WESTERN GRAY WHALE ADVISORY PANEL **WGWAP-14**

14th meeting **29 September – 1 October 2014**

Yuzhno-Sakhalinsk, Russia

REPORT OF THE WESTERN GRAY WHALE ADVISORY PANEL AT ITS 14TH MEETING

CONVENED BY THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE

CONTENTS

ACRONYMS

ADB tag	Advanced Dive Behaviour Tag
AIC	Akaike Information Criterion
CMP	Conservation Management Plan
CMT	Crisis Management Team
Company	Sakhalin Energy Investment Company
DTAG	Digital Acoustic Recording Tag (also known as D-tag)
ECT	Emergency Coordination Team
EMERCOM	Agency for Support and Coordination of Russian Participation in International Humanitarian Operations of the Ministry of Civil Defense and Emergencies of the Russian Federation
EMTF	Environmental Monitoring Task Force
ENL	Exxon Neftegas Limited
FRC	Fast Rescue Cutter
GEF	Global Environmental Facility
GBBP	IUCN Global Business and Biodiversity Programme
GIS	Geographical Information System
GMPP	IUCN Global Marine and Polar Programme
HSE	Health, Safety and Environment
IBM	A.V. Zhirmunsky Institute of Marine Biology, Far Eastern Branch of the Russian Academy of Sciences
IFC	International Finance Corporation
IGO	Intergovernmental Organization
IMO	International Maritime Organization
ISRP	Independent Scientific Advisory Panel
ISTAP	Independent Scientific and Technical Advisory Panel
ITOPF	International Tanker Owners Pollution Federation
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
IWG	Interdepartmental Working Group on Western Gray Whale Conservation of Russian Federation
IWC	International Whaling Commission
LNG	Liquid Natural Gas
MMO	Marine Mammal Observer
MMP	Monitoring and Mitigation Programme
MMPP	Marine Mammal Protection Plan
MNR	Ministry of Natural Resources and Ecology of the Russian Federation
MPCRSA	State Marine Pollution Control, Rescue and Salvage Administration of the Ministry of Transport the Russian Federation
NARW	North Atlantic right whales
NGO	Non-Governmental Organization
NOAA	U.S. National Oceanic and Atmospheric Administration
NTF	Noise Task Force
OBN	Ocean Bottom Node
OSR	Oil Spill Response
OSRP	Oil Spill Response Plan
PBDE	Polybrominated Diphenyl Ether
PCB	Polychlorinated Biphenyl
PCoD	Population Consequences of Disturbance
Photo-ID	Photo Identification
POI	V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch of the Russian Academy of Sciences
PML	Perimeter Monitoring Line
RHIB	Rigid Hull Inflatable Boat
RF	Russian Federation
RPN	Russian Federal Service for Supervision of Natural Resource Usage - Rosprirodnadzor
SakhNIRO	Sakhalin Research Institute of Fisheries and Oceanography
SEER	State Environmental Expert Review
SEIC	Sakhalin Energy Investment Company
UNDP	United Nations Development Programme
WGW	Western Gray Whale
WGWAP	Western Gray Whale Advisory Panel

EXECUTIVE SUMMARY

The 14th meeting of the Western Gray Whale Advisory Panel (WGWAP) was held in Yuzhno-Sakhalinsk, Russian Federation, from 29 September to 1 October 2014. It was followed immediately by the 7th meeting of the Noise Task Force (NTF) that took place in Yuzhno-Sakhalinsk, as well.

Gerard Bos, Director of the Global Business and Biodiversity Programme, began the meeting by announcing that his programme had recently assumed administrative responsibility for the Panel and the WGWAP process at the International Union for Conservation of Nature (IUCN). Stephen Turner presented the preliminary findings of the Third Independent Evaluation commissioned under the WGWAP Terms of Reference and this led to a wide-ranging discussion of alternative future paths for the Sakhalin Energy – IUCN collaboration and more generally for IUCN's engagement with the oil and gas sector in the Russian Far East.

