Getting to Expeditious and Equitable Restoration Following Oil Spills

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Introduction

Establishing the degree of environmental injury and magnitude of required restoration for injured natural resources following oil spills has become an objective of several nations. Several regulatory schemes have been, or will be, used as a means to evaluate injury and achieve appropriate restoration when warranted. It is important to note that the regulatory schemes discussed here are compensatory and not punitive in nature and objective. Substantial bodies of criminal and punitive penalties have been established by the nations of the world to dissuade and punish dischargers of oil to global waters. Further, flag states and international organizations and treaties have developed regulations designed to minimize oil pollution. This paper addresses the implementation of methods to assess environmental injury and determine appropriate restoration of the environment. Achieving expeditious and equitable restoration benefits the responsible parties, governmental authorities, and most importantly, impacted resources.

Regulatory Regimes

The current scheme in the United States defined by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Oil Pollution Act of 1990 (OPA) was enacted by Congress to right the wrongs wrought by society's' carelessness and accidental events by attempting to put the environment back in its original condition. This process has resulted in a range of outcomes regarding restoration. Some government authorities look to the United States with a view to using the broad concepts perceived to be the basis of US-style payouts for damages in search of compensation models which result in substantial settlements for environmental damage. Although potentially adversarial and litigious, the US approach to Natural Resource Damage Assessment (NRDA) has become highly sophisticated in recent years and has moved away from monetary compensation toward focusing on restoration measures.

The European Union has recently developed the Environmental Liability Directive (ELD) which has many commonalities to the OPA and CERCLA schemes including the provision for recovery of ecological service that were diminished during the recovery process, known as interim lost use. The Directive affords preexisting treaties and agreements precedence while in force. The collective application of International Oil Pollution Compensation (IOPC) Fund of 1992, the Civil Liabilities Convention (CLC), and the Bunkers Convention will limit application of the ELD in many aspects. The extent to which the Directive will be applied, in the short term, is likely to be limited to discharges from shore-based facilities and terrestrial incidents.

The international compensation regime, that is, the 1992 CLC, the 1992 Fund Convention (FC) and the 2003 Protocol to the FC, known as the Supplementary Fund (SF), also provides compensation for the costs of measures intended to repair damage to the marine environment. There are, nevertheless, a number of fundamental differences between the US regime under OPA and the approach incorporated within the international regime. While the “polluter pays” doctrine is embraced by the international regimes, cleanup response is the responsibility of national or local authorities in the first instance and the issues of who is at fault and strictly liable is deferred to an arena outside of the incident response.

The CLC and FC regimes address an incident response and compensation of victims. The owner is strictly liable for the first wave of compensation to victims followed by the Fund and subsequently the SF. The main compensatory differences between the international regime and the US regime can be encapsulated under the following headings: eligibility of individual claimants, the concept of making the public whole, differing interpretations of what is meant by restoration or reinstatement of damaged environments, restoration of alternative sites and use of models. Restoration and reinstatement might be thought to be synonymous and are in fact often used interchangeably in the context of remediation of environmental damage. In the context of the US and the international regimes, the interpretation of each is quite different. Guidance provided by the 1992 Fund’s Claims Manual indicates that the reinstatement measures should have a realistic chance of significantly accelerating natural recovery without adverse consequences for other natural or economic resources and should be proportional to the extent and duration of the damage and the benefits likely to be achieved.

The US regulations also recognize natural recovery as a key mechanism for restoration but introduce two concepts: primary and compensatory restoration. Compensatory restoration is intended to compensate for ”lost” environmental services during the period that the environment is undergoing recovery, whereas primary restoration refers to actions taken to restore or accelerate recovery and is equivalent to reinstatement under the international regime.

The international regime has no experience of reinstatement including interim lost use measures but in due course such claims are anticipated, since they are provided for under the conventions. When such claims are presented they will most probably include costs for monitoring, although concerns over the need for re-evaluating the restoration action in light of monitoring data could well lead to further legal debate under the international regime.

