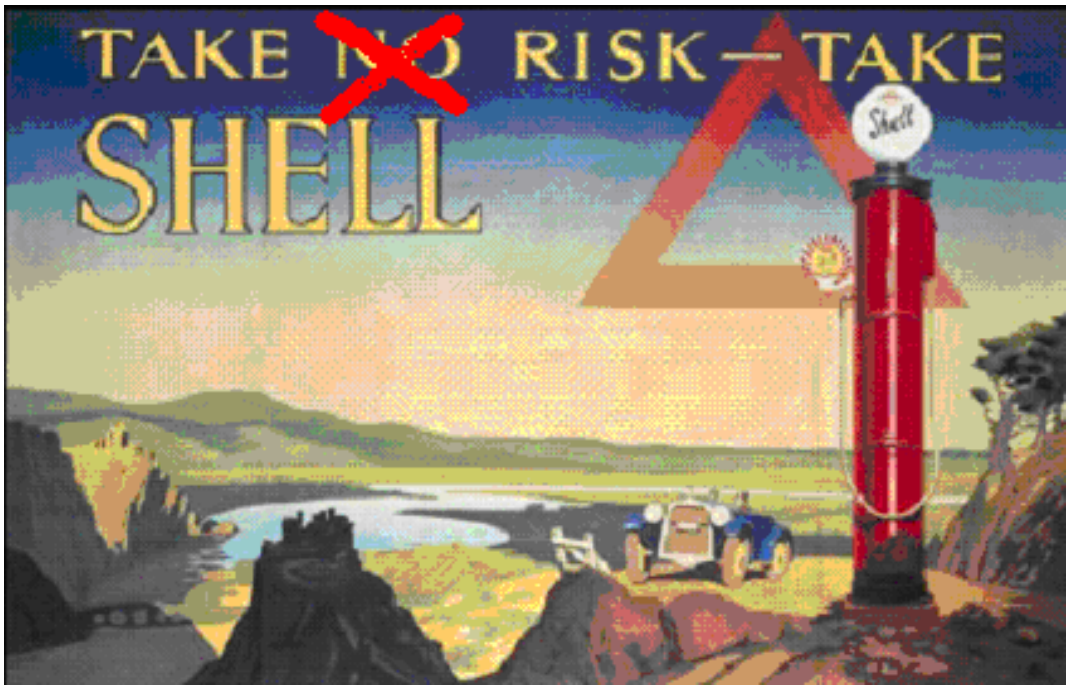
Risky Business – the new Shell



Shell's failure to apply its Environmental Impact Assessment Guidelines to Sakhalin II

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WWF-UK

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EXECUTIVE SUMMARY

The importance of **Environmental Impact Assessment (EIA)** is recognised by communities, companies, banks and governments. An effective process can deliver environmental, social and financial benefits.

PROCESS: This report has compared the EIA process undertaken by Shell on the Sakhalin II project with Shell's own group manual on EIA. The application of Shell's own EIA procedures has been found to be seriously lacking, with examples and evidence provided from a range of sources. This issue of **sequencing** is key if maximum environmental protection is to result, otherwise opportunities to change designs are lost. In this case, Shell has made decisions first, and then sought to justify them through the EIA process.

THE BIGGER PICTURE: Despite an indication that a **Strategic Environmental Assessment** was required, the lack of strategic planning on Sakhalin is resulting in damaging infrastructure development. Shell did not take into account social and environmental interactions, which is impacting on fisheries, the heart of Sakhalin's economy. Damage has already emerged, with much smaller catches in Aniva Bay in 2005.

SCOPING: Shell has been in denial of the breadth and depth of scope of EIA required for Sakhalin II, despite stakeholder input. The **baseline data** underpinning the Sakhalin EIA is not fit for purpose. This is evident in terms of poor data on trans-boundary species, obvious limitations in understanding of the Western Gray Whale, and the failure to recognise **indigenous communities**. Shell has failed to incorporate environmental information into decision-making and conduct a valid, early assessment of **alternative** project designs. In particular it is clear that environmental aspects were not considered in choosing the platform location, and no alternative options have been offered.

DIALOGUE: Shell has had ample chances to alter the project, but has chosen its construction timetable over environmental protection. Shell has handled **consultation** so badly to date, it has already seriously damaged relations and trust with key stakeholders. This has manifested in concerned groups taking out adverts in international newspapers to convey their dissatisfaction at Shell's actions. Shell's continuing attempts to supplement the EIA constitute a paper compliance exercise which cannot involve meaningful consultation. There is so little left to consult on at this stage, any process claiming to be consulting on the whole project would be considered flawed.

IMPACT ASSESSMENT: Shell is ignoring the fact that many of its impacts should be classified as of **major significance**. Even where the EIA indicates issues, Shell has only sought to reduce the emphasis placed on them, rather than address the problem. **Worst case** scenarios have not been considered in the analysis, skewing the picture to the positive. It appears Shell considers that significant impacts on a **critical habitat** of an endangered species are acceptable, ignoring the views of a panel of world experts and other stakeholders. Investigation of the implications of this flawed EIA shows that it is already contributing to negative impacts on the environment and local people. This has already resulted in Gray Whales being exposed to unnecessary risks and unknown impacts, whilst salmon spawning areas have already been destroyed.

Shell has not used rigorous **quantitative** assessments and modelling to predict the expected impacts and the effectiveness of its proposed mitigation measures. This is evident in terms of the noise the whales were exposed to during construction in Summer 2005. Shell exceeded the levels required by the eminent, independent panel of experts, on a repeated basis.

BIODIVERSITY: The company's recognised biodiversity implementation gap is at its widest in Sakhalin, with no indication key issues were included in the early decision-making processes. Shell is putting its own credibility and **reputation** at risk, as will any institution associated with the project. Shell is heading for having the **extinction** of a species of whale on its record. Shell has not taken a sufficiently **precautionary** approach to guarantee it will not impact upon endangered species. International cetacean experts have stated clearly that more could have been done to reduce risks to the whales. Shell's actions are contradictory to local **regulations** and International biodiversity commitments.

MITIGATION: Shell is not giving sufficient significance to the importance of the biodiversity in Sakhalin, with the focus on process rather than conservation outcomes. The overreliance on mitigation rather than prevention has caused Shell to come unstuck. Shell has not incorporated impact criteria into operational procedures to prevent significant impacts occurring. This is an example of the gap between clear statements of expected impact, and Shell delivering appropriate mitigation measures. In some cases the mitigation is ineffective (e.g. observers who cannot operate in the conditions present), in others it is not implemented (e.g., contractors failing to apply erosion control measures), whilst in a few it is non-existent (e.g. no recognised technique to clean up oil spills in ice).

IMPLEMENTATION: In terms of specific issues, Shell refused to wait for the best scientific advice before installing the platform base. Also, Shell has not acknowledged the importance of many of the salmon streams for spawning, and as a result cannot develop appropriate crossing techniques and mitigation measures. Shell has been exposed as having an over-reliance on contractors, which has manifested itself in unacceptable practices on Sakhalin river crossings. Shell did not reduce the risk of collisions with its mitigation attempts during its construction this summer.

CONCLUSION: Shell's denial is already resulting in irreversible impacts on the biodiversity and natural resources of Sakhalin Island. This is having a negative effect on the standards practised in Russia, given that local companies are applying better standards on projects elsewhere in Russia. It also does not bode well for Shell aspirations in other similar locations in the Arctic. Shell has shown interest in the Barents, Berings and Beaufort Sea, all WWF priority Ecoregions. The same issues of whales, ice, fisheries and local communities will face Shell in these locations, but on this evidence they are not equipped to deal with it.

Shell has set its own standards on EIA, which are aligned with World Bank requirements. It is clear the company has not applied this process satisfactorily, to meet any international standard. If financial institutions claiming to have meaningful standards get involved in the project at this late stage it will make a mockery of their standards too. **The European Bank for Reconstruction and Development has a responsibility to tell Shell the Sakhalin II project does not meet its policies; this is the only way Shell will get the message it has to change.**

INTRODUCTION

The importance of proper Environmental Impact Assessments (EIA) has long been recognised, for preventing unnecessary and undesirable impacts on the environment. This has developed into an acceptance that a healthy environment is also a basic right, as well as important for subsistence and economic activity based on natural resources. It has also become clear that a valid EIA process can improve the implementation of a project, in terms of reducing extra costs and delays.

This report investigates the ability of Shell, as a multinational hydrocarbon asset developer, to apply its own global standards on EIA to the largest oil and gas infrastructure project currently being undertaken anywhere in the world. In particular we consider how a failure to apply the process, and translate it into appropriate measures, results in impacts on environment and society. Many of these impacts are irreversible or impossible to rectify at this stage.

As a flagship project for the company, this analysis appears a reasonable test of the group policies and procedures. Indeed Sakhalin II is listed as an example on the EIA page of the shell.com corporate website. The significance should not be underestimated. In terms of Shell's future operations, the company has showed significant interest in the Arctic region, (Barents, Beaufort and Berings Seas). Here the company would face similar challenges to the Sakhalin project, in term of ice conditions, marine mammals, indigenous peoples and important fisheries.

The project also raises questions over the role of consultants in conducting EIAs in an independent manner. ERM were contracted to produce the Sakhalin II Phase II EIA. The content of the EIA is critical in guiding the selection of locations and techniques, as well as indicating the significance of environmental issues. The extent to which EIAs are still delivering on the original objectives of the concept is therefore also a pertinent debate.

Sakhalin II also represents a key test for the latest generation of investment principles and policies of both public and private banks. For public institutions Sakhalin II presents a test of whether environmental policies result in meaningful standards, which raise the bar for operators, or whether they are merely weak statements that can be ignored due to political processes. For commercial banks, it is the first true test of the Equator Principles, which have the potential to deliver a new benchmark in environmental and social requirements for project finance.[i]

The analysis is based on information available in the public domain, either provided by the company or by stakeholders. WWF has been following the project for a number of years both in Russia and within its wider network. WWF works with a number of other NGOs, such as Pacific Environment, CEE Bankwatch, Friends of the Earth, Greenpeace and IFAW. Sakhalin Environment Watch, an NGO based on Sakhalin Island has been highly active for many years and has provided critical information and material for this report.

Shell's policies and procedures pertaining to EIA are displayed in red text with a yellow border to distinguish the corporate material. The report demonstrates that many of the shortcomings of Shell's EIA and resulting impacts have already been observed by potential lenders, independent experts and NGOs, as well as being confirmed by company information.

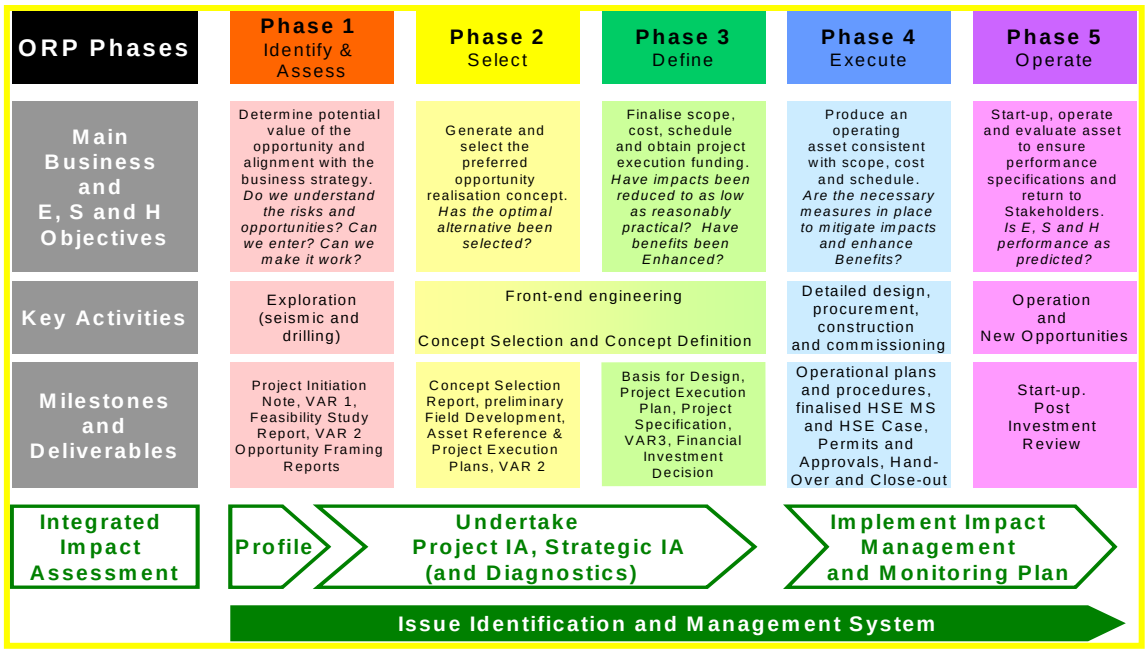
BACKGROUND

The Sakhalin II Phase 2 offshore oil and gas project is a proposed US$ 20 billion project on Russia's Pacific Coast. The project is being led by Shell, as the major shareholder (55%) and operator of the Sakhalin Energy Investment Company, (SEIC); (the other shareholders are Mitsui and Mitsubishi). It proposes the construction of a new oil and gas platform, offshore oil & gas pipelines, onshore pipelines carrying oil & gas the 800 km length of the island, and the construction of a liquid natural gas (LNG) production plant and oil & LNG terminal at the south end of the island.

Sakhalin II was split into two phases. Phase I of the project has already been completed, and consisted of a single offshore platform, which operates during the ice-free half of the year, exporting oil via tanker. The European Bank for Reconstruction and Development (EBRD) agreed a US$ 116 million loan for Sakhalin II Phase 1 in 1997. Both Shell and EBRD have been involved with the Sakhalin II project for over a decade. A diagram of the project is below:

PROCESS

Shell outlines the following Opportunity Realisation Process and indicates how an EIA should fit into that.



