

Twenty-Four Years of Social Science Research on the *Exxon Valdez* Oil Spill: Sociocultural and Psychosocial Impacts in a Commercial Fishing Community

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ABSTRACT 300133:

Our paper provides a comprehensive overview of research findings from a unique series of studies examining human impacts of the 1989 *Exxon Valdez* oil spill (EVOS). Our focused on Cordova, Alaska—considered ‘ground zero’ for sociocultural and psychosocial impacts from this disaster. During the past 24 years, we used and developed a variety of theoretical and conceptual approaches to frame evolving issues and employed both quantitative and qualitative methodological designs. We used ecological-symbolic theory and the renewable resource community (RRC) concept to frame community, group, and individual responses to this environmental disaster. We also employed social capital theory, the Conservation of Resources (COR) stress model, and key concepts such as recreancy, collective stress, and secondary trauma to explain observed chronic impacts. Findings reveal sociocultural disruption and psychosocial stress and the critical role protracted litigation and prolonged ecological damage had for maintaining community and mental health problems for over two decades. Quantitative data are supported by rich, descriptive qualitative data to deepen the understanding of human impacts. Our discussion summarizes major findings on psychosocial stress and sociocultural disruptions. We note how disruption and stress changed over time, reaching their lowest levels five years after the resolution of litigation, but nonetheless still evident due to a lack of recovery of key ecological resources. Finally, we discuss how these findings can be applied to better understand and mitigate social impacts of future oil spill disasters.

INTRODUCTION:

The supertanker *Exxon Valdez* ran aground on Bligh Reef in Prince William Sound (PWS), Alaska on March 24, 1989, spilling more than 11 million gallons of crude oil. Exacerbated by inadequate spill response and controversial cleanup techniques, the *Exxon Valdez* oil spill (EVOS) caused widespread environmental damage as more than 44,000 square

kilometers, including 1,900 kilometers of Alaskan coastline were oiled. (Spies et al., 1996; see also, <http://www.evostc.state.ak.us/>). Damages to the ecosystem were so severe that 21 years later, only 10 of 26 resources/species had fully recovered (EVOSTC, 2010).

The spill created a disaster for local communities, particularly those with strong economic, social, and cultural ties to renewable natural resources. Renewable resource communities in PWS included two Alaska Native villages, Tatitlek and Chenega Bay, and the commercial fishing community of Cordova. As headquarters for Alyeska Pipeline Corporation, the PWS community of Valdez experienced “boomtown” effects as thousands of cleanup workers spilled through the area. Initial socio-cultural impacts included economic uncertainty, community conflict, collective trauma, social disruption, loss of social capital, and psychological stress. Research documented a chronic nature of some impacts, particularly financial hardships, social disruption, and psychological stress. More than 18 years of unresolved litigation contributed to these long-term negative impacts (Gill, Ritchie, & Picou, 2013).

Cordova became ‘ground zero’ for EVOS-related sociocultural and psychosocial impacts. A commercial fishing community with a subsistence heritage rooted in Alaska Native culture, Cordova consistently ranked in the top ten most profitable U.S. seafood ports before the spill, but 21 years later, it was not even in the top 25. Over time, as the pink salmon fishery struggled to recover and the herring population crashed, the local economy was adversely impacted. Households participating in herring fisheries lost an estimated 25-30 percent of their annual income. Throughout the economic boom of the 1990s, Cordova struggled to survive, while non-affected Alaskan communities thrived.

Our research examined and documented sociocultural and psychosocial impacts occurring from this disaster. In 1989, Steve Picou and Duane Gill began a study that focused on Cordova. Their initial four-year study was followed by a project in 1995-1997 that utilized a participatory action model to develop and implement alternative community mental health programs. Joined by Liesel Ritchie in 2000, our research team continued a long-term community study of sociocultural and psychosocial impacts of the EVOS. Over the last 24 years this research has advanced understanding of the dynamics of chronic human impacts triggered by technological disasters.

We used and developed a variety of theoretical and conceptual approaches to frame salient issues and employed both quantitative and qualitative methodological designs. Ecological-symbolic theory and the renewable resource community (RRC) concept established our basic conceptual model for understanding community, group, and individual responses. Defined as a community “whose primary cultural, social and economic existences are based on the harvest and use of renewable natural resources” (Picou & Gill, 1996:881), the RRC concept emphasizes vital sociocultural and psychosocial relationships with ecosystem processes that shape community structures and processes. From this framework, we examined how communities and groups react to and are affected by resource loss/threat of loss—particularly as they relate to the utilization of ecosystem resources. Within this context we employed diverse conceptual approaches including the Conservation of Resources Stress Model; social capital theory; recreancy; corrosive community; lifestyle and lifescape change; and collective trauma (see Ritchie & Gill, 2007 for an extensive literature review of these approaches).

