



International Oil Pollution Compensation Funds

Guidelines for presenting claims for environmental damage

2018 Edition



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Contents

1. Introduction to the International Oil Pollution Compensation Funds	4
What are the IOPC Funds?	4
What does the 1992 Fund do?	4
How is money raised to pay compensation?	5
When does the 1992 Fund come into play?	5
Why are the costs of environmental damage compensated?	5
2. Who can claim?	8
3. What should you do if there is oil pollution?	9
4. What are the criteria which determine whether or not claims are admissible?	10
Summary of general requirements for admissible claims applicable to environmental damage	10
Specific criteria for environmental damage claims for post-incident studies	10
Specific criteria for reinstatement measures	11
Is my claim admissible for compensation?	12
5. What costs are covered?	13
Post-incident studies	13
Reinstatement measures	17
6. When should you make a claim?	25
Time limit for submission of claims	25
7. How can you make a claim?	26
Where can you get a claim form and how should you submit it?	26
What information should you provide?	26
Supporting information and documentation	27
8. How are claims assessed and paid?	29
9. Contacting the IOPC Funds	31
ANNEX	32

Preface

This booklet sets out what should be done following an oil spill to present claims for environmental damage covered by the international liability and compensation regime, that is, the reimbursement of costs for post-spill studies and for reinstatement of environments damaged by oil. A general practical guide to presenting claims for losses due to oil pollution caused by a tanker can be found in the Claims Manual published by the International Oil Pollution Compensation (IOPC) Fund 1992 (1992 Fund). The 1992 Fund has also published other sector-specific guidance documents which form part of a Claims Information Pack. That pack includes Guidelines for presenting claims in the tourism sector, in the fisheries and mariculture sector and for clean up and preventive measures. All of those guidance documents are available via the publications section of the IOPC Funds' website.

Environmental damage resulting from oil spills is of paramount importance not only to those communities directly affected by oiled environments, clean-up operations and economic loss, but in particular to the wider general public. Compensation is available for environmental damage, subject to criteria set out in the Claims Manual and provided claims are based on sound science. The guidance contained in this booklet explains how these criteria can be applied to such claims.

Please note that following these guidelines does not guarantee that claims will be successful. It should be understood that after many spills there may be no need to undertake either post-incident studies or reinstatement measures and in such circumstances compensation for environmental damage would not be warranted. This booklet does not address legal issues in detail and should not be seen as an authoritative legal interpretation of the relevant international Conventions in individual Member States.



1. Introduction to the International Oil Pollution Compensation Funds

What are the IOPC Funds?

- 1.1
- The International Oil Pollution Compensation Funds (IOPC Funds) are two intergovernmental organisations (the 1992 Fund and the Supplementary Fund) which provide compensation for oil pollution damage resulting from spills of persistent oil from tankers, in circumstances where the shipowner's limit of liability has been exceeded or there is no financial security in place to cover the shipowner's liabilities.
- 1.2
- The International Oil Pollution Compensation Fund 1992 (which, in this booklet, is called 'the 1992 Fund') is composed of States Parties to the 1992 Fund Convention which covers the payment of compensation to people, businesses or organisations that suffer losses due to pollution caused by persistent oils (not gasoline or other light oils) from tankers. The Supplementary Fund

provides an additional tier of compensation to victims in States which are Party to the Supplementary Fund Protocol. The details of how these different Conventions work are complex. More information on the Conventions can be found in the 1992 Fund Claims Manual and on the IOPC Funds' website.

What does the 1992 Fund do?

- 1.3
- The aim of the 1992 Fund is to provide compensation for losses resulting from a pollution incident involving a tanker, so that the claimant is returned to the same economic position in which they would have been if the oil spill had not happened. In the case of claims for environmental damage such losses may be for loss of profit (see section 1.12) but more often are likely to be costs incurred in respect of post-incident studies and reinstatement measures.

How is money raised to pay compensation?

- 1.4
- The owner of a tanker is usually insured with what is known as a Protection and Indemnity Association, or P&I Club. A smaller number of tankers, often operating solely in domestic markets, may be insured by commercial insurers. The tanker owner should be covered against damages caused by oil pollution through this insurance up to the shipowner's limit of liability in accordance with the International Convention on Civil Liability for Oil Pollution Damage, 1992 (1992 CLC).
- 1.5
- When the compensation available under the 1992 CLC is inadequate to cover the total cost of the pollution incident, compensation is paid by the 1992 Fund. The 1992 Fund is financed mainly by oil companies in Member States, according to the quantity of oil transported by sea that they receive. In a State Party to the 1992 Fund all companies which receive more than 150 000 tonnes of oil by sea in any year must contribute to the 1992 Fund.

When does the 1992 Fund come into play?

- 1.6
- The owner of a tanker from which oil was spilled is responsible for paying for the damage caused, usually through their insurer or P&I Club, up to the limit of liability calculated according to the size of the tanker. Once this amount has been paid, the 1992 Fund is responsible for any extra payments. Often the shipowner's insurance is enough to cover all the costs and the money from the 1992 Fund is not needed. However, in a very large spill, it is possible that not even the money available from the 1992 Fund to pay compensation for that particular spill will be enough to cover all valid compensation claims; in this case—and it is very rare—each successful claimant will be paid a proportion of their assessed claim until all the money available from the 1992 Fund is allocated, unless the damage occurs in a State which is a Member of the Supplementary Fund.
- 1.7
- If the incident which caused the pollution was caused by a natural disaster, or if it was entirely caused intentionally by somebody (not the tanker owner) or by faulty lights or navigation aids which should have been maintained by the authorities, then the tanker owner is not responsible and the 1992 Fund will come into play immediately. Also, if the tanker owner is not known or cannot meet its liability, the 1992 Fund will step in and pay compensation.

- 1.8
- The 1992 Fund will not pay compensation if the pollution was caused by an act of war or hostilities or if the spill was from a warship. Nor will the Fund pay if it cannot be proved that the damage was caused by persistent oil spilled from a tanker. The 1992 Fund cannot pay compensation for environmental damage that occurred on the high seas, i.e. outside the territorial waters or exclusive economic zone of its Member States.
- 1.9
- Whether the compensation comes from the shipowner's insurer or the 1992 Fund, the process of making the claim and the criteria applied to assessing the claim are the same. The 1992 Fund and insurer usually work closely together, particularly on large oil spills. The Fund, in cooperation with the insurer, usually appoints experts to observe, follow and record the impact of the spill and progress of the clean-up operations and to provide technical advice as appropriate. Experts will also be used to review and investigate the technical merits of claims and to assist in determining independent assessments of the losses. Although the 1992 Fund and the insurer rely on experts to assist in the assessment of claims, the decision as to whether to approve a particular claim and the amount of compensation to be paid rests entirely with the shipowner, the insurer concerned and the 1992 Fund.

Why are costs of environmental damage compensated?

- 1.10
- The Conventions that govern the payment of compensation following oil spills rely on a common definition of pollution damage as follows:

“*Pollution damage” means loss or damage caused outside the ship by contamination resulting from the escape or discharge of oil from the ship, wherever such escape or discharge may occur, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken.*”

'Impairment of the environment' is not defined in the Conventions but is generally understood to mean an adverse alteration to the environment leading to a deterioration or weakening of its functioning.



- 1.11 That underlined part of the definition above gives rise to three types of claims in relation to impairment of the environment, namely:
- (i) claims for loss of profit;
 - (ii) claims for the costs of post-incident studies; and
 - (iii) claims for the costs of reinstatement measures.
- 1.12 Typical claims for loss of profit resulting from impairment of the environment might include loss of revenue for a marine or coastal park or a nature reserve, for example, due to reduced income from car parking, camping or mooring fees. In the fisheries sector, claims may be admissible for reduced catches of commercial species of marine products. An example might be the disruption of the capture and sale of mangrove crabs and other shellfish due to the contamination of mangroves. Guidance on claims for economic loss is provided in the 1992 Fund Claims Manual and in separate guidance documents on fisheries and mariculture and on tourism, available from the IOPC Funds and which can be downloaded from the IOPC Funds' website.
- 1.13 This booklet is only concerned with costs resulting from damage to non-economic resources and in the context of the 1992 Conventions that means costs of post-incident studies and reinstatement measures. Although post-incident studies are not mentioned directly in the definition of pollution damage in the 1992 Conventions, studies are sometimes necessary to determine whether or not an oil spill may pose a threat to the marine environment or to establish the nature and extent of any environmental damage caused by the spill. The results of these studies may also determine whether reinstatement measures are necessary, feasible and will be effective. The interpretation of pollution damage agreed by Member States within the forum of the 1992 Fund Assembly is set out in the Claims Manual, which is intended to assist in the uniform interpretation of the 1992 Conventions across all Member States. The Claims Manual makes it clear that costs of studies to establish the nature and extent

(the severity) of environmental damage may be admissible as well as studies to monitor recovery, both occurring naturally and following the implementation of reinstatement measures.