Injury Assessment

The purpose of the Compensation Conventions and other regimes may be relatively straightforward, however the path through determination of what is injured may be long and tortuous. In a large or complex case, specifically targeted scientific studies are necessary to quantify environmental impact. The collection of data to evaluate lost resources may be problematic due to the ephemeral nature of some evidence such as bird corpses and water chemistry as well as inaccessibility and adverse weather. The lack of background data robust enough to define prior conditions

against which post-spill conditions can be compared is common. Even events in areas of large anthropogenic or other exogenous influences may have data sets that lack adequate site specific baseline and can confound interpretation. In countries such as China, the will to conduct good science in the wake of pollution incidents is not matched by available resources or effective procedures, while in Europe and North America there is no such shortage (Moller, 2005).

During the EXXON VALDEZ case, numerous large studies were conducted by both the trustees and the spiller. Many of these were redundant and resulted in controversial outcomes that supported a trend towards using science to support adversarial positions. This approach has been damaging and has hindered the development of amicable government-industry partnerships (Moller 2005).

The Cooperative Approach

In the US, the theme in the new millennium has become cooperation between the responsible party (RP) and the Federal, state, and local government agencies designated as trustees for the natural resources injured by the incident. Federal regulations and guidelines were modified to require the trustees to invite the RP to cooperate in the assessment of injuries and the development of a plan to restore the resources. Regardless of the institutional guidelines, the level of cooperation is primarily at the discretion of the individual trustee representatives involved. Recently, the level of cooperation has more frequently become linked to funding of the damage assessment process.

The foundation of the cooperative approach is collaborative development and conduct of technical studies to quantify injury. The level of collaboration is at the discretion of the trustees. The ultimate objective is to mutually develop data that expedite agreement on injury and implementation of restoration. An advantage to the RP is that redundant assessment studies for the RP and trustees are avoided as OPA requires the RP to reimburse the cost of the government's studies as well as its own. An additional advantage is that the RP has direct knowledge of trustee concerns and may have the opportunity to participate in focusing injury studies to address the research questions and in developing cost-effective restoration. Cooperation is not always viewed the same as collaboration. While the trustees are required to invite the RP into a cooperative process, the best results generally arise from collaborative scientific endeavors. Participation of all parties in the process of study design, data interpretation, evaluation of additional data needs and program modifications leads to better science and less divergence of opinion as to injury and restoration.

The RP is invited to participate both technically and financially. If the RP wishes to participate, the terms of participation may, but not always, be memorialized by a Memorandum of Understanding (MOU). The U.S. National Oceanic and Atmospheric Administration (NOAA) have posted examples of these documents on the Internet at: http://www.darrp.noaa.gov/library/pdf/PPD_AP-D.PDF. In the past, the general practice was that the RP may elect to fund studies it considered reasonable and decline to fund all or part of those it felt were excessive or lacking in technical merit. Studies not funded by the RP are for the exclusive use of the

trustees. In the event of a lawsuit, the data are vulnerable to discovery. Until that time, the RP likely does not benefit from the trustees' information when strategizing a settlement. The use of a single mutually agreed upon data set has proven to be a pivotal factor in getting to expeditious and equitable restoration.

Although OPA requires the trustees to invite the participation of the RP in NRDA, it is very clear that the trustees are obligated to seek full compensation for injured resources and that the RP participates at the pleasure of the trustees. Section 990.14(c) of OPA identifies a list of factors the trustees may consider in determining if, and to what extent, the trustees will allow the RP to participate. Among the factors they may consider are demonstrated cooperativeness and willingness to fund the trustees' activities. It has become increasingly common for trustees in larger incidents to adopt the "Pay to Play" position with the RP. With increasing regularity, this position includes an all-or-none provision requiring the RP to fund the entire package of trustee studies in order to be deemed fully cooperative and to participate in the assessment and restoration process. If the RP does not participate fully in financing, OPA provides the trustees a funding alternative that allows financing initial NRDA activities without encumbering their own agency budgets.

