WESTERN GRAY WHALE ADVISORY PANEL **WGWAP-7**

7th Meeting **12-14 December 2009**

Geneva, Switzerland

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

CONVENED BY THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE

CONTENTS

1 OPENING

The seventh meeting of the Western Gray Whale Advisory Panel (WGWAP-7) was held at Hotel Epsom, Geneva, Switzerland, from 12-14 December 2009 under the chairmanship of R.R. Reeves.

Amanda Bradford of the University of Washington (Seattle) attended the meeting of the Photo-ID Task Force immediately before WGWAP-7 and, at the request of the Panel, stayed on to provide technical support during the main meeting.

Panel members present are listed in Annex 1. The meeting was also attended by representatives of the following organisations (also see Annex 1):

AEA Group	Mizuho Corporate Bank, Ltd.
Credit Suisse	Pacific Environment
DEFRA, UK	Sakhalin Energy Investment Company Ltd
International Union for Conservation of Nature (IUCN)	WWF International
	WWF Russia
Ministry of Natural Resources and Environment of Russian Federation	Russian Academy of Science, Institute of Ecology and Evolution

Finn Larsen and Laura Riddering of IUCN facilitated meeting preparations and logistics. Sarah Humphrey served as meeting rapporteur. Their efforts in support of the Panel's work are greatly appreciated.

1.1 Introduction and logistics

Two Panel members were unable to attend this meeting – Greg Donovan because of unforeseen and pressing IWC responsibilities, Alexey Yablokov due to a health problem. The plenary meeting of the Panel followed two task force meetings held earlier at the same venue – a 2-day meeting of the Seismic Survey Task Force (6-8 December) and a 1-day meeting of the Photo-ID Task Force (8-9 December).

1.2 Adoption of agenda

As for previous Panel meetings, the draft agenda had been prepared by Reeves and Larsen with input from Sakhalin Energy representatives and Panel members. A number of minor adjustments were made to the draft based on comments by meeting participants. Reeves explained that the order and timing of some items would need to be adjusted ad hoc. The final agenda is given as Annex 2.

Pacific Environment called attention to the NGO letter provided to the Panel in advance of the meeting (WGWAP-7/26) and it was decided that the various elements of the letter would be addressed under the relevant topics already in the draft agenda.

1.3 Documents

The list of documents, including slide presentations, is given in Annex 3.

Reeves commended Sakhalin Energy for submitting documents on time. He further noted the Panel's appreciation for the documents and information provided by NGOs.

Reeves acknowledged that some of the material to be provided by the Panel had not been delivered in as timely a fashion as desirable and that in the future a greater effort should be made to meet deadlines. At a minimum, it would be helpful in managing expectations and preparing for meetings if the responsible individuals notified the Panel chair and IUCN representative of any anticipated delays.

It was hoped that both task force reports (Seismic Survey and Photo-ID) would be available for the meeting. The Photo-ID report was circulated in draft form at the beginning of the second day of the meeting, and the main elements of the Seismic Survey report (a draft of which was still under review by task force members during the WGWAP meeting) were summarized in a slide presentation by Nowacek (see Item 5.2). Following the usual practice the task force reports will be finalized by participants, submitted for adoption by the Panel (via e-mail) and then made public on the IUCN website.

1.4 Reporting Procedures

It was **agreed** that all parties would make every effort to ensure that the final Panel report is publicly available by early February 2010 and that Sakhalin Energy's formal responses to new Panel recommendations are posted on the IUCN website within two weeks thereafter.

2 REPORTS ON FIELD ACTIVITIES IN 2009

2.1 Preliminary summary of effort and/or results of Sakhalin Energy/ENL 2009 field programme (distribution, behaviour, acoustics, photo-ID and benthic monitoring) including information on fog and other weather conditions in 2009 versus other years

Muir presented information on weather conditions off NE Sakhalin in 2009 (document WGWAP-7/25). From aboard the R/V *Akademik Oparin* during the period 5 July to 28 September, sea states were relatively calm most of the time (Beaufort ≤ 4) but visibility was generally poor (< 1 km) approximately 40% of the time, primarily due to fog.

Distribution surveys conducted from shore between 25 June and 28 September were greatly hampered by poor weather conditions. The north and south stations experienced the highest number of poor weather days in July. Overall, there was no survey effort due to poor weather on slightly more than 60 days in the north and just under 60 days in the south (WGWAP-7/25, Figs 5 and 6). Fog was the main problem (approximately 55% of the time) followed by high sea states (approximately 20% of the time).

In the context of the planned 2010 4-D seismic survey, Nowacek noted that visibility of < 1 km meant it would not be possible to observe the entire shutdown range from the seismic survey vessel and therefore the 'shooting' of 'A' lines (see later) would have to be suspended. Sakhalin Energy gave assurance that this contingency had been considered in estimates of weather 'down time' for the survey and also that it had been addressed in the MMO protocols.

Muir, Tyurneva and Racca presented summaries of the effort associated with distribution, behaviour and benthic monitoring, photo-ID work and acoustic monitoring, respectively, under the joint Sakhalin Energy/ENL programme in June-September 2009 (document WGWAP-7/11). This included: 1) shore-based distribution, 2) vessel-based distribution, 3) photo-ID, 4) shore-based behaviour, 5) benthic, 6) acoustic/hydrologic and (7) Kamchatka studies in Vestnik and Olga Bays. The 2009 data are still being analysed and therefore no results or conclusions were included in the presentations or in WGWAP-7/11. The final reports on this work are expected to be available for review at WGWAP-8.

Overall, the 2009 effort mirrored that in previous years, in terms of both scope and timing. That being said, the Panel welcomed the addition of photo-ID surveys, distribution surveys and benthic studies in Vestnik Bay and endorsed the continuation of studies in Olga Bay.

Several other points with regard to the information presented in WGWAP-7/11 and during the presentations were raised by the Panel, including:

- There was a complete absence of sightings during September at shore stations 10 and 11 as shown in Figure 1 (panel C).
- While recognising the preliminary nature of the summary plots of distribution and the data from the shore and vessel observation teams, it appears that the numbers of whales off Sakhalin in 2009 were similar to what was observed in years before 2008. This general impression will need to be re-evaluated once the full results of the final analyses are available.

That being said, the Panel welcomed the opportunity to review these preliminary summaries of the research effort in 2009 and encouraged that this be standard practice for future autumn/early winter WGWAP meetings.

- The relatively large number of distant (off-transect) observations of gray whales to the east of the offshore feeding area during systematic vessel surveys (mentioned by Muir during her presentation) was considered noteworthy and the Panel looked forward to a more detailed presentation and analysis of these sightings at WGWAP-8.
- With regard to work off Kamchatka, the Panel encouraged more focus on the benthic sampling in Vestnik Bay and its implications for gray whale foraging. Also, it was suggested that an analysis of the timing and numbers of gray whale observations off Kamchatka in relation to ice conditions in different years could be informative.

2.2 Preliminary summary of effort and results of work by non-industry groups (including whale observations and photo-ID/biopsy)

Tsidulko presented the results of the photo-ID work by the Russia-US team in 2009, when 17 boat surveys between 24 June and 26 August involved 67 hours of survey effort. A total of 82 individual whales were identified, including seven calves and one previously unidentified non-calf. The remaining 74 non-calf whales had all been identified in previous seasons and included one of the three calves identified during the 2008 field season. Of the seven mothers observed in 2009, six had previously been observed with a calf, while one was a new mother. This new mother was first identified as a calf in 1998, establishing her age at first known reproduction as 11 years, which is consistent with the range in age at sexual maturity determined by Rice and Wolman (1971) for eastern gray whales (5-11 years). This observation brings the number of known reproductive females in the population to 26.

In discussion, it was noted that the effort and observation data are similar in magnitude to data prior to the 2008 season, suggesting that the overall reduction of whales in the study area found in 2008 did not occur in 2009. There was interest in the distribution of whales in the study area and how it compared with that of the previous year, as well as with the preliminary 2009 results from the industry-sponsored team (see 2.1). Tsidulko responded that the distribution of whales observed by the Russia-US team had not yet been analysed in sufficient detail to comment.

3 REVIEW INFORMATION ON RELEVANT ACTIVITIES BY SAKHALIN ENERGY AND OTHER COMPANIES IN 2009

3.1 Sakhalin Energy activities

During June-September the sub-sea pipelines in the Piltun-Astokh and Lunskoye areas were inspected using a remotely operated vehicle to provide visual images as well as multi-beam sidescan sonar inspections. These are high-frequency (>100 kHz), narrow-beam sources that presumably have little effect on whales. Such inspections will be undertaken every year for the first five years of operation (as part of permit requirements) to make sure that there are no free spans due to erosion of the seabed by currents.

The pipeline inspection was followed by rock dumping in October and November along the sub-sea pipelines where free spans were detected. Approximately 5700 tons of rock was deposited, representing about two vessel loads.

During August there was a 2-week shutdown of the Molikpaq platform for a rejuvenation workscope. This involved safety checks and upgrading of items on the platform.

In order to meet its permit commitments, Sakhalin Energy conducts annual vessel-based ecological monitoring along the pipelines and around the platforms and wellheads (PA-16, PA-18 and LUN-8). In 2009 this work was carried out from the *Pavel Gordienko* between 1 and 12 July as well as between 16 October and 13 November.

As a matter of general information, a minor earthquake of magnitude M4.8 was recorded on 22 August. The epicentre was 20 km east of the PA-A platform.

3.2 Non-Sakhalin Energy activities

Activities reportedly planned or carried out by companies other than Sakhalin Energy, as summarized in WGWAP-7/15, included the following:

- A 2-D seismic survey conducted by Venineft (Rosneft-Sinopec) in the Veninsky transition zone, Sakhalin III project, during October-November.
- Seismic surveys conducted by Elvary Neftegas (Rosneft-BP) in the Kaigansko-Vasukanskoe area, Sakhalin V project, during September-October. The surveys in the North section were 2-D and those in the South section were 3-D.
- A 3-D seismic survey (620 km^2) conducted by Gazprom in the South-Kirinskaya structure, Sakhalin III project, during autumn 2009 (111 km^2 completed on or before 21 September).
- A 3-D seismic survey (600 km^2) by Gazprom scheduled for the Minginskaya structure, Sakhalin III project, for autumn 2009 had not begun as of October 2009 and may have been postponed.
- A 3-D seismic survey (600 km^2) by Gazprom scheduled for the Kirinskoye structure, Sakhalin III project, was acquired in the first week of July and continued into the first week of November 2009.
- Drilling of production wells by ENL at the Yastreb rig, Odoptu licence area, Sakhalin I project. According to the ENL website (http://www.sakhalin1.ru/en/project/future.asp; accessed 4 January 2010), these will be 'onshore extended reach wells to the offshore field'.

There was a brief discussion of the ENL pile driving activity in the Odoptu licence area in 2009. Weller once again emphasised that the issue of confounding sources of noise, such as that from pile driving on land near the Piltun feeding area, would have to be addressed in any analysis of whale distribution and behaviour. Sakhalin Energy representatives pointed out both the complexity of such analyses and the difficulty of analysing 'third party' sound inputs without knowing source locations. The Panel agreed that it was highly desirable that other companies would make such information available, but also stressed that without wider participation in the WGWAP process recommendations directed at other companies were of limited effectiveness. It was noted for the record that ENL had presented some information on its 2008 pile driving activities to the IWC Scientific Committee at its June 2009 meeting in Madeira (International Whaling Commission 2009) and that it had a monitoring programme in place in 2009.

4 REVIEW INFORMATION ON RELEVANT ACTIVITIES BY SAKHALIN ENERGY AND OTHER COMPANIES EXPECTED IN 2010

4.1 Sakhalin Energy activities

Pipeline inspections, followed by remedial action as necessary, will be repeated in June-September 2010, similar to 2009. These inspections and follow-up actions are part of Sakhalin Energy's 5-year permit to operate. Also, ecological monitoring around the platforms and along the pipelines will be repeated according to permit requirements.

Conductor driving (lowering a conductor to the seabed and driving it down into the shallow subsoil to stabilise the upper part of the well bore) will be carried out at the PA-B and LUN-A platforms in preparation for drilling. This is a normal operation and together with the drilling activities will be a regular event. Such work takes place on the platform itself and inside the concrete legs of the gravity-based structure. Noise levels will be low due to the damping of the concrete. Noise levels measured from a jack-up rig (*i.e.* no concrete) near Lunskoye were found to be about 135dB at a 3 km radius from the rig. Levels are expected to be significantly lower for the operations carried out inside the concrete gravity-based structure.

The planned Astokh 4-D seismic survey is discussed under agenda Item 5.

