

# Approaches to environmental damage claims

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Hugh Parker and Gary Mauseth examine the differences between the approaches to environmental damage compensation under the US 1990 Oil Pollution Act and the international regime.

Oil spills are highly emotive events and images of oiled beaches and dead or dying wildlife, especially birds, further raise the level of public indignation. The suffering of oiled wildlife is particularly distressing and oil spills can kill a number of different marine organisms. Nevertheless, in terms of their biological significance, in most cases these effects are short term and transitory and losses are repaired relatively quickly by the natural environment's ability to make good damage inflicted by both man-made and natural phenomena. Despite this, many approaches to environmental damage compensation start from the premise that damage is inevitable, irreparable and permanent. Claims are often based on theoretical calculations which in a major incident result in demands for very substantial amounts, the proceeds of which may have little prospect of benefiting the damaged environment or accelerating natural recovery

and are more akin to fines or punitive damages than compensation.

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. However, in recent years although potentially adversarial and litigious, the US approach to Natural Resource Damage Assessment (NRDA) has become highly sophisticated, moved away from monetary compensation and has focused on restoration measures. The international compensation regime, that is the 1992 Civil Liability Convention (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 the 1990 Oil Pollution Act (OPA 90) and the approach incorporated within the international regime. The main differences can be encapsulated under the following headings: objectives, 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.

## Objectives

OPA 90 is a legislative action that (in part) requires the Responsible Party (RP) to remediate the spilled oil, compensate those economically injured for identifiable losses, and further requires that "trustees" for natural resources ensure that injuries to natural resources are identified and damages compensated.



By way of contrast, the international regime provides reimbursement to victims of oil pollution and the costs of clean-up through a system of tiered international treaties: the first layer, CLC, provided by the shipowner and the second and third layers, FC and SF, provided by receivers of oil cargoes (usually oil companies).

### Making the public whole

A significant difference between the US and international regimes is that one of the objectives of OPA 90 is to make "the environment and the public whole" such that the emphasis is on compensating the public for the loss of goods and services provided by the damaged environment. The international regime, on the other hand, follows the traditional insurance concept of placing claimants in the same economic position as they would have been had the incident not occurred. In the latter case compensation for impairment of (injury to) the environment is limited to loss of profit from such impairment and costs of reasonable measures of reinstatement actually undertaken or to be undertaken. Having said that, the two regimes have moved towards each other over the years. In the US, following the publication of the National Oceanic and Atmospheric Administration (NOAA)'s 1996 NRDA regulations, the emphasis has been very much on restoration. While for some time settlements were tied to monetary value, in the sense that a political judgment would typically be made as to how much would have to be paid by a shipowner to satisfy public outrage, more recently settlements have been achieved where restoration

measures agreed with the trustees are undertaken by vessel interests, the RP, and the trustees do not necessarily know the costs of those measures.

Under CLC/FC/SF regime the emphasis is also on restoration, or reinstatement of environmental injury, and with the publication of the 1992 Fund's Claims Manual in 2005 the interpretation of the international regime was elaborated to encourage governments to

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undertake studies to determine whether reinstatement measures would be appropriate. To date, however, there have not been claims for reinstatement measures under the international regime although such were mooted in the case of damaged mangroves following the SOLAR 1 incident (Philippines, 2006).<sup>1</sup>

In contrast to the international regime, one of the features of the US regulations concerned with public restitution is the concept of compensation for being deprived of the use of goods and services provided by non-

economic resources. A specific example is lost recreational use due to beaches or recreational fisheries being closed. As noted above, in the international regime the closest that might be considered an admissible claim of this nature would, for example, be a claim for lost income from a national park from entrance fees or car parking charges, whereas the US regulations address the public's loss of opportunity to enjoy a natural resource.

### Interpretation of restoration or reinstatement

Restoration and reinstatement might be thought to be synonyms and are in fact often used interchangeably in the context of remediation of environmental damage but, 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 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 recognise 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 recovery refers to actions taken to restore or accelerate recovery and is equivalent to reinstatement under the international regime.

