WESTERN GRAY WHALE ADVISORY PANEL **WGWAP-11**

11th Meeting **12-14 February 2012**

Geneva, Switzerland

REPORT OF THE WESTERN GRAY WHALE ADVISORY PANEL AT ITS ELEVENTH MEETING

CONVENED BY THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE

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ACRONYMS

EIA	Environmental Impact Assessment
EMTF	Environmental Monitoring Task Force
ENL	Exxon Neftegas Limited
ENP	Eastern North Pacific
HAB	Harmful algal bloom
IBM	Institute of Marine Biology
IFAW	International Fund for Animal Welfare
IPEE RAS	Institute of Problems in Ecology and Evolution of the Russian Academy of Sciences
ISRP	Independent Scientific Review Panel
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
IWG	Interdepartmental Working Group
MCI	Maximum Cumulative Impact
MNR	Ministry of Natural Resources of Russian Federation
MVA	Multivariate analysis
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
NTF	Noise Task Force
OSR	Oil Spill Response
OSRP	Oil Spill Response Plan
PA	Piltun Area
PBDE	Polybrominated Diphenyl Ether
PCB	Polychlorinated Biphenyl
PCI	Potential Cumulative Impact
PCoD	Population Consequences of Disturbance
POI	Pacific Oceanological Institute
PSA	Production Sharing Agreement
RMS	Root-Mean-Square
SEIC	Sakhalin Energy Investment Company
SEL	Sound Exposure Level
SSTF	Seismic Survey Task Force
UNDP	United Nations Development Programme
WGW	Western Gray Whale
WGWAP	Western Gray Whale Advisory Panel

1 OPENING

1.1 Introductory remarks

The eleventh meeting of the Western Gray Whale Advisory Panel (WGWAP-11) was held at the Hotel Royal, Geneva, Switzerland, from 12-14 February 2012 under the chairmanship of R.R. Reeves. The meeting was preceded by the second meeting of the Noise Task Force at the same venue on 8-9 February.

Reeves began the meeting by recalling that the independent scientific panel process, involving engagement between IUCN and Sakhalin Energy, had started more than seven years ago. Much has been learned about western gray whales since then, but it is clear that much more remains to be learned. The first meeting of the present Panel was in November 2006. It had been agreed by Sakhalin Energy and IUCN that the initial commitment would be for five years, with the possibility of continuation depending on how things went. Reeves expressed his opinion that all individuals and groups involved to date, including the Lenders, the NGOs, IUCN support staff, Company officials, the Company's contracted scientists and engineers, Associate Scientists enlisted to help the Panel with technical issues, as well as the Panel members themselves, have learned from one another and developed a degree of mutual respect and trust.

This meeting inaugurated the second five-year phase of an exceptional, if not unique, arrangement between conservation and industry. Some challenges can be foreseen in the coming years, and others likely await, unforeseen. It is nevertheless encouraging to look back and recall challenges that have been dealt with, more or less successfully, in the first five years. This gives reason to hope that the WGWAP process will prove resilient in the face of future challenges. What is most important is that all participants in the process keep the conservation and recovery of western gray whales and their ecosystem in the centre of the frame.

All Panel members were present (Annex 1). In addition, Brandon Southall attended the meeting as an Associate Scientist at the request of the Panel.

Representatives of the following organisations also attended the meeting (see Annex 1).

AEA Group	Sakhalin Energy Investment Company Ltd
Credit Suisse	Sakhalin Ministry for Nature Resources
International Fund for Animal Welfare	Standard Chartered Bank
International Union for Conservation of Nature	WWF Russia
Mizuho Corporate Bank, Ltd	WWF UK
Pacific Environment	

Reeves reminded participants of procedures regarding interventions by Observers at WGWAP meetings. Priority is given to Panel members and Company representatives but at the end of each agenda item, Observers are given the opportunity to ask questions and make comments. This is generally limited to about five minutes but can vary at the discretion of the Chair. Also, at any time the Chair may recognise an Observer and request that he or she provides information on a particular topic to the Panel. From the Panel's perspective, the contributions by Observers to WGWAP meetings have been extremely valuable, and it is hoped that this pattern will continue.

Patricio Bernal, Tatiana Saksina, Béatrice Riché and Olivier Hasinger of IUCN facilitated meeting preparations and logistics. Sarah Humphrey served as meeting reporter. Interpreters Alexander Danilov and Grigory Shkalikov provided excellent simultaneous translation, as always. The efforts of all of those individuals in support of the Panel's work are greatly appreciated.

1.2 Adoption of agenda

The draft agenda was adopted essentially without any major changes (Annex 2).

1.3 Documents

The list of documents is given in Annex 3. Those designated as public are available at http://www.iucn.org/wgwap/wgwap/meetings/wgwap_11/

The draft reports of the first meeting of the Environmental Monitoring Task Force and the second meeting of the Noise Task Force were available for reference. Both will be posted on the WGWAP public website once they have been reviewed by task force members and finalised by the chairs.

1.4 Reporting procedures and timelines

The normal procedure is for the Panel to develop its draft report as quickly as is feasible, with a general goal of making it available for fact checking by Sakhalin Energy within about two weeks after the meeting. The Company is expected to complete its fact check within two weeks so that the final report can be made available for public release approximately a month after the meeting. This delivery schedule has often proven to be overly optimistic but it remains a reasonable goal.

1.5 Update on outstanding business from previous meetings including status of recommendations

Reeves reported on progress towards ensuring that the cumulative list of Panel recommendations is up to date and publicly available (http://www.iucn.org/wgwap/wgwap/recommendations/). He noted that some ground had been lost on this aspect of the WGWAP's work as a result of the staffing transition at IUCN but also that there was reason to hope Saksina's availability to help would make it possible to catch up (see Item 1.7).

The Noise Task Force (NTF) agreed that it would strive, in future recommendations, to include clarity on: precise objectives, data requirements, analytical techniques, a realistic timeline, and a means for tracking progress. In principle, clarity on these points would be useful for other Panel recommendations insofar as it is feasible and appropriate to the topic.

The Noise and Environmental Monitoring Task Forces had both noted that many recommendations include an expectation that a policy or procedure will be adopted as regular practice. Once the Company has responded favourably to such a recommendation, it is considered Closed – implemented. However, in view of turnover in the company and changes in company practice over time, there is a need to ensure that implementation continues to be tracked. The Panel **recommends** that IUCN work on this matter with the Panel chair and report back no later than at WGWAP-12.

1.6 Website update

Hasinger provided an update and called attention to the fact that documents for this meeting are available on the WGWAP-11 page of the Panel website (http://www.iucn.org/wgwap/wgwap/meetings/wgwap_11/).

1.7 IUCN update on personnel, contract, TOR etc.

Bernal updated the meeting on changes in support personnel within the IUCN Global Marine and Polar Programme. Finn Larsen left IUCN in May 2011 and Bernal provided interim support to WGWAP until February 2012 when Saksina came onboard as a fulltime replacement for Larsen. Also, Hasinger has been helping since December 2011 in anticipation of Riché's upcoming maternity leave and he is now serving as a temporary replacement for her.

The contract between IUCN and Sakhalin Energy has been renewed and the WGWAP Terms of Reference have been updated and revised. With regard to the latter, questions were raised by Panel members and Observers, and Reeves encouraged them to provide written submissions for IUCN's consideration, noting that the Terms of Reference are subject to change at any time with concurrence of the parties.

During the course of this meeting, a question arose concerning the extent to which participants, including Sakhalin Energy, Panel members, Observers, IUCN officials and others, should be

constrained with regard to publicising discussions, conclusions etc. via social media and other outlets. The WGWAP Terms of Reference, and indeed the very basis for this engagement between industry and civil society, hinge on the principle of transparency. After a lengthy discussion it was agreed that the terms of disclosure of 'findings' and other information presented at meetings need to be spelled out more explicitly than is presently the case in the WGWAP Terms of Reference, and IUCN was assigned the task of working with the Panel chairman to develop a proposed 'code of conduct' for Observers. Donovan offered to provide, as background for use in this endeavour, the existing IWC documentation used to develop its guidelines for the participation of Observers in Commission meetings. This comprises a review of practices in a number of international organisations. The availability of an agreed WGWAP code of conduct should provide clarity and guidance to all parties and preclude future problems in this regard.

2 TWO-YEAR EVALUATION

Turner gave a presentation on his most recent evaluation of the WGWAP process commissioned by IUCN (available at http://www.iucn.org/wgwap/wgwap/evaluations/). The structure and process of this evaluation (completed in November 2011) were similar to those of the previous evaluation in 2008 (completed early in 2009). The emphasis of Turner's Terms of Reference was on evaluating the effectiveness of individual participants and of the process as a whole. Fortuitously, the timing of the evaluation meant that IUCN was able to make use of Turner's results during the late stages of revision of the WGWAP Terms of Reference (see Item 1.7, above).

Turner found some improvement in the functioning and effectiveness of the WGWAP process since the previous evaluation, but he also identified a number of areas where more improvement is desirable (see Annex 4 for the full Summary and Recommendations from the Turner report). For example, he concluded that IUCN should 'lift its game' not only by achieving greater integration of WGWAP (and the related rangewide initiative) with various other IUCN programmes, commissions, country offices etc., but also by establishing closer links with partners and stakeholders in the wider world, both formally and informally. In his view, there is considerable potential for documenting and disseminating 'lessons learned' from the WGWAP experience to wider audiences, but it will require more focussed and sustained effort by both IUCN and the other process participants to produce tangible products and make sure they reach the appropriate constituencies (e.g. business and industry groups, regulatory agencies). Regarding recommendations, Turner noted the difficulty of tracking and managing the large number of recommendations that have been made since the report of the Independent Scientific Review Panel was published in 2005. Considerable progress has been made on this task, but it will be a challenge to recover the ground lost over the past eight or nine months since Larsen's departure. Also, Turner urged the Panel to strive to make its recommendations more operationally precise and avoid ambiguities and generalities.

During discussion, attention was drawn to several specific outreach activities that had taken place since the last WGWAP meeting. These included attendance by Tsidulko and Reeves at the Sakhalin Oil and Gas Conference in Yuzhno in September 2011, where Reeves gave a formal presentation on WGWAP and chaired a roundtable discussion. The attendance of an Observer from the Sakhalin Oblast Government at WGWAP-11 was a direct outcome of Tsidulko's efforts at the Yuzhno conference (see Item 13, below). Also, in December 2011 Reeves, Tsidulko and Yablokov attended a meeting of the Interdepartmental Working Group in Moscow, Reeves and Tsidulko as observers and Yablokov as a member of the working group (again, see Item 13).

Reeves pointed out that several WGWAP members were active in the work of the IWC Scientific Committee and that Cooke's population assessments of western gray whales were regularly presented and discussed at that committee's annual meetings. Summary update reports on WGWAP activities are presented each year and these are published in the Commission's scientific journal (Reeves et al. 2009, 2010, 2011, in press). Reeves also stressed the potential of a multi-authored 'lessons learned' paper, currently being prepared mainly by Nowacek and Southall for peer-reviewed journal publication, to become one of the 'tangible products' of the WGWAP process (see

above) which hopefully will have an impact on industry practice in general. Finally, Panel members suggested that the upcoming United Nations Conference on Sustainable Development (the 'Rio=20 Summit' in Rio de Janeiro in June 2012) may present an opportunity for IUCN to showcase the WGWAP model, and it was noted that plans were already underway for a Sakhalin Energy/IUCN collaborative event on western gray whales at the IUCN World Conservation Congress in South Korea in September 2012.

IUCN is obliged, according to its internal procedures, to prepare and post a detailed 'evaluation response' on the public WGWAP website that includes, for each of Turner's recommendations, a list of specific actions to be taken, the individual(s) responsible for the actions, how implementation will be measured and a timeframe (again, see http://www.iucn.org/wgwap/wgwap/evaluations/ for the response document from the 2008-09 evaluation). The response document for the 2011 evaluation was not yet complete at the time of WGWAP-11 but was expected to be posted on the website in the near future.

3 REPORTS ON FIELD ACTIVITIES IN 2011

3.1 Photo-identification

Tyurneva presented preliminary findings from the 2011 field effort. Photo-ID data were collected from the Piltun, Offshore and Chaivo areas on the Sakhalin Shelf and Olga Bay in Kamchatka. Photos from opportunistic sightings were also obtained in Vestnik Bay, SE Kamchatka. Field methods were the same as in previous years. Photos taken by the tagging team were also included in the data analysis. Tyurneva emphasised that all results are subject to further quality assessment and control.

A total of 16 days of photo-ID effort were achieved by the IBM team off Sakhalin during the period from 23 August to 21 September. Based on a preliminary analysis of the data, a total of 111 individuals were identified, including seven mother-calf pairs, six 'highly probable' calves and two 'likely' calves (i.e. small individuals sighted without their mothers or presumed mothers present). The proportion of animals deemed to be in poor body condition (body condition class 2-4) was 20.7% (23 animals, including seven nursing females). The corresponding proportion in 2010 was 11.5%.

Analysis of photos collected during 2011 tagging operations off Sakhalin is still underway. Provisionally, a further ten distinct individuals were identified during the tagging work.

Photo-ID work in Olga Bay was conducted from 21 July to 8 August. There were six days of effort during this period. A total of 30 different whales were photo-identified, 18 of which were included only in the Kamchatka catalogue as they had not been photo-identified previously at Sakhalin, and 12 of which were included in both catalogues (Kamchatka and Sakhalin). Nine whales were photo-identified in Olga Bay for the first time and two of these were already in the Sakhalin catalogue. Two cow-calf pairs were identified; neither of the mothers was known from the Sakhalin catalogue. The number of 'skinny' whales is traditionally high in Olga Bay: in 2011, 70% were judged to be in poor body condition.

Photos of six whales in Vestnik Bay were supplied by V. Burkanov and V. Vertyankin. One was a whale new to both catalogues (Sakhalin and Kamchatka). Five other whales had been photo-identified at Sakhalin in previous years.

The total number of whales included in the IBM Sakhalin catalogue seen in 2011 at Sakhalin and Kamchatka was 134. [Note: The Panel was informed after the meeting that the final figure was 137.] Furthermore, it was noted that in the past three years of observations (2009-2011) a total of 182 individuals included in the IBM Sakhalin catalogue were sighted, including calves.

Currently the IBM Sakhalin catalogue (KOGW) includes 205 identified whales; the Kamchatka catalogue contains 150 whales. Of those, 84 whales are included in both catalogues, i.e. they were photo-identified at both Sakhalin and Kamchatka.

The Panel welcomed this report and looked forward to receiving final results for 2011 and previous years at its next meeting.

3.2 Distribution

Vladimirov provided an overview of effort and preliminary results from the joint Sakhalin Energy/ENL 2011 vessel- and shore-based distribution surveys. Overall, the 2011 effort mirrored that of previous years in both scope and timing. Vessel surveys were conducted from the research vessel *Igor Maximov* and followed the transect lines employed in 2010. Survey lines in the offshore area were placed further to the east. Visibility and sea state conditions were generally poor during the study period. Only one vessel survey, on 23 September, covered the entire transect area and 34 whales were counted. A partial survey, with a count of 8 whales, was conducted on 20 August.

The 2011 shore-based distribution effort was similar to that of previous years. Surveys were conducted between 1 August and 28 September. Although poor weather conditions prevailed during some portions of the study period, there were six complete surveys (i.e. when all 13 shore stations were covered in a single day) and 14 partial surveys in August and nine complete and 16 partial surveys in September. In August shore-based data showed the highest numbers of whales off stations 3-4 and 5-6 in the north and stations 9-10 and 11-12 near the mouth of Piltun Lagoon and further to the south. In September the highest numbers of whales were observed off stations 9-10 near the mouth of the lagoon.

In discussion, some Panel members noted that the distribution and density of whales was likely influenced by a combination of factors, including not only benthic biomass and prey availability but possibly also industrial activities. The Panel welcomed the clear graphics provided in this presentation and encouraged the use of similar representations of data in the future.

3.3 Acoustics

Racca summarised the 2011 acoustics programme, conducted by POI on behalf of Sakhalin Energy and ENL. The purpose of this programme is to monitor background and anthropogenic underwater sound in and near the two gray whale feeding areas off Sakhalin and in so doing, measure and track changes in the acoustic environment in relation to oil and gas activities.

The results presented were preliminary. The recording buoys appeared to have performed well, remaining in the water for as long as 52 days without maintenance. This increased longevity is welcome because it should mean less need for vessel traffic to service the buoys in coming years. The downside of this improved life is that it requires the use of more alkaline batteries, but hopefully these can be recycled. Data from the buoys appeared to be of good quality, although the Panel was unable to make a full assessment because only a portion of the data was presented.

Racca noted several things in his presentation. Firstly, signals from a seismic survey were recorded on the 'control' and 'Odoptu-N-20' buoys, indicating that the survey occurred in the vicinity of the northern part of the Piltun feeding area. Racca presented some of the received signals and indicated that the data could be mined to estimate source levels; the AIS data from the *Pacific Explorer* recorded on the *Igor Maximov* would be useful for making these calculations.

Secondly, Racca drew attention to vessel noise on several of the recorders, including what was inferred to be noise from trawling operations. He further noted that the recorder at the 'Arkutun-Dagi' buoy had been lost, possibly because of fishing activity in the area. The Panel expressed concern about the possibility that trawling was occurring near or even in the gray whale feeding areas as this could affect the whales in two ways, by causing direct noise disturbance and/or by damaging the benthos and thus affecting the whales' food supply. However, without knowing more about the nature and scale of such fishing activity, it will not be possible to assess its potential impacts.

In its report of WGWAP-8 (Item 3) the Panel had expressed concern about the potential effects of fishing activities on western gray whales in the Sakhalin region. At that time, the Panel had

expressed its intention to 'approach contacts on Sakhalin for more information' in this regard. However, no significant progress has been made since then. It is hoped that with support from IUCN, more progress can be made before the next meeting. Therefore, the Panel **recommends** that IUCN approach the Sakhalin Oblast government, the Sakhalin Fisheries Agency, and any other potential source with an explicit request for information on fishing activities (e.g. number and type of vessels, seasons of operations) in and near the gray whale feeding areas off Sakhalin. Such a request is justified by the Panel's need to be able to assess fisheries-associated risks (including noise) to the whales. A report on progress should be provided by IUCN at WGWAP-12.

In its WGWAP-10 report (Item 6.5.2) the Panel noted that it had had insufficient time to consider carefully the joint programme's noise report from the 2010 season and that it would return to the subject at this meeting. To begin with, the Panel took note that Sakhalin Energy, with the help of POI and Jasco, had presented data in the format requested and that the format, *inter alia* how the spectrograms are presented and the frequency bands displayed, greatly improves the reader's ability to comprehend and interpret the data.

Thanks in part to this improved data format, the Panel's attention was drawn to several very loud periods in August and September 2010. Further consideration of the 2010 acoustics data led the Panel to conclude that there had been periods when noise levels, especially continuous noise, rose well above the criteria set by the Panel in its WGWAP-2/15 report. In fact, in several cases the noise received inside the Piltun feeding area (i.e. at buoys placed along the 10 m isobath) far exceeded the Panel's criteria for behavioural disturbance of gray whales.