4.2 Non-Sakhalin Energy activities

The non-Sakhalin Energy activity of greatest immediate concern in 2010 is a planned seismic survey to be carried out by Rosneft Shelf Far East (RN Shelf Dalnii Vostok) in the Lebedinsky field, which borders on and partially overlaps with the Piltun feeding area (also see Item 5.2.2). According to document WGWAP-7/26, an environmental impact assessment process for this survey has been announced, with a public comment period to commence in March 2010. At the time of WGWAP-7, it was still uncertain whether the survey would in fact be conducted in 2010. This will be a transition zone survey in shallow water near shore. It will involve the laying of mounted receiver cables on the ocean floor and the production of sound from sources both on shore (explosive charges) and offshore (airguns). The onshore activity could be carried out as early as May and the marine activity in June. In the absence of a representative of the operator and with no documentation available for reference, it was not possible to consider in detail either the design of this seismic survey or the monitoring and mitigation that might be applied in association with it. VanBlaricom drew attention to the fact that the use of explosive charges or otherwise powerful sources of sound that propagates through the substrate could have important implications for prey populations, particularly sand lance, which are very sensitive to disturbance on the ocean bottom. Cooke noted, however, that in principle it should be possible to make this method of seismic acquisition less disturbing to whales than vessel-towed seismic airgun arrays if less sound energy enters the water column. Additional activities reportedly planned by companies other than Sakhalin Energy, as summarised in document WGWAP-7/16, include the following:

- A 2-D seismic survey by Elvary Neftegas (Rosneft-BP) in the Kaigansky-Vasyukanskiy licence area, Sakhalin V project, sometime between 2010 and 2012 (see WGWAP-7/Inf.2 regarding the 2008 Elvary 2-D seismic survey in this area).
- 2-D and 3-D seismic surveys by Gazprom in Ayashskiy, East Odoptu and Kirinskoye fields, Sakhalin III project, summer-autumn 2010-2012.
- A 3-D seismic survey (600 km^2) by Gazprom in the Minginskaya structure, Kirinsky licence area, Sakhalin III project, originally planned for autumn 2009 (see under Item 3.2) may have been postponed to 2010.
- A 2-D seismic survey by East-Smidt Neftegaz (Rosneft-BP) in the East-Smidt area, Sakhalin V project, timing unknown.
- Construction of exploration wells by Venineft (Rosneft-Sinopec) in the North-Veninskaya area, Sakhalin III project, timing unknown.

Plans by ENL (Sakhalin I project) for further construction activity associated with the Piltun Lagoon pipeline and for further development of the Arkutun-Dagi field just east of the Chaivo field are mentioned in documents WGWAP-7/26 and WGWAP-7/Inf.5 but no detailed information was available for the Panel to consider. According to the ENL website (as above), the planned Arkutun-Dagi development includes ‘a new offshore drilling and production platform, which includes a gravity base substructure and topsides facilities’, and a new oil and gas pipeline from that platform to the existing Chaivo Onshore Processing Facility. This latter facility is expected to double its gas production by mid-2011 through ‘the significant expansion of existing onshore and offshore facilities, including new drilling, processing, compression, power, and other infrastructure investments’ (ENL website, as above).

The Panel expressed its appreciation to Larsen at IUCN, Sakhalin Energy staff and NGO representatives for their efforts to obtain and report this information. Further, the Panel expressed its wish, in the future, to see a unified map or maps of the various industrial activities that are expected or planned in a given year. Such graphic representations would facilitate the Panel’s consideration of the cumulative effects of all activities in the region potentially affecting the whales. Although it recognises that preparation of such ‘composite maps’ will not be a simple exercise and that outcomes will be constrained by such things as the quality, completeness and format of the input information and data, the Panel **recommends** that one or more composite maps of likely industrial activity in 2010 on the Sakhalin shelf be prepared and presented at the next WGWAP meeting.

4.3 Other matters

Elliot (WWF) drew attention to several statements by ENL (as quoted in WGWAP-7/26) regarding the adequacy of gray whale monitoring and mitigation by industry off Sakhalin and the status of the western gray whale population. For example, ENL states, ‘Based on data compiled through these multi-year cooperative efforts [the joint monitoring programme co-sponsored by ENL and Sakhalin Energy], measures taken to protect Western Gray Whales appear to be effective, and the western gray whale population is growing’. Also, ‘Variations in whale distribution appear to be coincident with changes in the abundance and distribution of food supply, and do not coincide with intermittent onshore and offshore oil and gas activities’. The Panel noted that the most recent population assessment by Cooke *et al.* (2008a) does indeed suggest that the whale population was growing slowly at least up to 2005. Whether it has continued to grow in spite of the documented mortality in set nets in Japan (totalling 5 whales, all female) remains to be seen. It is not known whether the rate of increase through 2005 (1.6-3.5% per year) could have been higher in the absence of disturbance. Regarding the marked change in distribution observed in 2008, the Panel has seen no credible evidence that this was a response to changes in the distribution and abundance of gray whale prey, or to refute the idea that it was correlated with industrial activities in the region (see Item 10.3).

Finally, as part of the ongoing discussion regarding access to acoustic data (see recommendations WGWAP-6/009-012), Nowacek and Vedenev met privately with Racca and Broker during WGWAP-7 to discuss a way forward for implementing previous WGWAP recommendations regarding acoustics and the presentation of acoustic data. As a result of those discussions, the Panel decided to consolidate several of its earlier recommendations regarding the presentation of acoustic data and replace them with a single comprehensive recommendation. Hence, the Panel **recommends** that for any and all future requests for acoustic data (*e.g.* for use in ongoing MVA efforts), Sakhalin Energy should provide, in tabular format, 1Hz, 1-minute averages for continuous noise and 1Hz, 1-second averages for impulsive noise in frequency bands specified in the request. These requests will target specific time periods and these time periods will be kept as short as possible due to the effort required to produce such data. If data are needed over long time periods, time-saving steps (*e.g.* requesting 1/3 octave levels instead of 1Hz bands) will be considered.

5 4-D SEISMIC SURVEY

5.1 Summary of ice conditions and earliest start date

The Panel has repeatedly emphasised that the most important mitigation measure for the Astokh 4-D seismic survey will be to conduct it as early in the season as possible, when fewer western gray whales are likely to be present in the feeding area, particularly mother-calf pairs. The definition of ‘as early in the season as possible’ is directly tied to the timing of ice-free conditions in the survey area.

WGWAP-7/19 provided new information from an analysis of ice data designed to predict when ice-free conditions are likely to occur in the Astokh survey area in 2010. The overarching objective was to enable the earliest possible date for mobilisation of the seismic vessel to the survey area, and satellite images of sea ice coverage and sea ice concentration in the northern Okhotsk Sea during 1982-1999 and 2004-2009 were used in the analysis. Specifically, satellite images collected between January and March of each of those years were used to measure maximum sea ice coverage. Based on these measurements, winters were classified as Severe, Normal or Mild.

In general, the severity of a given winter, as determined by satellite images from the February to March period, were useful in determining the probability that the Astokh survey area would be ice-free by a certain date. Mild winters resulted in the earliest ice-free dates while severe winters delayed clearing of the ice. For example, mild winters in 2008 and 2009 resulted in the Astokh survey area being ice-free on 8 June and 9 June, respectively.

When the Astokh 4-D seismic survey had been scheduled for the 2009 season, the mobilisation date had been fixed as 15 June. However, in planning for the survey in 2010 Sakhalin Energy will use the ice-based approach described in document WGWAP-7/19 and further explained by Terwogt during the meeting, to determine the mobilisation date. In brief, this approach will entail: 1) review of satellite images from February to March of 2010 to classify the winter as Severe, Normal or Mild; 2) statistical analysis of historical data to estimate an ice-free date with an associated probabilistic range of uncertainty; 3) continued qualitative monitoring of satellite and temperature data from the northern Okhotsk Sea and off Sakhalin from April to mid-May 2010 in order to monitor the ice break and, as possible, narrow the range of uncertainty around the predicted ice-free date; and 4) a decision by Sakhalin Energy no later than mid-May on a definite day on which to notify the PGS seismic vessel as to when it is required to be on site and ready for acquisition of data (*i.e.* start-up date)[1].

The Panel welcomed the above approach and acknowledged that such use of ice data had potential value in helping to ensure that the 2010 Astokh 4-D seismic survey would be initiated at the earliest possible date. The Panel also suggested that the analysis of timing of sea ice clearance off NE Sakhalin would be valuable to other operators and for other purposes and contexts and therefore it encouraged Sakhalin Energy to make document WGWAP-7/19 publicly available.

5.2 Seismic Survey Task Force

5.2.1 Summary of Sakhalin Energy seismic survey plans for 2010

Terwogt presented an overview of the Sakhalin Energy plans for a 4-D seismic survey in the Astokh lease area. She briefly recapitulated the reasons for conducting the survey and the extent and the general plan for it, all of which had been presented at previous WGWAP meetings. The tasks for early 2010 on the part of Sakhalin Energy are to 1) finalise the plan for using ice data (discussed above under Item 5.1) to ensure that the survey begins as early in the season as possible, 2) complete contractual and operational preparations for the survey (including incorporation of Panel recommendations) and 3) update the EIA to include the distribution data from 2008 and 2009.

The Panel was advised that Sakhalin Energy was in the process of responding to comments on the EIA from the lenders. Hancox, representing the consultants to the lenders, indicated that he would convey a request to the lenders that the Panel be allowed to see the latest EIA, including lender comments and Sakhalin Energy responses once the latter have been submitted.

5.2.2 Review and summary of inter-sessional tasks and pre-meeting workshop

As mentioned under Item 1.3, Nowacek summarized results of the pre-meeting workshop (the fourth formal workshop of the Seismic Survey Task Force, hereafter SSTF-4) in a slide presentation. He also summarized inter-sessional work carried out by individual Task Force members and in small groups since WGWAP-6. The latter included a meeting of a small subset of the SSTF and Sakhalin Energy representatives in Gland in October 2009 (the 'Gland meeting') that had been expected to agree on a final perimeter monitoring line (PML). Nowacek's presentation did not cover details of previous SSTF meetings (SSTF-1, -2 and –3) as those reports are publicly available on the IUCN website (http://www.iucn.org/wgwap).

[1] The mobilization of the PGS vessel from Singapore takes about 21 days. For example, it must depart by 20 May, at the latest, in order to be in the Astokh survey area by about 10 June (based on historical data, there is an 80% chance of the survey area being ice-free by 10 June).

Two key aspects of the planning for monitoring and mitigation of the Astokh 4-D seismic survey remained to be resolved after WGWAP-6: 1) the final PML and 2) development of a practical implementation scheme for many of the agreed measures.

Perimeter Monitoring Line

The agreed final PML was the result of analyses carried out at and immediately following the Gland meeting by Judy Muir, Ruth Joy and Charles Paxton. A full description of these analyses is included in the SSTF-4 report.

Cooke had been conducting a parallel analysis using a different method to calculate the 95% density surface for gray whale distribution during June-July, with the expectation that his results would be compared at SSTF-4 with those of Muir, Joy and Paxton in order to arrive at a final PML. However, Cooke's results were not ready for the SSTF workshop so the decision was taken to use the Muir-Joy results to delineate the final PML to be used during the 2010 Astokh 4-D seismic survey. It was agreed, however, that Cooke would complete his analysis on the understanding that the results could prove useful in post-survey analyses and in the design of monitoring plans for future seismic surveys.

Implementation Scheme

Monitoring and mitigation will involve input from vessels, shore stations and remotely deployed acoustic buoys that both record data and relay information to shore stations. Details of the equipment are given in previous SSTF reports and specifics of the implementation scheme are included in the SSTF-4 report. Only major elements are summarised here.

Classification of A and B lines: Early in the SSTF process, the decision was made to classify the seismic survey acquisition lines as either 'A' or 'B', with the former requiring more stringent monitoring and mitigation. The assumption behind this distinction was that A lines were more likely to result in received sound levels in the feeding area that could be expected to disrupt gray whale behaviour. It was recognized that airgun sounds from any line in the survey have the potential to affect the whales, but it was agreed that additional measures are required for monitoring the lines expected to produce sounds in the feeding area above the accepted behavioural response threshold of 163 dB_{RMS} or 156 dB_{SEL}.

Given the shape of the survey area and specifically its orientation relative to the shoreline, it is recognized that some A lines may only partially qualify as such since received levels in the feeding area are likely to drop below the behavioural response threshold at some point during acquisition according to model predictions, which are in reasonable agreement with *in situ* empirical measurements (see Section 7 of the SSTF-4 report). Sakhalin Energy is working on a proposed approach for 'truncating' some A lines so that, at least in theory, they can be acquired with non-A line monitoring conditions and restrictions, thereby shortening the overall duration of the seismic survey. The logic behind this approach is that rapid and early completion of the seismic survey is the best mitigation tool as fewer whales are likely to be affected, given that whale densities are lower early in the season (*i.e.* May-July). The Panel **recommends** that Sakhalin Energy submit the A-line truncation proposal by 28 February 2010. The Panel further **recommends** that this proposal include provision for buffer zones to ensure that the behavioural response threshold will not be exceeded at the PML during acquisition of the truncated portions of the A lines. Nowacek, Racca and Vedenev discussed these buffer zones in general terms during the SSTF workshop and the Panel meeting, but the detailed specifications remain to be agreed. The Panel will review the Sakhalin Energy proposal and provide a response by 15 March 2010, assuming timely submission of the proposal.

Shore station locations, protocols and structures: No substantive changes in shore station operations (*i.e.* monitoring behaviour and density/distribution) were recommended at SSTF-4. Station locations are to be as previously agreed and are specified in the SSTF-4 report. The one outstanding issue concerns the construction of platforms and their suitability for theodolite operations. The Panel **stresses** the importance of adequate visual observation platforms and **recommends** that Sakhalin Energy test the structural integrity of the platforms under realistic field conditions and that the tests be conducted with sufficient lead time to allow for any necessary corrective measures to be implemented. The term ‘adequate’ is meant to include: 1) the ability of observers to see the required areas to be monitored, *i.e.* out to the PML, and 2) confirmation that only infrequent rebalancing of theodolites (*i.e.* not more than once every hour) will be needed under normal operating conditions.