Specifically:

During the **'Define'** phase, full EIA will be completed for the selected concept, possibly as a single EIA for the full field development or a series of project EIAs under an integrated 'umbrella'

This indicates that the EIA should be completed to inform the investment decision, rather than during the execute phase, when construction has started. Furthermore it states that impacts should be reduced as low as reasonably practicable during the define phase.

Shell note that their operations will often be subject to regulatory requirements on EIA, and also that financing institutions also have clear requirements on EIA process and content. Whilst there can be some variation between EIA processes, Shell's guidelines follow the typical approach. Indeed, Shell's EIA approach is stated to be compatible with the guidelines issued by the World Bank, which are largely harmonised with those of other financial organisations, such as EBRD and Equator Principles Signatories. This is sensible as in theory it should prevent the need for multiple processes to meet different requirements. However in practice this will only work if Shell manages to implement its own guidelines effectively. The ongoing rejection of the original EIA by EBRD confirms that Shell has not delivered on its own EIA standard in this case.

COMMITMENT

Shell has made clear commitments to carrying out an EIA in the manner describer in its documents. The company identifies how this is woven through its General Business Principles, Group Environmental Management Systems, and Group Biodiversity Standard. Responsibility for ensuring these Group policies are implemented lies at board level in the Sustainability Committee, which consists of six non-executive directors.[ii]

Shell Policies Related to EIA

The requirement for EIA is implicitly affirmed in the Shell Statement of General Business Principles.

- Principle 2: Shell recognises its responsibility "*to conduct business as responsible, corporate members of society*."
- Principle 3: "*Criteria for investment decisions are not exclusively economic in nature but also take into account social and environmental considerations*."
- Principle 6: "*Consistent with their commitment to contribute to sustainable development, Shell companies have a systematic approach to health, safety and environmental management in order to achieve continuous performance improvement*."

In addition, the mandatory Group Procedure for an HSE Management System (HSE-MS) issued in March 1997 makes reference to Environmental Assessment (EA) in two related contexts:

- 'Environmental (impact) Assessment (including a consideration of social impacts) shall be conducted prior to all *new* activities and facility developments, or *significant modifications* of existing ones'.

The Group Procedure also requires consideration of environmental risks as part of the process of identifying HSE critical operations and installations. These critical activities are subject to the Hazard and Effects Management Process (HEMP) leading to a documented demonstration that risks have been reduced to a level that is as low as is reasonably practicable (ALARP).

Furthermore, Shell has made an explicit commitment to address biodiversity in impact assessments in the **Group Biodiversity Standard** (established in May 2001), which states:
In the Group, we recognise the importance of biodiversity. We are committed to:

- *work with others to maintain ecosystems;*
- *respect the basic concept of protected areas;*
- *seek partnerships to enable the Group to make a positive contribution towards the conservation of global biodiversity.*

Shell's commitment to contributing to sustainable development requires a systematic process for analysing the environmental, social and human health consequences of its activities. EIA is a tool to help deliver this contribution. Biodiversity is a key component of sustainable development. The impact assessment process provides an early and opportune moment to consider biodiversity in the context of Shell activities. It also provides for the early identification of biodiversity risks and benefits, which enables management to build mitigation into project design.

From the above position statements and policies there is no doubt of Shell's intention to conduct EIAs. However the company is falling short in terms of the timing of this activity. Despite stating that "Environmental (impact) Assessment (including a consideration of social impacts) shall be conducted prior to all *new* activities and facility developments", many critical areas of the Sakhalin II project design are still being assessed half-way through construction. This makes it impossible to "build mitigation into project design" as is the aspiration of the above statement.

Shell held a workshop in March 2005 which reviewed 5 years of its Biodiversity standard.[iii] The conclusions in terms of implementation were:

- There is a **gap between the policy and practices** at many of our operations around the world, and as a priority, resources and senior level support need to be committed to closing this gap and ensuring a level of consistency across the Group.
- An important element of "**closing the implementation gap**" will be to link biodiversity into the early decision making processes of project development, improving communication of our commitments within the Group, communicating better what we are doing with the outside world and assigning resources where needed.

The biodiversity implementation gap is at its widest in Sakhalin, with no indication key issues were included in the early decision-making processes.

SEQUENCING

Timing of carrying out the EIA process is critical. Following statements that the EIA for Sakhalin II is "not fit for purpose"[iv] by the European Bank for Reconstruction and Development, Shell has been attempting to rectify this situation by producing an EIA Addendum. In some aspects therefore they are seeking to gain retrospective approval. This practice of having to improve an EIA to try and meet finance standards is not exclusive to Sakhalin II. There is a growing problem of companies trying to comply on paper once a project is half-built, rather that going through a legitimate, inclusive process of assessment prior to the project starting.

To their credit some of the financial institutions have realised the shortcomings of this sequence of events and are starting to include on the ground assessments of initial construction activities in their reviews of EIAs. This can give a good idea of the level of implementation of plans outlined in the EIA. However, the further advanced construction is, the less influence the potential sponsor can have on the project outcome. The potential lenders to Sakhalin II have struggled to hold Shell to basic requirements, let alone manage to enhance the project to meet their standards.

The shortcomings of Shell's original process also demonstrate the importance of both public and private financial institutions conducting their own assessments of the social and environmental aspects of a project. As the commercial banks that are signatories of the Equator Principles progress their standards even further, the imperative for comprehensive due diligence on social and environmental issues becomes even stronger. The spotlight on Sakhalin II as a test for the principles means great scrutiny will be placed on the efforts of any commercial bank interested in the project. Credit Suisse First Boston has already been subject to protests due to its role as financial advisor.[v]

It is recognised that some minor aspects may be changed as development continues to respond in an iterative manner. But once construction has started, it is rare for projects to be changed significantly. Shell acknowledges that early decision-making on location choices is critical, especially for biodiversity. In particular they note the potential for irreversible impacts, such as the extinction of the Western Gray Whale:

> Biodiversity is distinct from other environmental aspects (e.g. emissions to atmosphere, effluent discharges etc) because it can be irreversibly impacted. Decisions made very early in the project when little is known about the biodiversity are critical. For example, it is very difficult (and often costly) to reverse early decisions on routing of pipelines and siting of facilities. But early design decisions with a pollutant emission for example, can be reversed through choice of control technologies as the project develops. Furthermore, the simple act of stating the intent to locate a Shell EP project in an area of high biodiversity value can raise significant reputation issues.

Shell made a last minute decision to re-route the offshore pipeline from the platform to the shore at Piltun in March 2005. WWF welcomed this decision, which was made right at the limit of when it was possible to change the routing. The process that led to this decision involved significant pressure from both NGOs and potential lenders, resulting in the establishment of the Independent Scientific Review Panel, (ISRP)[vi]. The findings of the ISRP exposed many

shortcomings in the original assessment of the Sakhalin II project; the pipeline routing was the only fundamental aspect of the project design that Shell was willing to change at that point. It is believed this rerouting cost around $300 million.[vii] If Shell had conducted a proper assessment at an earlier stage it could have avoided this extra cost.

Shell also had to change some of the onshore pipeline route. However the fact that it had charged ahead with clearing the right of way, has left a swathe of forest felled for no reason in the Dolinsky region, (see picture of split tracks of cleared forest below). As the EIA for this route change has not been released, Shell's plans for restoring this corridor are not known.

Shell also note the potential reputational issues associated with locating a Shell EP project in an area of high biodiversity value. It is still a mystery why Shell decided to take on such high reputational risks. Perhaps an initial assessment indicated that the remoteness of the island would preclude any significant attention to the project. Or perhaps the broader troubles at Shell relating to reserves reclassification, and restructuring distracted the company from what should have been a pressing issue.

So far Shell is heading for something much worse than the 'Brent Spar' in terms of environmental impact, with the potential to make a whale population extinct and destroy fishing resources on an island the size of England. For all the rhetoric on global standards, it is unthinkable that Shell would inflict these standards on the UK.

As Shell continues to engage in biodiversity issues on a global scale, their credibility is being undermined by their approach to the Western Gray Whales on Sakhalin Island. If the ultimate conclusion is that the population disappears, it would destroy Shell's reputation, and make a mockery of their Biodiversity standard.

Making decisions first and seeking to justify them through a flawed EIA is not acceptable.

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

Shell acknowledges the importance of conducting SEAs for large developments. There is no doubt that the huge potential oil and gas activity around Sakhalin Island warrants a strategic approach. Shell's Sakhalin II project alone warrants a strategic approach; its size is equivalent to building a pipeline from Newcastle to Land's End, with major elements at either end.

Strategic Environment Impact Assessment is normally applied by the public sector (governments, regional administration) to assess the implications of policies, plans and programmes. It may be applied at national and regional levels. However, Strategic EIAs could also be applied to private sector policies, plans and programmes. Indeed private sector companies are sometimes requested by regulators to undertake Strategic Impact Assessments, in addition to the more typical project-level EIAs.

The need for Strategic EIAs may only arise in a limited number of Shell EP's world-wide business opportunities, and it is not proposed to address Strategic EIAs further in this Guide. However, Shell EP's integrated approach to Impact Assessment will ensure that the Group is well equipped to participate if the need arises.

Shell cannot be held solely responsible for not delivering an SEA for Sakhalin, as they are only one of the operators on the island, and co-operation from the Russian authorities and support from other parties would be needed. The EBRD identified the need to conduct an SEA for Sakhalin Island in its Natural Resources policy of 1999,[viii] (see below), and Shell's policy indicates that it would participate. Given Shell's desire to gain funding from the EBRD, it would appear prudent that they ensured this was delivered in order for the EBRD to be able to participate. Shell has also been known to conduct their own strategic assessments, and are currently scoping such an exercise for the Arctic.

	Impacts	**Mitigation**
Operational Objectives	Multiple or cumulative impacts are unknown and not possible to undertake in individual project environmental impact assessments	Undertake a Strategic Environmental Assessment (SEA) in areas of potential cumulative impacts of oil developments, such as Sakhalin Island, the Caspian Sea area, and for oil and gas transportation pipelines and associated oil terminals in areas such as the Trans Caucasus, the Black Sea and the Baltics.

WWF has outlined the argument for conducting SEAs for large extractives projects, and the role of International Financial Institutions in a separate report 'Where are all the SEAs'.[ix] Nowhere is it more evident than Sakhalin that all the parties involved need to commit to these processes. The operators on Sakhalin are currently developing infrastructure independent of each other. Whilst Shell decided to run their pipes north-south, crossing all the rivers that run east-west, Exxon is planning to route its pipeline (Sakhalin I) from the neighbouring field, across the island east-west. The inability to share infrastructure increases costs and environmental damage.

The lack of strategic planning on Sakhalin is resulting in unnecessary damaging infrastructure development.

INTEGRATION OF SOCIAL AND ENVIRONMENT

Shell are aware of the need for an integrated approach to assessing social and environmental impacts, and note specifically the potential for emissions to the marine environment to have an impacts on fish resources, whether they are required for subsistence or economic activity.

- an EIA assesses the primary effects to water quality of an effluent discharge to the marine environment. As a secondary effect there are biological impacts to fish and the tertiary impact is an adverse economic impact to fisheries

- and/or a health impact to subsistence communities whose nutrition relies on fishing for the affected resource. With an integrated impact assessment, covering health, social and environment, it is important that these interactions are identified during scoping. Subsequently, surveys of natural resources can then also be linked to determining their social and economic values. Studies should therefore assess how natural resources are used, by whom and when. Sometimes natural resources user-groups can assist in baseline data provision and monitoring.

Yet in Sakhalin, Shell has failed to accept the impact its activities will have on local fisheries. A third of the 553,000 islanders are employed in the fishing industry, with higher proportions in coastal towns. At present fisheries are a sustainable heart of Sakhalin's economy, which form a traditional part of people's culture and way of life.

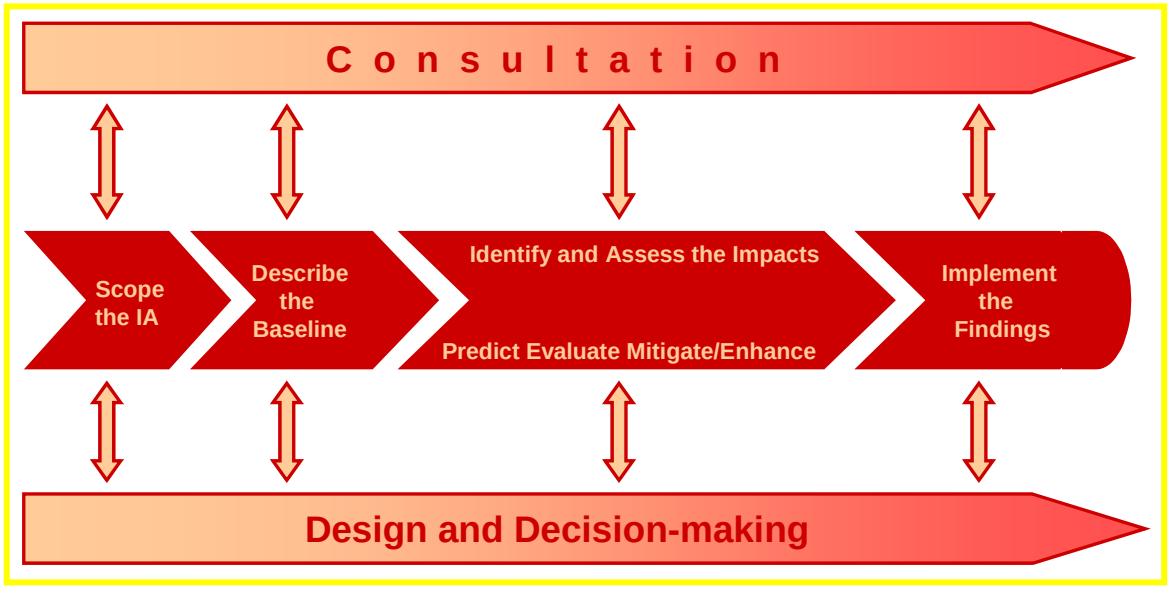
Firstly there are discrepancies in terms of the extent of the impact of dredging material on the southern coast which is essential for local fisheries. Shell predicted that material would not disperse from the dumping site, but would remain in a large pile on the seabed. However initial dumping by the company has already seen greater dispersal than expected. Shell has accelerated its dredging activities despite local concerns, and without informing stakeholders.