- 1.14 The marine environment provides environmental services that support the plants and animals that live within it and to the humans who depend on the sea and shoreline for their livelihoods, recreation and enjoyment. The Conventions do not provide compensation for what is sometimes referred to as 'pure' environmental damage that is, compensation for the loss of environmental services. Rather they cover the costs of reinstatement of the damaged environment to restore those lost services as far as that is possible.
- 1.15 Whether or not reinstatement measures will be needed depends on the sensitivity of the affected resources to contamination by oil and their natural rate of recovery. In many cases there may be no need for reinstatement measures following an oil spill. The marine environment is naturally very resilient and is subject to an extreme range of physical conditions and to natural perturbations such as red tides and storms. For example, organisms living on tidal shorelines are not only exposed to daily cycles of drying out and becoming submerged but are also able to tolerate significant ranges of temperature and salinity due to exposure to sunlight, wind, rain and freshwater runoff. However, some species suffer sub-lethal effects such as impaired feeding and reproduction and juveniles, eggs and larvae are particularly sensitive to toxic components of oil. Nevertheless, while such effects have been observed in laboratory studies and in the immediate vicinity of a spill, it is rare for such impacts to be observed at population levels in the environment, often due to recruitment from adjacent unaffected areas. In addition, the evolution of many marine species has involved survival strategies that may reduce their sensitivity to oil contamination as well as reproductive strategies that enable the rapid recovery of affected populations.

- 1.16 Although reinstatement measures are not defined in the 1992 Conventions, section 3.6.4 of the Claims Manual states that:

“...the aim of any reasonable measures of reinstatement should be to re-establish a biological community in which the organisms characteristic of that community at the time of the incident are present and are functioning normally.”

- 1.17 Even though the age distribution of the organisms may be different to that prior to the incident, the re-establishment of a properly functioning biological community provides evidence that the community is recovering. The aim of reinstatement measures should therefore be to enhance the recovery of damaged environments.
- 1.18 An alternative concept is one in which the damaged site is brought back to a theoretical baseline or pre-spill condition where the ecological state is the same

as would have existed had the spill not occurred. This is not usually practical for a number of reasons but may be appropriate where relevant and feasible. However, in practice baseline conditions are often not known and such information is only likely to be available for areas where comprehensive surveys of resources vulnerable to oil pollution are frequently undertaken. Added to this, the marine environment is in a constant state of flux with populations expanding and contracting depending on the availability of food sources and other changes in environmental conditions. As a consequence of these significant natural fluctuations, it would be difficult to predict with any certainty what the ecological state would have been, had the spill not occurred. Furthermore, in many cases the timescales required to re-establish the abundance and diversity that existed in the affected communities of plants and animals to pre-spill levels are likely to be substantial.



2. Who can claim?

- 2.1** Anybody in a 1992 Fund Member State who has suffered a financial loss due to oil pollution caused by a tanker can claim compensation. Although the 1992 Conventions do not then restrict who can claim compensation, in the case of environmental damage, claims are most likely to be presented by national or regional governments or government agencies mandated to manage natural resources on behalf of the nation or region. Under certain circumstances, individuals or organisations may submit claims but only as the natural resource owner or manager or with the cooperation, consent and coordination of the resource owner or manager, where the link with the resource is thoroughly established, such as a wildlife organisation or non-governmental organisation (NGO) historically active in the affected area.
- 2.2** For a claim to be admissible, the person who is making the claim (the claimant) must be able to show that they, or the organisation they represent, has incurred, or definitely will incur, costs either for post-incident studies or for both post-incident studies and reinstatement measures.

Example 1

Seabirds are particularly vulnerable to oil pollution and NGOs or special interest groups concerned with the welfare of seabirds often take responsibility for efforts to clean and rehabilitate oiled birds. Claims for the costs incurred for such operations are discussed in the Guidelines for presenting claims for clean up and preventive measures (Clean up Guidelines). However, such groups might also initiate studies to determine the impact of mortalities resulting from the spill on populations of the affected seabirds and subsequently propose reinstatement measures to restore populations to pre-spill levels, as far as these are known. Subject to the criteria set out in Section 4, it is possible that claims for the associated costs for both the study and the reinstatement measures might be admissible.

Example 2

Landowners who either own the shoreline or own land abutting the shoreline might routinely allow their animals to graze along the shoreline. As a result of a spill a claim for economic loss for the cost of alternative fodder might be admissible but the landowner may also wish to undertake reinstatement measures to restore the shoreline as quickly as possible. In many countries the shoreline is a national asset and so any such measures would need to be undertaken with the agreement of the appropriate national authority, but in principle, a claim for reasonable reinstatement costs might be admissible.



3. What should you do if there is oil pollution?

- 3.1** In terms of measures to mitigate environmental damage, the first actions which should be taken are preventive measures, i.e. carrying out response operations to prevent or mitigate damage by removing spilled oil or oil that poses an imminent threat of spillage. Rather than being solely restricted to economic considerations, where there is a real threat of substantial damage to the marine environment, the 1992 Conventions are intended to cover even significant costs of such measures taken for its protection, provided they are proportionate to the threat of damage. Nevertheless, it is important to consider this statement in the context of the findings of numerous post-incident studies which have concluded that in many cases, little or no significant damage could be detected.
- 3.2** One of the main reasons for these findings, as discussed above, is the marine environment's capacity for recovery as well as ecosystem complexity and the high natural variability, both spatial and temporal, of many marine resources. Together these make it particularly difficult to determine whether or not any observed changes have occurred as a result of an incident. In addition, confounding factors such as the presence of other pollutants or impacts due to human activities such as aggressive fishing techniques can both make it difficult to distinguish these effects from any due to the oil, as well as obscuring any more subtle impacts.
- 3.3** When deciding whether post-incident studies should be initiated the following practical considerations should be taken into account:
- observed geographical extent and degree of oiling;
 - likelihood of significant quantities of oil reaching sensitive natural resources;
 - observed significant environmental impacts, that is, conspicuous damage such as mortalities, defoliation, discolouration due to the oil rather than other coincidental factors;
 - importance of resources due to:
 - conservation status of a given species or habitat
 - rarity and distribution
 - functional significance within the ecological community
 - scientific and public profile; and
 - the likelihood that impacts can be detected due to:
 - sensitivity of species, community or habitat to oil and their recovery potential
 - availability of relevant baseline information/reference sites
 - absence of confounding factors
 - scale of natural variability
 - the existence of proven study protocols.
- 3.4** The authority to decide whether a post-incident study should be carried out or not lies with the responsible authorities in the affected country or individuals or organisations set out in section 2. However, the shipowner's insurer, the 1992 Fund and their experts should be invited, at an early stage, to participate in or provide input to the assessment of whether or not a post-incident study is justified for a particular incident. If the authorities or other claimants decide to carry out a study, the shipowner's insurer, the 1992 Fund and their experts should be invited to participate in or provide input to the process of defining the terms of reference, design and planning of the study. The aim of such involvement is to ensure that a post-incident study provides reliable and usable information and does not unnecessarily repeat work that has already been done elsewhere. In addition such involvement allows claimants the opportunity to draw upon the knowledge base available to the 1992 Fund, the shipowner's insurer and their experts, including the outcomes of previous studies, the techniques used and a database of specialist expertise. Similarly, if the study establishes that reinstatement measures are justified and feasible, their continued involvement is likely to both assist claimants in the implementation of the measures and also facilitate the assessment of claims for reimbursement of the costs incurred.

4. What are the criteria which determine whether or not claims are admissible?

4.1 Paragraphs 1.4.12–1.4.13 of the Claims Manual state that:

“*Compensation is payable for the costs of reasonable reinstatement measures aimed at accelerating natural recovery of environmental damage. Contributions may be made to the costs of post-spill studies provided that they relate to damage which falls within the definition of pollution damage under the Conventions, including studies to establish the nature and extent of environmental damage caused by an oil spill and to determine whether or not reinstatement measures are necessary and feasible.*

Compensation is not paid in respect of claims for environmental damage based on an abstract quantification calculated in accordance with theoretical models. Nor is compensation paid for damages of a punitive nature on the basis of the degree of fault of the wrong-doer.”

4.2 It should be noted that compensation for measures taken to reinstate the environment is limited to measures actually undertaken or to be undertaken. Admissibility of claims is therefore restricted to claims filed by claimants who are firmly resolved to take effective measures to repair the damage or claimants who are equally resolved to take such measures and are only prevented from doing so by lack of funds. The 1992 Conventions therefore provide the possibility of reasonable reinstatement costs being met that are to be incurred at some point in the future.

4.3 Claims for reasonable costs of studies to determine the nature, extent and duration or threat of environmental damage and to monitor

recovery both occurring naturally and following the implementation of reinstatement measures, are provided for under the 1992 Conventions. Claims are subject both to general admissibility criteria and the specific conditions for environmental damage claims set out in sections 1.5 and 3.6, respectively of the Claims Manual and summarised below.

Summary of general requirements for admissible claims applicable to environmental damage

- Claims will be paid for damage caused as a result of contamination by persistent oil from a tanker and costs of preventive measures where there has been a grave and imminent threat of pollution damage.
- There must be a close link between the contamination and the costs claimed.
- All claims should relate to measures that are reasonable and justified.
- Claimants must prove how much they have spent, or in the case of claims for reinstatement to be undertaken, will spend, and must provide information to support this.
- The expense must have actually been incurred or, in the case of environmental damage for reinstatement measures yet to be undertaken, a firm commitment to incur the expenditure must have been given.