In addition to establishing a process for defining injuries and assessing damages, OPA established the Oil Spill Liability Trust Fund (OSLTF) and directs the U.S. Coast Guard to administer the Fund via the National Pollution Fund Center (NPFC). Among other things, the OSLTF provides funding for the cleanup of orphan spills and for initiating the assessment of injuries to natural resources caused by a discharge of petroleum. In the event of a spill, Federal trustees can develop generalized study plans and budgets, submit them to the NPFC, and receive an obligation from the OSLTF to cover the initial assessment studies within hours of the request. The allocation is a lump sum that requires evidence of expenditure on NRDA-related activities for reimbursement.

The availability of funds from outside the trustee agency's own budget eliminates the need for it to seek funding from the RP. Both NOAA and the US Department of the Interior have adopted a policy of seeking a funding obligation from the OSLTF prior to requesting the cooperation of the RP. This substantially changes the trustees' posture in negotiating the "cooperative" damage assessment and the atmosphere of collaboration in scientific activities. In some instances, the requirement of cooperation is viewed as a hindrance by regulatory authorities who believe that the unilateral assessment of injury and restoration by the regulatory authority will be automatically funded by the NPFC without the same scientific scrutiny provided by the spiller.

Restoration Identification and Scaling

Environmental injury and restoration is fundamentally a scientific endeavor. Science should be the driver of this exercise. However, science cannot always arrive at a definitive answer to a given question. But it should arrive at an approximation of an answer or identify critical data required to increase the resolution of the answer.

The determination of injury, restoration scaling and restoration implementation can be confounded by seemingly unrelated technical issues. For example, the need for the RP to conduct very extensive and technically thorough studies to determine injury that might be cost effectively estimated for modest restoration projects that might have substantial impact to third party claims. Another example is application of theoretical techniques that are unproven such as some models, assay techniques or experimental techniques that are under development by a particular party.

A professor of mine frequently used the phrase “it is what it is.” While it seemed an innocuous statement at the time, it became increasingly meaningful with exposure to the negotiation process. Negotiating science based on a position of what one wants the outcome to be as opposed to what the science indicates is most likely “what it is” can be counterproductive to getting restoration in place. Bidding restoration based on submitting an under or over inflated injury or restoration scale with the intention of settling a negotiation somewhere in the middle removes science as a driver, degrades the value of science as an objective tool, and is not conducive to expediting restoration.

Consistency

Despite the assessment and restoration planning guidelines under CERCLA and OPA, the experience of the federal regulatory authorities and the central administration of the Damage Assessment program in the United States, consistent views of science and restoration outcomes in different regions using similar approaches remain somewhat rare. A recent multiple regression model that predicts damage claims under OPA in the United States found that the state where the spill occurred explained more variance in the resulting damage claim than the amount and type of oil spilled and the resources affected (Dunford and Freeman, 2001).

The Need for Certainty

The balance of the need for certainty in data and value to restoration scaling can be influenced by an RP’s need to defend third party claims or a trustee’s need to defend the selection of a preferred restoration alternative. Expensive restoration will increase the RP’s need for certainty. Conversely, cost effective restoration can minimize that need.

The use of best professional judgment can be a valuable tool in reaching a resolution to restoration. A caution is that such judgment should have a firm basis in fact and not propagation for prior untested judgments. The judgment may then be applied to the next incident because the precedent was set in the previous incident. Ultimately the judgment based on little or no data becomes gospel and the classic hypotheses built on hypotheses scenario results. Under this scenario a party may take a position or action based on a perception that lacks adequate technical foundation.