Secondly this has resulted in a local fishing company – Calypso – seeing their catch reduced and Japanese customers refusing to take fish from Aniva bay where Shell is constructing its Liquefied Natural Gas plant and loading terminal. This was previously the most productive net for the company, giving 1478.3 tonnes of fish each year. In 2005, it has yielded only 449.5 tonnes, down 70%. This has resulted in a complaint being made to the EBRD's Independent Recourse Mechanism (IRM). The complaint has been accepted as legitimate by the IRM.[x] Shell has now issued an interim agreement, acknowledging that there has been a negative impact.

Ignoring social and environmental interactions is decimating fisheries, the heart of Sakhalin's economy.

SCOPING

Shell outlines the following process for scoping the EIA. It describes an ongoing process of consultation to establish data needs, identify issues, and examine alternatives. On some projects there may be conflicting ideas of what stakeholders want. Yet in some ways Shell has been spoilt on Sakhalin II. A large coalition of over 50 Russian and International Non-Governmental Organisations (NGO) formed a coalition, which outlined common areas of concern.[xi] The groups have stuck by this statement, and have met the company as a group as well as individually to explain these issues. Furthermore, the company should already have had an indication of the major issues from its work on Sakhalin II Phase I. Shell note that the scoping phase should be used to identify alternative project designs/sites to be assessed.



Shell also emphasis the importance of the scoping phase:

> Scoping is one of the main foundations of an EIA. If scoping is carried out well, the EIA process has a good chance of proceeding smoothly and efficiently; carried out poorly, it is likely that important information will be missed, leading to unnecessary delays and costs.

Shell provides a list of questions which an EIA should answer to assess relevant biodiversity aspects of the project at the scoping stage. These questions should have been addressed by the EIA. Whilst most issues are present in some form, they are not always adequately addressed or flagged as major issues. Inexplicably the lack of answers did not trigger a more comprehensive investigation at an early stage. This exemplifies the danger that difficult issues are scoped out of an EIA, to smooth progress, rather than being highlighted for attention.

Shell has been in denial throughout producing the various EIA documents, of the breadth and depth of scope required for Sakhalin II, despite stakeholder input.

BASELINE DATA

Shell identifies the following as the important purposes of collecting baseline data:

- It provides an understanding of the characteristics of the people and environmental resources that may be affected by the project (for example, archaeological or cultural resources, sensitive habitats of nature conservation value, high-quality landscapes).
- It provides an understanding of the characteristics of environment aspects that could affect the project (for example, excessive rainfall and/or steep terrain can impose significant problems during construction).
- Certain impacts (air quality) can only be assessed with knowledge of the baseline (existing atmospheric pollutant concentrations and meteorological characteristics).
- It defines a baseline against which future (project or third party induced) changes can be monitored.
- It identifies any liabilities, if present, that may be inherited from past activities.
- Gaps in knowledge and areas for further study are identified.

Since Shell released its original EIA, there have been several major inaccuracies or omissions identified by stakeholders and potential lenders. The problems experienced by Shell during construction also indicate that they did have an accurate understanding of the environment when they started. Whilst most projects encounter some unexpected events during execution, the number and significance of the ongoing problems, which have not been addressed with construction continuing is resulting in significant unnecessary impacts. Some examples of areas that were significant omissions include:

Baseline date on species distribution – trans-national impacts

In terms of the most basic information levels, Shell's use of single sources of third party data, or of limited surveys during a single season have resulted in huge discrepancies. Japan is just 42km from Sakhalin Island. Japanese experts from the Preservation Bureau of Hokkaido Corporation highlighted the failure to address trans-boundary issues in the Sakhalin II EIA, and made the following comments:

- Steller sea lions – survey only conducted during summer season, not during winter breeding season or on migration patterns.
- The toxicity of crude oil to marine mammals has been underestimated
- The study by the Wildlife Prevention Bureau and Moscow State University found 15 braces of Steller's sea eagles had bred and inhabited around the Chaivo Gulf this year and it identified many other hatchlings and juveniles, whereas the EIA report indicates only 5 braces.

- There are endangered

species of bird identified in the Japan-Russia Migratory Birds Treaty, yet only cursory mentions are made of some of them. Previous studies have identified the area as a breeding area for the endangered Spotted Greenshank and endemic subspecies *Calidris alpina actites.* No survey of the significance of the development for these species has been made.

- If the Japanese Environmental Impact Assessment Law was used as the standard, the impacts on the Steller's Sea Eagle, being at the top of the food chain, a marker species in the ecosystem and representative of it, of course, would have to be assessed. However, since this EIA lacks an ecosystem-based perspective, no assessment of the overall impact of the project on the river basin, the chain effect of this on the lagoon, the chain effect of this on the fish which form part of the Steller's Sea Eagle's diet, and finally the end effect on the species itself. Moreover, if attention is turned the ecology of the Sakhalin coast and to its pinnipeds, such as seals, these species should, of course, also be listed due to their use of the area throughout the year and the fact that are comparable to the Steller's Sea Eagle in terms of position in the food chain and being distinctive and representative of the ecosystem as a whole. However, a comprehensive assessment of the impact on pinnipeds has not been done.
- The methodologies used to collect, analyse and interpret data do not provide a representative picture.
- **Conclusion: The EIA fails to adequately consider trans-national impacts**

Indigenous Peoples

Despite having signed the contract for Sakhalin II in 1994, and receiving communications from stakeholders flagging the issue in 1997, (see above), Shell failed to recognise the relevance of indigenous groups to their plans until 2005. Indigenous peoples made protests in January 2005 and again in July 2005. This related to specific actions, such as Shell constructing a storage facility on a sacred burial ground, as well as general objection to the lack of recognition. This indicates the poor understanding and relations Shell had with this minority group.

The Nivkh way of life is based on the local ecosystems, particularly reindeer and the salmon in the streams that cross the island. Finally Shell acknowledged they would have to produce an Indigenous Peoples Plan in the summer of 2005. However this appears to be purely an attempt to meet on paper the EBRD's requirement that projects comply with the IFC's safeguard policy on Indigenous Peoples. This is a fundamental omission from the original EIA, which questions Shell's commitment to respecting the rights of these peoples. Now the company is rushing to complete an assessment, when it should take time to fully appreciate the seasonal variation of the way of life of indigenous groups.

Hydrological processes

Shell has limited understanding of the offshore processes, such as ice scour, hydrodynamics and sediment flows. The initial miscalculation of the depth of ice scour contributed to a one year delay in laying the offshore pipeline,[xii] which was subsequently moved. (If this issue had not arisen, the pipeline may have been installed prior to the ISRP process.) Shell now has to bury its pipelines deeper in order to prevent ice blocks carving through buried oil and gas pipelines. Aside from the general gaps in knowledge regarding Western Gray Whales, the ISRP also observed that the following work needed to be conducted to provide a full background picture:

- "*investigation of the ocean dynamics (currents, tides, winds) in the vicinity of Sakhalin II, the Piltun and offshore feeding habitats and Piltun Lagoon - inter alia this will allow for better modelling of the dynamics of oil spills and improved response strategies;*
- *investigation of the ecology of Piltun Lagoon and the Piltun foraging area, and the links between them; inter alia this will provide a more secure basis for evaluating the likely risks to gray whales and their prey, and better inform decisions on siting pipelines and other activities*" (ISRP p7)

There were further gaps in terms of the validity and sources of information that Shell had used to base its assessment on. The ISRP (p94) concluded:
"Despite the considerable documentation provided by SEIC, important information gaps left considerable uncertainty over many aspects of risk evaluation and the efficacy of proposed mitigation measures. Those gaps pertained not only to important scientific information on the whales, their prey resources and their habitat, but also to the SEIC decision-making process"

The inadequacy of baseline data was also an area of concern flagged by a USAID review[xiii] "*Baseline data and subsequent impact analyses for rare and threatened aquatic and terrestrial species (including the western Pacific gray whale, listed as endangered under the U.S. Endangered Species Act)"*

When it started the project, Shell did not have a good enough knowledge-base for the decision-making that followed. It is likely that the poor quality of baseline data contributed to the problems Shell is currently experiencing. This has resulted in Shell having to make up the project as it goes along, and denies the opportunity to maximise sensitive design. In the words of Shell's EIA standard:

Following these activities, the EIA will have compiled a 'factual' account of baseline environmental conditions that is as focused, comprehensive and up to date as possible, while at the same time being fit for purpose in the context of the EIA task at hand.

For Sakhalin II, this was not the view of the EBRD, who stated that it has ruled that the environmental impact assessments are "**unfit for purpose**"[xiv] and has postponed any decision on the financing until Sakhalin Energy revises them.

The baseline data underpinning the Sakhalin EIA is not fit for purpose.

ALTERNATIVES

Shell make much of the possibilities offered by considering alternatives, yet this is a critical weakness in their approach to the Sakhalin II EIA. In particular, Shell note that considering alternatives should be part of building mitigation into design. This confirms the importance of the correct sequencing highlighted earlier. If key aspects of the EIA are not completed until after construction has begun, there is no opportunity to incorporate further mitigation elements.

Exploring Alternatives

Exploring alternatives is really a part of building mitigation into design (discussed in Section 3.6.4). However, the majority of EIA legislation and guidance requires a discrete treatment of 'alternatives' so it is briefly discussed separately in this section.

Providing an environmental input to choices between alternatives, alongside all other considerations (e.g. cost, technical feasibility, constructability, safety etc) is critical to the legitimacy of the EIA and the project. Typically this is undertaken:

- early in the design process when different sites, routes, major technology choices and means of product transport (e.g. FPSO vs. seabed pipeline) are being evaluated, coinciding with the 'assess' and 'select' phases;
- as design proceeds to a more detailed level in which different process or control technologies (e.g. biotreatment vs. chlorination vs. UV irradiation of wastewater) are being evaluated, coinciding with the 'define' phase.

Evaluating Alternatives - Biodiversity

During the Select Phase, the project will be evaluating alternatives. It is important that emerging knowledge on biodiversity feed into critical project decisions. For example, the biodiversity experts in the EIA team shall interact with engineers and others determining a pipeline corridor/facility location, to take account of areas of sensitivity, weather windows for construction and restoration issues. Evaluating alternatives also benefits enormously from consultation with stakeholders, who will provide local context and indicate which aspects of biodiversity are particularly important to them.

It is evident from the original design approved by Shell, that biodiversity experts were not sufficiently engaged with engineers and decision-makers. This can be seen in the poor planning of the timing and location of activities, in relation to the gray whales in particular. Shell also failed to discuss any alternatives with stakeholders as they were never willing to put any options on the table.

Shell released the Comparative Environmental Assessment as a further document in early 2005. This presented information on two alternative offshore pipeline routes, which could take the pipelines outside the boundary of the recognised gray whale feeding area. This document fed into the ISRP discussions, which resulted in Shell agreeing to move the offshore pipeline from the original route to the Alternative 1 option. This was a last minute concession, which was welcomed by WWF. However it does not resolve many of the fundamental issues related to operating in the vicinity of the feeding area. It is also a mystery why it took so long, and so much external input, for Shell to take the most obvious step of moving the pipeline outside of the actual feeding area. This change should not be mistaken for a panacea to all offshore problems. The fundamental issues of noise, oil spills, sediment and collisions still remain.

The rerouting decision in many ways highlights the shortcomings of the rest of the project. A similar process has not been undertaken for the other aspects of the project, such as the PA-B platform location, or the activities in Aniva Bay. Unfortunately, it appears to be too late for all the other aspects, as Shell has already raced ahead with installing the platform base, making river crossings, constructing the LNG plant, and dredging and dumping in Aniva Bay. There is therefore no significant potential for lenders to improve the project at this stage.

Shell also makes specific reference to the World Bank's Guidelines on Impact Assessment, which are included as an appendix. Shell's approach is also supposed to be consistent with the World Bank guidelines, which describe the content of an EIA, including:

"f) *Analysis of alternatives*. Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including, the "without project" situation—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement."