Specific criteria for environmental damage claims for post-incident studies

- The scope of the study should be directed towards establishing the grave and imminent threat of damage, the nature, extent and likely duration of any damage that has occurred, and monitoring the recovery of damaged environments. Elements of the study might also be included to determine the necessity and feasibility of reinstatement measures. It should not be for general scientific interest.
- The scale of the study should be in proportion to the extent of the contamination, the likely effects of that contamination and the benefits achieved through reinstatement. The timing of studies should aim to avoid unnecessarily delaying those benefits.
- The study must provide reliable and useful information and should avoid repeating previous

work or duplicating other ongoing studies or projects.

- The study should be carried out with professionalism, scientific rigour, objectivity and balance, that is, studies should follow principles of sound scientific investigation.
- The progress of the study should be monitored and the results clearly and impartially documented.

Specific criteria for reinstatement measures

- The measures should have the aim of re-establishing the biological community in which the organisms characteristic of that community at the time of the incident are present and are functioning normally, that is, the measures should be aimed at enhancing the recovery of the damaged component of the environment.
- The measures should have a realistic prospect of significantly accelerating the natural process of recovery and should be based on sound scientific principles.

- The measures should seek to prevent further damage as a result of the incident.
- The measures should, as far as possible, not result in the degradation of other habitats or in adverse consequences for other natural or economic resources.
- Measures taken at some distance from, but still within the general vicinity of, the damaged area may be acceptable so long as it can be demonstrated that they would actually enhance the recovery of the damaged components of the environment and the services that those components provide.
- The link between the measures taken and the damaged component of the environment is essential.
- The measures should be technically feasible.
- The costs of the measures should be in proportion to the extent and duration of the damage and the benefits likely to be achieved.



- 4.4

The criterion that measures should not result in the degradation of other habitats or in adverse environmental or economic consequences calls for the application of Net Environmental Benefit Analysis (NEBA), also sometimes referred to as Spill Impact Mitigation Assessment (SIMA). Essentially both concepts examine trade-offs that can be made to deliver the least worst outcome in terms of environmental and socio-economic impacts. The process involves an analysis of available options and weighing conflicting factors to achieve outcomes that offer an appreciable environmental and/or economic benefit when compared with natural recovery alone. The key elements considered in the analysis include the fate and effects of the spilled oil, the ecological importance of the affected natural resources, the expected outcome of the proposed reinstatement measures and an assessment of the risk that the measures may do more harm than good.
- 4.5

According to the general criteria, it is essential that claimants have incurred costs or are committed to incurring such costs, or have otherwise suffered a financial loss in order for compensation to be paid under the international liability and compensation regime. For environmental damage claims these costs must be related to a project addressing either a post-incident study or a post-incident study and reinstatement measures. In the case of reinstatement measures claims must be directed to the recovery of environments

damaged by persistent oil and for those yet to be undertaken, claimants must be able to demonstrate a commitment to undertake such measures in order to be eligible for compensation.

Is my claim admissible for compensation?

- 4.6

Before submitting a claim or a proposal for reinstatement measures, make sure you can answer yes to the following questions:
 - Are or will the measures likely to significantly accelerate the natural process of recovery?
 - Is there a close link between the reinstatement measures and the damaged component of the environment?
 - Have the measures been undertaken within the general vicinity as the damage?
 - Has due regard been given to the principles of NEBA?
 - Are the costs of the measures proportionate both to the extent and duration of the impairment of the environment and to the benefits likely to be achieved?
- 4.7

When considering all the elements of the criteria set out in the section above, it should be noted that post-incident studies and reinstatement measures would normally be most appropriate in the case of a major spill where there is evidence of significant environmental impact, that is conspicuous effects or the threat thereof.

5. What costs are covered?

Post-incident studies

- 5.1

In principle, the cost of studies to examine impairment of the environment are covered, especially if such studies are restricted to quantifying obvious damage that is readily observable rather than the speculative investigation of a broad array of hypothetical effects. Research projects of general scientific interest are unlikely to be eligible for compensation. Studies of the ecological impacts of the incident are usually conducted in parallel with measurement of the concentration of the spilled oil and its chemical components in order to establish a pathway between the observed damage and the spilled oil or its chemical components. Depending on the circumstances of the incident and the resources impacted, samples for such analyses may be taken from the tissues of the affected species as well as the surrounding waters and sediments. The duration and precise scope of the study should be clearly defined at the outset with the participation of the shipowner's insurer, the 1992 Fund and their experts. For example, the species, communities or habitats to be studied and the rationale for selecting these subjects need to be justified. Depending on the results obtained, the study duration may need to be shortened or extended.
- 5.2

In order to gain a better understanding of the reinstatement and its goals, consultation with relevant stakeholders is recommended, including with those who use the area for recreational purposes or indigenous communities who use the area for the practice of cultural traditions and customs. Regular communication of the results of post-incident studies and reinstatement measures with all stakeholders is also recommended. Relevant authorities may wish, in particular, to provide information on public access and health relating to an affected area or resources.
- 5.3

In the case of studies undertaken to monitor recovery following reinstatement measures, it should be noted that the criteria set out above in section 4.3 do not require that the monitoring continues until environments have fully recovered but until it can be demonstrated that the process of recovery has been comprehensively established. In fact, because of the high natural variability that exists in the marine environment it may be quite difficult to recognise conclusively when the environment has fully recovered.



SEA EMPRESS

In February 1996 the tanker *Sea Empress* ran aground in the entrance to Milford Haven, United Kingdom and spilled 72 000 tonnes of Forties crude as well as 480 tonnes of heavy fuel oil bunkers. Some 200 kilometres of coastline were impacted including a national park.

The United Kingdom Government set up a committee of marine scientists, the *Sea Empress* Environmental Evaluation Committee (SEEEC), tasked with assessing the impact of the incident. The Committee commissioned some 80 studies of the key species and habitats most heavily impacted by oil, focusing on those indicative of environmental health and of importance to conservation and the marine food chain. Many of the studies were inconclusive

citing difficulties due to lack of pre-spill data, natural variability and inadequate information on the degree of contamination and distribution of oil to allow comparisons between sites that had been oiled and those that had not. For those studies that were able to demonstrate impacts, rapid recovery was observed over the course of the following year.

Although the overall cost of these studies was more than £2 million, no claim for compensation was submitted because at that time it was not clear that this might have been an admissible claim. The subsequent interpretation agreed by the 1992 Fund Assembly and reproduced in the Claims Manual, indicates that such a claim submitted today would, in principle, be eligible for compensation.

- 5.4** In general three approaches are taken to such studies:
- (i) comparison of the pre-spill and post-spill ecological status of the affected resources as well as the levels of oil and its chemical components to which those resources were exposed both pre- and post-spill;
 - (ii) comparison of the affected area with uncontaminated reference sites or sites not impacted by the spill; and
 - (iii) monitoring post-spill recovery of the communities and habitats contaminated by oil.

(i) Pre-and post-spill data comparison

5.5 While the direct comparison between pre- and post-spill data may seem the best approach, reliable pre-spill information does not often exist. Any previous studies of the affected area would most probably have been undertaken for reasons other than in anticipation of an oil spill and so may not have concentrated on the same species, communities or habitats suffering conspicuous impacts. Even if previous surveys of the affected resources have been carried out, the natural variability in the marine environment and any changes that may have occurred during the intervening period should be taken into account when analysing this data. It is also important that background hydrocarbon levels, and in particular levels of Polycyclic Aromatic Hydrocarbons (PAH)^{<1>}, are known and well documented. Many countries have routine monitoring programmes that can provide such background data. It may sometimes be possible to carry out rapid, post-spill surveys that can provide a good indication of the pre-spill environment. These may be undertaken either before oil reaches the resources of interest and at risk of becoming oiled, or before the effects of the spill have had time to manifest themselves.

^{<1>} Polycyclic Aromatic Hydrocarbons (PAH) are compounds formed of multiple aromatic (benzene) rings and are of particular concern due to the toxicity of this class of compounds and their carcinogenic properties.

^{<2>} Gas Chromatography Mass Spectrometry (GCMS) is an analytical technique that uses Gas Chromatography to separate the compounds in a complex mixture into component molecular groups by injecting a sample into a gas stream as it passes through a column that interacts differently with each molecular group so that they are separated as they exit the column at different times. Mass Spectrometry takes the material from the GC column and by applying a strong magnetic field breaks the molecules into predictable segments so allowing individual molecules present to be identified and quantified.

(ii) Comparison with reference site/s

5.6 Reference sites should be carefully selected for comparison with the oiled site. It is unlikely that sites with exactly the same ecological and environmental conditions will be available but those as closely similar as possible should be selected. For impacts on communities or populations, reference habitats should be the same as those impacted and, as far as possible, exposed to very similar environmental, meteorological and maritime conditions.

(iii) Post-spill monitoring of recovery

5.7 In circumstances where there are neither pre-spill data nor sufficient suitable reference sites, monitoring the recovery of impacted natural resources provides the third approach to damage assessment. Recovery related to an associated reduction in hydrocarbon levels monitored over time and clearly distinguishable from other natural fluctuations can provide a useful assessment of the levels of damage caused by the spill. Monitoring should be initiated as soon as possible after the incident and comparisons made with nearby, unoiled sites in order to account for changes due to natural fluctuations.

