE[academic letter] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Judge H. Russell Holland, Joseph Jorgensen, Alaskan Natives, social scientists, lawyers, courts, Exxon, State of Alaska, Native Corporations, Bohannon] LITIGATION_EFFECTS[In re the *Exxon Valdez*, federal common law, maritime law, Federal Water Pollution Control Act, Trans-Alaska Pipeline Liability Fund, Order No. 190 Id. at 10. dicta, Federal District Court]

CITATION[Jones, Jonathon D., Christopher Jones and Fred Phillips. 1994. Estimating the costs of the *Exxon Valdez* oil spill. Research in Law and Economics, 16:109-149.]
ABSTRACT/ANNOTATION[In this academic article, the author uses the *Exxon Valdez* case to examine whether the costs associated with large spills provide private incentives to oil

companies to invest in spill prevention and abatement. A stock market event analysis is used to estimate losses to Exxon stockholders from the EVOS and estimate the spill's negative external effects on the oil industry. The study found large and significant losses for Exxon, while costs to the oil companies were economically large but statistically insignificant. Further, liability laws provide firms with private incentives to invest in safeguards, but companies may underestimate the costs of a spill. The *Exxon Valdez* spill is estimated to have cost a loss in stockholder wealth of between $4.7 billion and $11.3 billion. Costs to stockholders in other oil companies after the spill, and costs resulting from factors such as increased regulation, may total as much as $9.8 billion. The study uses a broad reading of costs, and these include direct costs such as cleanup, legal fees and insurance, indirect costs such as financial liability, and repercussion or reputation costs, such as regulatory change, legislative change, and stockholder and consumer factors. The article includes a time line of events and news regarding the spill, the company and the industry, along with fluctuations in stock prices. The authors concludes that the stock market response to the Valdez spill was atypically large. This event may have brought a reassessment of expectations regarding spill frequency, and initiated changes in environmental attitudes and policies that are not likely to be duplicated in future spills.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska, Prince William Sound, Santa Barbara CA, Florida] EVENT_PHASE[spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Alyeska, oil industry, stockholders, bond market, regulators, legislators] ECONOMIC_EFFECTS[stock market, bond market, insurance rates, Exxon costs, oil industry costs] LITIGATION_EFFECTS[liability, damages] REMAINDER[legislation, regulation]

CITATION[Jorgensen, Joseph G. 1995. Ethnicity, not culture? Obfuscating social science in the *Exxon Valdez* oil spill case. American Indian Culture and Research Journal, 19(4):1-124.]
ABSTRACT/ANNOTATION[The author of this academic article argues that social science was mis-used in a lawsuit by Native Alaskans against Exxon over the oil spill. Social scientist who testified for the Natives argued that culture-loss had occurred as a result of the spill, but the author indicates that the testimony should have instead focused on Natives' responses to the consequences of the EVOS. The article criticizes the approaches of social scientists cited by the plaintiffs and those for the respondent. In the context of a broader discussion of Native culture, it argues that Native plaintiffs were ill served by social scientists who made claims on the basis of cultural impacts, and that social scientists for the plaintiffs muddied the waters. It concludes that bad social science was associated with severe results for Native Alaskans.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, social scientists, Exxon] CULTURAL_EFFECTS[culture loss, rhetoric of risk] LITIGATION_EFFECTS[failure of plaintiffs]

CITATION[Jorgensen, Joseph G. 1996. 'Ethnicity, not culture?...' A reply. Response to article by H. Russell Holland. American Indian Culture and Research Journal, 20(3):171 (5 pages).]
ABSTRACT/ANNOTATION[The author disputes the concepts of culture and tradition proposed by Holland in an academic response to another article in the same journal. The author argues that the generalizations made about culture and tradition lack evidential support.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, social scientists, Judge

H. Russell Holland, Exxon, lawyers] CULTURAL_EFFECTS[culture loss, rhetoric of risk] LITIGATION_EFFECTS[failure of plaintiffs]

CITATION[Moore, W.W. 1994. The grounding of the *Exxon Valdez* -- an examination of the human and organizational factors. Marine Technology and News, 31(1):41-51.]
ABSTRACT/ANNOTATION[This academic article notes that in high consequence, low probability technological disasters, human and organizational factors are often causative. The author observes that the complexity and limitations of the technology are often not well understood by the operators. The specific human and organizational factors that can lead to technological disasters are proposed.]
KEYWORDS: SOURCE_TYPE[technical article] GEOGRAPHY[Bligh Reef, Prince William Sound] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaska Board of Marine Pilots, State Pilot Association, Southwest Pilots Association, tanker crew, Exxon, U.S. Coast Guard.]

CITATION[Palinkas, Lawrence A., John S. Petterson, John C Russell, and Michael A. Downs. 1993. Community patterns of psychiatric disorders after the *Exxon Valdez* oil spill. American Journal of Psychiatry, 150(10):1517 (7 pages).]
ABSTRACT/ANNOTATION[This academic article presents a study on psychological impacts of the *Exxon Valdez* oil spill carried out one year after the spill. Symptoms of generalized anxiety disorder and post traumatic stress disorder were assessed using the National Institute of Mental Health Diagnostic Interview Schedule, and depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES-D). Research employed a community survey of 599 men and women in thirteen Alaska communities. The one-year prevalence of symptoms in communities with all degrees of exposure was 20.2% for generalized anxiety disorder and 9.4% for post traumatic stress. The prevalence of respondents with CES-D Scale scores above 16 and 18 was 16.6% and 14.2% respectively. Those who had a high exposure to the spill and cleanup were 3.6 times likelier to have generalized anxiety disorder, 2.9 times likelier to have post traumatic stress, they were 1.8 times as likely to have a CES-D Scale score of 16 and above and 2.1 times as likely to have a score of 18 and above. Women more often suffered these conditions, and Native Alaskans were more likely to suffer depressive symptoms. Implications for mental health and primary care are discussed.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[13 Alaska communities] EVENT_PHASE[cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, women, Alaskans] PSYCHOLOGICAL_EFFECTS[post-traumatic stress disorder, PTSD, generalized anxiety disorder, depression]

CITATION[Palinkas, Lawrence A., Michael A. Downs, John S. Petterson, and John C. Russell. 1993. Social, cultural, and psychological impacts of the *Exxon Valdez* oil spill. Human Organization, 52(1):1 (13 pages).]
ABSTRACT/ANNOTATION[This academic article considers the psychological and sociocultural impacts of the *Exxon Valdez* spill, and reports the results of a population-based study of 594 men and women living in 13 Alaska communities a year after the spill. The study found a dose-response relationship between exposure to the spill and cleanup activities and declines in traditional social relations with coworkers, friends, neighbors, and family, as well as a decline in activities associated with subsistence production and distribution, along with a

perceived increase in problems connected to substance abuse and domestic violence, and a decline in perceived health status along with an increase in diagnosed medical conditions. Further, the study found post traumatic stress, generalized anxiety disorder, and depression. Those most at risk for the psychiatric disorders were Alaskan Natives, women, and those 18-44 years old.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alaskans, women, adults] SOCIAL_EFFECTS[social disruption, demographic characteristics, kinship, friendships, crime] FAMILY_EFFECTS[family relationships, domestic violence] PSYCHOLOGICAL_EFFECTS[post-traumatic stress disorder, PTSD, generalized anxiety disorder, depression, substance abuse, sense of health] OTHER_EFFECTS[increased diagnosis of medical problems, decline in perception of health] SUBSISTENCE_ACTIVITIES[decreased harvest, sharing] CULTURAL_SUBSISTENCE[sharing]

CITATION[Palinkas Lawrence A., John C. Russell, Michael A. Downs, and John S. Petterson. 1992. Ethnic differences in stress, coping, and depressive symptoms after the *Exxon Valdez* oil spill. Journal of Nervous and Mental Disease, 180(5):287-295.]
ABSTRACT/ANNOTATION[This academic article reports research on depressive symptoms in a sample of 188 Alaskan Natives and 371 Euro American residents of three Alaska communities. Equal proportions of Natives and Euro Americans lived in affected and control communities. The study found ethnic differences in the association between depressive symptoms and exposure to the spill and cleanup. Symptoms were measured with the Center for Epidemiological Studies Depression Scale. Natives had a significantly higher mean Exposure Index score than did Euro Americans, and were more likely to report that they had worked on the cleanup, and suffered from the damage to commercial fishing and subsistence activities. For Natives, depression was related to participation in cleanup and other oil contact, while among Euro Americans depression was related to damage to commercial resources, their use or residence in areas affected by the spill. Family support provided a better buffer for Euro Americans than for Natives. The two ethnic groups were different in the degree and kind of exposure they reported, in their evaluation of the events as stressful, and the level of depression measured in the two groups. The cultural significance of the spill, and the threat to Native culture and personal identity associated with culture were factors. There was no difference between Natives living in different areas, and no significant difference among Native groups including Aleuts, Athapaskan Indians, Southeast Coast Indians, and other groups.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska, three communities] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Euro Americans, Aleuts, Athapaskan Indians, Southeast Coast Indians] FAMILY_EFFECTS[family support] ECONOMIC_EFFECTS[commercial fishermen] PSYCHOLOGICAL_EFFECTS[depressive symptoms, coping mechanisms] SUBSISTENCE_ACTIVITIES[contaminated resources] CULTURAL_SUBSISTENCE[culture, identity]

CITATION[Picou, J. Steven, D.A. Gill, C.L. Dyer, E.W. Curry. 1992. Disruption and stress in an Alaskan fishing community: initial and continuing impacts of the *Exxon Valdez* oil spill. Industrial Crisis Quarterly, 6(3):235-257.]

ABSTRACT/ANNOTATION[The article argues that communities dependent on the use of renewable natural resources are more vulnerable to the impacts of disasters that contaminate those resources. It compares the city of Cordova, Alaska with an Alaskan community unaffected by the spill, and finds long term impacts such as social disruption and stress in Cordova.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Cordova, Petersburg] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, Alaskan Natives] SOCIAL_EFFECTS[social conflict] CULTURAL_EFFECTS[sense of community] FAMILY_EFFECTS[family relationships] ECONOMIC_EFFECTS[economic loss, work disruption] SUBSISTENCE_ACTIVITIES[contamination fears] CULTURAL_SUBSISTENCE[sharing]

CITATION[Quarm, Darrin J. 1992. Right to subsist: the Alaska Natives' campaign to recover damages caused by the *Exxon Valdez* spill. The Georgetown International Environmental Law Review, 5: 177-213.]
ABSTRACT/ANNOTATION[This academic article examines the legal issues involved in lawsuits brought by Native Alaskan corporations against Exxon. This article reviews the actions taken by Native Corporations against Exxon, and discusses key players, the legal strategies employed by key players, and evaluates those strategies and their results. The author mentions that damage to the wildlife of Prince William Sound damaged the Natives' subsistence activities and the subsistence lifestyle, including social and cultural traditions, economics, sense of pride and cultural identity, self reliance, cooperation and family and community responsibility. The bulk of the article presents the legal context and legal arguments made by concerned parties.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska, Prince William Sound] EVENT_PHASE[spill, cleanup, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, federal government, Alaska State, Native Corporations, litigants, Chenega Corporation, Port Graham Corporation, English Bay Corporation, Alyeska, environmental groups, Department of the Interior, U.S. District Court, Department of Justice, Sierra Club Legal Defense Fund, National Resources Defense Council, Trustees for Alaska, National Audubon Society, Environmental Defense Fund, National Wildlife Federation, Wilderness Society] PSYCHOLOGICAL_EFFECTS[post-traumatic stress disorder] LITIGATION_EFFECTS[Alaska Native Claims Settlement Act, Alaska National Interest Land Conservation Act, Marine Mammal Protection Act, Oil Pollution Act] SUBSISTENCE_ACTIVITIES[subsistence activity] CULTURAL_SUBSISTENCE[lifestyle, traditions, economics, pride, identity, self reliance, cooperation, family and community responsibility]

CITATION[Rodin, Mari, M. Downs, J. Petterson, J. Russell. 1992. Community impacts resulting from the *Exxon Valdez* oil spill. Industrial Crisis Quarterly, 6(3):219-234.]
ABSTRACT/ANNOTATION[This academic article considers the social effects associated with the *Exxon Valdez* oil spill and by the cleanup efforts. Three factors influencing impacts were the environmental damage caused by the accident, the influx of large sums of money into the community, and the manner in which cleanup entities operated. The article suggests that management strategies used during the cleanup undermined community social structures in Native communities. It also finds and that a community's technical and administrative resources were important variables in it's ability to find additional resources and help.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska, Kodiak, Seward, Valdez, Old Harbor, Ouzinkie, Tatitlek, Larsen Bay, Kenai Peninsula Borough]

EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[cleanup workers, Exxon, Alaskan Natives, Deckhands Association, VECO, commercial fishermen, Seward Life Action Council, Alaska Department of Environmental Conservation] SOCIAL_EFFECTS[emergent groups, social organization, social conflict] CULTURAL_EFFECTS[sense of place, Native culture, cultural persistence] FAMILY_EFFECTS[domestic violence, unsupervised children] PSYCHOLOGICAL_EFFECTS[substance abuse, domestic violence, crime, mental health services] MUNICIPAL_EFFECTS[fiscal impacts, delayed work] SUBSISTENCE_ACTIVITIES[contaminated resources] CULTURAL_SUBSISTENCE[social structure] REMAINDER[vulnerability of traditional communities]

CITATION[Shaw, D. and H. Bader. 1996. Environmental science in a legal context: the *Exxon Valdez* experience. Ambio, Nov. 25(7):430-434.]
ABSTRACT/ANNOTATION[This academic article examines the existing legal framework of governmentally supported scientific research on incidents such as the *Exxon Valdez* oil spill. It notes that the government gathered data on the environmental consequences of the incident, most as part of a legally mandated process that limits the information gathering to specific studies designed to help determine injury and biological restoration. With respect to the *Exxon Valdez* case, the article observes that the damage assessment process was not designed to study effects of the incident in any broad sense. The constraints on data collection limited the ability of state and federal government to demonstrate natural resource injury, and the delays associated with defining the scope of damage assessment meant that research opportunities were lost. It argues for changing the reliance on ecological baseline data, and proposes that a different legal context, one of mitigation rather than restoration, would have advantages.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[State of Alaska, US, Prince William Sound, Aleutian Islands] EVENT_PHASE[spill, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Department of the Interior, National Park Service, Exxon, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, Alaska Legislature] LITIGATION_EFFECTS[CERCLA, Oil Pollution Act, Public Trust Doctrine, Maryland v. Amerada Hess Corporation, Maine v. M/V Tamanol, In re Steuart Transportation Corporation, Clean Water Act, Marine Mammal Protection Act, public trust resources]

CITATION[Smith, Conrad. 1993. News sources and power elites in news coverage of the *Exxon Valdez* oil spill. Journalism Quarterly, 70(2):393-403.]
ABSTRACT/ANNOTATION[In this academic article, the author analyzed sources named in six months of coverage of the *Exxon Valdez* spill by the New York Times, the Los Angeles Times, the Washington Post, and the Anchorage Daily News. The interest was in the relative success of elite and non-elite sources in access to media, and how the three major elites identified and framed the story. The study looked at 483 stories written by 116 different journalists, and identified 1,439 sources including government, oil industry, scientists, fishermen, environmentalists, affected business, individuals, animal rescue, oil experts, legal experts and media observers. The study concludes that sources named by more than one news organization were part of powerful institutional elites, i.e. organized economic or political groups with a vested interest in how the spill was reported. It further concludes that sources from the three elites had different perspectives and were not equally satisfied with the way the story was reported, though satisfaction was not related to media access.]

KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[New York Times, Los Angeles Times, Washington Post, Anchorage Daily News, journalists, oil industry, scientists, fishermen, environmental groups, businesses, public, media] REMAINDER[media coverage]

CITATION[Special report (on the 1989 *Exxon Valdez* oil spill, Prince William Sound, Alaska). In The Amicus Journal. Vol. 11, no. 3 (summer 1989). *(NOTE: this 'special report' essentially consists of five separate articles within this volume; these are each annotated below)*]

CITATION[Borrelli, Peter. 1989. Troubled waters. (p.10-20) The Amicus Journal. Vol. 11, no. 3 (summer 1989)]
ABSTRACT/ANNOTATION[This article provides a description of the locales, landmarks, and entities involved in response to the *Exxon Valdez* oil spill.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prince William Sound, Cordova, Eastern and Northern Districts, Chugach Mountains, Valdez, Columbia Glacier, Kenai Peninsula, Kodiak Island, Southwestern District, Montague District, Perry, Culross, Naked Islands, Arctic National Wildlife Refuge, Bristol Bay, Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Cordova District Fishermen United, Aquaculture Corporation, National Marine Fisheries Service, scientists, Alaska Department of Fish and Game, U.S. Forest Service, Exxon, National Oceanographic and Atmospheric Administration, Governor Steve Cowper] LITIGATION_EFFECTS[CERCLA.]

CITATION[Schmidt, Susan. 1989. The oil doctors. (p.21-23) The Amicus Journal. Vol. 11, no. 3 (summer 1989)]
ABSTRACT/ANNOTATION[This article discusses government scientific response, especially response by NOAA, to the oil spill. It mentions that NOAA is one of fifteen government agencies that deal with oil spills.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska] EVENT_PHASE[cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, scientists, National Oceanographic and Atmospheric Administration, National Response Center, U.S. Coast Guard, Environmental Protection Agency]

CITATION[Seligman, Dan. 1989. The accident that wanted to happen. (p.21-23) The Amicus Journal. Vol. 11, no. 3 (summer 1989)]
ABSTRACT/ANNOTATION[The subtitle of this article is "how big oil, Congress, and the Nixon Administration scuttled NEPA and a Canadian pipeline alternative in favor of the trans-Alaska pipeline," and it discusses the context in which the decision was made to site the pipeline in Alaska, including the energy shortage, and political and legal battles over siting.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Alaska, Canada] EVENT_PHASE[pre-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Congress, Senate, Nixon Administration, U.S. Coast Guard, Department of the Interior, Wilderness Society, Environmental Defense Fund, Friends of the Earth, National Resources Defense Council, Exxon, oil companies]

CITATION[Hall, Vicki. 1989. Dear Mom. (p. 28-29). The Amicus Journal. Vol. 11, no. 3 (summer 1989)]

ABSTRACT/ANNOTATION[This is a personal account written by a woman in Cordova who works as a longshoreman. Her observations of the spill and her emotional response and concerns about the future of the area are described, and dated April 25, 1989.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Cordova, Aleutian Chain, Kodiak] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[longshoremen, Exxon]

CITATION[Price, Jess. 1989. Snake oil. (p.30) The Amicus Journal. Vol. 11, no. 3 (summer 1989)]
ABSTRACT/ANNOTATION[The author interviews Dept. of the Interior Secretary Manuel Lujan about the future plans for the Wildlife Refuge, lease sales, and regulatory items such as inspections and response teams, in the wake of the *Exxon Valdez* spill.]
KEYWORDS: SOURCE_TYPE[popular article] GEOGRAPHY[Prince William Sound, Arctic National Wildlife Refuge] EVENT_PHASE[cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Bush Administration, Department of the Interior, Manual Lujan Secretary of the Interior, Environmental Protection Agency, Department of Commerce, Office of Management and Budget, National Academy of Sciences, U.S. Coast Guard.]
CITATION[Tierney, Kathleen J. and E.L. Quarantelli. 1992. Social aspects of the *Exxon Valdez* oil spill. Industrial Crisis Quarterly, 6(3):167-173.]
ABSTRACT/ANNOTATION[This introductory editorial precedes a series of articles on the *Exxon Valdez* oil spill in a special issue of the journal. Following a brief summary of the articles contributing to the special issue, the authors argue that scientific research and reporting were constrained following the spill by gag orders associated with lawsuits, and by efforts to subpoena data collected under promises, and "Human Subjects/IRB" requirements, of confidentiality. It concludes that the power of science in our society is very fragile compared to the power of the state and the corporation.]
KEYWORDS: SOURCE_TYPE[academic editorial] GEOGRAPHY[Alaska]
SOCIAL_OR_CULTURAL_IDENTIFIER[scientists, corporations, government, human subjects] LITIGATION_EFFECTS[litigation and scientific research]

CITATION[Tolbert, Miles. 1990. The public as plaintiffs: public nuisance and federal citizen suits in the *Exxon Valdez* litigation. Harvard Environmental Law Review, 14(2):511-527.]
ABSTRACT/ANNOTATION[The author of this academic article suggests that novel legal approaches have emerged in response to the *Exxon Valdez* spill, and that these approaches might change the nature of future environmental litigation. The article compares two lawsuits brought by environmental groups against Exxon, suits that used two different legal strategies. One suit used common law public nuisance doctrine, while the other used modern environmental statutes. The efficacy and limitations of the two approaches are discussed.]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[environmental groups, Alyeska, Exxon, U.S. District Court, National Wildlife Federation, Wildlife Federation of Alaska, Natural Resources Defense Council, Environmental Protection Agency] LITIGATION_EFFECTS[Federal Water Pollution Control Act, Resource Conservation and Recovery Act, CERCLA, Sierra Club v. Morton, Save Sand Key Inc. v. US Steel Corp., Akau v. Olohana, Trustees for Alaska v. State, Sierra Club v. Exxon Corp, Clean Water Act]

CITATION[Wooley, Christopher B. 1995. Alutiiq cultures before and after the *Exxon Valdez* oil spill. American Indian Culture and Research Journal, 19(4):125 (29 pages).]
ABSTRACT/ANNOTATION[The author of this academic article disputes the view proposed by other research that the spill and disruption of subsistence activities led to a loss of culture among Alaskan Natives. Instead, the author argues that the spill provided an impetus for the Alutiiq people to become more aware of their cultural identity and political power, and gain increased sense of self-worth. More generally, it argues that culture is never static and that change is ongoing. It criticizes surveys and baseline studies that attempt to define a culture at a given time in order to quantify culture change. It proposes that major events are often treated the cause of change that is actually ongoing, and argues that the spill could be treated as the scapegoat for the many changes in Alutiiq culture in the twentieth century]
KEYWORDS: SOURCE_TYPE[academic article] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alutiiq] SOCIAL_EFFECTS[political power, ethnic pride] CULTURAL_EFFECTS[cultural persistence, cultural identity] ECONOMIC_EFFECTS[wage labor] PSYCHOLOGICAL_EFFECTS[self-worth, cultural identity] SUBSISTENCE_ACTIVITIES[subsistence activity] CULTURAL_SUBSISTENCE[absence of impact on culture]

REPORTS

CITATION[Agler, B.A., P.E. Seiser, S.J. Kendall, and D.B. Irons. 1994. Marine bird and sea otter population abundance of Prince William Sound, Alaska: trends following the T/V *Exxon Valdez* oil spill, 1989-93. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93045). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194873).]

CITATION[Agler, B.A., S.J. Kendall. P.E. Seiser, and D.B. Irons. 1995. Marine bird and sea otter abundance of Prince William Sound, Alaska: trends following the T/V *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 94159). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194881).]

CITATION[Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160.]
ABSTRACT/ANNOTATION[This report is based on research in twenty-one communities in four Alaska locales, conducted during 1992, 1993, and 1994. The research was directed at understanding the sociocultural impacts of resource development in Alaska's Outer Continental Shelf, and especially the impacts on subsistence use of wildlife and fish. The *Exxon Valdez* spill is one topic addressed in this broader study of oil development. Two interview instruments were employed, a "harvest survey questionnaire" and a "social effects questionnaire." Separate chapters provide results of research in each community, and clear differences emerge among the communities, based on ethnic composition, economic base, proximity to the spill and damage to the environment. In an earlier study, the researchers found that the spill had an important impact on subsistence activities and related sociocultural systems, and that the degree of social and subsistence impacts followed the geography of the spill and the persistence of environmental

damage. The most environmentally affected areas were also the most affected in terms of subsistence and social impacts. This pattern of impacts continued during the present study. In some communities, impacts included decreased sharing of wild foods, less participation of children in subsistence activities, less satisfaction with living in the community, a belief that there is less subsistence activity, and that the populations of fish and wildlife that provide subsistence base had declined. There were also fears of food contamination, and doubts about the health of the environment. These perceived declines in wildlife populations and vitality of the environment are viewed as unexplained, and constitute a source of lingering uncertainty about the future. The prolonged litigation over Native claims, and the judicial decisions made with respect to the legitimacy of Native claims, constitute another social impact. *(NOTE -- individual volumes/chapters of this work are separately annotated given the rich nature of their content)*]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Chenega Bay, Cordova, Tatitlek, Valdez, Prince William Sound, Kenai, Nanwalek, Port Graham, Seldovia, Cook Inlet, Akhoik, Karluk, Kodiak, Larsen Bay, Old Harbor, Ouzinkie, Port Lions, Kodiak Island Borough, Chignik Bay, Chignik Lake, Alaska Peninsula, Arctic region, Kotzebue, Kaktovik, Kivalina, Nuiquist] EVENT_PHASE[spill, cleanup, restoration, litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, fishermen, hunters, sportsmen, subsistence resource users] SOCIAL_EFFECTS[subsistence-based community]
CULTURAL_EFFECTS[sense of place, sense of community, risk perception]
FAMILY_EFFECTS[children, sharing, domestic violence, role relationships]
ECONOMIC_EFFECTS[economic gain, economic loss] PSYCHOLOGICAL_EFFECTS[substance abuse, fear about future] LITIGATION_EFFECTS[Native lawsuits]
SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, decreased harvest, contamination fears, deer, harbor seals, sea lions, sea ducks, clams, seals, salmon, halibut, clams, bidarkies, octopus] CULTURAL_SUBSISTENCE[sharing, enculturation, uncertainty about future]

CITATION[Jody and James A. Fall. 1995. Cordova. *In* Volume II: Prince William Sound. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160.]
ABSTRACT/ANNOTATION[Commercial and subsistence harvests in Cordova declined over the three years of the study. In 1993 approximately 20% of households blamed the *Exxon Valdez* spill for the reduced subsistence, while a larger proportion of Natives in Prince William Sound and Cook Inlet held this view. There was general opposition to continued resource development, and the majority said they liked living in Cordova less than before, because of financial troubles, stress, and uncertainty about the future.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Cordova, Prince William Sound, Cook Inlet] EVENT_PHASE[spill, cleanup, restoration, litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] ECONOMIC_EFFECTS[reduced harvest] PSYCHOLOGICAL_EFFECTS[stress, fear about future]
SUBSISTENCE_ACTIVITIES[decreased harvest]

CITATION[Miraglia, Rita A. and Lisa Tomrdle. 1995. Valdez.. *In* Volume II: Prince William Sound. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160.]
ABSTRACT/ANNOTATION[The authors observe that there are socio-demographic differences between Valdez and some of the other communities studied, since it is an urban community, a portion of the economy is based in the oil industry, there is relatively little subsistence use of resources while recreational hunting and fishing are more common, and the community is predominately non-Native. Further, the *Exxon Valdez* spill did not contaminate the Port of Valdez. Valdez residents were more likely to compare the *Exxon Valdez* spill to the pipeline construction of the 1970's, while other Prince William Sound communities more often compared the spill to the 1964 earthquake, and the theme was economic boom rather than disaster. In contrast to other communities, most Valdez respondents did not report that there were fewer subsistence resources. A few interviewees thought clams were unsafe for children, and associated this unsafety to oil pollution and contamination, but long-time residents often cited chronic pollution from the pipeline terminal rather than the *Exxon Valdez* spill. Respondents in Valdez reported less social impact from the spill than did respondents in other communities.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Valdez] EVENT_PHASE[pre-spill, spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[sportsmen, non-Natives, residents] ECONOMIC_EFFECTS[economic gain]

CITATION[Seitz, Jody and Rita Miralgia. 1995. Chenega Bay. *In* Volume II: Prince William Sound. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160.]
ABSTRACT/ANNOTATION[While there was an increase in harvests in the years 1991-1993 over levels in 1989-1991, some effects of the spill continued into 1994. Harvests of land mammals, birds, and marine mammals were below expectations, and there was a shift to harvesting of fish. Since there were fewer local resources, and there were continued contamination fears about local resources, subsistence activity was associated with travel to new areas. Respondents asserted that resource use was below levels prior to the spill, and the majority said that deer, harbor seals, sea lions, sea ducks, and clams had declined in numbers. The authors report that contamination fears persisted in Chenega Bay more than in any other community studied. Respondents also indicated that they did not feel well enough informed, and they said there was less sharing of resources, and a third of respondents believed that the spill had affected children's participation in subsistence. In the first year of the study, half the respondents reported they liked living in Chenega Bay less since the spill.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Chenga Bay] EVENT_PHASE[pre-spill, spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, resource users] SOCIAL_EFFECTS[subsistence-based community, sharing, cooperative work, information sources] CULTURAL_EFFECTS[sense of community, sense of place, risk communication] FAMILY_EFFECTS[role relationships, enculturation] SUBSISTENCE_ACTIVITIES[

decreased harvest, deer, harbor seals, sea lions, sea ducks, clams, contamination fears , travel to new areas, increased effort, shift from mammals to fish.]

CITATION[Seitz, Jody, and James A. Fall. 1995. Tatitlek. *In* Volume II: Prince William Sound. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[The authors write that Tatitlek is one of the communities that continues to be most affected by the spill, as evidenced in reduced harvests despite the greater effort put into subsistence activity. The report notes the cultural values which give responsibility to those who take part in subsistence activities for providing for dependents, and an ethic that they must not return without something to share. The failure of the herring run in 1993 and 1994 and a herring virus made a prized food unavailable and had added cultural significance, since it is associated with spring and the renewal of life, and is seen as a sign of environmental health and the persistence of Alutiiq subsistence culture. Five households had left the small community of Tatitlek by 1994, and three of them were considered important harvesters. There were additional expenditures of time and labor as people traveled farther to harvest.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Tatitlek] EVENT_PHASE[pre-spill, spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alutiiq] SOCIAL_EFFECTS[sharing, emigration, subsistence-based community] CULTURAL_EFFECTS[traditional knowledge, cultural persistence, risk perception] SUBSISTENCE_ACTIVITIES[herring, decreased harvest]

CITATION[Tomrdle, Lisa, Lisa Hutchinson-Scarbrough, and Ronald T. Stanek. 1995. Kenai. *In* Volume III: Lower Cook Inlet. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[The *Exxon Valdez* spill had little or no direct impact on Kenai, according to respondents interviewed for this report. The oil and gas industry are important parts of the Kenai economy, while the subsistence use of resources is not common. Wildlife and fishery resources are part of the area's commercial fishing, and recreational hunting and fishing are part of the tourism industry. According to one interview with a counselor, the presence of sudden wealth from the cleanup may have contributed to social problems such as divorce, violence, and substance abuse. Most respondents were unaffected by the spill and were unaware of impacts from the spill, and they favored continued oil development. Only a small portion of respondents worked in fisheries or as fishermen, or were Alaskan Native, and respondents in these categories identified themselves as being more affected by the spill, and they noted economic impacts. Some residents expressed sympathy for Exxon in the ongoing litigation.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kenai] EVENT_PHASE[spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[oil industry employees, fishermen, fisheries workers, tourists, Alaskan Natives] FAMILY_EFFECTS[divorce] ECONOMIC_EFFECTS[economic gain, commercial fisheries, tourism industry] PSYCHOLOGICAL_EFFECTS[divorce, violence, substance abuse] LITIGATION_EFFECTS[sympathy for Exxon]

CITATION[Stanek, Ronald T, Lisa Tomrdle, and James A. Fall. 1995. Seldovia. *In* Volume III: Lower Cook Inlet. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[Social impacts differed in Seldovia and the other two Kenai Peninsula communities included in the Technical Report 160 study series, despite the fact that the three communities have a similar history. In comparison to the other two Kenai Peninsula communities, relatively few households in Seldovia mentioned lowered harvest levels, reduced sharing of resources, or less participation in subsistence activities by children. And comparatively few mentioned decreased populations of subsistence resources or fears of food contamination. The researchers suggest that this difference may be associated with the lesser degree of oiling in the area of Seldovia and the lesser degree of observed decline in subsistence resources. Yet around half of the residents believed oil development in the outer continental shelf would result in damage to the fish and wildlife. A population of near 500 includes about a third Alaskan Natives. Commercial fishing provided the economic base for many years, but this industry declined sharply during several years prior to the spill. Tourism has provided some diversification, and the permanent location of a spill response team in Seldovia after the spill increased the oil and gas sector of the community and economy. Seldovia is an incorporated community, but is not connected by roads to other parts of the State. There was a high degree of reliance on wild resources for subsistence, and wild resource harvesting included most Seldovia residents. Harvested resources included berries and plants for food and medicinal purposes, fish, marine invertebrates, land and sea mammals for food.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Seldovia, Nanwalek, Port Graham, Kenai Peninsula] EVENT_PHASE[pre-spill, spill, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Natives, commercial fishermen, children] SOCIAL_EFFECTS[subsistence-based community, sharing] CULTURAL_EFFECTS[sense of place, sense of community] FAMILY_EFFECTS[enculturation] ECONOMIC_EFFECTS[commercial fisheries, tourism industry, subsistence economy, economic gain, economic loss] SUBSISTENCE_ACTIVITIES[increased harvest, resource availability]

CITATION[Stanek, Ronald T. 1995. Port Graham. *In* Volume III: Lower Cook Inlet. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[Port Graham has a population of around 160, with about 85% of the residents Native Alaskan. Like Seldovia, another Kenai Peninsula community, Port Graham did not have roads connecting it to the rest of the State, but was accessible by boat and small airplane. The commercial fishing industry was the major economic sector in Port Graham prior to the oil spill, but after the spill the local cannery closed and salmon runs declined, leading to a significant decrease in the importance of the commercial fishing industry. The economy diversified somewhat after the spill, with work in small construction projects, logging, a salmon hatchery and more, but many young job seekers had to leave Port Graham to find employment.