Therefore, the Panel makes the following **recommendation** (following the format mentioned under Item 1.5 for new Noise recommendations):

RECOMMENDATION ON THE PROVISION OF ACOUSTIC DATA FOR SPECIFIED PERIODS IN 2010

Objective

To investigate identified periods of loud noise within the feeding grounds in more detail with regard to both the activities underway and the acoustics data recorded. This investigation will attempt to (a) identify the cause(s) of the noise and (b) determine the extent (i.e., sound exposure) of the potential threat or disturbance, so that mitigation can be improved in the future, recognising that the sources of the loud noise are likely not SEIC activities.

Reporting/data requirements

According to the impulse noise format described in recommendation WGWAP-7/002, the Panel wishes to analyse the data from the following acoustic buoys on the dates indicated: Buoys A10, Odoptu N10, Odoptu-S-20 and Odoptu N20 for the periods 25-30 August, and 11-20 September; and Buoy OFA, 1-7 September 2010.

Responsible persons

Sakhalin Energy. IUCN, the Panel

Timeline

The data should be submitted to IUCN by 31 May 2012 and circulated to the Panel. The Panel will provide a report at least three weeks before WGWAP-12.

3.4 Benthic

Fadeev began his report by taking note of the unfortunate death during the 2011 field season of Nikolai Ivanov, a key member of the benthic monitoring field team with skills as a diver and videographer. A moment of silence was observed in commemoration of Ivanov's life and contributions.

Fadeev presented a summary of major data categories collected in summer and autumn 2011 by his field team. Many of the samples were still being analysed, and the data presented were therefore

partial and preliminary. Sample categories collected include contaminants (heavy metals and hydrocarbons) in sediment samples, and benthic species used by gray whales in recognised feeding areas. Sample collection methods and locations followed the standard station design used in previous years (a 'monitoring grid' of points within feeding areas positioned at random). The data presented suggest little change in benthic biomass densities in whale feeding areas between 2010 and 2011. Benthic work in Olga Bay, eastern Kamchatka, was limited in 2011 due to inclement weather and unfavourable sea conditions. A complete report, including consideration and presentation of all 2011 data, is anticipated at the WGWAP-12 meeting.

Fadeev noted that he was participating in an ongoing collaboration with Professor Kriksunov of Moscow State University to carry out multivariate statistical analyses of spatial patterns in existing benthic data (see Item 11.3). The analytical framework had not yet been fully resolved and remained in development. Based on preliminary evaluations of the influences of 17 independent parameters on amphipod distribution, and recognising that phytoplankton appear to be the most significant primary producers for benthic communities in the feeding areas, a current working hypothesis is that the date of annual ice melt in the late spring or early summer is important to phytoplankton biomass and may be significant to inter-annual variation of amphipod biomass in the benthos. Satellite imagery is available for chlorophyll concentrations in surface waters, possibly allowing the generation of index values linked to phytoplankton concentrations.

The Panel has for many years noted the great difficulty yet importance of integrating the various datasets in order to evaluate the effects of various activities on the population. This is discussed further under Item 11.3.

As a follow-up to discussions at the Environmental Monitoring Task Force meeting in December (Item 6.1), Fadeev described an effort to sample and identify phytoplankton in the gray whale feeding areas, with the goal of determining presence and abundance of species capable of producing harmful algal blooms (HABs). One hundred phytoplankton species were identified, of which nine are known to be capable of producing HABs. There is no evidence to suggest the concentrations of these species are high in the gray whale feeding areas off Sakhalin. Brownell suggested that reference to data from other areas where marine mammal exposure to HABs has been investigated would be a useful next step. He also noted that coastal areas in China had some of the highest incidence of severe HABs known, and data from that region should be examined in the context of this discussion.

The Panel **recommends** that Brownell and Weller take the lead in consulting with outside experts (e.g. Frances Gulland in California) on the marine mammals/HABs issue and how it may pertain to western gray whales, and that they report back at WGWAP-12.

3.5 Field programme of Russia-US team in 2011

On behalf of Alexander Burdin and his colleagues at the Kamchatka Branch of the Pacific Institute of Geography, Far East Division of the Russian Academy of Sciences, Weller provided a summary of the 2011 photo-identification results from the long-term (1994-2011) Russia-U.S. research program on western gray whales. A total of 14 small-boat surveys, including 33 hours of directly observing 83 whale groups, were completed in 2011. This effort resulted in the identification of 82 individuals, including 12 calves and one previously unidentified non-calf. When combined with photo-identification images collected during the 2011 satellite tagging operation (used by permission of the IWC), the total number of whales identified and calves observed in 2011 increased to 122 and 15, respectively. The Russia-U.S. 1994-2011 photo-identification catalogue, containing a total of 205 identified individuals, has been finalised and is available upon request from Burdin or Weller. The Panel thanked Burdin and colleagues for providing their summary and extended appreciation to IFAW for supporting the Russia-U.S. research and ensuring its continuation over the past decade.

3.6 2012 Joint Programme

At the Panel's request, Evans provided a spoken summary of the planned Sakhalin Energy 2012 research and monitoring programme. The shore-based behaviour team and archival acoustic monitoring buoys will be in place by mid-June to collect case specific data related to the planned seismic and acoustic site surveys (see Items 5 and 9, below). Once that effort has been completed, there will be a 2-3 week hiatus in the research and monitoring work. On or about the first of August, the joint SEIC/ENL programme, including shore- and vessel-based distribution, benthic, acoustic and photo-identification components, will begin and continue until approximately the end of September, similar to the programme executed in 2011.

4 SATELLITE TAGGING

4.1 Summary of field effort in 2011

Tsidulko and Mate presented the main results of last year's satellite tagging effort conducted under the Research Program of the Okhotsk-Korean Gray Whale (*Eschrichtius robustus*) Population Habitat Using Satellite Telemetry by the A.N. Severtsov Institute of Problems in Ecology and Evolution of the Russian Academy of Sciences (IPEE RAS) in collaboration with Oregon State University Marine Mammal Institute as well as the U.S. National Marine Fisheries Service, Kronotsky State Nature Biosphere Reserve and the Kamchatka Branch of the Pacific Institute of Geography. The Program was funded jointly by Sakhalin Energy and ENL, with contracting and administration through the IWC and IUCN.

The field protocol for selecting whales as candidates for tagging had been updated by the IWC Scientific Committee at its annual meeting in June 2011 based in part on the tagging results from 2010 (see IWC in press). The protocol was further modified during fieldwork in September 2011 based on observations by the field team of the general health status of parturient females known to have weaned their calves earlier in the season. According to the final agreed protocol (with approval of the Scientific Steering Group obtained via e-mail), in 2011 tags could be deployed on mature whales of both sexes as long as they were judged by experts on the field team to be in good health and not accompanied by a calf. The field season spanned from 16 August to 24 September, with tagging effort conducted from 22 August to 22 September. Poor weather limited effort but 17 tagging missions on 16 days were achieved.

Six tags were deployed (five females; one male) on animals that had been photo-identified previously off Sakhalin in multiple years. Four tags stopped transmitting (4-67 days) while the whales were still in Sakhalin waters. One tag was still transmitting at the time of this meeting.

Ancillary to the tagging effort, the tagging team photo-identified 103 individual whales including 11 calves. Six skin samples and four blubber samples were also obtained from biopsies during the tagging effort. The importance of careful use of the biopsy samples was noted. Donovan noted that at least those samples that fell under the control of the IWC would be governed by IWC protocols that include review of any proposals for use by the Scientific Committee (which includes a number of Panel members).

The gray whale known as 'Flex' that had been tracked as a result of the 2010 satellite tagging effort (Rozhnov et al. 2011; Mate et al. 2011), was resighted multiple times in 2011 and was evaluated to be in satisfactory health and condition.

Two of the whales tagged in 2011 (both females) departed the Sakhalin coast approximately a month earlier than Flex had in 2010. While Flex and both 2011 whales crossed from the western to eastern North Pacific, they followed somewhat different tracks. One of the 2011 transmitters stopped working while the whale was in the southern part of the Gulf of Alaska. The other 2011 whale moved south along the west coast of North America almost to the tip of the Baja California peninsula (Mexico). This individual was resighted on two occasions (one day apart) off Oregon and California. At that time the tag appeared to be fully deployed and she was travelling in a group of 8-10 whales, although only one of those was with her on both occasions.

The directed long-range movement by all three tagged whales suggests purposeful migration. *Inter alia* the results will require reconsideration of gray whale migration speeds. Whilst Mate noted that all three whales whose tags continued transmitting migrated eastwards, he emphasised that the sample size was small and the possibility of other migratory routes and destinations of gray whales that feed off Sakhalin in the summer and autumn could not be ruled out.

4.2 Future satellite tagging

Tsidulko reported that five telemetry tags remain in Russia and Mate commented that they may be used to continue the effort. The Panel noted, however, that the batteries of these tags (now several years old) must be checked to verify their ability to perform at an acceptable factory specification prior to future deployment. At its previous meetings (see WGWAP-9 report, item 10; WGWAP-10 report, item 14), the Panel has expressed support for continuation of the tagging programme with oversight by the IWC Scientific Committee. The central objective remains: to learn where the whales from Sakhalin (and Kamchatka) go in winter and the routes they use to get there and back. This information is needed to guide efforts to protect the animals throughout their range, including Russia, Japan, Korea, China, Canada, the United States and Mexico. The Panel also **reiterates** the important role of the joint IWC-IUCN steering group in scientific aspects of the programme.

Evans stated that the main sponsors of the work to date, Sakhalin Energy and Exxon, believed that the funding burden should now be shared more broadly and he also stated that neither company had additional tagging effort in its 2012 scope of work. Yablokov reported that funds for tagging were being sought within Russia and Tsidulko noted that despite the current lack of funding, the permitting process was already underway and would not pose a serious obstacle to any 2012 follow-up effort should funds be made available.

The Panel **urges** all potential sponsors, including Sakhalin Energy and ENL, to consider providing support for the tagging programme. [Note: Following the meeting, the Panel was informed by Evans that SEIC and ENL were working with the IWC, Oregon State University and the Institute of Ecology and Evolution of the Russian Academy of Sciences to find a way to field a satellite tagging programme off Kamchatka in 2012. Evans stressed that an 'internationally led' effort was needed and that additional funding beyond that provided by SEIC and ENL would be required. He reported that IUCN and WWF had promised to investigate ways of supporting this effort and that discussions with the United Nations Development Fund were also ongoing.]

5 NOISE TASK FORCE

5.1 Background

Donovan, who chairs the Noise Task Force (NTF), reported on the two meetings that had been held since WGWAP-10. The NTF had been formed at WGWAP-10 to supersede the Seismic Task Force (SSTF)[1]. Its remit was to:

(1) Continue work on pulse noise issues, especially

- Analyses of the results from the 2010 Astokh 4D seismic survey
- Provide advice and recommendations on the planned summer 2012 2D (geotechnical) surveys

(2) Address broader noise-related issues, including

- Specific noise-generating events or activities
- Continuous noise
- Chronic overall increase in noise on the Sakhalin Shelf

[1] (see http://www.iucn.org/wgwap/wgwap/task_forces/seismic_survey_task_force)

- Review status of past 'noise' recommendations.

5.2 Report of November 2011 meeting (NTF-1)

The first meeting of the NTF was held in Vancouver, Canada, from 13-14 November 2011. The final report is available at http://www.iucn.org/wgwap/wgwap/task_forces/noise_task_force/. What follows here is Donovan's summary of that meeting, the primary focus of which was to consider progress with and the status of past recommendations related to noise issues. The task force's views on these can be found under Items 5.3 and 5.4. New recommendations are dealt with below.

5.2.1 General discussion of recommendations

At the start of its work, the NTF considered the issue of recommendations in general. It agreed that past recommendations had sometimes suffered from imprecise specifications that had led to misunderstandings between the Panel and the Company and this had often resulted in delayed or incomplete fulfilment of those recommendations. It noted that this issue was broader than noise-related recommendations. It agreed that at least for major NTF recommendations, it would try to formulate them under the following headings, recognising that not all headings would always be applicable:

(1) precise objectives;
(2) data requirements;
(3) analytical techniques;
(4) realistic timelines;
(5) a means to track progress.

With respect to items (4) and (5) in the above list, the NTF agreed that it was important to establish mutually agreed and realistic timelines for implementation of recommendations, including completion of analyses and presentation of results. An efficient mechanism is needed to review progress between meetings. Experience has shown that regular teleconferences can be valuable. This should be an organisational priority for the IUCN WGWAP officer.

The NTF suggested that the Panel should consider using the above approach when formulating its recommendations (cf. earlier discussions under Item 1.5).

The NTF also noted that some previous recommendations of the Panel (and its predecessors) refer to actions by Sakhalin Energy that are expected to be incorporated into routine business and require regular attention and updating. The NTF recommended that the Panel develops a mechanism to ensure that if such recommendations are classified as 'Closed' in the online list, they are identified so all parties (especially IUCN) are 'reminded' of the need to ensure continuing compliance/implementation (again cf. Item 1.5).

5.2.2 New or consolidated recommendations agreed at NTF-1

The NTF agreed to one major new recommendation at NTF-1. This related to the reporting of new and ongoing activities for consideration by WGWAP. The formulation goes beyond simply noise issues and the NTF hoped that this would assist the WGWAP in formulating a general recommendation. The Panel's view on this can be found under Item 5.5.1.

The NTF also began to develop a new recommendation dealing with (a) Timing and format for acoustic data presentation, especially in the light of new projected activities and if necessary a re-examination of relevant data from previous years and (b) the need for regular sampling/analysis of ambient noise. The discussions at NTF-1 were continued at NTF-2 (see Item 5.5) where a new recommendation was agreed.

Finally, the NTF agreed that Nowacek would develop a consolidated recommendation arising out of discussions over the unusual noise recorded near the PA-A platform in 2009. This is discussed under Item 5.5.

5.2.3 New information on South Piltun (including the 2D surveys planned for 2012)

The task force received new information from Sakhalin Energy on deliberations within the Company. Further information was received at NTF-2 (see Items 5.3.3 and 9).

5.2.4 D-Tags

The use of D-Tags to collect detailed information on received sound levels and behaviour of gray whales during noise-generating activities and in 'quiet' periods has been discussed at previous meetings (e.g. SSTF-7 and WGWAP-10). The D-Tag (Johnson and Tyack 2003) is a multi-sensor acoustic recording tag that simultaneously measures an animal's movements with accelerometers and magnetometers, the depth of water via a pressure sensor, the temperature of the water, and the sounds made by the animal as well as the sounds to which it is exposed. NTF-1 received an update on the use of D-Tags. It was anticipated that further consideration would be possible once a detailed proposal was available (see recommendation WGWAP 9/028).

5.2.5 Possible ways to obtain, validate, analyse and interpret data from previous seismic surveys by other companies (including Gazprom and Rosneft)

NTF-1 agreed that the issue of obtaining and reviewing data on seismic surveys from other companies would require a more focussed and consistent effort by IUCN than has occurred thus far. It hoped that the appointment of the new full-time officer, along with the contacts with Rosneft made by Tsidulko and Reeves, would improve the situation.

5.2.6 Cumulative noise

NTF-1 received an initial briefing on the integrated analysis being funded by the joint programme of Sakhalin Energy and Exxon Neftegas (also see Item 11.3, below); stage 1 related to integrating information on the multiyear distribution and benthic datasets. Amongst issues raised was the definition of baseline (no activity) years and the appropriate acoustic metrics.

It also received a summary of two recent studies. Rolland et al. (2011) reported that a 6 dB decrease in underwater ship noise below 150 Hz in the lower Bay of Fundy (coinciding with decreased traffic as a result of the terrorist attack on the Twin Towers in New York on 11 September 2001) correlated with a significant decrease in stress hormones measured in faecal samples from North Atlantic right whales. Blackwell et al. (2011) used a modelling approach to examine received sound levels and acoustic behaviour of bowhead whales off northern Alaska over a four-year period. The received 'dose' of airgun sound at which detected bowhead calling rates began to decline was ~ 120 dB re 1 μPa^2s cumulative SEL over 15 min, corresponding to received SPL at the whale of at least 100 dB re 1 µPa. The unit designation here – 1 μPa^2s – provides the appropriate reference pressure (1 µPa) as well as the terms(s) indicating sound energy summed over time.

The NTF noted the importance of integrating information from studies of other baleen whales in developing conservative (i.e. precautionary or risk-averse) advice on potential disturbance from sound whilst recognising the potential limitations of interspecific comparisons. It also noted the practical difficulties in obtaining faecal samples from gray whales in the Sakhalin area.

Issues related to cumulative noise are also considered under Items 11.3 and 11.4.

5.2.7 Review progress on analyses of the 2010 4D data

The task force received and discussed a progress report that provided input to inform the main discussion of this issue at NTF-2. The relevant deliberations are incorporated into the consolidated view given under Item 5.3.

5.2.8 Future of the joint programme

There was a substantial discussion concerning the future of the joint SEIC/ENL gray whale research and monitoring programme, particularly with regard to the question of whether the acoustics element would be maintained. The NTF was concerned to hear of difficulties in getting approval for

the 2011 joint programme as a result of pressure from MNR. *Inter alia* this related to questions of 'recoverability' of research costs. The NTF was informed that it is ultimately the prerogative of the Russia Party under the PSA terms (Production Sharing Agreement) who agree with the Company (effectively 'a contractor' under the PSA terms) on the scope of the work and what costs are and area not 'recoverable'.

This issue is also discussed under Items 3.6 and 11.1.

5.2.9 Panel discussions of NTF-1

The Panel welcomed and endorsed the report of NTF-1 and its recommendations. As noted previously, recommendations relating to POI data obtained under the Joint Programme require joint permission from Sakhalin Energy and Exxon Neftegas. It was agreed that Nowacek would develop a consolidated recommendation arising out of discussions over the unusual noise recorded near the PA-A platform in 2009 for the WGWAP-12 meeting.

5.3 Report (provisional) of February 2012 meeting (NTF-2)

The second meeting of the NTF (NTF-2) was held in Geneva, Switzerland, from 9-10 February 2012. The draft report, largely complete apart from editorial changes (discussion, conclusions and recommendations sections had been agreed by the NTF on 11 February), was available to this meeting. The final report of NTF-2 will be posted on the IUCN website (http://www.iucn.org/wgwap/; http://www.iucn.org/wgwap/wgwap/task_forces/noise_task_force/). What follows here is Donovan's summary of that meeting, the primary focus of which was to:

(1) review progress on 4D analyses and possible implications of any results for planned 2D surveys (see item 3 of this list);
(2) consider the noise section of the 'Issues Document' prepared by Sakhalin Energy (WGWAP-11/5);
(3) review updated plans for 2D (geotechnical) surveys (currently planned for summer 2012).

5.3.1 4-D analyses

The task force was pleased to receive detailed progress reports on the three primary study elements from Sakhalin Energy, recognising the considerable work that had gone into them:

(1) 'Case studies' - each of these consists of a whale track constructed from theodolite sightings by the behaviour teams, resolved in 1-minute steps and associated point-wise with estimated sound exposure levels from the seismic source where applicable;
(2) 'Behaviour' MVAs (these represent a similar but refined approach to previous multivariate analyses by Gailey;
(3) 'Distribution MVAs' (these MVAs focus on the distributional data, and involve newly developed statistical methodologies).

The detailed technical comments, suggestions and recommendations on these progress reports can be found in the NTF-2 report and are not summarised here. The general conclusions under each heading are summarised below.