Operational procedures for the observation vessel: Details are given in Section 7.6 of the SSTF-4 report and the Panel **recommends** that the observation vessel follow the operational decision trees described there. During the meeting the Panel was informed that the *M/V Pavel Gordienko*, which is likely to be used as the observation vessel, is also slated to serve as a backup for the shore-based acoustic monitoring station in case of failure of the infrastructure on shore. According to Racca, use of the observation vessel in this contingency capacity had been in the plans all along, although the Panel did not know this. The Panel **recommends** that Sakhalin Energy submit for its review an operational contingency plan as soon as possible but not later than 28 February 2010. Such a plan needs to include consideration of likely scenarios and an explanation of how this vessel would be able both to effectively and consistently monitor the acoustic buoys and carry out its visual observation and other sampling responsibilities specified in the monitoring and mitigation plan.

Seismic source verification: At the beginning of any seismic survey, it is standard operating procedure to conduct a seismic source verification (SSV). As agreed during previous Task Force and Panel meetings, Sakhalin Energy will prepare a library of propagation models from which the one that most closely matches the data measured during the SSV will be chosen for the assignment of A and B lines. The Panel **recommends** that if any of the measured data fall ≥3 dB outside the range (|1 SD|) predicted by the model, then the propagation models should be retuned and rerun until alterations give results that more closely match the data. The procedure for the SSV will follow standard industry practice, and the Panel **recommends** that the data be provided as soon as possible but not more than 48 hours post experiment to Nowacek, Vedenev and Southall for their review and validation. The data should be in the form of plots of amplitude (RMS and SEL) vs. range for each shot. The review group must respond within 24 hours.

Follow-up Analyses

The Panel has consistently identified the need to assess both the effects of the seismic survey on the whales and the effectiveness of the monitoring and mitigation plan. To ensure that these assessments take place, the Panel **recommends** the formation of a working group to advise on such analyses following the Astokh 4-D seismic survey. One approach would be to give this charge to a continued or reconstituted Seismic Survey Task Force. Pursuant to such work, the Panel **recognizes** the importance of post-seismic survey visual monitoring, regardless of whether whales were observed in the potential impact zone (*i.e.* shoreward of the PML) during the survey. The Panel therefore **recommends** that visual data continue to be collected from the behaviour and distribution stations for a period of at least 14 calendar days following completion of the seismic survey.

Independent Monitoring

The Panel recalled its previous recommendation (WGWAP-5/004) that an independent observer be present onboard the seismic vessel during the survey. Sakhalin Energy has agreed to implement this recommendation but with the caveat that accommodation onboard the seismic vessel itself will be infeasible. On reconsideration, the Panel considers it preferable that the independent observer be onboard the observation vessel, which at this point is expected to be the *M/V Pavel Gordienko*. Being onboard this vessel would allow the independent observer to verify implementation of the Panel’s recommendations with regard to monitoring and mitigation. It is understood that restrictions may need to be placed on this person, *e.g.* with regard to nationality, access to unprocessed acoustic data, etc. Nowacek and Vedenev, in consultation with Reeves and Donovan, will develop the terms of reference for the independent observer by 31 January 2010. These will include a recommendation on who the person should be as well as an outline of the required skill level, experience and expertise (in the event that the Panel’s own choice is unavailable or for some reason cannot be accommodated). After the terms of reference have been submitted to IUCN, the Panel expects that IUCN and Sakhalin Energy will coordinate and enable the participation of the independent observer.

Other Remaining Tasks
Three main tasks for further work by the Task Force were identified, as follows:

- Protocols for focal-individual observations

It was agreed that draft protocols for focal-individual observations from both the RHIB (see later) and the observation vessel would be circulated to the Task Force by Gailey no later than 28 February 2010. (Note: The RHIB is a rigid-hulled, inflatable vessel that will be stored onboard and launched from the observation vessel during periods of good weather. The RHIB is regarded as a preferable platform for conducting focal whale observations during the seismic survey.)

- Protocol for acoustic recording from the RHIB

It was agreed that Broker and Gailey would provide a draft protocol no later than 28 February 2010 for initial review by a subgroup teleconference and then by the Panel.

- Development and implementation of a data management plan

As all data collected before, during and immediately after the seismic survey will be solely under the control of Sakhalin Energy, there should be no impediments to detailed analyses of the behavioural, distribution/density and acoustic data. To conduct such analyses effectively, however, a data management plan must be developed. No specific assignment of responsibility or a timeline for such development was established at the meeting. This matter will require further attention at WGWAP-8.

Potential for Concurrent Lebedenskoye Seismic Survey
As discussed under Item 4.2, another seismic survey may occur in 2010 in the Lebedenskoye area to the north and west of the Astokh area. This survey is of particular concern due to the close proximity, and indeed overlap, of the survey area with the Piltun feeding area. Furthermore, there is a risk that the simultaneous occurrence of this survey with the Astokh survey would effectively exclude the whales from much or most of their prime feeding habitat on the Sakhalin shelf. Alternatively, if the two seismic surveys were to occur in sequence, this would prolong the period of potential disturbance. Given the very limited information available regarding the Lebedenskoye survey and any mitigation measures planned for it, the Panel was unable to decide which of the two options – simultaneous or sequential – would cause less disturbance to the whales. Therefore, it concluded that the Lebedenskoye survey should not be conducted in 2010. Postponement would ensure that the two surveys are well separated in time and allow ample opportunity for the company involved to optimise the design and reduce risks to the whales and to develop appropriate monitoring and mitigation procedures.

6 REPORT FROM PHOTO-ID TASK FORCE AND FUTURE WORK PLAN

6.1 Review and summary of inter-sessional tasks and pre-meeting workshop

The Photo-ID Task Force met during December 8-9. A draft of its report was circulated to the Panel and the Sakhalin Energy members of the Task Force. The report was to be finalised and posted on the web shortly after WGWAP-7.

6.1.1 Inter-sessional tasks
The Task Force reported the following progress on the three tasks in the work plan agreed at WGWAP-6:

1. Update of cross matching through the 2008 season
Cross-matching of the catalogues, including entries from the 2008 field season, was conducted independently by each team. The results are reported under Item 6.2.

2. Outreach materials for getting ID photos from strandings and platforms of opportunity

Larsen and Weller reported on progress and it was agreed that responsibility for this activity would reside with the range-wide initiative (see Item 14, below).

2. Joint population analysis

It had been agreed at WGWAP-6 that a joint population analysis would be conducted, combining both the IBM and Russia-US data sets up to and including the 2007 season. The population model and fitting procedure would be that originally developed by Reeves *et al*. (2005) and used in subsequent assessments presented annually to the IWC Scientific Committee and the Panel (Cooke *et al.*, 2008a, 2008b).

Cooke confirmed that the data sets required for conducting the joint analysis had been received from both teams. It was agreed that data through 2008 could be used even though the original agreement had been for data through 2007 only.

At its December 2009 meeting, the Task Force agreed on minor changes to the method that take account of certain characteristics of the IBM data set. In particular, the scoring system for mothers and calves being developed by the IBM team had not been finalised. Therefore, it was agreed that when interpreting the IBM data for analysis purposes, the following treatment of calves would be applied: (i) only mother-calf pairs confirmed by the Russia-US team would be recognised as such; (ii) for the IBM data set, no distinction would be made between possible calves and other unaccompanied whales.

Originally, it had been anticipated that results of the joint population analysis would be presented at WGWAP-7, but this analysis was not completed in time for any results to be discussed. A new timetable for completing this work was agreed (see Item 8).

6.1.2 Other items arising from the Task Force workshop

The feasibility of obtaining photographs adequate for photo-identification from strandings was illustrated in the case of the male gray whale found on the beach by a local hunter near Chaivo Lagoon in September 2009 (see Item 9.6 of this report and document WGWAP-7/13). Photos were obtained and matched with a whale that had been seen and photographed by both research teams off Piltun in 2005 (when it was identified as a male calf by the Russia-US team). This whale was later seen at Olga Bay in Kamchatka in 2008 and again in July 2009 by the IBM team.

It was **agreed** that the photos of this whale obtained off Kamchatka in 2009 should be examined closely for evidence of poor body condition, excessive loads of ectoparasites, and scarring or wounds that might be related to the cause of death. Also, it was **agreed** that scars indicative of non-lethal interactions with vessels, fishing gear, or killer whales should be noted. It was further **recommended** that a tissue sample from the dead whale should be supplied to the lab used by the Russia-US team for genetic analysis, and that the results of a genetic analysis should be published jointly by the parties involved.

The Task Force considered a proposed method for ranking known males as candidates for satellite tagging, based on an analysis of the Russia-US genetic and photo-ID data sets. No specific recommendations arose from the Task Force's discussion of this work. The plans for tagging are discussed under Item 7.

6.2 Results of the comparison of the 2008 catalogues

The results of the independent matching exercises by the two teams were in perfect agreement. The summarised results are [2007 figures in square brackets]:

- 183 [*178*] whales in total
- 154 [*151*] shared between catalogues
- 18 [*18*] unique to Russia-US catalogue
- 11 [*9*] unique to IBM catalogue

In addition, there were five temporary whales in the Russia-US catalogue, of which two matched whales in the IBM catalogue, and nine temporary whales in the IBM catalogue, of which two matched whales already in the IBM and Russia-US catalogues.

Each team cross-checked its entire catalogue with the entire catalogue of the other team (not merely the new entries from 2008). Apart from the new matches based on 2008 data, there were no revisions to matches based on the 2007 and earlier data, except that some temporary whales had been upgraded to full catalogue status. Some catalogue photos had been replaced by newer images of superior quality.

It was emphasised that not all catalogued whales can be expected to still be alive, and that the currently living population is probably less than the total of 183 whales. In particular, most of the 18 whales unique to the Russia-US catalogue have not been seen for some years, and are possibly dead. The population assessment (see Item 8) provides an estimate of the number of catalogued whales that are still living.

The meeting thanked the two teams for their work, and **agreed** that the cross-matching should continue annually as long as each team is collecting data.

To date, the IBM (Sakhalin) and Russia-US catalogues have been cross-matched, and the IBM and Kamchatka catalogues have been cross-matched, but the Russia-US catalogue has not been cross-matched with the Kamchatka catalogue. While it was agreed that this would be a useful exercise, Sakhalin Energy representatives considered this to be outside the remit of WGWAP.

6.3 Work plan

The Task Force's recommended timeline for conducting the joint population assessment is discussed under Item 8.

For the remaining aspects of the work plan, the following timeline was agreed:

- An analysis of photos taken off Kamchatka (prior to its death) of the whale stranded at Chaivo in 2009 will be submitted by Sakhalin Energy at WGWAP-8. This analysis will include inspection of all available images for any indications (body condition, scarring, etc.) of potential relevance in determining the cause of this whale's death.
- The updated catalogues (data through the 2009 season) are to be submitted by each team to IUCN by 1 September 2010, with cross matching to be completed in time for the results to be reported at WGWAP-9.

Regarding the plan for a genetic analysis of the tissue sample from the Chaivo carcass, the WGWAP Chair and IUCN will work with the parties involved, including those groups not represented at this meeting, to agree to a timeline.

It was **agreed** that for the purpose of completing the above tasks, there is no need for the Photo-ID Task Force to continue as a separate entity. It can be reconstituted at a later time should the need arise.

7 SATELLITE TAGGING

Mate and Glazov gave presentations on satellite tagging.

7.1 Preliminary report on eastern gray whale tagging in 2009

Mate provided an overview of his recent tagging work on eastern gray whales off Oregon and California. Between 1 September and 4 December 2009, 18 gray whales were tagged off the central Oregon coast or near Crescent City, California. Two newly developed tag types were deployed during the study. These tags are similar to the Telonics ST-15 tags used by Mate *et al*. in 2005 to track eastern gray whales, but they are slightly shorter and have a potentially far longer battery life. At the time of the WGWAP-7 meeting, 10 of the 18 tags deployed in the current study were still transmitting, with some operating for more than 100 days.

This tagging programme was undertaken, in part, to evaluate the performance of the new tags and determine if they would be suitable for tagging western gray whales, as planned for summer 2010. Until each of the tags deployed stops transmitting, the overall performance of the two tag types cannot be fully evaluated. Thus, it is expected that Mate will provide an update on tag performance and related results at WGWAP-8.

Another major feature of the 2009 tagging programme involved follow-up observations of tagged whales to inspect and monitor the wounds at tag attachment sites on the whales' bodies. Mate reported that many of the tagged whales had been re-sighted and re-approached for this purpose and that most of the tagged whales were individually identifiable from the photo-ID catalogues maintained by research groups working in the region. The Panel welcomed this news of dedicated follow-up studies to evaluate tag effects and encouraged Mate to provide more detailed information regarding this important aspect of the 2009 work at WGWAP-8.

In discussion, the Panel asked whether specific details of the field protocols to be used off Sakhalin were available. One concern expressed was how much time and how many attempts would be devoted to tagging a given western gray whale and whether limits should be set on these parameters. Mate replied that his team had recorded data on approaches during their work with eastern gray whales and that, in general, the first approach nearly always proves to offer the best opportunity to deploy a tag. The Panel encouraged Mate to provide more detailed information on this issue at the next WGWAP meeting, and particularly how experience with eastern gray whales will be used in the design of protocols for tagging western gray whales. Mate noted that advice from the IWC Scientific Committee and the Panel regarding study design, criteria and precautions, together with input from Bradford during her site visit to Oregon State University (OSU) and participation in the eastern gray whale tagging effort, had helped the OSU team strengthen some of its field protocols.