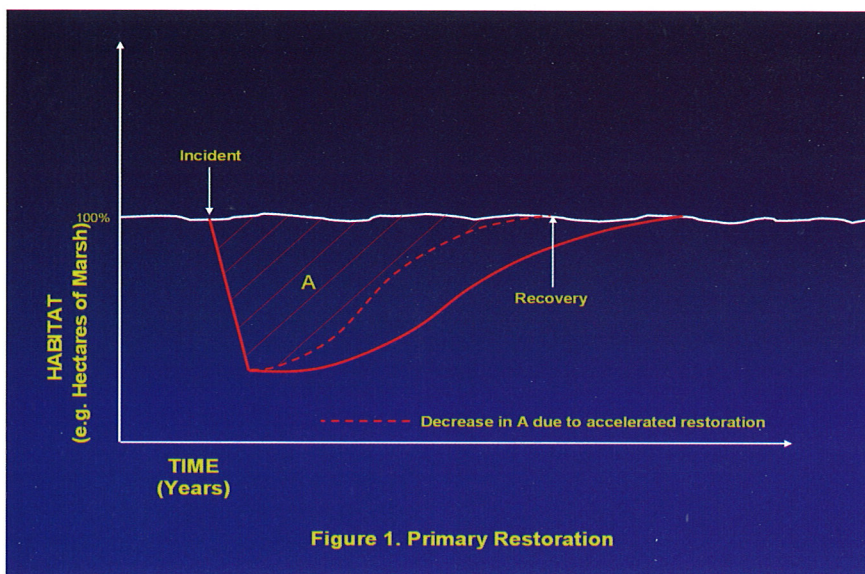


Figure 1.

Figure 1 represents the hypothetical case of a marsh that provides a variety of ecological services such as habitat for fish rearing, avian cover and prey production, shoreline

<sup>1</sup> An important debate within the 1992 Fund Assembly in October 2006 clarified that rather than being solely restricted to economic considerations, the conventions were intended to cover measures taken for the protection of the marine environment, so where there was "a significant risk of causing substantial damage to the marine environment, even very high costs of a removal operation would normally not be considered disproportionate in relation to the potential environmental consequences". On the other hand, the debate reinforced the regime's determination "that the costs of operations undertaken for social or political reasons should not be recoverable under the conventions".



protection, etc. The effects of primary restoration efforts taken to accelerate recovery such as oil removal, replanting or other measures to reduce the duration and magnitude of the lost services are indicated by the dotted curve. These lost services are represented by the hashed Area A in terms of lost acre years of marsh.

US law also requires compensation for diminution of ecological services pending recovery or "interim lost use". Therefore, Area A must be compensated in some manner. In our simplified illustration, the hypothetical creation of marsh services where none previously existed is considered in Figure 2 below. In this case compensatory marsh is created prior to recovery of the impacted marsh and the services generated take some time to reach maximum output.

The extra element of restoration incorporated within the US regulations, while easily understood conceptually, can lead to controversial outcomes in application. Once the scale of the restoration project is determined and the new habitat established, it is logically expected to provide environmental services over some considerable time, stretching far into the future. This contrasts with the conceptual diagram below, where the two areas A and B are equally balanced by creating the hectares of marsh necessary to provide the equivalent hectare years. The restored services are "discounted" to account for the fact that the services provided by restoration are in the future and because consumption in the present is deemed more valuable than in the

future. Discounting, typically at three per cent per annum, also allows services provided at different times to be normalised so comparisons can be made like with like. If the new habitat is appropriately constructed, it should substantially outlive the assumed three per cent time horizon and so is likely to more than replace the lost services and hence the potential controversy over the approach.

In addition, the restoration measures may not be effective; in the example above the new marsh plants may not grow successfully or be destroyed by some natural disaster before

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reaching their full potential. In order to protect against such eventualities trustees will usually require provisions for monitoring the effectiveness of the restoration measures and re-opening restoration efforts should the initial measures fail either through unsuccessful growth or damage due to natural phenomena.

As mentioned above, the international regime has no experience of reinstatement 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-opening could well lead to further legal debate under the international regime.

### Alternative sites

Under the US regulations the use of alternative sites is an essential consequence of the concept of compensatory restoration. Often the most appropriate mechanism for primary restoration is deemed to be natural recovery, but then restoration of another site is required to provide compensatory restoration while the damaged site recovers. According to the 1992 Fund's Claims Manual, "reinstatement measures taken at some distance from, but still within the general vicinity of, the damaged area may be acceptable", under the international regime, "so long as it can be demonstrated that they would actually enhance the recovery of the damaged components of the environment".

This guidance would seem to exclude some approaches accepted in the US where different habitats can be held equivalent to the damaged habitat. They may not have any bearing on the recovery of the damaged resource itself, but rather replace the services that the damaged habitat would have provided. Often, it is not possible to restore some injured resources in place. For example, seabirds may be suffering mortalities while oil is floating in their foraging areas offshore. Once oil has been removed from the sea surface, US law requires efforts to restore impacted populations to pre-spill levels. A typical approach to restoring these populations is to alter factors that limit the pre-existing population such as breeding habitat or nesting area predators.