Case studies

These studies provided valuable detailed observations from the 4D survey that can inform the quantitative analyses of MVAs. The inevitable limitations (e.g. with respect to sample size) are largely a result of success of the mitigation measures (i.e. to complete the survey as soon as possible when fewest whales are present). When data are collected in a non-controlled situation such as this, the results should be interpreted cautiously and it should be recognised that the approach is only likely to detect relatively large-scale effects. Careful consideration is needed to determine the appropriate metrics for exposure (here and in the other studies).

Behaviour MVAs

The NTF welcomed the progress made thus far and endorsed the proposed way forward. It encouraged the use of data from other years to obtain more appropriate 'natural' models and noted that it was important that the analysts were provided with the best bathymetric data (both here and in the 'distribution' MVAs).

Distribution MVAs

The NTF welcomed the progress made thus far. It focussed its suggestions on the three most promising approaches: (a) analysis of scan counts, (b) analysis of distance from shore and (c) analysis of densities.

General conclusions

The NTF recognised both the complexity of the analyses that are required and their importance in adding to understanding of the effects of seismic surveys on whales and in developing improved mitigation measures. It also recognised the future value of trying to incorporate recent developments in the use of state-space models to examine behavioural (and other) responses to human activities. As has been stated several times before, considerable effort and resources were expended by the Company and the Panel to design a comprehensive monitoring and mitigation programme for the 2010 4D survey. Similarly considerable effort and resources were expended in successfully implementing the programme in the field – an effort perhaps unparalleled in the world. It would be false economy not to complete full analyses of the resultant data. While progress may not have been as fast as the NTF would have liked, this is not a criticism of the analysts but a reflection of the complexity of validating and preparing the data, determining appropriate metrics for key parameters and developing new integrative analytical methods. The discussions during the meeting show that considerable progress has been made and the NTF recommended that the work continues and looks forward to receiving the results. A timetable was to be provided by Broker before 21 February.

The NTF also recommended that the analysts seek input from members by email and conference calls in the event that unforeseen issues arise with any of the analyses.

5.3.2 Noise component of the 'Issues' document.

The NTF considered the relevant sections of WGWAP-11/5 that had been produced in response to recommendations WGWAP-9/019 and especially WGWAP-9/020. Its comments can be found later under Item 10 in this report.

5.3.3 Update of general South Piltun project

The NTF discussions on this general issue are reflected in the discussion under Item 9 of the present Panel report.

5.3.4 2012 2D seismic surveys

The task force was informed that the postponement of operations originally planned for summer 2011 to summer 2012 had been due to a delay in obtaining Russian Federation approvals for the critical geophysical part of the work.

Sakhalin Energy confirmed that the previously identified potential location for the South Piltun platform remained valid. However, Company officials were investigating alternative locations farther offshore for the following reasons:

(a) less well complexity (risk) and better target access;
(b) such locations would be farther away from the gray whale feeding area and closer to existing pipelines.

The possibility of shallow gas at the alternative locations requires that 2D seismic survey data also be obtained for them. To this end, consideration is being given to modifying the proposed survey

area. As currently envisioned, any newly designed area will be farther from the gray whale feeding area and may be smaller than the originally proposed area.

In addition, as reported at NTF-1, geoacoustic surveys will be conducted to cover relief well locations near the PA-A, PA-B and Lun-A platforms.

Before addressing the specifics of the planned 2012 surveys, the task force developed a general statement on mitigation and monitoring programmes, recognising that the Panel's recommendations on such matters may be consulted and cited by other companies operating in the region. This statement and subsequent recommendations regarding the planned 2012 surveys are under Item 5.4.

The task force recognised that it had never fully discussed the potential impacts of the sub-bottom profiler(s) to be used during the planned 2012 surveys (and beyond). Actual dimensions of the devices had been provided to Racca's company (JASCO) for acoustic 'footprint' modelling. A small group consisting of Racca, Southall, Nowacek, Broker and Vedenev was established to consider this issue. It had been hoped that this group would be able to report progress at the WGWAP-11 meeting or if not by the end of February 2011. This is discussed further under Item 5.3.7.

5.3.5 Further progress on the consideration of cumulative impacts

NTF-2 received a summary of relevant initiatives underway outside the work of this Panel. In particular, information was provided on a project being carried out by the University of California, Santa Barbara. This is a two-year multi-disciplinary project aimed at developing standardised and practical methods for assessing cumulative effects of anthropogenic underwater sound on marine mammals. Although the aim is general, case studies are being used as part of the project, including a study focussing on bowhead whales in the Beaufort Sea in 2008. *Inter alia*, simulation studies (use of 'animats') are used to examine received levels of computer-generated whales. Output from the project may be valuable in terms of input for the St Andrews University ('Population Consequences of Disturbance' (PCoD) initiative. NTF-2 also received information on parallel efforts of US NOAA and Office of Naval Research on large-scale sound mapping. Further discussion of cumulative impacts can be found under Item 11.4 of this report.

5.3.6 Chair's concluding remarks

Donovan concluded his presentation by thanking the participants for their co-operation. Despite the complex nature and important implications of the discussions within the task force, all members had contributed fully to rigorous debate in a professional and scientific manner.

5.3.7 Panel's discussion of NTF-2

The Panel thanked Donovan and the other task force members for their hard work and clear reports. The Panel **endorsed** the draft report of NTF-2 and its recommendations as presented by Donovan at the meeting; the major recommendations are dealt with below under Item 5.5.

Nowacek summarised progress with respect to sub-bottom profilers – see Item 5.3.4 (above). There was some confusion about the sub-bottom profiler(s) to be used. The Company uses such devices every year to inspect pipelines for damage or maintenance needs and it had not considered them to be a problematic sound source. Without the specifications of the device or devices to be used for the 2012 surveys, however, the Panel cannot make informed recommendations about this matter, particularly because there is a range of source levels for the units the Company was reportedly considering. The Panel **recommends** that information on the sub-bottom profiler(s) to be used for the 2012 surveys be provided as soon as possible to IUCN and that an appropriate mechanism be determined for the Panel to provide timely advice.

There was some discussion over the status of MVA (or similar) analyses and their relevance to future work such as examining any plans for a South Piltun development or consideration of seismic surveys beyond 2012. To date, there have been five such cases: the Exxon seismic survey in 2001, PA-B related work in 2005, Sakhalin Energy pipeline construction in 2006, Exxon pile-driving in

2008 and 2009 and Sakhalin Energy's 2010 4D seismic survey. It was noted that data collection and analyses for these events were not all of equal quality for a number of reasons including inclement weather, poor equipment or equipment failure. It was suggested that this was particularly true of acoustic data. Also, some of the analyses involved information and data from different sources, i.e. Exxon only, Sakhalin Energy only, or the SEIC/ENL Joint Programme. This may affect the ability of the Panel or task force to conduct additional analyses. Broker noted that Sakhalin Energy would like ultimately to publish its studies (which at present are in the form of 'gray literature' reports) in the formal peer-reviewed literature.

The Panel noted the importance of using past experience to inform planning of future activities as well as the need to consider cumulative and aggregate sources of noise. This may come not only from examination of already completed analyses (such as Gailey's earlier MVAs) but also from re-examination of existing data using newly developed analytical methods such as those being developed for application to the 4D seismic survey data. Consideration of future aggregate sound levels by the Panel will require information on likely activities of other industrial activities in addition to those of Sakhalin Energy (see Item 11.2).

Sohl (WWF UK) reported that WWF opposed the additional platform and considered it premature to continue with the 2D and acoustic site surveys this year in the absence of information on the new platform and development. The risk associated with the survey cannot be reduced to zero. Aggregate and cumulative effects are of concern. She noted her understanding that ENL would be constructing its Arkutun Dagi platform about 25 km from shore in 2012 and this would generate additional associated ship noise.

5.4 Update on the status of previous noise recommendations

The Panel **noted** that IUCN will update the status of noise recommendations from previous meetings in accordance with the guidance given in the NTF-1 report.

5.5 New major recommendations arising out of Panel discussion of the NTF-1 and NTF-2 reports

5.5.1 Recommendation WGWAP-11/006

CONTINUOUS RECOMMENDATION ON THE REPORTING OF NEW SAKHALIN ENERGY ACTIVITIES AND CHANGES IN ACTIVITIES WITH POTENTIAL IMPLICATIONS FOR WESTERN GRAY WHALES

Objective

The Panel has a responsibility to review, evaluate and advise on Sakhalin Energy activities that may have impacts (including in a cumulative manner) on western gray whales (e.g. with respect to noise, damage to benthos, oil spill risk). This requires that the Panel is made aware of planned 'new' activities as well as any changes to ongoing activities well in advance of these becoming operational.

Reporting/data requirements

It would be valuable and efficient to have a single 'activities' document that can be updated regularly (at a minimum, immediately prior to WGWAP meetings).

Items to be summarised include:

- numbers, types, locations and general operating patterns of marine vessels working for SEIC (e.g. supply vessels, oil spill response vessels, standby vessels, accommodation vessels, diving vessels, *ad hoc* activities)
- changes to 'regular' operations (e.g. drilling, well conductor driving, maintenance and project activities)

- potential or actual specific/unusual activities (e.g. seismic surveys, pipeline stabilisation, construction works) – with notification as early as possible;
- timelines of such activities throughout the season or seasons (to allow consideration of aggregate activities).

Where changes occur, there should be a concise explanation of why they are necessary, a summary of options considered, an evaluation and risk assessment of any possible impacts and a presentation of measures proposed by the company to ensure that disturbance or other effects on gray whales are minimised. As appropriate, this should include an explanation as to why certain potentially applicable mitigating measures were not adopted.

Responsible persons

Sakhalin Energy

Timeline

Sakhalin Energy should report at least annually in document form, consistent with its normal business planning cycle. Information must reach the Panel sufficiently in advance to ensure that any ensuing recommendations can be used by the company to modify its plans if necessary. Large-scale activities such as those involved in the South Piltun development, seismic surveys etc. are best dealt with (as has been the case) as separate exercises with considerably more lead time and detailed information must be provided well in advance. It is recognised that the task force approach may need to be used for such cases.

Also see Item 11.1 (below).

5.5.2 Recommendation WGWAP-11/007

CONTINUOUS RECOMMENDATION ON THE DESIRED ANALYSIS AND REPORTING OF ACOUSTIC DATA FOR SUMMARY REPORTS.

Objective

To provide a more constructive and productive means of initial analysis and examination of acoustic data, consistent and adequate summaries of data on temporal patterns of noise must be submitted to the Panel for consideration. In addition, the original time series of data must be available for more detailed analysis of specific events of interest. This new process should facilitate the most efficient and productive review of acoustic data by the Panel and NTF.

Reporting/data requirements

All original time-series data should continue to be collected and stored by the Acoustic Monitoring Group at the Pacific Oceanological Institute (POI). This is not a new request but reflects the critical importance of full archival preservation of the original data.

WGWAP recommendation 7/002 specifies the need for the reporting of data on specific acoustic events on relatively fine temporal (1-s for impulse noise; 1-min for continuous noise) and spectral (1-Hz band) scales. While data must be made available upon request on these fine scales for specific events, this is not a regular requirement for all sensors and all sampling periods. However, to expedite the release of 'event' data in a timely and efficient manner Sakhalin Energy has agreed to include in its contract with POI a requirement that all raw acoustic data be pre-processed and archived as time-indexed frequency-resolved records (e.g. through the computation of simple, non-averaged spectrograms). This operation will minimise the time needed by POI to fulfil subsequent requests for data.

For each season, beginning with 2012, the following tabular and graphical summary representations of the acoustic data should be included in, or enclosed in digital format with, the reports. Specifically, each annual report would include for every recording station and all available data

periods:

* Tabular summaries in digital format of 30-min Leq levels in 1/3-octave bands between 10Hz and 10kHz (ANSI standard centre frequencies)

* Graphs showing sequential 1-min Leq values for the 20Hz-2 kHz and 20 Hz-15 kHz passbands (presented chronologically with ~3 days data/graph)

* Distinct spectrograms showing a) 1-min averages in the range 20Hz-2kHz on a linear frequency scale and b) 1-min averages in the range 20Hz-15kHz on a logarithmic frequency scale. For completeness and ease of reference, the 2-20 Hz frequency range could be shown on a common time axis alongside the 20Hz-15kHz logarithmic spectrograms, but should be segregated and rendered separately with an independent colour scale so as not to restrict the dynamic range of the >20 Hz data.

Responsible persons

SEIC, IUCN

Timeline

The company should submit a report annually through IUCN in document and/or digital form that contains the data as described above. Sakhalin Energy and IUCN will develop an efficient method to transfer and circulate this material to the Panel and/or Task Force members as appropriate.

5.5.3 Recommendation WGWAP-11/008

RECOMMENDATION ON ANALYSES OF RESULTS FROM THE 4-D SEISMIC AIRGUN ARRAY SURVEY

Objective

Perhaps unparalleled effort and resources were expended to design and successfully implement a comprehensive monitoring and mitigation programme for the 2010 4D seismic survey. Considerable effort and resources have also been invested in validating, coding and developing initial analyses of the data. It is important that the data collected are fully analysed as soon as possible to increase understanding of the effects of seismic surveys on whales and thus contribute to the evaluation of existing mitigation measures and the development of improved measures for future surveys.

Data requirements/analyses

These are specified in the reports of the Noise Task Force (NTF-1 and NTF-2) and the comments, suggestions and recommendations in those reports have been endorsed by the Panel. They are not repeated here.

Responsible persons

Sakhalin Energy (for ensuring the analyses are carried out in accordance with NTF-1 and NTF-2 reports, informing NTF members on progress, consulting with them on methods where appropriate and submitting written reports), NTF members (for providing verbal and written comment as appropriate through email, teleconferences and meetings) and IUCN (for logistical support with document circulation, teleconferences and meetings).

Timeline

The Panel was advised by Sakhalin Energy after the meeting that it expected work on the behaviour and distribution MVAs to be completed by 31 August 2012.

5.5.4 Recommendation WGWAP-11/009

STATEMENT AND RECOMMENDATIONS ON SEISMIC AIRGUN SURVEYS IN SAKHALIN WATERS WHERE GRAY WHALES ARE CONCENTRATED

Recognising that the mitigation and monitoring programmes developed by the Panel and Sakhalin Energy may be considered by others as precedents, the Panel **emphasises** the following:

(1) the mitigation and monitoring strategies developed for the 2010 and (proposed) 2012 seismic airgun surveys were based on:

(a) careful analysis of the specific airgun array being used (**2620** in^3 in 2010 and **160** in^3 in 2012) and associated modelled footprints in the feeding area;

(b) the position and extent of the surveyed area with respect to the gray whale feeding areas[2];

(c) the seismic survey strategy, especially the timing of the survey;

(2) thus while the development processes and analytical methods used to determine mitigation measures for seismic surveys involving airgun arrays of different sizes are generally applicable, several aspects are case-specific and must be seen in the context of the total mitigation strategy;

(3) the primary mitigation measure for any seismic airgun survey in Sakhalin waters where gray whales are concentrated must be to complete the survey before the majority of whales have arrived in the area (nominally by 7 July based on conditions observed at Sakhalin in about 2005-2010); without this, the other measures alone established for the 2010 and 2012 surveys would not have been considered sufficient by the Panel.

The sizes of the recommended exclusion zones[3] around vessels operating seismic airguns for gray whales are primarily dependent on the power of the sound source and not the location or spatial extent of the survey. The Panel **recommends** that exclusion zones must be at least the modelled $180dB_{RMS}$ re:1µPa distance from the specific array to be used plus an appropriate additional safety margin that may change with circumstances. Generalising from the analyses undertaken for the 2010 and 2012 surveys, the Panel **recommends** that for seismic surveys in areas off Sakhalin where gray whales are concentrated:

(1) for sound sources of 200 in^3 or less, the exclusion zone must be at least 500m;

(2) for sound sources of over 200 in^3 it must be based on modelling (for $180dB_{RMS}$ re:1µPa) and verified in the field (or directly measured) and in any case must not be less than 1000 m.

The Panel **recommends** that this general statement is clearly displayed on the IUCN website along with the detailed mitigation and monitoring strategies developed thus far.

5.6 Future work of NTF

The Panel agreed that there was a need for the NTF to continue its work. In particular, its next meeting should focus on the analyses of the 4D seismic survey data as well as reviewing progress on other recommendations. The timing of that meeting must wait until SEIC provides the timeline for this work. The value of regular teleconferences to review progress and finalise the date of the next meeting and its agenda was recognised. The Panel **requests** that IUCN ensures that NTF teleconferences are organised on a regular basis.

[2] The Panel developed a working definition of the 'feeding area' based on an analysis of distribution data collected over a number of years (see WGWAP-6 report, Item 5.5). The area varies by season. The analysis should be updated from time to time as more data become available.

[3] Area around the seismic vessel within which activities must cease immediately if a marine mammal is observed.

There was some discussion as to how to handle new information on the forthcoming 2D survey. The Panel recognised the formal commitment from Sakhalin Energy that (a) the full agreed suite of monitoring and mitigation measures would be implemented and (b) if there are any changes to the survey area the Panel would be informed immediately and such changes would not increase the size of the survey area or move it nearer to a gray whale feeding area. The Company **confirmed** that the details of any significant changes would be submitted immediately to IUCN for circulation to the Panel. In consultation with the Panel and especially those serving on the NTF, the Chair of the Panel would then determine what response is required.

While recognising that in this case, it appears that any changes would be in the direction of reducing potential noise disturbance, the Panel **stresses** the need to determine future mechanisms for response to single emerging inter-sessional issues that do not necessarily involve holding a full meeting.

For more on the topic of future meetings, see Item 14.

6 ENVIRONMENTAL MONITORING TASK FORCE (INCLUDING OIL SPILLS)

6.1 Report of December 2011 EMTF meeting

VanBlaricom, co-chair with Dicks, presented a brief overview of the first WGWAP Environmental Monitoring Task Force meeting (EMTF-1) and discussed updates on environmental monitoring recommendations and the future work of the task force (Items 3.4, 6.3 and 6.4). Dicks followed with an overview of the oil spill portion of the EMTF's work and then summarised changes to oil spill recommendations (Item 6.2).

EMTF-1 was held 7-9 December 2011 in Geneva. A draft report was provided for review at WGWAP-11 and the final report will be made available on the WGWAP website in due course.

6.2 Update on oil recommendations

Consideration was given at the EMTF meeting to the status of previous recommendations related to oil spill and gas associated risks. Reeves, Dicks and VanBlaricom completed an update with Saksina at WGWAP-11. During this process, it was noted that recommendations WGWAP 3/025 and 3/027 had been wrongly allocated on the IUCN website to oil spill and gas associated risks when they contained only minor reference to oil analysis. The main subject of these recommendations is whale carcasses and necropsy so they should be relocated to Table 7 (The Rest) on the Recommendations page of the WGWAP website. Saksina agreed to ensure this is done.

Victoria Broje, an oil spill specialist from Shell in Houston who was involved with the Macondo (Deepwater Horizon) platform blow-out in the Gulf of Mexico, joined EMTF-1 via teleconference and provided some interesting insights into how international perceptions regarding the use and effectiveness of dispersant chemicals and in-situ burning have changed. The Panel noted that there had been relatively few changes in the operational aspects of the Sakhalin II offshore platforms or at the Prigorodnoye terminal in Aniva Bay since Dicks's last visit in 2009. It sees little need for changes to oil spill response planning. The Panel believes SEIC's oil spill response arrangements have already been tailored as far as practicable to minimise impacts on gray whales and their prey. In view of this, the Panel welcomed the reconfirmation by Evans of the Company's commitments under the terms of the HSESAP Management System, as published on SEIC's website and as subject to regulation by the Lenders and the Lenders' representatives. Should any significant changes to existing arrangements be contemplated by the Company in the future, the Panel would expect to be advised and given the opportunity to comment.