5.8 Studies that combine elements of all three approaches may provide the most reliable outcomes. Measurements of hydrocarbons in the environment can help to establish a link of causation between any observed impact and the oil spilled. A qualitative match between the contamination and the spilled oil is normally established through chemical analysis, for example, using Gas Chromatography Mass Spectrometry (GCMS)^{<2>} and the same technique can also provide essential quantitative information. The methodology also allows other potential sources of contamination to be ruled out, including background levels of PAHs that pre-date the spill.

5.9 It is imperative that a reliable reference sample of the spilled oil is secured at the earliest opportunity. Provided circumstances allow, this is best supplied directly from the ship, ensuring that samples are taken from the relevant tanks and that this procedure is properly authorised, witnessed and that a chain of custody of samples is maintained. If the situation of the casualty precludes obtaining a sample directly, then a reference sample has to be taken from as close to the ship as possible, ensuring that oil movement on the wind and currents supports the credibility of the sample and that there are no other confounding sources of contamination.

HEBEI SPIRIT

On 7 December 2007, the tanker *Hebei Spirit* was struck by a crane barge while at anchor about five nautical miles off Taean on the west coast of the Republic of Korea. The collision resulted in a release of approximately 10 900 tonnes of crude oil at sea.

Immediately after the spill, the Korean Government instructed a leading scientific organisation in Korea to carry out a number of environmental monitoring programmes, including the sampling of water, sediment and marine organisms in the months following the incident. The programmes included studies on the impact of marine pollution in the affected areas for the period 2007–2009 and environmental impact assessment and restoration studies for the period 2010–2011.

The first studies included monitoring of a comprehensive list of sampling locations, from where samples were taken at either monthly or quarterly intervals to assess the impact on the marine environment and on mariculture and fisheries resources. Based on the results of the monitoring, it became evident that the oil pollution had been quickly eliminated and the environment had been restored owing to the quick response of the Korean Government in initiating clean-up operations. The Korean Government relied on this study to decide on when to lift the fisheries restrictions which it had imposed at the beginning of the incident. The majority of the restrictions were lifted in April 2008, with the last fisheries restrictions lifted in early September 2008. The 1992 Fund considered the claim for the costs of the studies admissible in principle, since they were used to counteract the impact of the spill and manage seafood safety, although the Fund originally queried the claim due to insufficient information.

The results of the monitoring programmes from 2007 to 2009 showed that the level of pollutants attributable to the *Hebei Spirit* oil spill dropped to background levels during 2008 and were undetectable in 2009. In addition, there was no indication from the monitoring work on shoreline and coastal habitats from 2007 to 2009 that there were detectable biological or ecological impacts that could be

directly attributable to the *Hebei Spirit* oil contamination that warranted further study.

The other monitoring programme financed by the Korean Government was long-term monitoring of the environment of the Yellow Sea in the period 2010–2011. However, this part of the study did not focus on the impact of the incident but rather was aimed at monitoring the changes of the environment from a purely scientific perspective. The monitoring programme for 2007–2009 had already shown that the impact of the *Hebei Spirit* oil spill had substantially disappeared in 2008 and the data since 2009 changed very little.

Any oil contamination reported in the environmental impact assessment statements since 2009 was found to be localised pollution. The sites were selected for the existence of oil residue and therefore they could not represent the conditions of the Yellow Sea as a whole. Furthermore, the environment of the Yellow Sea is continuously affected by many factors, for instance, small oil spill incidents involving boats, leaks from the submarine oil field, chronic inputs from rivers flowing into the Yellow Sea and global warming. Therefore, while the environmental monitoring programme of the Yellow Sea might have been considered as a desirable long-term project as a basic study on a scientific level, the study itself was found to be too remote to be linked to the incident and was therefore not admitted for compensation by the 1992 Fund.

When the Korean Government submitted the claim to the P&I Club and the Fund, it declared that it would stand last in the queue to receive compensation. At the same time, the Korean Government filed the claim in court to protect its right for compensation. In 2016, the Seosan Court (Court of First Instance) reached the same conclusion as the 1992 Fund, that the studies carried out in 2007–2009 were admissible. However, the costs for the long-term monitoring of the marine environment in the Yellow Sea were also not admitted by the Court, as it considered that there was not a sufficient link of causation between the study and the contamination.

SINGAPURA TIMUR

In May 2001 the Panamanian chemical tanker *Singapura Timur*, carrying some 1 550 tonnes of bitumen, collided with the unladen Bahamian-registered tanker Rowan near Undan Island, in the Strait of Malacca, Malaysia. The *Singapura Timur* sank in 47 metres of water, in the middle of the northbound shipping lane of the traffic separation scheme in the Malacca Straits. Although the water depth was sufficient for the wreck not to present a navigation hazard, it was only some eight nautical miles from the nearest coast and close to sensitive coastal resources, including coral reefs, mangroves and mariculture facilities.

The Malaysian Department of Environment (DOE) considered that the remaining bunkers posed a threat to these resources and appointed a contractor to remove the bunker fuel oil. In addition the DOE decided to undertake a post-incident study to ascertain whether the bitumen cargo remaining on board the wreck posed a threat to the environment and, if so, whether the cargo should also be removed. The IOPC Fund was involved from the outset in the selection of the experts who undertook the study and in the determination of their mandate. Since this study required a detailed diving survey of the wreck and the collection of water and sediment samples in the vicinity of the wreck, the fieldwork associated with the study was combined with the operation to remove the bunker fuel in order to minimise costs.

The underwater inspection of the wreck was undertaken more than a year after the vessel sank and found that the hull of the wreck was still in excellent condition and was stable, lying on hard sand. It was concluded that although the wreck was likely to remain intact for many years,

in the long-term, the wreck would be expected to disintegrate slowly through corrosion, gradually exposing the cargo of bitumen. However, analyses of samples of water and sediments taken in the vicinity of the wreck and compared with samples taken from a reference site some 10 nautical miles up current, found no evidence of PAHs leaching into the water or uptake in sediments. A review of the physical properties of the bitumen showed that it was heavier than seawater and had no tendency to flow. Underwater surveys of the bitumen that had spilled onto the seabed when the vessel sank also confirmed that it had formed large blocks that had not moved or broken up into tarballs or particles.

It was therefore concluded that the bitumen would not spread beyond the wreck site or float to the surface and was virtually inert, having no tendency to leach components into the sea or the atmosphere. Consequently the bitumen did not pose a threat to marine and coastal resources and leaving the cargo of bitumen in the wreck did not pose a risk to the environment.



Reinstatement measures

5.11 The first stage of a reinstatement project is usually the removal of as much of the oil as possible from the affected area either through clean-up operations or natural cleaning. The 1992 Fund pays compensation for reasonable clean-up measures as they are considered measures to prevent pollution damage including damage to the environment. Although the 1992 Fund has provided compensation for a number of post-incident studies, it has little experience of admissible claims for reinstatement. Several claims have been submitted relying on abstract quantification of damage to the environment but these did not fall within the definition of pollution damage and were rejected. In terms of reinstatement measures, the criteria set out in section 4 lead to three categories of claim:

- (i) those that meet all the criteria and are admissible;
- (ii) those that involve a project likely to accelerate recovery but for which it is unclear whether it meets one or more of the other criteria for reinstatement measures and in particular, whether the costs of undertaking these measures are proportionate; and
- (iii) those that clearly cannot meet the criteria in section 4 and are therefore inadmissible.

(i) Admissible claims

5.12 The inference from the guidance provided by the Claims Manual is that both direct and indirect reinstatement measures are admissible, that is, intervention directly with the impaired resource and indirect measures, perhaps taken at some distance from the damage site. Both should aim to accelerate the recovery of damaged components of the environment. Both should be bound by finite conditions, defined during the project's design phase, that unambiguously describe what constitutes successful completion

of the reinstatement project. Given the absence of precedent it is difficult to predict with any certainty what types of reinstatement would meet all the necessary criteria but it is likely that direct intervention would more readily fall into this category.

5.13 Examples of direct reinstatement include replanting of salt marsh plants and mangroves. In either case once levels of gross contamination have declined, natural recovery will take place through the distribution of seeds and propagules^{<3>} from adjacent unaffected plants allowing the pre-existing biodiversity and an ecologically driven distribution to prevail. Applying the principles of NEBA, the benefits of replanting should be weighed against the anticipated rate of natural recovery and efforts made, as far as possible, to retain the existing species diversity. In addition, replanted sites will need to be protected from disturbance while the young plants become established.

(ii) Claims where admissibility is unclear

5.14 Although the 1992 Fund Convention includes provision for payment of compensation for environmental damage in the context of reinstatement measures, as noted above, to date no admissible claims have been presented and there are therefore no precedents upon which to base guidance. The discussion that follows cannot therefore provide certainty on how the Convention would be interpreted in practice but is based on an analysis of the examples postulated against the criteria identified in Section 4. Provided these criteria are met, the Convention does provide sufficient flexibility for innovative proposals for reinstatement measures to be made so long as they are based on sound science and established protocols. As will be apparent, the most difficult element to judge is whether measures would be considered proportionate or not too remote. All will depend on the particular circumstances of the incident concerned.