Commercial fishing continued to be the largest source of employment, and to represent the major source of household earned income. The chapter indicates the kinds and quantities of resources harvested for subsistence use, sharing, medicinal purposes, and the amounts and kinds of fish taken from commercial activities for home use. Community members were asked to assess the amounts of wild resources they had used in 1991/92 in comparison to 1990, and in comparison to the year prior to the spill. For marine resources, around half of the respondents indicated that they used less in 1991/92 than before the spill, a moderate number indicated that they used the same amount, and the fewest respondents said that they used more marine resources than before the spill. In contrast, more respondents indicated that they used the same amounts of land based resources such as birds, plants, and land mammals in 1991/92 and before the spill. Reported resource use levels were more similar in 1990 and 1991/92, than when comparing either year to the year prior to the spill. The composition of the wild resource harvest was relatively consistent during the six year period of study, despite the oil spill. This consistency is attributed to established harvest practices, cultural preferences, access and affinity to traditional harvest areas, and abundant resources, and to the fact that the oiling of Port Graham did not have as severe an impact on harvests as some other areas. Respondents expressed some concern about food safety after the spill, and thought there were fewer resources available, and less sharing. They also liked their communities less.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kenai Peninsula, Port Graham, Nanwalek, Seldovia, Cordova, Chenega Bay, Kodiak] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Russian] SOCIAL_EFFECTS[subsistence-based community, sharing, emigration] CULTURAL_EFFECTS[sense of place, sense of community] ECONOMIC_EFFECTS[economic loss, commercial fishing, economic diversification, unemployment, subsistence economy] SUBSISTENCE_ACTIVITIES[fishing, hunting, gathering, resource availability, medicinal plants, preservation methods] CULTURAL_SUBSISTENCE[medicinal plants, traditional locales, resource preferences]

CITATION[Stanek, Ronald T. 1995. Nanwalek. *In* Volume III: Lower Cook Inlet. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[At the time of this study, Nanwalek had a population of around 162, approximately 90% Native Alaskan. Residents were more isolated than the other two Kenai Peninsula communities, and placed greater importance on maintaining their customs and traditions. There were few economic opportunities, but subsistence and traditional culture were attractions for residents. The economy has moved almost completely away from commercial fishing (due to low escapements and the closing of a cannery in Port Graham) to reliance on temporary jobs in construction, with additional sectors in logging, services, and local government. Half of the respondents considered their financial situation the same as before the spill, and a third judged it to be worse despite revenue from the cleanup. Resource harvest levels dropped by half in 1989, the year of the spill, over levels in 1987, and the types of items harvested also decreased by half. Harvest amounts and kinds recovered in 1990-92. More marine than non-marine resources were discarded due to abnormal appearance and fear of contamination. Confidence in the safety of resources increased in the years after the spill, while

employment opportunities decreased. Residents observed decreases in seal and sea lions, and helped to clean heavily oiled beaches. Participation in subsistence activities by children was significantly affected by the oil spill, this impact was more widespread in Nanwalek than in some other communities. The researcher observes that many Nanwalek adults took cleanup jobs that kept them from the community for long periods and meant that Nanwalek children did not work with their parents to obtain subsistence resources. The reported sharing of subsistence resources also declined after the spill, but in the third year after the spill sharing levels increased.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Nanwalek, Kenai Peninsula, Port Graham, Seldovia, Kachemak Bay, Cook Inlet] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, children] SOCIAL_EFFECTS[subsistence-based community, sharing] CULTURAL_EFFECTS[sense of place, traditional knowledge, customs, enculturation] FAMILY_EFFECTS[parent absence] ECONOMIC_EFFECTS[economic decline, cleanup employment, subsistence economy, village economy, economic diversification, temporary employment] SUBSISTENCE_ACTIVITIES[resource availability, harvest amounts, species, increased reliance on subsistence] CULTURAL_SUBSISTENCE[sharing, enculturation]

CITATION[Mishler, Craig, Rachel Mason, and Jeffrey Barnhart. 1995. Kodiak. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 160]
ABSTRACT/ANNOTATION[The history of Kodiak City is briefly reviewed, and it is described as part rural and part urban, with a city population of over 6,000, with 14.2% Native Alaskan. The wider area of Kodiak included in this study had a population of around 10,000. Over 25% of the residents were newcomers, and had arrived in Kodiak after the *Exxon Valdez* oil spill. Around 8% of the residents were employed by the Federal government, and many were part of a nearby Coast Guard base. Commercial fishing is the major economic sector, and Kodiak was the number one seafood port in 1981 and 1988. Commercial fisheries also contributes to subsistence use, and fishermen use or share part of their commercial catch. The cost of living in Kodiak was relatively high in the early 1990's, and was higher according to some measures than Anchorage or Seattle. Kodiak residents harvested and used a large number of subsistence resources. The report does not distinguish between sports harvest and subsistence harvest by Native Alaskans. The researchers note that in 1991, 98% of households used , and 93% harvested at least one wild resource, with 80% giving a harvested resource and 93% receiving a harvested resource. Fishing, the harvest and processing of plants and berries, and hunting for food were the main activities, with 88 resources harvested, and sharing extending to 15 Alaskan communities, while Kodiak residents received wild goods from 25 communities. Per capita harvest included 96.6 pounds of fish, 25 pounds of land mammals12 pounds of marine invertebrates and 5 pounds of wild plants and berries. Harvests in later study years were similarly high. The specific species, means of harvest, and preservation methods are discussed, as are geographic/ethnic differences in harvested resources. In general, Kodiak residents were not concerned about the effect of the *Exxon Valdez* oil spill on the safety of harvested resources, in part because increasing numbers of residents had not been in Kodiak at the time of the spill. It is suggested that the population has become increasingly transient and mobile. Of those surveyed, around 30% thought that clams were unsafe for children to eat, with 50% concerned

about shellfish poisoning, and 20% mentioning oil contamination. Reported sharing of resources had not apparently decreased in 1990 and 1991 from the levels of sharing before the spill.] KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kodiak Island, Kodiak City, Women's Bay, Chiniak Bay, Gulf of Alaska] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Native, fishermen, U.S. Coast Guard, sportsmen, children] SOCIAL_EFFECTS[sharing, subsistence-based community, immigration, demographic change, emigration] CULTURAL_EFFECTS[risk perception, risk communication] ECONOMIC_EFFECTS[commercial fisheries, harvest types, government employment, service sector, cost of living, per capita income] SUBSISTENCE_ACTIVITIES[hunting, fishing, plants, gear types, species, quantities, contamination fears, resource availability] CULTURAL_SUBSISTENCE[sharing] CITATION[Mishler, Craig. 1995. Old Harbor. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS] ABSTRACT/ANNOTATION[Old Harbor is located at the southeast end of Kodiak Island, at the narrows of Sitkalidak Strait. The population is above 200, and half the residents are of mixed Alutiiq and Scandinavian ancestry, with almost all the residents members of the Russian Orthodox Church. Those of Alutiiq-Scandinavian heritage are often involved in commercial fishing. Commercial fishing generally occupies its participants for six months out of the year, and while commercial fishing is the most common employment sector, with government employment second, slightly more personal income in Old Harbor derives from government work, which pays more, than from commercial fishing. Old Harbor includes a small boat harbor and a large dock, a clinic, an elementary and high school, and a new airport completed in 1993. The use of subsistence resources was particularly high in Old Harbor, and these resources contributed a significant proportion of foods consumed. All households used at least one wild resource, and all harvested at least one. Eighty-four different kinds of resources were harvested, and in addition an uncounted variety of wild plants were harvested. Levels of sharing were also high, and 95% gave away and 97% received at least one resource. Sharing with other communities involved seven recipient communities and gifts from twelve communities. Subsistence harvests contributed an important part to Old Harbor's economic health, and the harvest level was the third highest per capita among the study communities in 1991. Thirty-eight percent of households estimated that wild fish, meat, and poultry constituted between a quarter and a half of their yearly use. Around 60% of salmon were caught with subsistence gear. The amounts, species, harvest and preparation methods are discussed, as is the medicinal use of plants. About half of the residents surveyed thought their use of wild resources had declined since the *Exxon Valdez* oil spill, with the largest perceived decline in use of salmon, marine mammals and shellfish. The amounts of subsistence harvests declined considerably in the year following the oil spill, and by 1991/92 had begun to approach, but still did not equal, harvest levels before the spill. Concerns about eating subsistence foods were common in Alaskan communities after the spill, but by 1991/92 concerns were lower than in Prince William Sound and lower Cook Inlet. Only 19% of those surveyed said that the spill had negatively affected children's participation in subsistence activities, and over 90% liked living in their community just the same as before the spill. The researchers note that sharing is almost exclusively associated with subsistence foods rather than purchased foods, and that the cultural ethic of sharing and the support of the elderly through sharing would probably change with a change in diet.]

KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Old Harbor, Prince William Sound, Cook Inlet, Kodiak Island, Three Saints Bay, Sitkalidak Strait, Anchorage, Kodiak City, Akhiok, Fairbanks, Gambell, Karluk, North Naknek, Barrow, Bethel, Chalkyitsk, Kenai, Port Lions, south Naknek, Afognak, Alitak, Port Hobron] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alutiiq, Scandinavian, Alaskan Natives, Russian, commercial fishermen, children, elderly] SOCIAL_EFFECTS[subsistence-based community, sharing] CULTURAL_EFFECTS[sense of place, religion, sharing, cultural values] FAMILY_EFFECTS[children, enculturation, obligations, sharing with elderly] ECONOMIC_EFFECTS[commercial fishermen, government employment, government payments] MUNICIPAL_EFFECTS[infrastructure] SUBSISTENCE_ACTIVITIES[hunting, fishing, gear types, resource availability, harvest amounts, species, food preservation techniques, contamination fears] CULTURAL_SUBSISTENCE[sharing, enculturation, harvest methods, preservation methods, medicinal plants]

CITATION[Mishler, Craig, Rachel Mason, and Vicki Vanek. 1995. Ouzinkie. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[This is a community of over 200 residents on Spruce Island, near Kodiak Island. Around 87% of the residents are Alaskan Native, and employment was in commercial fishing, the school board, the village Native Corporation, longshoreman, and Native corporation provided the local income. Harvest levels and techniques, gear types, the species harvested, and medicinal uses of plants are presented. Residents have favorite subsistence hunting and fishing areas, and the researchers observe that some harvest areas and species have a highly symbolic value to the community. There was a dramatic decline in harvest levels after the oil spill, and levels did not return to pre-spill levels in subsequent years. It is speculated that subsistence harvests were permanently transformed after the spill, reflecting both reduced populations of animals and a dietary shift from subsistence foods to purchased foods. The change in tastes to purchased foodstuffs was influenced by the high cash incomes associated with cleanup work, and by large amounts of free groceries given to cleanup workers by Exxon and VECO. There were also perceived declines in resource availability. In the first year of this survey, the highest proportion (47%) of residents said they got 26-50 percent of their protein from wild foods, while in the third year the same proportion of residents said they got 1-25 percent of their protein from wild foods. A majority believed that the oil spill had not affected children's participation in subsistence activities. 96% of household share subsistence goods. Levels of political activity had not changed in the community, and residents liked living there as much as before the spill. Community members described the attractions of living in Ouzinkie, and said that if another oil spill were to prevent subsistence activity for six months, it would be a calamity.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Ouzinkie, Spruce Island, Kodiak Island, Kodiak Archipelago, Anton Larson Bay, Monashka Bay, Fort Abercrombie State Park, Marmot Bay, Afognak Island] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Ouzinkie Native Corporation, Russian, commercial fishermen, longshoremen, children, elderly, Unification Church] SOCIAL_EFFECTS[subsistence-based community, sharing, political activity, voting, leadership] CULTURAL_EFFECTS[sense of place, sense of community, cultural values,

sharing] ECONOMIC_EFFECTS[commercial fisheries, cleanup money, traditional vs. commercial economy, cash economy] MUNICIPAL_EFFECTS[infrastructure] SUBSISTENCE_ACTIVITIES[resource availability, contamination fears, species, subsistence methods, preservation methods, medicinal plants, favored locales, decreased harvest, change from subsistence foods to purchased foods] CULTURAL_SUBSISTENCE[sharing, enculturation, symbolic value of locales, symbolic value of species, change in attitudes towards subsistence foods]

CITATION[Mishler, Craig, Rachel Mason, and Jeffrey Barnhart. 1995. Larsen Bay. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS] ABSTRACT/ANNOTATION[Larsen Bay, on the west side of Kodiak Island, is inaccessible by road, and can be reached by air or water travel. It has a relatively young population of around 150 residents, and just over 80% are Alaskan Native. Commercial fishing provides most of the local income, and in 1993 included 6 purse seine permits, 3 beach seine permits, and 10 set gillnet permits. A local cannery purchases from residents but its employees are from outside the community. Income from government jobs, especially education, is the second highest source of income. The cash economy was stable over the three years of the study, the population decreased slightly, and those who remained had higher cash incomes. The amount of money spent by households on purchased foods was among the highest of the villages studied. 69% of the community took part in subsistence harvests in the first year, they shared resources with residents of 14 other Alaskan communities, and the per capita harvest was 295 pounds of food. which increased to 353 pounds in 1992/93, and 451 pounds in 1993/94. Trends in prior years had shifted, and in 1982/83 the harvest was 403 pounds, in 1986 it as 209 pounds, and in 1989 it was 212 pounds. 52% of the harvest was fish in the first year, and fish were 70% of the weight during the second study year, and 64% the third year. The chapter also notes processing techniques and the species harvested. Participation in subsistence activities was high, with over 90% of households harvesting, and all households using subsistence resources. Larsen Bay has become a popular site for sports hunters and fishermen from outside the community, and local subsistence users and hunters increasingly mentioned the depletion of resources by these outside sportsmen. Few of those surveyed expressed fears about seafood contamination. About half the household heads surveyed said that if subsistence resources became unavailable they would no longer live in Larsen Bay. Most of those surveyed in the first study year said they were sufficiently informed about the safety of eating subsistence foods after the oil spill. However, over the course of the three year study, the percentage of those who said they were uninformed remained constant, while the percentage of those who felt they had been informed declined.] KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Larsen Bay, Kodiak Island, Kodiak Archipelago Uyak Bay, Karluk, Kodiak City, Anchorage, Kenai] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Larsen Bay Tribal Council, Alaska Department of Fish and Game, Kodiak Area Native Association, commercial fishermen, sportsmen, hunters, fish processors, Alaskan Natives, elders, children, households] SOCIAL_EFFECTS[subsistence-based community, community obligations, sharing, support of the elderly, household size] CULTURAL_EFFECTS[risk communication] ECONOMIC_EFFECTS[commercial fisheries, fish processing, tourism industry] MUNICIPAL_EFFECTS[population decline, decreased household size, infrastructure,

subsistence community] SUBSISTENCE_ACTIVITIES[harvest amounts, species, participation in harvests, participation in processing, processing methods, medicinal plants, fishing methods, sharing, competition with sportsmen] CULTURAL_SUBSISTENCE[sharing, enculturation, sense of place]

CITATION[Mason, Rachel, and James A. Fall. 1995. Karluk. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[Karluk is a located on the west side of Kodiak Island, along the Shelikof Strait and at the mouth of the Karluk River. In the late 1800's, it had a population of hundreds, but in the 1990's it was 71 or less. It was a relatively young population, with an average age of 22.7 years, it was 95% Alaskan Native, and had a fairly long average residency in the community, 28 years. The population decline is attributed to a variety of factors, including an enduring family feud, and additional tensions that emerged after the *Exxon Valdez* oil spill. Employment in Karluk was scarce, and the per capita income of $6,924 was one of the lowest of the communities included in the study. The major source of income was service jobs, and a major sector of that business was providing guides for sports hunting and fishing. Income from employment at the local school was the other major source of income. In contrast to other communities, commercial fishing did not provide much income, and consisted of only an average of $90 per capita. Commercial fishing is less important in Karluk because it does not have a small boat harbor, and only one person owned a limited entry salmon fishing permit. Some young men in the village worked as crew on Kodiak or Larsen Bay fishing boats. Food expenditures in Karluk were higher than in the other communities surveyed in 1991/92, and the average expense was over eight hundred dollars per household. Over a third (38.5%) of those surveyed said their financial situation was about the same as before the EVOS, and the same proportion said their situation was worse than before the spill. The researchers note that the stressed condition of the economy were visible in the high unemployment rate, high food costs, decreasing population, and low per capita income. Subsistence uses of resources were high, and virtually all residents had used and harvested at least one wild resource. On average, Karluk households harvest a smaller range of resources than do other Kodiak communities, and Karluk's subsistence harvests concentrate on the major local resource, salmon. They shared resources within the community and with other communities. In 1991/92, 46%, estimated that between 26-50% of their protein came from wild resources. There was a substantial drop in subsistence harvests for the year following the *Exxon Valdez* oil spill. The pre-spill average was 618 pounds per capita, and that dropped to 255 pounds in 1989. Most of those surveyed identified the oil spill as the reason for the lower harvest, specifically cleanup work that interfered with harvesting, and contamination fears. The spill had social impacts, including unfilled jobs in tribal government, and animosities over cleanup hiring, wages, and income. Subsistence harvest recovered in 1990/91, to 401 pounds per capita, but in 1991/92 they had again dropped, to 269 pounds per capita, a pattern that contrasts with some other spill area communities such as Ouzinkie, Nanwalek, Port Graham, and Chenega Bay. Yet most villagers considered their subsistence uses the same or higher than before, few feared food contamination, most thought they had been well enough informed about food safety, and only 15% in 1991 indicated less sharing. Only 15% believed the spill had affected children's participation in subsistence activities, lower than the proportion of respondents in Prince William Sound, lower Cook Inlet,

and Ouzinkie. Karluk is a site for sports hunting and fishing, and sportsmen from all over the world visit and take resources for use, trophies, or catch and release. These activities compete with available subsistence harvests.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Karluk, Shelikof Strait, Kodiak Island, Karluk River, Larsen Bay, Ouzinkie, Nanwalek, Port Graham, Chenega Bay, Prince William Sound, lower Cook Inlet] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, tribal council, guides, sportsmen, children, educators] SOCIAL_EFFECTS[emigration, social conflict, subsistence-based community, sharing] CULTURAL_EFFECTS[sense of place, sharing] FAMILY_EFFECTS[children, enculturation] ECONOMIC_EFFECTS[financial strain, low income, cost of living, unemployment, tourism industry, employment outside community, government employment] MUNICIPAL_EFFECTS[civic posts unfilled, subsistence community] SUBSISTENCE_ACTIVITIES[decreased harvest, participation in harvest, species, techniques, contamination fears, sharing, competition with sportsmen, harvest amounts, no sustained recovery in harvests, children's participation, contribution to diet, medicinal plants] CULTURAL_SUBSISTENCE[sharing, enculturation, medicinal plants]

CITATION[Mishler, Craig. 1995. Akhiok. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[This isolated community is located on Alitak Bay at the south end of Kodiak Island. The population is small, with between 56 and 80 residents, and most of the increase occurred after the *Exxon Valdez* oil spill. At the time of the survey, 85% of the village was Alaskan Native, and it was a relatively young population, with 42% of the population under 14, and 7% over age 54. Akhiok and Karluk had the lowest per capita incomes in the Kodiak area. There was no local grocery store in Akhiok, and villagers traveled to the cannery at Wards Cove at Atilak to buy supplies. Travel to other communities is by air, and is expensive. This increases the cost of living in Akhiok. Harvest of wild foods was especially important given the low incomes, and participation in subsistence was high. All households harvested at least two resources, and used at least eight resources. There were high levels of sharing, with 83% of households giving, and 96% of households receiving, wild resources. The average per capita harvest in 1992/93 was 322 pounds. The harvest and preservation techniques, and the species harvested, are discussed. The researchers note that since 1983 the estimated pounds of subsistence harvest have been variable, and have not shown a particular trend. Akhiok is heavily dependent on subsistence foods to maintain the economy, because of the low income, and the added costs of purchased supplies. The *Exxon Valdez* oil spill did not appear to have a negative impact on subsistence activity in Akhiok. However, participation in clean-up activities added significantly to the earned income in 1989, and household income was more than double in 1989 the levels in 1992/93, though this partly relates to a larger household size in 1989 and more nuclear households in 1992/93.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Akhiok, Karluk, Kodiak Island, Alitak, Moser Bay, Olga Bay, Wards Cove] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alutiiq, Russian Orthodox] SOCIAL_EFFECTS[subsistence-based community, absence of local services, sharing] CULTURAL_EFFECTS[sharing, religion] ECONOMIC_EFFECTS[unemployment,

low income, government employment, cleanup money, subsistence economy, cost of living] MUNICIPAL_EFFECTS[infrastructure, subsistence community] SUBSISTENCE_ACTIVITIES[dependence on subsistence, harvest amounts, harvest methods, species, no decrease after EVOS, sharing] CULTURAL_SUBSISTENCE[sharing, dependence on subsistence]

CITATION[Fall, James A., and Craig Mishler. 1995. Port Lions. *In* Volume IV: Kodiak Island. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[This community was founded in 1965 by villagers who left Afognak, which used to be an Alutiiq village on Afognak Island. Residents left Afognak after years in which their subsistence activities were restricted or forbidden by a federal mandate creating a Fish Culture Reserve. In 1993/94, Port Lions had a population of around 236, and 66% of the residents were Alaskan Native. Port Lions is located on the north side of Kodiak Island, at Settlers Cove in Kizhuyak Bay, near the mouth of the Kizhuyak River. But many of the traditional fishing areas are near Afognak. The village included a Russian Orthodox and a Protestant Church, and lodges for hunters and fishermen, but the only grocery store had closed. Most households have cars or trucks, and Port Lions has a large boat harbor and houses a fairly large fishing fleet for commercial and subsistence fishing. The road system spans ten miles, and links the air strip and the ferry dock. The per capita income in Port Lions was higher than that in any of the other Kodiak Island villages in the years studied. Major sources of income and employment came from commercial fishing, government employment, and the transportation, communications and utilities sector. In 1989, the year of the EVOS, subsistence harvests declined 52% in comparison to averages of pre-spill years. The majority of households blamed the spill for the decrease, citing contamination fears and the involvement of residents in cleanup rather than subsistence. In 1993/94 subsistence harvest had recovered to pre-spill levels, and 92% of residents harvested at least one resource, and all households used, harvested, and shared resources.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Port Lions, Kodiak Island, Settlers Cove, Kizhuyak Bay, Kizhuyak River, Afognak] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Native, federal government, Alutiiq, Secretary of Commerce, Secretary of Labor, Russian Orthodox, Protestant, sportsmen, commercial fishermen] SOCIAL_EFFECTS[subsistence-based community, sharing] ECONOMIC_EFFECTS[per capita income, decreased harvests, cleanup employment] MUNICIPAL_EFFECTS[infrastructure] SUBSISTENCE_ACTIVITIES[decreased harvest, species, harvest methods, contamination fears, participation in harvests] CULTURAL_SUBSISTENCE[traditional locales, traditional harvest techniques]

CITATION[Hutchinson-Scarbrough, Lisa. 1995. Chignik Bay. *In* Volume V: Alaska Peninsula and Arctic. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[This community of between 130 and 190 residents is located at the southern end of Chignik Bay, at the head of Anchorage Bay. In 1992, it was estimated that 52% of the residents were Alaskan Native. Commercial fishing, including both fishing and fish

processing, is the major economic sector in terms of income and employment. There was also employment in local government, the school, health clinic, and stores. Chignik Bay is an incorporated city, with a mayor, city council and administrator, and Far West Inc. village corporation represents the Native population, and the Bristol Bay Native Corporation was also important in the community. The infrastructure is fairly developed, and includes a school, gymnasium, post office, firehouse, airstrip, two stores, health clinic, radio station, two churches and two seafood processing plants. 40% of those surveyed said their financial situation was better in 1991/92 than during the year before the *Exxon Valdez* oil spill, and a third said it was worse. Subsistence contributes an important part to the diet. 83% of the residents attempted to harvest resources, and subsistence resources were used by all households. Sharing was common, and 97% received, and 63% gave away wild resources. Per capita subsistence harvest increased from 1984 to 1989, from 188 pounds to 209 pounds, and then increased in 1991/92 to 357 pounds. Subsistence techniques, gear types, amounts, and preservation methods are discussed. The researcher mentions that communities close to the spill had a greater decrease in wild resource sharing than did the Chignik area communities. Commercial fishermen, fish processors, businesses and the municipality suffered a loss of income and were uncertain about the long-term damage to resources, and were concerned about the safety of eating subsistence foods, but also felt a need to harvest more subsistence foods to make up for lost income. There were social impacts due mostly to lost income, including increased conflicts between people, more stress and alcohol use, and clinical depression. During 1989, the spill caused confusion, disruption, stress, and anger. Fears about the safety of subsistence foods, about how to manage without them, and about lost income were the major concerns. Only a few Chignik Bay residents worked on oil spill cleanup or test fishing. By 1992 most residents felt the community was back to normal, but believed they had not necessarily recovered the losses they suffered in 1989. While 83% of those surveyed said they liked living there as much as before the EVOS, some of the 12% who liked living there less mentioned decreased resource availability and community conflict, and that community differences had been brought to the fore. About half the respondents thought they were provided with enough information about the safety of subsistence foods.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Chignik Bay, Chignik Lake, King Salmon, Anchorage Bay, Aleutian Range, Alaska Peninsula] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Russian, Alaskan Natives, Exxon, VECO, Far West Inc. Village Corporation, Bristol Bay Native Corporation, elders, children, leaders, fishermen] SOCIAL_EFFECTS[subsistence-based community, social conflict, leadership, sharing] CULTURAL_EFFECTS[sense of place, sense of community] FAMILY_EFFECTS[parent-child conflicts, parent absence] ECONOMIC_EFFECTS[economic loss, fiscal loss, financial recovery, economic sectors] PSYCHOLOGICAL_EFFECTS[stress, alcohol abuse, inter-personal conflict, fear, worry, anger] SUBSISTENCE_ACTIVITIES[harvest amounts, harvest methods, species, preservation methods, decreased harvest, sharing, dependence on subsistence] CULTURAL_SUBSISTENCE[sharing, enculturation, health beliefs]

CITATION[Hutchinson-Scarbrough, Lisa. 1995. Chignik Lake. *In* Volume V: Alaska Peninsula and Arctic. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]

ABSTRACT/ANNOTATION[This Alaska Peninsula community is located near the mouth of Chignik Lake, on a pass that leads through the Aleutian Range from Bristol Bay to the Pacific Ocean. The population numbers around 130, and 92% are Alaskan Native. The village is part of the Lake and Peninsula Borough, and is governed by a village council, which employs an administrator and a clerk. Chignik River, Limited is the village's Native Corporation. The village includes a post office, Russian Orthodox Church, health clinic and school district, and airstrip. Commercial fishing is the major source of income and employment, the school system is second, and the health corporation and the local village corporation are also employers. Subsistence foods supplement the diet and a third of households surveyed estimated that 26 to 50% of their meat, fish and poultry were from subsistence foods. 79% of residents harvested and 64% processed wild foods; on average, households used 24 kinds of resources, which was the greatest 'use' variety of the communities included in the study. Sharing was common, and 96% of households received resources and 92% gave resources, and there was sharing with at least 18 other Alaskan communities. Harvest amounts, techniques, gear types and species are discussed, as are preservation methods. The study finds that the spill had a greater impact financially and emotionally on villagers than through the loss of subsistence harvests. Economic difficulties were worse in Chignik Lake than in Chignik Lagoon or Chignik Bay, because the average income is lower, and Chignik Lake residents did not have the savings to cover the year of lost income. Some fishing permit holders had to foreclose on loans and sell their fishing permits and their boats. Since they planned to pass these permits and boats to their children, their losses had wider implications. The average Exxon damage claims provided $4,018.18 per household in 1989, none in 1990, and only one resident worked on spill clean-up. Few survey respondents thought that children participated less in harvests, while in communities closer to the spill such as Tatitlek and Nanwalek, over 50% of respondents noted this change. There was also little change in Chignik Lake with respect to sharing of resources, in comparison to communities nearer the spill. A portion, but not a majority, of residents thought there were less salmon and ducks in 1991 than in 1988. About 60% of those surveyed thought they had been adequately informed about the safety of subsistence foods. The researcher notes that residents suspect that the effects of the spill are just beginning to become apparent, with tar balls washing onto the beaches, lower levels of salmon, clams, and eider ducks, and observations of diseased fish and empty clam shells. However for other villagers, their lives and subsistence activities have returned to normal.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Chignik Lake, Alaska Peninsula, King Salmon, Aleutian Range, Bristol Bay, Port Heiden, Tatitlek, Nanwalek, Chignik Bay, Chignik Lagoon, Chignik River, Anchorage Bay] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, elders, leaders, children, Exxon, commercial fishermen, boat owners, fishing permit holders, parents] SOCIAL_EFFECTS[subsistence-based community, sharing] CULTURAL_EFFECTS[sharing, sense of place] FAMILY_EFFECTS[inheritance, enculturation] ECONOMIC_EFFECTS[economic loss, foreclosures] MUNICIPAL_EFFECTS[infrastructure] SUBSISTENCE_ACTIVITIES[harvest amounts, harvest methods, species, preservation methods, resource availability, dependence on subsistence, sharing, children's participation] CULTURAL_SUBSISTENCE[enculturation, sharing]

CITATION[Magdanz, James, Susan Georgette, and Jimmie Evak. 1995. Kotzebue. *In* Volume V: Alaska Peninsula and Arctic. Alaska Department of Fish and Game, Division of Subsistence.