7.2 Plans for western gray whale tagging in 2010

Glazov provided information on the Severtsov Institute of Ecology and Evolution (IEE), Russia Academy of Sciences, located in Moscow. IEE has recently initiated research programmes, with ministerial backing, on a number of Russian Red List species. Many of these studies have incorporated satellite tagging as part of the research methodology and IEE is the responsible institution for all Argos-related work in Russia.

Based on its in-house expertise and authority regarding satellite telemetry, IEE has been part of recent discussions with Sakhalin Energy and ENL (representing the project sponsors) as well as Donovan and Tsidulko (representing both the Panel and the IWC) and Larsen (representing IUCN) regarding the tagging of western gray whales. In the light of pending agreements among these parties, IEE has submitted the necessary permit applications to import the aforementioned tags used by Mate and has agreed to facilitate and collaborate on the western gray whale tagging programme.

Relative to IEE interest in collaborating on satellite tagging, Glazov described a framework for an IEE-led programme of research on western gray whales. This initiative is under development and still awaiting approval by the Presidium of the Russian Academy of Sciences. IEE plans not only to conduct tagging studies of western gray whales (collaboratively with Mate et al.), but also to carry out research on photo-identification, genetics, distribution, abundance, nutrition and behaviour as well as assessments of the impacts of human activities on the whale population. Ongoing work on western gray whales by other research groups was acknowledged and Glazov made clear that IEE intended to seek collaborative arrangements, at least with other Russian groups.

Noting the ambitious scale of the IEE programme outlined by Glazov, Bell emphasised that the funding provided by Sakhalin Energy for the satellite tagging programme was not intended to be used to develop any other research initiatives.

Following the presentation by Glazov, Tsidulko summarised the actions taken by other parties to advance the satellite tagging initiative since the last meeting of the IWC Scientific Committee in June 2009. A meeting organised by ENL took place in Moscow in October 2009, with representatives of ENL and Sakhalin Energy as well as Mate (representing the interests of OSU) and

Tsidulko (representing the IWC SC/WGWAP coordination group) present. Donovan, IWC's Head of Science, unfortunately was not able to attend and therefore the IWC was not formally represented. During the meeting, participants examined potential project bottlenecks (permits, vessels, visas, etc.) and began to develop a work plan for October to December 2009, to include paperwork, identification of collaborators, availability of suitable vessel(s) (notably with respect to safety), contractual relationships and other logistical matters. A schematic flowchart drafted by Donovan, suggesting the project management scheme and responsibilities of different parties and groups, was developed after the Moscow meeting and circulated and discussed among the participants. Tsidulko projected the current version of the flowchart on a screen and explained it at the WGWAP meeting.

The Panel regretted that Donovan had been unable to attend the Moscow meeting in October and that he was not present at WGWAP-7 as this precluded a fully informed discussion of the flowchart and associated issues with regard to the IWC's role in managing the satellite tagging initiative. Panel members noted that it was difficult to follow the management scheme as depicted in the flowchart and that some of the 'boxes' included data owners and some did not. This latter point led to discussion of data sharing, confidentiality and how the IWC, in its role as project coordinator or manager, would guide such matters. Broker stressed that the scheme presented in the flowchart was still provisional and that a planned meeting on 15 December, immediately after the WGWAP meeting, was expected to help resolve some of these questions.

Weller stated that as a member of the Panel and the IWC SC/WGWAP scientific coordination group, as well as a data owner (the Russia-US programme holds the photo-ID and genetic data to be used in selecting whales as candidates for tagging), he had been disappointed by the recent lack of transparency on the issue of satellite tagging. It is important for meetings to be formalised and documented by reports or minutes if the scientific advice of coordination group members not in attendance at the meetings is to be considered. Reeves acknowledged that the responsibility for notification and reporting of such meetings rested with several of the involved parties and agreed that such transparency was essential, given the sensitivities and complexities associated with the satellite tagging component of the overall western gray whale research and conservation effort.

For clarification, Reeves drew attention to section 9.2 of the WGWAP-4 report, as follows:

> "In light of the information presented in WGWAP-4/INF.14 and provided by Donovan in regard to the IWC Scientific Committee co-ordination group, the Panel agreed that, in principle, tagging/telemetry work on western gray whales should be carried out. Moreover, the Panel agreed that all of its previous recommendations concerning satellite tagging would be superseded by the following single recommendation:
>
> "The Panel **concludes** that telemetry work on western gray whales should be carried out provided that such work is guided by a co-ordination group within the IWC Scientific Committee. This guidance would include specific advice on experimental protocols, study design and measures to be taken to minimise the risk of negative impacts on the whales or the population as a whole. The co-ordination group will take into account all previous recommendations of the Panel."

Reeves stated that it was his understanding that Panel members on the co-ordination group (Brownell, Donovan, Reeves, Tsidulko and Weller) were expected to represent the Panel's interests in this task (satellite tagging). He added that the subject of satellite tagging had become a standing item on the WGWAP agenda and therefore that it would continue to be discussed at future meetings of the Panel.

8 POPULATION ASSESSMENT

8.1 Update of population assessment

The most recent population assessment is that presented to the IWC Scientific Committee in 2008 and to the IUCN Range-wide Workshop in Tokyo in September 2008. That assessment was based on the Russia-US photo-ID and genetic data series up to the 2007 season (Cooke *et al.*, 2008a, 2008b). The non-calf population size in 2008 was estimated at 130 whales (confidence limits 120-142). A further update incorporating 2008 data is in preparation but was not available at WGWAP-7.

The IWC Scientific Committee and the IUCN Range-wide Workshop had expressed concern that, according to the 2008 population assessment, the recent (2005-2007) level of by-catch in Japan was not sustainable and would result in population decline if continued.

The only documented death of a western gray whale in 2008 or 2009 was the male that came ashore near Chaivo in September 2009 (see Items 6.1.2 and 9.6). The Panel was encouraged by the lack of by-catch reports from Japan in 2008 and 2009. However, there is no guarantee that all anthropogenic mortality throughout the range has been reported. Raising public awareness in all the range states is an important part of the range-wide initiative (Item 14), and this is expected to increase the chances that any mortality of western gray whales as a result of human activities will be reported.

8.2 New assessment using data from both field teams

It was agreed at WGWAP-6 that a joint population analysis combining both the IBM and Russia-US data sets up to and including the 2007 seasons would be conducted, using the same model as was used for previous assessments based only on the Russia-US data. Because the combined data set is larger than either data set alone, it is anticipated that an assessment using it will be subject to less uncertainty than the previous assessments.

As discussed by the Photo-ID Task Force (see Item 6.1.1), it was agreed that the joint population assessment would include 2008 data from both teams and that certain modifications to the model were needed to take account of issues specific to the IBM data set, notably the uncertainty surrounding the identification of mother-calf pairs and unaccompanied calves.

The two data sets were received as agreed prior to WGWAP-7, but the assessment, originally scheduled for presentation to the meeting, was not completed in time. Therefore, the following revised timetable was **agreed**. The recommendation of the Photo-ID Task Force, that the assessment be reviewed by an independent expert, was also **agreed**.

- Cooke will complete and submit a first draft of the 'joint' population assessment to IUCN by no later than 15 January 2010. IUCN will circulate the manuscript to all co-authors and members of the current Photo-ID Task Force, with instructions from Cooke and Larsen regarding feedback and revisions.
- Cooke will also prepare and deliver to IUCN by no later than 31 January 2010 the requisite data and background materials for the independent review.
- Immediately after WGWAP-7, IUCN will begin the process of engaging the independent reviewer so that by 1 February 2010 it should be possible to send the materials to the reviewer, with a deadline of 15 March 2010 for delivery of the review.
- Cooke will provide a revised version of the manuscript to WGWAP-8 in April 2010, taking into account, as appropriate, the reviewer's feedback.

9 SUMMARY OF EFFORT AND RESULTS OF SAKHALIN ENERGY MARINE MAMMAL OBSERVER (MMO) AND CARCASS DETECTION PROGRAMMES (INCLUDING NECROPSY MANUAL, NECROPSY KITS, MARINE MAMMAL PROTECTION PLAN UPDATE, STRANDED WHALE)

9.1 MMO Programme

The document provided for this meeting was a preliminary report on the 2009 MMO programme (WGWAP-7/22). Only three Sakhalin Energy vessels carried MMOs in 2009. The research vessel *Pavel Gordienko* had two observers onboard as it conducted environmental monitoring around the offshore platforms, along the offshore pipeline and in Aniva Bay near the LNG plant. MMOs on the two crew-change vessels, *Polar Piltun* and *Polar Baikal*, logged more than 1000 observation hours during 68 shuttle runs from Kaigon to the PA-B platform and back, 45 from Kaigon to the PA-A platform and back and 62 from Kaigon to the LUN-A platform and back.

Adherence to the traffic management corridors established in the Marine Mammal Protection Plan was reported as generally good apart from one occasion when the captain of *Pavel Gordienko* decided to shorten the return route to Vladivostok due to a shortage of fuel. Company officials did not accept this as a valid reason for deviation from the navigation route and stated their intention to take measures to prevent recurrences.

There were 16 gray whale sightings (21 individuals) – two while the vessel was transiting between platforms and the rest during environmental monitoring work or while the vessel was stationary near a platform. Mitigation measures were taken on three occasions when the whales were observed at distances of a kilometre or less from the vessel. On two of these occasions the vessel changed course and reduced speed. In the other instance the vessel stopped and waited for the whale to move away.

9.2 Carcass Survey Programme

As in the past, the flight crews on helicopters carrying out crew change flights checked beaches and near-shore waters for whale carcasses on an opportunistic basis. There were 137 such flights between Nogliki and the Piltun area and 69 between Nogliki and the Lunskoye area in 2009 (WGWAP-7/12).

In addition, four dedicated carcass surveys were conducted on 27 July, 31 August, 8 October (with Panel members Dicks and Tsidulko and IUCN representative Larsen onboard) and 2 November. All flights were performed in accordance with previous WGWAP recommendations except for that regarding flight altitude. The people conducting the flights have observed that because of the large number of logs and other large objects on the beach, the recommended altitude of 450 m is too high to detect dead marine mammals efficiently. Therefore, the flights are now flown at an altitude of 150-200 m.

Two carcasses were observed in 2009. The dead gray whale first found and reported by a local hunter and investigated by the shore-based distribution team on 5 September (see WGWAP-7/13) was seen and reported by a helicopter crew on 6 September. A beluga carcass in a state of advanced decomposition was observed and examined during a dedicated helicopter survey on 8 October.

The Panel noted the value of the carcass survey programme and encouraged that it continue. Determining the background or baseline rate of strandings, not only of gray whales but also of other marine mammals, is essential for long-term monitoring. Knowing background rates makes it possible to detect unusual or exceptional mortality events (*e.g.* after an oil spill).

In response to a comment by Tsidulko that no equipment for sampling had been onboard the helicopter during the 8 October dedicated flight, Sakhalin Energy gave assurances that such equipment would be onboard for future dedicated flights.

9.3 Necropsy kits

As recommended by the Panel (see Recommendation WGWAP-4/005), Sakhalin Energy has prepared three necropsy kits (WGWAP-7/20), which are stored in Yuzhno (2) and Nogliki (1). One of these kits was already used to deal with the September stranding of a gray whale (Item 9.6). Broker explained that the decision to place the kits at these two sites rather than three sites as recommended is that 1) regardless of where a whale is found, it is most likely that the necropsy team will be deployed from Yuzhno and 2) Nogliki is the safe-storage site closest to Piltun. The Panel accepted this explanation.

9.4 Necropsy manual

As noted at WGWAP-5 (report Item 7.4), Sakhalin Energy has completed implementation of Recommendation WGWAP-4/003 by translating the specified section of the necropsy manual and distributing it to 14 organizations on Sakhalin following the Panel's advice.

9.5 Marine Mammal Protection Plan Update

The updated Marine Mammal Protection Plan (MMPP) was circulated as document WGWAP-7/19. Broker called the Panel's attention to the major changes in relation to gray whales. The Plan has been restructured so that essential information is highlighted while background information appears in a series of appendices.

Vessel speed limits are now 21 knots under all conditions in the crew transfer corridor, 17 knots under all conditions in the navigational corridors and 10 knots (daylight and visibility ≤ 1 km) or 7 knots (visibility < 1 km or night time) westwards from the corridors, in the safety zones and in the pipeline inspection corridor.

The recommended minimum flight altitude of 450 m for helicopters has been judged unrealistic under most conditions with significant cloud cover. The specified minimum flight altitude for all types of aircraft is 100 m although pilots generally prefer to fly considerably higher, typically 350-450 m when cloud cover allows.

As referenced under Item 11 (below), the substantial new sections of the MMPP on oil spill response and monitoring are to be reviewed in detail by the Environmental Monitoring Task Force (see Item 10, below).