Outcomes of the three meetings of the Interdepartmental Working Group on Western Gray Whale Conservation (IWG) under the Russian Federation Ministry of Natural Resources and Environment (MNR), that had taken place since WGWAP-13 were noted. Of particular interest were aspects related to the Exxon Neftegas Limited (ENL) pier construction project in Piltun Lagoon, the United Nations Development Programme / Global Environmental Facility (UNDP/GEF) project to develop mitigation and monitoring guidelines for application to human activities potentially affecting whales in the Russian Far East, the need to manage salmon fishing in and near the Piltun whale feeding area, and plans by ENL and Sakhalin Energy for large-scale seismic surveys in 2015.

Anete Berzina (IUCN) summarized available information on oil and gas activities planned for the north-eastern Sakhalin Shelf in 2015 and beyond. An interactive map – a web application and a website with associated data and detailed information – has been developed for use by the Panel and its task forces. The Panel **recommends** that a small steering group with representation from the Panel, Sakhalin Energy and IUCN be formed to guide further refinement of this valuable map tool by IUCN.

After a brief presentation by an ENL representative on that company's seismic survey plans for 2015, the Panel expressed **great concern** about the projected level of seismic activity (and indeed other activities) near the feeding grounds in 2015 that may adversely affect gray whales. It **urges** the Russian Authorities and the companies involved to work together to ensure that seismic activities near the feeding areas are synchronised appropriately to ensure that the primary mitigation measure can be met (recognising that this may mean it is infeasible for all projected surveys to be undertaken in 2015) and ensure that monitoring and mitigation measures are established and implemented in accordance with the guidelines and principles, endorsed by IUCN and the International Whaling Commission (IWC).

With regard to Sakhalin Energy's Joint Programme with ENL, the Panel again encouraged the companies to pursue efforts to collect more acoustic data during periods with little or no industrial activity so that ample control or reference data are available for comparison to periods with intense industrial activity. The Panel also welcomed the news that the recommended field study of acoustic characteristics of the different boat types used for photo-ID and biopsy work had been completed in 2014, with results expected to be available soon for the Panel's consideration. Finally, the Panel **recommends** that the companies continue their benthic sampling programme and thus maintain the valuable time series of data on gray whale prey.

With regard to ship strike risks, the Panel made two recommendations. First, it **recommends** that a full report (including effort information) on results of the Company's 2-year trial of its new traffic corridor south from the LUN-A platform be provided for evaluation at the next meeting. Second, it welcomed the Company's plans to commission a full analysis of ship strike risk but **recommends** that before this analysis proceeds, the Panel be given an opportunity to review and advise on the planned approach, scope, methodology and potential analysts.

With regard to noise issues, the ongoing work of the NTF was noted and the Panel anticipated that it would prepare its advice on planned 2015 seismic surveys in December, once it has received the reports from NTF-7 and NTF-8.

The Panel expressed **extreme concern** about the potential impacts of ENL's pier construction project in Piltun Lagoon on gray whales and their critical habitat around the lagoon entrance. Four concerns were identified, as follows: (i) vessel traffic and potential for ship strikes on whales at or near the lagoon mouth; (ii) noise created by the tug boats and other vessels and equipment that would operate in this area; (iii) disturbance of the lagoon ecosystem, e.g. from sand dumping and dredging; and (iv) risk of toxic spills if barges and supply vessels run aground. Further, the Panel noted that: (i) optional approaches exist for accomplishing ENL's objectives without the need for any of the disruptive and risk-prone activities proposed; (ii) source-level calculations for tug boats suggest that underwater noise levels would far exceed what is considered 'safe' for whales; (iii) at the very least, mitigation measures to reduce sound transmission into sensitive areas near the lagoon mouth (e.g. bubble screens, cofferdams) should be considered; and (iv) when evaluating this proposed project, consideration should be given to the implications for seals, seabirds, salmon and other biota near and inside the mouth of Piltun Lagoon.

Given Sakhalin Energy's and the Panel's longstanding interest in cumulative effects as well as the internationally recognized importance of this issue, the Panel **recommends** that a one-day workshop be organized by IUCN and held in conjunction with its next meeting.