METHODS:

We used a mixed-methods approach combining quantitative and qualitative research designs. Quantitative approaches included telephone and self-administered surveys designed to collect data from community residents (1989, 1990, 1991, 1992, 1995, 1997, 2000, 2006, 2009, and 2013) and from a renewable resource user group (RRUG) panel of commercial fishermen and Alaska Natives (2001, 2006, and 2009). Our approach included a field experiment design using Petersburg, Alaska as a control/comparison community.¹

All community and RRUG surveys included common items on demographic characteristics, community values and attachment, social disruption, and psychological stress. Symptoms of psychological stress were assessed using the Impact of Event Scale (IES); a self-report inventory measuring the psychological impact of a particular event (Horowitz, Wilner, & Alvarez, 1979). Surveys also included measures of depression, self-efficacy, and resource loss.

Qualitative approaches included ethnographic methods, participant observation, informal conversations, and a qualitative panel. Our initial 1989 study included informal conversations with community officials and key informants, and we continued to conduct informal conversations throughout the 24 year study. We also participated in various community events and organizational meetings. These various ethnographic experiences provided pertinent issues to include on our surveys and a context for understanding research findings.

In 2002-2003 a formal qualitative study was conducted in Cordova (Ritchie, 2004). Forty-eight interviews were conducted with subjects selected by a “criterion-based selection” design based on representative demographic, occupational, and stakeholder statuses. The interview guide addressed community attachment, social capital, resource loss, lifestyle and lifescape changes, social disruption, and ongoing EVOS litigation. After the 2008 Supreme Court decision, 35 of the original 48 participants were re-interviewed creating a panel design. Results provided a robust approach for contextualizing quantitative data and probing into long-term psychosocial responses to the spill and resolution of disaster-related litigation.

RESULTS:

Our research documented psychosocial and sociocultural impacts, some of which became chronic due to unresolved high-stakes litigation and failed recovery of resources such as herring. Findings on psychosocial effects revealed disruptions to daily and family life, as well as increased mental stress (Gill, 2007; Gill & Picou, 1997, 1998, 2001; Picou & Arata, 1997; Picou & Gill, 1996; Ritchie, 2004, 2012; Ritchie et al., 2012).² Increased psychosocial problems were manifested via drug and alcohol use; chronic feelings of helplessness, betrayal, and anger; increased depression and anxiety; and adoption of avoidance coping strategies. Long-term resource loss spirals exacerbated these stressors; particularly among commercial fishermen and Alaska Natives (Arata et al. 2000; Picou et al. 2004; Ritchie & Gill, 2010).

¹ Petersburg is a commercial fishing community similar to Cordova in population, economy, and ties to renewable resources. A Valdez community survey was conducted in 1991 and 1992 in conjunction with the other community surveys.

² Other social science studies of the EVOS generated findings that were consistent with our early research findings (see Gill et al., 2013 for our National Science Foundation report that includes references to these studies).

Technological disasters like oil spills create high levels of uncertainty and Cordovans who experienced the EVOS became uncertain about short- and long-term effects on the ecosystem, as well as their community, family, and livelihood (see Arata et al., 2000; Gill, 1994; Gill & Picou, 1998; Picou & Arata, 1997; Picou et al., 1992; Ritchie, 2004; Ritchie & Gill, 2007). Consistent with Erikson's (1976; 1994) concept of 'collective trauma' and Freudenburg's (1997) 'corrosive community' concept, social relationships were disrupted and community relations became strained in response to the spill and ensuing EVOS-related issues. These contributed to economic and social capital loss spirals (Arata et al. 2000; Ritchie, 2004).

EVOS-Related Psychological Stress

We used the IES to examine psychological stress related to the EVOS (Horowitz et al., 1979). The scale measures stress from traumatic events typically beyond the range of human experience (e.g., technological disasters) and identifies symptoms for Post-traumatic Stress Disorder (PTSD). The more stressful the event, the more likely it is to produce recurring, unbidden, and distressing thoughts and feelings (intrusive recollections) and/or deliberate attempts to suppress these feelings and avoid reminders of the incident (avoidance behavior). Seven items comprise the intrusive stress scale, and eight items make up an avoidance scale. The IES is also used for clinical classifications into severe, moderate, mild, and sub-clinical levels.