Use of Models

Some years ago, following recurrent problems with ship detentions in Egyptian waters while claims for environmental damage were negotiated, a group of Norwegian civil servants, prompted by Norwegian shipowners, devised a method of quickly settling claims. The model they developed had the benefits of reaching a quick settlement but also minimizing transaction costs in terms of prolonged biological studies to determine the extent of damage and overcame the difficulties of translating the outcome of such studies into monetary value. While this and other similar approaches might provide a practical solution for small spills, in the case of substantial incidents, given that the main input parameter is the quantity of oil spilled, the size of the claims produced quickly becomes disproportionate in terms of both the damage suffered and transaction costs.

In both the Russian Federation and some of the ex-Soviet States, notably Ukraine, versions of the Soviet-era "Metodika" are retained in national legislation. It was the application of the Metodika in one of the earliest cases to be dealt with under the 1973 Fund Convention (the forerunner to the 1992 FC) that prompted the rejection of models in the international regime. One of the very first resolutions adopted by the IOPC Fund Assembly in October 1980 (the IOPC Fund's 1980 resolution) stated that "the assessment of compensation to be paid by the IOPC Fund is not to be made on the basis of an abstract quantification of damage calculated in accordance with theoretical models".

Complex mathematical models have been developed over the years to determine environmental injury resulting from oil spills. OPA allows the use of models if they are reliable and "state of the art". However, demonstrating reliability is difficult as little data have been obtained that allows the models to be verified against actual outcomes.

The difficulties that such models face in reflecting the effects of oil pollution damage on the natural environment can be illustrated by considering the enormous range of factors which influence modelled estimates of injury. First, there is extensive variability in the physical and chemical characteristics of the spilled substance, the physical characteristics of the receiving environment, and most importantly in the weathering of oil and the meteorological conditions at the time of the spill. Second, identification and quantification of biological species which are actually exposed to the pollutant are additional factors to be considered. Finally, the toxicity of the material to those identified species has to be modelled taking into account the differing tolerances of the affected species to the various components of oil. Given these challenges, it might be anticipated that the preferred strategy would be to measure the actual impact of an incident through environmental field studies. These models tend to be used when actual data on the effects of the spill are unavailable, for example, ephemeral data immediately following an incident, or when such studies are deemed unlikely to capture the full range of injuries flowing from the incident.

To be of value to the process models must be transparent and fully available to both sides to evaluate and manipulate. Also, models employed should have the capacity to assess error of the estimate so as to evaluate the usefulness of that estimate in a

decision making process. In general, the more variables attempted to be controlled by a model, the greater the error.

Participants

The single most influential factor in achieving expeditious and equitable restoration of the environment following oil spills is the human factor. If the individual participants truly desire to expedite restoration they can. If not they can cause unnecessary delay and costs. Some traits of effective participants are;

- Intellectually honesty
- Technically qualified to deal with the resources at issue
- Familiar with the process, rules and requirements of the pertinent legislation or regime
- Experienced in the process.
- Cooperative objectivity – not minimizing or maximizing injury or restoration - "it is what it is"
- Willing to truly collaborate
- Have the technical courage to reach a reasonable assessment with the application of best professional judgment and effectively express that assessment to their constituencies
- Check any punitive or adversarial agendas at the door. Leave the punishment to the appropriate authority.

The benefits of focusing on resource management and restoration, as opposed to resource advocacy, as well as the value of collaborative injury assessment to responsible authorities and responsible parties have become evident. The informed but dispassionate scientific observer is much more likely to reach a timely and equitable result than an impassioned advocate. This goes for both sides of the table. A bottom-line focused executive is not as likely to reach an agreement as much as a technical manager that understands the rules and technical issues at hand.

Often, the parties involved tend to center their attention on the financial cost of restoration as opposed to consideration of the environmental value of the proposed actions. Responsible authorities in a highly publicized incident may be mindful that their constituents may find the cost of proposed restoration is insufficient to fully compensate the constituents' view of the injury formulated by the media. Responsible parties are concerned the quantum of restoration may be unnecessarily overstated. If both parties were to address the restoration as "environmental currency" rather than "financial currency" the settlement discussions have an increased potential for resolution while addressing the common principles of the regulatory regimes.