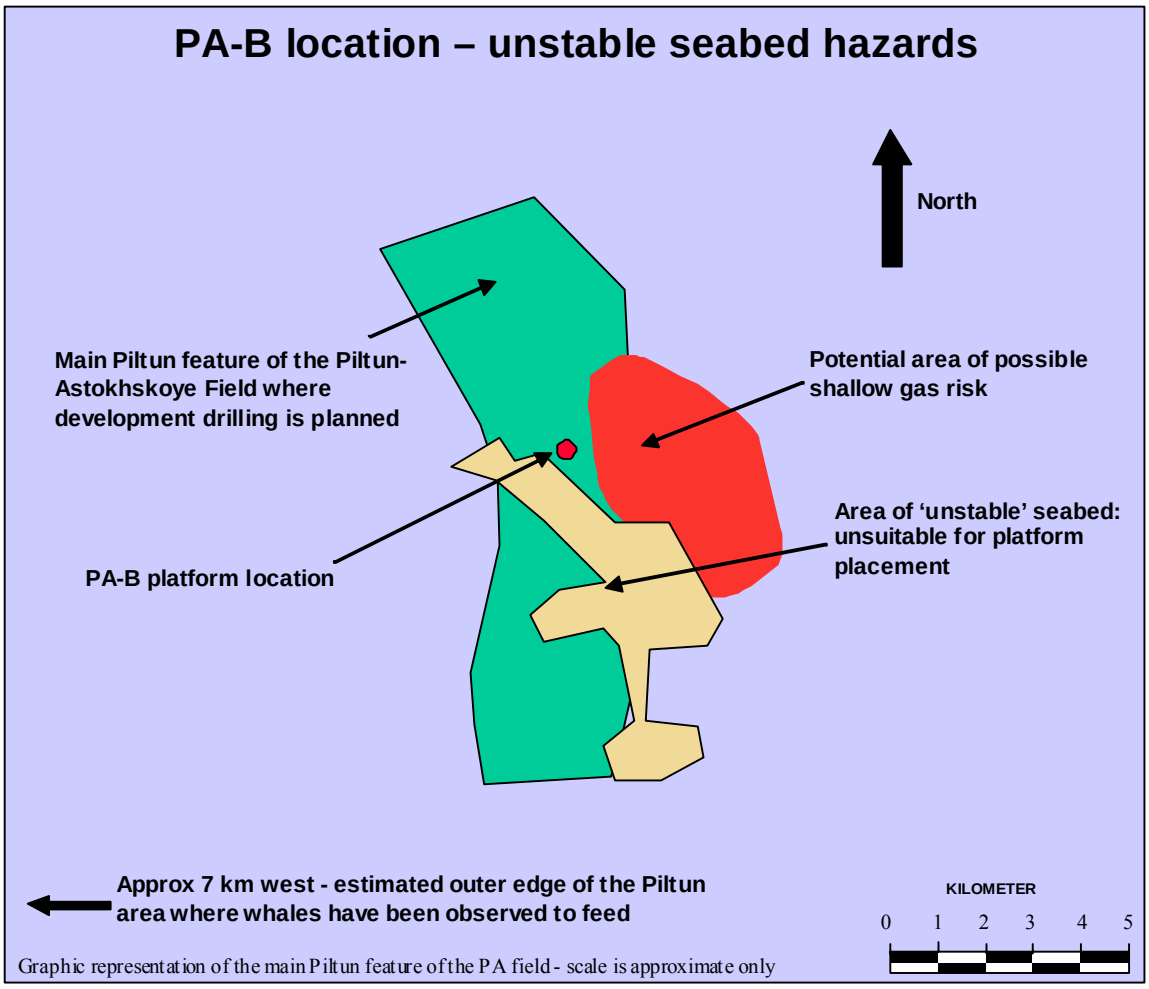
It is particularly interesting to note that the World Bank guidelines require the "without project" situation to be considered. Shell never included such an option in the scope of the EIA. The process was conducted on the basis that this was going ahead so that Shell could extract as much oil and gas as possible. Splitting the project into two phases also introduces a much larger project on the back of an earlier phase, without the overall impact being considered together. Shell has not indicated how it tackles this fundamental contradiction with the guidelines it purports to be aligned with. There has never been a serious conversation with the company discussing WHETHER Shell should be operating at all in this place, or any kind of review in light of the findings of the ISRP.

Shell's explanation of the PA-B platform location fails to meet these requirements, with it being clear that environmental factors were not taken into account. The basic fact that the decisions were taken before the production of information relating to potential impacts on the whales makes this clear. This is also the conclusion of both the ISRP and USAID.

USAID identified the following as an area of concern for compliance:
"Analysis of alternatives, which would include a side-by-side comparison of technical, social, environmental and economic risks and benefits for each alternative, including "no project" alternative, criteria used for assessment and discussion of analytical process for selecting the preferred alternative."

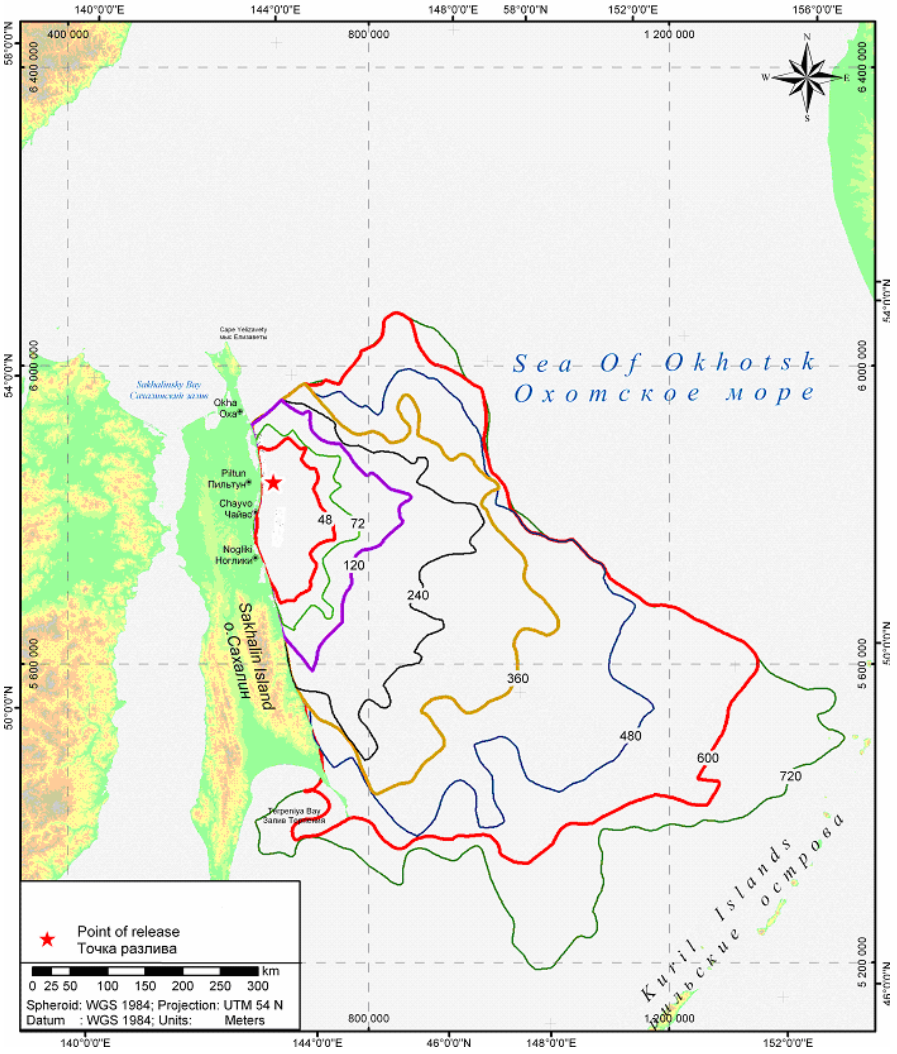
The whale experts concluded:
"*Although the SEIC documentation on prevention and mitigation measures is extensive, the Panel found that a lack of specificity made it difficult to evaluate. Similarly, it proved difficult to evaluate some of the decisions taken (such as the location of the PA-B platform) in this context. Clearly, from the perspective of gray whale conservation, any reasonable means to reduce platform-associated risks to the feeding grounds, including moving the platform farther away from them, should be taken*. (ISRP p6)

Shell's attempt to justify its selection of the PA-B platform location to the ISRP took the form of a briefing paper in spring 2005,[xv] which attempted to simplify the explanation. Aside from the poor quality of the diagrams used (below) which did not even include an accurate representation of where the whale feeding grounds are in relation to other aspects, there is no discussion in this document of how environmental issues were included in the decision-making process. Notably this attempt can in no way be considered a consideration of alternatives, including the no-project option, presenting environmental risks alongside other issues.



For example there is no indication of the potential oil spill envelopes from even the chosen platform location, and how they overlap with the feeding area. Again this is partly because Shell did not include these types of issues in the design, and partly because they had not even done the work to have the analysis available to inform the decision at the time it was made.

The following diagram shows excursion envelopes (Risk Zones) for Oil Spills from Piltun-A Platform (Molikpaq): Autumn (Volume: 96m3; Cause: Pipeline rupture):



Shell has never provided any oil spill excursion envelopes for the PA-B location, so the only information that can be offered is the summer assessment for a pipeline to the PA-A platform (see below). Shell is planning on using the PA-B platform all year round, so it would be reasonable to see potential oil spill envelopes for all types of conditions, particularly given the contrasting conditions of the ice-covered winter months.

WWF believes that any spill will be an unmitigated disaster. No oil company has been able to provide a comprehensive explanation of how they would clean up an oil spill under ice. Shell reinforced this by only being able to point to initial research at the Vancouver meeting. Shell has never responded to repeated requests that a comprehensive plan detailing how they would prevent an oil spill affecting the feeding area. Shell should not continue until they can do this.

Discussions on Arctic conditions and oil spills response are still at the research stage, as acknowledged by the Arctic Council of governments. In a recent document outlining Shell's strategy for the Barents Sea, one of the main limitations is as follows:

The main reasons for rather limited exploitation of the vast offshore carbonic resources of the Barents and Pechora regions are linked to the severe climate of the Arctic region. A large portion of the Barents Sea is covered with ice year round. Drilling operations in ice-covered parts of the sea have never been tried due to high operational costs and unpredictable environmental implications of oil spills. Particularly, activities in the zone of drifting ice may have long-lasting environmental effects. Presently, a lot of efforts are put into studying weathering conditions of oil in cold Arctic waters and selecting safe technologies for operations in Arctic conditions. A lot of information has been collected by joined efforts of the Russian and the Norwegian institutes, but gaps and uncertainties remain.

Given the uncertainty and risks to the environment this highlights, Shell's operations are of even more concern.

At the time of producing the PA-B briefing paper in 2005, Shell concluded:

Relocation would reduce total economic hydrocarbon recovery from the field and would result in substantially increased costs – running into hundreds of millions of dollars – and significant delays in bringing the field on-stream.

This indicates that Shell considered it was too late at this stage to incorporate environmental aspects into design retrospectively, on the basis that Shell placed economic aspects above any environmental risks. It is also interesting to place this view in the context of the announcement that followed soon after, where the costs of the project were doubled from USD 10 billion to USD 20 billion (not including any platform changes).[xvi]

The ISRP concluded:
"*it appears that the site was chosen prior to analysis of spill trajectories. If so, then risks to key areas such as the nearshore foraging habitat for gray whales were not understood and considered in the site selection process*". (ISRP p58). This brings the whole design of the project into question.

WWF can only concur with this conclusion, that the whole site selection process was flawed, and has never had any serious integration of environmental concerns from the beginning. Shell got into this project without an appreciation of the true implications for the Western Gray Whales and the people of Sakhalin Island. Now it is in the middle of its construction schedule, the company does not want to alter its plans, and can see no way out of the mess.

Shell has failed to incorporate environmental information into decision-making and conduct a valid, early assessment of alternative project designs.

CONSULTATION

Shell provides the following description of the role of consultation:

EIA provides a vehicle to involve stakeholders through consultation. Consultation (defined in EP 95-0374 as "soliciting people's views on proposed actions and engaging them in a dialogue") is an interactive, two-way flow of information, views and ideas between stakeholders and Shell. It encompasses information dissemination and participation.

Shell does indeed have a culture of dialogue, but it has not worked out how to translate this into action. The lack of response in terms of altering the project led to a breakdown of relations with Russian groups who formed the coalition. The NGO coalition gave Shell one last chance at an all day Moscow meeting in May 2005, but again left disappointed. WWF and other NGOs raised the Western Gray Whale issue 7 years ago in Russia, and it has been the subject of regular meetings with Shell Group staff at the global level. To exemplify this, WWF has met with Shell / Sakhalin Energy representatives in Sakhalin, Moscow, London and The Hague, at all of the following levels in the last 2 years alone:

- The Shell VPs of Environment and External Relations
- The Group Biodiversity Advisor
- The Chief Executive of Sakhalin Energy
- The Chairman of Sakhalin Energy and Head of Shell Russia
- The Global Head of Exploration and Production
- The Chief Executive of Shell

plus numerous other managers and public relations people in Shell / Sakhalin Energy.

WWF has now exhausted bi-lateral discussions with Shell on Sakhalin II, as the company fails to respond to the dialogue.

Shell already had many of the relevant stakeholders and issues identified to them from Phase I of the project, which was approved by the EBRD's board for funding in 1997. Correspondence from Pacific Environment[xvii] in 1997, for example, on phase I of the development includes details of the following areas of concern:

- Compliance with non-binding commitments to international standards, e.g. "the principles of US environmental legislation"
- Endangered Species, including the Gray whale
- Oil Pollution liability provisions
- Air and Water emissions
- Indigenous Peoples

Opinion on the island is also turning against Shell, as livelihoods and lifestyles are affected by Shell's construction. In a recent BBC programme on the project,[xviii] whilst the BBC presented a balanced view, the reporter struggled to find anyone to say anything positive about the project,

outside of the company. Local representatives, such as the Mayor of Korsakhov, have also spoken out about the poor deal local towns are getting from the deal.

It is interesting however that it is in the area of consultation that Shell has fallen down - to the extent of losing a court case on Sakhalin Island. Specifically, Sakhalin Energy has been found not to have complied with Russian EIA legislation to conduct public hearings on the impacts of its offloading jetty at the LNG plant under construction. It is worth noting that this is also the same site that is now subject to a complaint to the EBRD's IRM, because of reduced fish catches. The Decision of the Yuzhno-Sakhalinsk City Court on 17 January 2005 and the subsequent Appellate Decision of the Sakhalin Regional Court on 26 July 2005 both concluded that Sakhalin Energy should not have been granted approval of their plans for an offloading jetty.[xix]

The complexities of the Russian legal system and the mismatch in power and resources of the local NGO Sakhalin Environment Watch, compared to Shell, make this legal victory even more remarkable. At best, this demonstrates that Shell did not have a systematic process of due diligence to identify all local regulatory requirements in place. This court decision also asks a very important question of potential funders of the project. The EBRD and ECGD both state they will not support projects which break local law. Unless they are to ignore their own guidelines, these institutions should not therefore fund the project.

The state of relations with NGOs is evidenced by a number of groups seeing fit to place advertisements in the Financial Times in the Summer 2005, (e.g. see back cover). Shell's decision to carry on regardless with the installation of the platform base was the final straw. When communications reach this kind of public statement of dissatisfaction, relations have reached crisis point.

Shell has handled consultation so badly, it has completed destroyed all relations and trust with key stakeholders.

DISCLOSURE

Aside from committing to meeting World Bank standards on disclosure, Shell makes the following comment:

> The disclosure process is primarily about stakeholder engagement and transparency. The draft Report/Statement is circulated for stakeholder review and comment, and feedback is incorporated to the extent practicable into the final document (and management plans) on the basis that a final Report/Statement and conditions to approval attached by regulatory bodies are legally binding.