It was noted at EMTF-1 that there is potential for change to occur in oil properties through the life of an oilfield. The Panel took note of the value of obtaining and evaluating data from Sakhalin Energy on changes in the physical properties of extracted crude oil in the project area over the life of the project. This is something that will need to be checked periodically to ensure that the

Company's oil spill response plans and capabilities are consistent with the oil properties as (and if) they change through time.

An oil spill exercise was conducted at the mouth of Piltun lagoon in September 2011, in compliance with recommendation WGWAP-7/019. The status of recommendation WGWAP 7/019 therefore should be changed to 'Closed - superseded' by the two-part recommendation given later in this paragraph. Sakhalin Energy provided an Ecoshelf report on the September 2011 drill for consideration at the EMTF meeting. Ecoshelf's reports are factual and frank and contain practical recommendations for improvements where problems are encountered. The drill revealed problems with vehicle access to the site (due to the poor quality of roads), with deployment of protective booms in the lagoon mouth (due to strong tidal currents) and with support for personnel in the field. It was proposed at EMTF-1 that a repeat drill should be conducted in 2012 to resolve these difficulties.

The Panel **recommends** that (i) lessons learned from the 2011 Piltun drill are taken into account during the Piltun drill that is scheduled by SEIC for 2012, with attendance by Dicks and other Panel members/IUCN representatives; (ii) Dicks and other Panel members, if needed, take part in planning of the drill to ensure that amongst other objectives it addresses the Panel's concerns; and (iii) the site visit is combined with a review of Sakhalin Energy's OSR equipment and other response resources. Sakhalin Energy confirmed its agreement and support in principle and indicated its willingness to facilitate the site visit.

Regarding recommendation WGWAP 7/020, the Panel had only been supplied with the relevant documentation on oil spill exercises during this meeting. Sakhalin Energy conducted more than 200 spill response exercises in 2011. Many were routine desktop exercises to check communications procedures, but a number of drills deployed large offshore skimming systems at sea around the PA-A and PA-B platforms and in Aniva Bay, and shoreline equipment was deployed at Piltun Lagoon (see above) and in winter conditions on onshore pipeline routes and river crossings. The OSR reports contain suggestions for improvement, especially to organisation and management of personnel. The reports reviewed by Dicks concerned Sakhalin Energy exercises with limited involvement of Sakhalin Oblast or Russian Federation authorities. Therefore the Panel was pleased to learn that the Company was scheduled to conduct a Tier 3 exercise in May 2012 jointly with Russian authorities and hopefully with the involvement of Japanese government interests. Evans pointed out that the Federal Oil Spill Response Plan in Russia provides different levels of engagement with Russian Federation authorities depending on the size of the spill. The Panel intends to pursue further the subject of Tier 3 exercises (scope, participating authorities and interests, etc.) with Sakhalin Energy during 2012.

On a related matter, the Panel believes there is a strong likelihood that oil from a major spill at or near one of the Sakhalin II platforms or pipelines would penetrate into Piltun Lagoon. An important component of the lagoon ecosystem is emergent vegetation (marsh grasses and other species) which is highly vulnerable to oil damage and ill-advised attempts at clean-up. Restoration methods for marsh vegetation (such as re-seeding or transplantation of vegetation plugs) can assist with recovery, but these only work for certain communities. The supporting documentation for the OSRPs does not provide adequate information on the wetland vegetation such that targeted restoration measures could be identified and put in place. The Panel suggests that further studies aimed at providing baseline data on emergent wetland vegetation within Piltun Lagoon be conducted during 2012 with the aim of producing marsh restoration proposals for the OSRPs.

The Panel reiterates the need for a mechanism by which IUCN follows up and tracks recommendations through time, making sure commitments are met (e.g. see Items 1.5 and 5.1, above). The spill exercise reports are a good example of an annual requirement, as was agreed when recommendation WGWAP 7/020 was assigned a status of 'Closed – implemented'. The addition of a tracking column to the cumulative list of recommendations on the WGWAP website would be one way for IUCN to monitor compliance into the future.

Regarding recommendation WGWAP 8/012, on provision, Sakhalin Energy reported early in the meeting that technical issues had arisen with the factual content of the report and this had prevented

the Company from providing it for Panel review. However, it was later learned that the report is publicly available on the Sakhalin Energy website, so recommendation WGWAP 8/012 can be considered 'Closed – implemented'. Dicks will review the document and report back at WGWAP-12.

Recommendation WGWAP 10/017 concerns the provision of revised copies of Ice Response and Environmental Monitoring handbooks. With respect to the former, Evans reported that the Russian version had been updated in August 2011, but the English translation was unacceptable and is currently being re-done. Once the new translation is available, it will go to the Lenders' environmental consultants and will then be provided to the Panel for review through IUCN. Evans also agreed to check the status of the Environmental Monitoring handbook and report back to the Panel.

During the discussion at WGWAP-11 Knizhnikov referred to a Scanex report he had provided to the Panel which summarised the use of satellite imagery to track vessel traffic around Sakhalin in 2011, and also included consideration of the potential for detecting oil on the sea surface. Dicks had seen the Scanex report and agreed to follow up on whether time sequence data on vessel activity might be available and also on the oil detection issue.

6.3 Update on Environmental Monitoring recommendations

Recommendations for Panel consideration that emerged from EMTF-1 related to Environmental Monitoring were forwarded either to this agenda item (see below) or to Items 3.4 and 6.2 (above). Recommendations WGWAP 1/021 (1) and 10/013 should be classified as 'Closed – superseded' by the following two-part recommendation: The Panel **recommends** that Panel members Tsidulko and VanBlaricom collaborate with Fadeev and colleagues at the Russian Academy of Sciences in Vladivostok to produce a review of literature relevant to the following question: "Why do western gray whales focus their foraging effort on the recognised feeding areas on the northeastern Sakhalin shelf?" It further **recommends** that VanBlaricom and Tsidulko, in collaboration with Fadeev, develop a formal proposal to IUCN for support of the literature review, with objectives and funding needs identified.

The Panel **recommends** that when biopsy samples are collected from western gray whales for various research purposes, blubber portions be used, in part, to assess anthropogenic contaminant levels (particularly persistent organic contaminants such as PCBs and PBDEs), as long as the volume of a given sample is sufficient to allow such analyses, with due consideration of other priorities for use of the biopsy material.

6.4 Future work of EMTF

There was general agreement that another EMTF meeting would not be scheduled at this time, although future meetings may be deemed appropriate in response to emerging issues. The principal tasks over the next few months will be completion of the literature review as described above, and the site visit by Dicks to observe a shoreline oil spill response exercise at Piltun Lagoon and conduct inspections of OSR resources, scheduled for summer 2012.

7 PHOTO-ID

7.1 Update on status of catalogue comparisons

The annual update of cross-comparison of the Sakhalin gray whale catalogues of the two field teams (Russia-US and IBM) was carried out for 2010. Each team matched the other team's catalogue with its own.

As of 2010 there were 187 whales in the IBM Sakhalin catalogue and 188 whales in the Russia-US catalogue. Of these, 171 whales were common to both catalogues, making a total of 204 distinct whales. There was complete agreement between the teams as to the results of the cross-comparison.

The 2010 Russia-US catalogue includes whales identified during tagging-related surveys in 2010. This inclusion resulted in two additional whales in the catalogue, both of which were matched with whales in the IBM catalogue.

No systematic attempt has yet been made to compare the Russia-US catalogue with the Kamchatka catalogue, but during the comparison exercise by the IBM team, one whale was noted that was common to the Russia-US and Kamchatka catalogues but not found in the IBM Sakhalin catalogue.

The total of distinct whales seen by one or other of the teams off Sakhalin in 2010 is 121, including eight calves. A further 20 whales in the catalogues (i.e. whales seen off Sakhalin in previous years) were seen off Kamchatka in 2010, making a total of 141 Sakhalin-catalogued whales (including eight calves) seen alive somewhere in 2010.

The Panel thanked both teams for their participation in the cross-comparison exercise, and notes its standing recommendation (WGWAP-6/015) that the cross-matching between the Russia-US and IBM Sakhalin catalogues be updated annually. This recommendation should be included among those that are considered ongoing (see Item 1.5). Due to an oversight, the IBM team has already received the 2011 catalogue additions from the Russia-US team. Therefore, the comparison of the 2011 catalogues will not be double-blind as normally recommended.

The Panel also **notes** its recommendation (WGWAP 10/04) that the Russia-US catalogue and the Kamchatka catalogue be compared directly, and **requests** that Saksina (IUCN) initiate this by contacting the relevant parties. The Panel further notes that this is a relatively small task, since it requires only matching those whales in the Russia-US and Kamchatka catalogues that are not also found in the IBM Sakhalin catalogue.

7.2 Status of comparisons of Sakhalin catalogue to collections from other regions (e.g. Canada, western US, Mexico)

Weller provided a summary of recent efforts to compare the Russia-U.S. team's Sakhalin photo-identification catalogue with a similar catalogue of gray whales in the eastern North Pacific. The objective of this comparison was to investigate possible population mixing in addition to that revealed by the movements of 'Flex' during the 2010 tagging study conducted by A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences and Oregon State University Marine Mammal Institute (see Item 4, above).

The western North Pacific (WNP) to eastern North Pacific (ENP) catalogue comparison involved 181 and 1,064 individuals, respectively, and resulted in six matches (three males, two females and one whale of undetermined sex). Three of the six whales were first identified as calves (with their mothers) off Sakhalin. All ENP sightings of Sakhalin whales occurred off southern Vancouver Island, British Columbia, and were made during only two days of effort. Three whales were identified on 2 May 2004 and three more on 25 April 2008. The three 2004 whales were observed together in a single group, while the three whales in 2008 were in two separate groups in close proximity. All six whales had been sighted off Sakhalin prior to their ENP sightings and five were observed off Sakhalin subsequent to being sighted in the ENP. Four whales were sighted in both the ENP and WNP in the same year, three in 2004 and one in 2008. As the ENP catalogue represents only a small fraction of the total number of individuals in the ENP population (~19,000), it is likely that more WNP/ENP exchange has occurred than was detected from this comparison.

Although these matches provide new records of cross-basin movements, Weller reminded participants that winter/spring observations of gray whales off Japan, including a 2006/2007 photographic match between Honshu (Japan) and Sakhalin, suggest that not all gray whales identified off Sakhalin follow the same migration pattern as the few tagged whales that have been tracked thus far. Therefore, Weller hypothesised that the number of Sakhalin whales that migrate along the Asian coast could be fewer than previously estimated and therefore of greater conservation concern.

Weller called attention to a recently initiated 'Pacific wide study on stock structure and movement patterns of North Pacific gray whales, which is being carried out under the auspices of the IWC

(IWC in press). The purpose is to facilitate comparisons of photo-identification and genetic samples collected in areas traditionally allocated to the 'eastern' (e.g. Mexico, USA, Canada, Alaska, Chukotka, north-eastern Kamchatka) and 'western' (Sakhalin, south-eastern and western Kamchatka/Sea of Okhotsk, Japan, Korea, China) populations. Priority has been given to previous recommendations of the IWC Scientific Committee, including: (1) genetic comparisons between Japan/Russia (i.e. Sakhalin, Kamchatka, Chukotka) due to their near proximity in the WNP and recent photographic links between Japan and Sakhalin (Weller et al. 2008) and Sakhalin and Kamchatka (Tyurneva et al. 2010) and (2) genetic comparisons between Kamchatka (which may represent a mixed feeding area for ENP and WNP) and all regions in the ENP and WNP.

7.3 Future photo-ID efforts

Sakhalin Energy confirmed that collection of photo-ID data on the Sakhalin Shelf was included in the programme of work for 2012 approved by MNR. Continuation of photo-ID data collection in Kamchatka was not included, however. It was explained that Russian authorities had decided that costs of data collection outside the Sakhalin II licence area could not be counted as recoverable under the PSA. It is unclear to the Panel whether this implies that the Company is not permitted to support such work. Evans clarified that in 2011 the companies (SEIC and ENL) had been advised by MNR that the Kamchatka scope was not approved and therefore this scope was removed.

The Panel heard that the Russia-US team was optimistic that its data collection would continue in the 2012 field season, but that this could not yet be confirmed at the time of the meeting.

Noting the value of this work for population assessment and other purposes, the Panel considers it highly desirable that the photo-ID research and monitoring work on the Sakhalin Shelf continue.

The Panel considers the continued collection of data in Kamchatka to be important because it contributes to understanding of the 'Sakhalin population' and Evans confirmed that the companies also consider this important. Among other things, it is valuable to have records of Sakhalin individuals in Kamchatka, especially in years when they are not photo-identified or otherwise recorded in Sakhalin. Therefore, the Panel **recommends** that Sakhalin Energy makes every effort to support the work in Kamchatka as it is integral to monitoring population status. If the Company cannot implement this recommendation, the Panel alternatively **recommends** that Sakhalin Energy ensures there is no obstacle to continuation of the work with funding from another source. In particular, the Company and other parties should make every effort to extend the rights of access to and use of the data collected in Kamchatka thus far to whatever agency or persons continue the photo-ID work there. This would enable the Kamchatka catalogue and sightings history database to continue being updated. In the event that rights reside jointly with co-sponsors (i.e. ENL), Sakhalin Energy should work with co-sponsors to furnish the required permissions.

8 POPULATION ASSESSMENT

8.1 Updated assessment (validity of assumptions etc.)

The last assessment, presented to WGWAP-8 in 2010, had used photo-ID data collected off Sakhalin by both the Russia-US and IBM teams through to 2008 (document WGWAP 8/9).

In view of the recent satellite-tagging results, the interpretation of the assessment requires more attention. The model had been based on the assumption that the Sakhalin whales form a demographically self-contained population. Given the documented migration of Sakhalin whales to the eastern North Pacific (see Items 4.1 and 7.2), it now seems unlikely that they are fully isolated. It is still possible that the Sakhalin group is demographically self-contained (i.e. that the whales coming to Sakhalin were all born to mothers that came to Sakhalin) but this requires further investigation. There is clearly a high degree of site fidelity, in that whales seen in Sakhalin return to Sakhalin at a high rate, and female Sakhalin whales have a propensity for bringing their calves to Sakhalin, but these factors require quantification.

The Panel **recommends** further work on the interpretation of the population assessment in the light of recently available tagging, photo-ID and genetics results. The Panel further **recommends** that, when a definitive version of the IBM dataset through 2011 is available, an updated joint assessment be conducted.

Preparation of a joint assessment had been planned for this meeting, using sighting history data from both teams for the seasons through 2010. However, the most recent available tabulations of the IBM data (document WGWAP 10/14) showed retrospective changes to the sighting history data also for years prior to 2008, relative to the version of the dataset used for the assessment in document WGWAP 8/9; it was unclear which versions were definitive. The Panel recalls its previous recommendation (WGWAP-6/020) that datasets be assigned version numbers, and that a record be maintained of all retrospective changes to data.

The Panel **recommends** that both teams be requested to supply definitive versions of their sighting history datasets, including data through the 2011 season, for input to a joint assessment to be presented at WGWAP-12. Changes relative to previously submitted versions should be documented. Sighting history entries from Kamchatka should also be included in the assessment if possible, at least for those whales which have also been seen off Sakhalin.

In the meantime, a preliminary updated population assessment was presented by Cooke using only Russia-US data through the 2011 season. The model was the same as that used in the 2010 assessment (document WGWAP 8/9), which had been subject to independent review in 2011 (document WGWAP 10/9). The median estimate for the non-calf population size in 2012 is 141 whales (95% 126-152) (155 whales (95% CI 142-165), if calves are included). Median estimates and associated 90% confidence limits for the key population parameters are: calf survival rate 0.72 (0.67-0.81), non-calf survival rate 0.976 (0.960-0.984) and annual rate of increase 4.0% (3.1-5.8%). While the population continues to increase, the estimates of population size in the new assesment are slightly lower than those in the 2010 assessment (document WGWAP 8/9), when comparing estimated numbers for the same year (e.g. median estimate for non-calf population size in 2008 in the new assessment is 123 (118-128) whales compared with 127 (123-130) in the 2010 assessment), but the changes are within the confidence intervals.

8.2 Stock identity

In addition to the questions of direct relevance to population assessment, the Panel considers that the full range of questions relating to population structure and stock identity of gray whales needs to be re-examined in light of the new data from satellite tracking (Item 3, above) and photographic and genetic matching (Item 7.2, above). This will require extensive input from various scientific disciplines, including the field of population genetics which is not well represented on the Panel. Rather than attempting to resolve the evident complexity of the topic itself, the Panel considers that it is best addressed in other scientific fora, particularly the IWC Scientific Committee. The matter is on the committee's agenda for its June 2012 annual meeting. Therefore, the Panel does not make a recommendation of its own at this stage.

9 UPDATE ON SOUTH PILTUN PLANNING AND DECISION-MAKING

Davey gave a presentation on behalf of Sakhalin Energy to explain the current state of planning for a third platform near the Piltun feeding area. He stressed that the Company is obliged to consider this third platform (PA-C or South Piltun) under the terms of the Production Sharing Agreement, which require that hydrocarbon resources in the licence area are exploited to the maximum extent that is feasible and commercially viable. It is standard industry practice to develop the most accessible and economically attractive portions of an oil and gas structure first and only later investigate options for extracting products from the more marginal portions. Thus the difficulty being experienced by the Company in deciding if and how to proceed with a third platform is not unexpected. Davey stated that some rethinking is underway and the timeline for the phased decision process, as previously presented to the Panel, has been adjusted somewhat in recent months pending further studies. The current understanding is that a final investment decision will not be made before

2014, which means the earliest conceivable date for the start of production would be around 2019/2020.

As part of his presentation, Davey summarised potential rig types, substructure options, oil and gas processing options, possible pipeline configurations and tradeoffs. He presented some preliminary modelling results intended to explore worst-case construction noise scenarios, noting that a great deal more of this kind of work would be needed to meet environmental impact assessment requirements if and when a decision was made to proceed with a new platform. Finally, Davey mentioned that the scope of the planned 2-D seismic and acoustic site surveys to assess shallow gas and seabed hazards at and around potential sites for a new platform (see Item 5) had been modified to allow the identification of sites for relief wells (for existing well-stock) in the event of a blow-out. This stems from a review of Sakhalin Energy's entire operation in the light of the Macondo (Deepwater Horizon) oil spill in the Gulf of Mexico and prudent risk management being pursued by responsible operators worldwide.

In the reports of its last two meetings, the Panel made clear that its willingness to cooperate with Sakhalin Energy in developing a robust monitoring and mitigation programme for the 2-D seismic and acoustic surveys for site selection must not be interpreted as an 'endorsement' of the overall South Piltun project. Moreover, the Panel explicitly recommended against commencement of any new construction until more progress was made towards understanding the effects on the whales of PA-B construction noise and on cumulative effects more generally. In its formal response to recommendation WGWAP 10/020, Sakhalin Energy acknowledged the Panel's concerns and pointed to the Company's 'early engagement' with the Panel on the subject of the South Piltun development. It also gave assurance that the project EIA would address cumulative effects. At this meeting, Company officials clarified that the EIA for the 2-D seismic and acoustic site selection surveys were entirely separate from the South Piltun project EIA.