1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS] ABSTRACT/ANNOTATION[This community is far from the site of the spill, and experienced no direct impacts, though cleanup provided a small number of jobs for businesses associated with the Native Corporation NANA. The town is located 26 miles north of the Arctic Circle on Kotzebue Sound in northwest Alaska. It is 600 miles north and west of Valdez, and is not connected to the rest of Alaska by road or rail; access to Kotzebue is by boat, snow machine, dog team and air. It has a population of around 3,000, and between 75 and 85% are Alaskan Native. Kotzebue provides a regional center of government and services for dispersed communities in the area. The primary sources of employment and income are from government, services, commercial fishing and retail trade. It has a relatively high rate of employment and income, with an estimated per capita income in 1991 of $12,686. Subsistence activities provided a major portion of the diet in Kotzebue, up to 25% of protein for a third of the population, and between 26 and 50% for a quarter of the population. Harvest amounts, species, fishing permit structure, and preservation techniques are discussed. Activities included gathering wild plants (for food and medicinal uses), fishing, hunting, and trapping. Harvests and sharing were not substantially different in the years before and after the spill. Sharing took place within Kotzebue, with 35 Alaskan communities, and places outside the State. In 1986 the per capita harvest was 398 pounds per capita, and was even higher, 518 pounds per capita, among Native residents of Kotzebue. There are two Native Corporations, the Northwest Alaska Native Association and the Kikiktagruk Inupiat Corporation, and the NANA has a fairly strong political role locally. According to survey respondents, political participation and ideas about leadership were not changed after the spill.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kotzebue, Arctic Circle, Valdez, Kotzebue Sound, Northwest Arctic Borough, Red Dog Mine] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[government workers, Alaskan Natives, Inuit, Inupiat, Northwest Alaska Native Association] ECONOMIC_EFFECTS[cleanup employment] SUBSISTENCE_ACTIVITIES[subsistence unaffected]

CITATION[Magdanz, James, Susan Georgette, and Ronald T. Stanek. 1995. Kivalina. *In* Volume V: Alaska Peninsula and Arctic. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS] ABSTRACT/ANNOTATION[No impacts of the spill are indicated in this community far from the spill site. However knowledge about the *Exxon Valdez* spill may have affected local opinions, and villagers expressed serious doubts that either a large or a small spill could be contained. The development of the Red Dog mine was associated with an incident of water contamination with serious local impacts; in another experience with development, a local road was said to have decreased the availability of caribou. This small Inuit community is located around 80 miles above the Arctic Circle, northwest of Kotzebue, and near Cape Thompson. About 95% of the population is Alaskan Native. There is no centralized water and sewer system, except for at the school and clinic, and access to the village was by air, by boat when there was open water, and by snow machine and dog team in the winter. The per capita income in 1992 was around $7,000, with earned income from government, mining, trade, and service, and a fairly small contribution from commercial fishing. There was considerable reliance on subsistence, and an average harvest of 761 pounds per capita, with the majority coming from

marine mammals, big game, and fish. The overall harvest level remained stable over the decade of the mid 1980's to mid 1990's, but there were variations in levels of particular resources. Wild food consumption was higher in Kivalina than in any of the other study communities. There was confidence in the safety of wild foods, and most respondents thought that sharing practices had not changed. Harvest amounts, species, and preservation techniques are mentioned. There was the view that greater development of offshore oil and gas would have a negative impact on the availability of subsistence resources.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kivalina, Arctic Circle, Kotzebue, Chukchi Sea, Noatak, Corwin Lagoon, Kivalina Lagoon, Wulik River, DeLong Mountains, Mulgrave Hills, Point Hope, Red Dog Mine, Cape Thompson, Northwest Arctic Borough, Noatak Valley] EVENT_PHASE[pre-spill, spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Inuit, Inupiat, Northwest Alaska Native Association, Joint Federal-State Land Use Planing Commission for Alaska]
CULTURAL_EFFECTS[political attitudes, beliefs about technology, trust in development, belief in efficacy of spill cleanup] SUBSISTENCE_ACTIVITIES[high subsistence levels]

CITATION[Pedersen, Sverre. 1995. Kaktovik. *In* Volume V: Alaska Peninsula and Arctic. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[The social effects portion of the survey was not carried out in this community, and thus there is no information on social impacts of the *Exxon Valdez* spill. This is a small community on Barter Island, about 120 miles east of Prudhoe Bay and near the Arctic National Wildlife Refuge. About 85% of the population of near 200 is Alaskan Native. Subsistence provides a major portion of dietary protein, and in 1992 the subsistence harvest was 886 pounds of edible weight per capita. Most of this came from the higher than average whale harvest that year.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kaktovik, Barter Island, Beaufort Sea coast, Prudhoe Bay, Arctic National Wildlife Refuge, Arey Lagoon, Kaktovik Lagoon, North Slope Borough, Barrow] EVENT_PHASE[pre-spill, post-spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Kaktovik City Council]
SUBSISTENCE_ACTIVITIES[harvest amounts, species]
CITATION[Pedersen, Sverre. 1995. Nuiqsut. Alaska Department of Fish and Game, Division of Subsistence. 1995. An Investigation of the Sociocultural Consequences of Outer Continental Shelf Development in Alaska. Prepared for Minerals Management Service, Alaska OCS]
ABSTRACT/ANNOTATION[Impacts of the *Exxon Valdez* oil spill are not discussed. Nuiqsut is located about 150 miles southeast of Barrow. It is incorporated as a second class city, and it is part of the North Slope Borough. Access to Nuiqsut is by air. The population is around 350, and 89% are Alaskan Native. The population depends on subsistence foods because purchased foods are expensive and sometimes unavailable. Subsistence foods are considered healthier, and are preferred as part of local tradition. Subsistence provides most of the protein in the diet. In 1993, the harvest was 742 pounds per capita, and consisted primarily of fish, mammals, and marine mammals. Sharing of resources was common, with 91% of households giving, and 98% or households receiving at least one resource. Income earned through employment provides for housing, heat and other living expenses. Income sources are local government and education, finance, insurance real estate and construction, services, trade, and so forth.]

KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Nuiqsut, Nechelik Channel, Colville River, Barrow, Prudhoe Bay, Arctic Ocean, Kaktovik, North Slope Borough] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Inupiat, Nuiqsut City Council] SUBSISTENCE_ACTIVITIES[harvest amounts, species]

CITATION[Andres, B.A. 1995. The effects of the *Exxon Valdez* oil spill on black oystercatchers breeding in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 12, Restoration Study Number 17). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-204292).]

CITATION[Babcock, M.B. and J.W. Short. 1996. Prespill and postspill concentrations of hydrocarbons in sediments and mussels in intertidal sites within Prince William sound and the Gulf of Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Coastal Habitat Study Number 1B). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194824).]

CITATION[Babcock, M.M., P.M. Harris, S.D. Rice, R. J. Bruyere, and D.R. Munson. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 93036). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Babcock, M.M., S.D. Rice, and P.M. Harris. 1995. Recovery monitoring and restoration of oiled mussel beds in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 93036). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Babcock, M.M., S.D. Rice, P.M. Harris, and C.C. Brodersen. 1996. Recovery monitoring and restoration of intertidal oiled mussel beds in Prince William Sound impacted by the *Exxon Valdez* oil spill: 1991 and 1992. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Annual Report (Restoration Study Number 103-1). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Ballachey, Brenda. 1995. Biomarkers of damage to sea otters in Prince William Sound, Alaska following potential exposure to oil spilled from the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-1). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Bittner, Judith E. and Douglas R. Reger. 1995. 1994 EVOS report. Anchorage, Alaska: Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology.]
ABSTRACT/ANNOTATION[The Spill Area Site Protection and Collection Plan was an additional aspect of archaeological site protection identified by requests from a number of concerned communities and organizations. As part of this, there was a need to determine the need for repositories for collections, and to assess existing facilities. Local museums in the Prince William Sound and Homer areas were visited for this purpose -- to describe existing

museums and assess their suitability for housing archaeological collections generated from *Exxon Valdez* oil spill related activities. Individuals in local communities, Native corporations, and governmental agencies were interviewed to determine what kinds of site protections programs existed in the spill area. At the same time, those groups were polled to determine what facility and program needs were perceived on the local as well as the regional level. Recommendations were: 1) a regional repository should be supported, 2) small local storage and display facilities should be supported, 3) site monitoring should continue and a stewardship program should be encouraged, and 4) public education in support of archaeological site protection should be supported for long term site protection.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Cordova, Valdez, Seward, Homer, Kodiak, Eyak, Tatitlek, Chenega, Port Graham, Nanwalek, English Bay, Karluk] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, local government, state government] SOCIAL_EFFECTS[local resources] REMAINDER[archeology]

CITATION[Bodkin, J.L. and M.S. Udevitz. 1996. 1993 Trial aerial survey of sea otters in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93043-2). Anchorage, AK: National Biological Service.]

CITATION[Bodkin, J.L. and M.S. Udevitz. 1995. An intersection model for estimating sea otter mortality from the *Exxon Valdez* oil spill along the Kenai Peninsula, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-5). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194980).]

CITATION[Bodkin, J.K., D.M. Mulcahy, C.J. Lensink. 1996. Age-specific reproduction in female sea otters (Enhydra Lutris) from Southcentral Alaska: analysis of reproductive tracts. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-4). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Bowman, T.D., P.F. Schempf, and J.A. Bernatowicz. 1993. Effects of the *Exxon Valdez* oil spill on bald eagles. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 4). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-204250).]

CITATION[Braddock, J.F., B.T. Rasley, T.R. Yeager, J.E. Lindstrom, and E.J. Brown. 1992. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the *Exxon Valdez* Oil Spill. *Exxon Valdez* State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 1B). Fairbanks, AK: University of Alaska Fairbanks (NTIS No. PB96-194626).]

CITATION[Braddock, J.F. and Z. Richter. 1995. Microbiology of subtidal sediments: monitoring microbial populations. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93047-2). Fairbanks, AK: University of Alaska Fairbanks (NTIS No. PB96-194816).]

CITATION[Braund, Stephen & Associates and Peter Usher. 1993. The effects of the *Exxon Valdez* oil spill on Alutiiq culture and people. Anchorage. Stephen R. Braund & Associates.]
ABSTRACT/ANNOTATION[This report was prepared in support of Native litigation against Exxon. Braund et al. conducted field research and synthesized other primary data to describe the effects of the EVOS on Native communities. The report presents a brief overview of the history of Alutiiq peoples in Alaska, including an argument that subsistence is an essential element of Alutiiq culture in several ways. Subsistence describes the relationship of food and place, the relationship of humans to nature and resources, the transfer of knowledge between generation, and the expression of cultural autonomy. As part of Alutiiq culture, subsistence has both economic, social, and psychological importance. The report next provides a brief overview of the EVOS as a technological disaster, then discusses the impacts to Native culture and communities. The authors present a discussion that identifies the following impacts: decline in the quality of environment and resource quality and quantity; increased uncertainty about subsistence; uncertainty about the safety of subsistence resources; invalidation of traditional environmental knowledge; and, uncertainty about the future. The report summarizes studies of subsistence and concludes the following specific impacts to subsistence: decline in culturally significant elements of the subsistence system; decline in subsistence participation; decline in cooperative hunting, fishing, and gathering; decline in sharing; decline in satisfaction in eating Alutiiq foods; decline in integrity of place; and, decline in autonomy. The authors then argue that damage to the core elements of Native communities – the natural resource base or kinship system – "damages the culture and the people."]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Native villages] EVENT_PHASE[spill, post-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alutiiq] CULTURAL_EFFECTS[culture loss, enculturation, subsistence traditions, traditional knowledge, cultural identity] SUBSISTENCE_ACTIVITIES[decreased subsistence activity, decreased harvest] CULTURAL_SUBSISTENCE[change in attitudes towards subsistence foods, cultural meaning of subsistence, stewardship of the environment, traditional knowledge, uncertainty about future, sharing, self-reliance, cooperation]

CITATION[Brelsford, Taylor, Ann Fienup-Riordan, Joseph Jorgensen, Steven McNabb, Patricia Petrivelli, Lynn Robbins, and Michael Galginaitis. 1992. Social indicators of Alaskan coastal villages: I key informant summaries; volume 1, schedule A regions. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 151, OCS Study MMS 92-0031. New Haven, Connecticut: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This volume one of a two-volume set of key informant summaries from the social indicators studies of seven different regions of Alaska. The Schedule A regions, covered in this volume, include the North Slope region, the NANA region, the Calista region, and the Aleutian-Pribilof Islands region. This volume does not cover communities in the *Exxon Valdez* spill region, but it does provide an introduction to the study that is not recapitulated in Volume 2 (that does cover *Exxon Valdez* spill area communities, and specific spill impacts).]
KEYWORDS: SOURCE_TYPE[report volume] GEOGRAPHY[North Slope, NANA, Calista, Aleutian-Pribilof Islands] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[key informants, interviewees] REMAINDER[interview summaries]

CITATION[Brown-Schwallenburg, Patty, Jeff Hetrick, and David Daisy. 1996. Nanwalek/Port Graham/Tatitlek subsistence clam restoration. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95131). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division.]
ABSTRACT/ANNOTATION[Clams were once a major subsistence resource in the Native communities of Nanwalek and Port Graham in lower Cook Inlet and Tatitlek in Prince William Sound. The use of clams as a subsistence food source has been greatly reduced as a result of a lack of confidence by villagers in the safety of shellfish after the *Exxon Valdez* oil spill. In addition, local clam populations have been on the decline in recent years as a result of sea otter predation and changing currents and beach patterns. The 1995 objectives of this study were to identify clam species to use in restoration efforts, identify and clear clam brood stock for hatchery use, demonstrate hatchery and nursery capabilities to produce clam seed for 1996, and to identify and survey restoration sites near the project villages.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Kenai Peninsula, lower Cook Inlet, Nanwalek, English Bay, Port Graham, Tatitlek] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] SOCIAL_EFFECTS[subsistence-based community] ECONOMIC_EFFECTS[economic diversification] SUBSISTENCE_ACTIVITIES[clamming, decreased harvest, contamination fears, contaminated resources, restoration of subsistence]

CITATION[Byrd, G.V., E.P. Bailey, and W.H. Stahl. 1995. Introduced predator removal from islands. *Exxon Valdez* Oil Spill restoration Project Final Report (Restoration Project 95041). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Carls, M.G., S.D. Rice, and R.E. Thomas. 1995. The impact of exposure of adult pre-spawn herring (Clupea harengus pallasi) on subsequent progeny. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94166). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Chugach Regional Resource Commission. 1995. Community involvement/traditional ecological knowledge project. *Exxon Valdez* Oil Spill Trustee Council detailed project description (restoration project 96052). Anchorage, AK: Chugach Regional Resource Commission.]
ABSTRACT/ANNOTATION[Project 96052 would continue and expand on the original concept of increasing community involvement in the restoration process begun under 95052. The project originated in 1995 and is scheduled to run through 2002, with an annual budget of $250,000. The project has two major components: community involvement and traditional ecological knowledge. Under the community involvement component a spill area-wide coordinator will be hired through a contract with Chugach Regional Resources Commission to serve as a liaison between the communities and the existing network of scientists, agency personnel, restoration office personnel, and the Trustee Council. Through direct communications with a network of local facilitators the spill area-wide coordinator will actively involve local residents in the restoration program, particularly on-going scientific studies. The second project component, Traditional Ecological Knowledge (TEK), will consist of a pilot effort with the potential to integrate western science and local TEK to further the Trustee Council's restoration program. No annual or final reports have been issued for this project.]
KEYWORDS: SOURCE_TYPE[project description] GEOGRAPHY[Prince William Sound, Kenai Peninsula, lower Cook Inlet, Chenega, Tatitlek, Port Graham, Nanwalek, English Bay, Eyak, Seward, Valdez] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] SOCIAL_EFFECTS[community stability, social disruption, subsistence-based community] CULTURAL_EFFECTS[traditional knowledge] CULTURAL_SUBSISTENCE[symbolic expression of culture]

CITATION[Cohn, Ruth E. and William A. Wallace. 1992. The role of emotion in organizational response to a disaster: an ethnographic analysis of videotapes of the *Exxon Valdez* accident. Boulder, CO: Natural Hazards Research and Applications Information Center, Institute of Behavioral Science, University of Colorado. Working paper #74.]
ABSTRACT/ANNOTATION[The report discusses four videotapes which were produced in the six months following the *Exxon Valdez* oil spill. The four tapes were produced by four different organizations, Exxon corporation, the U.S. Coast Guard, the Cordova District Fishermen United, and the Public Broadcasting System's NOVA. The report compares the emotional quality of the interviews and the emotional persuasion of the visual imagery presented in these four tapes.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska, Cordova] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, U.S. Coast Guard, Cordova District Fishermen United, fishermen, residents, Public Broadcasting System] PSYCHOLOGICAL_EFFECTS[emotional expression]

CITATION[Cooney, R.T. 1995. Sea90: Sound ecosystem assessment (SEA) - and integrated science plan for the restoration of injured species in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94320). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Section.]

CITATION[Corbett, D.G. and D. Reger. 1994. Development of Alaska heritage stewardship program for protection of cultural resources at increased risk due to the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report

(Restoration Study Number 104A). Homer, AK: U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge (NTIS No. PB96-204284).]

CITATION[Craig, A.K., B.G. Bue, and T.M. Willette. 1996. Injury to pink salmon embryos in Prince William Sound - field monitoring. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95165). Cordova, AK: Alaska Department of Fish and Game, Genetics Laboratory.]

CITATION[Craig, A.K., B.G. Bue, and S. Sharr. 1995. Feasibility of wildstock tetracycline otolith marking in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94320C). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Dahlheim, M.E. and O. Von Ziegesar. 1993. Effects of the *Exxon Valdez* oil spill on the abundance and distribution of humpback whales (Megapteranovaeangliae) in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 1). Seattle, WA: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194634).]

CITATION[Dahlheim, M.E. and C.O. Matkin. 1994. Assessment of injuries and recovery monitoring of Prince William Sound killer whales using photo-identification techniques. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93042/94092). Seattle, WA: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194667).]

CITATION[Dahlheim, M.E. and C.O. Matkin. 1993. Assessment of injuries to killer whales in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine mammal Study Number 2). Seattle, WA: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194642).]

CITATION[Day, R.H. and D.A. Nigro. 1996. Status and ecology of Kittlitz's murrelet in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 96142). Fairbanks, AK: ABR, Inc.]

CITATION[DeGange, A.R., D.C. Douglas, D.H. Monson, and C.M. Robbins. 1995. Surveys of sea otters in the Gulf of Alaska in response to the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-7). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-1195003).]

CITATION[Dekin, Albert A. Jr. et al. 1993. *Exxon Valdez* oil spill archaeological damage assessment. Produced and edited by Leslie Green. Anchorage, AK: Preston, Thorgrimson, Shidler, Gates, and Ellis.]

CITATION[DeVelice, R.L., C. Hubbard, M. Potkin, T. Boucher, and D. Davidson. 1995. Characterization of upland habitat of the marbled murrelet in the *Exxon Valdez* oil spill area. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93051B). Anchorage, AK: USDA Forest Service, Chugach National Forest (NTIS No. PB96-194931).]

CITATION[DiCostanzo, C. and B.P. Simonson. 1993. Database management. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 30). Juneau, AK: Alaska Department of Fish and Game, Division of Commercial Fisheries.]

CITATION[Donald, R., R. Cook, R. Bixby, R. Benda, and A. Wolf. 1990. The stress related impact of the Valdez oil spill on the residents of Cordova and Valdez, Alaska. Valdez, AK: Valdez Counseling Center.]
ABSTRACT/ANNOTATION[The Valdez Counseling Center conducted a 3 phase mail survey in Cordova and Valdez which started in May of 1989 and was completed about one year later. The study administered self-report measures of depressive symptoms (Center for Epidemiologic Studies of Depression -CESD), a measure of stress (Frederick Reaction Index), and a perceived social support measure. The sampling procedures yielded a total of 93 respondents. Initially 53 Cordova residents were recruited of whom 43 completed all three phases; and, in Valdez 64 respondents were initially recruited of whom 50 completed all three surveys. The Valdez Counseling Center survey produced the following major findings: residents of Cordova and Valdez experienced the EVOS was an extreme stressor that caused emotional distress for residents; Cordova had a higher intensity and duration of emotional distress than did Valdez; Perceived social support was a mediating factor in Valdez, but not in Cordova; and, no relationships were found between emotional distress and occupation, age, gender, and other demographic variables. Among Valdez respondents, stressors were most related to the impact of the influx of outsiders into the community. Among Cordova residents the stressors were related to social disruption and concern about the future of commercial fishing.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Valdez, Cordova] EVENT_PHASE[post-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[residents, Valdez Counseling Center] SOCIAL_EFFECTS[demographic characteristics, community disruption, social support, population increase] ECONOMIC_EFFECTS[commercial fishing] PSYCHOLOGICAL_EFFECTS[stress, social support, depressive symptoms] MUNICIPAL_EFFECTS[influx of outsiders]

CITATION[Doroff, A.M., and A.R. DeGange. 1995. Experiments to determine drift patterns and rates of recovery of sea otter carcasses following the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-9). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194972).]

CITATION[Dragoo, D.E., G.V. Byrd, D.G. Roseneau, D.A. Dewhurst, J.A. Cooper, and J.H. McCarthy. 1995. Population levels and reproductive performance of murres based on observations at breeding colonies four years after the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study Number 11). Homer, AK: U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge (NTIS No. PB96-204268).]

CITATION[Duffy, D.C. 1996. APEX: Alaska predator ecosystem experiment. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95163). Anchorage, AK: Alaska Natural Heritage Program, University of Alaska.]

CITATION[Edmundson, J.A., G.B. Kyle, and S.R. Carlson. 1995. Restoration of Coghill Lakes sockeye salmon: 1994 annual report on nutrient enrichment restoration. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94259). Soldotna, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Endter-Wada, Joanna, John Hofmeister, Rachel Mason, Steven McNabb, Eric Morrison, et al. 1993. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 1 (Cordova, Tatitlek, Valdez). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This volume considers socioeconomic variables and social impacts of the *Exxon Valdez* spill on three of the communities in the area affected by the spill. The volume contains chapters on Valdez, Cordova, and Tatitlek, and they are organized differently. The chapter on Valdez includes an historical and descriptive overview of the community, a section on the economy with subsections on commercial fishing, fish processing, tourism, transport, the public sector, small businesses, and housing, and a section on the sociology of the spill and its effects. The Cordova chapter contains an historical and socio-economic overview, a section on Alaskan Natives in Cordova in terms of culture, social-political organization and economy, a section on the impacts of the spill on the fishing sector of the economy, another section on the non-fishing private sector impacts of the spill (entries include housing, labor, conflicts within the business community, and entries for various service providers), a section on impacts on city government and a summary section. The chapter on Tatitlek includes a background and a section on the effects of the spill through 1991, including the economy, attribution of blame for the spill, human intervention, subsistence, an leadership. An introduction provides an summary discussion of research findings for 'schedule C' communities, in terms of general socioeconomic differences among them, and the impact of the spill. It notes that in much of rural Alaska, the presence of commercial fishing and fisheries businesses are associated with high incomes and available jobs, and they provide much of the private sector activity in rural Alaska. It also notes that the communities with a high proportion of oil industry employment are sociologically distinct from other communities in the sample. The report also makes a distinction between 'hub' communities and 'periphery' communities. The hub communities are larger and more economically diverse, and they have a larger public sector. In terms of spill impacts, the report concludes that a community's proximity to the spill is not sufficient to explain residents' perceived exposure to the spill, the spill's impact on resources, or risks. Instead, small communities (such as Tatitlek, Chignik), those close to visible effects of the spill (Valdez, Cordova, Tatitlek) and communities where fishing is the dominant economic sector (Cordova) are likelier to perceive decreases in fish resources, and the perceptions are strongest in communities where these factors of size, visibility, and fishing economy overlap. It concludes that despite some economic benefits provided by cleanup work, small communities with undiversified resource-export economies are especially vulnerable to the spill's impacts. While they may benefit from cleanup funds, in order to gain benefits residents of these

communities more often have to make adjustments, such as moving, than do those in larger communities. Those nearer the spill were more likely to blame the State for the spill, while those in more distant communities more often blamed Exxon and the ship's captain. Demographic variables are associated with differences in perceptions and impacts. Decreased fish resources are likelier to be noticed by younger respondents, who also expressed more pessimism about oil development. Native Alaskans faced certain disproportionate economic impacts: they more often had to move in order to secure work in the cleanup, their work tenure was less secure, they more often faced property loss, and they expressed more doubt about the benefits of oil development. Those in less secure circumstances faced greater disruption in order to benefit from cleanup work: Half of the single parents in the sample relocated for cleanup work, and the children were placed in various transitional-care situations. Those with less employment history had more trouble gaining employment. Overall, the report concludes that the existing social and political patterns, of underdevelopment in rural areas, dominance of urban centers, lesser economic access for Native Alaskans, were mirrored in differential impacts of the spill.]
KEYWORDS: SOURCE_TYPE[report volume] GEOGRAPHY[Valdez, Cordova, Tatitlek, Chignik, Kodiak City, Tyonek, Seldovia, Kenai, Karluk, Old Harbor] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, children, families, fishermen] SOCIAL_EFFECTS[emigration, immigration] FAMILY_EFFECTS[parent absence, childcare] ECONOMIC_EFFECTS[economic diversification, economic gain, economic loss, property loss] MUNICIPAL_EFFECTS[operational disruption]

CITATION[Robbins, Ed. 1993. Valdez. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 1 (Cordova, Tatitlek, Valdez). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This chapter observes that after the spill there was increased social division and tension between oil industry employees and those employed elsewhere, and between those who benefitted from the spill and those who did not, though the tensions were not as high as elsewhere in the Prince William Sound area. To some extent residents have become less community oriented and more insular, because of the social tensions and overcrowding during the cleanup efforts. In the post cleanup period, the housing market continued to be competitive because housing had not become more available, and there was a lasting turnover in the population with some residents leaving and others arriving. While social changes were viewed as largely negative, economic changes were perceived as positive.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Valdez] EVENT_PHASE[pre spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, oil industry employees, residents] SOCIAL_EFFECTS[increased insularity, alienation, social conflict, emigration, immigration] ECONOMIC_EFFECTS[economic gain] MUNICIPAL_EFFECTS[population turnover, overcrowding]

CITATION[Reynolds, Stephanie. 1993. Effects of the 1989 *Exxon Valdez* oil spill on Cordova, Alaska. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 1 (Cordova, Tatitlek, Valdez). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]

ABSTRACT/ANNOTATION[There were conflicts over the operation of Exxon during the cleanup, including a lawsuit among city council members. The city of Cordova was constrained to provide services and facilities for the cleanup, without receiving full reimbursement for expenditures and labor. Private sector economic impacts were uneven, and businesses not participating in cleanup faced more damage. Economic impacts included lost credit lines, bankruptcies, foreclosures, business closures, and lost business. There was criticism over a chaotic and changing claims process, and that there was no oversight of Exxon's practices. There was conflict in the business sector between VECO and local business, and concern over the long-term impact of the spill on fishing. There was confusion over Exxon's use of fishermen as independent contractors in the spill, and the contractors' acceptance of legal liability for cleanup efforts. There was some stigma attached to work for Exxon, and resentments over Exxon's accounting practices. Cleanup workers were untrained to deal with the hazardous materials of the spill and cleanup, and there were adverse health affects for workers. Residents expressed the view that the cleanup may have caused additional environmental harm. Claims for damages to fishermen and hatcheries are discussed. Impacts to Native Alaskans in Cordova included higher prices, shortages of rental space, disrupted government operations, the lost use of subsistence resources, fear of resource contamination, along with concerns about the environment and their subsistence traditions. Exxon disallowed traditions of inter-village exchange of subsistence resources in assessing damages.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Cordova] EVENT_PHASE[pre spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, municipal workers, city council members, local government, Exxon, VECO, cleanup workers, commercial fishermen, independent contractors] SOCIAL_EFFECTS[social conflict, leadership] ECONOMIC_EFFECTS[economic loss, bankruptcy, foreclosures, business losses, fiscal losses, claims process, inflation, housing shortages] PSYCHOLOGICAL_EFFECTS[anger, fear, social disruption] MUNICIPAL_EFFECTS[increased workloads, delayed work, service demands, chaotic claims process, fiscal impacts] OTHER_EFFECTS[hazardous materials, health] SUBSISTENCE_ACTIVITIES[contamination fears] CULTURAL_SUBSISTENCE[culture conflict]

CITATION[Morrison, Eric. 1993. Tatitlek. With a preface by Steven McNabb. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 1 (Cordova, Tatitlek, Valdez). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This chapter provides background on this Alutiiq community and the early effects of the spill. However, this is only a brief chapter because the research was curtailed due to ongoing litigation. The author observes that money made during the cleanup was often spent on luxury items rather than savings. The influx of people, including reporters, researchers, and cleanup workers was a source of anger in the community. Subsistence resources, especially bottom fish and shellfish, were seen as affected. A decline in subsistence harvests is noted.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Tatitlek] EVENT_PHASE[pre-spill, spill, cleanup, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Alutiiq, cleanup workers, journalists, scientists] ECONOMIC_EFFECTS[economic gain, economic loss, spending patterns] LITIGATION_EFFECTS[litigation and scientific research]

SUBSISTENCE_ACTIVITIES[contamination fears, resource availability, shellfish, bottomfish] REMAINDER[litigation constrains research]

CITATION[Endter-Wada, Joanna, John Hofmeister, Rachel Mason, Steven McNabb, Eric Morrison, et al. 1993. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]

CITATION[Robbins, Lynn A. 1993. Kenai. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This chapter contains sections the historical context of Kenai, and the impacts of the spill on the municipality, businesses and households, commercial fishermen and fish processors, and community relations. The community includes fishing sectors and oil sectors, and there is general amity between these groups, though there was some resentment between drift-net and set-net fishermen, because the set-net fishermen were able to continue to work on the inlet's shores, and brought in large catches of salmon. There was also some bitterness between drift net fishermen and people who worked in spill cleanup. Alaskan media was affected when the oil company consortium VECO bought one of the two major State newspapers, The Anchorage Times, and sold it in 1992 to The Anchorage Daily News. Crimes were less common during cleanup. City workers did not leave their jobs to work on the cleanup, and only the Women's Resource and Crisis Center experienced a small loss of staff, and a 30 to 40 percent increase in shelter occupancy associated with stress in families employed in the driftnet fishing sector. There were economic losses to businesses in the construction sector, and to guides and some businesses and services related to fishing.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kenai] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, VECO, Exxon, municipal workers, business sector, residents] SOCIAL_EFFECTS[reduced crime] CULTURAL_EFFECTS[sense of place] FAMILY_EFFECTS[domestic stress] ECONOMIC_EFFECTS[business losses, economic gains, fishing industry sectors] PSYCHOLOGICAL_EFFECTS[substance abuse, stress] MUNICIPAL_EFFECTS[preparedness plans revised]

CITATION[McNabb, Steven, with contributions from Jon Hofmeister and Robert Heasley. 1993. Tyonek and Seldovia. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[There are a number of differences between Tyonek and Seldovia. Tyonek is predominately Alaskan Native, while Seldovia is a mixed community. Oil never reached Tyonek in Upper Cook Inlet, and commercial fishing and subsistence were not affected,

while there was some oil in Seldovia. The economy in Tyonek is dependent on government transfers, commercial fishing and subsistence, and Seldovia has a more diversified cash economy and includes tourism and timber sales. Seldovia's citizens were more often employed in the cleanup work than were citizens of Tyonek. Tyonek organized an effort to find employment for its citizens in the cleanup, and the residents sent fish to communities that had been affected by the spill. There were resentments between those employed in cleanup, and those not so employed. Fish prices were considered low, and some considered the harvest amounts low. There were fuel shortages and increased fuel costs for residents, due to changes in fuel transportation regulations and diversion of barges to the cleanup. Seldovia experienced more impacts from the EVOS than did Tyonek. There was increased work for social service and public safety workers, due to child neglect, stress, and the instability caused by rapid influx of people. There was deferred institutional business, delayed public works projects, jeopardized funding, and stress among staff. Cleanup jobs provided income that was about equal to work lost in the depressed commercial fishing and tourism sectors. The researchers observe that the social impacts of the cleanup were as significant as the impacts of the spill, and propose that this is not an inevitable situation, and that the course and impacts of EVOS cleanup were a product of time and place, and the interactions between Exxon, VECO, businesses, and the State and Federal governments.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Tyonek, Seldovia] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Exxon, VECO, commercial fishermen] SOCIAL_EFFECTS[population increase, social tension] FAMILY_EFFECTS[child neglect, domestic stress, parent absence] ECONOMIC_EFFECTS[commercial fisheries, tourism industry, cleanup employment, fuel prices, employment] PSYCHOLOGICAL_EFFECTS[stress] MUNICIPAL_EFFECTS[mitigation, employment] SUBSISTENCE_ACTIVITIES[sharing, subsistence unaffected] CULTURAL_SUBSISTENCE[sharing]