In order to have a meaningful consultation on an EIA, it is necessary to build in adequate time and opportunities for stakeholders to input, and for the company to incorporate these comments. Following the publication of the original EIA, Shell received numerous comments from stakeholders as discussed above. It is clear now that the funding process has taken over the EIA process. Potential lenders have asked for further work to be done, which has been referred to as an EIA Addendum. Essentially these are revisions of the EIA, however as the project has already proceeded, the opportunity to comment at a time when the project outcome can be altered has already been lost.

Public Financial Institutions have comment/disclosure/consultation periods built into their processes. At this point in the project, this would constitute a meaningless exercise, as there would be no opportunity to change the project in response to comments. Stakeholders would submit the same issues they have always raised, and the banks would not be able to improve the majority of aspects, which have already been started.

The elements of the EIA Addendum also remain confidential until the potential lender decides to put the project out for a disclosure/consultation period. The documentation is therefore primarily being produced with the aim of satisfying potential lenders on paper, rather than to form part of a transparent, informed process prior to decision-making. This can also lead to confusion over the company's intentions, with potential improvements not being made public, and also being contingent on getting the finance.

Even where Shell has made public statements of its intention to move the offshore pipeline for the Sakhalin II project, further information is not forthcoming. For example, despite repeated requests (written and verbal) to representatives of the company, the revised EIA for the new offshore pipeline route and landing point, has not been provided.

Shell's continuing attempts to supplement the EIA constitute a paper compliance exercise which cannot involve meaningful consultation.

IMPACT ASSESSMENT

Shell provides instructions for predicting and evaluating impacts, and identifies various further tools that can be used to assist in this process. The outcome of these efforts is critical in determining which impacts are considered significant

Predicting and Evaluating Impacts

When predicting and evaluating impacts on biodiversity resources, it is important to consider biodiversity at genetic, species and ecosystem level. There is also a social change component to consider and it is therefore important to predict and assess impact on biodiversity in terms of both conservation and the sustainable use of biodiversity resources.

This leads to the need to consider the impacts in two dimensions (entries in each cell are by way of examples only):

	Conservation of biodiversity	**Sustainable use of biodiversity**
at an Ecosystem level	Tropical rain forest	The role of the forest in watershed management
at a Species level	Migrating salmon	Subsistence and sports fisheries
at a Genetic level	Sub-species of a particular fruit	Pest resistant strains of a commercially valuable fruit

The table above provides an overall framework for the prediction and assessment of impacts on biodiversity. In evaluating the overall significance of the impact, it is necessary to consider the importance or sensitivity of the biodiversity resource that is being affected, and the magnitude of the impact.

The ISRP was a last ditch attempt to try and get Shell to take the Western Gray Whale issue seriously. The scientists exposed areas of concern relating to the overall approach of Shell, as well as criticising modelling techniques and proposed mitigation measures. They also noted that the Western Gray Whale was very delicately balanced, although still had the potential to recover:

"Additional whale deaths, regardless of the cause, have the most serious consequences for the population – most importantly, the loss of one additional female per year (over and above the death rates experienced in recent years) would be sufficient to drive the population towards extinction with high probability." (ISRP p4)

The fact that the Western Gray Whales are internationally recognised as a critically endangered population further emphasises the approach needed from Shell. There have been resolutions at the International Whaling Commission 3 times in the last 5 years referring specifically to Sakhalin Island and impacts of oil and gas development.[xx]

Shell use migrating salmon as an example throughout their EIA manual. On Sakhalin, the salmon are on a two year spawning cycle, so if Shell inflicts damage during two consecutive seasons, it could seriously affect the population.

Setting the criteria for what amounts to 'high' (major), 'medium' (moderate) or 'low' (minor) magnitude impact for a particular project essentially involves deciding what amount of change is acceptable in that case (sometimes referred to as the 'limits of acceptable change'). Ideally these criteria will be derived from appropriate objectives/targets for individual habitats and species (e.g. targets set in national, regional or local BSAPs) and/or from stakeholder consultation. Where there are no appropriate targets/nature conservation objectives, specific criteria should be developed on a case-by-case basis according to expert opinions and professional judgment.

Impact Significance Matrix

	Low magnitude impact	**Medium magnitude impact**	**High magnitude impact**
Locally important habitat or flora/fauna	Minor Significance	Minor Significance	**Moderate Significance**
Nationally important habitat or flora/fauna	Minor Significance	**Moderate Significance**	**Major Significance**
Internationally important habitat or flora/fauna	**Moderate Significance**	**Major Significance**	**Major Significance**

It is also important to assess whether the project will affect the achievement of the aims of any Biodiversity Action Plans (which could be at an international, national or local level and cover a species or an ecosystem/habitat). Such an assessment may also identify opportunities for the Project Team to contribute in a positive manner to the achievement of the aims.

Given the international importance of the 100 Western Gray Whales in terms of biodiversity, Shell should have acknowledged that any impact had moderate if not major significance. However this is not how it emerged in their analysis. It appears that Shell only have criteria for significance to the construction timetable, rather than for the species.

Underestimating impacts

The ISRP reviewed the modelling techniques used by SEIC to calculate the transmission of noise in the Sea of Okhotsk, and is not convinced it is an accurate representation of the noise scenario associated with the proposed activities. The ISRP concludes: "*notably it errs on the side of underestimating the potential effects of noise and relies on an as yet underdeveloped and untested transmission loss model*." (ISRP p34)

Definition of low impact

At the Vancouver workshop[xxi] on gray whales in September 2005, Shell could not even explain what was meant by its Marine Mammal Protection Plan criteria for defining low impact, let alone demonstrate that they had met them:

MMPP criteria for low impact:
≤ 5 whales
≥ 90% feeding area (@ ≤ 120 dB)
≤ 7 days (5% of feeding period))

SEIC had no system in place this summer to calculate if and when they had breached these criteria as they proceeded with construction. Even after the event SEIC has not done this. The summary of acoustic monitoring further demonstrated the lack of significance attached to these criteria at SEIC. The construction season was chopped up into the different types of activities undertaken, most of which lasted only a couple of days each. SEIC took a view that each activity only experienced high noises levels a few times, but did not consider the cumulative impacts of the construction season as a whole. Furthermore it is not possible to assess the full extent of the impact until next season at least, as reduced food intake this summer may result in a whale not surviving the winter

The definition itself is also debatable, given that it could result in more than one whale being affected in a season, which could mean that the panel's limit of more than one female being lost would be breached.

Worst case

It is common practice to consider all possible scenarios, including extreme events, even if they have a low probability of occurring.

If appropriate, a 'worst case' approach may be adopted. If prediction and evaluation are based on the worst case and no significant impacts are identified, then it is unnecessary to refine the assessment further.

Shell failed to include blowouts or winter spills as the worst case scenario in their oil spill assessment, maintaining its optimistic approach.

"*Spill trajectory modelling (in the CEA) revealed a high level of risk to the two gray whale foraging areas off Sakhalin even though the modelling did not consider worst-case scenarios involving platform blowouts and winter spills (under ice).*" (ISRP p6)
"The CEA did not model the worst-case scenario, i.e. that of a platform blow-out, but such modelling is essential for a thorough and unbiased assessment of risk. The risks associated with such a low-probability event may exceed considerably those from the spills that were modelled."(ISRP p57)

The USAID review also noticed this as an omission from the Sakhalin II EIA:
"*Data on and analysis of spills/leaks behaviour at river crossings, subsea pipelines and platforms, detection sensitivity, containment methods, time lines for containment, best and worst case scenarios*"

IMPACTS OCCURRING ON SAKHALIN

Shell describe a comprehensive list of typical impacts associated with the various stages of a project These include a number of impacts which were identified in the Sakhalin II EIA, and have not been addressed by the resulting design, mitigation and management of the project:

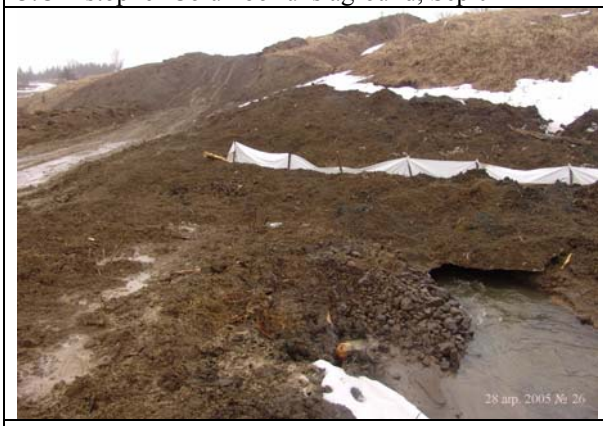
Impact identified by Shell	Impact occurring/unaddressed on Sakhalin	Evidence
Physical disturbance of soils and watercourses	River crossings conducted during the 2004/05 winter resulted in significant pollution of salmon spawning streams with suspended sediment.	EBRD & Rosprirodnadzor visits; Picture 1
Impacts to fish	See above	Picture 2
Disturbance of marine mammals	Shell's installation of the PA-B platform base in July/August 2005 resulted in noise levels exceeding the 120dB recommended by the ISRP.	Shell's acoustic monitoring of installation.
Disturbance of sediment and benthic populations	The ISRP is still concerned Shell does not understand the full benthic system, in terms of ocean dynamics and the interrelation with Piltun lagoon.	ISRP report
Impacts to seabirds, coastal habitats etc in event of oil spill	A dredger in the South of the island already spilt its oil in September 2004, and demonstrated Shell's failure to clean it up. Shell has not been able to demonstrate the potential extent of spills or how it would clean them up	Picture 3; ISRP report
Temporary and permanent loss of habitat and component ecological populations to temporary and permanent footprint	Degradation of salmon spawning areas and displacement of gray whales from south of feeding area	Picture 4 and WWF monitoring of gray whales, summer 2005
Soil erosion	River crossings have not had erosion control measures installed properly; areas where the pipeline has already been buried are already experiencing erosion due to ineffective restoration measures.	Pictures 5 and 6
Nuisance impacts to local communities (noise, dust, vehicle movements)	Construction traffic to and from the LNG plant construction site through local towns disrupting life and spreading dust	Picture 7
Damage to physical infrastructure (community roads)	Churning up of main routes between towns in the south due to construction traffic	Picture 8
Disturbance to sediment, benthic fauna and other seabed flora and fauna	The dumping of dredging waste in Aniva Bay has spread material further than predicted, and fish catches have already been reduced.	Shell monitoring reports and EBRD IRM complaint
Loss of seabed habitat	The ISRP has continued to raise concerns over the disturbance of sediment near the feeding area where the benthic communities are vital for gray whale feeding along the seafloor	ISRP report
Disturbance to marine mammals	The ISRP raised the key issue of collision risk between Shell vessels and gray whales. The limited scope of Shell's considerations did not originally include extra tanker traffic in the south or increased platform to shore traffic.	ISRP reports
Risk to marine and coastal resources in event of spill	Shell have still not adequately addressed winter oil spills or clean up measures.	ISRP report
Provision of artificial reef	The ISRP observes that Shell has not considered the artificial reef properties of its new platform structure.	ISRP report

1. Pipeline right of way, May 04

2. Salmon die before spawning Sep 05

3.Christopher Columbo runs aground, Sep 04

4. Contractors divert salmon spawning river, May 05



5. Erosion control measures will melt away, Apr 05

6. Erosion of buried pipeline sections, Jun 05

7. Dust clouds envelope BBC film crew, Aug 05

8. Heavy vehicles churn up the local roads, Jun 05

It is not expected that all impacts will be avoided. On Sakhalin, Shell has not even achieved the targets it set itself. The evidence on Sakhalin is that significant impacts have still resulted, even on particularly sensitive issues with potentially irreversible impacts. Shell has experience of operating around the world, and comes up against similar issues each time, yet the problems continue.

In this case there are a series of reasons why impacts are still occurring. These include:

- Failure to identify the impact
- Inaccurate representation of the size or significance of the impact
- Inadequate mitigation measures being proposed
- Poor implementation of mitigation measures.

In terms of predicting the impacts, when you consider the worst case scenario for the Western Gray Whales (extinction), the value and sensitivity of the resources (priceless – the only known feeding area is a critical habitat), and the uncertainty (limited understanding of the environment, the species and operations in ice), it is unbelievable that Shell did not appreciate the seriousness of the challenge they were facing. Shell has demonstrated they were aware of the significance of the biodiversity present, yet have not translated this into whether and if so, how they develop the project.

Shell is ignoring the fact that many of its impacts should be classified as of major significance.

Shell has not considered worst case scenarios in its analysis, or recognised the international significance of its actions, skewing the picture to the positive.

Shell considers that significant impacts on a critically endangered species are acceptable, ignoring the views of a panel of world experts and other stakeholders.

Shell's denial is already resulting in irreversible impacts on the biodiversity and natural resources of Sakhalin Island.

Shell has not incorporated impact criteria into operational procedures to prevent significant impacts occurring.

QUANTITATIVE RISK ASSESSMENT

Shell discusses the merits of quantitative methods which they indicate provide a more objective that qualitative methods, and facilitate communication with the design team and regulators. They also state that the following factors should be taken into account:

Quantitative Methods

Data Collection and Modelling Effort can be Disproportionate

By their nature, quantitative methods can often be resource-intensive, involving monitoring programs, the running of predictive models and the scrutiny of model output. This contrasts with a subjective expert judgement which may be reached relatively quickly.

For example, the site of a facility might be used by a species of bird that is ubiquitous throughout the area and throughout the country in which the facility is located. A totally quantitative approach to assessing the significance of the impact on the species would involve undertaking a survey to estimate the number of breeding pairs that would be affected by the development, developing a model to predict how the population would respond and then assessing the significance of that impact in national and global terms. Such an approach may be seen as excessive and disproportionate to the significance of the impact because of the ubiquitousness of the species. This contrasts with a situation where the particular species was threatened by extinction, where it was important to know what percentage of the population might be affected by the development.