An effective restoration process directed at environmental currency should help to defuse public criticism. However, as long as there is a mismatch between public perception and scientific reality regarding pollution impacts there is a risk of political interference in decision-making (Moller 2005).

Lawyers

The ability to apply science effectively within the legal process is sometimes affected by the fundamental conflicts between the scientific and legal processes. A recent Supreme Court decision ruled that “general acceptance” is not a prerequisite to the admissibility of scientific evidence and that an expert’s testimony, as determined by the trial judge, should be founded on reliable and relevant information which is based on scientifically valid principles. There are, however, conflicts between the scientific and legal requirements regarding the level of proof necessary to establish a basis for a conclusion or decision. Scientists test stated hypotheses through statistical evaluation of data whereas a court forms decisions based on a “preponderance of evidence” selectively presented by attorneys to support their clients interests. Science seeks to establish the scientific truth whereas the legal process is founded on the advocacy of conflicting interests to resolve a truth (Mauseth & Kane, 1994).

Who are the Gatekeepers?

Ultimately litigation can resolve a disputed case; however, the process can result in excessive costs and vastly delayed restoration. To date no OPA case has been tried in court. The proposed ELD has a provision for litigation if the competent authority cannot reach consensus with the polluter (Official Journal of the European Union. 2004 ELD, Article 13). The IOPC Fund has a self enforcing mechanism with member states sitting in Committee and debating issues of admissibility.

As discussed above, the US OSLTF provides reimbursement of spill-related costs, including the determination of injury to the environment and execution of restoration, in the event that the RP prevails in limitation of its liability under OPA in 15 C.F.R. Section 990 or if the RP is determined “uncooperative” or declines to fund restoration actions. The fund has the obligation to examine the veracity of claims submitted. This would include evaluating the assessment of injury as well as the efficacy and cost effectiveness of proposed restoration. To effectively discharge this duty, the OSLTF would require the technical means and institutional inclination to objectively review and fund or not fund the proposed restoration.

Collateral Usefulness of Data

Generation of data during the course of the damage assessment process must be efficiently directed to answering the specific questions of injury to resources at issue and their restoration. Within these parameters there can be collateral benefits in that there can be unique opportunities to allow science to expand the body of knowledge that would have otherwise not occurred in the absence of the incident. These studies provide valuable insights into how ecosystems work and how they react to pollutants and should be published for future cases to draw on the outcome of previous studies. Immense amounts of resources have been spent on these studies which rarely see the light of day. Advancing scientific understanding would be a valuable achievement given a positive and collaborative approach.

Conclusions

Restoration following oil spills has broad support on a global basis and has been the subject to several differing regimes. In evaluating the attributes that foster expedited and equitable restoration within these regimes, the following factors are identified;

1. Willingness and technical capacity of the participants to reach timely and cost effective restoration
2. Focus on environmental currency rather than financial currency.
3. All parties view cooperation as collaboration
4. Use a single mutually agreed upon data set when possible
5. Let science be the driver in the process
6. Consistency of technical approach within a regime
7. Avoid theoretical and unproven assessment techniques and models, including assessment conclusions that have precedence but not technical support
8. If used, models and other sophisticated techniques must consider error and be transparent and fully available to review by either side
9. Balance the need for certainty and the cost of assessment with the likely magnitude of restoration

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Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (US)
CLC	Civil Liabilities Convention (International)
ELD	Environmental Liability Directive (EU)
FC	1992 Fund Convention (International)
IOPC	International Oil Pollution Compensation Fund of 1992 (International)
MOU	Memorandum of Understanding
NOAA	National Oceanic and Atmospheric Administration (US)
NPFC	Pollution Fund Center (US)
NRDA	Natural Resource Damage Assessment (US)
OSLTF	Oil Spill Liability Trust Fund (US)
OPA	Oil Pollution Act of 1990 (US)
RP	Responsible Party (US)
SF	2003 Protocol to the FC, known as the Supplementary Fund (International)

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