CITATION[Endter-Wada, Joanna, Rachel Mason, Joanne Mulcahy, Jon Hofmeister. 1993. The Kodiak Region. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This was one of the areas most affected by the spill, and Kodiak's fishing areas in the Shelikof Straits were oiled, and the oil reached Kodiak's beaches within three weeks of the spill. The researchers write that Exxon's actions inhibited community mobilization of the kind that had occurred after the 1964 earthquake. At the time of the spill, Kodiak City was struggling to remain a major US fishing port and regional processing center. The fishing industry itself had become more competitive, diversified, capitalized and risky, leading to tensions that were exacerbated by the spill. Exxon's spill response created differential impacts in Kodiak, which produced some community factionalism. There was an active Emergency Services Council in place, which had been formed after the 1964 earthquake. The cleanup process required local governments to formulate plans and submit them to Exxon for approval, then finance the cleanup plan and submit claims for reimbursement. By the time oil reached Kodiak, Exxon had begun to limit its cleanup costs and liabilities. There were lost tax revenues and increased social service costs. Local government faced conflicts with Exxon over

defining the geographic extent of the problem and the nature of impacts, and conflicts over preventing the spill's spread. Communities had difficulty obtaining uniform treatment from Exxon, leading to the formation of the 'Oiled Mayors' to provide formal, uniform negotiation. Economic effects were uneven, and some lost financially while others gained. Impacts on fishing, tourism, and service and support industries are discussed. Other topics are factionalism, and subsistence.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Kodiak, Kodiak Archipelago, Prince William Sound, Shelikof Strait, Alaska Peninsula, Chignik, Kodiak Island Borough, Kenai Peninsula Borough, Kodiak City, Port Lions, Kukak Bay, Karluk Lagoon, Olga Bay] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Oiled Mayors, Exxon, VECO, Emergency Services Council, U.S. Coast Guard, Kodiak Area Native Association, National Park Service, Alaska Department of Environmental Conservation, Advanced Environmental Technology] SOCIAL_EFFECTS[emergent groups, factionalism] CULTURAL_EFFECTS[sense of place] FAMILY_EFFECTS[divorce, domestic violence] ECONOMIC_EFFECTS[fishing industry sectors, economic loss, economic gain, unemployment, banking industry, loans] PSYCHOLOGICAL_EFFECTS[substance abuse, alcohol abuse, domestic violence] MUNICIPAL_EFFECTS[service demands, mitigation, expenditures, media, lost time, lost revenue] SUBSISTENCE_ACTIVITIES[decreased harvest, contamination fears] CULTURAL_SUBSISTENCE[cultural identity, family ties, community ties, cooperation]

CITATION[Rooks, Curtis Takada. 1993. Karluk. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[Subsistence harvests in this Alaskan Native community decreased, and there were contamination fears. Most losses were adequately compensated. There was an influx of outsiders in the community, associated with Exxon and the cleanup effort, they operated outside of local authority and the community was powerless to manage them. People left positions of responsibility for cleanup jobs, and temporary employment increased. Much of the money earned in cleanup was spent outside the community. There was a large difference between public sector wages and wages from the cleanup, and this created dissatisfaction. 25% of the population left Karluk, enabled to leave by more money, and encouraged to leave by local problems.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Karluk] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Exxon, VECO] SOCIAL_EFFECTS[social tension, leadership] ECONOMIC_EFFECTS[economic loss, economic gain] MUNICIPAL_EFFECTS[influx of outsiders, emigration, population] SUBSISTENCE_ACTIVITIES[decreased harvest, contamination fears]

CITATION[Rooks, Curtis Takada, with contributions from Joanna Endter. 1993. Old Harbor. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies

Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[Old Harbor had a population of 284 in the 1990 census, and residents are predominately Alaskan Native, and refer to themselves as Aleut. The Russian Orthodox church is the primary local organization not based in kinship. The village is about 2 miles across, and it is described as affluent by Alaska Native village standards. Participation in the fishing industry is the major source of income, while traditional Native customs of subsistence and sharing are maintained. This study in a predominately Native community mentions changes in subsistence activity, financial losses, and widespread depression. Fears of subsistence food contamination were common, especially among the elderly. Villagers mentioned changes in the appearance and apparent health of seafood, and children increasingly rejected traditional foods in favor of purchased foods. The only available work was in the cleanup effort, and it required that villagers wait to be called to work by Exxon, rather than take the more active role they were used to in commercial and subsistence fishing. Parents were more often absent from the home, and children did not have the opportunity to learn in the company of their parents how to harvest subsistence foods. For those not normally employed in the fishing sector, the cleanup work provided an economic boon, stores may have made more money, and those serving the housing needs of Exxon and VECO workers also benefitted. There were eventual difficulties with income taxes and fishing boats were lost for financial reasons and because small-boat repairs were neglected. An additional consequence was seen the next season, when there was greater competition for Old Harbor fish from Kodiak City fishermen who had made a lot of money renting large boats to VECO, and were able to upgrade their equipment to travel to Old Harbor. Village governmental institutions were overwhelmed with work associated with the spill, and with quelling rumors. Insulation work scheduled by the Housing Authority was delayed, and the Village Council, hired by VECO as local coordinators, missed the submission dates of grants, which eventually called into question local leadership.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Old Harbor, Kodiak City, Sitkalidak Strait, Sitkalidak Island] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, fishermen, Village Council, VECO, Exxon, Housing Authority, children, elderly] SOCIAL_EFFECTS[leadership, inter-generational discord, social tension] FAMILY_EFFECTS[domestic stress, parent-child conflicts, parent absence] ECONOMIC_EFFECTS[economic loss, economic gain, taxation, property loss] PSYCHOLOGICAL_EFFECTS[depression] MUNICIPAL_EFFECTS[government overwhelmed, rumor control, grants missed, Village Council as VECO coordinators] SUBSISTENCE_ACTIVITIES[decreased harvest, change from subsistence foods to purchased foods, contamination fears] CULTURAL_SUBSISTENCE[enculturation, subsistence traditions]

CITATION[Rooks, Curtis Takada. 1993. Chignik. Social indicators study of Alaskan coastal villages: IV. Postspill key informant summaries; schedule C communities, Part 2 (Kenai, Tyonek, Seldovia, Kodiak City, Karluk, Old Harbor, Chignik). Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 155, OCS Study MMS 92-0052. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[Chignik, also referred to as Chignik Bay, is located in the Anchorage Bay and its population is mostly Alaskan Native. Residents include employees in the fish processing sector, non Native educators and employees in the public sector, Native

fishermen who winter out, and Native fishermen who winter in. A large portion of the Chignik fishery was closed by the *Exxon Valdez* spill, and different sectors of the fishing industry experienced different degrees of impact. The small fishing operations were most seriously affected, while intermediate and large operations reportedly had fewer negative effects. The largest operations (highliners) had opportunities to fish elsewhere, and also received compensation from Exxon for fishing losses, and some hired their boats to Exxon for cleanup activities. Exxon's compensation procedures were suited to the business practices characteristic of large fishing operators. Chignik Lagoon was the only area open to fishing, and there was much competition in that area. There was a considerable amount of social tension, sometimes involving arguments over truthfulness with respect to compensation claims and the degree of financial loss. These disputes involved adults and children, families and friends, and increased tension between large and small operators. There were fiscal losses to the city because of lost fish tax revenues, and longer work days for city workers. And there were financial losses in the fish processing and other business sectors.]
KEYWORDS: SOURCE_TYPE[report chapter] GEOGRAPHY[Chignik, Chignik Bay, Chignik Lagoon, Anchorage Bay] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, fishing sectors, children, fish processors, non-Natives, municipal workers, Exxon, VECO] SOCIAL_EFFECTS[subsistence-based community, social conflict, increased competition] FAMILY_EFFECTS[domestic stress] ECONOMIC_EFFECTS[fiscal loss, business losses, fish processing, commercial fisheries] PSYCHOLOGICAL_EFFECTS[stress, anger] MUNICIPAL_EFFECTS[fiscal losses, lost tax revenue, increased workloads, delayed work] SUBSISTENCE_ACTIVITIES[decreased harvest]

CITATION[Endter-Wada, Joanna, Lynn A. Robbins, Douglas W. Levine, Daniel L. Boxberger, Paula D. Nohalty, Joseph G. Jorgensen, and Steven L. McNabb. 1992. Final Report: Bristol Bay Subsistence Harvest and Sociocultural Systems Inventory. Prepared for Alaska Outer Continental Shelf Office, Social and Economic Studies Program, Minerals Management Service. Technical Report No. 150; OCS Study MMS 92-0036. Logan, UT: Social Science Research Associates.]
ABSTRACT/ANNOTATION[Along with communities in the greater Bristol Bay region, this work contains subsistence resource utilization oriented community profile of the Alaska Peninsula community of Chignik Lake. While fieldwork for Chignik Lake took place in 1990, the *Exxon Valdez* spill is not analyzed with respect to the subsistence resource base. The report includes discussion of the meanings of subsistence activities for interviewees, the social patterning of subsistence cooperation and sharing, and draws conclusions about the importance of subsistence in maintaining Native cultural traditions and as a foundation of regional social structure.]
KEYWORDS: SOURCE_TYPE[report volume] GEOGRAPHY[Bristol Bay, Chignik Lake, Togiak, Dillingham, Nushagak Bay, New Stuyahok, Nushagak River, Nondalton, Iliamna Lake, Naknek, Bristol Bay Borough/ Upper Alaska Peninsula, Port Heiden, Chignik] EVENT_PHASE[general] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] SUBSISTENCE_ACTIVITIES[harvest amounts, species] CULTURAL_SUBSISTENCE[subsistence culture, social patterning of subsistence]

CITATION[Endter-Wada, Joanna, Jon Hofmeister, Rachel Mason, Steven McNabb, Joanne Mulcahy and Lynn Robbins. 1992. Social indicators of Alaskan coastal villages: I key informant summaries; volume 2, schedule B regions. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 152, OCS Study MMS 92-0032. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This volume two of a two-volume set of key informant summaries from the social indicators studies of seven different regions of Alaska. The Schedule B regions, covered in this volume, include the Bering Straits region, the Bristol Bay region, and the Kodiak region. The regional discussions follow a common outline of: historical context; population and demography; community organization and economy; household organization and kinship; and ideology. Two regional discussions encompass areas of the *Exxon Valdez* spill: the Bristol Bay region (which includes 'Gulf of Alaska side' portions of the Alaska Peninsula) and the Kodiak Region. The Bristol Bay regional discussion does not contain information on the *Exxon Valdez* spill. The Kodiak regional discussion has a number of references to the oil spill (including documenting a pre- and post-spill shift in KI opinions on the beneficial or detrimental aspects of OCS development), and has an entire additional section (pages 807-869) devoted exclusively to the effects of the *Exxon Valdez* oil spill on the City of Kodiak, which appears to be the same as the *Exxon Valdez* section of the 1993 volume on Kodiak City (for annotation and keywords in this section, see above).]

CITATION[*Exxon Valdez* Oil Spill Forum. 1994. Five years later: what have we learned?: proceedings of a public forum, Anchorage, Alaska, March 2, 1994. Anchorage, AK: Oil Spill Public Information Center.]

CITATION[*Exxon Valdez* Oil Spill Trustee Council. 1993. Summary of public comment on alternatives: of the draft *Exxon Valdez* oil spill restoration plan. Anchorage, AK: *Exxon Valdez* Oil Spill Trustee Council.]
ABSTRACT/ANNOTATION[Public comment on alternative ways to achieve restoration following the *Exxon Valdez* oil spill is summarized in this document. Comment was sought through the distribution of 33,000 copies of a newspaper brochure on the proposed alternatives, accompanied by a questionnaire, and in public meetings. 799 questionnaires were returned, and two-thirds were from within the spill area, another quarter from other parts of Alaska, and the remainder from outside Alaska. 792 letters were also sent in, and around 500 people attended public meetings. Comments concerned the scope and duration of restoration efforts, and the sorts of projects that restoration funds should be spent on, including habitat protection and acquisition, monitoring and research, general restoration, expenditures on administration and public information, endowment or savings account, injured resources and services, and the process of restoration.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska, Anchorage, Cordova, Tatitlek, Chignik Lagoon, Larsen Bay, Seward, Seldovia, Juneau, Ouzinkie, Old Harbor, Kodiak, Chenga Bay] EVENT_PHASE[restoration]

CITATION[*Exxon Valdez* Oil Spill Trustees. 1994. Draft 1994 work plan: (without brief project descriptions). *Exxon Valdez* Oil Spill Restoration. Anchorage, AK: *Exxon Valdez* Oil Spill Trustee Council.]

ABSTRACT/ANNOTATION[With respect to archaeological resources, the report finds that injury to sites comes from looting and vandalism, and erosion around the sites from cleanup activity. The repair of sites and artifacts, protection from further damage, and monitoring are indicated, and projects are outlined. These projects include restoration of sites, training of volunteers to monitor the sites, and the design of heritage centers to store artifacts from damaged sites. With respect to subsistence, the report outlines projects to promote the recovery of subsistence resources including harbor seals, sea otters, clams, Pacific herring, pink and sockeye salmon. Removal of remaining oil on beaches and mussel beds are also planned. A project to test the safety of subsistence food is continued from 1993, with meetings to be held in Native villages to disseminate the results. Projects directed at commercial fishing damaged by the spill are also discussed, and projects to restore recreation and tourist areas.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska, spill area, Prince William Sound] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, Alaskan Natives, tourists, sportsmen] SUBSISTENCE_ACTIVITIES[contamination assessment]

CITATION[*Exxon Valdez* Oil Spill Trustee Council. 1996. *Exxon Valdez* Oil Spill Restoration Plan, Draft update on injured resources and services, April 1996. Anchorage, AK: *Exxon Valdez* Oil Spill Trustee Council.]
ABSTRACT/ANNOTATION[This document reports on the progress of the restoration effort directed by the Trustee Council. It includes a review of species recovery and the recovery of archaeological sites, and lost services. A list at the end of the document indicates which resources have recovered, which are recovering, which have not recovered, and those for which recovery is unknown. Lost or reduced services tracked here include commercial fishing, passive uses, recreation and tourism, and subsistence. With respect to archaeological resources, it states that the oil spill area contains more than 3,000 sites of archaeological and historical significance, and that twenty-four sites on public lands were damaged by cleanup activities, looting, or vandalism following the spill. Most of the vandalism took place in 1989, and involved searches by cleanup personnel. Measures were put in place to protect the sites from further damage. With respect to commercial fishing, the report states that fishing was reduced because of fishery closures, and because some fish species were reduced in number by the spill. The list of injured species, and the progress toward their recovery, is included in this report. In 1989 there were fishery closures in Prince William Sound, lower Cook Inlet, upper Cook Inlet, Kodiak and Chignik. These fisheries opened in 1990, but the Prince William Sound herring fishery closed in 1993 and remained closed because of low herring population. The Trustee Council projects to restore commercially important fish species are described. Passive use of resources, such as aesthetic appreciation of the environs, is also discussed as an injured resource, and recovery is defined. Impacts on recreation and tourism are also discussed in terms of wildlife viewing of species injured by the spill (killer whales, sea otters, birds) and recreation use of beaches with oil residue. Sports hunting and fishing are also affected by closures, and since 1992 restrictions were placed on sports fishing of cutthroat trout in parts of Prince William Sound, and restrictions were placed on the hunting of harlequin ducks in 1991. Another change brought by the spill was a shift in tourist and recreational use to areas unaffected by the spill, which brought management problems. And some recreational facilities were damaged by cleanup workers. Subsistence is another injured resource, and the report states that fifteen communities with predominantly Alaskan Native populations rely on harvests of fish, shellfish, seals, deer, ducks and geese, while

residents of other communities are also reliant on resources shared by residents of this area. Subsistence harvests declined in these villages, for reasons of reduced species availability, contamination fears, and disrupted activities due to cleanup and other spill related events. The report notes that subsistence foods were tested for hydrocarbon contamination through 1994, and were determined to pose no significant additional risk to health. However, an exception was noted for shellfish, which may continue to accumulate oil, and subsistence users were advised to avoid shellfish from an area where oil can be seen or smelled. Subsistence harvests have returned to pre-spill levels in some villages. Harvest levels recovered first in the communities of the Alaska Peninsula, Kodiak Island and lower Kenai Peninsula, but recovery has lagged in the Prince William Sound villages. Additionally, the harvest of some species remains low, and in some cases there is a shift to greater use of other species to compensate for the loss. Sometimes greater effort is required in time and travel to provide for subsistence. The cultural significance of subsistence harvests is also discussed as an injured resource, and the disruption of the subsistence way of life and the chance for children to learn subsistence culture are mentioned.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Chenega Bay, Prince William Sound, Alaska Peninsula, Kodiak Island, Kenai Peninsula, lower Cook Inlet, upper Cook Inlet, Kodiak, Chignik] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[commercial fishermen, sportsmen, Alaskan Natives, tourists] CULTURAL_EFFECTS[sense of place] ECONOMIC_EFFECTS[economic loss, commercial fisheries, subsistence economy, tourism industry, lost passive use] MUNICIPAL_EFFECTS[tourist sites shift] SUBSISTENCE_ACTIVITIES[decreased harvest, contamination fears, resource availability, increased effort] CULTURAL_SUBSISTENCE[enculturation] REMAINDER[recovered species, recovering species, species not recovered, species recovery unknown]

CITATION[*Exxon Valdez* Oil Spill Trustee Council. 1997. 1997 Status Report. Anchorage, AK: Oil Spill Trustee Council.]
ABSTRACT/ANNOTATION[The contents of this document include a list of the Council and Public Advisory Group members, brief summary of the recovery status of natural resources and human resources and services, summary of ongoing research and monitoring activities sponsored by the Council, habitat protection efforts, public participation projects, a short summary of the civil and criminal settlements in Exxon litigation and the uses of civil settlements, and an audit of Trustee Council Expenditures. The section on human resources states that subsistence harvests in some villages have returned to levels before the spill, but some resources continue to be scarce. In particular, studies continue to learn why harbor seal populations continue to decline. Various projects to raise subsistence resources are mentioned. The section on recreation indicates that lands have been purchased for the creation of a State campground and recreation area, and another as a U.S. Forest service campground. A brief description is offered monitoring and research programs to promote fisheries and fish habitats. The public participation and outreach programs, and the overall organization of the public participation component, are outlined.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Oil Spill Trustee Council, public, Public Advisory Group, Alaskan Natives] SUBSISTENCE_ACTIVITIES[resource availability]

CITATION[Fall, J.D. 1995. Harbor seal and sea otter cooperative subsistence harvest assistance. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Projects

94244 and 95244). Anchorage, AK: Alaska Department of Fish and Game, Division of Subsistence.]

CITATION[Fall, J.A. 1995. Subsistence restoration planning and implementation. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 94428/95428). Anchorage, AK: Alaska Department of Fish and Game, Division of Subsistence (NTIS No. PB96-208426).]

CITATION[Fall, James A. and Charles J. Utermohle (eds.) 1995. An investigation of the sociocultural consequences of outer continental shelf development in Alaska, II Prince William Sound (OCS Study MMS 95-011). Anchorage, AK: U.S. Department of Interior. (See entry under ADF&G)]

CITATION[Faro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. 1994. Assessment of injury to river otters in Prince William Sound, Alaska, following the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Terrestrial Mammal Study Number 3). Soldotna: Alaska Department of Fish and Game, Wildlife Conservation Division.]

CITATION[Farro, J.B., R.T. Bowyer, J.W. Testa, and L.K. Duffy. 1994. River otter component of the oiled mussel-bed study. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study Number 103-3). Soldotna, AK: Alaska Department of Fish and Game, Wildlife Conservation Division.]

CITATION[Feder, H.M. 1995. Injury to deep benthos. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study 2B/Air Water 2). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division (NTIS No. PB96-194618).]

CITATION[Ferren, H. and J. Milton. 1995. Chenega chinook release program. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95272). Cordova, AK: Prince William Sound Aquaculture Corporation.]

CITATION[Ferren, H. and J. Milton. 1995. PWSAC-PWS system investigation: experimental fry release. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95320K). Cordova, AK: Prince William Sound Aquaculture Corporation.]

CITATION[Forage fish study in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94163). Fairbanks, AK: University of Alaska Fairbanks, School of Fisheries and Ocean Sciences.]

CITATION[Freese, J.L. and C.E. O'Clair. 1995. Injury to crabs outside Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 22). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194782).]

CITATION[Frost, K.J., L.F. Lowry, J. Small. and S.J. Iverson. 1996. Monitoring, habitat use, and trophic interactions of harbor seals in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95064). Fairbanks, AK: Alaska Department of Fish and Game, Division of Wildlife Conservation.]
CITATION[Frost, K.J., L.F. Lowry, and J. Ver Hoef. 1995. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94064 and 94320F). Anchorage, AK: Alaska Department of Fish and Game, Wildlife Conservation Division.]

CITATION[Frost, K.F., and L.F. Lowry. 1994. Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 93046). Fairbanks, AK: Alaska Department of Fish and Game, Wildlife Conservation Division.]
ABSTRACT/ANNOTATION[Restoration Project 93046 continued the effort initiated under Marine mammal Study Number 5 (Assessment of injury to harbor seals in Prince William Sound, Alaska, and adjacent areas) in 1989 through 1991. The project was reclassified as a restoration project in 1992 (study number 73, Harbor seal restoration study) and continued in 1993 as study number 93046 (Habitat use, behavior, and monitoring of harbor seals in Prince William Sound, Alaska). Aerial surveys of harbor seals were conducted at 25 trend count sites in PWS during pupping and molting in 1990-1993. Molting period counts at oiled sites were 51 percent lower in 1993 than in 1988, compared to 11 percent lower at unoiled sites. Pupping counts for all sites combined were 23 percent lower in 1993 than in 1989. The study concluded that harbor seals in PWS had not recovered since the *Exxon Valdez* oil spill. Satellite-linked time-depth recorders were attached to 20 harbor seals in PWS during 1991-1993. Tagged seals moved an average of 5 to 10 kilometers/day. Seals showed strong site fidelity, each hauling out mostly at the site it was tagged and sometimes at another nearby location. Daily maximum dive depths for seals smaller than 50 kilograms were usually 100 to 130 meters, compared to 130 to 150 meters for larger seals. For all seals combined, 58 percent of the dives were less than 50 meters.]
KEYWORDS: SOURCE_TYPE[EVTC Project Annual Report] GEOGRAPHY[Prince William Sound] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[subsistence resource users] SUBSISTENCE_ACTIVITIES[harbor seals]

CITATION[Frost, K.J. and L.F. Lowry. 1994. Assessment of injury to harbor seals in Prince William Sound, Alaska, and adjacent areas following the *Exxon Valdez* Oil Spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 5, Restoration Study Number 73). Fairbanks, AK: Alaska Department of Fish and Game, Wildlife Conservation Division (NTIS No. PB96-197116).]

CITATION[Geiger, H.J., W.D. Templin, J.S. Collie, and T.J. Quinn II. 1995. Run reconstruction and life history model. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 28). Juneau, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-208418).]

CITATION[Goldberg, Victor P. 1991. Recovery for economic loss following the *Exxon Valdez* oil spill. New York, N.Y.: Center for Law and Economic Studies, Columbia University School of Law. Series title: Working paper #62.]
ABSTRACT/ANNOTATION[This legal work considers the arguments surrounding recovery for indirect losses suffered as a consequence of environmental disasters, in particular the *Exxon Valdez* case. The author questions the allowance of collection by third parties for indirect losses in such cases. Commercial fishermen were the only parties whose claims for indirect damages were recognized in the *Exxon Valdez* case, and the article explores the historical conditions and precedents for the exception allowed fishermen. Legal issues discussed include the fact that most of the direct damage was to unowned assets, the question of how value should be assessed (the value of the fish destroyed or the losses consequent to the loss of the fish), the issue of fishermen's reliance on the fishery and the question of how broadly the idea of 'reliance' on an asset should be applied, and the legal question of the victim's responsibility for mitigation of loss after a disaster, and before (such as preparation and diversification). The author concludes that government should compensate those who suffered direct losses during such disasters, and then recover expenditures by suing those responsible. Further, it argues that third parties and indirect losses, including among commercial fishermen, should not be paid under tort law.]
KEYWORDS: SOURCE_TYPE[academic report] GEOGRAPHY[Alaska] EVENT_PHASE[spill, litigation] ECONOMIC_EFFECTS[indirect damages, direct damages, compensation for damages] LITIGATION_EFFECTS[damages, direct costs, indirect costs, liability]

CITATION[Greenpeace. 1990. The dinosaur's path: the *Exxon Valdez* oil and national security.]
ABSTRACT/ANNOTATION[This brief document by the environmental organization Greenpeace offers an overview of the spill and its impacts, and focuses more extensively on energy policy and the environmental consequences of energy use. The disaster is described as an accident waiting to happen. Conditions that contributed to the occurrence of the spill, the lack of preparation for mitigating its environmental effects, and the impacts on Native communities and subsistence practices, and the altered sense of place for Alaskans, are all mentioned. It also mentions that legal 'gag orders' associated with litigation following the disaster have restricted the release of scientific and other information on the impacts of the spill and the efficacy of clean-up efforts. Renewable energy policy and the reliance on foreign oil are also discussed.]
KEYWORDS: SOURCE_TYPE[pamphlet] GEOGRAPHY[Alaska, US, global, Bligh Reef] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Department of the Interior, Department of Energy, Environmental Protection Agency, General Accounting Office, Minerals Management Service, National Research Council, Natural Resources Defense Council, Exxon, Alyeska, Native Alaskans, Alaskans, Alaska Department of Environmental Conservation, fishermen, Alaska Volunteer Independent Cleanup Effort] SOCIAL_EFFECTS[social disruption] FAMILY_EFFECTS[domestic violence] PSYCHOLOGICAL_EFFECTS[substance abuse, domestic violence] LITIGATION_EFFECTS[litigation restricts information, litigation and scientific research] SUBSISTENCE_ACTIVITIES[decreased harvest, resource availability] CULTURAL_SUBSISTENCE[cultural meaning of subsistence]

CITATION[Hanable, William S. 1990. Military support for the cleanup of the *Exxon Valdez* oil spill: a special historical study. Elmendorf Air Force base, Alaska: Headquarters, Alaskan Air Command, Office of History, 76 pages.]

ABSTRACT/ANNOTATION[Although there was no declaration of a disaster following the 11-million gallon *Exxon Valdez* oil spill, President Bush directed that an Alaskan Oil Spill Task Force be formed to coordinate military support for oil spill cleanup activities. Troops were not involved in the actual physical cleanup activities. Rather, the military provided airlift, command control, communications, equipment, landing craft for ship-to-shore transportation and in-shore operations, medical support, oil skimmers, and ships for berthing civilian workers. This report documents the activities of the task force and its management of the military's response to the oil spill cleanup effort.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_EFFECTS[Multi-Agency Coordinating Group, response organization]

CITATION[Hanable, William S. And C. Burkhart. 1990. The *Exxon Valdez* oil spill and the National Park Service: A report on the initial response. Anchorage, Alaska: National Park Service, Alaska Region, 115 pages plus appendix.]
ABSTRACT/ANNOTATION[This work is intended as an official history or record contemporary to the events that it documents -- National Park Service activities in response to the *Exxon Valdez* oil spill. It covers the period of time from the beginning of the incident until the end of the first phase of the cleanup, when cleanup field teams left the area in the fall. The report focuses on the use of the Incident Command System, a pre-existing mechanism for managing federal agency response to fires, as the management system used by the national Park Service in their efforts. This was the first time that this system was applied in Alaska, and to a different kind of environmental disaster than it had been previously been used for. The report is divided into several parts. Chapter one describes spill events, provides historical background, identifies the national Park Service resources threatened by the spill, and the existing mechanisms for dealing with such threats. The initial National Park Service response is also documented. Chapter two further describes the methods used to direct and control National Park Service response to the spill during its first phase, and the coordination of that direction and control with similar efforts by other agencies and institutions. Chapter three is an account of staff and field operations conducted in anticipation of the arrival of the spilled oil at various on-shore locations. Chapter 4 expands on the topics of chapters 2 and 3 (command and control, and field operations) as they evolved after the spilled oil arrived at these on-shore locations. Chapter five summarizes the interpretations of previous chapters and presents additional conclusions.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_EFFECTS[Multi-Agency Coordinating Group, response organization]

CITATION[Hatch, S.A., P.M. Meyers, D.M. Mulcahy, and D.C. Douglas. 1996. Seasonal movements and pelagic habitat use of murres and puffins determined by satellite telemetry. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 95021). Anchorage, AK: National Biological Service (NTIS No. PB97-112726).]

CITATION[Hayes, D.L. 1995. Recovery monitoring of pigeon guillemot populations in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 94173). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194790).]

CITATION[Haynes, E., T. Rutecki, M. Murphy, and D. Urban. 1995. Impacts of the *Exxon Valdez* oil spill on bottomfish and shellfish in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 18). Juneau: U.S. National Marine Fisheries Service.]

CITATION[Heintz, R.A., S.D. Rice, and J.W. Short. 1995. Injury to pink salmon eggs and preemergent fry incubated in oiled gravel (laboratory study). *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94191-2). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Hepler, K.R., P.A. Hansen and D.R. Bernard. 1994. Impact of oil spilled from the *Exxon Valdez* on survival and growth of Dolly Varden and cutthroat trout in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 5; Restoration Study Number 90). Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish.]

CITATION[Highsmith, R.C., M.S. Stekoll, .P.G. Van Tamelen, A.J. Hooten, L. Deysher, L. McDonald, D. Strickland, and W.P. Erickson. 1993. Herring Bay experimental and monitoring studies. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 60C). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-194949).]

CITATION[Highsmith, R.C., M.S. Stekoll, P.G. Van Tamelen, S.M. Saupe, T.L. Rucker, and L. Deysher. 1995. Herring Bay experimental and monitoring studies, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94086). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division.]

CITATION[Hoffmann, A. and P. Hansen. 1994. Injury to demersal rockfish and shallow reef habitats in Prince William Sound, 1989-1991. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 6, Fish/Shellfish 17). Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish.]

CITATION[Holland-Bartels, L. 1996. Mechanisms of impact and potential recovery of nearshore vertebrate predators. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95025). Anchorage, AK: National Biological Service.]