^{<3>} Mangroves are an example of plants that propagate by dropping propagules into water which then drift before settling elsewhere, rooting and growing into a new tree. Though resembling an elongated seed pod, the propagule undergoes no dormant stage as a seed, but rather progresses to become a live plant before leaving its parent tree.



SOLAR 1

On 11 August 2006, the tanker *Solar 1*, carrying approximately 2 000 tonnes of intermediate fuel oil, sank in 630 metres of water some 10 nautical miles south of Guimaras Island, Republic of the Philippines. Following an operation to remove the remaining oil from the sunken vessel in March 2007, it was found that virtually the entire cargo had been spilled at the time of the incident. In November 2006, a proposal for a post-incident environmental monitoring programme and the rehabilitation of coastal natural resources was submitted to the shipowner's insurer and the 1992 Fund. The proposal focused on the reinstatement of mangroves affected by the oil.

Surveys conducted on behalf of the P&I Club and the 1992 Fund had found that in some small, discrete areas of mangrove habitat some of the trees had died while others exhibited signs of poor health due to the accumulation of oil in stagnant areas where various types of debris had built up and inhibited tidal flushing. The P&I Club and the

1992 Fund supported a proposal to clear the natural tidal channels serving eight mangrove sites of oiled and unoled debris in order to promote greater tidal exchange and flushing and so assist the removal and degradation of the oil adhering to mangrove root systems and within the surrounding sediments. This would be considered an indirect reinstatement measure, since the intervention did not directly involve the mangroves but was intended to provide an improved environment to accelerate the recovery of the remaining mangroves under stress as a result of the oil pollution.

Although the Government of the Philippines did not submit a claim for post-incident studies, the University of the Philippines did conduct further surveys three years after the spill. It was found that where trees had died and the wood was extracted for firewood, a forest gap was created and recovery was poor. However, faster recovery was observed where dead mangroves were not harvested and the fallen trees reduced water movement so helping to keep propagules from drifting away, enhancing recruitment and the establishment of saplings.

(iii) Indirect measures

5.15 Indirect reinstatement measures are those that bring an improvement to the surrounding environmental conditions and so enhance the natural recovery of damaged resources. Examples include measures such as predator and disturbance control. Many species of turtles have protected status and are vulnerable to pollution damage while nesting on sand beaches but their recovery is hindered by predation of eggs and juveniles for example, by humans and foxes. The construction of temporary fences to protect nesting sites or fox culls might be considered as interventions to reinstate turtle populations. However, measures sometimes proposed, involving the precautionary collection of turtle eggs, artificially rearing and releasing the

juveniles, are less likely to satisfy the specific criteria set out in section 4 for reinstatement measures to be eligible for compensation. In particular, costs are unlikely to be proportional to the benefits derived since the numbers of individuals protected in this way is unlikely to have an impact on the reinstatement of affected populations.

5.16 The case study below, the eradication of rats from Langara Island, British Columbia, was undertaken to improve environmental conditions and encourage the recovery of bird populations impacted by oil from the *Nestucca* spill. While not an IOPC Fund case, the example does provide a good illustration of the application of the concept of indirect reinstatement.

NESTUCCA

In December 1988 the barge *Nestucca* collided with her tug off Grays Harbor, Washington State, USA, spilling some 800 tonnes of heavy fuel oil. Over a period of three weeks the oil was carried north some 100 nautical miles and came ashore over 500 kilometres of the western shoreline of Vancouver Island, British Columbia. Beached bird surveys were conducted and reported 12 500 carcasses, although the total number of seabirds killed as a result of the spill was estimated to have been considerably higher. Taking into account the size of the spill, the number of seabird mortalities was particularly high, in part due to the persistent nature of the oil but of greater importance was the very high density of seabirds in the area. Another factor was the highly 'clumped' distribution of seabirds off Vancouver Island due to the physical oceanic processes that determine prey distribution. It seems that oil lost from *Nestucca* passed through these dense flocks leading to extremely high mortality figures. The species representing the highest proportion of seabird mortalities were Common murre (*Uria aalge*) and Cassin's auklet (*Ptychoramphus aleuticus*) at 42% and 32%, respectively, together with a small proportion of Ancient murrelets (*Synthliboramphus antiquus*).

In 1995 a restoration project was undertaken with the aim of accelerating the recovery of some of the seabird populations affected by the *Nestucca* incident through the eradication of a predator: rats, from one of the islands north of Vancouver Island, Langara Island in the Haida Gwaii archipelago

(formerly Queen Charlotte Islands). Although rats might be considered a 'natural resource', and so eradication might be considered to fail the criterion that other resources should not be adversely affected, it did meet the principles of NEBA since the rats were an introduced, non-indigenous species, responsible for the destruction of indigenous seabird populations. The islands support half the world's population of Ancient murrelets and a fifth of the world's breeding Cassin's auklets. Over a period of 30 to 40 years after their introduction to Langara Island, presumably from fishing boats or log barges, rats had exterminated five of the six burrow-nesting seabird species and the population of the sixth, Ancient murrelets, plummeted from 200 000 to some 20 000 breeding pairs. However, between 1999 and 2004, after the successful eradication of rats, there were strong indications that the Ancient murrelet breeding population was recovering.

Although the most serious impact of the *Nestucca* incident was suffered by Canada, now a 1992 Fund Member State, at the time of the incident the Fund Convention had not yet entered force in Canada. Nevertheless, the incident provides an illustration of circumstances where indirect reinstatement measures taken at some distance from the damaged area may be acceptable. In this example, the reinstatement measures targeted the same species that had suffered damage as a result of the spill, providing the strong link between the reinstatement project and the damage and therefore any such claim may have been considered acceptable under today's 1992 Fund Convention.

- 5.17

Indirect reinstatement measures are most likely to be used in circumstances where direct measures are not feasible and indirect measures are likely to bring about the recovery of the environment and the services it provides, more quickly than natural recovery. For example, where populations are already under severe stress and exposure to the additional detrimental effects of an oil spill is likely to lead to a situation where recovery of the damaged component of the environment is impossible or unacceptably slow.
- 5.18

One of the criteria to be satisfied in relation to reinstatement measures is that the costs of the measures should not be disproportionate and a judgement on this would depend on the arguments and facts presented in support of any such project. For example, the work to eradicate predators from the Haida Gwaii archipelago is still continuing and in the event of a similar incident in future a judgement would have to be made whether a contribution to this regional programme might constitute an appropriate reinstatement measure and if so, the size of any such contribution.
- 5.19

The 1992 Fund reaches decisions on whether measures are proportionate through debate, taking into account the circumstances of the incident, the facts presented in support of a claim and weight of argument. The 1992 Fund's Executive Committee has regularly been called upon to make decisions on admissibility for claims relating to a number of incidents, for example, on the level of costs for the removal of oil from sunken wrecks that are proportional to the risks posed by leaving the oil in place.

PRESTIGE and SOLAR 1—A case study of the determination of the proportionality of costs

The case study below is intended to illustrate how the IOPC Fund has reached decisions on proportionality. Although in the example below the issue to be decided in both incidents was the proportionality of the costs of preventive measures, a similar approach would be taken to determine whether or not the costs of reinstatement measures are proportionate.

Following the sinking of the tanker *Prestige* in the Atlantic Ocean in 2002, some 13 000 tonnes of the vessel's remaining cargo of heavy fuel oil was removed from a depth of 3 650 metres, some 170 nautical miles off the Spanish coast. Despite this remarkable engineering achievement, the 1992 Fund's Executive Committee judged that while the costs of some of the preparatory work should be met, the claim for the cost of the operation to remove the oil itself was out of proportion to the risks of leaving it in place, and that the claim was therefore inadmissible. In contrast, the circumstances of the *Solar 1* which sank off the Philippines in 2006 (see example following paragraph 5.15 above), allowed the Committee to reach the opposite conclusion.

In both cases the decision on whether or not costs were proportionate hinged upon a comparison of the risk of pollution posed by the sunken vessels against the costs of oil removal. The assessment of the pollution risk had to first consider the likelihood that oil would be released and second, the consequences of any such release. In evaluating the risk of release the key issues were the quantity of oil remaining on board and the rate at which this oil was likely to be lost from the wreck.

A reasonably reliable estimate of the amount of oil remaining in the two sections of the *Prestige* wreck could be obtained but no such information was available for the *Solar 1*, although it was known that a substantial quantity of oil was lost when the vessel sank. Although the concern is often expressed that a catastrophic failure of the ship's structure would allow all the oil to be released simultaneously, in reality this is highly unlikely

because the oil is distributed over a number of tanks and such a loss would need the simultaneous and spontaneous failure of all the tanks. However, in shallow water such an event might occur as a result of a severe storm or tsunami. For a wreck in deeper water, serious damage to one or more tanks might be foreseen as a result of the passage of heavy fishing gear, a large vessel dragging anchor or the vessel becoming crushed due to movement of the seabed as result of seismic activity.