Results from our 1989-1992 community surveys revealed that five months after the spill, Cordovans registered an IES level comparable to that experienced by clinical patients six months after therapy for bereavement resulting from the death of a parent and two years after therapy for rape (see Arata et al., 2000; Gill & Picou, 1998; Picou et al., 1992; Picou & Arata, 1997; Picou & Gill, 1997). Further, 15 percent were in the 'severe' clinical level (10% in 1990), indicating a need for professional mental health assistance. Throughout the four-year study, IES levels were significantly higher for Cordova's commercial fishermen and Alaska Natives compared to the rest of the community (Picou et al., 1992; Picou & Gill, 1996), and significantly higher than observed levels in the control community—Petersburg.

Initial attempts to deal with psychological stress resulted in excessive demands on community mental health providers, which in turn led to high turnover rates among mental health administrators and counselors. This further diminished the capacity to address chronic stress (Ritchie, 2004). Alternative mental health strategies were developed and implemented in Cordova from 1995-1997 and social relationships improved with implementation of the "Growing Together Community Education Program" (Picou 2009b). During this time, IES levels decreased among community residents but remained higher among fishermen and Natives (Arata et al., 2000; Picou & Arata, 1997).

Litigation Impacts

Litigation was a significant feature of the EVOS. The numerous civil cases filed against Exxon were eventually consolidated into a 'class' consisting of almost 33,000 plaintiffs including Alaska Natives, commercial fishermen, deckhands, cannery workers, business owners, and others harmed by the spill. A 1994 jury trial in Federal District Court in Anchorage found Exxon reckless and liable for \$287 million in compensatory damages and \$5 billion in punitive damages. Exxon appealed and the case took a series of unanticipated twists and turns that delayed resolution until it reached the U.S. Supreme Court (Gill, 2008; Picou, 2009a).

As the legal saga unfolded, disastrous impacts continued in Cordova and among groups reliant on damaged resources. Qualitative findings document how attention to legal issues and resource recovery diverted efforts from normal industry activities and how bankruptcies, business closings, out-migration, and low tax revenues became the norm. Slow recovery of ecosystem resources and delayed justice from unresolved litigation contributed to a chronic psychosocial malaise that drained communities of social capital—people and groups became increasingly “tapped out” (Ritchie, 2004, 2012; Ritchie & Gill, 2007; Ritchie et al., 2012).

The 2008 Supreme Court ruling upheld the plaintiffs’ assertion that Exxon was responsible for the spill and liable for punitive damages, but reduced the punitive damage award to \$507 million—a ‘one-to-one ratio’ of punitive to actual damages (*Exxon v Baker*, 2008). The latter action evoked, “feelings of betrayal, shock, injustice, anger, depression, resignation, defeat, sadness, and hurt” among plaintiffs and they “lost faith in the justice system and felt helpless, invisible, and insignificant compared to corporation citizens” (Gill, 2008:5).

Research on EVOS litigation adds considerably to our understanding of adverse psychosocial impacts. Findings suggest that after 1992, much of EVOS-related stress, anxiety, and social disruption were a consequence of litigation processes and resource loss (Gill, 2007; Gill et al., 2013; Marshall et al., 2004; Picou & Martin, 2007; Picou et al., 2004). Analysis of the Cordova community data (1992, 1995, 1997, 2000, 2006, 2009, and 2013) indicated that EVOS-related psychological stress, as measured by the IES, was consistently predicted by being a litigant rather than a non-litigant. This pattern persisted during the years of litigation and up to five years after the Supreme Court decision. These quantitative findings were corroborated by qualitative narratives of community members (Ritchie, 2012; Ritchie et al., 2012).

Other variables positively associated with high levels of psychological stress from 2000 to 2014 were: being single in every year except 2006; being non-white in 2009; years of residency in Cordova for 2006; object resource losses for 2000 and 2009; and lack of trust in government for 2006 and 2013. Throughout this time, Cordova residents who lost trust in government and the judicial system and who reported losses in commercial fishing and other PWS resources experienced increased stress. By 2013, only 14 percent of Cordovans manifested severe and moderate levels of stress and two-thirds of the residents (65%) had sub-clinical IES scores suggesting that EVOS-related stress had declined significantly in the Cordova community. Depression in the Cordova community declined from 2000 to 2013 with only two percent classified as severely depressed in 2013.