CITATION[Impact Assessment, Inc. 1990(a) Analysis of fiscal impacts to local jurisdictions. Interim report number 1. Prepared for Oiled Mayors Subcommittee, Alaska Conference of Mayors. La Jolla, CA: Impact Assessment Inc.]
ABSTRACT/ANNOTATION[The report looks at local government revenues and expenditures, and revenues and expenditures related to the oil spill, and impacts related to the fish tax.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska] EVENT_PHASE[pre-spill, spill, cleanup] ECONOMIC_EFFECTS[public expenditures, fish tax] MUNICIPAL_EFFECTS[public expenditures]

CITATION[Impact Assessment, Inc. 1990(b). Public and Private Sector Impacts of the *Exxon Valdez* Oil Spill. Second Interim Report. Prepared for the Oiled Mayors Subcommittee, Alaska Conference of Mayors. La Jolla, CA: Impact Assessment Inc.]
ABSTRACT/ANNOTATION[This research report for the Oiled Mayors Subcommittee uses an economic base model to analyze private and public sector economic impacts of the spill and the cleanup effort. The discussion of the public sector compares a set of populous jurisdictions with a set of communities that are more remote and less populous. In the economic model used here, industry sectors which drive the economy ('base sectors') include fish harvesting and processing, and tourism. An additional base sector industry, spill cleanup, developed after the spill. Support sector industries (which vary with the fortunes of the base sectors) increased employment during the cleanup and after cleanup ended in September 1989. Continued economic expansion during the fourth quarter of 1989 was associated with the windfall earnings during cleanup. Commercial fishing continued to be the major contributor to the economy, though fish harvests were below official projections for some species and areas. In terms of public sector fiscal impacts, the report found that revenues were moving back to normal patterns, though perhaps not in the case of fish tax. Further, it was unclear how the postponement of projects would affect their eventual costs, or the fiscal impact on insurance and auditing. Mental health and alcoholism costs increased after the spill, but future costs in these areas were unknown. It appeared that Exxon paid less attention to the less populous set of communities. The spill and cleanup extended social and governmental resources beyond capacity, especially in smaller cities, while accounting staffs were often overwhelmed, and many costs likely remained unreported and un-reimbursed.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Cordova, Valdez, Kodiak, Homer, Kenai, Seward, Soldotna, Old Harbor, Ouzinkie, Seldovia, Whittier] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, merchants, cleanup workers, Alaskan Natives, government] ECONOMIC_EFFECTS[service sector, public expenditures, fiscal impacts, economic gain]

CITATION[Impact Assessment, Inc. 1990 (c). Social and psychological impacts of the *Exxon Valdez* oil spill: for the economic, social and psychological impact assessment of the *Exxon Valdez* oil spill. Prepared for Oiled Mayors Subcommittee, Alaska Conference of. Mayors. Interim Report Number 3. La Jolla, CA: Impact Assessment, Inc.]
ABSTRACT/ANNOTATION[An academic study of the social and psychological impacts of the *Exxon* Valdez spill and cleanup in the regions of Kodiak Island, Chignik Bay, Kenai Peninsula, Southern Kenai Peninsula, and Prince William Sound, this report presents data from field interviews, a household survey, and data from local agencies such as police departments, mental health clinics, and hospitals. After presenting pre-existing differences in the characteristics of these areas, and the different conditions surrounding the spill and cleanup in each area, the villages are described in terms of the response effort, local government, and changes in community, way of life, family, mental health, medical factors, and changes in personal experience. The report notes that most of the municipalities were extended beyond capacity, and ordinary services suffered. In many communities, there was an increase in destructive behavior, as indicated by increases in drunk driving arrests, crime, visits to mental health clinics, and admittance to women's shelters. Potential long term impacts emerged in peoples concerns about the future of subsistence activities, subsistence food sources, and the cultural and social life surrounding the partial reliance on these activities. The oil producing sectors expressed concern

over a legislative backlash against the oil industry, and in the influx of money for the cleanup brought new people to the area and changed expectations among Alaskan Natives about their role in the economy.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Kenai Peninsula, Southern Kenai Peninsula, Prince William Sound, Kodiak Island, Chignik Bay] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Natives, police, clinics, hospitals, women's shelter] SOCIAL_EFFECTS[social disruption, natural resource community, subsistence-based community] ECONOMIC_EFFECTS[economic loss, increased wealth, wage expectations] PSYCHOLOGICAL_EFFECTS[crime, mental health, violence, destructive behavior, alcohol abuse, substance abuse] MUNICIPAL_EFFECTS[service demands, fiscal losses] OTHER_EFFECTS[legislative change, increased regulation] SUBSISTENCE_ACTIVITIES[resource availability, contamination fears] CULTURAL_SUBSISTENCE[threat to subsistence culture, subsistence roles]

CITATION[Impact Assessment, Inc. 1990 (d). Economic, social, and psychological impact assessment of the *Exxon Valdez* oil spill: final report. Prepared for Oiled Mayors Subcommittee, Alaska Conference of Mayors. La Jolla, CA.: Impact Assessment, Inc.]
ABSTRACT/ANNOTATION[This report presents the results of research carried out between November of 1989 and September 1990, on the social, psychological and economic impacts of the oil spill and cleanup on twenty-two Alaskan communities in three areas, including the villages of Kodiak, the Alaska and Kenai Peninsula, and the villages of Prince William Sound. Population size of the twenty-two communities before the spill ranged from 6,774 in Kodiak to 55 in Chignik Lagoon. Social and psychological data were gathered through interviews with mental and social health providers and an archival survey, fiscal impacts were studied through interviews and reviews of records, and a survey provided data on impacts to the private sector. With respect to psychological and social problems, the study found 90% more general anxiety disorder in case than control communities, 99% more post traumatic stress disorder, and 90% more depression, as well as 11.4 times more drinking, 7.4 times more drug use, and 11.6 times more domestic violence. There were also affects on health, specifically on individuals' sense of their own health and the number of health problems verified by physicians as measured before and after the spill, with more health problems in those most exposed to the spill. Mental health impacts were especially common in Native communities, in part because mental health services were less available, since these services were in high demand and many of the counselors and staff had left to participate in the cleanup. Participation in the cleanup effort had an impact on family and community social life, and participants spent less time with family and friends and in community and religious activities. Further, the involvement with the cleanup was a source of some community controversy and conflict. 45% of those who worked in the cleanup reported that they spent less time with members of their households, compared to 16% of those not taking part in the cleanup. Parents reported effects on their children, including separation anxiety, parent-child discord, and behavioral problems. The spill and cleanup had an especially marked impact on subsistence activities in Native communities, and the social and spiritual values linked to traditional uses of the environment were perceived as threatened. While hunting, fishing, and gathering decreased by a reported 42%, the social aspects of subsistence, such as joint subsistence activities, sharing with other households, available food to share with elders, receiving shared food, also decreased. With respect to the economy, the report finds both impacts on local government operations, and fiscal impacts. It notes that usual government

business was displaced by the demands of responding to the spill and cleanup, there were communications problems among various entities, the political context was altered by factionalism that emerged over the spill and cleanup, and new organizations and alliances formed. Local communities were reimbursed by Exxon for only a portion of actual costs, and fiscal impacts were not uniform among communities. In terms of private sector economic impacts, the report finds the highest cleanup participation in some business sectors and occupations, and higher participation in some communities than others. Firms that participated in cleanup had lower income in 1988 than firms that did not participate, but participating firms had higher income in 1989. Future community preparedness is discussed.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[North Gulf Coast, Kodiak, Alaska Peninsula, Kenai Peninsula, Prince William Sound, Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, Port Lions, Chignik Bay, Chignik Lagoon, Chignik Lake, Kenai, Soldotna, Seward, Homer, Seldovia, Port Graham, English Bay, Valdez, Cordova, Whittier, Chenega Bay, Tatitlek] EVENT_PHASE[pre-spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[cleanup workers, Alaskan Natives, local government, Exxon, merchants, residents] SOCIAL_EFFECTS[social disruption, social conflict, crime, kinship, subsistence-based community, emergent groups] CULTURAL_EFFECTS[risk perception, sense of community, cultural persistence] FAMILY_EFFECTS[role relationships, domestic violence, behavioral problems, separation anxiety, children, generational tension, obligations] ECONOMIC_EFFECTS[economic gain, economic loss, fiscal impacts] PSYCHOLOGICAL_EFFECTS[depression, anxiety, post-traumatic stress disorder, PTSD, substance abuse, separation anxiety, behavioral problems, counselors] MUNICIPAL_EFFECTS[service demands, fiscal losses, operational disruption, mayor, city council, Oiled Mayors, service providers take cleanup employment] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, decreased harvest, contamination fears, contaminated resources, sharing] CULTURAL_SUBSISTENCE[sharing, cooperation, cultural meaning of resources, enculturation.]

CITATION[Jewett, S.C., and T.A. Dean, R.O. Smith, M. Stekoll, L.J. Haldorson, D.R. Laur, and L. McDonald. 1995. The Effects of the *Exxon Valdez* oil spill on shallow subtidal communities in Prince William Sound, Alaska 1989-93. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93047, Subtidal Study Number 2A). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division, NTIS No. PB96-194865).]

CITATION[Jorgensen, Joseph G. 1995. Social indicators study of Alaskan coastal villages: VI. Analysis of the *Exxon Valdez* spill area, 1988-1992. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 157, OCS Study MMS 94-0064. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[A number of findings are discussed and summarized in this volume. Among the findings, the spill sparked a brief boom and bust cycle in employment, income, and commercial activities. There were increases in proceeds for rents, services, and products. There were job losses, especially in the commercial fishing sector, while there was added employment in the cleanup of the spill. Job loss in the private sector was greater than in the public sector between 1989 and 1990, and there was a steeper increase in income among Native Alaskans than non-Natives, partly because the pre-spill incomes among Native Alaskans were lower. In terms of subsistence activities, the study found that Natives decreased their food

harvests after the oil spill, and relied more on preserved food harvested before the spill, while non-Native Alaskans increased their harvest of subsistence foods. It also found that Natives and non-Natives define the environment and its resources differently: Instrumental use and cultural and spiritual valuation are important parts of the Native definitions, while commodity valuation takes precedence in the definitions of non-Natives. The Native study members displayed much greater knowledge of the environment, especially species and habitats, than did non-Natives, and were able to identify each of the 77 species presented to them in a survey. Comparisons are made between Native and non-Native study members in terms of beliefs about managing the environment, evaluation of whether such a spill would be likely to occur again, social organization, visiting patterns, sharing, conceptions of the environment, religion, knowledge of political issues and political participation. In most areas, the study found changes in behavior after the *Exxon Valdez* oil spill among both Natives and non-Natives, and differences in Native and non-Native responses to the spill as manifested in different behaviors.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Kodiak, coastal village, Alaska] EVENT_PHASE[pre spill, spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Natives, fishermen] SOCIAL_EFFECTS[sociability, sharing, political activity] CULTURAL_EFFECTS[traditional knowledge, religion, stewardship of the environment, political attitudes] FAMILY_EFFECTS[household organization, household composition] ECONOMIC_EFFECTS[economic gain, economic loss, unemployment, cost of living, inflation] SUBSISTENCE_ACTIVITIES[harvest amounts, harvest methods, decreased harvest, increased harvest] CULTURAL_SUBSISTENCE[sharing, significance of habitats, knowledge of species]

CITATION[Jorgensen, Joseph G. 1994. Social indicators study of Alaskan coastal villages: V. Research methodology for the *Exxon Valdez* spill area, 1988-1992. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 156, OCS Study MMS 93-0071. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This report discusses the methodology used in an expanded study of Alaskan coastal villages. Thirty-one villages had been part of an ongoing study, begun in 1986, on the effects of oil-related factors on Alaskan village life; of those villages, only two, Kodiak City and Old Harbor, were within the area affected by the *Exxon Valdez* oil spill. After the spill, several villages in spill-affected areas were added to the study, and this volume discusses the research methodology used in this expanded study. As in the pre-EVOS phase of this study, the research instruments were a questionnaire and a key informant protocol. The instruments included a series of questions on the EVOS. This document provides information on the study sites, time period covered by the study, response rates and reasons for refusal, and issues of instrument reliability and validity. A considerable amount of data appears interspersed with the discussion of design, methods and data analysis.]
KEYWORDS: REMAINDER[research methods]

CITATION[Jorgensen, Joseph. 1994. Social indicators of Alaskan coastal villages: III analysis. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 154, OCS Study MMS 93-0070. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This document contains analysis on a wide range of social indicators topics.

Exxon Valdez post spill analysis includes an examination of changes in earnings based on village type, degree of participation in village corporation elections, changes in employment, and whether or not oil exploration was considered good or bad for the (individual) village, in relation to the spill. Three variables are analyzed with respect to their association with impacts from the spill. The mixed/Native contrast refers to village composition, and a mixed village is defined as one in which over 25% of the population was non-Native, and Native villages, in which over 75% of residents were Native. A Native/non-Native contrast refers to ethnicity rather than village type. The third contrast, commercial fishing versus non-commercial fishing, refers to the degree to which the village economy is dependent on commercial fishing.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaskan coastal villages] EVENT_PHASE[pre-spill, spill, post-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, non-Natives, commercial fishermen] CULTURAL_EFFECTS[traditional knowledge, belief and cognition, ethics, values] MUNICIPAL_EFFECTS[infrastructure as a variable] CULTURAL_SUBSISTENCE[knowledge, beliefs, cognition, values]

CITATION[Jorgensen, Joseph. 1993. Social indicators of Alaskan coastal villages: II. Research methodology; design, sampling, reliability, and validity. Prepared for Minerals Management Service, Alaska OCS Environmental Studies Program, Technical Report 153, OCS Study MMS 93-0035. New Haven, CT: Human Relations Area Files.]
ABSTRACT/ANNOTATION[This volume introduces the research design and research methods, and the sampling procedures used in the social indicators study conducted in 30 Alaskan villages beginning in 1986. The project called for an analysis of contemporary life in the 30 villages in seven Native regions associated with the Alaska Native Claims Settlement act of 1971, in an area that reached from Kodiak Island to the North Slope. Attention in the research design was to be paid to differences among ANCSA regions, between Native and non-Native residents, between villages with developed infrastructure and those with minimal infrastructure, and between Outer Continental Shelf oil-related activities and other development that could affect village life. To this end, two social indicator research instruments were developed to monitor social conditions in these communities over time. A questionnaire and an interview protocol were the instruments developed. This volume addresses the issues of instrument validity, research design (including the selection of communities, the sampling design with respect to persons and households), variance, reliability, non-response, field testing the instruments in 1987, and further testing in 1988, 1989, and 1990.]
KEYWORDS: SOURCE_TYPE[report volume] GEOGRAPHY[ANCSA communities, Kodiak Island, North Slope] EVENT_PHASE[pre-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[ANCSA communities, Alaskan Natives, non-Natives] REMAINDER[research methods]

CITATION[Joyce, T.L., Evans, and R. Riffe. 1996 Otolish marking of pink salmon in Prince William Sound hatcheries, 1995. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95320C). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Klosiewski, S.P. and K.K. Laing. 1994. Marine bird populations of Prince William Sound, Alaska, before and after the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal

Natural Resource Damage Assessment Final Report (Bird Study Number 2). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB97-112684).]

CITATION[Kuletz, K.J. 1994. Marbled murrelet abundance and breeding activity at Naked Island, Prince William Sound, and Kachemak Bay, Alaska, before and after the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 6). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB97-112692).]

CITATION[Kuletz, K.J. N.L. Naslund, and D.K. Marks. 1994. Identification of marbled murrelet nesting habitat in the *Exxon Valdez* oil spill zone. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study Number 15-2). Anchorage, AK: U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge (NTIS No. PB97-112718).]

CITATION[Kuletz, K.J., D.K. Marks, N.L. Naslund, N.G. Goodson, and M.B. Cody. 1994. Information needs for habitat protection: marbled murrelet habitat identification. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93051B). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-196886).]

CITATION[Kuletz, K.J., D.K. Marks, and N.L. Naslund. 1994. At-sea abundance and distribution of marbled murrelets in the Naked Island area, Prince William Sound, Alaska, in summer, 1991 and 1992. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study Number 15-1). Anchorage, AK: U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge (NTIS No. PB97-112734).]
CITATION[Kuwada, M.N., and K. Sundet. 1993. Stream Habitat assessment project: Afognak Island. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 47). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division (NTIS No. PB96-194915).]

CITATION[Lee, Martin R. 1989. After the *Exxon Valdez* spill: oil pollution liability and compensation legislation. Washington D.C.: Congressional Research Service, The Library of Congress.]
ABSTRACT/ANNOTATION[Transporting oil involves risks of accidents and thus requires established liability and compensation standards. This work describes the extent to which such a set of standards existed in 1989. Four Federal statutes -- the Clean Water Act, the Deepwater Port Act, the Trans-Alaska Pipeline Authorization Act, and the Outer Continental Shelf Lands Act Amendments -- established the basic parameters of the system, with additions through the actions of specific states and two international agreements. The result was a patchwork of coverage lacking uniformity and perhaps equity. Although the Department of Justice had recommended a uniform Federal oil pollution liability and compensation standard be established, and Congress had repeatedly considered such legislation, no act had been passed. The Senate generally favored the rights of States to establish their own liability standards, whereas the House had been more willing to preempt those standards.]
KEYWORDS: SOURCE_TYPE[report] EVENT_PHASE[litigation] OTHER_EFFECTS[legislation, liability standards]

CITATION[Lipscomb, T.P., R.K. Harris, R.B. Moeler, J.M. Pletcher, R.J. Haebler, and B.E. Ballachey. 1996. Histopathologic lesions associated with crude oil exposure in sea otters, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-10). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Lipscomb, T.P., R.K. Harris, A.H. Rebar, B.E. Ballachey, and R.J. Haebler. 1996. Pathological Studies of sea otters. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-11). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Lyles, Dianna M. 1990. *Exxon Valdez* oil Spill: A geographic information management response. National Governors' Association third annual conference, integrating data for decision making. Juneau, Alaska: Alaska Department of natural Resources.]
ABSTRACT/ANNOTATION[The response to the *Exxon Valdez* oil spill required an immense management and coordination effort. A key aspect of this was the role of the Alaska Department of natural Resources, Land Records Information Section, in performing comprehensive damage assessment mapping and analysis for the involved State and Federal agencies. This required gathering information, designing database systems, procuring necessary computer capacity, and implementing production responses. This effort yielded enormously valuable rewards, and three simple but important lessons:
1) Using a sophisticated GIS in a large assessment exercise is a strategic decision that requires top management understanding and commitment.
2) Excellent implementation skills must be immediately applied to similar emergency situations.
3) Contingency planning should comprehensively address issues of geographic information management.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[state government, cleanup workers] SOCIAL_EFFECTS[Multi-Agency Coordinating Group, response organization]

CITATION[Martin, P.D. 1993. Effects of the *Exxon Valdez* oil spill on migrant shorebirds using rocky intertidal habitats of Prince William Sound, Alaska, during spring, 1989. *Exxon Valdez* oil spill state/federal natural resource damage assessment final report (bird study number 12-1). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Marty, C.D., E.F. Friedberg, T.R. Meyers, J.A. Wilcock, C.R. Davis, T.B. Farver, and D.E. Hinton. 1995. Ichthyophonus hoferi, viral hemorrhagicsepticemia virus, and other causes of morbidity in Pacific herring spawning in Prince William Sound in 1994. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94320S). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division.]

CITATION[Matkin, C.O., D. Scheel, G. Ellis, L. Barrett-Lennard, and E. Saulitis. 1996. Comprehensive killer whale investigation. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95012). Homer, AK: North Gulf Oceanic Society.]

CITATION[McCarron, S. and A.G. Hoffman. 1993. Technical support study for the restoration of Dolly Varden and cutthroat trout populations in Prince William Sound, *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 106). Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish.]

CITATION[McClintock, Sharon. 1989. Alaska oil spill commission oiled communities response investigation report. Alaska Oil Spill Commission.]
ABSTRACT/ANNOTATION[The Alaska Oil Spill commission gathered information following the spill in communities affected by the spill. Issues discussed include the spill's proximity and effect on local resources, community responses to the spill, the impact on the community, social impacts, response to the cleanup and containment efforts, causes for community specific impacts, and recommendations. Communities included in this work are: Akhiok, English Bay (Nanwalek), Port Graham, Kodiak, Larsen Bay, Seldovia, Cordova, Chenega Bay, Old Harbor, Karluk, and Whittier. Brief discussion of social impacts indicate: social disruption, changes in subsistence harvests and practices, conflicts and social dissension, individual and communal stress, disruption of local and tribal government, inadequate child care, economic loss for commercial and subsistence fishing and their support industries, health concerns about contaminated resources, distress and grief following observing dead and dying wildlife, frustration with Exxon's perceived insincere cleanup, suicides and other psychosocial problems, influx of outsiders into communities, loss of control over community life and processes, and fiscal losses to local governments.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Akhiok, English Bay, Nanwalek, Port Graham, Kodiak, Larsen Bay, Seldovia, Cordova, Chenega Bay, Old Harbor, Karluk, Whittier] EVENT_PHASE[post-spill] SOCIAL_OR_CULTURAL_IDENTIFIER[residents, Alaska Oil Spill Commission, Exxon, Alaskan Natives] SOCIAL_EFFECTS[social disruption, social conflict, disruption of Native communities, population increase] FAMILY_EFFECTS[childcare] ECONOMIC_EFFECTS[economic loss, commercial fisheries losses] PSYCHOLOGICAL_EFFECTS[grief, frustration, suicide, stress, mistrust, disruption] MUNICIPAL_EFFECTS[influx of outsiders, fiscal losses] SUBSISTENCE_ACTIVITIES[decreased harvest, contamination fears]

CITATION[McDowell Group. 1990. An assessment of the impact of the *Exxon Valdez* oil spill on the Alaska tourism industry: phase I, initial assessment. Prepared for Preston, Thorgrimson, Shidler, Gates, and Ellis. Seattle, Washington: Preston, Thorgrimson, Shidler, Gates, and Ellis.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* oil spill of March 24, 1989 had major effects on the tourism industry throughout Alaska. There were five major negative effects identified by the business surveys conducted for this report:
1) Decreased resident and non-resident vacation/pleasure traffic in the spill-affected areas of Valdez, Homer, Cordova, and Kodiak due to the lack of available visitor services (accommodations, charter boats, air taxis).
2) Forty three percent of surveyed businesses felt their business had been significantly adversely affected by the oil spill in the summer of 1989.
3) Costs of doing business were higher due to a severe labor shortage in the visitor industry throughout the state, due to traditional service industry workers seeking high-paying spill clean-up jobs.
4) Cancellations due to the spill were reported by 59 percent of the businesses.

5) Most negatively affected were lodes and resorts, Alaska-based package tour companies, guided outdoor activities, and charter and sightseeing boats. These businesses did not have the opportunity to reap spill benefits (such as spending for accommodations) because they were located away from spill clean-up operations or operated a business which could not serve clean-up needs.
Other negative effects noted in the report, based on other cited survey work, was the net loss of $5,500,000 to $19,000,000 in visitor spending in 1989, compared to 1988 (an 8 percent decline in Southcentral Alaska, but 35 percent in Southwest Alaska). Also, of those visitors who did go to Alaska in 1989, 16 percent reported that the spill affected their planned activities. Half of these people avoided the Prince William Sound area altogether. Some businesses (sectors such as hotels/motels, car/RV rentals, air taxi and boat charters) in areas such as Kodiak, Homer, Seward, Valdez, and Anchorage experienced increased earnings due to spill clean-up demand for their
services. Effects in 1990 were generally perceived as less than those for 1989, but still present. No long term effects assessment was made.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Kodiak, Homer, Seward, Valdez, Anchorage] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[tourism industry] ECONOMIC_EFFECTS[economic gain, economic loss, money spill] SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources]

CITATION[Mills, Michael J. 1992. Alaska sport fishing in the aftermath of the *Exxon Valdez* oil spill. Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish. Special Publication #92-5.]
ABSTRACT/ANNOTATION[The report is based on a mail survey sent to a random sample of those holding sports fishing licenses in Alaska. The survey was conducted annually since 1977 by the Alaska Department of Fish and Game, Division of Sport Fish. This report compares survey results in the area affected by the spill in the five years prior to the EVOS, 1984-88, to survey results in the year 1989. The report includes survey results for streams, but not lakes in the area affected by the EVOS. In general, the study finds that in the geographical area of the EVOS, sports fishing increased between 1984 and 1988, and then decreased in 1989. In 1984-88 there was a mean increase per year of 10% in the number of anglers, a mean increase of 10% per year in the number of household trips, a mean increase of 8% per year in the number of days fished, and a mean increase of 14% per year in the number of fish harvested. The pattern of increase continued in areas outside the spill-affected region. In the region of the spill, the number of anglers decreased 13% in 1989 from levels in 1988, while household trips decreased 15%, the number of days fished decreased 6% and the fish harvested decreased 10%. There was a difference within the spill area between saltwater sports fishing and freshwater sports fishing, and saltwater areas had greater impacts on sportfishing: in streams, the number of anglers decreased 16%, but the number of trips increased 5%, the days fished increased 11%, and fish harvested increased 9%. The study found different degrees of impact in subareas of the spill region. In Prince William Sound the number of anglers, the number of household trips and the days fished decreased, but the number of fish increased; in the Kenai Peninsula area all measures decreased more than the mean for the spill region as a whole, and the same pattern held for the Westside of Cook Inlet. In contrast, in the Kodiak subarea there was only a slight decrease in the number of anglers, along with an increase in the number of trips, and in the days fished, but the

fish harvest decreased 20%. And in the Alaska Peninsula anglers and trips decreased, while days fished and fish harvest increased. There was a difference found between Alaskan residents, and non-residents of Alaska, with a decrease in fishing and harvesting in the spill area among Alaskans, and an increase in fishing and harvesting for non-residents of Alaska. The study found that 10% of those fishing in the oil spill area were cleanup workers, and they accounted for 24% of the fish harvesting. The report includes tables representing data by year and area, and an appendix of comments made by sports fishermen.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska, Prince William Sound, Kenai Peninsula, West Cook Inlet, Kodiak, Alaska Peninsula] EVENT_PHASE[pre-spill, spill] SOCIAL_OR_CULTURAL_IDENTIFIER[sportsmen, residents, cleanup workers] REMAINDER[recreation]

CITATION[Miraglia, Rita A. 1995. Subsistence Restoration Project. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93017). Anchorage, AK: Alaska Department of Fish and Game, Division of Subsistence.]
ABSTRACT/ANNOTATION[Restoration Project 93017 was initiated as a result of data gathered by the Alaska Department of Fish and Game, Division of Subsistence, documenting injury to the subsistence resource by the *Exxon Valdez* oil spill. The goal was to restore the confidence of subsistence users in their abilities to determine the safety of consuming subsistence resources. Methods included community meetings, collection and testing of subsistence resource samples, accompanying community representatives on test laboratory tours, and informational newsletters to communities. Community anticipation was emphasized in every phase. Hydrocarbon testing occurred on ninety composite samples from harbor seals collected in 1993. The tests of the edible tissue showed aromatic contaminants at low levels so as to be within the test's margin of error. The bile of rockfish, seals, and one duck were screened for the presence of metabolites of fluorescent aromatic contaminants. The levels were low, so one would not expect to find elevated concentrations in the edible flesh of these organisms. The project was partly successful in disseminating the subsistence food safety advice of the Oil Spill Health Task Force and in improving the level of trust in the results of hydrocarbon test on the resources.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Kenai Peninsula, lower Cook Inlet, Kodiak Island, Alaska Peninsula, Port Lions, Old Harbor, Karluk, Kodiak, Ouzinkie, Akhiok, Larsen Bay, Nanwalek, English Bay, Port Graham, Chenega Bay, Tatitlek, Chignik Bay, Chignik Lagoon, Chignik Lake, Perryville, Ivanoff Bay] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, subsistence resource users] SOCIAL_EFFECTS[community stability, community resources, social organization] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, risk communication, traditional knowledge] FAMILY_EFFECTS[domestic stress, sharing] PSYCHOLOGICAL_EFFECTS[mental health] MUNICIPAL_EFFECTS[service demands, operational disruption] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, decreased harvest, contamination fears, contaminated resources] CULTURAL_SUBSISTENCE[sharing, symbolic expression of culture]

CITATION[Monnett, C. and L.M. Rotterman. 1992. Movements of weanling and adult female sea otters in Prince William Sound, Alaska after the T/V *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal

Study Number 6-12). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194899).]

CITATION[Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of female sea otters in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-13). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-195964).]

CITATION[Monnett, C. and L.M. Rotterman. 1992. Mortality and reproduction of sea otters oiled and treated as a result of the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-14). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-196902).]

CITATION[Monson, D.H. and B. Ballachey. 1995. Age distributions of sea otters found dead in Prince William Sound, Alaska Following the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-14). Anchorage, AK: U.S. Fish and Wildlife Service, (NTIS No. PB96-194675).]

CITATION[National Wildlife Federation. Citizens Commission on the *Exxon Valdez* Oil Spill. 1990. The day the water died: a compilation of the November 1989 Citizens Commission hearings on the *Exxon Valdez* oil spill. Edited by Thea Levkovitz. Anchorage, Alaska: Alaska Natural Resource Center, National Wildlife Federation.]
ABSTRACT/ANNOTATION[In November of 1989, four days of public hearings sponsored by the National Wildlife Federation, the Wildlife Federation of Alaska, the Natural Resources Defense Council, and the Windstar Foundation were held in Cordova, Kodiak, Old harbor, Homer, and Anchorage. The hearings were intended as a chance for Alaskans to describe how the *Exxon Valdez* oil spill and subsequent cleanup efforts had affected their lives, and to offer recommendations on how to avoid or at least minimize the effects of any similar future events. The testimony is quite difficult to summarize and full transcripts are not included in this relatively short document. Selected quotes are presented within the categories of testimony constructed by the editors:
"It couldn't happen"
"Who's in charge?"
"The futility of cleaning rocks"
"Impacts of the cleanup"
"The human cost"
"The Native perspective"
"The future"
"Corporate ethics"
The document also contains a selected event chronology of the oil spill and oil spill response, and a complete list of those who provided testimony.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Cordova, Kodiak, Old Harbor, Homer, Anchorage] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, deckhands, cleanup workers, local government, state government, subsistence resource users] SOCIAL_EFFECTS[social disruption, conflict, local resources, subsistence-based community, response organization,

alienation] CULTURAL_EFFECTS[perceived risk, sense of place, sense of community, lifestyle, ethics, dislocation, disruption] FAMILY_EFFECTS[role relationships, stress, roles, children] ECONOMIC_EFFECTS[economic boom, economic loss, money spill] MUNICIPAL_EFFECTS[service demands, fiscal loss] SUBSISTENCE_ACTIVITIES[hunting, fishing, contamination fears, contaminated resources] CULTURAL_SUBSISTENCE[symbolic expression of culture] REMAINDER[community involvement, community participation]

CITATION[Nishimoto, G. and G.V. Byrd. 1993. Effects of the *Exxon Valdez* oil spill on fork-tailed storm petrels breeding in the Barren Islands, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 7). Homer, AK: U.S. Fish and Wildlife Service (NTIS No. PB97-112676).]

CITATION[Nyswander, D.R., C.H. Dippel, G.V. Byrd, and EP. Knudtson. 1993. Effects of the *Exxon Valdez* oil spill on murres: a perspective from observations at breeding colonies. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 3). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB97-112700).]

CITATION[O'Clair, C.E., J.W. Short, and S.D. Rice. 1995. Subtidal monitoring: recovery of sediments in the Northwestern Gulf of Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94285). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[O'Clair, C.E., J.W. Short, and S.D. Rice. 1996. Petroleum hydrocarbon-induced injury to subtidal marine sediment resources. *Exxon Valdez* Oil Sill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 1A). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-196944).]

CITATION[O'Clair, C.E., J.W. Short, and S.D. Rice. 1996. Recovery of sediments in the lower intertidal and subtidal environment. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93047-1). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-194832).]

CITATION[O'Clair, C.E., J.W. Short, and S.D. Rice. 1996. Subtidal monitoring: recovery of sediments in the northern Gulf of Alaska. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 95285). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Oakley, K.L. and K.J. Kuletz. 1994. Population, reproduction and foraging of pigeon guillemots at Naked Island, Alaska, before and after the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Bird Study Number 9). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-204276).]

CITATION[Olsen, J., H. Ferren, and C. Kerns. 1994. Chenega chinook release program. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94272). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division.]

CITATION[Olsen, J., H. Ferren, and C. Kerns. 1994. Prince William Sound system investigation: experimental manipulation. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 94320L). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division (NTIS No. PB96-208434).]

CITATION[Olson, R.A. 1995. Use of aerial photograph, channel-type interpretations to predict habitat availability in small streams. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 95505B). Anchorage, AK: USDA Forest Service, Chugach National Forest (NTIS No. PB96-194923).]