Shell failed to gain an appreciation of the potential impacts of its activities on the 100 remaining Western Gray Whales before it started phase II of the project. This was not facilitated by the limited understanding of the behaviour of this population, in terms of migration routes, or sensitivity to particular inputs to their environment. However as stated above, with the population threatened by extinction, Shell should be able to demonstrate what proportion of the population might be affected by the development. Shell has an aspiration that they will not have an impact at a population level; however they cannot demonstrate quantitatively that this will not happen. It is only since the ISRP started questioning Shell's approach that the company has been forced to retrospectively justify their decisions.

Accuracy of Modelling Data

The above examples raise another issue related to quantitative approaches, namely the reliability or otherwise of the modelling used in the predictive phase. For aspects such as noise or emissions to air, the science behind the predictions is well-understood and predictions can be made with a high degree of accuracy. However, for natural systems, the situation is the reverse. Ecosystems are complex and modelling them to understand how they, and elements within them, will react to human-induced impacts is difficult. Natural systems can also have a high degree of natural variability (for example the year in which the baseline was measured may have been an unusual year) and it is often necessary to collect long term data to show population changes. Where uncertainty exists in quantitative approaches, the sources and implications of the uncertainty should be clearly explained in the EIA Report/Statement.

Shell's models to predict exposure of feeding whales to the noise were also described as flawed by the whale scientists at the Vancouver meeting. Specifically the scientists did not consider it appropriate for Shell to use a model of migrating whales (travelling parallel to the coast) when feeding whales would also be travelling perpendicular to the coast, towards the noise source. (Vancouver report (VR) p14)

Care is Necessary in Presenting Results

In cases where quantitative approaches can be used to predict impacts, care should be exercised in the way that the results are presented in the EIA Report/Statement. Taking noise as an example, because the dB scale is logarithmic in nature, it is always advisable to present a table that 'translates' the dB scale into terms that people can relate to. The extent to which numerical scales should be expressed in terms that people can relate to depends, to a degree, on the extent to which the impact perceptibly affects people. Noise is an impact that clearly affects people directly but the levels of chemicals in a watercourse, or 'unseen' air quality levels, are much more obtuse concepts.

Shell has failed to grasp the significance of exceeding noise levels during construction activities offshore. Noise carries long distances through water, and marine mammals are known to be particularly sensitive to noise, due to their methods of communication. Shell's own acoustic data from the PA-B platform installation went over the 120dB limit the ISRP required frequently (17 out of 32 days at the edge of the gray whale feeding area) and went over 140dB on 6 days. 120dB was also the limit expressed in Shell's own low impact criteria. Yet Shell expressed no concern over this. Shell has not indicated the difference in noise level between 120dB and 140 dB given the logarithmic scale. Given that an increase of 10 decibels is equivalent to increasing noise intensity by a factor of 10, a 20dB increase is equivalent to increasing noise intensity by a factor of 100.

The presentation of noise data from the noise monitoring of summer 2005 did not correspond to the criteria Shell has set for determining whether high impact has resulted. Also Shell did not design their monitoring to allow correlation of noise levels with whale behaviour, so it was not possible to gain an indication of the impact. Shell divided up the construction activities into small periods, which resulted in each period being described as low impact, but no consideration was given to the overall impact. Shell could not explain how the 5 day criteria related to the season as a whole or to individual sections of construction they had indicated.

Shell also failed to apply quantitative methods to a number of other important areas, such as oil spill modelling and mitigation measures:

"In response to comments in the ISRP report and discussions at the Gland meeting, SEIC produced a quantitative risk analysis for platform blowouts. The analysis identified potential sources of failure that could result in a blow-out and provide information on the expected frequencies of such events based on a database of oil industry records. An independent review has been commissioned to assess the risks but the results were not available at the time of the Vancouver meeting. If the review does not reveal significant shortcomings in the analysis, then the analysis appears to provide a reasonable basis for estimating the probability of a platform blow-out." (VR p35)

There is no explanation as to why the information was not included in the original analysis to provide a comprehensive quantitative risk assessment. The incomplete nature of the work conducted by SEIC does not give much reassurance for the reliability of its documentation, and the decisions based upon it.

Quantitative studies can be useful, although again these are often conducted by consultants paid by the companies. Shell did not even undertake such exercises for many aspects of the project, which made it harder to understand their decision-making process. For example it is hard to assess the justification for approving a particular mitigation measure, when there is no analysis to demonstrate the benefit that option has in reducing the level of impact.

Shell has not used rigorous quantitative assessments and modelling to predict the expected impacts and the effectiveness of its proposed mitigation measures.

CUMULATIVE IMPACTS

Shell acknowledges the importance of addressing cumulative impacts for a project. In the case of Sakhalin II, there is a need to address both the cumulative impacts of the individual project on various elements of environment and society, and also the need to assess the cumulative impacts of all the projects taking place in that vicinity which could affect the same elements of environment and society.

Cumulative impact is where impacts occur together to affect the same environment resource or receptor. Assessing cumulative impacts should be an integral part of the prediction/evaluation/mitigation process and not a separate activity. It involves looking at the effects of the project in combination with other concurrently proposed developments (not just oil and gas developments, but other developments such as roads, dams or housing estates).
There are a number of steps to understanding these impacts:

- identify other future developments (often through the consultation process);
- obtain as much information as possible about the development, particularly as it relates to timing and location;
- scope the potential cumulative impacts (in the same way as scoping for the Shell EP project, this process can be facilitated by contact with the proponent(s) of the other development(s); and
- in extreme cases (e.g. where two large-scale projects are being built close to one another and at the same time), it may be necessary to undertake a joint cumulative assessment with the other project proponent. The result of this can either be published as an Addendum to the main EIA Report/Statement, or as a separate report.

Despite stating that assessing cumulative impacts should not be separate, Shell is left without cumulative assessments after completing the initial EIA.

The ISRP was critical of Shell failing to appreciate the cumulative impacts on the whales of various types of activity. The main areas of concern (ship strikes, oil spills, noise and benthic smothering) were never considered together to give an overall picture of the impacts and risks for the endangered gray whales. Each aspect was only ever considered separately.

Furthermore Shell has never been able to incorporate the cumulative impacts of all the oil and gas development in the vicinity of the Western Gray Whales. For example, in terms of an overall increase in shipping down the coast. The Vancouver gathering of whale experts noted the following shortcomings in regard to Shell's consideration of cumulative impacts.

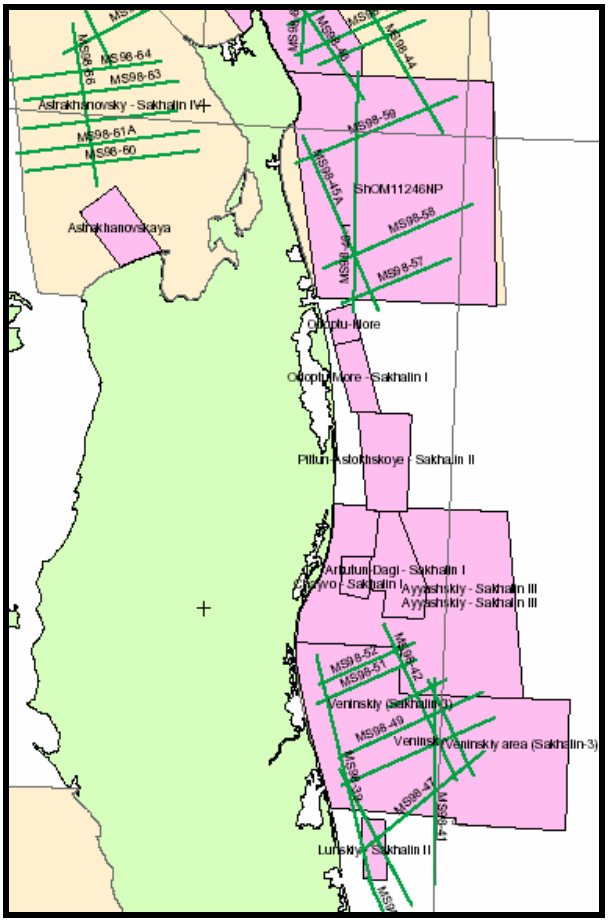
"Adequacy of assessment of cumulative impacts
Assessment of such effects cannot be contingent upon establishment of a range-wide recovery effort. An annual workshop of scientists, conservationists, and industry representatives is also not sufficient to address this need for assessment and management of rangewide cumulative impacts." (VR p43)

It is important to note that the willingness of scientists to meet is not enough per se to address cumulative impacts, and the proposal to form the Western Gray Whale Advisory Panel (WGWAP) in Vancouver provides little comfort at this stage.

"Efforts must be made to secure the cooperation of other oil companies in the WGWAP and in the process of assessing and managing cumulative threats to the maximum extent possible. SEIC confirmed in Vancouver that they will assist in seeking such cooperation.

Because there is little or no safety margin with respect to the recovery prospects of the WGW population (see ISRP report, Ch. VII), the working principle should be that any residual negative effects of project activities, even if small, will be balanced by positive measures to help reduce other threats to the WGW population, such that cumulative threats are reduced at each step." (VR p44)

Map of contracted and delineated blocks around the north of Sakhalin Island:



USAID also noted the absence of consideration of cumulative impacts.
"*Data on and analysis of cumulative impacts of the proposed project and other current and foreseeable offshore oil and gas developments in the region*"

WWF has continually requested that all of the operators on Sakhalin work together on whale protection measures. Shell has promised several times to initiate this, at several levels of the organisation, but has never brought the other lead operators (BP and Exxon) to the table.

Shell has not built in assessment of cumulative impacts into the EIA.

BIODIVERSITY

Shell makes the following statement on areas of high biodiversity and includes the WWF Global 200 Ecoregions as a designation that should trigger extra concern.

The Group's Biodiversity Standard states that the Group will respect protected areas and will enter into consultation with relevant NGOs whenever a project raises the likelihood of encroachment onto such an area.

WWF Global 200 Ecoregions The Global 200 is a science based global raking of the richest, rarest and most distinctive examples of all the Earth's diverse natural habitats based on the principle that only by conserving representative examples of all the world's ecosystems is it possible to protect the broadest array of species and maintain the complex ecological and evolutionary processes that make up the web of life.

The Sakhalin II project is in the Sea of Okhotsk Ecoregion which extends around Sakhalin Island. WWF worked with other conservation groups on a proposal for a whale sanctuary to be created around the Western Gray Whale Feeding Area at Piltun on Sakhalin Island. This formed part of a previous review of environmental issues produced by WWF Russia and submitted to the company in 2003.[xxii] As indicated above there was consultation with WWF over a number of years at all levels, but Shell did not take this on board in their decision-making.

Previously, a whale sanctuary was proposed to the Russian authorities. After initial support from the government, the idea of a sanctuary has since been dropped which was unsurprising, given Shell's proposed activities in the feeding area. WWF still believes the area should receive official recognition and protection. Shell's project acted as a deterrent to protecting this critical habitat, which does not enhance the likelihood of protecting the habitat.

Shell also identifies the endangered species that are relevant to the project, which include the Western Gray Whale and Russian Taimen (wild salmon). Despite the supposed awareness indicated in the EIA, there was limited action to avoid impacts on these species which are both on the IUCN Red List of endangered species, and therefore protected by Russian legislation.

On the Western Gray Whales, Shell announced a US$5million research programme, which initially consisted of some rushed consultations around the world, which were poorly attended, due to lack of notice and most concerned NGOs already having represented their position. The emphasis was also misjudged, with conservation groups not interested in a programme that offered to closely monitor the extinction of Western Gray Whales, rather than prevent it. The inadequacy of this public relations attempt was confirmed when potential lenders required the ISRP process. The poor planning of the monitoring conducted by Shell this summer was exposed at the Vancouver workshop, when it became clear that Shell could not actually assess the effectiveness of its mitigation measures due to only being able to observe whales in close proximity to the shore, during good visibility.

For the Taimen, Shell has not put in any special measures to protect the habitat of this endangered wild salmon. The lack of control over the contractor Starstroi, has meant river crossing locations and techniques have not been carried out as planned.

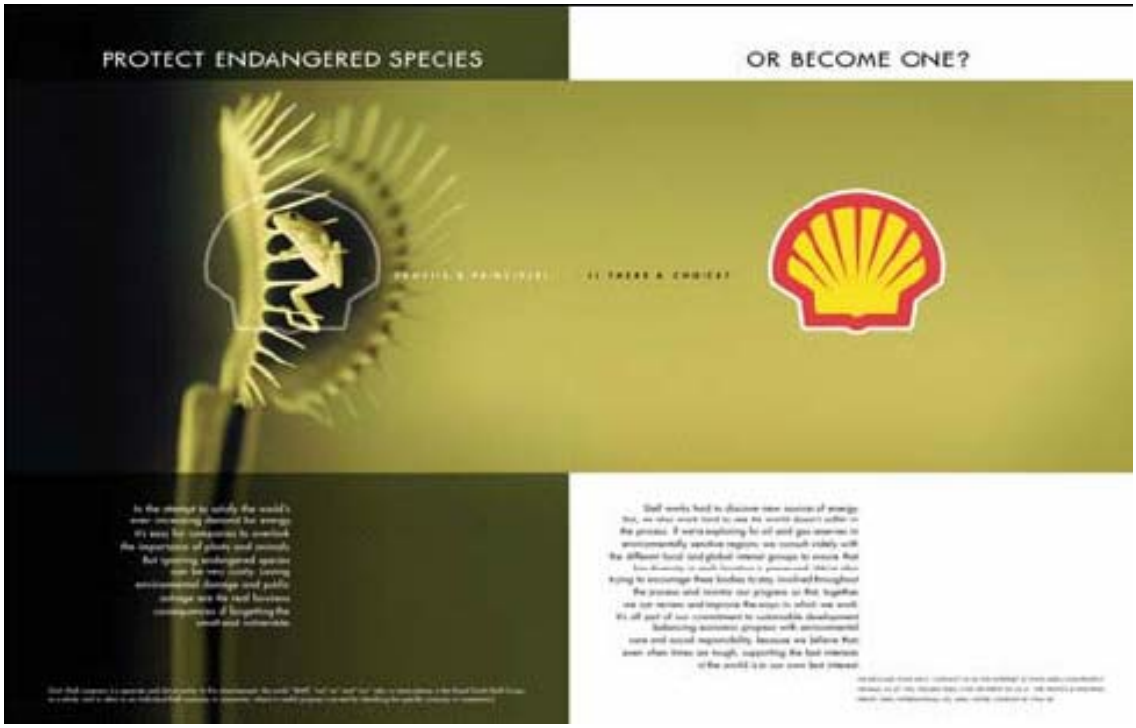
The lack of serious emphasis shown by Shell to endangered species demonstrates that group values on biodiversity have not been instilled throughout its largest project. The approach also shows a distinct lack of respect for Russian legislation. Shell sought to remove regulatory risk by gaining exemptions from laws stating that construction was not permitted in the habitats of Red Listed Species. This goes against the corporate principle and policy of:

Business Principles: Responsibilities to society
"to observe the laws of the countries in which they operate"

HSE policy
"Every Shell company:

- has a systematic approach to HSE management designed to ensure compliance with the law and to achieve continuous performance improvement"

Shell previously laid out its choice in an advertisement, which may come back to haunt the company, if an environmental disaster occurs: Protect Endangered Species Or Become One



Shell is not giving sufficient significance to the importance of the biodiversity in Sakhalin, with the focus on process rather than conservation outcomes.