9.6 Stranded gray whale

As noted above, a dead gray whale was found in the intertidal zone near Chaivo Lagoon on the morning of 5 September 2009 (WGWAP-7/13). The carcass, which proved to be that of a 10.07 m male, was examined over the next few days by personnel from Sakhalin Energy, a local veterinarian and representatives of relevant authorities (Rosprirodnadzor and Rosselkhoznadzor). Various body tissues were sampled and photographs were taken. Company representatives were unable, from external examination of the carcass and analysis of the photographs, to establish the cause of death. The carcass was buried by a contractor (Orenburg) on 18 September.

Photographs of the dead whale were matched to the Russia-US and IBM catalogues and it was identified as an individual first photographed by both teams off Sakhalin as a calf of the year in 2005 (WGWAP-7/13). Michael Moore (Woods Hole Oceanographic Institution) examined photographs of the dead whale provided by Sakhalin Energy and reported: "With the exception of the gross abnormality in the cut blubber face, that is impossible to interpret, given the lack of more detailed blubber examination, skeletal dissection, and histopathology, there is no evidence of any human interaction in this case. No vessel collision. No fishing gear entanglement. In conclusion, the cause of death could not be determined from the available information." At the meeting, Bradford observed that the photos of the dead whale showed scarring indicative of previous non-lethal entanglement. In light of this, the Panel recommended that the photos of the whale obtained off Kamchatka be examined carefully for evidence of such scars (see section 6.1).

As a result of discussion regarding the response to this stranding, the Panel **recommends** that the first responders to the next gray whale stranding on Sakhalin should: 1) take more photographs of the external appearance of the whale, with an emphasis on views taken at right angles to the body, and including close-up photographs of any external injuries; 2) record all of the basic data called for in Appendix 6 of the Sakhalin Energy Marine Mammal Protection Plan; and 3) collect a skin sample for genetic identification of the individual whale. If safety permits, first responders should remain in the area of the stranded whale to photograph additional body regions as the tide moves or repositions the carcass.

Additional recommendations related to the Chaivo stranding are given under Item 6.1 (above).

In their report on this stranding (WGWAP-7/13), Sakhalin Energy identified several additional issues and described actions taken.

- Non-office hour contact details of relevant MNR officials and other authorities were not available to the company and this resulted in a significant delay in the first inspection of the carcass. In order to avoid a similar situation in the future, the full contact details have been incorporated into the latest update of the Sakhalin Energy Marine Mammal Protection Plan.
- Rosprirodnadzor, Sakhalin Administration, has the lead responsibility for investigating stranded gray whales and Rosselkhoznadzor, Sakhalin Administration, has ultimate responsibility for authorizing whale necropsies.
- Although as indicated above under Item 9.4 a necropsy manual was available, the first responders to the stranding concluded that a simpler, basic protocol for measuring and sampling the carcass (including specifications on what kinds of tissue to sample, in what quantities and how to preserve and analyze them) would have been useful. The Panel agreed to supplement the above recommendation with further details prior to WGWAP-8. Sakhalin Energy clarified that this basic protocol was intended only as a practical guide to actions that should be taken immediately upon discovery of a carcass in order to prevent the loss of vital information, *e.g.* due to decomposition. It would supplement rather than preclude a full necropsy.
- There are no whale necropsy experts on Sakhalin Island or on nearby mainland Russia. In the present instance, this (a problem initially noted in the report of the IUCN Independent Scientific Review Panel in 2005) meant that a full and timely necropsy could not be conducted. Sakhalin Energy and the Panel agreed that an expert (preferably several such experts, given potential availability issues) should be identified who could be flown in to lead necropsies in the future. This person would either have to be a Russian national or have a standing visa to enter the Russian Federation on short notice. Sakhalin Energy stated its intention to contact Rosprirodnadzor with a request to identify someone in the Russian Federation who could assist when required.

During discussion, a number of suggestions were made regarding the issues of 1) identifying one or more appropriate necropsy experts, 2) developing greater capacity within Russia for conducting this type of work and 3) setting up a functional arrangement for notification and logistics in advance of the next gray whale stranding on Sakhalin. One approach would be to identify Russian veterinarians with some experience conducting necropsies on marine mammals (unfortunately few have any experience with large whales – Sergei Blokhin in Vladivostok being perhaps the sole exception) and arranging for them to attend necropsy training courses. Alternatively or in addition to this, such individuals could gain valuable experience working with a foreign expert as a mentor (*e.g.* in Japan or the United States). A different approach would be to identify a regional necropsy expert and arrange for him or her to obtain a Russian visa on a renewable, ‘standby’ basis, thus creating a mechanism to facilitate timely travel to the stranding site. It was suggested that the most appropriate person for this would be Dr. Tadasu Yamada at the National Museum in Tokyo.

Panel members offered to advise Sakhalin Energy on potential Russian candidates for training and on additional foreign experts who might be able and willing to play roles as ‘mentors’ of Russian veterinarians or as direct necropsy participants. The Panel **recommends** that Sakhalin Energy prepare a proposal on these matters related to the need for future gray whale necropsies for consideration at WGWAP-8.

10 REPORT FROM ENVIRONMENTAL MONITORING TASK FORCE AND FUTURE WORK PLAN

VanBlaricom presented a synopsis of activities relating to the Environmental Monitoring Task Force (EMTF) that took place during autumn 2009. These activities included site visits to Piltun Lagoon and environs in September and to the Far East Laboratory of the Russian Academy of Sciences in Vladivostok in November (WGWAP-7/9). VanBlaricom and Tsidulko participated in both site visits. Aaron W.E. Galloway, a doctoral student in VanBlaricom's laboratory at the University of Washington, Seattle, participated as a diver during the Piltun site visit.

10.1 Summary of site visit to Sakhalin

The purpose of the Piltun site visit was to make scuba diving observations of the benthic habitat in the Piltun feeding area. Despite challenging conditions and limited time, the team managed to dive in five locations and logged 3.6 person-hours of observation time on the sea bottom and in the water column, primarily in the feeding area but with some observation time inside the lagoon. VanBlaricom described the following perceptions based on the benthic observations (see document WGWAP-7/9 for details):

- Effects of effluent waters and sediments from Piltun Lagoon on portions of the feeding area proximate to the entrance channel appear to be substantial, particularly with regard to suspended sediments, associated detritus and possibly associated microbiota.
- As a consequence of persistently strong bottom currents, for which the Piltun feeding area is well known, the sediment surface is unusually dynamic, with actively propagating ripple marks as a consistent feature. The dynamic sediments and high organic inputs probably contribute to the substantial biomass densities of pericarid crustaceans, and particularly gammaridean amphipods, in the region.
- The dynamic sediment surfaces and locally high levels of suspended sediments probably restrict the development of dense suspension-feeding assemblages in benthic habitats of the area.

10.2 Summary of visit to Fadeev lab in Vladivostok

The purpose of the Vladivostok site visit was to meet with Dr. Valeriy Fadeev, Chief of the Laboratory of Ecology, Shelf Communities, at the A.V. Zhirmunsky Institute of Marine Biology, Far East Branch, Russian Academy of Sciences. Fadeev is the lead investigator for monitoring the benthic biological environment in the Sakhalin II project area and a member of the EMTF. The primary goal of the meeting in Vladivostok was for Panel members to gain a detailed understanding of the data management, analyses, and archiving that takes place under Fadeev's supervision (see document WGWAP-7/9 for details).

During the visit, the following issues emerged as matters of interest in the context of the EMTF's terms of reference:

- Possible expansion of categories of contaminants to be sampled and analysed, including the addition of PCB residue sampling and analyses to the survey protocol.
- The possibility of expanding ecological survey work in Piltun Lagoon, given the hypothesised significance of trophic subsidy processes involving transfer from the lagoon to the nearby Piltun feeding area, and given the increased risk of oil spills within the lagoon associated with recent and ongoing activities of the ENL Sakhalin I project.
- Analytical and statistical implications of the recent prohibition of benthic dive sampling at shallow survey stations as a result of Sakhalin Energy's diving policy. This prohibition has forced changes in data collection methods that may introduce biases to the data time series.
- Questions concerning the ecological significance of sediment-associated bacteria and microflora in the effluent from Piltun Lagoon.

10.3 Discussion

In response to a question concerning the possibility of some form of trophic subsidy to the Piltun feeding area from Amur River effluent, a hypothesis discussed at several previous WGWAP meetings, VanBlaricom stated that no documentation of Amur River influence on the Piltun feeding area had been provided to the Panel. He further suggested that trophic subsidy hypotheses involving

Piltun Lagoon and the Amur River are not mutually exclusive. The effects from the two sources could be additive. VanBlaricom was nevertheless sceptical that the effect on biological productivity of the Piltun feeding area from the Amur River, if any, would be stronger than that from Piltun Lagoon. He reiterated that the stable isotope work of Fadeev and colleagues, as reported at previous WGWAP meetings, did not support the hypothesis that macrophytic detrital input from Piltun Lagoon is a primary contributor to the high benthic productivity in the feeding area. VanBlaricom clarified that other plausible mechanisms for subsidy from the lagoon remain to be evaluated with appropriate studies. Bell indicated that Sakhalin Energy has no current plan to conduct environmental monitoring work inside Piltun Lagoon because the company has no activity or presence there.

The Panel has ongoing concerns regarding two aspects of the activities of ENL in the Sakhalin I project area. Firstly, there is concern about the status and the potential ecological impacts of the pipeline recently constructed in bottom sediments across the centre portion of the lagoon. Information in document WGWAP-7/26 indicates that significant structural problems were observed in the pipeline within the last year, and that as a result additional construction work will be necessary before the pipeline is operational for transportation of crude oil. The reported pipeline problems raise concerns about increased oil spill risks, and questions regarding ENL's oil spill and environmental monitoring efforts.

Secondly, the Panel is concerned about recent claims by ENL that observed anomalies in numbers and distribution of gray whales in the Piltun region during late spring, summer, and fall 2008 were due to changes in benthic prey populations rather than acoustic disturbance associated with industrial activities (see document WGWAP-7/26). The latter possibility was discussed in detail at WGWAP-5 and WGWAP-6. The former possibility is not supported in the documentation seen thus far by the Panel. That there is a link between fluctuations in benthic prey populations and 'anomalous' gray whale distribution is a plausible hypothesis, but the validity of such a hypothesis has not been documented in a scientifically valid and transparent manner. In the Panel's view, unsubstantiated claims of this type are not an acceptable form of scientific discourse. It is particularly worrisome when claims of this kind are allowed to influence management policies without having undergone appropriate scrutiny by the scientific community.

The Panel is well aware that only contracting companies are obliged to follow its advice, or explain their reasons for not doing so. At the same time, the Panel recognises that it is bound by its terms of reference both to seek all relevant information and to 'proactively provide scientific, technical and operational recommendations it believes are necessary or useful for conserving the WGW population' (Section 7a of WGWAP terms of reference). In this spirit the Panel **requests** that ENL provide the following information:

- A summary of monitoring activities related to both oil spill risk and ecosystem effects associated with the oil pipeline across the centre portion of Piltun Lagoon and
- Copies of reports documenting the link between benthic prey population dynamics and the 'anomalous' distribution of gray whales in the Piltun region during late spring, summer, and early autumn of 2008.

As a way of ensuring that the above request is conveyed in an official manner, the Panel **recommends** that IUCN use its good offices to communicate with ENL on this matter.

VanBlaricom introduced a recently published study evaluating relationships between benthic meiofaunal nematode populations and petroleum hydrocarbon residues in the vicinity of the Molikpaq platform, operated by Sakhalin Energy (Fadeeva and Maslennikov 2009). The paper provides quantitative evidence that nematode assemblages are sensitive to variation in the low-level petroleum hydrocarbon (PHC) residues present in benthic sediments within 1 km of the platform. Although gray whales apparently do not feed near the Molikpaq, the paper may have significant conceptual implications for benthic monitoring in western gray whale feeding areas. It was suggested that Sakhalin Energy and Fadeev's group might consider incorporating sampling of meiofaunal nematode assemblages as part of the benthic monitoring program in the feeding areas.

Patterns observed in the nematode assemblage may provide an early warning of PHC contamination in areas crucial to the health of foraging gray whales. VanBlaricom noted, however, that study of meiofaunal nematode assemblages is exceptionally difficult, given the typically minute sizes and high densities of meiofaunal nematodes, associated taxonomic uncertainties and labour intensity, with its consequent high costs.

10.4 Work plan

VanBlaricom acknowledged that work on a literature review, as specified in the EMTF terms of reference, was behind schedule primarily due to his substantial competing obligations.

Following a brief discussion, it was **agreed** that an EMTF workshop should be scheduled for sometime after WGWAP-8. Participants will include VanBlaricom (Chair), Broker, Dicks, Efremov, Fadeev, Tsidulko and Weller. The Panel suggested that scientists associated with Fadeev's laboratory, as well as one or more scientists involved in the IWC Scientific Committee's pollution investigations, may be appropriate additional participants. Scheduling and selection of a meeting location will need to take into account travel costs and the competing obligations of participants.

11 OIL SPILL PREVENTION, PREPAREDNESS AND RESPONSE

Agenda items 11.1 ('Summary of site visit to Sakhalin') and 11.2 ('Review of outstanding issues') are summarised here as one section.