CITATION[Picou, J.S., K. Arata, and S.R. Couch. 1995. The mental health demonstration project: an interim report (9/27/95). RCAC Contract No. 7.4021.702.]
ABSTRACT/ANNOTATION[Little or no social science information exists on the mitigation of and recovery from disasters and technological accidents. Research does indicate that technological disasters resulting in toxic contamination have different, more severe, and longer-term and more chronic social and psychological impacts than do natural disasters resulting primarily in immediate property destruction and/or loss of life. This information on community recovery from disasters, with special emphasis on the special characteristics of technological disasters, is briefly reviewed in the interim report. The Mental Health Demonstration Project (MHDP) itself is an ongoing project to provide original data and information on programmatic strategies for reducing the severity of chronic impacts of oil spills for Prince William Sound communities. This first interim report provides a overall description of the seven-stage project, an initial update on project activities, and outlines proposed intervention strategies proposed as pilot programs for enhancing community recovery from the effects of oil spills (stage five of the project, the current stage at the time of this interim report). These pilot programs were field-tested in later stages of the project. A major goal of these pilot programs was to aid in the "transformation" of an affected community (Cordova) to a healthy post-event state, recognizing that the pre-event state can never be "recovered." The pilot programs proposed were:
Community Education Radio Programs -- annotated separately
Community Education Leaflets -- annotated separately
Community Education Newspaper Series -- annotated separately
The Growing Together Program -- Family/individual group therapy (9 sessions). Outline provided in interim report.
The Peer Listener Program -- outline provided in interim report.]
KEYWORDS: SOURCE_TYPE[progress report] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Alaskan Natives, family] SOCIAL_EFFECTS[community stability, social disruption, social conflict, leadership, emergent groups, kinship, response organizations, alienation] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, lifestyle] FAMILY_EFFECTS[domestic stress, domestic violence] ECONOMIC_EFFECTS[economic gain, economic loss, work disruption] PSYCHOLOGICAL_EFFECTS[stress, depression, anger, anxiety, mental health, substance abuse, therapeutic community, PTSD, post-traumatic stress disorder, corrosive community, mistrust, mental health services]

SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources] REMAINDER[talking circle]

CITATION[Picou, J.S. 1996. The mental health demonstration project: interim report (3/01/96). RCAC Contract No. 7.4021.702.]
ABSTRACT/ANNOTATION[This second interim report is much briefer than the first and is more of a project management document. It briefly summarizes pilot program development in the five months since the first report and presents a schedule for the completion of all project activities.]
KEYWORDS: SOURCE_TYPE[progress report] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Alaskan Natives, individual, emergent groups] SOCIAL_EFFECTS[community stability, social disruption, social conflict, leadership, emergent groups, kinship, response organizations, alienation] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, lifestyle] FAMILY_EFFECTS[domestic stress, domestic violence] ECONOMIC_EFFECTS[economic gain, economic loss, work disruption] PSYCHOLOGICAL_EFFECTS[stress, depression, anger, anxiety, mental health, substance abuse, therapeutic community, PTSD, post-traumatic stress disorder, corrosive community] OTHER_EFFECTS[health] SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources]

CITATION[Picou, J.S. 1996. The mental health demonstration project: a progress report (9/26-27/96). RCAC Contract No. 7.4021.702.]
ABSTRACT/ANNOTATION[This third interim or progress report is a synthetic document incorporating the two previous reports. All scheduled project activities had been accomplished at the time of this report. The final phase of the project remained, for the preparation of a final research report, a final programmatic evaluation, and preparation of a draft guidebook for implementation of the pilot mitigation programs. This third progress report also reported more detailed psychological data on long-term symptoms experienced by commercial fishermen, one of the identified high-risk groups affected by the 1989 *Exxon Valdez* oil spill. The specific psychological symptoms of severe depression, post-traumatic stress disorder, anxiety, social isolation, anger, and work disruption were then targeted for mitigation by the pilot programs.]
KEYWORDS: SOURCE_TYPE[progress report] GEOGRAPHY[Prince William Sound, Cordova, Eyak, Tatitlek, Chenaga Bay, Port Graham] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Alaskan Natives, individual] SOCIAL_EFFECTS[community stability, social disruption, social conflict, leadership, emergent groups, kinship, response organizations, alienation] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, lifestyle] FAMILY_EFFECTS[domestic stress, domestic violence] ECONOMIC_EFFECTS[economic gain, economic loss, work disruption] PSYCHOLOGICAL_EFFECTS[stress, depression, anger, anxiety, mental health, substance abuse, therapeutic community, PTSD, corrosive community] SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources] OTHER_EFFECTS[health] REMAINDER[talking circle]

CITATION[Picou, J.S. 1997. The mental health demonstration project: a progress report (2/03/97). RCAC Contract No. 7.4021.702.]

ABSTRACT/ANNOTATION[This fourth project progress report reviews activities completed for each of the six pilot programs since the last progress report (9/96). As of 2/97, the date of this last progress report, all pilot program activities were completed or in their final stages, with all formal pilot program activities ending 2/11/97. All pilot programs are described and summarized. Outlines for the research report and the guidebook are provided, but delivery of draft products was not anticipated until 3/97. These materials are still in draft form and not available for review (as of 10/97).]
KEYWORDS: SOURCE_TYPE[progress report] GEOGRAPHY[Prince William Sound, Cordova, Eyak, Tatitlek, Chenaga Bay, Port Graham] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, individual] SOCIAL_EFFECTS[social conflict, leadership, emergent groups, kinship, alienation] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, lifestyle] FAMILY_EFFECTS[domestic stress, domestic violence] OTHER_EFFECTS[health] SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources] REMAINDER[talking circle]

CITATION[Piper, Ernest. 1993. The *Exxon Valdez* oil spill: final report, state of Alaska response. Juneau, Alaska: Alaska Department of Environmental Conservation.]
ABSTRACT/ANNOTATION[The report starts with an introduction that traces the most recent history of Alaska and the important role of oil and gas development in that history, as background to its discussion of the response to the *Exxon Valdez* oil spill. The report itself consists of five main components, from the perspective of the state of Alaska, and especially the Alaska Department of Environmental Conservation. Chapter 1 discusses the oil spill response organization. It explains how the standard institutions functioned within the spill response, and how separate and unique institutions emerged. It looks at how decisions were made (although primarily at the state level), but also how state interests and decisions conflicted with, overlapped, or were harmonized with the decisions of other entities involved in the response. Chapter 2 examined how oil response technology worked on the oil spill. It discusses how public and private institutions viewed certain technologies and how they made the decisions to use (or not use) certain types of technology. Chapter 3 is a somewhat sequential description of the shoreline cleanup, begun after the relatively brief water-response phase. While continuing the discussion of earlier sections -- institutional interaction, technology assessment, etc. -- its main purpose is to apply the analysis of previous sections to specific incidents and periods of the response effort. Chapter 4 is a brief overview of state and federal law and regulation changes made since the *Exxon Valdez* oil spill and the date of the report (June 1993). Chapter 5 describes how and why the state of Alaska addressed the principal legal issues raised by the spill. It briefly discusses two early, failed attempts to settle various aspects of the cases, as well as the final civil and criminal settlements of October 1991. It then examines the basic approaches to restoration anticipated by the state and federal governments in the early stages (winter 1992-93) of the restoration process.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Alaska] EVENT_PHASE[pre-spill, spill, cleanup, restoration, litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, local government, state government]
SOCIAL_EFFECTS[Multi-Agency Coordinating Group, response organization]
LITIGATION_EFFECTS[court settlement, class action, damages, plaintiffs, defendants, common property resource, maritime law]

CITATION[Prince William Sound Economic Development Council. 1996. Sound waste management plan, *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 95115), Valdez, Alaska.]
ABSTRACT/ANNOTATION[Restoration Project 95115 was the initial phase of the Sound Waste Management Plan project. It was designed to address marine pollution generated from land-based sources within the Prince William Sound communities of Cordova, Valdez, Whittier, Tatitlek, and Chenega Bay. The project recommended ways to improve the management of three different waste streams generated within the communities are a chronic source of marine pollution: used oil, household hazardous waste, and solid waste. Proper handling of these wastes reduces the stress on recovering resources and services. The recommendations of the report, some already implemented, include: creation of a comprehensive used oil management system in each
community, construction of Environmental Operation Stations to improve the overall management of solid and oily wastes, and the development of a regional household hazardous waste program. The Sound Waste Management Plan is based on the premise that a coordinated regional effort will be more effective and cost efficient than individual community efforts.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Chenega Bay, Cordova, Tatitlek, Valdez, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[local government] SOCIAL_EFFECTS[community resources, response organization]

CITATION[Rebar, A.H., B.E. Ballachey, D.K. Bruden, and K.A. Kloecker. 1996. Hematology and clinical chemistry of sea otters captured in Prince William Sound, Alaska following the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-17). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Reeves, G.H., K. Griswold, and K.P. Currens. 1996. Cutthroat trout and Dolly Varden in Prince William Sound, Alaska: the relation among and within populations of anadromous and resident forms. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 96145). Corvallis, OR: U.S. Department of Agriculture, Pacific North West Research laboratory.]

CITATION[Reger, Douglas, Linda Yarborough, Jeanne Schaaf, Pat McClenahan, and Richard Bland. 1996. Archaeological site monitoring and restoration, 1994. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94007-2). Anchorage, AK: Alaska Department of Natural Resources.]
ABSTRACT/ANNOTATION[The Index Site Monitoring project originated as an attempt to monitor vandalism and other site injury through time in the *Exxon Valdez* oil spill area. Sites were vandalized and unintentionally injured during and immediately after oil spill cleanup efforts ceased. Additionally, the potential for oil to adversely affect their research value made monitoring intertidal sites for intrusion by buried or retransported remnants of the oil spill another concern of land managers. Because the large number of sites made monitoring of each site impossible, a few sites were selected to be visited. Monitoring of selected sites commenced after Project 93007 as a reasonable approach to tracking injury to sites. The aim of the program is to provide monitoring of area sites for a ten year period after the spill, in order to allow

managers to detect trends of injuries. Some sites are visited yearly and others on a less frequent schedule. Condition of the index sites have been mapped and those which suffered oiling are sampled for encroachment of retransported oil. None of the monitored sites have been re-oiled. The AFG-046 Site and AFG-098 continue to erode and provide fresh exposures to attract vandal attention. The AFG-097 Site continues to be affected by campers tenting and building campfires on the site. The SEL-215 Site continues to erode and lose cultural data. The remaining sites do not appear to be seriously affected.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Kenai Peninsula, Kodiak Island] EVENT_PHASE[restoration] REMAINDER[archaeology]

CITATION[Reger, Douglas, Debra Corbett, Mark Luttrell, and Linda Yarborough. 1996. Archaeological site restoration, index site monitoring, 1995. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95007A). Anchorage, AK: Alaska Department of Natural Resources.]
ABSTRACT/ANNOTATION[The Index Site Monitoring project originated as an attempt to monitor vandalism and other site injury through time in the *Exxon Valdez* oil spill area. Sites were vandalized and unintentionally injured during and immediately after oil spill cleanup efforts ceased. Additionally, the potential for oil to adversely affect their research value made monitoring intertidal sites for intrusion by buried or retransported remnants of the oil spill another concern of land managers. Because the large number of sites made monitoring of each site impossible, a few sites were selected to be visited. Monitoring of selected sites commenced after Project 93007 as a reasonable approach to tracking injury to sites. The aim of the program is to provide monitoring of area sites for a ten year period after the spill, in order to allow managers to detect trends of injuries. Some sites are visited yearly and others on a less frequent schedule. Condition of the index sites have been mapped and those which suffered oiling are sampled for encroachment of retransported oil. None of the monitored sites have been re-oiled. The AFG-046 Site and AFG-098 continue to erode and provide fresh exposures to attract vandal attention. The AFG-097 Site continues to be affected by campers tenting and building campfires on the site. The SEL-215 Site continues to erode and lose cultural data. The remaining sites do not appear to be seriously affected.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Kenai Peninsula, Kodiak Island] EVENT_PHASE[restoration] REMAINDER[archaeology]

CITATION[Reger, D. R., J.D. McMahan, and C.E. Holmes. 1992. Effect of crude oil contamination on some archaeological sites in the Gulf of Alaska, 1991 investigations. *Exxon Valdez* Oil Spill State/Federal natural Resource Damage Assessment Final Report (Archaeology Study Number 1). Anchorage, AK: Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Office of History and Archaeology (NTIS No. PB96-194659).]

CITATION[Riffe, R.R., S. Gehlbach, D.G. Evans, and B.G. Bue. 1996. Coded wire tag recoveries from pink salmon in Prince William Sound fisheries, 1995. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95320B). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Rosenberg, D.H. 1995. Experimental harlequin duck breeding survey in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration

Project 94427). Anchorage, AK: Alaska Department of Fish and Game, Wildlife Conservation Division.]

CITATION[Rosenberg, D.H., M.J. Petrula, and D.W. Crowley. 1996. Distribution, abundance, and composition of harlequin duck populations in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95427). Anchorage, AK: Alaska Department of Fish and Game.]

CITATION[Roseneau, D.G., A.B. Kettle, and G.V. Byrd. 1995. Common murre restoration monitoring in the Barren Islands, Alaska, 1993. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93049). Homer, AK: U.S. Fish and Wildlife Service, Alaska Maritime National Wildlife Refuge (NTIS No. PB96-204334).]

CITATION[Rotterman, L.M. and C. Monnett. 1991. Mortality of sea otter weanlings in eastern and western Prince William Sound, Alaska, during the winter of 1990-91. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-18). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194998).]

CITATION[Russell, John C., Lawrence A. Palinkas, and Michael A. Downs. 1993. Social, psychological, and municipal impacts related to the *Exxon Valdez* oil spill. Report prepared as a litigation support document concerning the *Exxon Valdez* . Placerville, CA: Expert Support Services. (*Note: This source is still under court protective order and not yet in the public domain.)*]

CITATION[Sale, D.M., J.C. Gibeaut and J.W. Short. 1995. Nearshore transport of hydrocarbons and sediments following the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 3B). Juneau, AK: Alaska Department of Environmental Conservation (NTIS No. PB96-194907).]

CITATION[Sanger, G.A. and M.B. Cody. 1994. Survey of pigeon guillemot colonies in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93034). Anchorage, AK: U.S. Fish and Wildlife Service (NTIS No. PB96-194808).]

CITATION[Scheel, D., R. Dodge, and T.L.S. Vincent. 1996. Survey of octopus in the intertidal in Prince William Sound, Alaska. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95012). Homer, AK: North Gulf Oceanic Society.]

CITATION[Schell, D.M. and A. Hirons. 1996. Isotope ratio studies of marine mammals in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94320I). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division.]

CITATION[Schmidt, D.C., K.E. Tarbox, B.M. Barrett, L.K. Brannian, S.R. Carlson, J.A. Edmundson, J.M. Edmundson, S.G. Honnold, B.E. Kind, G.B. Kyle, P.A. Roche, P. Shields, and C.O. Swanton, 1993. Sockeye salmon over escapement. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 27). Soldotna,

AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Schmidt, K., E.P. Bailey, and G.V. Byrd. 1995. Introduced predator removal from islands. *Exxon Valdez* Oil Spill Restoration Project Annual Report(Restoration Project 94041). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[Schmidt, D.C., K.E. Tarbox, B.M. Barrett, G.B. Kyle, J. A. Edmundson, B.E. King, S.G. Honnald, L.K. Brannian, C.O. Swanton, P. Shields, J.M. Edmundson, P.A. Roche, and S.R. Carlson. 1995. Sockeye salmon over escapement. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94258). Soldotna, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Schmidt, D.C., K.E. Tarbox, G.B. Kyle, and S.R. Carlson. 1995. Sockeye salmon over escapement. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 93002). Soldotna, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Seeb, L., J. Seeb, R. Gates, and C. Habicht. 1993. Assessment of genetic stock structure of salmonids. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Annual Report (Restoration Study number 59). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Seeb, J.E., S.E. Merkouris, L.W. Seeb, P. Bentzen, and J.M. Wright. 1995. Genetic discrimination of Prince William Sound herring populations. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95165). Anchorage, AK: Alaska Department of Fish and Game, Genetics Laboratory.]

CITATION[Sharr, S., B.G. Bue, S.D. Moffitt, A. Craig, and D.G. Evans. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report(Fish/Shellfish Study Number 2). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-194840).]

CITATION[Sharr, S., C.J. Peckham, D.G. Sharp, D.G. Evans, and B.G. Bue. 1995. Coded wire tag recoveries from pink salmon in Prince William Sound salmon fisheries, 1993. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93067). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-196928).]

CITATION[Sharr, S., C.J. Peckham, D.G. Sharp, L. Peltz, J.L. Smith, M.T. Willette, D.G. Evans, and B.G. Bue. 1996. Coded wire tag studies on Prince William Sound salmon, 1989-1991. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4, NMFS Component). Anchorage, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-196936).]

CITATION[Sharr, S., C.J. Peckham, D.G. Sharp, J.L. Smith, D.G. Evans, and B.G. Bue. 1995. Coded wire tag studies on Prince William Sound salmon, 1992. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 60A). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-196878).]

CITATION[Sharr, S., R. Riffe, S. Gehlbach, D.G. Evans, and B.G. Bue. 1995. Coded wiretag recoveries from pink salmon in Prince William Sound salmon fisheries, 1994. *Exxon Valdez* Oil Spill Restoration Project (Restoration Project 94320B). Cordova, AK: Alaska Department of Fish and Game.]

CITATION[Sharr, S., J.E. Seeb, G.B. Bue, A. Craig, G.D. Miller. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93003). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Sharr, S., J.E. Seeb, B.G. Bue, A. Craig, and G.D. Miller. 1994. Injury to salmon eggs and preemergent fry in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study 60C). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Short, J.W. and P.M. Harris. 1996. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill I: Chemical sampling and analysis. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3). Auke Bay (Alaska): National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NTIS No. PB96-196951).]

CITATION[Short, J.W. and P. Rounds. 1995. Petroleum hydrocarbons in near-surface seawater of Prince William Sound, Alaska, following the *Exxon Valdez* oil spill II: analysis of caged mussels. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Air/Water Study Number 3, Subtidal Study Number 3A). Juneau, AK: National Oceanic and Atmospheric Administration (NTIS No. PB96-196969).]

CITATION[Steiner, Rick and Kurt Byers. 1990. Lessons of the *Exxon Valdez*. Fairbanks, AK: Alaska Sea Grant College Program, University of Alaska Fairbanks.]
ABSTRACT/ANNOTATION[This report includes in introduction on the damage caused by the oil spill, and suggestions aimed at preventing future spills. It suggests new liability standards, research on prevention and mitigation, mentions the dangers inherent in current energy use, and discusses the impact of oil on sea life and the marine environment. Impacts on people, including possible contaminated food resources, economic and social impacts, and psychological impacts are also reviewed. The various measures used to clean up oil are presented. Legal issues are mentioned, including new federal laws and funding, and the restriction on release of scientific data, and the denial of funding for scientific research based on legal considerations. There is also a short annotated bibliography at the end of the report, and a 1991 update on the impact of the spill on wildlife and archaeological sites. This section concludes that a minimum of 26 archaeological sites were damaged, including home sites and burial sites that suffered severe damage. There is the additional concern about looting of exposed sites. Also, the 1991 update indicates that subsistence patterns remain disrupted.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska, Cordova, Valdez, Kodiak, Prince William Sound] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Alaskan Natives, Alaska Department of Environmental Conservation, Food and Drug Administration, National Oceanographic and Atmospheric Administration, Exxon, Alaska Department of Fish and Game, Oiled Mayors, Minerals Management Service, Oil Spill Health Task Force, Valdez Counseling Center, National Wildlife Federation, Alaska Department of Environmental Conservation, National Marine Fisheries Service] SOCIAL_EFFECTS[social disruption] ECONOMIC_EFFECTS[economic loss] PSYCHOLOGICAL_EFFECTS[stress, depression] LITIGATION_EFFECTS[litigation

and scientific research, litigation restricts information] SUBSISTENCE_ACTIVITIES[decreased harvest, contaminated resources] REMAINDER[archaeology]

CITATION[Stephan R. Braund & Associates and Jon Isaacs & Associates. 1995. Community conference on subsistence and the oil spill: summary report. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95138). Anchorage, AK: Alaska Department of Fish and Game, Division of Subsistence.]
ABSTRACT/ANNOTATION[Six years after the *Exxon Valdez* oil spill (EVOS), the subsistence activities of people from the spill area were still being negatively affected. Due to reduced subsistence resource uses, opportunities to teach subsistence skills and traditional knowledge have also been reduced, thereby affecting cultural life. A conference was sponsored by the EVOS Trustee Council and the Alaska Department of Fish and Game, Division of Subsistence to bring together elders, youth, and other subsistence users from all over the spill region to share observations, experiences, and ideas about their continuing subsistence and natural resource problems and possible solutions. The following goals emerged: to allow users from 20 communities to talk to one another about their common experiences related to the spill and subsistence; to facilitate communication between communities, regions, resource managers, and the EVOS Trustee Council; and to identify how communities can be more involved in the restoration of subsistence resources. Outcomes included the formation of a Steering Committee composed of representatives from each region as a vehicle for continuing the work begun at the conference and the formation of a committee to seek funding for a spirit camp/healing conference. The conference was videotaped to serve as an educational tool. Participant lists are included in the summary report.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Alaska Peninsula, Kodiak Island, Kenai Peninsula, lower Cook Inlet, Southeast Alaska, Chenega Bay, Tatitlek, Cordova, Valdez, Nanwalek, English Bay, Port Graham, Seward, Seldovia, Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, Port Lions, Kodiak, Chignik Bay, Chignik Lagoon, Chignik Lake, Ivanoff Bay, Perryville] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, local government, subsistence resource users] SOCIAL_EFFECTS[community resources, subsistence-based community, community stability, social disruption] CULTURAL_EFFECTS[sense of place, sense of community, lifestyle, traditional knowledge] FAMILY_EFFECTS[domestic stress, sharing] PSYCHOLOGICAL_EFFECTS[chronic psychological stress, mental health] MUNICIPAL_EFFECTS[service demands, Oiled Mayors] SUBSISTENCE_CULTURAL[hunting, fishing, decreased harvest, contamination fears, contaminated resources] CULTURAL_SUBSISTENCE[sharing]

CITATION[Sundet, K., M.N. Kuwada, and J. Barnhart. 1994. Stream habitat assessment project: Prince William Sound and Lower Kenai Peninsula. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93051). Anchorage, AK: Alaska Department of Fish and Game, Habitat and Restoration Division, (NTIS No. PB96-195029).]

CITATION[Swanton, C.O., T.J. Dalton, B.M. Barrett, D. Pengilly, K.R. Brennan, and P.A. Nelson. 1993. Effects of pink salmon (Oncorhynchus gorbuscha)escapement level of egg retention, preemergent fry, and adult returns to the Kodiak and Chignik management areas caused by the *Exxon Valdez* oil spill. *Exxon Valdez* Oil Spill State/Federal Natural Resource

Damage Assessment Final Report (Fish/Shellfish Study Number 7B and 8B). Kodiak, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Tarbox, K.E., R.Z. Davis, L.K. Brannian, B.E. King, J.R. Fox, and S.M. Fried. 1994. Kenai River sockeye salmon restoration. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 93015). Soldotna, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Tarbox, K.E., D.L. Waltmyer, L.K. Brannian, R.Z. Davis, B.E. King, J.R. Fox, and S.M. Fried. 1994. Kenai River sockeye salmon restoration. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Annual Report (Restoration Study Number 53). Soldotna, AK: Alaska Department of Fish and game, Commercial Fisheries Division.]

CITATION[Tarbox, K.E., R.Z. Davis, L.K. Brannian, and S.M. Fried. 1995. Kenai River sockeye salmon restoration. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94255). Soldotna, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Townsend, Richard and Burr Heneman. 1989. The *Exxon Valdez* oil spill: a management analysis. Washington, D.C. Center for Marine Conservation.]
ABSTRACT/ANNOTATION[The intent of this document is to assess the effectiveness of the response to the *Exxon Valdez* oil spill, concentrating on conditions prior to the spill that may have contributed to its occurrence and which conditioned industry and government efforts in response to it. Members of the research team spent several weeks in the area of the spill and interviewed dozens of government and industry officials, scientists, and private citizens. They concluded that there is a need for a much greater commitment to preparing for the next spill. The chief recommendation of the report concerned the organization and management of spill response -- their recommendation is that one person in the federal government should be in charge of any oil spill response effort. Other recommendations emphasize more practical aspects of preparedness (equipment on hand, standardization of equipment, and soon). The tone of the report continually underlines the need for continued public scrutiny of oil companies and government regulators. As the report summarizes, "Early commitments to oil spill response by Alyeska, the consortium of oil companies responsible for the operation of the Valdez terminal, faded with time until Alyeska had eliminated independent oil spill response teams entirely. Assurances and contingency plans alone do not make for meaningful preparedness." The report also assesses the preliminary research plans for assessing damages to resources caused by the *Exxon Valdez* oil spill, and makes recommendations for suggested immediate and future research.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Valdez, Seward, Cordova, Anchorage, Alaska] EVENT_PHASE[pre-spill, spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] SOCIAL_EFFECTS[local resources, response organization] CULTURAL_EFFECTS[perceived risk] MUNICIPAL_EFFECTS[service demands, fiscal loss, operational disruption] SUBSISTENCE_ACTIVITIES[contamination fears, contaminated resources]

CITATION[Trowbridge, Charles. 1992. Injury to Prince William Sound spot shrimp. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 5). Anchorage, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Udevitz, M.S., B.E. Ballachey, and D.L. Bruden. A population model for sea otters in western Prince William Sound. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93043-3). Anchorage, AK: National Biological Service.]

CITATION[Udevitz, M.S., J.L. Bodkin, and D.P. Costa. 1995. Detection of sea otters in boat-based surveys of Prince William Sound, Alaska. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Marine Mammal Study Number 6-19). Anchorage, AK: U.S. Fish and Wildlife Service.]

CITATION[United States. Congress. House. Committee on the Budget. Task Force on Urgent Fiscal Issues. 1991. Budgetary implications of the *Exxon Valdez* oil spill settlement. Hearing before the Task Force on Urgent Fiscal Issues of the Committee on the Budget, House of Representatives, One Hundred Second Congress, first session, October 31, 1991.]
ABSTRACT/ANNOTATION[The document opens with the statement of the Chair, Congressman Guarini. Also included are the statements of a resource economist with the National Wildlife Federation, a representative of the Alaska Attorney General's Office, an Alaska State Legislator, the Acting Assistant Attorney General with the Environmental and Natural Resources Division of the Department of Justice, a representative of the Natural Resources Defense Council, and a prepared statement was submitted by the American Petroleum Institute among others. The following excerpts the opening statement by the Task Force Chair: The Federal Government, Exxon, and the State of Alaska reached an agreement in which Exxon would pay $1.025 billion in fines and damages. No public comment on the agreement was taken. This agreement represented the largest settlement on record of an environmental case, and was meant to cover cleanup costs and the long-term expenses of restoring ecological balance. It was also to include claims, including those by third parties. The question to be addressed in the Hearing was whether it was a good settlement. Estimates of cleanup costs and environmental restoration range from $3 to $15 billion, and if this proves true, taxpayers are paying a large part of the cleanup costs. The Federal Government commissioned studies to establish the magnitude of the spill, but the studies were not released. The Chair goes on to say that the criminal penalties indicated in the settlement appear to have been manipulated for tax deductibility. For example, Exxon says it paid $2.5 billion in voluntary cost cleanup, and this expense is cited as a reason to offset criminal penalties, while the cleanup costs were deducted from Exxon's taxes. The Chair stated that "in the end, the agreement will actually cost Exxon perhaps, according to our calculations, $463 million in today's dollars. Almost all of the total settlement is deductible for Exxon."]
KEYWORDS: SOURCE_TYPE[Congressional Hearing] GEOGRAPHY[Alaska] EVENT_PHASE[cleanup] US Congress, Task Force on Urgent Fiscal Issues, Committee on the Budget, National Wildlife Federation, Attorney General of Alaska, Alaskan Legislature, Department of Justice Division of Environmental and Natural Resources, Natural Resources Defense Council, American Petroleum Institute, taxpayers, Exxon, Federal Government, Alaska State Government] MUNICIPAL_EFFECTS[municipal and State costs, fiscal impacts]

LITIGATION_EFFECTS[litigation, adequacy of settlement] REMAINDER[who paid costs of spill]

CITATION[United States. Congress. House. Committee on Merchant Marines and Fisheries. Subcommittee on Coast Guard and Navigation. 1989. *Exxon Valdez* oil spill: hearing before the Subcommittee on Coast Guard and Navigation of the Committee on Merchant Marines and Fisheries, House of Representatives, One Hundred First Congress, first session, on topics concerning the *Exxon Valdez* oil spill into the Prince William Sound of Alaska. April 6, 1989.]
ABSTRACT/ANNOTATION[This document includes statements, a chronology of Exxon's response to the oil spill, reviews and discussion of spill liability laws, and interviews of witnesses. Statements included those made by Representatives Bentley, Brennan, Carper, Clement, Coble, Curtis, Davis, Hughes, Inhofe, Jones, Laughlin, Lent, Lowey, Manton, Miller, Moore, Pickett, Schneider, Shumway, Tauzin, Weldon, and Young. There are also statements from a representative of the Commerce division of NOAA, the U.S. Coast Guard, the Prince William Sound Aquaculture Association, the EPA, the Trans Alaskan Pipeline Liability Fund, the US Fish and Wildlife Service, Exxon, the Department of Transportation, the National Marine Manufactures, and a statement by the Lieutenant Governor of Alaska.]
KEYWORDS: SOURCE_TYPE[Congressional Hearing] GEOGRAPHY[Alaska, Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[Rep. Bentley, Rep. Brennan, Rep. Carper, Rep. Clement, Rep. Coble, Rep. Curtis, Rep. Davis, Rep. Hughes, Rep. Inhofe, Rep. Jones, Rep. Laughlin, Rep. Lent, Rep. Lowey, Rep. Manton, Rep. Miller, Rep. Moore, Rep. Pickett, Rep. Schneider, Rep. Shumway, Rep. Tauzin, Rep. Weldon, Rep. Young, National Oceanographic and Atmospheric Administration, U.S. Coast Guard, Prince William Sound Aquaculture Association, Environmental Protection Agency, Trans Alaskan Pipeline Liability Fund, U.S. Fish and Wildlife Service, Exxon, Department of Transportation, National Marine Manufactures, Lieutenant Governor of Alaska] REMAINDER[liability laws]

CITATION[United States. Congress. House. Committee on Merchant Marine and Fisheries. Subcommittee on Coast Guard and Navigation. 1989. Hearing Before the Subcommittee on Coast Guard and Navigation of the Committee on Merchant Marine and Fisheries, House of Representatives, One Hundred First Congress.]
ABSTRACT/ANNOTATION[This Congressional Hearing was held in Cordova, Alaska, in August of 1989 at the Mt. Eccles Elementary School. The Members present were the Chairman of the Subcommittee, the Hon W.J. Billy Tauzin, and Representatives Lowey, Studds, Young, Goss, Herger, and Unsoeld. This document is a transcript of the Hearing, along with the statements and letters filed by those attending or otherwise involved in the Hearing. Thee document begins with a statement from Chairman Tauzin from Louisiana, followed by a statement from Rep. Young from Alaska, and then Rep. Davis from Michigan. Next there is a statement from Victor Rezendes, the Associate Director of Transportation Issues with the General Accounting Office. He was accompanied by Assistant Director Maccaroni, G. Ziebarth, an evaluator, and by Consultant V. Keith and Jackie Goff the GAO General Counsel. They state that the response to the *Exxon Valdez* oil spill was clearly inadequate, and that we are equally unprepared elsewhere in the US. Second, they note that even if more resources were devoted to spill cleanup, the ability to manage a spill of that magnitude is very limited. Third, they state that it is important to avoid scattered leadership, and mention that one problem currently is that

there is no single designated leader. They believe the Federal Government should take the leadership role. They conclude that it is important to significantly increase funding to aid preparation. Following this statement, the GAO personnel were questioned by the Congressional panel. Then others offered statements and were questioned by the panel, including the head of Exxon in the US, the Vice President for Operations of the Alyeska Pipeline Service, the Assistant Regional Administrator for Alaska Operations of the Environmental Protection Agency, the Alaska Dept. of Environmental Conservation, the Hazardous Material Response Branch Representative for the National Oceanographic and Atmospheric Administration, and the Coast Guard's Federal on-scene coordinator. Written statements were submitted by a larger number of individuals and groups, and those submitting statements included Cordova District Fishermen United, Chugach Alaska Corporation, a commercial fisherman, the mayor of Cordova, and the US Fish and Wildlife Service.]
KEYWORDS: SOURCE_TYPE[Congressional Hearing] GEOGRAPHY[Alaska, Prince William Sound] EVENT_PHASE[pre-spill, spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[General Accounting Office, Alyeska, Exxon, Environmental Protection Agency, Alaska Department of Environmental Conservation, National Oceanographic and Atmospheric Administration, U.S. Coast Guard, Cordova District Fishermen United, Chugach Alaska Corporation, commercial fishermen, Cordova mayor, U.S. Fish and Wildlife Service, federal government] SOCIAL_EFFECTS[social disruption]
CULTURAL_EFFECTS[sense of place] ECONOMIC_EFFECTS[economic loss]
MUNICIPAL_EFFECTS[municipal actions, municipal costs] SUBSISTENCE_ACTIVITIES[decreased subsistence activity, resource availability, contaminated resources] REMAINDER[legislative oversight]

CITATION[United States. Congress. Senate. 1989. National Ocean Policy Study. Exxon oil spill: hearings before the National Ocean Policy Study and the Subcommittee on Merchant Marine of the Committee on Commerce, Science, and Transportation, United States Senate, One Hundred First Congress, first session on cleanup, containment, and impact of the *Exxon Valdez* oil spill and oil spill prevention and maritime regulations. Washington, D.C.: U.S. GPO]
ABSTRACT/ANNOTATION[The first part of the Senate hearings was held on April 6, 1989, and included a statement by the chair Ernest Hollings, and Senators Stevens, Packwood, Gorton, and Inoye. The document includes a transcript of the statements and the questioning of witnesses, who included representatives from National Oceanographic and Atmospheric Administration, Exxon, the Environmental Protection Agency, the Department of the Interior's Fish and Wildlife Service, the US Geological Survey, and the U.S. Coast Guard. The document also includes letters from the governor of Alaska, and the president of Exxon. The second part of the document includes hearings held on May 10th and July 20, 1989. There were additional Senators present, and witnesses included representatives from the US Navy, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, the Center for Marine Conservation, Cordova District Fishermen United, Exxon, the U.S. Coast Guard, the Port Pilot's Association, Chevron, the American Institute of Marine Shipping. Letters and statements were introduced from the Chugach Alaska Corporation, the Forest Service, NOAA, and Laborer's International Union.]
KEYWORDS: SOURCE_TYPE[Senate Hearing] GEOGRAPHY[Alaska, Prince William Sound] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Senator Hollings, Senator Stevens, Senator Packwood, Senator Gorton, Senator Inoye, William E. Evans, Under