Recreancy

Institutional trust and civic engagement are fundamental to social capital. Trust in local organizations enhances bonding social capital and trust in organizations outside the community fosters bridging and linking social capital. Diminished or loss of trust in social institutions and organizations is linked to ‘recreancy’—“the failure of experts or specialized organizations to execute properly responsibilities to the broader collectivity with which they have been implicitly or explicitly entrusted” (Freudenburg, 2000:116). Communities affected by technological disasters experience diminished ontological security and decreased formal social capital as a consequence of beliefs about recreancy (Ritchie, 2004, 2012; Ritchie et al., 2012).

Typical of technological disasters, many survivors of the EVOS believed Exxon and Alyeska were recreant and lost trust in these and other ‘responsible’ institutions. Prolonged litigation and controversial legal decisions extended perceptions of recreancy to the judicial system and Supreme Court. Ritchie, Gill, and Farnham (2012) observed that many Cordovans believed the Supreme Court decision reflected issues of recreancy and a continuation of perceived institutional failures associated with the spill and cleanup. Our qualitative panel study data provided insights into how recreancy was perceived.

The initial grounding evoked reactions ranging from sadness, concern, and uncertainty to frustration, anger, and outrage—particularly over the broken promises of no oil spills. Many respondents expressed feelings of betrayal at the initial lack of containment and cleanup. As one resident said, *“I was pretty devastated. I fought for years to keep it [the pipeline] out and we fought hard to try to ensure that the best safety measures were in place. All the promises that were made about high technology being used were basically not ever fulfilled.”* The inadequate response increased frustration, but as one respondent observed, *“[Alyeska and Exxon] had nothing. They had nothing to clean this oil up. They had no equipment. ... They had no plan. They had nothing.”* One respondent referred to the lack of response as *“corporate paralysis.”*

Shortly after the spill, Exxon representatives came to Cordova and promised to make the community “whole.” Most every respondent remembered the promise. *“I remember [an Exxon official] saying, ‘Be glad it’s Exxon that spilled the oil. We will take care of you and we will make you whole....’ They don’t realize how much damage they have caused, how many generations they have affected, and how many lives they have destroyed by what they did.”* Two decades later, most believed Exxon failed to fulfill the promise. *“They said they were going to make us whole, fix us up. They never did a damn thing. All they did was [contribute] to the stress of the community by carrying on this litigation.”*

As litigation continued, community residents began viewing the federal government and judicial system as failing to fulfill their responsibilities to protect citizens and ensure timely justice. Many respondents believed the government was more supportive of Exxon than of injured parties. *“[The government] is much more corrupt than I thought prior to the spill. I’m sure of that. I’m not nearly as naïve or trusting [anymore] I’m not the only one. Nobody [here] trusts the federal government anymore.”*

After the Supreme Court ruling, one resident observed, *“I think that the decision ... created a whole other ball of wax for a lot of people here. They went from being angry at Exxon, to being angry at the legal system.”* Other respondents observed, *“Our legal system has allowed them to get away with it. It’s not just the legal system; it’s the political system. There could be enough pressure brought to bear [to make them pay] Nobody has brought any pressure to bear [on Exxon].”*

Although attributed to EVOS-related experiences, perceptions of recreancy regarding government and the judicial system became distinct from those related to the spill and cleanup. Most respondents considered the protracted litigation as preventable and believed Exxon could have chosen to settle and help the community recover. They believed the federal government failed to protect its citizens by not holding Exxon accountable. From their perspective, deliberate decisions by government, the courts, and Exxon inflicted long-term pain and suffering. A

commercial fisherman and community leader provided a particularly poignant account of how the Supreme Court decision changed his worldview:

The disappointment over not having my \$2.5 million [claim paid] wasn't as profound to me as the loss of confidence in our legal system. I'd always thought that the Supreme Court was near to God, [that] they were just above reproach, and could not be influenced by even the biggest corporation. [But] the Supreme Court is not above reproach. And the biggest corporation in the world is in charge. That was hugely disappointing and I'm still disappointed. If ... any semblance of the original trial by jury, the verdict, and the compensation had been awarded, that could have provided closure for me. But now there'll never be closure, for me, because it's influenced how I look at the United States and our legal system. It's just changed everything.... I don't trust anybody anymore in government.