Following reviews by Dicks of Sakhalin Energy's Oil Spill Response Planning documents (OSRPs) in 2007 and 2009, two members of the Panel (Tsidulko and Dicks) and a representative of IUCN (Larsen) visited Sakhalin Island between 5th and 12th October 2009 with the aim of updating the Panel's assessment of oil spill preparedness and response. Details of visits to OSR equipment stockpiles at the Nogliki Pipeline Maintenance Depot and the Prigorodnoye Liquid Natural Gas Terminal and a review of outstanding oil spill-related issues that have arisen from the earlier OSRP reviews and at previous WGWAP meetings were summarised in document WGWAP-7/8.

The OSR equipment inspected at Nogliki and Prigorodnoye was of a high standard, stored in excellent facilities and well maintained. Both Sakhalin Energy and Ecoshelf response staff members interviewed during the visits were well trained and experienced in the use of the equipment and appeared to understand its application and limitations. The OSR resources held by Sakhalin Energy now meet the requirements for response at sea and on shorelines as specified in the OSRPs.

Wildlife capture and cleanup facilities located at Prigorodnoye are excellent and the equipment and procedures are consistent with good international practice. Facilities are currently sufficient for cleaning and rehabilitating approximately 500 birds. This number could easily be exceeded at certain times of the year and therefore it would be appropriate for Sakhalin Energy to consider identifying additional facilities for such an emergency. The currently available hazing equipment is suitable for deployment over about a kilometre of marsh or shoreline. Given the relatively low cost of such equipment, it should be possible to substantially increase the number of devices and thus reduce the numbers of oiled birds in the event of a major spill. It is also important to note that there are as yet no facilities to handle oiled seals, and Sakhalin Energy may wish to incorporate the handling of seals into the plan and prepare appropriate procedures, equipment and facilities to make this feasible.

After reviewing the risk of crude oil spillage to the east of Aniva Bay from tankers moving along shipping lanes through the Kuril Islands, Dicks concluded that, assuming normal patterns of weather and sea conditions, it was very unlikely that oil spilled there would reach either the near-shore or offshore feeding areas of gray whales off north-eastern Sakhalin. Consequently, the Panel concluded that there was no justification for further detailed modelling of spills in areas east of Aniva Bay, at least with respect to risks to those feeding areas. Therefore, recommendation WGWAP 4/018 can be considered as 'Closed – implemented satisfactorily'.

Arrangements for both the temporary storage and final disposal of oily wastes generated by cleanup appear adequate, even for a major spill. Provided Sakhalin Energy's understanding is correct that adequate temporary storage facilities along most of the coastline in the whale feeding areas can be made available, with the agreement of Russian authorities, it seems likely that waste handling would be effective and not result in any bottlenecks for cleanup operations. This aspect of OSR should therefore have no detrimental implications for the gray whales or their feeding areas.

The poor quality of dirt roads, which provide the only land access to shorelines in the gray whale feeding areas, remains a concern, both for cleanup and for the transport of oily wastes. Sakhalin Energy has expressed the view that adequate numbers of suitable vehicles (*e.g.* large trucks, 4-wheel drive cars) are available and that there is sufficient road repair equipment to cope with the situation. Nonetheless, some access tracks pass through coastal sand dunes that can easily be damaged and this could become an important concern during cleanup.

Sakhalin Energy has an extensive oil spill exercise and training programme, with drills conducted each year at all equipment stockpiles as well as the command centre in Yuzhno. An important omission from the programme is that to date no drills have been carried out on shorelines near the gray whale feeding areas. The Panel **recommends** that some drills be conducted in these areas. This would allow proper testing of problems related to the poor quality of the dirt roads and help identify the best means of getting resources and personnel to the areas and providing support once equipment has been deployed. As a caveat, the Panel cautioned that in planning such drills, it is important to consider the potential for impacts on fragile ecological features and wildlife. Sakhalin Energy acknowledged this concern and gave assurances that any drills in sensitive areas would be designed and conducted to test access, logistics, and personnel performance while causing minimal stress on the local environment.

The exercise and training matrix provided by Sakhalin Energy during the site visit was difficult to comprehend. Instead of such a matrix, the Panel **recommends** that in the future, Sakhalin Energy should provide for each Panel meeting a list of the exercises conducted and planned along with a brief summary report on each drill. This would fulfil recommendation WGWAP-4/020. Dicks explained that drills can be of several types, ranging from simple desktop exercises that test communications procedures, to deployment of specific items of response equipment (often combined with training). The drill conducted in September 2009 was comprehensive and involved activation of command centres, deployment of ocean-going response equipment from dedicated OSR vehicles, mobilisation of shoreline cleanup crews, and use of response equipment like booms and skimmers. It also included liaison with local authorities and regulators. Unannounced exercises are conducted occasionally, including surprise mobilisation of response teams.

Consistent with recommendation WGWAP-6/024, Sakhalin Energy is moving ahead with further analyses of aromatic compounds in Vityaz crude. The European NORDTEST protocol or similar has been selected as an appropriate analytical technique and arrangements are underway for Sakhalin Energy to provide a sample to a South Korean laboratory capable of conducting the analysis.

With regard to the documentation requested of Sakhalin Energy at WGWAP-6, all items were provided for Panel review. Brief comments on each item are as follows:

- Supporting documents for the OSRPs related to environmental monitoring totalled more than 1,500 pages. They summarise the company's compliance with regulatory requirements for environmental monitoring, dealing with oily wastes, and data storage and handling. Little of relevance to gray whale interests was found in them.
- The Handbook for Monitoring and Assessment of OSR Operations provides guidance for monitoring the effectiveness of spill cleanup operations, but it does not address the subject of environmental sampling and what to do after a spill to monitor impacts. Post-spill environmental monitoring will need to be given further attention by the Environmental Monitoring Task Force (EMTF) (see Item 10).

- Marine Mammal Protection Plan (MMPP): Sakhalin Energy has included post-spill whale monitoring in the MMPP, but this document was not reviewed in detail prior to WGWAP-7. Given the importance of post-spill monitoring of gray whales and their feeding areas, this subject would benefit from further consideration by the Panel prior to the 2010 season.
- Master Equipment Lists were used for cross-referencing with OSRPs and in support of the stockpile visits described above. They appeared to be consistent with the OSRPs and with what was seen in the OSR equipment stockpiles at Nogliki PMD and the Prigorodnoye terminal.
- The Dispersant Forum Protocol summarises discussions between scientists and regulators around limiting dispersant application to waters deeper than 10 m and preferably away from whale feeding areas. Dicks reminded the meeting that volumes of dispersant held on-site are small and the dispersant use protocols to which Sakhalin Energy has agreed are designed to meet concerns over the gray whales and their feeding areas as well as to meet Russian regulations. Dicks had reviewed this issue at WGWAP-6 and concluded that the protocols for dispersant use were well designed. It is company policy that dispersants will not be used near whale feeding areas unless there is an over-riding environmental concern related to other wildlife. In any event Russian regulations prohibiting dispersant use in areas with water depths of less than 10 m mean that much of the Piltun feeding area is off-limits.
- The draft Manual for Oil Spill Clean Up in Ice is little more than a general review of the subject. As it stands, it is not yet a practical manual setting out Sakhalin Energy's policy, approaches, techniques and equipment. The Panel was given to understand that there had been no change in the OSRPs or in the company's approach to winter spill response. Therefore, previously expressed concerns remain and the subject of spill response in ice is an item for continued Panel review.

Finally, Knizhnikov (WWF) referred to the recent large oil spill in the Timor Sea and noted the lengthy delay in response, apparently due to heavy seas or fog. In view of this example, he surmised that similarly long delays due to poor weather conditions could occur off Sakhalin, and therefore he proposed that production activities should be suspended whenever conditions sufficiently severe to preclude a timely response to a spill. Knizhnikov offered to provide a WWF report on this matter for Panel review. Reeves thanked him for the offer and assured him that the Panel would be glad to receive this information.

12 MULTIVARIATE ANALYSIS

12.1 Update on status of work

In Gailey's absence, Broker provided an update on the status of the Sakhalin Energy/ENL 2006 multivariate analysis (MVA), preliminary results of which were presented at WGWAP-6 (see Item 9 of the WGWAP-6 report). The analysis has been ongoing and Gailey has received additional input on the statistical approach. It is anticipated that updated results will be presented at WGWAP-8.

12.2 Progress on workshop

Donovan has been in contact with St. Andrews University to facilitate an MVA workshop (see Item 9.2 of the WGWAP-6 report) but given the lack of progress, Sakhalin Energy and ENL have decided to proceed on their own. They are planning a large-scale analysis incorporating all quantifiable factors that might influence whale distribution. Next steps and potential contributing experts have been identified but timelines and work plans have not yet been specified.

13 INFORMATION ON RUSSIAN INTERDEPARTMENTAL WORKING GROUP ON WGW CONSERVATION

Kaliberda, Deputy Head of Division for the Department for International Cooperation of the Ministry of Natural Resources and Environment of the Russian Federation (MNR), described the recently formed Russian Interdepartmental Working Group (IWG) on the conservation of western gray whales (see WGWAP-7/Inf.3). As background, Kaliberda gave an overview of some of the activities of the Russian government to conserve and manage marine mammals, particularly those in the Red Data Book of the Russian Federation. At an international scale, the Russian Federation has ratified and participates in a number of international agreements. Kaliberda explained that within Russia, MNR is the federal regulatory body responsible for environmental protection and that some of the regulations are facilitated by the All-Russian Research Institute of Nature Protection and the Russian Academy of Sciences.

Kaliberda further noted that MNR is a State Member of IUCN and as such welcomes information on western gray whale conservation from the Panel. In November 2009, MNR issued an order to establish the IWG. Kaliberda noted that, with approval by the Russian government, the group could eventually be expanded to form a multilateral international agreement (*e.g.* like ACCOBAMS or ASCOBANS). The IWG is viewed by MNR as a mechanism through which the Russian Federation can meet its obligations under the ICRW and improve conservation efforts on behalf of a whale population listed in the Red Data Book. The order establishing the IWG described its general provisions (see WGWAP-7/Inf.3), including *inter alia* that it should be composed of representatives of federal and regional authorities, scientific and public organizations, and oil and gas companies as well as individual scientists and experts, and that its decisions regarding western gray whale conservation are recommendatory rather than prescriptive. The members of the IWG have been appointed by MNR and their names along with their affiliations are listed in WGWAP-7/Inf.3.

According to Kaliberda, the specific objectives of the IWG are to: 1) develop an effective strategy for western gray whale conservation and management, 2) improve coordination of western gray whale research and 3) improve the quality of documents on western gray whales submitted by the Russian Federation to the IWC. The various functions intended to meet those objectives are outlined in WGWAP-7/Inf.3. The IWG chairman, R. R. Gizatulin, Director of the Department of Public Policy and Regulation in the Sphere of Environmental Protection and Environmental Security, MNR, is charged with managing the group's activities, making any changes to its composition and developing its work plan. The IWG is expected to meet as required but no less often than three times per year. The agenda for its first meeting includes consideration of 1) IWC recommendations on western gray whales and 2) the planned 2010 satellite tagging program.

In discussion, it was pointed out that there are currently no representatives of public organizations in the IWG. Kaliberda verified this observation and indicated that although such representation is presently lacking, there is a provision for eventual inclusion. She emphasized that the IWG was only in start-mode and that the membership could readily be expanded. When asked to clarify the role of the IWG in advising MNR and other governmental bodies, *e.g.* in terms of permit issuance, review and compliance, Kaliberda responded that the IWG can provide recommendations and establish legal frameworks. She further emphasised that because the IWG was created by MNR, it was likely to have influence on decision-making and policy.

When asked to comment on Sakhalin Energy's view of the IWG, Ryan said that he understood its role initially would be to function as a forum for communication between MNR and the various Sakhalin oil and gas operators and thus to promote industry best practices with regard to gray whale conservation. He added that Sakhalin Energy would emphasise the benefits of operational transparency and point to the WGWAP as a model framework. The IWG may have the ability, at least within Russia, to facilitate the sharing of data between companies, clarify project review and approval procedures, and generate recommendations. In the long term, this could lead to greater consistency of standards for mitigation and monitoring (*e.g.* as applied to seismic surveys) and to a reduction in redundant activities that occur when operators proceed independently. The Panel recognised these potential benefits but emphasised that with regard to information exchange, this should go beyond the IWG parties and extend to other forums including the IWC and WGWAP.

The Panel expressed its appreciation to Kaliberda for attending the meeting and providing an interesting summary. Also, it stressed the importance of maintaining a regular exchange of information with the IWG on activities of mutual interest. In that regard, it will be useful to have representation from the IWG present at future WGWAP meetings.

14 PROGRESS ON RANGEWIDE INITIATIVE AND WESTERN GRAY WHALE CONSERVATION PLAN

Larsen reported on progress made on the Rangewide Initiative and the associated Conservation Plan being facilitated by IUCN. As a recap, scientists from the range states of China, Republic of Korea, Japan and Russia, as well as from Canada, Germany, Australia, UK, and USA, met in Tokyo in September of 2008 to review western gray whale population biology, actual and potential threats, and threat elimination or mitigation, and to seek a basis and mechanism for developing the Conservation Plan. A drafting group and a steering group were established at the workshop, and the former has met twice over the past year, making good progress towards a final draft for review by the steering group.

The overall objective of the Plan is to ‘manage human activities that may adversely affect western gray whales in order to maximise the possibility of the population to recover, based on the best scientific knowledge’. Additional elements of the Plan include background material, a legal framework, western gray whale biology and status review, actual and potential anthropogenic threats and mitigation measures, coordination and steering committee, public awareness and education, executive summary of actions, and identification of high-priority actions.