Another point made in the Panel's WGWAP-10 report (item 12.2) was the apparent contradiction between the Company's consideration of a major new construction project and the substantial scaling back of its investment in gray whale research and monitoring (e.g. shortened field season, elimination of the behaviour monitoring programme; see Item 3.6, above). At WGWAP-9 (item 2.1.7) and again at WGWAP-10, the Panel stated, "it seems particularly ill-advised for Sakhalin Energy to be scaling down its overall monitoring effort at the same time that it has announced plans to scale up its industrial footprint via the South Piltun development". Nothing was presented at WGWAP-11 that would lead the Panel to change this assessment. Although the 'summary report' of the joint programme 2002-2010 (document WGWAP-11/7-8), the 'issues document' discussed under Item 10 (below) and the 'integrated analysis' discussed under Item 11.3 (below) may together be seen as constituting an effort to respond to the Panel's often-expressed concern about the lack of programme coherence and synthesis, the need remains for a stronger effort to characterise and assess the potential cumulative and aggregate effects of industrial development on the Sakhalin Shelf (see Item 11.4, below).

The Panel finds it difficult to reconcile the possibility of a major new construction project directly offshore of the mouth of Piltun Lagoon with the possibility of scaled-back gray whale field studies and broader monitoring efforts only for specific activities such as seismic surveys. The importance of annual monitoring has been stressed repeatedly in past Panel reports (see for example reports of WGWAP-2, item 8 and recommendation WGWAP 2/011; WGWAP-3, item 12.2; WGWAP-5, item 14.1). The Panel **reiterates** its views from the report of WGWAP-5 (item 14.1):

> 'From the Panel's perspective, the primary aims of research and monitoring are to provide a scientific basis for long-term monitoring of the status of western gray whales, particularly in the light of the anthropogenic activities on the feeding grounds, to ensure that appropriate mitigation measures are in place for whatever activities are occurring, and to evaluate the effectiveness of those measures.'
>
> 'The monitoring effort must be adequate to detect changes in whale abundance and distribution over time, should they occur, and, where possible, to link such changes to environmental and anthropogenic factors.'

> 'Whilst the companies indicate that they will develop additional programme components for specific circumstances, the short-term expansion of monitoring during a particular activity may not be sufficient to allow adequate evaluation of effects or ensure the success of mitigation measures.'

The Panel **stresses** that an annual monitoring programme (and subsequent prompt integrated analyses over years) with the full complement of elements – distribution/density, behaviour, benthic, photo-identification and acoustics – is essential for the proposed development to be properly evaluated. It **recommends** that Sakhalin Energy maintains such a programme for at least as long as it continues to consider a new South Piltun development.

In order to judge whether and to what extent changes to a field programme notified for a single year (which in fact may or may not be permanent or long-term) are likely to compromise the value of a long-term monitoring programme, it is essential to have some information on future plans (i.e. whether the changes are intended to remain in place). Therefore the Panel **recommends** that Sakhalin Energy provides it with its provisional longer-term (say 5-year) plans with respect to monitoring; the Panel is willing to participate in any discussions over improvements or modifications to any elements.

During discussion, Yablokov raised the issue of decommissioning. He pointed out that the cost of dismantling a complex structure in an environmentally responsible way could rival or exceed the cost of building and installing it in the first place. This important matter needs to be addressed and it is unclear whether adequate account of it has been taken for the existing Sakhalin II platforms much less the contemplated third PA platform. The Panel therefore **requests** clarification from Sakhalin Energy regarding the decommissioning plans for the PA-A and PA-B platforms as well as how decommissioning options have been taken into account in South Piltun planning.

10 UPDATE ON 'ISSUES' DOCUMENT (WGWAP-11/5) (INCLUDING MULTI-YEAR SUMMARY REPORT BY SEIC/ENL) – A RESPONSE TO RECOMMENDATION WGWAP-9/020

The Panel welcomed this effort by Sakhalin Energy to respond to recommendation WGWAP 9/020, which called for "a comprehensive overview of the issues and risks that need to be addressed for a new development such as South Piltun, including *inter alia* oil spills, continuous noise, vessel collisions, disturbance of benthos and cumulative impacts." The recommendation specified that this overview "should include a risk matrix that makes clear how Sakhalin Energy would prioritise the various elements, as well as how the company assesses each issue in terms of potential short-, medium- and long-term effects on the western gray whale population."

In presenting document WGWAP-11/5, Evans explained that it was clear from the recommendation that the report should represent the Company's view and incorporate all 'learning' reflected in the many documents considered, beginning with those reviewed by the Independent Scientific Review Panel (ISRP) in 2004-05 and continuing through the recent work shared and discussed within the WGWAP context.

10.1 Noise

Donovan noted that while the NTF had welcomed the noise component of WGWAP-11/5, it had recognised that it was not practical for the task force to undertake a detailed review at a level which would enable it to fully endorse all of the report's contents. However, the task force noted that the document covered all of the appropriate topics and provided useful background for discussions of noise issues related to future operations and developments, including broad strategies to be followed in terms of evaluating risks and developing effective mitigation measures.

The Company's view is that its noise mitigation efforts have considerably reduced the impacts from what these might have been without such measures. Evans stressed the value of capturing the benefits of some of the noise mitigation approaches and encouraging their wider adoption by industry (cf. Item 2). For its part, the Panel acknowledged Sakhalin Energy's exceptional

investment in monitoring and mitigation over the years and its willingness to engage constructively in the panel process. Many of the Panel's recommendations have been implemented either fully or to a significant degree, and on a number of occasions the Company has postponed an activity or significantly modified its work schedule in response to concerns regarding the potential impacts on western gray whales.

The Panel noted during the discussion of WGWAP-11/5 that the extremely full agenda of this meeting meant that although document WGWAP-11/7 and 8, 'Summary of the Joint Okhotsk-Korean Gray Whale Monitoring Programme Findings, Sakhalin, Russian Federation, 2002–2010', was available ahead of time, it had not been able to review this document as thoroughly as it would have liked. The Panel recognised the importance of studies carried out on the north-eastern Sakhalin Shelf by scientists from leading Russian research institutes and that the ENL-Sakhalin Energy Joint Monitoring Programme had produced a great deal of valuable information on western gray whales of potential use in assessing population status and mitigating the potential impacts of the Sakhalin I and Sakhalin II projects. A few comments on the noise portion of WGWAP-11/7 and 8 are offered hereunder.

The Panel noted a tendency in the document to overstate conclusions. For example, the key acoustic conclusion is, "Distribution and abundance of whales did not appear to correspond with specific industry activities and seemed to be more linked to availability of prey" (see p. 1, *Executive Summary*). Whilst recognising that Sakhalin Energy, through its joint programme with ENL, has collected and presented data on western gray whales annually for approximately a decade, the Panel considers this conclusion premature. Only recently has the Company established an effort to analyse the 2002–2010 datasets in an integrated manner to determine the quantitative relationships between different programme components (acoustic, benthic, behaviour, photo-identification) and the effects of industrial activities on whale distribution and abundance (e.g. seismic surveys, pipeline construction and offshore platform construction). This complex and difficult work is still in progress and its results are not yet available (see Item 11.3, below).

In addition, the acoustic monitoring data in Table 3.2 ('*Sound levels generated by specific ENL or Sakhalin Energy project (or other industry) activities'*; p.15), taken mainly from document WGWAP 10/19[4], are in the form of maximum levels in dB (re 1 μPa^2) at 90% percentile level of one-third octave power spectral density (where all levels are less than 115 dB). This does not demonstrate absence of acoustic impact on the gray whales. To compare such noise levels with the 120 dB criterion for gray whale disturbance (for continuous noise), they need to be presented in one-third octave power spectral density and integrated along the full frequency band (e.g. 2 Hz – 2 kHz) to show received SPL levels measured at acoustic monitoring locations. RMS noise levels generated by industrial activity (not presented in Table 3.2) could exceed the 120 dB disturbance threshold. Although the presentation of acoustic data in the form of maximum levels in dB at 90% percentile level of one-third octave power spectral density may be correct in principle, it is inappropriate in the present context because doing so makes it impossible to determine whether industrial noise associated with activities of the Sakhalin I and Sakhalin II projects did or did not exceed the threshold.

Finally, document WGWAP-11/7 and 8 states (*'Initial Conclusions';* p. 30), "Highest sound levels were those due to near-shore research vessels as opposed to the construction activity". This conclusion is based on results of the 2005 MVA where acoustic data from a very small sample were incorporated improperly into the statistical analysis.

In conclusion, while recognising the importance of the work of the joint programme and indeed recommending its continuation elsewhere in this report, the Panel is not in a position to endorse all of the conclusions of document WGWAP-11/7 and 8.

[4] WGWAP-10/19 - Rutenko et al. 2011. Analysis of Acoustic Measurements Conducted in the Piltun and Offshore Gray Whale Feeding Areas on the Northeast Sakhalin Shelf During the 2003-2009 Field Seasons. Report submitted by ENL and Sakhalin Energy to the Ministry of Natural Resources.

10.2 Benthos

WGWAP-11/5 concluded that risks from platform construction to the gray whales' benthic prey populations were low despite concerns expressed in the ISRP report. The existing platforms are well offshore of the Piltun feeding area and not near the Offshore feeding area; this would also be true of a South Piltun platform. There are no discharges of toxic materials into the sea, the existing pipeline was routed specifically to avoid the nearshore feeding area (as would be any new pipeline needed for a new platform) and the suspension of sediment from dredging has been and would be minimised. Moreover, the benthic sampling work by Fadeev's team has revealed no detrimental effects such as hydrocarbon contamination of sediments.

VanBlaricom agreed with the Company's conclusion on this issue, noting that published data on platform effects on benthos in other regions typically indicate localised measurable impacts (spatial scales of tens to hundreds of metres, far short of the scale of impact required to influence any of the gray whale feeding areas in the present context). Therefore the physical impacts of a properly functioning offshore platform, based on currently proposed siting information, should not be a serious concern with respect to gray whale prey.

10.3 Ship strikes

Measures implemented to minimise the risk of ship strikes on gray whales were judged by the Company to have been highly effective (document WGWAP-11/5). No such strikes have been documented and there is evidence of vessel captains taking action to avoid collisions when advised to do so by Sakhalin Energy's onboard Marine Mammal Observers.

10.4 Oil spills

Document WGWAP-11/5 also judged the risk from oil spills to be low given the measures in place both to prevent spills and to respond in the unlikely event that one occurs. Oil Spill Response (OSR) exercises (drills) are carried out year-round and equipment stockpiles are ample and well maintained. Losses of oil into the sea have been negligible thus far.

Sakhalin Energy's advisors on OSR methodology see a role for dispersant chemicals and immediate in-situ burning of any large-scale release of hydrocarbons. This view is not aligned to the Company's current OSRPs that have been approved by Russian authorities. Further work is required across the industry and SEIC is well advised to follow progress.

Dicks agreed in broad terms that the oil spill risk was low and that OSR plans and resources were in place to deal with spills. He made the point that both Sakhalin Energy and the Panel had put considerable effort into refining the OSRPs and that this had resulted in a beneficial approach to spill response for the protection of gray whales and their food sources. A good balance has been achieved among oil recovery, dispersant application, shoreline clean-up and in-situ burning. This balance considers the properties and likely behaviour of Vityaz crude and the environmental conditions specific to Sakhalin Energy's operations at Sakhalin. Dicks noted that after the Macondo blow-out in the Gulf of Mexico, there had been changes in international perceptions, which have promoted the apparent effectiveness of dispersant use and in-situ burning. Whilst potential benefits in techniques should be taken on board to improve the OSRPs, it is important that these changed perceptions not become a driver that upsets the balance already achieved in the Company's approach. The Panel anticipates further discussion of this matter at future meetings and expects Dicks to raise the issue at appropriate intervals and ensure it is not neglected.

10.5 Cumulative effects

Finally, WGWAP-11/5 acknowledged the difficulty of assessing cumulative effects but concluded that those effects must not be large since both adult and calf numbers appear to be increasing and individual whales are observed to return to the Sakhalin feeding areas year after year. As mentioned in the preceding agenda item, however, the Panel believes that a stronger effort is needed to characterise and assess the potential cumulative and aggregate effects of industrial development on the Sakhalin Shelf (also see Item 11.4, below). The document rightly points out that many factors

affecting the whale population are outside the control of Sakhalin Energy and this underlines the importance of approaching western gray whale conservation from a rangewide perspective.

10.6 Overview

The risk matrix included in WGWAP-11/5 ranked the risks from all Sakhalin Energy activities, properly mitigated, as low and short-term. Even in the case of abnormal or emergency situations, the risks, with mitigation, were judged to be only medium and short-term.

Overall, the Panel welcomed the effort by Sakhalin Energy but noted that WGWAP-11/5 would have benefitted from some form of external peer review and from inclusion of references to support many of the conclusions. Also, more circumspection around some of the conclusions would have been appropriate in view of the significant gaps in knowledge that remain concerning the more subtle effects of anthropogenic activities on whales and other wildlife. It is important, for example, to bear in mind the long life spans and long generation times of whales, which mean that the population trends used to justify some of the no-effect conclusions in the report are short-term trends by whale standards and could prove misleading once truly long-term trends become evident. This again highlights the need for continued long-term monitoring (see Item 9).

In addition, the issue of other activities in the Sakhalin region that are beyond the influence of Sakhalin Energy was raised. Ultimately, if the cumulative risk to the whales is high, even if the component attributed to the Company is zero, the overall risk to the whales remains high. This, again, emphasises the need to understand other operators' activities (see Item 11.1, below). Evans agreed that it is important to reach out to other operators and to publicise mitigation protocols related to activities such as seismic surveys which have been developed collaboratively by the Panel and the Company and which have potentially broad application (see Item 5.5.5).

In discussion, Vorontsova (IFAW) recalled a detailed technical presentation in 2004 on plans for the PA-B platform at a meeting in Moscow, chaired by Shell. In response to the NGO demand that the platform be sited farther offshore and thus farther away from the Piltun feeding area, the response was that this was not feasible. Also, Sakhalin Energy clearly stated that the chosen location would preclude the need for a third platform as it would allow access to all parts of the hydrocarbon field. The issue thus raised had been discussed at WGWAP-10 as well (see item 12.2 in the report) and the Panel had requested clarification from the Company (recommendation 10/019). The Company's formal response is quoted here in full from the WGWAP website (http://cmsdata.iucn.org/downloads/wgwap_10_recommendations_table_with_seic_response.pdf):

> The EIA for Phase 2 TEO-C chapter 5.2.1 says the following: "Over the 1990s major advances in extended reach and non-vertical drilling has allowed for a single platform to extend its lateral reach up to 6 km. This has greatly reduced the number of platforms needed to three for full field development, which resulted in a smaller "footprint" i.e. the overall offshore impact. PA-V platform option was determined to be currently uneconomic, but has been kept as a future option."
>
> Reservoir performance determines the ultimate drainage configuration required and is therefore monitored during the lifetime of production. Dependent upon this, the Operator must determine how best to fulfill the requirements to maximise recovery of hydrocarbons, which is an implicit requirement of the PSA. Based on the observed reservoir performance, the drainage configuration and current technologies, it is now apparent that to fulfill PSA requirements an additional platform is required.

With regard to the current state of extended reach drilling, Davey indicated that it was still possible to drill only six, and maybe up to eight, kilometres in exceptional circumstances. He estimated that to achieve full exploitation of the South Piltun sector it would be necessary to drill to 13 km from the PA-A (Molikpaq) platform, which was shown by a 2008 study to be infeasible. The Company will revisit this study to determine whether such a conclusion remains valid. In response to a question of how ENL has been able to reach 11 km at Chaivo, Davey explained that the drilling there is from a large onshore facility, which makes a big difference. However, as noted, even 11 km would still fall short of the South Piltun requirement of 13 km.

11 ACTIVITIES BY SEIC AND OTHER COMPANIES ON SAKHALIN SHELF IN 2011, 2012 AND BEYOND

11.1 SEIC Key Activities

In its last meeting report (item 13) the Panel clarified recommendation WGWAP 9/018 concerning its longstanding request for advance notice of Sakhalin Energy activities that could affect western gray whales. At this meeting, the Company provided document WGWAP-11/6 as a response.

The Panel expressed its appreciation for the detail provided in WGWAP-11/6 and encouraged the Company to continue the practice of providing such information in the future. It is important that all industrial activities and not solely those that involve noise input to the marine environment be considered in selecting what to report. Evans confirmed that although noise tended to be the focus of concern, the full range of activities had been reported in WGWAP-11/6 and this would continue in future presentations. The Panel's recommendation above under Item 5.5.1 is intended to cover this topic.

There was also some discussion of planned activities beyond 2012, such as the PA-B 4D seismic survey tentatively scheduled for 2014. In particular, the Panel reiterated its concern over the issue of the continuation of the joint programme and again emphasised the importance of sustaining full monitoring effort even during years between major noise events, to provide baseline information for comparison with high-activity years (see Item 9).

The Panel noted the importance of obtaining data on 'noise signatures' for certain types of activities, particularly in the context of determining priorities for minimising disturbance and for any serious efforts to assess cumulative effects. For example, an accommodation vessel (Heimdal DP) has been stationed at the platforms annually from June to November since 2010 and this is expected to continue into the future.

11.2 Non-SEIC Activities 2011-2013 and Beyond

Hasinger presented document WGWAP-11/13 which summarised the information that he was able to obtain on other companies' activities. The Panel welcomed this effort and congratulated Hasinger for doing such an excellent job of carrying out a difficult task.

Four oil and gas projects are approaching or in production mode on the eastern Sakhalin Shelf – Sakhalin I, II, III and V. Sakhalin I (ENL) and II (SEIC) are of greatest concern due to their proximity to the nearshore (Piltun) gray whale feeding area. However, adjacent projects are also important as gray whales are known to feed at least sporadically, for example, at the northern end of the island (Severnaya Bay) and south to nearshore waters off Chaivo Lagoon. Also, whales move often between the Piltun and Offshore feeding areas, the latter being partially within the Arkutun-Dagi Licence Area (Sakhalin I) and partially within the Veninsky Licence Area (Sakhalin III, Rosneft). It should also be noted that exploration is proceeding in other parts of the Okhotsk Sea shelf, notably Magadan and western Kamchatka (both areas used to some extent by gray whales historically).

During discussion it was pointed out that ENL planned to begin installation of the Berkut offshore platform, a large concrete gravity-based structure, in the Arkutun-Dagi field off Chaivo, immediately after ice melt in 2012. This work was expected to take about two weeks and would likely involve substantial continuous noise. No information was available on ENL's gray whale monitoring and mitigation plans.

The Panel noted that, once again, gray whales returning to the north-eastern Sakhalin Shelf in 2012 were likely to be exposed to seismic survey noise even though no large-scale surveys are planned by either Sakhalin Energy or ENL. This would mean, apart from anything else, that the results of the mitigation and monitoring programme for the Sakhalin Energy 2-D seismic and acoustic site surveys in 2012 (see Item 5.3.4) need to take account of the possibility that aspects of the whales' behaviour and distribution will have been influenced by such other factors.

Knizhnikov (WWF Russia) added a note of appreciation for Hasinger's effort and suggested that IUCN establish a regular reporting format for receiving and compiling this kind of information from the NGO community (and others). The Panel would welcome this.