In the case of the *Prestige* the area was found to be seismically stable whereas the sinking position of the *Solar 1* was only 25 nautical miles from a major fault line with a history of seismic activity. However, the more likely scenario for both vessels was that over the longer term, probably in excess of 50 years, corrosion of the steel hull would result in the formation of pinholes and fissures allowing the oil to escape. The rate of release would be determined by dimensions of any such apertures and the characteristics of the oil which in turn would be determined by temperature. The oil carried by the *Prestige* was more viscous, with a pour point well above the water temperature at the depth of the wreck whereas the *Solar 1* cargo was less viscous and had a pour point below the ambient temperature. In other words the *Solar 1* cargo was more fluid so that the rate of release would be expected to be higher.

The second part of the risk assessment concerned the consequences of any release determined by the characteristics of the oil and the resources within its path. The *Prestige* oil was more persistent and it was anticipated that at a distance of more than 100 nautical miles offshore, its eventual slow release could result in the formation of tarballs as the oil weathered, scattering over a vast area of the eastern Atlantic Ocean. Depending on seasonal ocean currents such tarballs might reach seafood cultivation areas in Galicia (Rias Baixas) or the tourist beaches of the Atlantic islands of Madeira, the Canary Islands and the Azores. However, it was judged that the only scenario capable of generating pollution damage resulting in costs of the same order of magnitude as the oil removal costs (approximately €100 million) would have had to

involve a massive sudden release in excess of 1 000 tonnes. As noted above such catastrophic structural failure of the wreckage of the *Prestige*, was highly unlikely.

At the time the Executive Committee reached its decision that the oil extraction from the *Solar 1* was admissible in principle, there was thought to be a significant risk of disruption to coastal fishing off Guimaras Island and to shellfish gathering along the island's southern fringing reef. There was also a risk of damage to sensitive mangrove forests as a consequence of chronic multiple oiling. The information available at that time indicated that the costs of operations to remove any remaining oil would be between US\$8–12 million depending on the amount of oil found on board. The estimated level of the losses sustained due to pollution from the *Solar 1* was in the range of US\$5–8 million. The Committee agreed that in this case, the indicative costs for the oil removal operation were not disproportionate to the risks of pollution damage resulting from further releases of oil. In reaching their decision on the proportionality of the costs to extract oil from the *Solar 1*, the Executive Committee weighed the proximity of economic and environmental resources vulnerable to oil pollution, the uncertainty over the quantity of oil remaining and the unknown consequences of frequent seismic activity, against the moderate projected costs of oil removal from a lesser depth than was the case for the *Prestige*.



5.20 Other measures might be considered which would improve environmental conditions within the affected area and so accelerate the rate of recovery of the damaged environment. Examples might include incorporating the damaged environment within a newly designated protected area, improved enforcement of fishing and environmental legislation within the affected area, eradication of other pressures on the damaged resource, such as, sources of pollution or perhaps even measures intended to reduce the risk of future pollution incidents through improved buoyage or removal of navigation hazards. However, the more remote the proposed measures are from the damaged environment, the more difficult it would be to judge proportionality and the beneficial effect on recovery.

5.21 For indirect reinstatement measures the issue of proportionality is paramount since a direct physical comparison may be difficult to make. Whereas for replanting an area of damaged marsh vegetation it is relatively straightforward to assess the area of damage and calculate the cost of replanting, quantifying the appropriate indirect reinstatement measures is inherently more difficult. However, if measures were taken to improve the general environmental conditions of the affected area and so enhance its recovery, for example, if the affected environment were to be included within a protected area, might this be admissible as a reasonable reinstatement measure? The costs of such a measure could include the costs of surveying, mapping and cataloguing the particular features of the area to be protected, as well as the administrative costs of drafting the regulations to establish the protected area. If we were to test the example above against criteria in Section 4, the following assessment may result.

(a) Are the measures based on sound science aimed at enhancing the recovery of the damaged component of the environment

and do they have a realistic prospect of significantly accelerating the natural process of recovery?

The restrictions on activities imposed within a protected area (such as, restricting access to minimise disturbance) are likely to improve environmental conditions in general and lead to enhanced recovery.

(b) Do the measures seek to prevent further damage as a result of the incident and do they, as far as possible, not result in the degradation of other habitats or in adverse consequences for other natural or economic resources? In other words has due regard been given to the principles of NEBA?

By minimising conflicts between human activities in the area and the environment, the principles of NEBA would be respected.

(c) Are the measures still within the general vicinity of the damaged area and can it be demonstrated that they would actually enhance the recovery of the damaged components of the environment?

The protected area would be in the same general vicinity and as noted in paragraph (a) above, the restrictions imposed are likely to enhance recovery by improving the environmental conditions within the affected area.

(d) Is the essential link between the measures taken and the damaged component of the environment maintained?

The protected area would relate to the same habitats.

(e) Are the measures technically feasible?

The proposed measures would be technically feasible.

(f) Are the costs of the measures proportionate both to the extent and duration of the damage and to the benefits likely to be achieved?

As to the key test of proportionality, this would be debated by the 1992 Fund's

governing bodies taking into account all the circumstances surrounding the incident and the facts submitted in support of the claim, including the actual costs involved.

(iv) Reinstatement of sites at some distance from the area of damage

5.22 Claims for measures taken at a site at some distance from, but still in the general vicinity of, the damaged area, for example, where reinstatement of damage at the affected site is not possible, are contemplated in the Claims Manual but are likely to require careful consideration to ensure that any such reinstatement project undertaken meets the criteria set out in section 4. The replacement of a damaged site by 'creating' an equivalent resource elsewhere may not satisfy these criteria, in particular, the application of the principles of NEBA, if other habitats or resources are adversely affected. The concept of taking measures at a distance from the damaged site while maintaining an essential link with the damaged environment is intended to cover measures to reinstate the same habitats or resources rather than their replacement or the provision of an equivalent alternative or substitute.

5.23 As an example, a reinstatement project following an incident in which an area of marsh habitat had been destroyed following an oil spill (perhaps due to the application of overzealous clean-up techniques) might include the reinstatement of an area of degraded shoreline such as a dredge spoil disposal site. To meet the criteria for reasonable reinstatement the area for reinstatement would need to be within the same general vicinity and have the potential to support a similar habitat to the damaged one. The spoil might need to be graded and excavated to provide the appropriate profile and tidal exchange and planting would need to be carefully planned to encourage natural

settlement of plants reflecting the diversity of vegetation of the original marsh. Fauna killed or displaced from the original marsh habitat would be expected to be recruited from adjacent unaffected areas. A monitoring programme might be considered against specific success criteria such as levels of vegetative cover and diversity to demonstrate that the process of recovery was well established.

(v) Inadmissible claims

5.24 No compensation is available simply because a coastline has been impacted by oil. For example, the loss of an amenity such as the ability to enjoy a recreational beach until it has been cleaned may be an inconvenience but, if it does not result in a financial loss, no compensation is payable. So for example, claims from the tourism sector for loss of income as a result of a beach becoming contaminated would generally be admissible in principle but a claim submitted on behalf of the general public unable to use the beach would not^{<4>}. Similarly, an arbitrary amount of money awarded to a community or region because it has suffered an oil spill fails the key tests in section 4. The money does not accelerate recovery nor is there a claimant who has suffered a financial loss.

5.25 Claims relying on an abstract quantification calculated in accordance with theoretical models are also inadmissible. Typically such inadmissible claims are calculated on the basis of the volume of oil spilled with no regard for whether or not damage is observed. An example of such an approach is the 'Metodika' illustrated by the *Volgoneft 139* case, summarised in the box below. In other approaches to modelling environmental damage, abstract values are accorded to pollution by different oil types and to the different habitats contaminated >

^{<4>} Separate specific Guidelines for presenting claims in the tourism sector are available from the IOPC Funds' website (www.iopcfunds.org).

by oil, or the volume of water determined to have been affected. While it is often suggested this provides a quick method of calculating compensation for environmental damage, such calculations have no relation to costs, if any, actually incurred. Similarly, survey methodologies that ask representative samples of members of the affected communities and the general public what such damage is 'worth', sometimes referred to as contingent valuation, or stated preference methodologies⁶⁵ would not find application in the international liability and compensation regime. None of these methodologies would result in admissible claims because compensation calculated in this way has no bearing whatsoever on the recovery of the damaged environments.

5.26 The Annex to these guidelines considers potential reinstatement measures that might be considered in the event of pollution damage for a range of habitats and populations, together with a commentary on the likely admissibility of the measures proposed.

'Metodika' claim: VOLGONEFT 139

On 11 November 2007, the Russian-registered tanker *Volgoneft 139* broke in two in the Kerch Strait linking the Sea of Azov and the Black Sea between the Russian Federation and Ukraine. The tanker was loaded with 4 077 tonnes of heavy fuel oil and up to 2 000 tonnes of fuel oil were spilled.

The Ministry of Natural Resources and Ecology of the Russian Federation Federal Service for Supervision in the Use of Natural Resources, Rosprirodnadzor, submitted a claim for environmental damage for some RUB 6 048.6 million, based on the quantity of oil spilled, multiplied by an amount of roubles per tonne ('Metodika'). The 1992 Fund informed the Russian authorities that a claim based on an abstract quantification of damages calculated in accordance with a theoretical model was in contravention of Article I(6) of the 1992 CLC and therefore not admissible for compensation.