PRECAUTIONARY PRINCIPLE

Shell recognises the concept of the precautionary principle in the EIA manual:

> Particularly in the earlier phases of the ORP there may be a lack of detailed biodiversity information, this coupled with the complexity of natural systems and the irreversible nature of impact may make the application of the precautionary principle appropriate. The precautionary principle is a principle of sustainability that, where there are threats of serious or irreversible damage, the lack of full scientific certainty should not be used as a reason for avoiding/postponing measures to prevent environmental degradation.

Such measures could include stopping construction or changing the project design. The threat of irreversible damage is very real in this case. The ISRP also felt it was important to take a precautionary approach and indeed the terms of reference for the ISRP specifically called on them to take an appropriate precautionary approach to assessing Shell's suggested measures:

"The most precautionary approach would be to suspend present operations and delay further development of the oil and gas reserves in the vicinity of the gray whale feeding grounds off Sakhalin, and especially the critical nearshore feeding ground that is used preferentially by mothers and calves."

It is clear that the precautionary principle is applicable to the Sakhalin project; however Shell has interpreted this in a different way. Indeed it could be argued that they have switched the burden of proof, such that they will not take measures to protect the whales unless it can be proven there is a definite impact – by which time it would be too late for the whales. This has been observed when skinny whales appeared at the same time as activity started offshore. Shell refused to halt because causality had not been demonstrated. Furthermore the only precaution taken appears to be designed to prevent any impact on the construction timeline.

The ISRP considers that Shell "*consistently interpret uncertain data optimistically and thus may seriously underestimate the nature of threats posed by the operations and hence the requisite mitigation measures*". (ISRP p38). This approach is not at all precautionary, as would be required for this endangered species. Even worse is the fact that Shell make optimistic interpretations of the data to try and downplay risks. This further erodes confidence in the rigour of the assessments undertaken.

In the conclusion of the most recent Vancouver report the whale experts find: "*The approach taken to date has not always been suitably or consistently precautionary, nor has the ALARP (As Low As Reasonably Practicable) concept always been implemented in a manner that provides the least practicable risk to the whales.*" (VR p5)

The Precuationary Principle is a recognised principle in environmental management, which Shell has not respected. It is misleading for the company to continue to pretend that they are taking the threat to the whales seriously. It has become evident that any environmental considerations are a low priority.

SHELL HAS NOT TAKEN A SUFFICIENTLY PRECAUTIONARY APPROACH TO GUARANTEE IT WILL NOT IMPACT UPON ENDANGERED SPECIES.

MITIGATION

Shell use a process called ALARP for developing mitigation measures; the process aims to produce impacts that are As Low As Reasonably Practicable (ALARP). The concept ultimately involves a decision as to what is reasonable, which may not always be the ultimate step in eliminating or reducing impacts. However it is the basis upon which Shell's EIA was produced, and also by which Shell's mitigation measures were assessed by the ISRP.

As Low As Reasonably Practicable

Continuing with the example of noise, if the predicted noise levels at the nearest receptor are above existing levels, but below the standard adopted for the project (e.g. the WHO sleep disturbance level) then ALARP is triggered. This does not necessarily mean reducing the impact below the 'no action criterion' (this may not be possible), but it is necessary to demonstrate that ALARP has been reached.

The optimal way of applying mitigation is through the ALARP process. As potential significant impacts are identified, options to mitigate them are generated, the options are looked at and decision taken on the most appropriate solution (also considering technical matters, cost etc.) that ensures the residual impact is ***as low as reasonably practicable***.

Determining what is 'reasonably practicable' is something that the EIA team cannot achieve in isolation. Factors such as technical feasibility, constructability and operability all feature in ALARP and design input on these issues is a necessity. The other key factor is cost. In defining ALARP for an impact/mitigation measure, the proportionality of the cost to the benefit should be given proper consideration

Shell proposed a number of mitigation measures that were supposed to reduce the impact on the Western Gray Whales to a level that was As Low As Reasonably Practicable (ALARP). Whether or not this is an appropriate level for such a sensitive population is a different discussion; however the whale scientists did question this at the Vancouver meeting. It can definitely be argued that cost considerations dominated decisions, rather than ensuring environmental protection. However in terms of Shell delivering on their own objectives in this regard, the scientists made the following conclusion:

"*The approach taken to date has not always been suitably or consistently precautionary, nor has the ALARP (As Low As Reasonably Practicable) concept always been implemented in a manner that provides the least practicable risk to the whales*."
(VR p5)

This independent group of whale experts therefore concluded that Shell had not even applied its own approach correctly, and that the risks to the whales could have been further reduced. Shell will have no defence if its excessive risks result in the extinction of a species. It is already too late to rectify this problem, which was also recognised by the scientists.

Shell takes the following approach to developing mitigation measures:

The mitigation hierarchy of ***Avoid - Reduce - Remedy - Compensate*** provides a useful framework for the development of a checklist of mitigation options

This is a traditional approach, but as Shell recognise not all aspects are suitable for all situations. In the case of the gray whales, it is essential that impacts are either avoided or are reduced at source, as the receptors are too sensitive to try and remedy the situation after the event. If damage is caused and a gray whale is lost or the population becomes extinct, it would not be a matter that could be rectified by compensation.

In terms of Shell's approach to mitigation on specific issues, the whale experts made the following observations:

Noise

"*The construction timeline precluded adequate review of risks and noise criteria. Mitigation measures (e.g. rescheduling of work) were not fully considered prior to installation. The level and other characteristics of noise at which gray whales are affected is not yet clear. With regard to installation of scour protection, no data were provided to explain why currents would become a factor after more than 3-days delay. Thus, the justification for proceeding immediately was unsubstantiated. Opportunities for learning about whale responses during CGBS [Concrete Gravity Base Structure] installation or installation of scour protection were lost, at least to some extent, by SEIC's decision to proceed with construction activities when weather precluded monitoring of whale behaviour (see Documents 9 and 19, issues 3.6 and 4.1). It cannot be concluded, in the absence of observations, that whales were not affected by construction activities.*

SEIC's use of a study of migrating gray whales as the basis for choosing an acceptable exposure level for feeding gray whales was inappropriate. We reiterate that the goal should be to keep the exposure of feeding whales below 120 dB. SEIC needs to demonstrate that, regardless of perimeter received levels, the criterion of 120 dB ensonification of fewer than 5 whales was met, as stated in the CEA. The advice provided by the experts during the teleconferences was either not heeded or altered significantly. Specifically for this issue, the noise action criteria suggested by Vedenev were significantly altered." (VR p14)

"*The SEIC response/approach to this issue is significantly different from the Vedenev proposal and was neither vetted nor endorsed. These criteria and monitoring/mitigation protocols are unacceptable because:*

- *The duration of exposure could actually lead to excessive sound energy exposure levels*
- *The absolute levels to which animals could be exposed are too high*
- *Real-time monitoring was not undertaken to detect acute responses to noisy activities*
- *No behavioral cues were included in mitigation criteria*
- *Pathway(s) from breach of criteria to actual mitigation action are poorly defined and cumbersome including a lack of a precautionary shutdown triggers and mechanisms.*" (VR p16-17)

A review of SEIC's own acoustic data summary[xxiii] shows that one buoy experienced over 120dB on 17 out of 32 days of monitoring. Noise levels over 140dB were experienced on 6 days. Given the exponential scale of decibels, the significance of exceeding the limit recommended by the scientists should not be underestimated. This follows on from earlier notes in the EIA manual about ensuring the implications of increasing noise levels are clearly expressed, given the logarithmic scale.

The fact that Shell altered the Vedenev criteria indicates that they were fitting mitigation criteria to fit their activities and allow them to continue, rather than designing mitigation criteria that would deliver on protecting the Western Gray Whale.

"*The [SEIC] response notes that SEIC encourages operators to schedule noisy activities in June or October when fewer whales are present. If, as the SEIC response indicates, the definition of new seasons has no effect on the activities that occur, then it is not clear why such seasons have been defined. Even with the changes in seasonal definitions, SEIC still scheduled the installation of the CGBS for the peak gray whale season. Despite attempts to mitigate by design, temporal and spatial separation remains a key and perhaps the most effective mitigation measure available. We reiterate that noisy activities should be scheduled for non-peak seasons. Furthermore, the schedule for noisy activities should be submitted to the WGWAP for review. We were disappointed that SEIC decided to install the CGBS in July; this implies that the Company's commitment to temporal separation has not been taken seriously.*"

This passage is typical of the gap between key information (e.g. peak whale season), suggested mitigation measures (e.g. avoiding peak whale season), and the way Shell conducts its operations (e.g. installing the platform base during peak whale season). It is not clear if Shell made a conscious decision to ignore temporal separation, or whether this is an example of the disconnect between the words on paper and the implementation.

Shell's approach to gray whale issues has shown a distinct lack of respect for the opinions of the whale experts, who are caught in a situation where they do not want to be co-opted by Shell, but want to try and influence the outcome if at all possible. Rick Steiner, an Alaskan oil spill expert, quit the panel in July 2005, following Shell's announcement that it had installed the platform base.

"*I feel that the precautionary approach for Royal Dutch Shell clearly requires you to postpone the tow-out of the PA-B base until such time as independent review has been completed, SEIC has adequately responded, and all outstanding issues have been reasonably resolved.*"[xxiv]

The co-chairs of the Vancouver workshop take the following view of this decision:

"Unquestionably, their [Shell's] decision to adhere to their predetermined construction schedule has, in some respects, obviated or undermined the utility of our review. The decision to move ahead is entirely theirs -- we do not have the authority or control to influence those decisions and the fact that they proceed with construction should in no way be taken as a sign of our concurrence with or approval of their schedule and activities."

Shell refused to wait for the best scientific advice before installing the platform base.

River Crossings

Shell's EIA guidelines require compliance with relevant environmental legislation, which Shell identifies in its River Crossings Strategy[xxv] as follows:

The pipeline design has been developed in line with Russian Federation legislation and standards. The main requirements are that:

- spawning grounds will be avoided;
- passage of migrating fish must be assured;
- natural conditions will be protected (e.g. areas of loose soil);
- where cultivatable soil is removed it will be replaced to restore the land to its previous condition;
- use of the cultivatable soil layer for back filling or other temporary earthworks is not allowed; and
- erosion protection measures must be applied during construction and operations.

In consultation with the local fisheries authority (Sakhalinrybvod), each of the rivers to be crossed were classified accordingly:
Group I - watercourses with no salmon spawning, and insignificant importance for fisheries;
Group II - watercourses with insignificant salmon spawning, and minor importance for fisheries;
Group III - watercourses with significant salmon spawning and major importance for fisheries.

Group I watercourses comprise the majority (90%) of all watercourses to be crossed; Group II comprises 4% (45 watercourses); and Group III comprises the remaining 6% (63 watercourses).

Eight of the 63 Group III rivers (high sensitivity) will be crossed using the horizontal directional drilling technique, namely the Buyuklinka, Firsovka, Val, Tym (first and second crossings), Naiba, Nabil and Vazi.

(The Onshore Pipelines Watercourse Crossings Strategy, SEIC, April 2003)

The Russian fisheries research institution, VNIRO, believes that 663 watercourses should have the highest category of protection.[xxvi] This is a significant discrepancy at 10 times the number Shell have arrived at. This demonstrates that inaccurate classification during the EIA can result in huge negative impacts on the ground.

Because of the difference in categorization, Shell has not taken any special measures on the majority of streams, and as a result salmon spawning areas have been damaged already, and have not been avoided as the objective above states. This misclassification has resulted in inadequate mitigation being proposed.

NGOs have also disputed Shell's assessment that only 8 out of over 1,000 pipelines should be crossed by horizontal directional drilling, and the explanation that the company has ruled out aerial or suspended crossings. As a result expert groups such as the Wild Salmon Center, which has operated in the region on Pacific salmon for many years, offered to review Shell's river crossing technique selections. After some initial discussions, Shell decided not to pursue this independent option, as the process suggested would have delayed the construction schedule, which was already behind.

Shell has not indicated clearly how it will rectify the situation on the river crossings. At the meeting in Moscow in May, the company admitted problems with contractor management. Shell also committed to having an expert review to improve river crossings. However this offer was later withdrawn as it would interrupt the construction schedule.

Overall, there is dangerous mitigation culture within the industry, which spreads an over-reliance on mitigation, as a panacea to all ills. However not all impacts can be mitigated, not all risks are acceptable, and implementation may not be satisfactory. In particular when dealing with potentially irreversible impacts such as the loss of a species, there is no room for error.

Shell has not acknowledged the importance of many of the salmon streams for spawning, and as a result cannot develop appropriate crossing techniques and mitigation measures.