11.3 Integrated Analysis

Vladimirov made a verbal presentation on a recently initiated effort to develop a multivariate analytical framework for application to data from the joint Sakhalin Energy/ENL gray whale research and monitoring programme. This work is being led by Professor Kriksunov and a team of statisticians at Moscow State University and the Institute of Evolution. A scoping seminar took place in Moscow in late September 2011 and preliminary results are currently under review by the companies and their contractors. There is no intention of making results available for Panel review for some time.

Initial effort has centred on attempting to integrate data from two programme elements, whale distribution/density and benthic sampling, and for two years, 2004 and 2008, when the industrial noise 'footprint' on the Piltun feeding area from Sakhalin I and II activities was judged to have been relatively light. The intention is to progress step by step, beginning with methodology. Once the challenges of integrating whale counting and benthic sampling data have been overcome, the next steps will be to incorporate acoustics and photo-ID data and to develop meaningful ways of comparing the 'control' data (from 2004 and 2008) with the 'disturbance' data (from years with construction activities near the feeding area).

The Panel was unable to offer any commentary or advice in the absence of a document to review and because so little detail was provided in the verbal presentation. However, it welcomed these efforts and **encourages** Sakhalin Energy and its collaborating scientists to continue efforts to apply multivariate statistical analyses and other appropriate quantitative approaches to investigate the relations of benthic prey, geospatial information on gray whale distribution and abundance through time, and various environmental variables, with the goal of achieving a better understanding of factors that influence gray whale numbers and distribution on the north-eastern Sakhalin shelf.

The Panel further noted that this is a long-standing problem and a number of individual scientists and teams of scientists elsewhere in the world have been working to develop analytical techniques which are likely to be applicable or at least useful to this project. The Panel **encourages** the Company and its collaborators to seek such input at an early stage. It **emphasises** that the preferred (and most efficient, cost-effective) approach would be to consult widely from the outset and ensure that the methodology is appropriate and credible before investing in extensive analyses.

During a somewhat related but different discussion, Yablokov proposed that the results, or reviews of the results, of western gray whale studies carried out by various research groups since 1995 be published in the format of a classic scientific monograph (possibly under the title: 'Western North Pacific Gray Whales: Ecology, Distribution and Population Dynamics'). Yablokov stated that he would volunteer his time to be the organiser and scientific editor of such a monograph, which could present (in concise form) and thus preserve for science and management a substantial amount of valuable data and information contained in scientific papers and internal reports, including those submitted to MNR and WGWAP. The Panel expressed support for this idea and hoped that both industry-sponsored researchers and others could be encouraged to participate in the project. The Panel invited Yablokov to submit a progress report on this activity by the next meeting.

11.4 Addressing cumulative effects

A number of approaches for addressing the issue of cumulative effects on marine mammal populations are currently under development. Some of these focus solely or primarily on acoustic disturbance but similar principles apply to most types of impacts.

A panel of the National Research Council (NRC) in the United States outlined a conceptual structure for determining the population effects of acoustic disturbance on marine mammals (NRC 2005). The Population Consequences of Acoustic Disturbance Working Group, now called PCoD

(see above under Item 5.3.5), a multidisciplinary collaboration involving several institutions, has tried to build on the NRC framework (Anon. 2010). The Working Group has further developed the conceptual model of the NRC report and applied it to some sample species: northern and southern elephant seals, coastal bottlenose dolphins, North Atlantic right whales and Blainville's beaked whales.

The NRC report recommended that the concept of Potential Biological Removal (PBR), now legally recognised in the US and in some other jurisdictions, which sets limits to anthropogenic mortality on marine mammal populations, should be extended to cover sub-lethal impacts (NRC 2005). This notion was developed further by a 2009 meeting in Monterey, California (Asilomar), called Workshop on Assessing the Cumulative Impacts of Underwater Noise with other Anthropogenic Stressors on Marine Mammals (Wright 2010). This workshop introduced the concept of Potential Cumulative Impact (PCI) (sometimes referred to as Maximum Cumulative Impact, MCI) which extends the PBR to cover sub-lethal impacts. The impact of each sub-lethal influence is expressed first in terms of energy loss, then converted to changes in demographic parameters, and finally converted to mortality equivalents. The total of actual mortality plus equivalent mortality should not exceed PBR. The main feature of the PBR approach is retained, that standard values ('defaults') are used for the parameters where species- or population-specific values are not available.

The case of western gray whales can, in principle, both benefit from and contribute to those efforts to quantify cumulative impacts from acoustic disturbance and other factors. The data collected during the construction work and seismic surveys may yield information relevant to dose-response relationships for acoustic disturbance, as being investigated by the Noise Task Force. The resulting insights could be used for assessing impacts on gray whales and also contribute to the pool of data used for developing generic values. Conversely, the cumulative effects models generated in other contexts may prove useful for quantifying the potential population effects of the cumulative exposure of western gray whales to various factors including noise.

A major challenge for the assessment of cumulative impacts on Sakhalin gray whales is one of gaining access to data on all major sources of disturbance, not just the data related to the activities of Sakhalin Energy. A first step might be to list all major activities likely to have caused acoustic or other disturbance to gray whales in the Sakhalin feeding areas over the last ten years, including basic information on the nature, extent and duration of each activity. Document WGWAP 11/13 (see Item 11.2) summarises the known ongoing oil and gas projects but more information is needed on associated activities, including seismic surveys, construction and vessel traffic. The general issue of obtaining information on other companies' activities is discussed below under Item 13. Regarding assessment of cumulative impacts, ideally, a comprehensive database on all industrial and other activities on the north-eastern Sakhalin Shelf should be developed and maintained. The Panel is probably not the appropriate body to do this, and the involvement of the relevant Federal and Oblast authorities would be essential.

The Panel **recommends** that IUCN, in close coordination and with the help of Panel members, Sakhalin Energy and other stakeholders in the WGWAP process (Lenders, NGOs) as well as relevant Russian government agencies, begin to develop such a comprehensive database and report back on progress at WGWAP-12.

12 UPDATE ON MONITORING FOR AND REPORTING GRAY WHALE CARCASSES, NECROPSY CAPACITY AND PROTOCOLS, HEALTH ASSESSMENT ETC.

In September 2009, one gray whale was found dead on the east coast of Sakhalin Island (see WGWAP-7 report) and another carcass (likely also that of a gray whale) was found in Kronotsky State Reserve (eastern Kamchatka) in the spring of 2010 (see WGWAP-9 report). The Panel was concerned after the 2009 stranding in particular that no cause of death had been determined and that the carcass had only been examined superficially. The Panel believes it is in the interests of all stakeholders to ensure that any future stranded gray whale be examined in detail. However, this requires that a trained necropsy team be on call and available to respond to the next stranding. Two relevant recommendations were made in the report of WGWAP-7, one concerning the basic

procedures to be taken by first responders to gray whale strandings (WGWAP-7/015) and the other asking Sakhalin Energy to prepare a proposed way forward on the necropsy issue (WGWAP-7/016). Little progress has been made since that time (December 2009), and in fact the Panel was disappointed to learn at WGWAP-9 (confirmed at WGWAP-10; see both meeting reports) that Sakhalin Energy had decided to discontinue its dedicated aerial surveys of Sakhalin beaches to check for whale carcasses. In its WGWAP-9 report, the Panel requested that Sakhalin Energy provide a clear, updated statement of its plans with regard to carcass surveys (recommendation WGWAP 9/008). In its formal response rejecting the Panel's advice, the Company cited its decision to reduce 'all but essential flights … due to increased safety risks with rotary wing aircraft' and indicated it would no longer conduct dedicated carcass detection flights as 'designated sorties'. This lack of dedicated surveillance, together with the elimination of the behaviour component of the joint Sakhalin Energy/ENL field programme which had provided at least opportunistic ancillary beach surveillance, reduces the chances of detecting stranded gray whales at Sakhalin while they are in a fresh state. The Company emphasised at this meeting that aerial fly-overs had been conducted only monthly during the open-water season and therefore the chances of detecting a fresh carcass from the dedicated surveys was small. It also pointed out that the distribution monitoring team uses most of the same stations formerly used by the behaviour/photo-ID team and that unlike the behaviour/photo-ID team, the distribution team moves between stations during the day, giving it greater temporal and spatial coverage and a better chance of detecting carcasses.

As acknowledged in the WGWAP-7 report, Rosprirodnadzor Sakhalin Administration has lead responsibility for investigating stranded whales and Rosselkhoznadzor Sakhalin Administration has ultimate responsibility for authorizing whale necropsies. The Panel is aware that Sakhalin Energy previously received permission from authorities to collect tissue samples from stranded whales in response to Panel recommendations WGWAP-3/001 and 4/004 (see WGWAP-5 report, item 7.3). On the basis of current understanding, the Panel **recommends** that the Company seek explicit advance permission from the appropriate authorities to allow Company employees or contractors to carry out, promptly and without delay, a full examination (necropsy and sampling) of any dead whale found in north-eastern Sakhalin Island. Any delay from discovery to examination lowers the chances of determining cause of death and of identifying the individual through photo-identification or a genetic sample and increases the risk that the carcass will be lost entirely.

At WGWAP-9 the Panel learned of an effort by two Moscow-based researchers, Olga Sokolova and Tatyana Denisenko, to develop a proposal for addressing the western gray whale necropsy issue (see WGWAP-9 report, item 11). At WGWAP-11 the Panel received a new proposal from Sokolova and Denisenko although it only arrived on the morning of the last day of the meeting and therefore participants had no opportunity to consider it carefully. The Panel nonetheless discussed the proposal briefly and made three comments: (1) the question of who is authorized to examine and sample a dead whale on Sakhalin remains unresolved (see above), (2) the role, training and responsibilities of any field team need to be specified more clearly and (3) an international review team needs to be established that can examine all data collected by the field team and confirm or revise any determination of the cause of death.

The current proposal from Sokolova and Denisenko, as written, is overly broad and still does not address the Panel's key concern: that a competent, adequately equipped rapid-response team is established to examine and sample any gray whale carcasses found on Sakhalin in a timely manner.

13 WGWAP RELATIONS WITH RUSSIAN AUTHORITIES (INCLUDING IWG) AND OTHER COMPANIES

The Panel acknowledged and expressed appreciation for Nevenchina's attendance as an Observer on behalf of the Sakhalin Oblast Ministry of Natural Resources. The issue of relations with Russian authorities and with oil companies other than SEIC has been a recurrent theme at WGWAP meetings. Although representatives of the Federal Ministry of Natural Resources had attended several past meetings as Observers, this was the first time a representative of the Oblast Government had attended.

In her brief remarks to the meeting, Nevenchina suggested that the biodiversity group, which was established in 2007 and reports to the Ecological Council on Sakhalin Island, might function as a focal contact point for the Panel, given that both her agency and Sakhalin Energy are active members. She also noted that she had a good understanding of the terms of the UNDP Global Environment Facility proposal process as it applies to the Russian Far East and therefore that she would be in a good position to provide support for a gray whale satellite tagging proposal.

The Panel has repeatedly cited the importance of broader application of robust monitoring and mitigation efforts (including maximum permissible noise levels) by other oil and gas companies operating on the Sakhalin Shelf. Very little, if any, information is made available in advance by companies other than Sakhalin Energy on their plans for potentially harmful and disturbing activities, nor has it been easy to gain access to the results of other companies' monitoring and mitigation efforts. ENL reports some of its results to the IWC Scientific Committee but it has chosen not to share information directly with the Panel.

After some discussion, the Panel concluded that it would be best to address the problem of access to information on other companies' activities in a stepwise manner and that a first step would be for Yablokov, as a member of the Interdepartmental Working Group, to raise the issue at that group's next meeting in Moscow on 17 February 2012. Therefore Reeves, on instructions from the Panel, sent a formal letter to Yablokov requesting that he do so. Nevenchina, Sakhalin Energy and WWF-Russia (Knizhnikov is a member of the IWG) gave assurances that they would lend support to this initiative whilst recognising that the Federal ministry (MNR) is the responsible regulatory body. The Panel stands ready to provide scientific and technical advice. There was general agreement at the present meeting that a concerted effort should also be made by the Panel, IUCN, Sakhalin Energy and other stakeholders involved in the WGWAP process (including Sakhalin Oblast and NGOs represented as Observers) to communicate with other companies and seek to improve access to information on their activities.

14 WGWAP WORK PLAN FOR 2012 AND BEYOND

It was agreed that under the circumstances, a full Panel meeting in the spring of 2012 (April or May) would not be necessary but that WGWAP-12 should be planned for the autumn of 2012 and the pattern of two Panel meetings per year (basically one in the spring and one in the autumn) should be re-established in 2013. Concern was expressed by Panel members that the abbreviated 3-day meeting duration, in contrast to the 4-day meetings typical of the first four years of WGWAP, should not come to be regarded as the norm. For example, it was pointed out that at WGWAP-12 the Panel would need to review final reports of the 2011 field season, preliminary results from the 2012 season including the planned monitoring during the 2-D seismic survey, final results of analyses of the monitoring data from the 2010 Astokh 4-D seismic survey, progress on the integrated analyses, developments with regard to South Piltun planning and a number of other items, some foreseen and some not. It was considered unlikely that three days would be sufficient to cover the full array of topics, but any decision about meeting duration should remain open until later in the year.

The option of having virtual (video-/teleconference) meetings for certain small well-defined topics should be considered (e.g. model and variable selection for multivariate analyses; final discussions in advance of the 2012 2-D seismic survey if no major issues arise). The Panel does not believe that virtual meetings are appropriate for full Panel meetings or major task force meetings, even if this were found to be consistent with the Terms of Reference, which seems doubtful given the need for participation not only by Company representatives and the Panel but also by Observers.

The Panel was also informed of Sakhalin Energy's strong preference for all future meetings to be held in Russia, noting that the Company would consider Japan and South Korea as acceptable.

The Panel recognises the need to be financially prudent (in fact many members give their time for free) but also notes its responsibility to provide thorough, timely review in a transparent manner. It is essential that this is not compromised. It notes that the Panel process is under the auspices of

IUCN. It expects that IUCN will ensure that the Panel is adequately consulted on dates, length and venues for meetings before decisions are taken.

15 REFERENCES

Anon. 2010. Introduction and progress of a working group on the Population Consequences of Acoustic Disturbance. Unpubl. document SC/62/WW5 presented to IWC Scientific Committee, Agadir, Morocco, June 2010.

Blackwell, S.B., McDonald, T.L., Nations, C., Thode, A.M., Kim, K.H., Greene, C.R., Jr., Guerra, M., Mathias, D., Macrander, A.M. 2011. Effects of seismic exploration activities on the calling behavior of bowhead whales, *Balaena mysticetus*, in the Alaskan Beaufort Sea. 19th Biennial Conference on the Biology of Marine Mammals, Tampa, FL, USA.

IWC. in press. Report of the Scientific Committee. *J. Cetacean Res. Manage*. 13(Suppl.).

Johnson, M. and Tyack, P. 2003. A digital acoustic recording tag for measuring the response of wild marine mammals to sound IEEE Journal of Oceanic Engineering 28(1):3-12.

Mate, B., Bradford, A., Tsidulko, G., Vertyankin, V. and Ilyashenko, V. 2011. Late-feeding season movements of a western North Pacific gray whale off Sakhalin Island, Russia and subsequent migration into the eastern North Pacific. Unpubl. document SC/63/BRG23 presented to IWC Scientific Committee, Tromsø, Norway, June 2011.

NRC. 2005. Marine mammal populations and ocean noise: determining when noise causes biologically significant effects. Committee on Characterizing Biologically Significant Marine Mammal Behavior. National Academies Press. 142 pp. Available at: http://www.nap.edu/openbook.php?isbn=0309094496

Reeves, R., Donovan, G.P., Weller, D. and Cooke, J.G. 2009. IUCN western gray whale initiative – an update. *J. Cetacean Res. Manage*. 11(Suppl.):187.

Reeves, R., Weller, D., Larsen, F., Donovan, G., Cooke, J. and Brownell, R. 2010. Progress report on IUCN Western Gray Whale Advisory Panel work from June 2008 to June 2009. *J. Cetacean Res. Manage*. 11(Suppl. 2):176.

Reeves, R., Weller, D., Larsen, F., Donovan, G., Cooke, J. and Brownell, R., Jr. 2011. Progress report on IUCN Western Gray Whale Advisory Panel work from June 2009 to June 2010. *J. Cetacean Res. Manage*. 12(Suppl.):183-184.

Reeves, R., Weller, D., Donovan, G., Cooke, J. and Brownell, R., Jr. in press. Progress report on IUCN Western Gray Whale Advisory Panel work from June 2010 to June 2011. *J. Cetacean Res. Manage*. 13(Suppl.).

Rolland, R.M., Parks, S.E., Hunt, K.E., Castellote, M., Corkeron, P.J., Nowacek, D.P., Wasser, S.K., and Kraus, S.D. 2012. Evidence that ship noise increases stress in right whales. Proc. R. Soc. B. February 8, 2012, doi:10.1098/rspb.2011.2429.

Rozhnov, V., Mate, B., Bradford, A.L., Vertyankin, V.V., Tsidulko, G.A., Irvine, L., Hayslip, C., Poltev, Y., Ilyashenko, V.Y. and Tyurneva, O.Y. 2011. Preliminary results of the research program of the Okhotsk-Korean gray whale (*Eschrichtius robustus*) population habitat using satellite telemetry. Unpubl. document SC/63/BRG26 presented to IWC Scientific Committee, Tromsø, Norway, June 2011.

Tyurneva O. Yu., Yakovlev Yu. M., Vertyankin V. V. and Selin N. I. 2010. The peculiarities of foraging migrations of the Korean-Okhotsk gray whale (*Eschrichtius robustus*) population in Russian waters of the Far Eastern seas. *Rus. Jour. of Marine Biol.* 36(2):117-124.

Weller, D.W., Bradford, A.L., Kato, H., Bando, T., Ohtani, S., Burdin, A.M. and Brownell, R.L., Jr. 2008. Photographic match of a western gray whale between Sakhalin Island, Russia, and Honshu, Japan: First link between feeding ground and migratory corridor. *J. Cetacean Res. Manage*. 10(1):89-91.