Resource Loss

Qualitative findings revealed that the lack of ecosystem recovery was another primary factor for chronic psychological stress and community disruption (Gill et al., 2013; Gill, 2007; Gill & Ritchie, 2007; Ritchie, 2004). This was particularly true for Pacific herring, a 'keystone species' in the PWS bioregion and an important resource for commercial and subsistence fisheries.³ The herring biomass collapsed in 1993 and as of 2013, had not recovered. The collapse was attributed to viral hemorrhagic septicemia virus (VHSV), an epidemic that reduced the biomass by 60 to 80 percent. Although there is agreement the VHSV was the direct cause of the collapse, there has been considerable disagreement between 'corporate-sponsored' and 'government-sponsored' research as well as traditional knowledge regarding factors that may have triggered the epidemic and continue to inhibit recovery

Regardless of the cause, the collapse of herring has had a profound impact of Cordova, its commercial fishing industry, and individuals who were heavily invested in the fishery. Prior to the EVOS, Cordova's herring industry accounted for approximately one-third of the local economy, the fishery was worth \$12 million, and herring seine permits averaged \$245,000. By 2008, there had been no herring fishery for 14 years, permit prices plummeted had to \$9,800, and Cordova struggled to plug a huge hole in the local economy. The herring collapse also created adverse impacts on sociocultural structures and processes (Gill et al., 2013). Cordova's subsistence and commercial herring fishery was embedded in the rhythm of community life. As one resident described:

It [the beginning of herring season] was just wonderful.... People were just coming alive.... Everyone would come back to town and we would all get together. It would just be this big influx of people and boats. ... Within a couple of days ... the harbor would just be [full]. ... And there are all kinds of people in town ... the divers, the processors ... just this big influx. And the town would just come alive. ... It was just energetic ... just the coolest thing. ... like the gold rush or

³See Gill, Ritchie, & Picou (2013) for complete references for this section.

something. We are here to make money. But also at the same time we just had a great time and the town would come alive. We would get cash, much needed cash. We just had fun.... that spring fling.... [It] just gets in your blood.

Using an anticipatory-utilization cultural cycle model (Gill & Picou, 1997; Ritchie & Gill, 2010), we documented how sociocultural rituals and practices developed in anticipation of the herring spawn. Herring-related activities stirred Cordova from its winter slumber and kick-started the fishing season. The annual herring spawn signaled the beginning of a new season and became part of the communal lifescape.

When herring collapsed, Cordova shifted to fishing only during the summer, changing community dynamics and disrupting social cohesion. Data from 2001 indicate that more than three-fourths of the RRUG panel reported community relations as being more fragmented. Several respondents described how Cordova had changed after the collapse of herring.

The loss of herring affected community subsistence patterns. Most households in Cordova participate in some form of subsistence or ‘personal use’ activities. More than 60 percent of RRUG panelists reported losses of subsistence resources in 2001 and more than one-half reported losses in 2009—in both years, almost all respondents mentioned herring as a subsistence food they could not obtain.

Possible causes of the herring collapse have been a highly contested subject, but almost everyone we interviewed believed the oil spill was a major factor. Some made personal observations and drew conclusions based on local traditional knowledge and years of experience. Other narratives reflected distrust in corporate science, critiques of government science, and how science is used in judicial processes. Relying on bioregional knowledge and experience, one fisherman said:

To go right to the heart of it, one of the most significant changes from the spill is the herring.... They [Exxon] can't tell you, or me, or anyone in this town that the lack of herring is from anything but from the spill.... You go right to the heart of the whole environment when you take away the basis for that lower level of life, then you take away food for every follow up consumer after that. The birds and the animals that feed on, everything gets affected.

Most Cordovans do not blame all of their problems on the oil spill, but when it comes to the collapse and continued decline in herring, the EVOS is usually mentioned. As one resident explained, “*You just can't blame all [community problems] on the oil spill ... but I do blame the [loss of the] herring on the oil spill because you just don't fish that for years and years and all of the sudden have an oil spill and never fish it again. There has got to be some correlation there.*”

Herring frames Cordovans’ ideas about recovery. Twenty years after the spill, more than 90 percent of RRUG panelist believed permanent environmental damage had occurred and two-thirds believed Prince William Sound would never fully recover. Inevitably, the herring collapse and poor prospects for recovery enter into discussions about ecosystem recovery. When asked about recovery, a fisherman said, “*Yeah, if the herring were back. And when you could go to*

those beaches and dig in half a foot down and not find oil, then that would be recovery. It would be cleaned up.”