IMPLEMENTATION

If inadequate mitigation measures are designed, then they will be useless once implemented, as was the case for Shell's ship-whale collision measures:

The ISRP considered the level of risk posed by increased traffic resulting from the other elements of the project, specifically the construction and operation of the LNG and oil plants at Aniva Bay.
"*The collision risk to gray whales posed by this new traffic was not addressed with any degree of rigour in the documents received from SEIC*". (ISRP p42)

The whale scientists continue to review mitigation measures, such as the Marine Mammal Observer (MMO) programme which Shell implemented during Summer 2005. Overall the experts were left with little or no sense of whether the measures offered any potential to reduce impact:
"*The external audit (Doc 28) provided a review of the MMO programme but no evaluation of its effectiveness as a mitigation measure. Its effectiveness as a mitigation measure, if any, remains unquantified, and may be marginal*". (VR p23)
"*The external audit (Doc 28) did not evaluate the effectiveness of the MMO programme in preventing collisions. The data collected under the programme should be analysed to determine how many cases there have been, if any, of sightings by MMOs that resulted in actions to avoid collisions. The effective coverage of the programme (e.g. the proportion of vessels with MMOs and the proportion of time that MMOs are on duty and visibility is adequate, and their detection probability) should then be estimated to determine the fraction of potentially dangerous encounters that would be expected to be detected by the MMOs*." (VR p27)

One of the main issues is that the plan did not even take into account the basic conditions it would be operating under. The coast is known to experience long periods of fog and poor visibility during the summer, especially July and August. Furthermore, if the wind reached Beaufort scale 4, the observers were not able to distinguish between spray from wave tops and whale spouts, from their low level observation point. The conditions during the platform installation are shown in the picture below. This was also acknowledged by Shell in a project update where it was stated:

"*Foggy weather persisted throughout the operation and prevented any of the observation teams from tracking whales during the operation.*"[xxvii]

Shell did not reduce the risk of collisions with its mitigation attempts during its construction this summer.

Alternatively, even if appropriate mitigation measures have been designed, they may be rendered irrelevant by contractors failing to implement them.

EIA and the Construction Contract

It is critical that all commitments associated with the EIA process are reflected in major activity contracts, such as construction contracts, and that provisions are made in the management of these contracts to ensure delivery.

Making this happen effectively starts when the Invitation to Tender (ITT) is issued to prospective contractors. The stage at which this occurs with respect to the EIA process will vary from project to project, but may occur when the design, particularly with respect to mitigation measures, is still evolving. It may also be the case that precise details about a number of EIA related issues, are left to the construction contractors to specify in their tenders. Additionally, other details may be finalised after the appointment of the preferred contractor, such as during detailed design. These might include, for example, details of the methods of crossing watercourses for a pipeline, or the location of construction camps. Such elements of the project design often have significant environmental implications.

It is therefore important that the EIA team feed into the ITT process, in the first instance by ensuring that all commitments and mitigation measures identified to that date (including third party commitments) are incorporated into the ITT material. This can be achieved by including an 'environmental requirements' section.

Shell has claimed to have requirements in its contracts with Starstroi to construct river crossings to meet the environmental standards that have been set out in the permit for construction. However Shell has not enforced these requirements, and the results have been devastating to salmon spawning streams on Sakhalin Island.

Shell admitted having problems with the river crossings and erosion control – two specific examples listed in the EIA manual above. Lack of contractor control was cited as one of the main reasons. As a result both the potential lenders and the regional natural resources authority, Rosprirodnadzor, inspected river crossings to assess standards. The poor quality of the work discovered has contributed to EBRD not being satisfied with the project. Rospirodnadzor made the following observations in relation to Shell's environmental permit requirements[xxviii]:

- Signs that the river channels had been altered by constructing an artificial channel
- Unregulated flow of polluting suspended matter into the watercourse.
- Construction of a temporary bridge across the river with footings in the river channel.
- Heaps of eroded soils and evidence of traffic within the riparian protection zone.
- Gas and oil pipeline crossings not constructed simultaneously as required.

It is disturbing that Shell cannot even fulfil the most basic mitigation measures, such as building both pipelines at the same time across a river. As a result Shell will unnecessarily disrupt two salmon spawning seasons, rather than one. Shell's failure to install adequate erosion control measures can be seen by the high levels of suspended material in the water, which will prevent salmon from spawning. Physical interference with the watercourse by redirecting channels was never approved, as this denies salmon access upstream. The following pictures illustrate the problems outlined by the inspections:

1. Redirected river channel

2. Former river channel

3.Muddied waters in salmon stream

4. Shell in too deep

Following the inspections, Shell announced a suspension of activities, yet further work has been done over the summer. The situation became very confusing when Shell announced the doubling of costs and a delay in delivery of first gas.[xxix] Despite a delay, Shell could not fit in an expert review. Furthermore, Malcolm Brinded, Head of Exploration and Production indicated that "[a] *number of the contractors will find it challenging in that they have moved from having incentives in place to working at cost to finish the project*." Rather than addressing the contractor management problem, Shell appears to have made it worse.

Contractor management appears to have been a key factor in Shell failing to deliver on even the environmental measures and procedures it had set itself. A report examining thirteen projects, including Sakhalin, was leaked to the Financial Times.[xxx] Ed Merrow, an outside consultant commissioned by Shell to evaluate project management, found the company was "*almost wholly dependent*" on contractors for critical functions, including scheduling and cost control. Shell took a "*distinctly hands-off approach*".

Project management generally is not up to industry best practice, with Shell setting up a special new project management academy to try and improve its skills on managing mega-projects. In an interview in the Financial Time in July 2005,[xxxi] Shell's chief executive admitted: "*We do some projects very well, and this large Sakhalin project and some others we don't do very well*"

Shell has not designed effective mitigation measures, or implemented the measures it has proposed, resulting in the destruction of salmon spawning streams.

CONCLUSION

The Sakhalin II project is the world's largest oil and gas project anywhere in the world. On the evidence presented here, it appears the industry has not improved for the 21st century, and indeed on this project, it appears Shell has gone backwards. The knowledge that elsewhere the company is capable of making better decisions and operating more responsibly makes the situation even harder to understand.

The unfortunate experience of corporate reality not matching rhetoric has achieved new levels with this project. There is no single point at which Shell fell down, but a series of compounding failures to appreciate the significance of the challenge the company faced. The EIA guidelines themselves are not the problem – they seem reasonable on paper. However the process of transforming them into action has not delivered satisfactory results. This raises a broader question about the role of EIA and the consultants that produce the assessments. The failures on the Sakhalin project are a wake up call for the industry that it needs to revisit the purpose of EIAs, and get back to the core environmental principles. At present there is a danger that EIAs become a means to an end – getting finance.

Impact assessment is a requirement of third party lenders, such as the World Bank/IFC, the banks who have signed on to the Equator Principles or European Bank for Reconstruction and Development (EBRD), and recommended by industry associations such as the International Petroleum Industry Environmental Conservation Association (IPIECA) and the Oil and Gas producers association (OGP).

The words of Shell above demonstrate the importance of impact assessment for the very financial institutions from which the company seeks money. It is incredible that Shell sought financing based on the poor assessment that was initially conducted. The company then realised that this would not be good enough to get environmental aspects approved. Ever since it has attempted to achieve compliance on paper by producing further reports, whilst continuing with construction in the same unacceptable manner.

An indicator of how unacceptable Shell's project management has been, came recently when President Putin of Russia visited Shell headquarters in the Netherlands. President Putin indicated that he would not be 'going Dutch' with Shell on the US$ 10 billion cost overruns – why should Russia be denied revenues, in order for Shell to recoup the expenses of its mistakes?

If Shell can't meet their own policies why should it expect others to fund the project and share its excessive risks. Signatories of the Equator Principles, e.g. ABN Amro, Royal Bank of Scotland, West LB, Mizuho, Dexia, and Credit Suisse First Boston, should all have their eyes wide open before they get involved in this project. Sakhalin II has been billed as a key test of the Equator Principles. By the time it gets to the commercial banks for an investment decision, it will be too late for them to influence the design of the project. Investors will inherit the risks that Shell has built into Sakhalin II, and will be powerless to influence the outcome.

The European Bank for Reconstruction and Development has a responsibility to tell Shell the Sakhalin II project does not meet its policies; this is the only way Shell will get the message it has to change.

Endnotes

[i] The Equator Principles have been signed by 33 financial institutions representing over 80% of global project loans, committing them to applying IFC safeguards. www.equator-principles.com

[ii] The Shell Report 2004, p4

[iii] Report of Shell Biodiversity Workshop, March 2005

[iv] EBRD President Jean Lemierre, Emerging Markets Publication, EBRD AGM 2004 (Russian Rage over Sakhalin Project, Simon Pirani, Emerging Markets, April 19, 2004

[v] Press release by RAN http://www.ran.org/news/newsitem.php?id=1431&area=newsroom

[vi] Independent Scientific Review Panel of Phase 2 of the Sakhalin II project and subsequent report of Feb 2005 http://www.iucn.org/themes/business/isrp/index.htm

[vii] Figure cited at meeting with Shell in Moscow, May 2005

[viii] EBRD Energy Policy, 1999 http://www.ebrd.com/about/policies/sector/natural/natural.pdf

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The mission of WWF is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:
· conserving the world's biological diversity
· ensuring that the use of renewable resources is sustainable
· promoting the reduction of pollution and wasteful consumption

November 2005

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There are only 100 Western Gray Whales left in existence. Their only feeding ground is off Sakhalin Island, on the east coast of Russia. Unfortunately, this is also the site of Shell's Sakhalin oil operation and proposed drilling platform. The project poses a serious threat to this critically endangered species. The Western Gray population has only 23 reproductive females, and the loss of just one additional female a year will drive the whales towards extinction. Leading whale scientists have recommended a more precautionary approach, but Shell is carrying on regardless and the platform is being towed out to sea to be erected. Not surprisingly, the European Bank for Reconstruction and Development has so far been unable to approve the venture because they're unsatisfied with its environmental credentials. WWF objects to Shell's decision to go ahead and install the platform without first ensuring the whales' safety. The project costs have now doubled, and we call on the Equator Banks and all other potential lenders to refuse funding for this high-risk operation. For a complete update, go to www.panda.org/sakhalin

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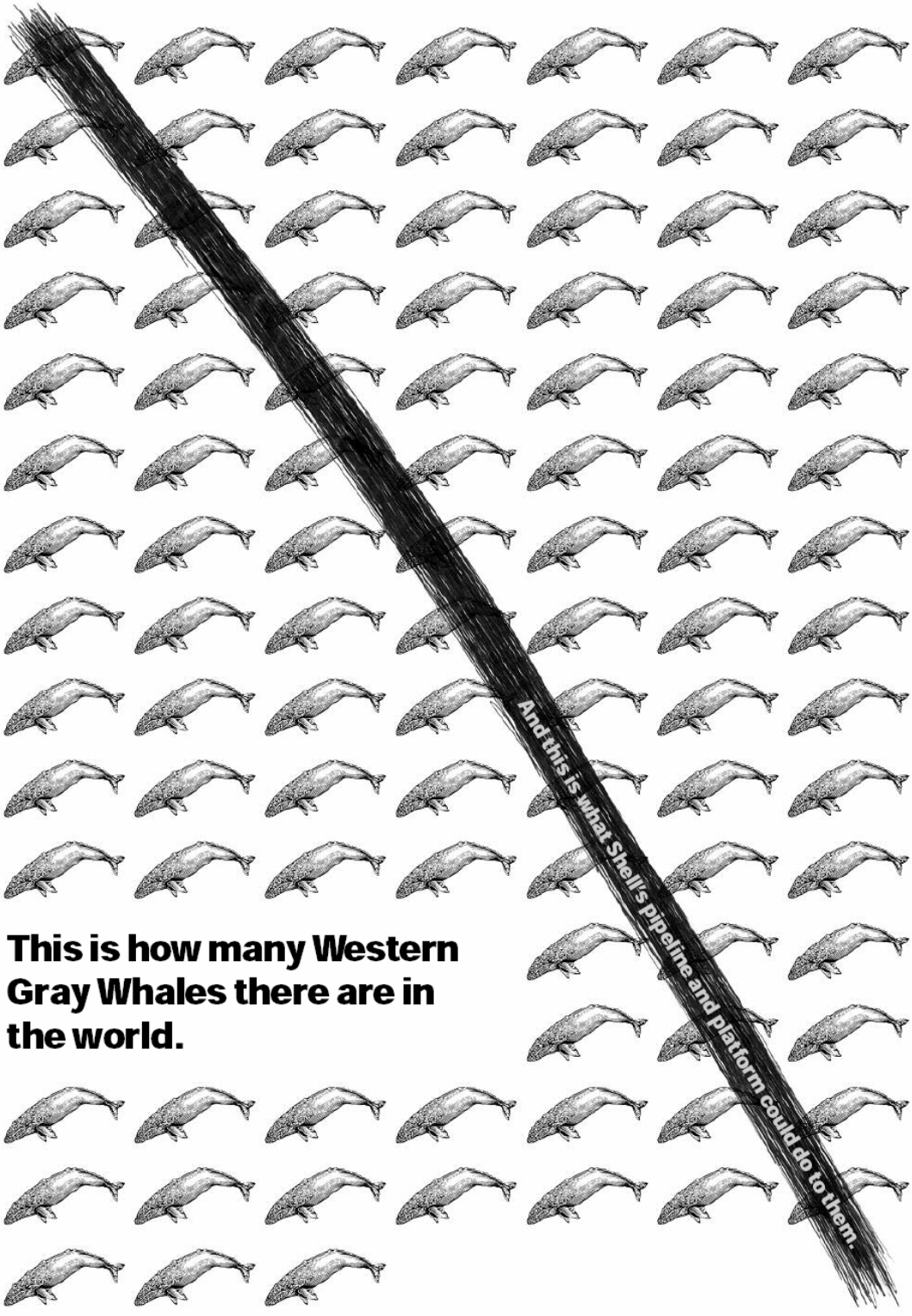

This is how many Western Gray Whales there are in the world.