Secretary of Commerce for Oceans and Atmosphere, National Oceanographic and Atmospheric Administration, L.G. Rawl, C.E.O. of Exxon, William Reilly, Environmental Protection Agency, Samuel Skinner, Department of the Interior, Captain Larrabee, U.S. Geological Survey, Admiral Paul Yost, U.S. Coast Guard, Captain Ken Thompson, Captain Dave Spade, Governor Steve Cowper, L.R. Raymond President of Exxon, Senator Kerry, Senator Burns, Senator Breaux, Senator Bryan, Senator Lott, Senator Gore, Senator Adams, Senator Pressler, U.S. Navy, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, Center for Marine Conservation, Cordova District Fishermen United, Exxon, Port Pilots Association, Chevron, American Institute of Marine Shipping, Chugach Alaska Corporation, U.S. Forest Service, Laborer's International Union] REMAINDER[legislative hearings]

CITATION[United States. General Accounting Office. 1989. Coast Guard: adequacy of preparation and response to *Exxon Valdez* oil spill: report to congressional requesters. Washington, D.C.: U.S. General Accounting Office.]
ABSTRACT/ANNOTATION[The report was requested by the House Committee on Merchant Marines and Fisheries to evaluate how well the Coast Guard was carrying out its environmental responsibilities. After the spill, the Committee requested that the topic be redirected to include the *Exxon Valdez* oil spill. The report finds that no one realistically prepared to deal with a spill of such magnitude in Prince William Sound. Alyeska had equipment available to manage a spill of 42,000 to 84,000 gallons, which was less than 1% of the oil spilled from the *Exxon Valdez*. It indicates that current technology is unable to contain or recover a spill of that size, and therefore emphasis must be placed on spill prevention. The report also faults the leadership structure overseeing transportation of hazardous materials by sea, and problems with the National Response System. It observes that states often leave spill planning to be done by industry on a voluntary basis, and suggests that National standards and oversight be developed. With respect to the spill, the Coast Guard reported that there were equipment breakdowns and that weather and water conditions made recovery more difficult. Spill prevention would include monitoring or directing ship movements, and harbor pilot or tug assistance. These were rarely done in Prince William Sound. Further, the Coast Guard did not have radar coverage for the whole Sound, because of the cost. And it indicates that greater funding would be needed to improve spill prevention. An appendix outlines the current National Response System.]
KEYWORDS: SOURCE_TYPE[government report] GEOGRAPHY[Alaska, Prince William Sound, U.S. states] EVENT_PHASE[pre-spill, spill, cleanup]
SOCIAL_OR_CULTURAL_IDENTIFIER[Alyeska, Exxon, U.S. Coast Guard, National Response Team, On Scene Coordinators, National Response Center] REMAINDER[regulatory change, spill response, risk estimates, risk assessment]

CITATION[United States. General Accounting Office. 1990. Coast Guard: federal costs resulting from the *Exxon Valdez* oil spill. Washington, D.C.: U.S. General Accounting Office.]
ABSTRACT/ANNOTATION[The report finds that as of September of 1989, nine federal agencies incurred costs from the *Exxon Valdez* oil spill. These agencies were the Departments of Defense, the Interior, Commerce, Agriculture, Justice, Transportation, Health and Human Services, Labor, and the Environmental Protection Agency. The total estimated costs were $125.2 million, with 89% representing cleanup costs, 9.8% damage assessment costs, and .9% other costs. The agencies spending the most were, the Department of Defense ($62.8 million), the Department of Transportation ($33.3 million), Department of the Interior ($12 million), and

the Department of Commerce ($9.6 million). Distribution of costs with in the agencies is presented, as is an overview of the cost reimbursement procedures, and also cases in which reimbursement is uncertain.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[General Accounting Office, Department of Defense, Department of the Interior, Department of Commerce, Department of Agriculture, Department of Justice, Department of Transportation, Department of Health and Human Services, Department of Labor, Environmental Protection Agency, Exxon] ECONOMIC_EFFECTS[economic loss, claims process]

CITATION[United States. General Accounting Office. 1990. Coast Guard: millions in federal costs may not be recovered from *Exxon Valdez* oil spill: report to Congressional requesters. Washington, D.C.: U.S. General Accounting Office.]
ABSTRACT/ANNOTATION[The report finds that the federal government reported spending $154 million on the *Exxon Valdez* oil spill as of June 30, 1990, but might recover only $123 million. Further, there are millions in costs that the government will not recover because they were undocumented or unreported.. The amount of un-reimbursed costs is likely to grow. Reasons for the limited recovery are investigated and reported in this document. The report finds that Coast Guard regulations provide for reimbursement of oil removal costs from the pollution funds, and agencies have been unable to collect directly from Exxon. Damage assessment and restoration of natural resources may not be funded unless Exxon agrees to fund the costs. A second reason for losses is that the Coast Guard's spill coordinator, responsible for approving the spill costs incurred by agencies, did not authorize agencies to recover some spill costs from the pollution fund, though these expenditures could have been authorized under the broad definition of oil removal. The spill coordinator's definition of these costs as unrelated to oil removal meant they could not be reimbursed. The study concludes that there was significant confusion over the reimbursement process and suggest the kinds of information that should be provided following a disaster.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Alaska] EVENT_PHASE[spill, cleanup, restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[U.S. Coast Guard, General Accounting Office, Coast Guard Spill Coordinator, Secretary of Transportation, Department of Defense, Department of Energy, Environmental Protection Agency, Federal Aviation Administration, National Oceanic and Atmospheric Administration, National Park Service] ECONOMIC_EFFECTS[economic loss, federal costs, claims process] REMAINDER[inter-agency coordination, reimbursement process]

CITATION[United States. National Transportation Safety Board. 1990. Marine accident report: grounding of the U.S. tankership *Exxon Valdez* on Bligh Reef, Prince William Sound near Valdez Alaska, March 24, 1989. Washington, D.C. : The Board.]
ABSTRACT/ANNOTATION[This report of the investigation, analysis, findings, and recommendations was signed on July 31, 1990 by the chair and members of the NTSB. The report indicates that during the *Exxon Valdez* accident, there were no injuries, but that around 258,000 barrels of crude oil spilled following the rupture of 8 cargo tanks. Damage to the vessel was estimated at $25 million, the cost of the lost cargo had an estimate of $3.4 million, and the cost of the cleanup during 1989 was $1.85 billion. The report found that the specific cause of the accident was the failure of the 3rd mate to properly maneuver the vessel due to fatigue and an

excessive work load, along with the failure of the master to provide a proper navigational watch because of alcohol, the failure of Exxon to provide a fit master and a rested and sufficient crew, the lack of vessel traffic service because of inadequate equipment and manning levels, inadequate personnel training and deficient management oversight, along with a lack of effective pilotage services. The general safety issues involved in the grounding included the adequacy of the navigation watch on the night of the grounding; the role of human factors, including fatigue and alcohol use; the Coast Guard and Exxon Shipping Company manning standards, along with Exxon's procedures for determining manning levels for tanker-ships; Exxon Shipping Company's drug and alcohol testing and rehabilitation programs; the Coast Guard regulations and procedures for drug and alcohol testing aboard commercial vessels; the role of the Coast Guard Vessel Traffic Service at Valdez; and the oil spill contingency planning and initial response. Recommendations included research, education, regulations regarding fatigue, and a range of recommendations regarding substance use and toxicology testing. One of the Board members filed an exception in which he concurred with the probable cause of the accident but added that a factor contributing to the severity of environmental damage was the lack of a double bottom on the *Exxon Valdez*, and a failure to initiate early burning of the crude because a needed boom was lacking. And in addition to the recommendations offered by the other Board members, this member recommended that all tank vessels over 20,000 dead weight tons and foreign vessels over that weight entering US waters, have double hulls.]
KEYWORDS: SOURCE_TYPE[government report] GEOGRAPHY[Prince William Sound, Bligh Reef] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Exxon crew, U.S. Coast Guard, Environmental Protection Agency, U.S. Geological Survey, Alaska Regional Response Team] ECONOMIC_EFFECTS[economic loss] REMAINDER[regulatory change]

CITATION[Varanasi, Usha, Donald W. Brown, Tom Hom, Douglas G. Burrows, Catherine A. Sloan, L. Jay Field, John E. Stein, Karen L. Tilbury, Bruce B. McCain, and Sin-Lam Chan. 1993. Volume I: Survey of Alaskan subsistence fish, marine mammal, and invertebrate samples collected 1989-91 for exposure to oil spilled from the *Exxon Valdez*. Seattle, Washington: National Marine Fisheries Service, Northwest Fisheries Science Center. U.S. Department of Commerce, NOAA technical memorandum NMFS-NWFSC-12, 110 p.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* oil spill raised concerns of native Alaskans that their subsistence seafoods were contaminated by the spilled petroleum. A study was conducted as a cooperative effort among NOAA, Exxon, and the Alaska Department of Fish and Game to assess the degree of contamination of subsistence organisms by Prudhoe Bay crude oil. Samples of edible flesh of fish, marine mammals, and shellfish were taken from 22 potentially affected native subsistence food collection areas and from two reference areas (Angoon and Yakutat) and analyzed for aromatic compounds. Elevated concentrations of fluorescent aromatic compounds in some samples from fish and marine mammals was clear evidence of their exposure to petroleum. However, aromatic compounds were not found in the muscle tissue of fish, harbor seals, and sea lions. Some harbor seal blubber samples did contain aromatic compounds, but generally at low levels (less than 100 ng/g). Smoked salmon contained higher concentrations of aromatic compounds (8,000 to 20,000 ng/g) than any of the untreated subsistence samples. The concentrations of aromatic compounds were less than 100 ng/g in approximately 90 percent of the more than 1,000 mollusc samples from 80 different beaches sampled. The concentrations of aromatic compounds were elevated in some mollusc samples (as

high as 18,000 ng/g) and exceeded 1,000 ng/g in 24 samples. In an advisory opinion, the Food and Drug Administration indicated that little risk was involved in the consumption of the nonsmoked subsistence foods studied. Subsistence food gatherers were advised not to collect or consume food if oil was observed to be present. The results also show that in future oil spills, shellfish tissue should be given the highest priority for analysis, whereas rapid screening of bile from fish and marine mammals should be sufficient to provide information on their level of exposure.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound, Tatitlek, Chenega Bay, Port Graham, Nanwalek, English Bay, Kodiak, Larsen Bay, Karluk, Akhiok, Old Harbor, Ouzinkie, Port Lions] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[subsistence resource users] SOCIAL_EFFECTS[subsistence-based community, local resources] SUBSISTENCE_ACTIVITIES[hunting, fishing, gathering, clamming, contamination fears, contaminated resources]

CITATION[Varanasi, U., T.K. Collier, C.A. Krone, M.M. Krahn, L.L. Johnson, M.S. Myers, and S.L. Chan. 1995. Assessment of oil spill impacts on fishery resources: measurement of hydrocarbons and their metabolites, and their effects, in important species. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 7). Seattle, WA: National Marine Fisheries Service, NOAA (NTIS No. PB96-194741).]

CITATION[Wedemeyer, K. and D. Gillikin. 1995. In stream habitat and stock restoration for salmon, Shrode Creek Barrier bypass subproject. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93139-B1). Anchorage, AK: USDA Forest Service (NTIS No. PB96-194766).]

CITATION[Wedemeyer, K. and D. Gillikin. 1995. In stream habitat and stock restoration for salmon, Otter Creek barrier bypass subproject. *Exxon Valdez* Oil Spill Restoration Project Final Report (Restoration Project 93139-B1). Anchorage, AK: USDA Forest Service (NTIS No. PB96-194774).]

CITATION[Wells, Peter G., James N. Butler, and Jane Staveley Hughes, (eds.). 1995. *Exxon Valdez* oil spill: fate and effects in Alaskan waters. Philadelphia, PA: ASTM, Series title: ASTM special technical publication; 1219.]

CITATION[Wertheimer, A.C., A.G. Celewycz, M.G. Carls, and M. V. Sturdevant. 1994. Impact of the oil spill on juvenile pink and chum salmon and their prey in critical nearshore habitats. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4, NMFS Component). Juneau, AK: National Oceanic and Atmospheric Administration, National Marine Fisheries Service.]

CITATION[Wertheimer, A.C., S.D. Rice, A.G. Celewycz, J.F. Thedinga, R.A. Heintz, R.F. Bradshaw, and J.M. Maselko. 1996. Affects of Oiled incubation substrate on straying and survival of wild pink salmon. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95076 and 95191B). Juneau, AK: Auke Bay Fisheries Laboratory, National Marine Fisheries Service, National Oceanic and Atmospheric Administration.]

CITATION[Wilcock, J.A., E.D. Brown, and E. Debevec. 1995. Herring spawn deposition and reproductive impairment. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 94166-1). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Willette, T.M., N.C. Dudiak, G., Honnald, G. Carpenter, and M. Dickson. 1995. Survey and evaluation of in stream habitat and stock restoration techniques for wild pink and chum salmon. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Restoration Study Number 105-1, Restoration Project 93063). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division.]

CITATION[Willette, T.M., G. Carpenter, P. Shields, and S.R. Carlson. 1994. Early marine salmon injury assessment in Prince William Sound. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Fish/Shellfish Study Number 4A). Cordova, AK: Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division (NTIS No. PB96-194758).]

CITATION[Wolf, D.A. 1994. Fate and toxicity of spilled oil from the *Exxon Valdez*. *Exxon Valdez* Oil Spill State/Federal Natural Resource Damage Assessment Final Report (Subtidal Study Number 4). Silver Spring, MD: National Oceanic and Atmospheric Administration (NTIS No. PB96-194857).]

CITATION[Yarborough, Linda Finn. 1995. Site specific archaeological restoration. *Exxon Valdez* Oil Spill Restoration Project Annual Report (Restoration Project 95007B). Anchorage, AK: Chugach National Forest.]
ABSTRACT/ANNOTATION[Project 94007 provided for restoration of two archaeological sites (SEW-440 and SEW-488) damaged during the *Exxon Valdez* oil spill and its subsequent cleanup program. Assessment and test excavations were carried out during 1994 field season. Because restoration was not completed during 1994 at one of the sites, field work continued in 1995. No further field work is anticipated, and the project is in its final phases of analysis (FY 96) and public presentation of results is planned for FY 97. This report describes the analysis and field work that took place in 1995.]
KEYWORDS: SOURCE_TYPE[report] GEOGRAPHY[Prince William Sound] EVENT_PHASE[restoration] CULTURAL_SUBSISTENCE[symbolic expression of culture] REMAINDER[archaeology]

COMMUNITY OUTREACH DOCUMENTS

CITATION[Picou, J.S. 1996. March 24, 1989: trying to understand. RCAC Contract No. 7.4021.702. Developed by Sound Alternatives and the Family Resource Center (Cordova) in cooperation with the University of South Alabama. Reprint of newspaper articles originally published in The Cordova Times.]
ABSTRACT/ANNOTATION[This document contains reprints of nine newspaper articles published in the Cordova Times from May to August in 1996. The series provides information about technological disasters, their impacts on communities, and strategies that people can use to overcome chronic stress. The articles were developed as one part of a larger mental health

demonstration project developed, funded, and directed by the Prince William Sound Regional Citizens' Advisory Council. Brief summaries of the main points put forth in each article follow below.

"Technical disasters: why are they different?"

Natural disasters are caused by uncontrollable forces of nature, bring people together to rebuild and help each other, and allow people to rebuild and return to their pre-disaster lives. Technological disasters are caused by humans or human error, produce mistrust and anxiety in people unable to repair the environment affected by such disasters, and do not allow people to return to predisaster conditions, instead requiring communities to form new patterns for their lives.

"Three Mile Island: a continuing disaster"

Technological disasters become embedded in the consciousness of victims, producing uncertainty long after the event is over. Chronic stress is common because of the fear of a potential second technological disaster. Guilt is produced from the fear of passing on genetic defects potentially caused by exposure to toxic contamination. Additional stress is produced from increased sensitivity to other potential environmental problems.

"Understanding anger from technological disasters"

Anger is a normal and healthy response that can help ease the pain and stress of a trauma. Allowing anger to be all-consuming is unhealthy and prolonged anger does nothing for long-term recovery. Deal with anger by directing it only at those responsible, understand that you have control only over yourself and your own emotions, that anger harms only you. Talk about your feelings, get physically active, and redirect your anger to concentrate on solutions rather than blame. Let go of your anger by realizing that you have no control over those who caused the disaster. Realize that others are sharing the pain and emotions of the disaster.

"Letting go of chronic depression"

Signs of depression are persistent sadness, loss of interest in usual activities, poor appetite, weight loss, sleeplessness or excessive sleep, fatigue, low self-esteem, guilt, difficulty concentrating, and thoughts of suicide or death. Release depression by accepting that a disaster has occurred and concentrate on helping yourself and others. Do not dwell on retribution. Rather, become a helper for others, even if only by listening to them. Establishing a new routine of regular sleeping, eating, and exercising will help reduce depression. Isolation increases depression, so talk with others and work together on solutions.

"Chronic stress and alcohol consumption"

Stress and alcohol become a vicious cycle when the desire to drink is associated with stress. The use of alcohol decreases an individual's ability to seek solutions to stressful situations. Being male, single, unemployed, and/or angry is correlated with abusive drinking patterns. To break the cycle, realize you have a problem, learn what situations cause you to desire alcohol, and seek professional help.

"Talking to children in stressful situations"

Children need to understand why their parents and other adults are acting differently following a technological disaster. Be honest and reassure them that the family will work through the problem together. Children may react to stressful situations by reverting to earlier developmental habits. Children need to know that they can ask questions about what they see and hear, and feel that they are secure within their families. Allow children to express and talk about their emotions. Show children that adults are seeking solutions and not affixing blame or projecting anger into the family.

"The mood-food connection and stress"
Negative emotions may trigger the desire or produce the opportunity to overeat. Limit sugar, salt, saturated fat, caffeine, and alcohol, and try to drink eight glasses of water a day. Remove tempting food from areas you are likely to be, establish regular meal times, and don't snack between meals. Stress can cause people to lose their appetites, but a regular schedule of exercise, sleep, and meals will help maintain health and decrease the incidence and effects of chronic stress.
"Chronic stress and cancer: is there a link?"
Depression and stress are thought to be commonly linked to cancer through effects on the immune system. Chronic stress causes people to begin or increase habits (smoking, alcohol abuse, overeating) which are known to increase the incidence of cancer. To reduce the risk of cancer, establish a regular schedule of eating, sleeping, and exercising and avoid alcohol, tobacco, red meat, and heavy diary products.
"Coping with technological disasters"
Victims of technological disasters commonly wish to withdraw and try to shelter their own families. For individuals this often leads to depression, and collectively to the formation of a corrosive community where people are mistrustful of each other and all institutions and feel powerless. Instead, people must realize that parts of the disaster will be permanent, recognize that anger is justifiable and that they need not forgive nor forget, but that they cannot be forever preoccupied by the past. They must assert control over what they can affect and actively seek positive solutions in conjunction with other community members.]
KEYWORDS: SOURCE_TYPE[public outreach document] PSYCHOLOGICAL_EFFECTS[psychological outreach, mental health services]

CITATION[Sound Alternatives. 1996a. Community Education Leaflets. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[This eight leaflet series presents different aspects of the "Growing Together Program." The first leaflet is a general introduction to the series, while the others describe potential psychological or social pathological consequences of technological disasters and ways to counter or cope with them. Titles of the leaflets are:
Growing together: a community education program
Plain talk about depression
Plain talk about domestic violence and wife abuse
Plain talk about managing anger
All about alcohol just for kids
Plain talk about alcohol
Plain talk about helping children cope with disaster
Plain talk about post-traumatic stress disorder.]
KEYWORDS: SOURCE_TYPE[community outreach documents] SOCIAL_EFFECTS[social disruption] CULTURAL_EFFECTS[risk communication] FAMILY_EFFECTS[family outreach] PSYCHOLOGICAL_EFFECTS[psychological outreach, mental health services]

CITATION[Sound Alternatives. 1996b. Community Education Taped Radio Programs. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]

ABSTRACT/ANNOTATION[This five tape series presents an overview of the characteristics of technological disasters and some of the psychological and other impacts which commonly result from them. The tapes also discuss ways to mitigate, cope with, and recover from such effects, on the personal as well as community level. Each tape features host Ray Farnell and a variety of academic and professional specialists. Titles of the tapes programs are:
Growing Together: Program One -- What are Technological Disasters
Steve Kroll-Smith, Bill Freudenburg, Dwayne Gill
Steve Picou
Growing Together: Program Two -- Community Recovery
Growing Together: Program Three -- Depression
Growing Together: Program Four -- Anxiety and PTSD
Growing Together: Program Five -- Substance Abuse and Anger
Each tape is separately annotated. Keywords included here are a combination of those from all five tapes.]
KEYWORDS: SOURCE_TYPE[public outreach radio/audio tape] SOCIAL_EFFECTS[social disruption] CULTURAL_EFFECTS[risk communication] FAMILY_EFFECTS[family outreach] PSYCHOLOGICAL_EFFECTS[psychological outreach, mental health services]

CITATION[Sound Alternatives. 1996b1. Growing Together: Program One -- What are Technological Disasters. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[Host Ray Farnell, specialists Steve Kroll-Smith, Bill Freudenburg, Dwayne Gill, and Steve Picou. The program summarizes the differing patterns of sociological disruption of natural (geological and meteorological) disasters as compared to technological (human caused) disasters. Effects of natural disasters tend to be short-term, unambiguous (or at least largely agreed upon by all concerned), and provoke responses conducive to the formation of a "therapeutic community." Effects of technological disasters tend to be longer-term, ambiguous and not agreed on by all concerned, and provoke responses more conducive to the formation of a "corrosive community" rather than a therapeutic one. The bulk of the program is concerned with the differences between the "therapeutic community" and the "corrosive community," especially in terms of the psychological pathologies characteristic of the second and the characteristics of technological disasters which seem to foster them.]
KEYWORDS: SOURCE_TYPE[taped radio program] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[spill, cleanup, restoration, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[rural residents, fishermen, Alaskan Natives] SOCIAL_EFFECTS[community stability, social disruption, social conflict, leadership, community resources, crime rates, response organizations, demographic characteristics, alienation] CULTURAL_EFFECTS[risk perception, sense of place, sense of community, ethics] FAMILY_EFFECTS[domestic stress] PSYCHOLOGICAL_EFFECTS[chronic stress, depression, anxiety, isolation, dislocation, disruption] LITIGATION_EFFECTS[litigation, lawyers, litigation as secondary disaster] OTHER_EFFECTS[health]

CITATION[Sound Alternatives. 1996b2. Growing Together: Program Two -- Community Recovery. Prepared in cooperation with the Family Resource Center (Cordova) and the

University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[Host Ray Farnell, specialists Steve Kroll-Smith, Bill Freudenburg, Dwayne Gill, and Steve Picou. This program proceeds from the concept of technological disasters as "technological violence" and discusses the effects of technological disasters in terms of victims -- both individual and collective (community). Recovery is dependent upon moving out of the "victim" category, and depends upon the realization of several unalterable aspects of the situation:
1) the pain of trauma being expressed is real
2) the pain being expressed is not the fault of the victims
3) while the pain is real, and not the victim's fault, what the victim does about the pain is the victim's choice
4) it is most often impossible to return to pre-event conditions, so victims need to progress towards positive (individual and community) transformation.]
KEYWORDS: SOURCE_TYPE[taped radio program] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[rural residents] SOCIAL_EFFECTS[social disruption, social conflict, crime rates, alienation, social pathology] CULTURAL_EFFECTS[sense of community, ethics] FAMILY_EFFECTS[domestic stress, domestic violence] PSYCHOLOGICAL_EFFECTS[victim stress, depression, anxiety, therapeutic community, corrosive community, mental health] OTHER_EFFECTS[health]

CITATION[Sound Alternatives. 1996b3. Growing Together: Program Three -- Depression. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[Host Ray Farnell, specialists K. Arata, K. Welsh, and S. Picou. This tape focuses on one individual psychological response common after technological disasters -- depression. It discusses what depression is, what it often derives from, correlates of depression, and how one can cope with and move beyond it.]
KEYWORDS: SOURCE_TYPE[taped radio program] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[rural residents] SOCIAL_EFFECTS[alienation] CULTURAL_EFFECTS[risk perception, sense of community] FAMILY_EFFECTS[domestic stress] PSYCHOLOGICAL_EFFECTS[chronic psychological stress, depression, self-image]

CITATION[Sound Alternatives. 1996b4. Growing Together: Program Four -- Anxiety and PTSD. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[Host Ray Farnell, specialists K. Arata, K. Welsh, and S. Picou. This tape, like the last, focuses on selected individual psychological responses to technological disasters. For both anxiety and PTSD it defines what they are, their relationship to the characteristics of technological disasters, and what people can do about them. For PTSD the interesting point is raised that in many cases the technological disaster is not really over. This stresses the ambiguity of the effects of a technological disaster, the variable nature of individual experiences, and the long-term nature of those effects.]

KEYWORDS: SOURCE_TYPE[taped radio program] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[rural residents] SOCIAL_EFFECTS[alienation] CULTURAL_EFFECTS[risk perception, sense of community] FAMILY_EFFECTS[domestic stress] PSYCHOLOGICAL_EFFECTS[chronic stress, PTSD, self-image]

CITATION[Sound Alternatives. 1996b5. Growing Together: Program Five -- Substance Abuse and Anger. Prepared in cooperation with the Family Resource Center (Cordova) and the University of South Alabama for the Prince William Sound Regional Citizens' Advisory Council.]
ABSTRACT/ANNOTATION[Host Ray Farnell, specialists K. Arata, K. Welsh, and S. Picou. This tape concentrates on a few behavioral responses to technological disasters, where previous programs have discussed psychological responses. As discussed, all are related and in the end are discussed in much the same terms. An important aspect of the program is advising people how to deal with these problems, how to seek the help of others in this regard, and the recovery/transformation process in general.]
KEYWORDS: SOURCE_TYPE[taped radio program] GEOGRAPHY[Prince William Sound, Cordova] EVENT_PHASE[restoration] SOCIAL_OR_CULTURAL_IDENTIFIER[rural residents] SOCIAL_EFFECTS[social disruption, social conflict, crime rates, alienation] CULTURAL_EFFECTS[lifestyle, ethics] PSYCHOLOGICAL_EFFECTS[chronic stress, sense of health, pathology, disruption, substance abuse, anger] OTHER_EFFECTS[health]

VIDEOTAPE

CITATION[Seed, Paul. 1992. Disaster at Valdez. Videocassette. British Broadcasting Company.]

NEWSPAPERS

Newspaper Search Resources

CITATION[Anchorage Daily News (ADN).]
ABSTRACT/ANNOTATION[The Anchorage Daily News is Alaska's largest newspaper. At the time of the EVOS, it was engaged with the Anchorage Times (AT) in a vigorous circulation battle which contributed to the eventual sale of the AT to the ADN as of June 4, 1992. The AT now exists only as a half page editorial forum in the ADN, and its archives are the property of the ADN. Nonetheless, this situation created a spirited competition for EVOS news for the period 03/23/89-06/03/92. The coverage of the two papers appears to be somewhat different, but we have not been able to devote the time to examining them to draw any firm conclusions in this regard. Most mention of potential social effects of the EVOS is in terms of stories about specific people or more general speculation -- little "hard" news has general perspectives on the potential social effects of the EVOS as its primary aim. The main exception to this may be coverage of fishery effects. On the other hand, many stories contain facts which contribute to an understanding of the socioeconomic effects of the EVOS. Access to newspaper files is unfortunately somewhat limited. The ADN library is open only one hour a day. Arrangements may be available to allow greater access, but would require negotiation with the ADN and an

allocation of time for the desired analysis. It appears that a commercial service has digitized at least some ADN archives and has them available via the Internet on a for-fee basis, but those of the AT are not digitized.]

CITATION[Alaska Resource Library and Information Service (ARLIS).]
ABSTRACT/ANNOTATION[ARLIS contains two main resources in terms of newspaper accounts related to the EVOS. The first is electronic access to various databases which index some newspapers for that period. The one with the most potential use, PolarPac, unfortunately lumps newspapers and books together as a searchable area. That is, there is no easy way to search indexed newspaper sources only. This limits the utility of the database in terms of recovering information from newspaper accounts. The second ARLIS newspaper resource is an extensive clippings file for various newspapers, for various periods of time. This is a physical clippings file, with no index, filed in roughly chronological order. No attempt has been made to gauge the "completeness" with which articles related to the EVOS and its effects were clipped, and no documentation or guidelines are explicated for the files. The clippings do appear to be extensive and are presumed to be at least fairly comprehensive. Papers included, and period of coverage, are as follows:
Alaska Commercial Fisherman 05/19/89-09/08/89
Aleutian Eagle 03/31/89-06/15/90
Aleutians East Borough Advocate 03/31/89-06/15/90
Anchorage Daily News 03/24/89-12/31/95a
Anchorage Times 03/24/89-06/03/92b
Arctic Sounder 06/30/89-12/01/89
Barrow Sum 03/31/89-04/13/90
Borough Post 03/31/89-06/15/90
Bristol Bay Times and Dutch Harbor Fisherman 03/31/89-06/15/90
Bristol Bay News 03/31/89-06/15/90
Chilkat Valley News 04/13/89-06/21/90
Copper valley Views 03/29/89-04/26/89
Cordova Times 04/12/89-06/21/90
Cordova Valdez Special Combined Issue 04/05/89
Delta Paper 04/05/89-03/14/90
Fairbanks Daily News Miner 03/25/89-06/21/90
Homer News 06/23/89-06/07/90
Island News 04/10/89-06/18/90
Juneau Empire 03/23/89-12/12/91
Ketchikan Daily News 03/23/89-06/20/90
Kodiak Daily Mirror 03/24/89-01/01/90
Mukluk News 04/06/89-05/17/90
Nome Nugget 04/13/89-05/17/90
Palmer Frontiersman 03/31/89-05/23/90
Peninsula Clarion 03/27/89-06/20/90
Petersburg Pilot 03/30/89-12/28/89
Pioneer All-Alaska Weekly 03/30/89-06/22/90
Senior Voice 01/89-07/89
Seward Phoenix Log 03/30/89-12/31/89

Skagway News 05/12/89-06/22/90
Southeastern Log 06/89-10/89
Tundra Drums 04/17/89-06/14/90
Tundra Times 04/03/89-05/23/90
USA Today 03/27/89-06/15/90
Valdez Pioneer 09/01/89-06/15/90
Valdez Vanguard 03/29/89-06/20/90
Valley Sun 04/18/89-03/27/90
Wrangell Sentinel 04/05/89-04/05/90
Librarians state that the clippings service continue (at least for the ADN) but that funding and staff shortages have not allowed for their processing for public access.
aFor the Anchorage Daily News, clippings from 1992 were not found. Also, clippings for years after 1990 were much more sparse than for 1989 and 1990. This is no doubt related to reduced press coverage.
bFor the Anchorage Times, clippings after 1991 are much sparser than for 1989 and 1990. This is probably related to reduced press coverage.]

CITATION[Z. J. Loussac Public Library.]
ABSTRACT/ANNOTATION[The Z.J. Loussac Library contains several newspaper resources of note. First, it maintains microfilm copies of all available Alaskan newspapers. Second, it possesses the electronic backfiles for the ADN, which are searchable by key words. Third, it maintains a physical clippings file related to the EVOS for Anchorage papers. Fourth, it allows access to various electronic databases which include newspaper sources. The microfilmed newspapers are not indexed, and thus are minimally useful without some sort of filtering device. The ADN electronic back files are potentially useful, but would require an extremely developed search strategy to recover useful article without a large number of "false positives." The physical clippings file appears useful for 1989 and 1990. Although the intent of the library staff is to keep it current, it is obvious from the file that the clipping guidelines for more recent stories is quite rigid -- relatively few are included. The databases accessible from library terminals do not appear to index newspapers from the EVOS time period.]