In September 2010, the Arbitration Court of Saint Petersburg and Leningrad Region issued a judgment rejecting the 'Metodika' claim. In its judgment the Court noted that, under Article I(6) of the 1992 CLC, compensation for damage to the environment, other than loss of profit caused by such damage, should be limited to the expenses for the reasonable reinstatement measures.



⁶⁵Respondents are asked, hypothetically, how much they would be willing to pay (WTP) or accept (WTA) to avoid something undesired, such as pollution.

6. When should you make a claim?

6.1 You should try to submit your claim as soon as possible. If you are considering making a claim at a later stage you should inform the shipowner's insurer and/or 1992 Fund of your intention to do so.

Time limit for submission of claims

6.2 It is important to recognise that there is a time limit of three years after damage has occurred for presenting claims to the shipowner's insurer and the 1992 Fund. Even if you have submitted a claim, but have not come to an agreement with the shipowner's insurer/1992 Fund within three years of the damage occurring, you must protect your rights in court. Failure to do so will result in you losing your right to compensation and your claim will become extinguished—see section 2.5 of the Claims Manual. Although usually the date of the damage is the date of the incident, it is conceivable that effects may be delayed and occur some time later but in any event an action in court must be brought within a maximum of six years of the date of the incident to preserve the claim. As the three-year anniversary of an incident approaches the Fund will normally write to claimants and to those who have indicated that they anticipate submitting a claim to alert them of the need to protect claims in court.

6.3 Although compensation is not normally paid for expenses that have not yet been incurred, in the case of reinstatement measures it is foreseeable that timescales for undertaking studies, implementing reinstatement measures and monitoring their performance could extend beyond the three-year time limit for making a claim. The Conventions provide that the costs of measures to be undertaken at some future date are admitted. For such costs to be accepted, however, there must be convincing evidence to support the expected

levels of expenditure and detailed justification for the measures to be undertaken.

6.4 Government claimants may choose to stand last in the queue (SLQ) if the value of established claims is likely to exceed the money available under the Conventions and there is a risk that claims will need to be pro-rated. The purpose of SLQ is to increase the level of payments to non-governmental claimants or to avoid pro-rating altogether. Once all non-government claims have been settled there is sometimes sufficient money remaining to settle government claims, at least in part. However, it can take several years to settle all the non-government claims and so it is important that SLQ claimants consider the need to protect claims in court to prevent them from becoming time-barred. Even SLQ claims should be submitted for examination as early as possible rather than waiting to see if there is sufficient money remaining. With the passage of time, individuals who were involved in studies or reinstatement measures may no longer be available and governments may find it increasingly difficult to provide the necessary information to satisfy queries raised by the 1992 Fund.



7. How can you make a claim?

7.1 Where can you get a claim form and how should you submit it?

- 7.1.1

In the event of an incident, the process for claim submission will be explained and specific customised claim forms and facilities will normally be made available by the 1992 Fund via its website (www.iopcfunds.org) or can be requested from the shipowner's insurer/1992 Fund. We advise claimants to provide all the documentation necessary to support their claim. Claim forms are designed to help you identify and provide the information required to assess your claim and as a result will speed up the assessment process. Original documents or certified copies of documents such as field logbooks, meeting minutes, purchase orders, invoices, receipts and any other records should be submitted with your claim. You are strongly advised to keep a copy of all of the information submitted for your own future use. Please note these documents will only be returned upon request and normally only on settlement of the claim. For spills which fall entirely within the CLC and therefore do not involve the 1992 Fund, contact should be made with the shipowner's insurer.
- 7.1.2

In general, claims should be submitted through the office of the insurer's local correspondent or representative or, in a very large incident, through the dedicated claims handling office set up by the shipowner's insurer and the 1992 Fund. The claims handling office is there to help you to make a claim, to advise on how the claim form may be completed, to forward your claim to the shipowner's insurer/1992 Fund and to assist in paying your claim once it has been reviewed and a compensation amount has been approved by the shipowner's insurer/1992 Fund. Claimants should note that the insurer's correspondent/representative,

claims handling office staff and experts do not make any decisions as to whether a claim will be paid or how much compensation will be paid—that is for the shipowner's insurer and the 1992 Fund to decide. In instances where the ship that was the source of the spill cannot be identified or no insurer is available, claims should be submitted directly to the 1992 Fund. Whether or not claimants are working in close consultation with the Fund and its experts, claims for compensation for the costs of studies and reinstatement measures must still be formally presented.

- 7.1.3

The IOPC Funds' website will provide the contact details of either the insurer's correspondent/representative or claims handling office as appropriate. Details are also usually given in the local press. Contact details for the 1992 Fund are provided at the end of this booklet.

7.2 What information should you provide?

General

- 7.2.1

The more details and evidence you can provide to the shipowner's insurer/1992 Fund about the studies, reinstatement measures and the costs incurred or to be incurred, the quicker your compensation claim can be assessed. Initially, you should provide as much of the following basic information as is available to you:
- The name and address of the person making the claim and the name of any representative or adviser or conversely the name and address of the organisation you represent.
 - The name of the ship involved in the incident.
 - The date, place and details of the incident (unless the information is already known to the 1992 Fund).
 - Confirmation that the claim is made for environmental damage (costs of post-incident studies/reinstatement measures).
 - The amount of compensation you are claiming and how you arrived at this figure.

- 7.2.2

Beyond this initial information it is essential that claims are submitted with supporting documentation showing how the expenses are linked with the actions taken. Experts engaged by the 1992 Fund and the shipowner's insurer to review the claimed costs need to understand what was done and why, where and when it was done, by whom, with what resources and how the costs were calculated. Invoices and receipts provide useful confirmation of expenditure but are insufficient by themselves and additional information such as the qualifications of the participating scientists and their remuneration would also be required. While such costs are best summarised in spreadsheets, one of the most important elements of a claim for environmental damage is the scientific evidence to support an assertion that the environment has been impaired. Reports should be submitted that clearly document the findings of post-incident studies and justify any reinstatement measures proposed or undertaken.

7.3 Supporting information and documentation

- 7.3.1

The following lists provide examples of the types of supporting information and documentation to be presented with claims for the costs of post-incident studies and reinstatement measures. These lists are illustrative, they are not exhaustive nor would all the items listed be appropriate or necessary under all circumstances.
- Post-incident studies

7.3.2

Delineation of the affected area describing the extent, distribution and degree of contamination within that area:

- Annotated maps, nautical charts, supported by geographically referenced photographs, for example, referenced to the location where the photographs were taken with aid of the Global Positioning System (GPS), aerial photography, remote sensing imagery and videos or other recording media.

- For shoreline contamination, reports of surveys of shoreline oiling, for example, SCAT team reports (Shoreline Clean-up Assessment Technique).
 - Sampling plan and rationale, detailing frequency of sampling and locations of sample stations.
 - Measurements of hydrocarbon concentrations, including PAH, in water, biota and sediment, as applicable.
- 7.3.3

Evidence linking the contamination with the ship involved in the incident:

- Data showing a match between a reference sample and pollution samples, for example, from GCMS analyses.
 - Observations tracking and plotting the movement of the oil.
 - Wind and tidal current data that supports the movement of oil from the ship to the affected area.
- 7.3.4

Details of studies undertaken:

- Aim and objectives.
 - Terms of reference (habitats, communities or species investigated).
 - Geographical scope and duration.
 - Description of methodologies and techniques used.
 - As far as they are available, details of the pre-spill conditions of the area.
- 7.3.5

Outcome of investigations determining the extent, nature and duration of any environmental impairment:

- Reports documenting results of studies of conspicuously affected resources.
 - Photographs, videos and other recorded media showing alleged impacts compared with similar unaffected resources.
 - Reports of laboratory analyses with details of the analytical methods used and relevant qualifications of the laboratory.
 - The shipowner's insurer/1992 Fund may request that field notebooks or electronic files and other base data used to compile the above reports are made available.

- 7.36** Detailed breakdown of costs incurred:
- Numbers of personnel engaged, their role in the study, qualifications, fee/rate structure and hours worked.
 - Transport, accommodation and other personnel costs.
 - Cost of materials and equipment explaining how these were used in the study.
 - Cost of laboratory analyses.

Reinstatement measures

- 7.37** Justification for reinstatement measures undertaken or to be undertaken:
- Evidence of significant environmental impairment.
 - Estimated rate of natural recovery of affected resources and data to support that estimate.
 - Description of reinstatement measures, quantification (area or number), date and duration of implementation or of proposed implementation.
 - Evidence or other rationale that reinstatement measures are likely to bring, or have brought

- about, recovery more quickly than would have occurred naturally, without intervention.
- Evidence that the measures undertaken or to be undertaken, are in proportion to the damage.
 - Evidence that the measures have not and will not degrade other resources, either economic or ecological.
 - Details (including duration) of programmes to monitor the efficacy of the measures taken.

- 7.38** Detailed breakdown of costs incurred or to be incurred:
- Numbers of personnel engaged, their role in the reinstatement project, qualifications, fee/rate structure and hours worked.
 - Transport, accommodation and other personnel costs.
 - Cost of materials and equipment explaining how these were, or will be, used in the project.
 - For projects to be undertaken at some future date evidence of commitment to undertake the project and costs to be incurred, ideally agreed under contract, including costs of monitoring performance of reinstatement measures.