To date, several high-priority actions have been drafted in the following categories: coordination, public awareness and capacity building, monitoring, research, and mitigation. For coordination, high-priority actions include implementation of the Conservation Plan and development of a web-based exchange of scientific information. In terms of public awareness and capacity building, a strategy is needed to increase public awareness and build capacity in range states. For monitoring, the long-term monitoring of abundance and trends off Sakhalin Island should be ensured through photo-identification and biopsy sampling. With regards to research, high-priority actions are to 1) determine movements, migration routes and location(s) of wintering ground(s) through satellite telemetry and 2) develop a GIS database on locations of set nets, gill nets, and pot/trap gear in the range of western gray whales. Finally, for mitigation, the focus is on the release of gray whales trapped in set nets, as well as on the prevention of set net entrapment. The next steps for the Plan are to: 1) finalise the draft (anticipated January 2010), 2) establish an Interim Steering Committee, 3) find a host institution, 4) identify initial funds, 5) recruit a coordinator and 6) appoint a Stakeholder Steering Committee (with representatives from range states, regional stakeholders, IUCN and the IWC).

In discussion, Larsen clarified that the GIS database on net locations would identify general areas of net fisheries, since the positions of most of the nets involved (excluding set nets) would frequently change, although Brownell cautioned that access to these types of data is likely to be limited. The subject of source(s) of funding for the Conservation Plan was raised. Larsen emphasized that this issue was still a work in progress. It was suggested that the funding base should be as broad as possible, in part to avoid restrictions on the availability of information. Sakhalin Energy has funded development of the Plan to date, but there is reason to hope that at least partial funding for implementation will be allocated by the IWC. The Panel agreed that a broader funding base was desirable.

15 REVIEW OUTSTANDING RECOMMENDATIONS AND REQUESTS, INCLUDING UPDATE ON CUMULATIVE ONLINE LIST

Reeves summarised progress on the cumulative list of some 320 panel recommendations to date (including those of the Independent Scientific Review Panel and other interim panels that preceded the WGWAP). The recommendations have been divided into topical batches for review by appropriate Panel experts in order to establish their current implementation status. For each batch, once the Panel has made its provisional determinations, the batch is submitted to IUCN for transmittal to Sakhalin Energy for its review. The Panel then considers the company's position before making its own final determinations. Reeves stressed that the current list (as posted online at http://www.iucn.org/wgwap/wgwap/recommendations/) is out of date but that there is reason to expect it to be updated soon after the New Year.

The Panel had previously established six status categories as follows: 1) closed – implemented satisfactorily, 2) closed – superseded by a new recommendation, 3) closed – no longer relevant but had not been implemented satisfactorily at the time it became moot, 4) open – no action taken yet, 5) open – in progress and 6) open – in need of clarification/expansion. A new column has been added to the table where the new recommendation that has superseded another (status category 2 above) is specified.

Two additional status categories have been created, both on the expectation that they will be used sparingly. 'Closed – moot' indicates that the recommendation is no longer expected to progress but that this does not mean the company was unwilling to implement it. 'Rejected' indicates that the company has considered the recommendation and decided not to implement it. As required by the WGWAP terms of reference, such a decision is accompanied by an explanation of the reason(s), which explanation is posted on the website next to the implementation status for that recommendation.

The Panel may choose to retract a recommendation if it finds, upon reflection, that such recommendation was ill considered or not well founded.

16 UPDATE ON PROPOSED PILTUN 'SPECIALLY PROTECTED NATURAL AREA' DESIGNATION

Document WGWAP-7/Inf.4 was provided by WWF-Russia to update the Panel on the concept of a protected area or wildlife reserve in north-eastern Sakhalin Island, the purpose of which would be to give greater protection to lagoon and near-shore habitat and species, including gray whales. Knitznikov reported that WWF-Russia was in the final stages of obtaining approval for the designation from the Russian government. However, various court cases and administrative processes are still pending, particularly with regard to ENL pipeline construction in Piltun Lagoon. It is acknowledged by all parties (and in WGWAP-7/Inf.4) that regardless of the final boundaries of the protected area, there would be a certain amount of ongoing conflict between the interests of oil and gas developers and the requirements for nature protection within the core and buffer zones (see for example WGWAP-7/Inf.1). As explained in the WWF document, there is considerable flexibility in how protected areas are managed in Russia. Therefore it should be possible to accommodate most reasonable operational and safety requirements of the industry, along with the traditional fishing and hunting rights of local people, while at the same time recognizing the need for a high degree of protection for this area's natural attributes. It is largely a matter of simply making sure that all parties act in good faith and with good will.

The Panel recalled that at WGWAP-2 (Item 15 in the report) it had encouraged 'the continued development of any proposal that may contribute to improved conservation of the western gray whale population', adding that it supported 'efforts that include protection of Piltun Lagoon from industrial development and other types of anthropogenic disturbance'. It was also recalled that WWF-Russia had kept the Panel regularly apprised of progress, with update reports on the protected area initiative at each Panel meeting since WGWAP-2.

The Panel generally endorses the concept of a protected area along the lines proposed by WWF-Russia but with two caveats. Firstly, it is important that any designation facilitates and does not discourage conservation-relevant research, as long as such research is carried out with appropriate regard for the welfare of the animals and the integrity of the natural environment. Secondly, any management plan for the protected area should recognize and promote wider adoption of the mitigation measures developed within the WGWAP framework to protect western gray whales. For example, WGWAP-7/Inf.4 explicitly refers to the traffic control measures developed by Sakhalin Energy within that framework and suggests that these should be adopted as part of the protected area management plan. Similarly, the Panel expects that the monitoring and mitigation measures for seismic surveys developed over the last several years in collaboration with Sakhalin Energy will come to be regarded as industry 'best practice'. As such, they should prove useful to protected area managers as they attempt to manage the impacts of industrial noise on whales and other biota.

17 WGWAP SELF-EVALUATION

Reeves called everyone's attention to the clause in the WGWAP terms of reference (Section 10a) requiring that Panel 'self-assessment' be a 'recurring item' on the agenda at each meeting. He invited input from non-Panel participants as well as Panel members.

To begin the discussion, Reeves noted that the cumulative list of Panel recommendations was now online, thus making it possible to track their number, content and status over time (see agenda Item 15). He considered this, along with the numerous reports and other documents made available on the IUCN website (http://www.iucn.org/wgwap/), as indicative that considerable progress had been made towards achieving transparency (per Section 3a of the terms of reference). He also noted that a smaller and smaller proportion of documents submitted to WGWAP meetings are marked as confidential and of those that are, an increasing proportion are eventually made public on the IUCN website.

With the rangewide initiative led by IUCN (see Item 14), the Panel is in an improved position to expand the geographical scope of its remit as envisioned in the terms of reference which state (Section 4e), '… as knowledge accumulates, resources increase, and the relevant interested parties from across the range of the WGW become involved, the scope of the WGWAP may be broadened to include more of the range of the WGW'. This applies to Kamchatka, which clearly falls within the Panel's scope of interest and responsibility judging by the terms of reference.

With regard to the Panel's modus operandi (Section 8 of the terms of reference), a number of aspects have worked well. The Panel has maintained and enhanced its technical capacity (Section 8.1a and 8.1b) in spite of the loss of Tim Ragen, with both Weller and Dicks having been added to the Panel's ranks since 2006. The Panel has gained access to specific expertise by recruiting 'associate scientists' (8.1c) for task force work (*e.g.* Amanda Bradford, Brandon Southall, Charles Paxton, Ruth Joy and Paul Wade). Further, site visits by Panel members to address specific issues (8.1f) have been carried out successfully, *e.g.* environmental monitoring, oil spill response (see Items 10 and 11 of this report).

With regard to some other aspects of its modus operandi, the Panel's performance has been less clearly compliant. For example, annual work planning has not been as rigorously or explicitly carried out as envisioned in the terms of reference (Section 8a). Such planning has been ad hoc and largely limited to discussions among the Panel chair, IUCN and Sakhalin Energy, often in the context of annual budget development. That said, however, it is clear from the Panel reports that considerable forward thinking and planning has occurred. This is especially evident in the report annexes, where terms of reference, work plans and timetables for the task forces appear.

Vedenev drew attention to the fact that the Panel has had difficulty making progress on one of its specific objectives (Section 2b), 'Co-ordinate research to achieve synergies between various field programmes; minimise disturbance to WGW, *e.g.* by avoiding overlap and redundancy of field research programmes; identify and mitigate risks associated with scientific research activities….'

This matter has been addressed to some extent by the Photo-ID Task Force but only in a limited way.

With regard to the principle that all WGWAP participants should make an effort to convince other oil and gas companies (as well as other 'interested parties potentially having impact on the WGW population'; Section 4g) to join the process, Archer asked whether DEFRA could help with this effort. Larsen responded in the affirmative and indicated that such intervention would be welcomed. He added that since September 2009 he had written to BP, ENL, Gazprom, Rosneft, Rosneft Far East and Elvary asking them to at least share information with the Panel. The sole response had come from Elvary indicating that it saw little need for such information sharing (see WGWAP-7/Inf.2). Larsen also gave assurances that the IUCN Director-General was taking a direct and active role in seeking the cooperation of additional companies as well as Russian government agencies in the WGWAP process.

Reeves pointed out that the terms of reference consider other oil and gas companies in two ways – one as potential contracting companies (Section 6) and the other as contributors of information and data (Section 3e). It was generally agreed that ENL is unlikely to become a contracting company in the absence of pressure from lenders or the Russian government, but also that analyses using data from the joint Sakhalin Energy/ENL research programme had been made available to the Panel – *e.g.* behaviour and acoustic data have been used in the multivariate analyses led by Gailey, photo-ID data have been used for the recent 'joint' population assessment led by Cooke, and distribution/density data have been used extensively by the Seismic Survey Task Force in developing the monitoring and mitigation programme for the planned Astokh 4-D seismic survey. Cooke emphasised that it was incumbent upon the Panel to define its scientific objectives and priorities and then to request access to information and data on that basis.

Norlen (Pacific Environment) expressed his concern that the Panel, by relying so heavily on the use of task forces, was at risk of losing its identity as an independent oversight body. In his view, the Panel is increasingly assuming a consulting role, in effect helping Sakhalin Energy plan and execute elements of its work programme. Reeves responded that it is indeed important for the Panel and IUCN to remain vigilant of such a tendency and to continue to seek a balance between independence and cooperation.

18 ANY OTHER BUSINESS

Two substantive issues were raised under this item. One was the status of the Panel's recommended 'moratorium' on industrial activities off north-eastern Sakhalin, and the other was a question of whether oil and gas development on the Sakhalin shelf will increase the risk of major earthquakes in the region. The only additional issue was the timing and venue of the next WGWAP meeting.

Moratorium

The full text of the Panel's 'moratorium' recommendation is as follows (recommendation WGWAP-5/011):

> "The Panel … **recommends** that a moratorium be implemented on industrial activities, carried out by Sakhalin Energy and all other Sakhalin-based oil and gas companies, that might be expected, in the absence of *independently* verified mitigation measures (such as those developed by the Seismic Survey Task Force for seismic surveys), to disturb gray whales in and near their main feeding areas during the primary summer/autumn feeding season (July through October). This moratorium should remain in place until: (i) a satisfactory management plan is in place and (ii) the information flows required for its successful operation are functioning."

The NGO letter for this meeting (document WGWAP-7/26) rightly pointed out that a variety of industrial activities carried out in 2009 and others planned for 2010 were outside the WGWAP process and therefore that the Panel had not had an opportunity 'to assess the[ir] direct, associated and cumulative impacts' on the western gray whale population. On that basis, the letter urged that the Panel 'continue to follow a precautionary approach by extending its call for a moratorium through 2010 and ideally beyond'.

The Panel confirms that its earlier recommendation stands, but at the same time it stresses that that recommendation was not intended to preclude Sakhalin Energy's implementation of the Astokh 4-D seismic survey, which in the Panel's judgement has been subject to an independently verified monitoring and mitigation programme (see Item 5). Further, the Panel shares the concern of the NGOs regarding cumulative impacts and acknowledges that these have not been adequately assessed (*e.g.* see Reeves et al. 2005: Chapter VI).

Earthquake Risks

This issue was raised in an online news article entitled 'In the Area of the Drilling Platform on Sakhalin an Earthquake is Possible –Scientists say' (document WGWAP-7/23). Sakhalin Energy noted that it follows a standard procedure of injecting seawater into wells to replace reservoir fluids as the oil and gas are extracted. In the company's view, this should prevent the effect described in WGWAP-7/23.

The Panel concluded that it did not have the necessary in-house expertise to evaluate the article's merit. Therefore, it decided to defer further consideration until appropriate expert advice could be received.

Next Meeting

After a brief discussion it was agreed that the next Panel meeting would be in Geneva sometime in the second half of April 2010.

Acknowledgements

The Panel and Sakhalin Energy acknowledged the efforts of Riddering, whose work on the IUCN website and in assisting Larsen with meeting arrangements has been greatly appreciated. Her cheerful and efficient presence will be missed and we wish her well in her new Peace Corps assignment. Also, the Panel and company expressed their appreciation of the work of Humphrey as rapporteur, not only during the main meeting but also at both pre-meeting task force workshops. Finally, as always, we are all grateful for the pleasant and skilful work of the translators – Grigory Shkalikov and Alexander Danilov.