Newspaper Articles

CITATION[Galagher, Susan. 1989. Editorial on the proper importance and overall significance of the spill. Anchorage Times 3/25/89.]
ABSTRACT/ANNOTATION[The content and tone of the piece is that while people should not overreact to the spill with doom-and-gloom scenarios, neither should its potential for significant negative effects be minimized or overlooked.]
KEYWORDS: SOURCE_TYPE[newspaper editorial] EVENT_PHASE[spill] PSYCHOLOGICAL_EFFECTS[emotional response]

CITATION[Lamming, Jean. 1989. Damage to wildlife feared. Anchorage Times 3/25/89, A1, A8.]
ABSTRACT/ANNOTATION[This article gives a brief report of the spill and stresses the many unknown factors and dynamics at work. It discusses the obvious concern of the herring (roe) fishery. The spill occurred days before the opening of two large roe fisheries, sac roe and

roe-on-kelp. Much (25% to 50%) of the herring in PWS spawn just outside Port Valdez. Rick Steiner is quoted on the general perception of the cleanup -- "The fishermen expected a quicker job and a more professional response. People around here are shocked, ... and worried, really worried. They're walking around in a daze." The article concludes that "The spill may draw increasing fire from environmentalists already sensitive about the trans-Alaska pipeline and efforts to open the Arctic National Wildlife Refuge to oil development."]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Port Valdez] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] PSYCHOLOGICAL_EFFECTS[shock, worry, dazed] REMAINDER[environmentalist's response, trans-Alaska pipeline]

CITATION[Ortega, Bob. 1989. Different kind of oil boom explodes in Valdez. Anchorage Times 3/26/89, A8.]
ABSTRACT/ANNOTATION["The massive oil spill in PWS is creating an economic boom in Valdez, where hundreds of workers are being hired to help with the cleanup and to work at overstuffed hotels and other facilities in the small town." "But the influx of money is overshadowed by the potentially disastrous long-term economic effects of the spill on highly profitable herring, pink salmon and other fisheries in the sound." "The immediate result of the spill has been to transform Valdez into a boom town. By mid-day Friday, there was not a hotel room or rental car available in town, and waiting lists grew longer by the hour." The Westmark Valdez was booked as of 7AM, and had opened a wing that had been closed for the winter. Boats were offered for hire, as were rooms in private homes -- for stiff fees. At least temporarily, local unemployment was non-existent. "'The {unemployment} office was open Saturday, to help line up 150 laborers, mostly local, being hired to help with the cleanup.'" "'And those are just jobs we're looking at as a direct result of the spill.'" "'All the hotels are also in dire need of housekeeping help, dishwashers, cocktail waitresses, and that kind of help.'" (Doris Giusti, manager of Valdez state Job Service office). Sea Hawk Seafoods Inc. had already suffered a loss due to spill. It had to turn away a scallop boat after the port of Valdez was closed (the boat went elsewhere to offload). Sea Hawk Seafoods normally hires 40 people for 2 weeks to process $2 million in roe (last year, 20 million pounds, paid wages of $2 million), but was worried that the spill could wipe this out completely (Sandy Cesarini, executive vice president of Sea Hawk Seafoods).]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Valdez] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, boat owners, service workers] ECONOMIC_EFFECTS[economic gain, labor shortage] MUNICIPAL_EFFECTS[service sector]

CITATION[Hunt, Joe. 1989. Irate fishermen assess damages. Anchorage Times 3/26/89. A-1,A-12.]
ABSTRACT/ANNOTATION[The article discusses how local people cite the slow response time of the state and oil companies in dealing with the spill, and the potential damage to the herring and salmon fisheries (through damage to the biological resources). It is stated that the situation could be worse, but that there still many unknowns.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[residents, state government, oil companies] REMAINDER[spill response time]

CITATION[AP story. 1989. Oil prices leap in trading after tanker spill. Anchorage Times 3/27/89.]
ABSTRACT/ANNOTATION[The article notes that oil prices increased in trading after the spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] ECONOMIC_EFFECTS[fuel prices]

CITATION[Brendler, Beau. 1989. Environmentalists ask Bush to stop offshore drilling. Anchorage Times 3/27/89.]
ABSTRACT/ANNOTATION[The article reports that environmentalists asked President Bush to stop offshore oil drilling.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[environmentalists, President Bush] REMAINDER[environmental concerns, offshore drilling]

CITATION[Hebert, H. Josef. 1989. Spill fuels scrutiny of Bush ANWR plan. Anchorage Times 3/28/89, A1, A8.]
ABSTRACT/ANNOTATION[Bush had a proposal to open ANWR to oil drilling, which now faces more scrutiny in Congress.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[President Bush, Congress] REMAINDER[Congressional debate, ANWR, increased environmental scrutiny]

CITATION[Kranish, Michael (Boston Globe). 1989. Valdez spill triggers concerns over ANWR plan. Anchorage Times 3/28/89.]
ABSTRACT/ANNOTATION[Pipeline construction was authorized by Congress by a tie-breaking vote by Spiro Agnew in 1973 -- over warnings from Senator Walter F. Mondale about the potential dangers of tanker spills. Now the EVOS spill threatens the opening of ANWR to oil exploration and drilling. The Senate Energy and Commerce Committee has voted 12-7 to approve drilling in ANWR 2 weeks ago, but the future of the bill is now stated to be unclear.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[pre-spill, spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Congress, Spiro Agnew, Walter Mondale, Senate Energy and Commerce Committee] REMAINDER[Congressional debate, ANWR]

CITATION[Lamming, Jean. 1989. Sound fishermen demand immediate compensation. Anchorage Times 3/27/89, B1, B6.]
ABSTRACT/ANNOTATION[The article reports that local fishermen want and need immediate compensation if herring are tainted or the fishery is called off. Many have borrowed against the herring and salmon fisheries and have immediate debt service needs. They cannot afford to wait years as those hurt by the Glacier bay spill incident had to. Raymond Cesaruni, owner of Sea Hawk Seafoods, Inc. (one of 2 processors in Valdez and one of the biggest Alaska-owned operations) foresees dismal prices as an effect of the spill on the herring fishery. He thinks that Japan may not even want to buy PWS herring in 1989, and that the effect could last 15 to 20 years.]

KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Valdez] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] ECONOMIC_EFFECTS[debt service, compensation for damages]

CITATION[Lamming, Jean. 1989. Spill stench permeates Aleut village. Anchorage Times 3/28/89.]
ABSTRACT/ANNOTATION[Residents of the village can smell the slick, and fear the potential effects of burning if the wind should change. Some people (especially pregnant women) have flown or plan to fly to Cordova for personal health reasons or to protect their unborn children. Residents are also worried about the possible tainting of subsistence resources.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Aleut] FAMILY_EFFECTS[children] OTHER_EFFECTS[odor of oil, health concerns, health] SUBSISTENCE_ACTIVITIES[contamination fears]

CITATION[Whitney, David. 1989. Spill could add to development foes' arguments. Anchorage Daily News 3/27/89, E1, E2.]
ABSTRACT/ANNOTATION[Bristol Bay, ANWR -- state opposed to the first, wants exploration and development of the second. The spill may well argue against both.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Bristol Bay, ANWR] EVENT_PHASE[spill] REMAINDER[future oil exploration, Bristol Bay, ANWR]

CITATION[AP story. 1989. Valdez spill boosts U.S. crude oil prices. Anchorage Daily News 3/28/89.]
ABSTRACT/ANNOTATION[The article reports that U.S. crude oil prices increased after the spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] ECONOMIC_EFFECTS[fuel prices]

CITATION[Medred, Craig. 1989. Spill dooms Sound animals. Anchorage Daily News 3/28/89 E1, E3.]
ABSTRACT/ANNOTATION[The article reports on damage to animals in the Sound.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill] REMAINDER[wildlife impacts]

CITATION[Laurie, Robert. 1989. Oil spill consumes employees' time. Anchorage Times 3/29/89.]
ABSTRACT/ANNOTATION[The State DEC office has expended 20 to 25% of the agency's staff to the task of coordinating the state's response to the spill. Forty agency officers (including Com. Dennis Kelso) were in Valdez with another ten to twelve in other offices devoting time to it. This hurt the other duties of the agency. Other state agencies were similarly affected. 20 ADF&G biologists and administrators were in Valdez. The Division of Emergency Services has six staff in a mini-Emergency Operations Center in Valdez. The Department of Military and Veterans Affairs was assisting with air support. Two assistant attorneys general from the Department of Law provided legal advice to stat officials, while DNR deployed Infrared Camera with two technicians, and also had three other specialists to determine the priority of cleanup for

the oiled beaches. The Division of Forestry was to deploy five emergency fire crews (80 people) to help cleanup. These 16 member crews were from Delta, Copper Center, Wasilla. The Division of Parks has offered two six-member Alaska Conservation Corps crews. The Department of Public Safety has several State Troopers assisting in the investigation of the accident.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[municipal workers, state workers, federal workers] MUNICIPAL_EFFECTS[infrastructure demands]

CITATION[Francis, Karl. 1989. Congratulations, Alaska, the spill is our own fault. Anchorage Daily News 3/29/89.]
ABSTRACT/ANNOTATION[Alaska lives on oil and its politicians kowtow to oil. The logical way to deliver oil from the North Slope was through a Canadian pipeline rather than through the Trans-Alaska pipeline aimed at Asian exports. Spill contingency plans were grossly inadequate, but this was the result not only of Alyeska/oil company noncompliance but also of lax state oversight.]
KEYWORDS: SOURCE_TYPE[newspaper editorial] EVENT_PHASE[pre-spill, spill] SOCIAL_OR_CULTURAL_IDENTIFIER[oil companies, Alaska] REMAINDER[causes of spill]

CITATION[Murphy, Mary Pat. 1989. Oil cleanup efforts leave many legislators seething. Anchorage Times 3/29/89.]
ABSTRACT/ANNOTATION[‘If there's one word I can convey to you from the people of Valdez and Cordova, that word is betrayal,' McAlpine told those gathered for a briefing on the spill called by House Speaker Sam Cotten, D-Eagle River. 'Every citizen feels betrayed,' McAlpine said, adding that the city of Valdez years ago offered to stockpile boom materials and other materials needed to respond to an oil spill".]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Cordova, Valdez] EVENT_PHASE[spill] PSYCHOLOGICAL_EFFECTS[anger, sense of betrayal]

CITATION[Saddker, Daniel R. 1989. Cordova fishermen fear lifestyle threat. Anchorage Times 3/29/89 A1, A8.]
ABSTRACT/ANNOTATION[Most of the reported concern has so far focused on Valdez, but residents note that Cordova is more dependent on fishing than Valdez. They worry that the spill may claim the fish, fishermen’s jobs, their town, and their way of life. Exxon reportedly promised to pay off reasonable claims. "But fishermen were skeptical of any rapid settlement of their claims, and many doubted any monetary value could be placed on their loss. 'How much is your lifestyle worth to you?' challenged one speaker." Shrimp pot harvest was halted, the pending black cod opening was canceled, and the salmon season was uncertain. "After listening politely to the fisheries managers, questioners zeroed in on representatives of the Coast Guard, Exxon, and Alyeska Pipeline Service Company. Fishermen blasted them for inadequate contingency plans, insufficient quantities of clean-up materials, delays in deciding whether to use chemical dispersants, and their refusal to accept volunteer cleanup help offered by fishermen." John Mehelich, seiner from Cordova -- "'My biggest concern is my whole way of life. This year I'm going to have to go out and clean up oil, and I'd rather be fishing.'"]

KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Cordova, Valdez] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[U.S. Coast Guard, Exxon, Alyeska, fishermen, volunteers] ECONOMIC_EFFECTS[claims process] PSYCHOLOGICAL_EFFECTS[anger] REMAINDER[contingency plans and preparation]

CITATION[Times Staff. 1989. Battle rages to save hatcheries. Anchorage Times 3/29/89, A1, A8.]
ABSTRACT/ANNOTATION["It's not a cleanup anymore; it's a long-shot effort to avert a total disaster for one of the largest salmon hatchery systems in the world." One estimate of potential losses to the fisheries was put at $150 million.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Alaska] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, hatchery workers] ECONOMIC_EFFECTS[fish hatchery industry]

CITATION[Tson, Ray. 1989. State losses from spill keep rising. Anchorage Times 3/29/89, B6, B8.]
ABSTRACT/ANNOTATION[Pipeline flow reduced, revenue losses projected to be $90 million (state share about $20 million).]
KEYWORDS: SOURCE_TYPE[newspaper article] ECONOMIC_EFFECTS[revenue loss]

CITATION[AP story. 1989. Washington fishermen lament loss. Anchorage Times 3/31/89.]
ABSTRACT/ANNOTATION[Estimates of losses from spill -- $11 million from herring, $200 million from salmon. 250 of 910 herring permits held by WA state residents, so losses felt in Washington as well as Alaska.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Washington State] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[Washington State fishermen] ECONOMIC_EFFECTS[economic loss, commercial fishermen]

CITATION[Hunt, Joe. 1989. Sierra club targets loading tankers. Anchorage Times 3/31/89.]
ABSTRACT/ANNOTATION[The Sierra Club had questioned of why tankers could be loaded in Valdez during the cleanup effort -- since most or all of cleanup equipment was deployed away from the port. The oil spill contingency plan requires that a minimal amount of spill response equipment is required to be available in the event of a spill during tanker loading, and such events have occurred in the past.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Valdez] EVENT_PHASE[spill] SOCIAL_OR_CULTURAL_IDENTIFIER[environmentalists, Sierra Club] REMAINDER[spill response, contingency plans]

CITATION[Times Staff. 1989. Murkowski's faith in oil unshaken. Anchorage Times 3/31/89.]
KEYWORDS: SOURCE_TYPE[newspaper article] SOCIAL_OR_CULTURAL_IDENTIFIER[Murkowski]

CITATION[Akre, Brian S. 1989. Oil firms withdraw advertising. Anchorage Times 3/31/89.]
ABSTRACT/ANNOTATION[Oil companies withdraw ads about their contribution to the state in light of the ongoing spill and cleanup effort.]

KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill, cleanup] REMAINDER[oil company advertizing]

CITATION[Katz, John. 1989. Action on pending policy issues could be influenced by Valdez spill. Anchorage Times 3/31/89.]
ABSTRACT/ANNOTATION[Issues: 1) Federal oil leasing in Bristol Bay, 2) arctic offshore seasonal restrictions on drilling, 3) drilling in ANWR, 4) even non-oil and gas matters -- Tongass National Forest management, federal lands protection in general. Author supports exploration and appropriate development of ANWR, opposes any oil and gas leasing in Bristol Bay.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill] REMAINDER[increased scrutiny of oil companies, ANWR]

CITATION[Saddler, Daniel R. 1989. Anger gives way to depression. Anchorage Times 3/31/89, A1, A8.]
ABSTRACT/ANNOTATION[Doris Lopez, Valdez. She and husband have two limited entry permits, representing a $450,000 investment. "'It's like somebody died. People are experiencing the grieving process. First they are extremely irate, now they are angry and depressed.'" "'It's like we lost all the innocence. No matter how they clean it up, it's never going to be the clean Prince William Sound again.'" The article reports that "Instead of preparing for what was predicted to be a record salmon harvest, the frustrated fishermen are beached, hoping to contribute their efforts to the cleanup." There are many people who want to go to work but have no direction or organization. Exxon says they cannot use volunteers because of the lack of workman's compensation coverage for them.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Valdez, Prince William Sound] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, Exxon, volunteers, Doris Lopez] ECONOMIC_EFFECTS[economic loss, workmen's compensation] PSYCHOLOGICAL_EFFECTS[anger, depression, loss of innocence, frustration]

CITATION[Toomey, Sheila. 1989. 2 fishermen file first lawsuit over spill; more suits likely. Anchorage Daily News 3/30/89 C1, C3.]
ABSTRACT/ANNOTATION[see headline]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] LITIGATION_EFFECTS[first lawsuits filed]

CITATION[Wohlforth, Charles. 1989. Valdez folks feel 'cheated'. Anchorage Daily News 3/30/89 A1, A6.]
ABSTRACT/ANNOTATION[Valdez always has been a pro-development town, married to oil, but now realizes some of the downside to this. But Valdez lives on oil -- except for the fishermen -- but they are relatively muted compared to Cordova fishermen. Alyeska pays 90% of Valdez' annual city budget of $33 million (4 to 5 times the size of other cities its size). The article reports that "For that minority of people in town who lived here before the pipeline was built and don't owe oil a thing, the dependence of Valdez on oil and the cozy relationship it led to can be frustrating." As a example it cites Doris Lopez -- married into a two-generation Valdez fishing family -- who says that Alyeska was always apathetic about the risks of a spill. Still, the

article concludes that "The town was shocked (by the spill), but for land dwellers in Valdez, the spill is already fading." "For fishermen, it's harder."]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Valdez, Cordova] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen, oil industry] ECONOMIC_EFFECTS[fishing sector vs oil sector]

CITATION[Pulliam, Elizabeth. 1989. Nothing to do. Anchorage Daily News 3/30/89 D1, D2.]
ABSTRACT/ANNOTATION[Sort of a "feeling" piece, about lack of use of volunteers (especially those from outside PWS who felt an attachment to the area) by those seen to be "in charge." Kelly Weaverling --"'Perhaps that is the definition of a true disaster, when even your best efforts are basically useless.'" Michael O'Callaghan of Anchorage raises and for most part dismisses idea of a grass-roots cleanup effort described. Reasons for the lack of use of volunteers were that there was no room in Valdez for outside volunteers, and conditions were quite harsh.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Anchorage, Valdez] EVENT_PHASE[spill, cleanup] SOCIAL_OR_CULTURAL_IDENTIFIER[volunteers] CULTURAL_EFFECTS[sense of place] PSYCHOLOGICAL_EFFECTS[futility] REMAINDER[lack of use of volunteers]

CITATION[Postman, David. 1989. Cordova fears end of the line. Anchorage Daily News 3/30/89 A1, A6.]
ABSTRACT/ANNOTATION[Local residents feel Cordova has been left out and will die as a town if the spill seriously affects fish resources. Other towns have tourism or the pipeline terminal or other economic options, while Cordova is dependent on fishing. The article's tagline description of Cordova -- "Cordova has more canneries than bars and more bars than anything else."]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Cordova] ECONOMIC_EFFECTS[economic diversification, fishery dependence] PSYCHOLOGICAL_EFFECTS[fear about future, fear for town]

CITATION[Letters to the Editor. 1989. Anchorage Daily News. Readers respond with anger, sadness to PWS oil spill. Anchorage Daily News 4/01/89.]
ABSTRACT/ANNOTATION[Mostly from non-PWS residents, emotional for the most part.]
KEYWORDS: SOURCE_TYPE[newspaper article] PSYCHOLOGICAL_EFFECTS[emotional response]

CITATION[O'Harra, Doug. 1989. Pilots, in treacherous waters. Anchorage Daily News 4/02/89 (We Alaskans section).]
ABSTRACT/ANNOTATION[Portraits of Alaskan pilots working in Port Valdez, especially in relation to the EVOS.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Port of Valdez] REMAINDER[life of pilots]

CITATION[Wohlforth, Charles. 1989. Scientists turn Sound into laboratory. Anchorage Daily News 4/03/97 A1, A?.]

ABSTRACT/ANNOTATION[Straight reporting, except for a comment that the spill is a boon to scientists' careers.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound] REMAINDER[science]

Recent Newspaper Articles

CITATION[Wall Street Journal. 1994. *Exxon Valdez* Natives' claims. Wall Street Journal 11/17/94]
ABSTRACT/ANNOTATION[This article discusses payments to 4,000 Alaskan Natives for replacement cost of food.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Alaskan Natives] LITIGATION_EFFECTS[claims, payments, Native claims]

CITATION[New York Times. 1995. Exxon verdict is upheld. New York Times 1/29/95.]
ABSTRACT/ANNOTATION[Verdict for punitive damages is upheld in the Exxon case.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] LITIGATION_EFFECTS[verdict, punitive damages, verdict upheld]

CITATION[Wall Street Journal. 1995. Exxon plans to appeal Alaska court ruling for damage award. Wall Street Journal 1/30/95]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] LITIGATION_EFFECTS[appeal, damages, award]

CITATION[Los Angeles Times. 1995. *Exxon Valdez* $5 billion verdict affirmed by judge. Los Angeles Times 1/31/95]
ABSTRACT/ANNOTATION[A $5 billion dollar verdict in the *Exxon Valdez* case is affirmed by Judge H. Russel Holland]
KEYWORDS: SOURCE_TYPE[newspaper articles] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Judge H. Russell Holland, U.S. District Court] LITIGATION_EFFECTS[verdict, $5 billion award]

CITATION[New York Times. 1995. Part of Valdez award is voided. New York Times 4/1/95.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, jury] LITIGATION_EFFECTS[damages, jury, award, voided]

CITATION[Los Angeles Times. 1995. Judge clears Exxon of duty to pay natives. Los Angeles Times 4/3/95.]
ABSTRACT/ANNOTATION[Exxon cleared of liability for damages to Native Alaskans from the oil spill]

KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives, Exxon, judge] LITIGATION_EFFECTS[liability, damages, judicial decision]

CITATION[Wall Street Journal. 1996. Exxon seeks a new trial in Valdez oil-spill case. Wall Street Journal 9/12/95.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] LITIGATION_EFFECTS[new trial]

CITATION[Wall Street Journal. 1996. Exxon has partial accord with Lloyd's of London. Wall Street Journal 1/18/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] LITIGATION_EFFECTS[partial settlement, lawsuit, recovery] REMAINDER[insurance claim]

CITATION[New York Times. 1996. Exxon to get $300 million in a partial settlement. New York Times 1/18/96]
ABSTRACT/ANNOTATION[Exxon to receive $300 million in a partial settlement from insurers including Lloyd's of London.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[insurers, Lloyd’s of London, Exxon] LITIGATION_EFFECTS[settlement] REMAINDER[insurance claim]

CITATION[Wall Street Journal. 1996. Request for new trial for Exxon is denied. Wall Street Journal 2/22/96.]
ABSTRACT/ANNOTATION[Request for a new trial for Exxon in the oil spill case is denied.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] LITIGATION_EFFECTS[request new trial]

CITATION[Los Angeles Times. 1996. Exxon loses appeal on Valdez case. Los Angeles Times 2/22/96.]
ABSTRACT/ANNOTATION[Exxon loses liability appeal for oil spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] LITIGATION_EFFECTS[liability, appeal]

CITATION[Phillips, Natalie. 1996. A $5 billion payday could make rich Alaskans as common as moose. Anchorage Daily News 3/17/96, B-1 and B-3.]
ABSTRACT/ANNOTATION[This article discusses the probable split of the $5 billion punitive damage award assessed to Exxon as a result of the *Exxon Valdez* oil spill. Although most of the award will be paid to commercial fishermen and their attorneys, the article makes it clear that not all claimants will receive an equal amount. A complex distribution matrix has been agreed to which allocates the proceeds of the award based on a number of factors, some related to the degree of harm caused by the spill, and others more related to the practicalities of pursuing and increasing the probability of success in the legal case. While there is no true "average" award that can be noted, many of the claimants will indeed receive large payments if and when Exxon

pays the award (estimated as 2.5 to 4 years from the date of award by the winning attorneys, based on how long Exxon's appeals would take to be heard).]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound] EVENT_PHASE[spill, litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] ECONOMIC_EFFECTS[money spill]

CITATION[Phillips, Natalie. 1996. Payout comes at high price. Anchorage Daily News 3/17/96, B-1 and B-3.]
ABSTRACT/ANNOTATION[This article provides somewhat more detailed information on the probable payout of the $5 billion *Exxon Valdez* punitive damage award to a specific group of claimants, salmon fishermen with permits for the Chignik area. The 92 to 100 permit holders will split about $186.8 million, or about $1.9 million each. This must be shared with crew members, typically three or four per vessel. While these payments appear to be large, the fisherman interviewed for the article points out that before the spill Chignik permit holders earned $80,000 to $240,000 a season, but averaged a lower $130,000 after the spill. Further, this decline was not shared equally by all fishermen, but hit the "highliners" the most. All Chignik permit holders had additional expenses and worries. The fisherman interviewed concludes that while the award may appear large, it is balanced by the heartache and losses he has had to sustain since the spill event, and that the delay of any settlement is an additional cost.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Chignik] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[fishermen] ECONOMIC_EFFECTS[economic gain, economic loss, money spill]

CITATION[Gerstenzang, James. 1996. Tanker seeks return to Alaskan waters. Los Angeles Times 5/4/96.]
ABSTRACT/ANNOTATION[*Exxon Valdez* has been forbidden to return to Prince William Sound, but Exxon seeks to see that situation reversed.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound] EVENT_PHASE[litigation] LITIGATION_EFFECTS[lawsuit]

CITATION[Wall Street Journal. 1996. Jury decides insurers should pay Exxon for Valdez expenses. Wall Street Journal 6/11/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, insurers, jury] LITIGATION_EFFECTS[verdict, jury, lawsuit] REMAINDER[insurance claim]

CITATION[Strom, Stephanie. 1996. Exxon wins $250 million from Lloyd's for Alaska oil spill. New York Times 6/11/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Lloyd’s of London, insurers] LITIGATION_EFFECTS[lawsuit, verdict] REMAINDER[insurance claim]

CITATION[Los Angeles Times. 1996. Exxon wins $250-million verdict in Valdez suit. Los Angeles Times 6/11/96.]
ABSTRACT/ANNOTATION[Exxon wins lawsuit against Lloyds of London for unpaid insurance claims relating to the *Exxon Valdez* oil spill]

KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, insurers, Lloyd's of London, court] LITIGATION_EFFECTS[lawsuit, win lawsuit, verdict] REMAINDER[insurance claim]

CITATION[McCoy, Charles. 1996. Exxon's secret Valdez deals anger judge. Wall Street Journal 6/13/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, judge] LITIGATION_EFFECTS[punitive damages, damage awards, secret agreement]

CITATION[McCoy, Charles; Fritsch, Peter. 1996. Exxon defends its 'novel' approach to reducing Valdez punitive damages. Wall Street Journal 6/14/96.]
ABSTRACT/ANNOTATION[Discussion of secret agreements made by Exxon that would enable Exxon to reduce its punitive damage payments]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] LITIGATION_EFFECTS[secret agreement, punitive damages, payments]

CITATION[Salpukas, Agis. 1996. Exxon is accused of 'astonishing ruse' in oil-spill trial .New York Times 6/14/96.]
ABSTRACT/ANNOTATION[A federal judge criticizes a secret agreement made between Exxon and seafood processors over damage awards for the oil spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[judge, Exxon, seafood processors] LITIGATION_EFFECTS[secret agreement, judicial criticism, damage awards]

CITATION[Murphy, Kim. 1996. Valdez spill's sticky legacy of public land. Los Angeles Times 6/23/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Latouche Island] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Alaskan Natives] REMAINDER[public land]

CITATION[McAllister, Bill. 1996. Report says Congress is sinking traffic control system for ships. Washington Post 6/28/96.]
ABSTRACT/ANNOTATION[Traffic control systems for vessels was an important issue after the *Exxon Valdez* oil spill. This article cites a National Research Council report that the Congress, specifically the House Appropriations Committee, eliminated $6 million that the U.S. Coast Guard states is critical for Vessel Traffic Services.]
NOTATION: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] REMAINDER[regulation]

CITATION[Wall Street Journal. 1996. Insurers owe energy giant $161 million over Valdez. Wall Street Journal 7/25/96.]
ABSTRACT/ANNOTATION[Insurers owe Exxon $161 million in claims over the oil spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[insurers, Exxon] LITIGATION_EFFECTS[insurance award] REMAINDER[insurance]

CITATION[Los Angeles Times. 1996. Exxon insurers ordered to pay interest in Valdez spill. Los Angeles Times 7/25/96.]
ABSTRACT/ANNOTATION[Insurers, including Lloyd's of London and other underwriters are ordered to pay Exxon on an insurance policy, for the *Exxon Valdez* oil spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Lloyd's of London, underwriters]
LITIGATION_EFFECTS[insurance award] REMAINDER[insurance claim]

CITATION[McCoy, Charles. 1996. Exxon's effort to secure award for spill rejected. Wall Street Journal 9/20/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
LITIGATION_EFFECTS[insurance award] REMAINDER[financing of award]

CITATION[Wall Street Journal. 1996. Judgement over Valdez entered in Exxon case, starting long appeal. Wall Street Journal 9/26/96.]
ABSTRACT/ANNOTATION[Appeals process begins in 9th U.S. Circuit Court of Appeals over *Exxon Valdez* judgement.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Court of Appeals]
LITIGATION_EFFECTS[appeal, judgement]

CITATION[Wall Street Journal. 1996. Exxon, Lloyd's agree to Valdez settlement. Wall Street Journal 11/1/96.]
ABSTRACT/ANNOTATION[This article concerns settlement of insurance claims by Exxon for coverage for the *Exxon Valdez* oil spill. The insurers include Lloyd's of London.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Lloyd's of London]
LITIGATION_EFFECTS[settlement] REMAINDER[insurance claim]

CITATION[Treaster, Joseph B. 1996. With insurers' payment, Exxon says Valdez case is ended. New York Times 11/1/96.]
ABSTRACT/ANNOTATION[Settlement between Exxon and an insurer, Equitas, over the *Exxon Valdez* oil spill.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Equitas] LITIGATION_EFFECTS[settlement] REMAINDER[insurance claim]

CITATION[Los Angeles Times. 1996. Exxon, insurers settle Valdez litigation. Los Angeles Times 11/1/96.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation]
LITIGATION_EFFECTS[settlement] REMAINDER[insurance claim]

CITATION[Wall Street Journal. 1997. Exxon pushing for return of Valdez to Alaska Sound. Wall Street Journal 1/16/97.]

ABSTRACT/ANNOTATION[Exxon seeks to return the *Exxon Valdez* tankership to Prince William Sound, and wants to have a law overturned that prevents the ship from visiting Valdez.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Prince William Sound, Valdez] EVENT_PHASE[litigation] LITIGATION_EFFECTS[overturn law]

CITATION[Schoch, Deborah. 1997. *Exxon Valdez*-linked funds to help Bolsa Chica. Los Angeles Times 2/14/97.]
ABSTRACT/ANNOTATION[Funds to be used for Bolsa Chica wetlands restoration project.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Valdez, Bolsa Chica wetlands, California] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon] LITIGATION_EFFECTS[settlement expenditures]

CITATION[Los Angeles Times. 1997. Exxon appeals judgment in Valdez case. Los Angeles Times 2/14/97.]
ABSTRACT/ANNOTATION[Article describes legal appeal in *Exxon Valdez* case.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Court of Appeals] LITIGATION_EFFECTS[appeal]

CITATION[Wall Street Journal. 1997. Appeal is filed of award in *Exxon Valdez* oil spill. Wall Street Journal 2/14/97.]
ABSTRACT/ANNOTATION[This newspaper article concerns a legal appeal filed by Exxon Corporation.]
KEYWORDS: SOURCE_TYPE[newspaper article] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Court of Appeals] LITIGATION_EFFECTS[appeal]

CITATION[Goldberg, Carey. 1997. A tanker hauling memories is shunned; Alaska residents oppose Exxon's effort to bring back the Valdez. New York Times 3/16/97.]
ABSTRACT/ANNOTATION[The *Exxon Valdez* has been renamed the Mediterranean, and Exxon Corporation wants to send it back to Prince William Sound, though some Alaskans object to its return.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Alaska, Prince William Sound] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Alaskans]

CITATION[Wall Street Journal. 1997. Exxon Corp. submits brief outlining Valdez appeal. Wall Street Journal 6/20/97.]
ABSTRACT/ANNOTATION[The award in the *Exxon Valdez* oil spill case is appealed to Ninth Circuit United States Court of Appeals in California.]
KEYWORDS: SOURCE_TYPE[newspaper article] GEOGRAPHY[Alaska, California] EVENT_PHASE[litigation] SOCIAL_OR_CULTURAL_IDENTIFIER[Exxon, Court of Appeals] LITIGATION_EFFECTS[award, appeal, Court of Appeals]

CITATION[Martin, Douglas. 1997. *Exxon Valdez* money to aid city wetlands. New York Times 9/11/97.]