Prior to the EVOS, herring played a critical role in Cordova. The annual herring spawn symbolized the beginning of Spring and a new season—ecologically and socioculturally. The commercial herring fishery created jobs and generated income and tax revenues. Most seasonal residents returned in late February and stayed through September—developing strong social bonds within the community. These ties have been disrupted and weakened with the herring collapse and the commercial fishing season has been shortened by two months. Subsistence relations were also disrupted by the lack of herring resources and the significance of the herring spawn as a symbol of ‘Spring’ has been diminished. These sociocultural changes will likely continue until herring recovers and a viable herring fishery returns.

CONCLUSIONS:

As an RRC in the aftermath of the EVOS, Cordova experienced economic losses, sociocultural disruption, and psychosocial stress that became chronic as compensation from litigation was delayed and herring failed to recover. The demise of the herring fishery changed community sociocultural structures and processes and perpetuated economic losses. Litigation failed to mitigate these damages and as a community, Cordova experienced chronic loss of resources without relief. Some residents, particularly those tied to damaged ecosystem resources and involved in litigation, experienced high levels of psychosocial stress. Litigation languished system for 19 years in the legal before a 2008 Supreme Court ruling slashed the punitive damages to 10 percent of what the 1994 jury had awarded. In the end, the compensation and punitive damage awards did not cover the economic losses of most plaintiffs, particularly herring fishermen. Moreover, the judicial process and Court decision eroded trust in the system and diminished social capital.

Despite these adverse effects, levels of depression and event-related stress in 2013 showed a significant decline. As predicted by the COR model modest gains in the commercial fishing industry and resolution of EVOS litigation have contributed to this improvement. As suggested by the RRC concept, 2009 RRUG panel data indicated these adverse effects continue to be intensified among commercial fishermen and Alaska Natives.

For many Cordovans, recovery of the PWS ecosystem will not be considered complete until the herring biomass returns to levels that can sustain a viable commercial fishery. Most Cordovans do not expect to see complete recovery in their lifetimes. Despite resolution of the litigation, without the restoration of the herring fishery, sociocultural changes associated with the fishery demise will likely become permanent.

Our 24 years of research on the EVOS has contributed to increased understanding of sociocultural and psychosocial impacts of oil spill disasters. For example, when the 2010 BP *Deepwater Horizon* oil spill occurred in the Gulf of Mexico, components of the alternative community mental health program (e.g., the Peer Listener Program) was implemented in several gulf coast communities to mitigate some of the adverse sociocultural and psychosocial impacts. Recognition of increased stress from litigation and compensation processes has influenced legal negotiations between BP, litigant groups (including states), and the courts. Moreover, our EVOS-work has served as a foundation for numerous studies of the human impacts of this most recent oil spill disaster (see Gill, Picou, & Ritchie, 2012; Ritchie, Gill, & Picou, 2011).

IMPLICATIONS:

Although the majority of oil spills never reach the magnitude of the *Exxon Valdez* or BP *Deepwater Horizon*, there are some important implications to be drawn from this body of research. Oil spills, whether the result of pipeline leaks, train derailments, barge collisions, tanker spills, wellhead blowouts, or other sources have the potential to damage the natural environment and adversely affect people who live in and/or depend on that environment. Oil spills have responsible parties to blame, creating conditions for public outrage and concerns for which oil spill practitioners should recognize and be prepared. Oil spills create uncertainty and those in authority have opportunities to alleviate. Clear, non-partisan communication is essential, as is careful listening and consideration of local knowledge and expertise.

Oil spill preparedness includes activities that enhance a community's capacity to respond to emergencies as well as plans to mitigate adverse effects. At one level, preparedness focuses on 'common' hazards and threats. A second level of preparedness anticipates 'worse case scenarios' like an EVOS or BP *Deepwater Horizon* oil gusher. At both levels, it is important to recognize and prepare for potential social and community effects. A sociological lesson to remember is to encourage civic engagement and invest social capital in this process. This includes the kind of bridging social capital displayed in the 2007 *Hebei-Spirit* oil spill in Korea in which the interdependency between communities played a significant role in promoting community resilience (Cheong, 2010).

Oil spill practitioners increasingly have to be concerned with the public and potential adverse sociocultural and psychosocial outcomes from spill events. Understanding some of the impacts of a worst case event like the EVOS provides a foundation for improving preparedness, response, and recovery from all sizes of spills.

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