Wright, A.J. (ed.). 2010. Report of the Workshop on Assessing the Cumulative Impacts of Underwater Noise with Other Anthropogenic Stressors on Marine Mammals: from ideas to action. Monterey, California, USA, 26-29 August, 2009. Okeanos - Foundation for the Sea, Auf der Marienhöhe 15, D-64297 Darmstadt. 67+iv p. Available at www.okeanos-foundation.org/assets/Uploads/CIReportFinal3.pdf

16 SUMMARY OF RECOMMENDATIONS FROM THE 11TH MEETING OF WGWAP

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
ITEM 1: OPENING					
WGWAP-11/001	Item 1.5	The Noise and Environmental Monitoring Task Forces had both noted that many recommendations include an expectation that a policy or procedure will be adopted as regular practice. Once the Company has responded favourably to such a recommendation, it is considered Closed – implemented. However, in view of turnover in the company and changes in company practice over time, there is a need to ensure that implementation continues to be tracked. The Panel **recommends** that IUCN work on this matter with the Panel chair and report back no later than at WGWAP-12.	IUCN, Panel chair	WGWAP-12	
Item 3: REPORTS ON FIELD ACTIVITIES IN 2011					
WGWAP-11/002	Item 3.3	[...] the Panel **recommends** that IUCN approach the Sakhalin Oblast government, the Sakhalin Fisheries Agency, and any other potential source with an explicit request for information on fishing activities (e.g. number and type of vessels, seasons of operations) in and near the gray whale feeding areas off Sakhalin. Such a request is justified by the Panel's need to be able to assess fisheries-associated	IUCN	WGWAP-12	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		risks (including noise) to the whales.			
WGWAP-11/003	Item 3.3	Objective To investigate identified periods of loud noise within the feeding grounds in more detail with regard to both the activities underway and the acoustics data recorded. This investigation will attempt to (a) identify the cause(s) of the noise and (b) determine the extent (i.e., sound exposure) of the potential threat or disturbance, so that mitigation can be improved in the future, recognising that the sources of the loud noise are likely not SEIC activities. Reporting/data requirements According to the impulse noise format described in recommendation WGWAP-7/002, the Panel wishes to analyse the data from the following acoustic buoys on the dates indicated: Buoys A10, Odoptu N10, Odoptu-S-20 and Odoptu N20 for the periods 25-30 August, and 11-20 September; and Buoy OFA, 1-7 September 2010.	Sakhalin Energy, IUCN, Panel	Data submitted to IUCN by 31 May 2012 and circulated to the Panel, Panel provides a report at least three weeks before WGWAP-12	
WGWAP-11/004	Item 3.4	The Panel **recommends** that Brownell and Weller take the lead in consulting with outside experts (e.g. Frances Gulland in California) on the marine mammals/HABs issue and how it may pertain to western gray whales, and that they report back at WGWAP-12.	Brownell, Weller	WGWAP-12	
Item 5: NOISE TASK FORCE					

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
WGWAP-11/005	Item 5.3.7	The Panel **recommends** that information on the sub-bottom profiler(s) to be used for the 2012 surveys be provided as soon as possible to IUCN and that an appropriate mechanism be determined for the Panel to provide timely advice.	Sakhalin Energy	As soon as possible	
WGWAP-11/006	Item 5.5.1	Objective The Panel has a responsibility to review, evaluate and advise on Sakhalin Energy activities that may have impacts (including in a cumulative manner) on western gray whales (e.g. with respect to noise, damage to benthos, oil spill risk). This requires that the Panel is made aware of planned 'new' activities as well as any changes to ongoing activities well in advance of these becoming operational. Reporting/data requirements It would be valuable and efficient to have a single 'activities' document that can be updated regularly (at a minimum, immediately prior to WGWAP meetings). Items to be summarised include: numbers, types, locations and general operating patterns of marine vessels working for SEIC (e.g. supply vessels, oil spill response vessels, standby vessels, accommodation vessels, diving vessels, *ad hoc* activities) changes to 'regular' operations (e.g. drilling, well conductor driving, maintenance and project	Sakhalin Energy	Open-ended (annual reporting)	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		activities) potential or actual specific/unusual activities (e.g. seismic surveys, pipeline stabilisation, construction works) – with notification as early as possible; timelines of such activities throughout the season or seasons (to allow consideration of aggregate activities). Where changes occur, there should be a concise explanation of why they are necessary, a summary of options considered, an evaluation and risk assessment of any possible impacts and a presentation of measures proposed by the company to ensure that disturbance or other effects on gray whales are minimised. As appropriate, this should include an explanation as to why certain potentially applicable mitigating measures were not adopted. Timeline Sakhalin Energy should report at least annually in document form, consistent with its normal business planning cycle. Information must reach the Panel sufficiently in advance to ensure that any ensuing recommendations can be used by the company to modify its plans if necessary. Large-scale activities such as those involved in the South Piltun development, seismic surveys etc. are best dealt with (as has been the case) as separate exercises with considerably more lead time and detailed information must be provided well in advance. It is recognised			

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		that the task force approach may need to be used for such cases.			
WGWAP-11/007	Item 5.5.2	Objective To provide a more constructive and productive means of initial analysis and examination of acoustic data, consistent and adequate summaries of data on temporal patterns of noise must be submitted to the Panel for consideration. In addition, the original time series of data must be available for more detailed analysis of specific events of interest. This new process should facilitate the most efficient and productive review of acoustic data by the Panel and NTF. Reporting/data requirements All original time-series data should continue to be collected and stored by the Acoustic Monitoring Group at the Pacific Oceanological Institute (POI). This is not a new request but reflects the critical importance of full archival preservation of the original data. WGWAP recommendation 7/002 specifies the need for the reporting of data on specific acoustic events on relatively fine temporal (1-s for impulse noise; 1-min for continuous noise) and spectral (1-Hz band) scales. While data must be made available upon request on these fine scales for specific events, this is not a regular requirement for all sensors and all sampling periods. However, to expedite the release	Sakhalin Energy, IUCN	Open-ended (annual reporting)	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		of 'event' data in a timely and efficient manner Sakhalin Energy has agreed to include in its contract with POI a requirement that all raw acoustic data be pre-processed and archived as time-indexed frequency-resolved records (e.g. through the computation of simple, non-averaged spectrograms). This operation will minimise the time needed by POI to fulfil subsequent requests for data. For each season, beginning with 2012, the following tabular and graphical summary representations of the acoustic data should be included in, or enclosed in digital format with, the reports. Specifically, each annual report would include for every recording station and all available data periods: * Tabular summaries in digital format of 30-min Leq levels in 1/3-octave bands between 10Hz and 10kHz (ANSI standard centre frequencies) * Graphs showing sequential 1-min Leq values for the 20Hz-2 kHz and 20 Hz-15 kHz passbands (presented chronologically with ~3 days data/graph) * Distinct spectrograms showing a) 1-min averages in the range 20Hz-2kHz on a linear frequency scale and b) 1-min averages in the range 20Hz-15kHz on a logarithmic frequency scale. For completeness and ease of reference, the 2-20 Hz frequency range could be shown on a common time axis alongside the 20Hz-15kHz logarithmic spectrograms, but should be segregated and rendered separately with an independent colour scale so as not to restrict the			

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		dynamic range of the >20 Hz data. Timeline The company should submit a report annually through IUCN in document and/or digital form that contains the data as described above. Sakhalin Energy and IUCN will develop an efficient method to transfer and circulate this material to the Panel and/or Task Force members as appropriate.			
WGWAP-11/008	Item 5.5.3	Objective Perhaps unparalleled effort and resources were expended to design and successfully implement a comprehensive monitoring and mitigation programme for the 2010 4D seismic survey. Considerable effort and resources have also been invested in validating, coding and developing initial analyses of the data. It is important that the data collected are fully analysed as soon as possible to increase understanding of the effects of seismic surveys on whales and thus contribute to the evaluation of existing mitigation measures and the development of improved measures for future surveys. Data requirements/analyses These are specified in the reports of the Noise Task Force (NTF-1 and NTF-2) and the comments, suggestions and recommendations therein endorsed by the Panel.	Sakhalin Energy, Noise Task Force members, IUCN	By the end of August 2012	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		Responsible persons Sakhalin Energy (for ensuring the analyses are carried out in accordance with NTF-1 and NTF-2 reports, informing NTF members on progress, consulting with them on methods where appropriate and submitting written reports), NTF members (for providing verbal and written comment as appropriate through email, teleconferences and meetings) and IUCN (for logistical support with document circulation, teleconferences and meetings).			
WGWAP-11/009	Item 5.5.4	Recognising that the mitigation and monitoring programmes developed by the Panel and Sakhalin Energy may be considered by others as precedents, the Panel emphasises the following: (1) the mitigation and monitoring strategies developed for the 2010 and (proposed) 2012 seismic airgun surveys were based on: (a) careful analysis of the specific airgun array being used (2620 in^3 in 2010 and 160 in^3 in 2012) and associated modelled footprints in the feeding area; (b) the position and extent of the surveyed area with respect to the gray whale feeding areas; (c) the seismic survey strategy, especially the timing of the survey; (2) thus while the development processes and analytical methods used to determine mitigation measures for seismic surveys involving airgun arrays	Sakhalin Energy, IUCN	As soon as feasible *and* open-ended (ongoing)	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		of different sizes are generally applicable, several aspects are case-specific and must be seen in the context of the total mitigation strategy; (3) the primary mitigation measure for any seismic airgun survey in Sakhalin waters where gray whales are concentrated must be to complete the survey before the majority of whales have arrived in the area (nominally by 7 July based on conditions observed at Sakhalin in about 2005-2010); without this, the other measures alone established for the 2010 and 2012 surveys would not have been considered sufficient by the Panel. The sizes of the recommended exclusion zones around vessels operating seismic airguns for gray whales are primarily dependent on the power of the sound source and not the location or spatial extent of the survey. The Panel **recommends** that exclusion zones must be at least the modelled 180dB$_{RMS}$ re:1µPa distance from the specific array to be used plus an appropriate additional safety margin that may change with circumstances. Generalising from the analyses undertaken for the 2010 and 2012 surveys, the Panel **recommends** that for seismic surveys in areas off Sakhalin where gray whales are concentrated: (1) for sound sources of 200 in^3 or less, the exclusion zone must be at least 500m; (2) for sound sources of over 200 in^3 it must be based on modelling (for 180dB$_{RMS}$ re:1µPa) and verified in			

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		the field (or directly measured) and in any case must not be less than 1000 m. The Panel **recommends** that this general statement is clearly displayed on the IUCN website along with the detailed mitigation and monitoring strategies developed thus far.			
WGWAP-11/010	Item 5.6	The Panel **requests** that IUCN ensures that NTF teleconferences are organised on a regular basis.	IUCN, NTF members	Open-ended	
ITEM 6: ENVIRONMENTAL MONITORING TASK FORCE (INCLUDING OIL SPILLS)					
WGWAP-11/011	Item 6.2	The Panel **recommends** that (i) lessons learned from the 2011 Piltun drill are taken into account during the Piltun drill that is scheduled by SEIC for 2012, with attendance by Dicks and other Panel members/IUCN representatives; (ii) Dicks and other Panel members, if needed, take part in planning of the drill to ensure that amongst other objectives it addresses the Panel's concerns; and (iii) the site visit is combined with a review of Sakhalin Energy's OSR equipment and other response resources. Sakhalin Energy confirmed its agreement and support in principle and indicated its willingness to facilitate the site visit.	Sakhalin Energy, Dicks and other Panel members, if needed	Open-ended	
WGWAP-11/012	Item 6.3	Recommendations WGWAP 1/021 (1) and 10/013 should classified as 'Closed – superseded' by the following two-part recommendation: The Panel **recommends** that Panel members Tsidulko and VanBlaricom collaborate with Fadeev and colleagues at the Russian Academy of Sciences in Vladivostok	Tsidulko, VanBlaricom	As soon as feasible	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		to produce a review of literature relevant to the following question: "Why do western gray whales focus their foraging effort on the recognised feeding areas on the northeastern Sakhalin shelf?" It further **recommends** that VanBlaricom and Tsidulko, in collaboration with Fadeev, develop a formal proposal to IUCN for support of the literature review, with objectives and funding needs identified.			
WGWAP-11/013	Item 6.3	The Panel **recommends** that when biopsy samples are collected from western gray whales for various research purposes, blubber portions be used, in part, to assess anthropogenic contaminant levels (particularly persistent organic contaminants such as PCBs and PBDEs), as long as the volume of a given sample is sufficient to allow such analyses, with due consideration of other priorities for use of the biopsy material.	Sakhalin Energy	As soon as feasible	
Item 7: PHOTO-ID					
WGWAP-11/014	Item 7.1	The Panel also **notes** its recommendation (WGWAP 10/04) that the Russia-US catalogue and the Kamchatka catalogue be compared directly, and **requests** that Saksina (IUCN) initiate this by contacting the relevant parties. The Panel further notes that this is a relatively small task, since it requires only matching those whales in the Russia-US and Kamchatka catalogues that are not also found in the IBM Sakhalin catalogue.	IUCN, Russia-US and IBM field teams	As soon as feasible	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
WGWAP-11/015	Item 7.3	[...] the Panel **recommends** that Sakhalin Energy makes every effort to support the work in Kamchatka as it is integral to monitoring population status. If the Company cannot implement this recommendation, the Panel alternatively **recommends** that Sakhalin Energy ensures there is no obstacle to continuation of the work with funding from another source. In particular, the Company should make every effort to extend the rights of access to and use of the data collected in Kamchatka thus far to whatever agency or persons continue the photo-ID work there. This would enable the Kamchatka catalogue and sightings history database to continue being updated. In the event that rights reside jointly with co-sponsors (i.e. ENL), Sakhalin Energy should work with co-sponsors to furnish the required permissions.	Sakhalin Energy	As soon as feasible	
Item 8: POPULATION ASSESSMENT					
WGWAP-11/016	Item 8.1	The Panel **recommends** further work on the interpretation of the population assessment in the light of recently available tagging, photo-ID and genetics results. The Panel further **recommends** that, when a definitive version of the IBM dataset through 2011 is available, an updated joint assessment be conducted.	Cooke, Sakhalin Energy, Russia-US and IBM field teams	As soon as feasible	
WGWAP-11/017	Item 8.1	The Panel **recommends** that both teams be requested to supply definitive versions of their sighting history datasets, including data through the 2011 season, for input to a joint assessment to be presented at	Cooke, Sakhalin Energy, Russia-US	WGWAP-12	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		WGWAP-12. Changes relative to previously submitted versions should be documented. Sighting history entries from Kamchatka should also be included in the assessment if possible, at least for those whales which have also been seen off Sakhalin.	and IBM field teams		
ITEM 9: UPDATE ON SOUTH PILTUN PLANNING AND DECISION-MAKING					
WGWAP-11/018	Item 9	The Panel **stresses** that an annual monitoring programme (and subsequent prompt integrated analyses over years) with the full complement of elements – distribution/density, behaviour, benthic, photo-identification and acoustics – is essential for the proposed development to be properly evaluated. It **recommends** that Sakhalin Energy maintains such a programme for at least as long as it continues to consider a new South Piltun development.	Sakhalin Energy	Open-ended	
WGWAP-11/019	Item 9	[...] the Panel **recommends** that Sakhalin Energy provides it with its provisional longer-term (say 5-year) plans with respect to monitoring; the Panel is willing to participate in any discussions over improvements or modifications to any elements.	Sakhalin Energy	As soon as feasible	
WGWAP-11/020	Item 9	The Panel **requests** clarification from Sakhalin Energy regarding the decommissioning plans for the PA-A and PA-B platforms as well as how decommissioning options have been taken into account in South Piltun planning.	Sakhalin Energy	WGWAP-12	
ITEM 11: ACTIVITIES BY SEIC AND OTHER COMPANIES ON SAKHALIN SHELF IN 2011, 2012 AND BEYOND					

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
WGWAP-11/021	Item 11.4	Regarding assessment of cumulative impacts, ideally, a comprehensive database on all industrial and other activities on the north-eastern Sakhalin Shelf should be developed and maintained. The Panel is probably not the appropriate body to do this, and the involvement of the relevant Federal and Oblast authorities would be essential. The Panel **recommends** that IUCN, in close coordination and with the help of Panel members, Sakhalin Energy and other stakeholders in the WGWAP process (Lenders, NGOs) as well as relevant Russian government agencies, begin to develop such a comprehensive database and report back on progress at WGWAP-12.	IUCN, Panel, Sakhalin Energy	WGWAP-12	
ITEM 12: UPDATE ON MONITORING FOR AND REPORTING GRAY WHALE CARCASSES, NECROPSY CAPACITY AND PROTOCOLS, HEALTH ASSESSMENT ETC.					
WGWAP-11/022	Item 12	On the basis of current understanding, the Panel **recommends** that the Company seek explicit advance permission from the appropriate authorities to allow Company employees or contractors to carry out, promptly and without delay, a full examination (necropsy and sampling) of any dead whale found in north-eastern Sakhalin Island.	Sakhalin Energy	As soon as feasible	

Annex 1. List of participants

PANEL MEMBERS PRESENT

Robert L. BROWNELL Jr.
Senior Scientist
Southwest Fisheries Science Center
National Marine Fisheries Service
1352 Lighthouse Ave.
Pacific Grove, CA 93950
USA

Justin G. COOKE
Centre for Ecosystem Management Studies
Höllenbergstr. 7
79312 Emmendingen
Germany

Brian DICKS
7 High Street
Hadleigh IP7 5AH
Suffolk
UK

Greg DONOVAN
Head of Science
International Whaling Commission
The Red House, 135 Station Road
Impington, Cambridge CB24 9NP
UK

Douglas P. NOWACEK
Duke University
Nicholas School of the Environment &
Pratt School of Engineering
135 Duke Marine Lab Rd.
Beaufort, NC 28516
USA

Randall R. REEVES (Chairman)
Okapi Wildlife Associates
27 Chandler Lane
Hudson
Québec J0P 1H0
Canada

Grigory TSIDULKO
A.N. Severtsov Institute of Ecology and Evolution
Russian Academy of Sciences
Leninsky prospect, 33
Moscow, 119071
Russia

Glenn R. VANBLARICOM
School of Aquatic and Fishery Sciences
Fishery Sciences Building, Rm. 116
1122 NE Boat Street
Seattle, Washington 98105
USA

Alexander I. VEDENEV
Head of Noise in Ocean Laboratory
PP Shirshov Institute of Oceanology
Russian Academy of Sciences
Nakhimovskiy Ave, 36
Moscow 117997
Russia

David WELLER
Protected Resources Division
Southwest Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric
Administration
8604 La Jolla Shores Drive
La Jolla, CA 92037
USA

Alexey V. YABLOKOV
Councillor
Russian Academy of Sciences,
Leninsky prospect, 33, office 319
Moscow 119071
Russia

Sakhalin Energy Investment Company Ltd.