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SUMMARY OF RECOMMENDATIONS FROM THE 7TH MEETING OF THE WGWAP

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
Item 4:	**Review information on relevant activities by Sakhalin Energy and other companies expected in 2010**				
WGWAP-7/001	Item 4.2	The Panel **recommends** that one or more composite maps of likely industrial activity in 2010 on the Sakhalin shelf be prepared and presented at the next WGWAP meeting.	IUCN	15 April 2010	
WGWAP-7/002	Item 4.3	The Panel **recommends** that for any and all future requests for acoustic data (*e.g.* for use in ongoing MVA efforts), Sakhalin Energy should provide, in tabular format, 1Hz, 1-minute averages for continuous noise and 1Hz, 1-second averages for impulsive noise in frequency bands specified in the request.	Sakhalin Energy	When requested by the Panel – with requests making specific reference to this recommendation	
Item 5:	**4-D seismic survey**				
WGWAP-7/003	Item 5.2.2	The Panel **recommends** that Sakhalin Energy submit the A-line truncation proposal by 28 February 2010.	Sakhalin Energy	28 February 2010	
WGWAP-7/004	Item 5.2.2	The Panel further **recommends** that this proposal include provision for buffer zones to ensure that the behavioural response threshold will not be exceeded at the PML during acquisition of the truncated portions of the A lines.	Sakhalin Energy	28 February 2010	
WGWAP-7/005	Item 5.2.2	The Panel **stresses** the importance of adequate visual observation platforms and **recommends** that Sakhalin Energy test the structural integrity of the platforms under realistic field conditions and that the tests be conducted with sufficient lead time to allow for any necessary corrective measures to be implemented.	Sakhalin Energy	1 April 2010	
WGWAP-7/006	Item 5.2.2	Details are given in Section 7.6 of the SSTF-4 report and the Panel **recommends** that the observation vessel follow the operational decision trees described there.	Sakhalin Energy	1 April 2010	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
WGWAP-7/007	Item 5.2.2	The Panel **recommends** that Sakhalin Energy submit for its review an operational contingency plan as soon as possible but not later than 28 February 2010.	Sakhalin Energy	28 February 2010	
WGWAP-7/008	Item 5.2.2	The Panel **recommends** that if any of the measured data fall ≥3 dB outside the range (|1 SD|) predicted by the model, then the propagation models should be retuned and rerun until alterations give results that more closely match the data.	Sakhalin Energy	< 48 hours after the Source Verification	
WGWAP-7/009	Item 5.2.2	The procedure for the SSV will follow standard industry practice, and the Panel **recommends** that the data be provided as soon as possible but not more than 48 hours post experiment to Nowacek, Vedenev and Southall for their review and validation. The data should be in the form of plots of amplitude (RMS and SEL) vs. range. The review group must respond within 24 hours.	Sakhalin Energy	Date dictated by timing of 4-D seismic survey	
WGWAP-7/010	Item 5.2.2	The Panel has consistently identified the need to assess both the effects of the seismic survey on the whales and the effectiveness of the monitoring and mitigation plan. To ensure that these assessments take place, the Panel **recommends** the formation of a working group to advise on such analyses following the Astokh 4-D seismic survey.	Seismic Survey Task Force	1 August 2010	
WGWAP-7/011	Item 5.2.2	Pursuant to such work, the Panel **recognises** the importance of post-seismic survey visual monitoring, regardless of whether whales were observed in the potential impact zone (*i.e.* shoreward of the PML) during the survey. The Panel … **recommends** that visual data continue to be collected from the behaviour and distribution stations for a period of at least 14 calendar days following completion of the seismic survey.	Sakhalin Energy	Dictated by concluding date of seismic survey	
Item 6:	**Report from Photo-ID Task Force and future work plan**				
WGWAP-7/012	Item 6.1.2	It was **agreed** that the photos of this whale obtained off Kamchatka in 2009 should be examined closely for evidence of poor body condition, excessive loads of ectoparasites, and	Sakhalin Energy	15 April 2010	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		scarring or wounds that might be related to the cause of death. Also, it was **agreed** that scars indicative of non-lethal interactions with vessels, fishing gear, or killer whales should be noted.			
WGWAP-7/013	Item 6.1.2	It was further **recommended** that a tissue sample should be supplied to the lab used by the Russia-US team for genetic analysis, and that the results of a genetic analysis should be published jointly by the parties involved.	Sakhalin Energy	15 April 2010	
WGWAP-7/014	Item 6.2	The meeting thanked the two teams for their work, and **agreed** that the cross-matching should continue annually as long as each team is collecting data.	Sakhalin Energy / Russia-US team	Annually	
Item 9:	**Summary of effort and results of Sakhalin Energy Marine Mammal Observer (MMO) and carcass detection programmes**				
WGWAP-7/015	Item 9.6	The Panel **recommends** that the first responders to the next gray whale stranding on Sakhalin should: 1) take more photographs of the external appearance of the whale, with an emphasis on views taken at right angles to the body, and including close-up photographs of any external injuries; 2) record all of the basic data called for in Appendix 6 of the Sakhalin Energy Marine Mammal Protection Plan; and 3) collect a skin sample for genetic identification of the individual whale. Also, first responders should remain in the area of the stranded whale to photograph additional body regions as the tide moves or repositions the carcass.	Sakhalin Energy	At each gray whale stranding	
WGWAP-7/016	Item 9.6	The Panel **recommends** that Sakhalin Energy prepare a proposal on these matters related to the need for future gray whale necropsies for consideration at WGWAP-8.	Sakhalin Energy	WGWAP-9	
Item 10:	**Report from Environmental Monitoring Task Force and future work plan**				
WGWAP-7/017	Item 10.3	In this spirit the Panel **requests** that ENL provide the following information:	ENL	1 April 2010	

Recommendation Number	Cross-Reference	WGWAP Recommendations & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		• A summary of monitoring activities related to both oil spill risk and ecosystem effects associated with the oil pipeline across the centre portion of Piltun Lagoon and • Copies of reports documenting the link between benthic prey population dynamics and the 'anomalous' distribution of gray whales in the Piltun region during late spring, summer, and early autumn of 2008.			
WGWAP-7/018	Item 10.3	As a way of ensuring that the above request is conveyed in an official manner, the Panel **recommends** that IUCN use its good offices to communicate with ENL on this matter.	IUCN	15 February 2010	
Item 11: Oil spill prevention, preparedness and response					
WGWAP-7/019	Item 11	An important omission from the programme is that to date no drills have been carried out on shorelines near the gray whale feeding areas. The Panel **recommends** that some drills be conducted in these areas.	Sakhalin Energy	30 November 2010	
WGWAP-7/020	Item 11	The exercise and training matrix provided by Sakhalin Energy during the site visit was difficult to comprehend. Instead of such a matrix, the Panel **recommends** that in the future, Sakhalin Energy should provide for each Panel meeting a list of the exercises conducted and planned along with a brief summary report on each drill.	Sakhalin Energy	Annually	

Annex 1. List of participants

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Annex 2. Final meeting agenda

1. Opening of 7th WGWAP meeting

1.1. Introductions and logistics
1.2. Adoption of agenda
1.3. Documents
1.4. Report drafting procedures and timeline

2. Reports on field activities in 2009

2.1. Preliminary summary of effort and/or results of SEIC/ENL 2009 field programme (distribution, behaviour, acoustics, photo-ID and benthic monitoring) including information on fog and other weather conditions in 2009
2.2. Preliminary summary of effort and results of work by non-industry groups (including whale observations and photo-ID/biopsy)

3. Review information on relevant activities by SEIC and other companies in 2009 (*e.g.* pile driving, seismic surveys)

4. Review information on relevant activities by SEIC and other companies expected in 2010

5. 4-D seismic survey

5.1. Summary of ice conditions and earliest start date

5.2. Seismic Survey Task Force
5.2.1. Summary of SEIC seismic plans for 2010
5.2.2. Review and summary of inter-sessional tasks and pre-meeting workshop
5.2.3. Work plan

5.3 Recommendations (from Seismic Survey Task Force report)

6. Report from Photo-ID Task Force and future work plan

6.1. Review and summary of inter-sessional tasks and pre-meeting workshop
6.2. Results of the comparison of the 2008 catalogues
6.3. Work plan

7. Satellite tagging

7.1. Preliminary report on eastern gray whale tagging in 2009
7.2. Plans for western gray whale tagging in 2010

8. Population assessment

8.1. Update of population assessment
8.2. New assessment using data from both field teams

9. Summary of effort and results of SEIC Marine Mammal Observer (MMO) and carcass detection programmes

10. Report from Environmental Monitoring Task Force and future work plan

10.1. Summary of site visit to Sakhalin
10.2. Summary of visit to Fadeev lab in Vladivostok

10.3. Work plan

11. Oil spill prevention, preparedness and response

11.1. Summary of site visit to Sakhalin
11.2. Review of outstanding issues

12. Multivariate analysis

12.1. Update on status of work
12.2. Progress on workshop

13. Information on Russian interdepartmental working group on WGW conservation

14. Progress on rangewide initiative and WGW conservation plan

15. Review outstanding recommendations and requests, including update on cumulative online list

16. Update on proposed Piltun SPNA

17. WGWAP self-evaluation

18. Any other business

Annex 3. List of documents

DOCUMENT NUMBER	SUBMITTED BY	TITLE	STATUS
PRIMARY DOCUMENTS			
WGWAP-7/1	IUCN	Provisional agenda (including time schedule) (English)	Public
WGWAP-7/2	IUCN	Provisional agenda (including time schedule) (Russian)	Public
WGWAP-7/3	IUCN	List of documents distributed in connection with the 7th meeting of the WGWAP	Public
WGWAP-7/4		No document	
WGWAP-7/5	Cooke	Preliminary report on Photo-ID Task Force Meeting, 8 December 2009, Geneva	Confidential
WGWAP-7/6		No document	
WGWAP-7/7	Nowacek/ Southall/ Reeves	Preliminary report on Seismic Survey Task Force Meeting, 6-7 December 2009, Geneva	Confidential
WGWAP-7/8	Dicks	Progress report on outstanding oil spill-related issues including 2009 Sakhalin site visit	Public
WGWAP-7/9	VanBlaricom	Progress report on Environmental Monitoring Task Force including 2009 Sakhalin and Vladivostok site visits (PP presentation)	Public
WGWAP-7/10	Tsidulko	Preliminary summary of field effort and results from 2009 by Russia-US team (PP presentation)	Public
WGWAP-7/11	SEIC	Effort report of the Western Gray Whale Monitoring Season 2009 (distribution, behaviour, acoustics, photo-ID and benthic monitoring)	Public
WGWAP-7/12	SEIC	Marine Mammal Carcass Survey 2009 Closeout Report	Public
WGWAP-7/13	SEIC	Report on the Stranding of a Western Gray Whale at the Chaivo Beach September 2009	Public
WGWAP-7/14	IUCN	Status of Rangewide conservation plan (PP presentation)	Public
WGWAP-7/15	IUCN	Information on relevant activities by other companies in 2009 (PP presentation)	Public
WGWAP-7/16	IUCN	Information on relevant activities by other companies expected in 2010 (PP presentation)	Public
WGWAP-7/17	Mate	Preliminary report on eastern gray whale tagging in 2009	Public
WGWAP-7/18	Tsidulko	Plans for western gray whale tagging in 2010 (PP presentation)	Not available
WGWAP-7/19	SEIC	Ice Data Relevant for the Astokh 4D Seismic survey in 2010	Confidential
WGWAP-7/20	SEIC	Necropsy Kit Presentation (PP presentation)	Public

DOCUMENT NUMBER	SUBMITTED BY	TITLE	STATUS
WGWAP-7/21	SEIC	Report on Installation of Shore-based Observation Platforms	Public
WGWAP-7/22	SEIC	Report on Marine Mammal Observer Programme	Confidential
WGWAP-7/23	Yablokov	Article on a Possible Earthquake In the Area of the Drilling Platform on Sakhalin	Public
WGWAP-7/24	SEIC	Marine Mammal Protection Plan – November 2009	Public
WGWAP-7/25	SEIC	Overview of 2009 Field Season Weather Conditions	Public
WGWAP-7/26	NGOs	Letter to WGWAP from Pacific Environment, WWF Russia and Sakhalin Environment Watch (with 5 annexes)	Public
FOR INFORMATION DOCUMENTS			
WGWAP-7/Inf.1	WWF-Russia	Letter of May 27 from Exxon Neftegas to WWF-Russia	Public
WGWAP-7/Inf.2	WWF-Russia	Letter of June 7 from Elvary Neftegaz to WWF-Russia	Public
WGWAP-7/Inf.3	Yablokov	The Statutes of the Inter-ministerial Working Group for ensuring conservation of the Korean-Okhotsk gray whale population	Public
WGWAP-7/Inf.4	WWF Russia	Planning for actions to establish a conservation area to protect the Western Pacific Gray Whale population on the north-east of Sakhalin Island, Russia	Public
WGWAP-7/Inf.5	WWF Russia	Letter of November 26 from the Russian Ministry of Natural Resources to WWF-Russia	Public
WGWAP-7/Inf.6	Pacific Environment	Letter of December 8 from Pacific Environment to JBIC	Public
WGWAP-7/Inf.7	MNR	Regulation to WGW Protection in the Russian Federation (PP presentation)	Confidential