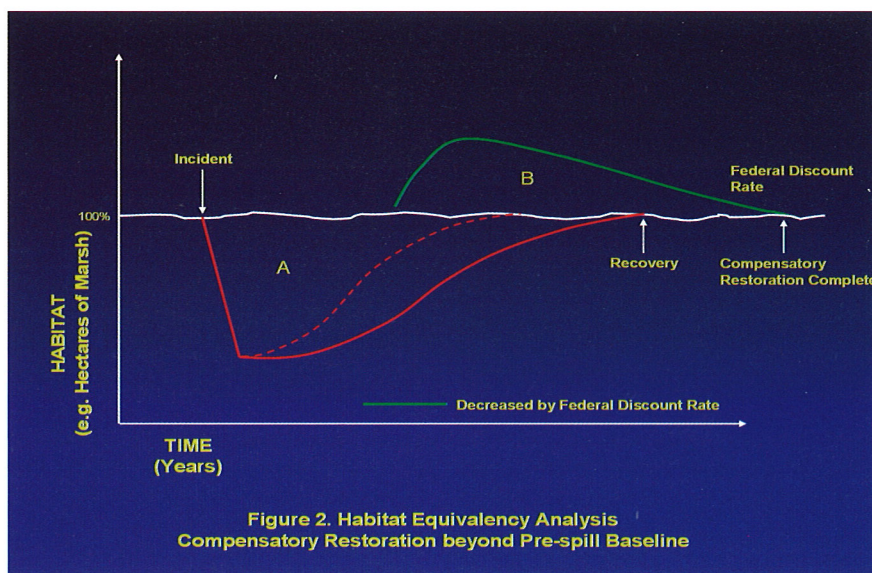


Figure 2.

An approach which has been followed in several US projects intended to restore migratory bird losses is the purchase of land some distance from the spill site, perhaps even in a different country, to protect the birds' breeding grounds. The idea being that by managing the land, trustees can prevent development and disturbance of the birds, so improving breeding success. It is open to question whether such a claim presented under the international regime would be found admissible. According to the Claims Manual guidance, it is questionable whether the purchase of distant lands would be considered "within the general vicinity of the damaged area" although such an approach may well have a reasonable chance of success in "actually enhancing the recovery of the damaged components of the environment".



## 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 minimising 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.

The Norwegian solution subsequently adopted by Egypt relies on a simple formula to calculate monetary amounts for notional restoration of the environment following an oil spill. The formula identifies areas as high, medium or low sensitivity and suggests a monetary quantum/km which should be charged, multiplied by a factor of up to 10 related to spill size. Spills greater than 100 tonnes attract this highest factor. A very similar approach, although from different origins, has been followed in Saudi Arabia in the application of the Jeddah Method.

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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. The Ukrainian regulations provide perhaps the simplest expression of the approach, where compensation for environmental damage and losses flowing from that damage are calculated as USD 329/kg of oil spilled into the sea. 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 International Oil Pollution Compensation (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 90 allows the use of models if they are reliable and “state of the art”. However, demonstrating reliability is difficult as little data has 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 in terms of the physical and chemical characteristics of the spilled substance and the physical characteristics of the receiving environment, most importantly in terms of weathering, 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 and, 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 difficulties, it might be anticipated that the preferred strategy would be to measure the actual impact of an incident through environmental field studies. However, these models tend to be used when actual data on the effects of the spill is 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.

Under the US regulations trustees routinely use models to scale adequate and proportional restoration measures. The technique most frequently used to calculate the amount of habitat necessary to compensate for interim lost use is Habitat Equivalency Analysis (HEA). The implicit assumption of HEA is that the public is willing

to accept a trade-off between a unit of lost services from a damaged resource in exchange for an equivalent unit of services provided by the restored habitat.

A key feature of the technique is the selection of a common “metric” that applies to both the damaged and restored resource, recalling that these are likely to be different. So, for example, compensatory restoration for bird loss might be achieved under the US regulations by restoration of marsh habitat if that were likely to promote recovery of the particular bird population through the

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provision of enhanced foraging opportunities. For this a metric, or parameter, common to both the lost birds and the restored marsh, needs to be selected in order to determine the scale of the restoration project. In the example above, the metric might be the typical foraging area for the particular bird species. However, it is important to note that since the technique relies on this metric, a single common parameter linking the damaged and restored resources, the outcome can be very sensitive to the metric chosen. Again, in the example above, an alternative metric might be the area required for breeding pairs. It is highly likely that the outcome of the analysis using these two metrics would be quite different.

Whether the use of HEA would fall foul of the IOPC Fund’s 1980 resolution is open to question since, as noted above, it has yet to be tested. Proportionality is a key concept under the international regime but it is more likely that delegates to the IOPC Fund’s Executive Committee, who debate issues of admissibility, would reach a conclusion based on the guidelines set out in the Fund’s 2005 Claims Manual through debate and weight of argument. Whether some time in the future settlements of restoration claims brought under the international regime will be reached following the lines of HEA only time will tell. ■