Koen BROKER
Victor DAVEY
Richard EVANS
Valeriy FADEEV
Roberto RACCA
Olga TYURNEVA
Alexey VLADIMIROV
Thomas ZENGERLY

Associate Scientists

Brandon SOUTHALL

IUCN

Patricio BERNAL
Olivier HASINGER
Sarah HUMPHREY (Rapporteur)
Tatiana SAKSINA
Stephen TURNER (Independent evaluator)

Governmental Observers

Elena Nevenchina, Sakhalin Ministry for Nature Resources

Observer NGOs (including alternates)

Naoko FUNAHASHI, IFAW
Maria VORONTSOVA, IFAW Alexey KNIZHNIKOV, WWF Russia
Heather SOHL , WWF UK
Doug NORLEN, Pacific Environment (from midday day 1)
Audrey WOOD, Pacific Environment

Observer Lenders

Bruno Bischoff, Credit Suisse (Day 1&2)
Jonathan Hancox, AEA Group
Bruce Mate, AEA Group
Corinne Raux-Foggon (Day 3)
Sayaka Wakabayashi, Mizuho Corporate Bank, Ltd

Interpreters

Alexander Danilov
Grigory Shkalikov

Annex 2. Final meeting agenda

WESTERN GRAY WHALE ADVISORY PANEL		**12-14 February 2012**
11th meeting		**Geneva, Switzerland**
WGWAP-11 AGENDA AND TIME SCHEDULE		

12 February 2012		**Documents**
09:00 – 09:45	**1. Opening of 11th WGWAP meeting**	
	1.1 Introductions and logistics 1.2 Adoption of agenda 1.3 Documents 1.4 Report drafting procedures and timeline 1.5 Update on outstanding business from previous meetings incl. status of recommendations [***Reeves***] 1.6 Website update [***Hasinger***] 1.7 IUCN update on personnel, contract, TOR etc. [***Bernal***]	WGWAP-11/1 WGWAP-11/2 WGWAP-11/3 WGWAP-11/9 WGWAP-11/14 WGWAP-11/16
09:45 – 10:30	**2. 2-year evaluation** [***IUCN, Turner***]	WGWAP-11/12
10:30 – 10:45	***Coffee break***	
10:45 – 12:30	**3. Reports on field activities in 2011** 3.1 Photo-identification [***Turnyeva***] 3.2 Distribution [***Vladimirov***] 3.3 Acoustics [***Racca***] 3.4 Benthic [***Fadeev***] 3.5 Field programme of Russia-US team [***Weller***]	WGWAP-11/10 WGWAP-11/11
12:30 – 13:30	***Lunch break***	
13:30 – 15:00	**4. Satellite tagging**	
	4.1 Summary of field effort in 2011 [***Mate, Tsidulko***] 4.2 Summary of results so far [***Mate, Tsidulko***] 4.3 Future satellite tagging [***All Participants***]	
15:00	***Adjourn and coffee***	

13 February 2012		**Documents**
09:00 – 10:30	**5. Noise Task Force**	
	5.1 Report of November 2011 NTF-1 meeting [***Donovan and others***] 5.2 Report (provisional) of February 2012 NTF-2 meeting [***Donovan and others***] (including updates on Astokh 4-D Seismic Survey Data Analyses and Noise Component of South Piltun 'Issues' Document, both by SEIC) 5.3 Update on Noise recommendations other than seismic survey related [***Nowacek***] 5.4 Update on Noise recommendations related to seismic surveys including 2010 Astokh 4-D and planned South Piltun 2-D [***Nowacek***] 5.5 Future work of NTF [***Donovan, SEIC***]	WGWAP-11/5 WGWAP-11/15 WGWAP-11/17
10:30 – 10:45	***Coffee break***	
10:45 – 12:30	**6. Environmental Monitoring Task Force (including Oil Spills)**	
	6.1 Report of December 2011 EMTF meeting [***VanBlaricom, Dicks***] 6.2 Update on Oil recommendations [***Dicks***] 6.3 Update on Environmental Monitoring recommendations [***VanBlaricom***] 6.4 Future work of EMTF [***VanBlaricom, Dicks***]	WGWAP-11/18
12:30 – 13:30	***Lunch break***	
13:30 – 14:00	**7. Photo-ID**	
	7.1 Update on status of catalogue comparisons [***Cooke***] 7.2 Future photo-ID efforts 7.3 Status of comparisons of Sakhalin (and Kamchatka?) photo catalogues to photo collections from other regions (including Canada, western US, Mexico, Chukotka?, China) [***Weller, SEIC***]	WGWAP-11/inf.1
14:00 – 15:00	**8. Population assessment** [***Cooke***]	
	8.1 Updated assessment (validity of assumptions etc.) 8.2 Plans for publication 8.3 Stock identity	
15:00	***Adjourn and coffee***	

14 February 2012		**Documents**
09:00 – 10:30	**9. Update on South Piltun Planning and Decision-making [*Davey*]**	
10:30 – 10:45	***Coffee break***	
10:45 – 11:30	**10. Update on Non-Noise Components of 'Issues' Document (including multi-year Summary Report by SEIC/ENL) [*SEIC*]**	WGWAP-11/5 WGWAP-11/7 WGWAP-11/8
11:30 – 12:30	**11. Activities by SEIC and Other Companies on Sakhalin Shelf in 2011, 2012 and Beyond**	
	11.1 SEIC key activities [***Evans***] 11.2 Non-SEIC activities 2011-2013 and beyond [***Hasinger***] 11.3 Integrated Analysis [***Vladimirov***] 11.4 How WGWAP can and should address Cumulative Effects issue [***Cooke***]	WGWAP-11/6 WGWAP-11/13
12:30 – 13:30	***Lunch break***	
13:30 – 14:00	**12. Update on monitoring for and reporting gray whale carcasses, necropsy capacity and protocols, health assessment etc. (including Olga Sokolova proposal) [Reeves, Others]**	WGWAP-11/19
14:00 – 14:30	**13. WGWAP Relations with Russian Authorities (including IWG) and Other Companies [*Reeves*]**	
14:30 – 15:00	**14. WGWAP Work Plan for 2012** [***Reeves, Others***]	
15:00	***Adjourn and coffee***	

Annex 3. List of documents

DOCUMENT NUMBER	SUBMITTED BY	TITLE	STATUS
PRIMARY DOCUMENTS			
WGWAP-11/1	IUCN	Provisional agenda (including time schedule) (English)	Public
WGWAP-11/2	IUCN	Provisional agenda (including time schedule) (Russian)	Public
WGWAP-11/3	IUCN	List of documents distributed in connection with the 11th meeting of the WGWAP	Public
WGWAP-11/4		No document	
WGWAP-11/5	SEIC	Response to WGWAP 9_020 Risk Mitigation Final	Public
WGWAP-11/6	SEIC	SEIC Key activities assoc with noise	Confidential
WGWAP-11/7	SEIC	MNR Summary report of the joint monitoring program 2002-2010 (English)	Public
WGWAP-11/8	SEIC	MNR Summary report of the joint monitoring program 2002-2010 (Russian)	Public
WGWAP-11/9	SEIC	Marine Mammal Observer Programme 2011 Close-Out Report	Public
WGWAP-11/10	SEIC	Sonograms 2010 program according to WGWAP format	Confidential
WGWAP-11/11	SEIC	Sonograms 4D program according to WGWAP format	Confidential
WGWAP-11/12	S.D. Turner	Evaluation of the Western Grey Whale Advisory Panel	Public
WGWAP-11/13	IUCN	Activities of other companies from 2011 to 2012 and beyond	Public
WGWAP-11/14	SEIC IUCN	WGWAP Terms of Reference 2012-2016	Public
WGWAP-11/15	Greg Donovan	Report of November 2011 NTF-1 meeting	Public
WGWAP-11/16	IUCN	List of documents distributed in connection with the 11th meeting of the WGWAP(Russian)	Public

WGWAP-11/17	Greg Donovan	Report of February 2012 NTF-2 meeting	Public
WGWAP-11/18	Glenn VanBlaricom Brian Dicks	Report of December 2011 EMTF-1 meeting	Public
WGWAP-11/19	Olga Sokolova	Summary on Gray Whale 2011 meeting in Tampa	Public

DOCUMENT NUMBER	PREPARED BY	TITLE	STATUS
FOR INFORMATION DOCUMENTS			
WGWAP-11/Inf.1	Greg Donovan	IWC extracts for WGWAP-11	Public

Annex 4. Summary and recommendations of the 2011 Evaluation of the Western Grey Whale Advisory Panel by S.D. Turner[5]

Background

The IUCN Western Grey Whale Advisory Panel (WGWAP) has now been operating for five years. Its terms of reference (TOR) require it to undergo an evaluation every two years. This is the second such evaluation, covering the period from the first quarter of 2009 to the third quarter of 2011.

During the review period, the panel has continued to work intensively, holding five more meetings (as well as several task force meetings). Two important developments have been the announcement by Sakhalin Energy that it is investigating development of a third platform on the Sakhalin Shelf in the South Piltun area; and the findings of satellite tracking, which have shown a western grey whale travelling across the Pacific to the west coast of North America.

This review therefore comes at a time of change for the panel. A second phase of operations will soon be launched, under a new contract between IUCN and Sakhalin Energy. The timing of this evaluation and IUCN's preparation of new TOR for the next panel contract were not synchronised. As it seemed that the new TOR might be finalised earlier, preliminary comments from the evaluation were submitted to IUCN as an input to the TOR.

The evaluation is based on review of the documentation; interviews with 31 informants; and a questionnaire survey.

Relevance

The WGWAP process is relevant to the conservation and recovery of the western grey whale population. But it is constrained by the fact that it still works with only one of the energy companies active on the Sakhalin Shelf; and its work is largely confined to one – critically important - part of the animal's range.

Recommendation 2.1[6]. To enhance the relevance and effectiveness of the WGWAP process, IUCN, supported by Sakhalin Energy, must continue efforts to engage other energy companies on the Sakhalin Shelf in the process, both formally and informally.

Recommendation 2.2. To enhance the relevance of the WGWAP process, IUCN, in consultation with the IWC and NGOs, must intensify efforts to secure funding for the rangewide initiative for the western grey whale – which will remain important despite emerging evidence of trans-Pacific migration by the animals.

From a scientific perspective, the WGWAP's advice to Sakhalin Energy is strongly relevant. The challenge for the panel is to optimise the operational relevance of its advice so that industry managers and technicians can understand and act on it. The challenge for the company is to make the best use of such advice in ways that optimise both operational advantage and conservation impact – while understanding that relevant advice may take time to construct.

Thematically, the cutting edge work of the panel in a particular field of marine conservation is highly relevant to IUCN. The practical value of this relevance depends on how effectively IUCN exploits it. Strategically, the panel is relevant in IUCN's overall approach towards, and experience with, the private sector. IUCN has not been capitalising adequately on either of these aspects of the panel's relevance.

Recommendation 2.3. To enhance the relevance of the WGWAP process for IUCN, IUCN's Global Marine and Polar Programme (GMPP) should ensure adequate interaction, engagement and cross-fertilisation with and between the WGWAP's work and that of its other projects and activities, as

[5] The full text of the 2011 Evaluation of the Western Grey Whale Advisory Panel Report can be found at: http://cmsdata.iucn.org/downloads/wgwap_evaluation_report_nov_11.pdf

[6] Recommendation numbers are keyed to chapter numbers in the report.

well as the Business and Biodiversity Programme and other relevant activities of the Secretariat and Commissions.

Recommendation 2.4. IUCN should affirm its commitment to, and clarify its procedures for, acting both as neutral convenor of the WGWAP and also as active conservation advocate on matters addressed by the panel.

Thematically, the issues with which the panel and Sakhalin Energy are grappling in the WGWAP process are highly relevant to the other companies working on the Sakhalin Shelf and to the oil and gas industry more broadly. The WGWAP process is also strategically relevant to the industry as it considers how to interact with environmental and conservation interests. It is not surprising that no other company has volunteered to join Sakhalin Energy in its collaboration with and funding of the panel. This does not diminish the strategic relevance of the WGWAP process for the sector.

Effectiveness

Overall, the WGWAP is complying with the principles laid down for it. However, several constraints make it difficult for it to perform all its tasks as intended.

The timely and adequate provision of the relevant information by Sakhalin Energy to the WGWAP is fundamental to the panel process and central to the health of panel relationships. Following the crisis of poor company performance in this regard in 2008, there has been a significant improvement. Against the backdrop of this generally improved performance, there has been less satisfaction with Sakhalin Energy's transmission of information about the South Piltun development.

Recommendation 3.1. Sakhalin Energy should ensure that it delivers a full and timely flow of information regarding the South Piltun development to the panel.

Good progress has been made in the content and management of WGWAP recommendations since 2008. IUCN and the WGWAP are managing them more effectively. WGWAP recommendations have become clearer, more practical and more usable (due partly to the way many of them emerge from task force discussions), while their number has become somewhat more manageable. More progress is needed in all these areas, although the panel cannot and should not guarantee that it will find fewer matters on which to make recommendations.

Recommendation 3.2. The panel should continue its efforts to improve the specificity, clarity and practicability of its recommendations.

Sakhalin Energy has acted effectively to implement some panel recommendations. The result is improved practice (sometimes at the cutting edge of best practice) with regard to potential disturbances like seismic surveys and boat traffic, probably leading to reduced disturbance for western grey whales. However, other recommendations have not led to a clear and effective result of this kind. The company may be reluctant to act as decisively as it should on some recommendations. It may find others difficult to act on in a practical and focused manner. Or various internal constraints – of which there have been several recently – may delay or diminish implementation.

IUCN needs to lift its game with regard to the WGWAP. It gives its undoubted credibility and respected name as a neutral convenor to the panel process, but not enough beyond that. This is ammunition for those who argue that it is too ready to make mutually beneficial arrangements with the private sector to lend environmental respectability to the latter's operations. Instead, it should stimulate much more active and open communication and engagement with and between all stakeholders in the panel process, the GMPP, the Business and Biodiversity Programme (BBP) and other IUCN programmes about the conservation issues and opportunities arising from the panel's work for conservationists and the private sector. It should also work more strongly in strategic areas above and beyond the panel's reach. Not only does the panel co-ordinator in the Global Marine and Polar Programme (GMPP) need to combine conservation experience and the ability to engage constructively with the worlds of industry and state policy; IUCN management must also be proactive in engaging with the work the panel does and the opportunities it presents for the Union as

a whole. Several informants expressed confusion about how the co-ordinator post is to be filled following the departure of the previous incumbent in May.

Recommendation 3.3. IUCN should ensure that arrangements for substantively filling the WGWAP co-ordinator position are clearly communicated and fully understood by all stakeholders.

The broader priority for IUCN is to achieve more productive understanding and collaboration with the Russian government. Russian language proficiency on the part of the next WGWAP co-ordinator would be a strong advantage in this regard. Working with NGOs, IUCN and the panel should also seek stronger links with the local oblast government on Sakhalin, which has relevant regulatory functions and scientific concerns.

Recommendation 3.4. IUCN, its GMPP and the WGWAP should strengthen their engagement with the Russian authorities and the Interdepartmental Working Group with regard to the WGWAP process.

Recommendation 3.5. IUCN and Sakhalin Energy should support closer interaction between the panel and local authorities and NGOs on Sakhalin.

At the same time, IUCN should communicate more effectively to all concerned about its administrative arrangements for the panel, and give a more convincing justification for the ways it uses the overheads that it charges on the project budget contributed by Sakhalin Energy. This has been a point of contention within the GMPP and in IUCN's relations with the company.

Panel meetings have included some useful self-assessment discussions, but the concept of a regular formal agenda item on this is not working out effectively.

Recommendation 3.6. Before each meeting, the panel chair and the IUCN co-ordinator should prepare a short document assessing the performance of the WGWAP, referring to the previous meeting and the intervening period, and table this in the self-assessment slot on the agenda for discussion.

Changes at Sakhalin Energy have meant a sharper focus on risk-based justification for panel recommendations and consequent company action, and an evident impatience with any hint of science for the sake of science in the panel's deliberations. There have been frictions. A new and possibly more inclusive trust and process need to be built, with arguably more flexible thinking about how to involve other companies, NGOs and local and national government – even if these parties do not all take part in the formal panel process as currently constituted. There is commitment on all sides to build this broader trust and process, although it will take some facilitation to find mutually acceptable expression by and among all parties.

Recommendation 3.7. IUCN and Sakhalin Energy should work together to build a new and more inclusive trust and process in the WGWAP, with more flexible thinking about how to involve other companies, NGOs and local and national government – even if these parties do not all take part in the formal panel process as currently constituted.

Efficiency

Five years into the WGWAP process, roles and responsibilities are mostly clear and stable, although somewhat unsettled by this year's transition in the co-ordinator post at IUCN and changes in Sakhalin Energy. The management of meetings, reporting and work flow is generally satisfactory. The machinery of the WGWAP can now function fairly smoothly.

From some perspectives, the WGWAP process costs more than it might. From others, it costs less than any conceivable option. Both IUCN and Sakhalin Energy must work in good faith to maximise the conservation and business benefits through continuing attention to the cost-effectiveness of the process.

Relationship management in the panel process has generally been adequate. There is more good faith on the various sides of the WGWAP process than some participants realise. Despite the changing personalities and shifts in emphasis, there is a good prospect that relationship management can develop from adequate to satisfactory.

WGWAP members are commended for the enormous effort they devote to the panel process. It is now time to review panel membership.

Recommendation 4.1. IUCN and the WGWAP chair should carry out a review of all panel members and determine whether to retain or replace them. Without increasing the size of the panel, they should aim to increase Russian representation and to ensure that at least one new member has strong practical experience of addressing environmental and technical concerns from within the oil and gas sector.

The idea of cutting each meeting to two days has rightly been resisted, as has that of having only one full meeting per year. There are criticisms of the task force approach as inadequately transparent and possibly generating conflicts of interest. The ultimate test must be whether the results of this modus operandi, as reflected in the company's actions and the mitigation and conservation results, adequately work towards the panel's goal of conservation and recovery of the western grey whale population. So far, the balance of the evidence is positive.

Recommendation 4.2. The panel should maintain its use of task forces, provided that panel members retain their independent stance in task force discussions, and that this independence is safeguarded by the private and plenary meetings of the panel as a whole.

Recommendation 4.3. The panel should ensure that its environmental monitoring task force functions effectively and catches up with its work.

Overall, the transparency of the WGWAP process is judged good, within the realistic limits imposed by the nature of that process. IUCN has produced a commendably thorough communications strategy for the WGWAP process. The fact that the responsible officer is also in charge of all routine WGWAP administration has slowed implementation of the strategy somewhat. There has been some improvement in the availability of communications and documents on the process in Russian. IUCN continues to be criticised in some quarters for communications that paint too favourable a picture of Sakhalin Energy motives and performance. Given that influencing the private sector is an important part of its overall strategy, it must achieve a difficult balancing act. To publish communications implying a crusade to police and correct the private sector would be counter-productive. Not surprisingly, it fails to please all of the people all of the time. In communications on the WGWAP, continuing vigilance is needed from panel members and communications staff to strike the appropriate balance and tone.

Open information sessions, and an online question and answer process, have not been effective.

Recommendation 4.4. Instead of attempting focused information or question and answer sessions on the western grey whale and the WGWAP, IUCN should give prominence to its and the panel's readiness to answer questions via the website, and actively seek the collaboration of Russian and other NGOs in spreading the word about this. It should also include a 'frequently asked questions' link to the fact sheet on the website.

IUCN provides generally strong and efficient administrative and logistical support to the WGWAP process. Reports on all panel and most task force meetings are thorough and efficient.

The influence and impact of the WGWAP

The WGWAP process has had a modest but positive impact on the conservation of the western grey whale population, and a marginal but positive impact on its recovery. The potential for it to achieve positive impact on the animals' conservation and recovery would be much greater if its efforts were nested within a rangewide initiative for this purpose.

The panel process has had a positive impact on Sakhalin Energy's practice on the Sakhalin Shelf. It is harder to be positive about the sustainability of these positive impacts on Sakhalin Energy. Beyond the duration of current obligations to lenders, much will depend on whether the environmental attitudes and practice of Gazprom – seen in the context of the Russian oil and gas industry overall – have evolved beyond their present sub optimal state. It will depend, too, on the

evolution of Russian regulatory practice and how effectively it can maintain the conservation standards that the panel is encouraging Sakhalin Energy to adopt.

So far, the WGWAP process has had relatively little influence on broader state and industry practice in the range of the western grey whale.

There are two ways in which the WGWAP process can affect the marine conservation practices of the oil industry in general. The first is for the panel model of interaction between independent experts and a company to be replicated. The second is for the industry to adopt approaches or practices that the panel has recommended. There is some evidence of the first type of impact, notably through the panel that IUCN set up to advise on oil and gas activities off the Mauritanian coast (2007 – 2009) and the Yemen LNG Independent Review Panel (operating since 2009). There is only limited, diffuse evidence of the second kind of impact.

The WGWAP process has had a substantial and positive influence on IUCN's approach to building partnerships with the private sector, which in turn has some significance for the overall IUCN Programme.