8. How are claims assessed and paid?

- 8.1** Claims for environmental damage are assessed against three broad questions:
- (i) Were the actions taken reasonable as judged by the criteria set out in section 4?
 - (ii) Were the costs of those measures reasonable and proportionate to the benefits derived or expected to be derived?
 - (iii) Is the method of calculation of the claimed expenses correct and has that calculation been properly computed?
- 8.2** The 1992 Fund assesses claims on a case-by-case basis taking into account the particular circumstances of the incident, the technical and scientific support for the measures taken and the application of the principles of NEBA.
- 8.3** In the case of claims for post-incident studies and reinstatement measures, claimants following the guidance set out in this document and the Claims Manual would be working in close liaison with experts appointed jointly by the shipowner's insurer and the 1992 Fund in the design, planning and implementation of both post-incident studies and any resulting reinstatement measures. Consultation both on technical aspects and costs would allow the Fund to monitor activities and comment on admissibility as the project progressed. However, it is important to emphasise that the involvement of the Fund and its experts in post-incident studies does not mean that any reinstatement measures proposed or undertaken will necessarily qualify for compensation. Conversely, should studies indicate that no significant environmental damage has occurred and that reinstatement measures are not justified does not in itself mean that compensation for the costs of the studies would be excluded.
- 8.4** The way claims are presented is often unique to the particular circumstances of the incident and the measures taken to meet the situation

- that it presents. In addition, administrations have different ways of deriving and recording costs leading to differing approaches to claims' formulation. As a consequence, after an initial review of the claim documents, it is normal for further queries to arise and further explanations to be required in order to allow the 1992 Fund and its experts to complete a detailed assessment. The process is usually one of iteration with a series of exchanges between the shipowner's insurer/1992 Fund and claimants, until it becomes clear how the claimed costs were derived and what these expenses represent. In most cases, on the basis of such a dialogue, an amicable agreement can be reached on the amount of compensation to be paid.
- 8.5** If further information is requested but the shipowner's insurer/1992 Fund consider that in the meantime you are at risk of suffering financial hardship, a provisional assessment may be made on the basis of the information that is available. You would be advised that the assessment can be revisited if further information to support your claim can be provided. Any payment made on a provisional basis would be less than that paid following a full assessment to ensure there was no overpayment. The amount of any provisional payments would be deducted from the final payment once the claim has been fully assessed.
- 8.6** Once your claim has been assessed by the shipowner's insurer/1992 Fund, you will be told how much compensation they think is fair, based on the evidence available from all relevant sources. This assessment will be in writing and it will be given to you, as the claimant, or to your representative, if you have nominated someone to act on your behalf.
- 8.7** Usually an offer is made as a 'full and final' settlement. This means that no further claims for costs incurred during the period of the current claim will be considered, and you will be asked to sign an agreement to this effect. Although you can make further claims for >



losses after this first period, in the particular case of an agreement reached on the costs of reinstatement measures to be undertaken at some future time you would not be able to make further claims.

- 88
- Please be aware that the shipowner’s insurer/ 1992 Fund may have to deal with hundreds or perhaps thousands of compensation claims. Your claim will be assessed as quickly as possible but it may take some time for the Fund to gather and cross-check relevant information necessary to assess the claim, particularly if little information has been submitted in support of your claim.
- 89
- If you do not agree with the amount of money that you have been offered then you should contact the shipowner’s insurer/1992 Fund (directly or through the local claims handling office, if there is one) and explain why you think that the offer is not sufficient. If you have new evidence to support your claim, you should submit that as well. The shipowner’s insurer/

1992 Fund may decide to review your claim and make a second offer in the light of new information, or it may decide that the original offer was fair. The 1992 Fund may contact you and arrange to discuss the matter in more detail. Whatever the outcome the reasons for the decision will be disclosed in writing.

- 8.10
- If you still do not agree with the amount offered, then you have the right to take legal action through the courts in your country. It could be an action against the shipowner, the insurer and the 1992 Fund, disputing the assessment of the amount of your losses. If you have not reached a settlement with the 1992 Fund before three years from the date of the damage have elapsed, the 1992 Fund would strongly recommend that you file an action in court against it. At this stage you would probably need to take legal advice. If you take no action within three years you run the risk of your claim becoming time-barred and you would lose your right to receive compensation.



9. Contacting the IOPC Funds

- 9.1
- If a local claims handling office is established following a large spill, the contact details for that office will be published in the local media and at www.iopcfunds.org.
- 92
- The contact details of the Secretariat of the 1992 Fund are as follows:
- International Oil Pollution Compensation Funds**
- 4 Albert Embankment
London SE1 7SR
United Kingdom
- Telephone:** +44 (0)20 7592 7100
- Fax:** +44 (0)20 7592 7111
- E-mail:** info@iopcfunds.org
- Website:** www.iopcfunds.org
- 93
- Should you need to contact the local claims handling office or the 1992 Fund Secretariat regarding your claim, you will be asked to quote the claim number or provide additional information to confirm your identity.
- 94
- Copies of the 1992 Fund Claims Manual and other useful documents can be found on the IOPC Funds' website at www.iopcfunds.org.

Further Reading:

IMO/UNEP Guidance Manual on Assessment and Restoration of Environmental Damage following Marine Oil Spills, IMO, 2009.



ANNEX

Habitat	Potential reinstatement measures	Comments on admissibility under the 1992 Conventions
Sand beaches	Reprofiling beach, sand replenishment	Costs of grading beaches to return the original profile particularly following surf-washing operations fall under preventive measures. Sand replenishment is rarely likely to be considered a reasonable option as long as natural processes are likely to replenish sand removed in clean-up operations. A possible exception might be considered to provide a usable recreational beach immediately following clean-up operations undertaken at the height of the tourist season, however, this would normally be considered as a preventive measure to minimise economic loss in the tourism sector.
Sand dunes	Replanting of dune plants	Replanting of dune grasses and other plants damaged for example, by traffic engaged in beach cleaning, may be acceptable together with measures to reduce disturbance by restricting access to the dunes.
Rocky shorelines	Recolonisation or replanting to restore local populations	Communities of plants and animals living on exposed rocky shorelines are routinely exposed to harsh environmental conditions and have a good capacity for rapid recovery. It is unlikely that claims for reinstatement measures would be admissible in the light of the anticipated rapid recovery of these habitats.
Mangroves and salt marshes	Recolonisation and replanting programmes to restore and enhance habitat	Planting out of seedlings is well-established reinstatement technique for both mangroves and salt marshes to enhance levels of natural propagation. However, replanting projects should be designed to reflect the locally occurring species diversity.
Sea grass communities	Habitat reinstatement through replanting and reseeding programmes to restore and enhance local communities	Replanting and reseeding sea grass beds have met with limited success for small-scale projects but are costly and may fail to satisfy the criterion of proportionality. Measures to limit disturbance while beds undergo natural recovery are more likely to be acceptable.
Coral reefs	Habitat reconstruction and recolonisation	Coral reefs are rarely at risk of damage by oil since they are usually submerged. However, corals and associated reef organisms can be particularly sensitive to dispersed oil. Measures to limit disturbance during recovery may be acceptable. Physical damage caused by ship groundings is outside the scope of the international liability and compensation Conventions.

Populations	Potential reinstatement measures	Comments on admissibility under the 1992 Conventions
Marine mammals	• Capture, clean, rehabilitate and release • Captive breeding and release	• Rehabilitation and release of oiled animals is considered to be a preventive measure and is discussed in the Clean up Guidelines. • Breeding programmes are unlikely to be considered a feasible reinstatement measure but restricting hunting and other disruptive human activities may be acceptable.
Marine reptiles	• Capture, clean, rehabilitate and release • Collection and relocation of turtle eggs • Predator control	• Rehabilitation and release of oiled animals is considered to be a preventive measure and is discussed in the Clean up Guidelines. • Collection, relocation or controlled hatching of turtle eggs and release of juveniles is a costly process and may fail the test of proportionality. • Predator control is more likely to provide an acceptable technique.
Birds	• Capture, clean, rehabilitate and release • Predator control	• Rehabilitation and release of oiled animals is considered to be a preventive measure and is discussed in the Clean up Guidelines. • Captive breeding of birds from an affected population is unlikely to be either feasible or proportional. Predator control and minimising disturbances to shore breeding birds is more likely to be an acceptable reinstatement technique.
Fish and shellfish	• Restocking fishery	• Populations of wild, pelagic fish are rarely at risk of damage by oil but intertidal shellfish are more likely to be exposed to oil. Reseeding shellfish populations is a recognised and viable approach for depleted stock enhancement, and under certain circumstances may be accepted as an admissible reinstatement measure, for example, in artisanal subsistence fisheries and those of indigenous communities.





International Oil Pollution Compensation Funds

4 Albert Embankment
London SE1 7SR
United Kingdom

Telephone: **+44 (0)20 7592 7100**

Fax: **+44 (0)20 7592 7111**

E-mail: **info@iopcfunds.org**

Website: **www.iopcfunds.org**