The Panel expressed appreciation for the work by some Panel members thus far in drafting monitoring guidelines within the aforementioned UNDP/GEF project, and noted the potentially great conservation value of such guidelines. However, it is a major task and considerably more work is required before the guidelines can be recommended. A number of suggestions were provided on how the draft guidelines could be improved, including in relation to objectives and practical matters.

New information on salmon fishing in and near the Piltun feeding area in 2013 and 2014 was presented and the Panel reiterated its concern about the risks that nets and lines in the water pose to gray whales. The Panel intends to include in its 2015 workplan the commissioning of an expert analysis on the nature and degree of risk to gray whales from salmon fishing at Piltun.

An issue not previously brought to the Panel's attention concerns visitation of the Piltun feeding area by cruise ships that deploy small vessels to approach whales for the benefit of tourists. The Panel **requested** that IUCN compile information on the tour companies that are known to advertise or offer cruises to Piltun and provide this for consideration at the next meeting.

An extensive review of Sakhalin Energy's oil spill response documents and site visits to observe field exercises in 2013 led the Panel to make two new oil spill-related **recommendations** – one that transfer of oily beach wastes to final disposal and helicopter dispersant spraying (using water) be tested in drills in 2015 and the other that the Company provide the Panel with an update on its programme for replacing aged or out-of-date oil spill response equipment.

An updated population assessment using data from both the IBM (including Kamchatka) and Russia-US data sets indicated that the number of whales using the Sakhalin feeding grounds increased from 2003-2013 at an average rate of 3-4%/year with total abundance in 2013 of 155-176 individuals (1+ years old) including 37-40 mature females. The Panel **reiterated** its view that a resumption of photo-ID work in Kamchatka is desirable and directly relevant to assessing the status of the whales feeding off Sakhalin. Further, the Panel **stressed** that regular updates of population assessment are mandated in its Terms of Reference and important to ensure that any unexpected downturn in numbers is detected promptly. The Panel also welcomed news of the IWC Scientific Committee's ongoing work to develop and evaluate the conservation and management implications of plausible stock structure hypotheses for North Pacific gray whales, and emphasized that this is directly relevant to WGWAP and to refinement and implementation of the joint IUCN/IWC Western Gray Whale Conservation Management Plan (CMP).

Finally, the Panel agreed on its workplan for the remainder of 2014 and outlined key elements of its draft 2015 workplan which is to be submitted to IUCN by the end of October 2014.

1 OPENING

1.1 Introductory remarks

The fourteenth meeting of the Western Gray Whale Advisory Panel (WGWAP-14) was held at the Mega Palace Hotel in Yuzhno-Sakhalinsk, Russia, from 29 September-1 October 2014 under the chairmanship of R.R. Reeves. Two meetings of the Noise Task Force (NTF) had been held since WGWAP-13 (May 2013, Tokyo), both in Amsterdam: NTF-5 from 11-12 October 2013[1] and NTF-6 from 3-4 April 2014[2]. Unfortunately, in this case it proved impossible for a number of reasons to follow the usual practice of holding any task force meetings immediately before the Panel meeting. Therefore NTF-7 took place at the same venue as the plenary from 3-5 October 2014.

Reeves welcomed participants and requested a moment of silence to honour Dr Valeriy Fadeev, Institute of Marine Biology, Vladivostok, a valued colleague and friend who died in June 2014. Dr Fadeev had led the SEIC/ENL Joint Programme's benthic monitoring programme for many years and he was widely recognised and respected for his research on the ecology of benthic invertebrates – the principal prey of Sakhalin gray whales.

All Panel members except Bob Brownell, Glenn VanBlaricom and David Weller were present (Annex 1). Representatives of the following organizations also attended the meeting as Observers, including various officials from the Russian Federation and Sakhalin Oblast Governments, Lender representatives, representatives of Exxon Neftegas Limited (ENL) and several non-governmental organizations (NGOs) (for details see Annex 1).

ENVIRON Exxon Neftegas Limited (ENL) International Fund for Animal Welfare (IFAW), Russia International Union for Conservation of Nature (IUCN) Mizuho Corporate Bank, Ltd	Pacific Environment Rosprirodnadzor Far East Rosprirodnadzor Sakhalin Oblast Sakhalin Oblast Ministry of Environment Protection and Natural Resources Sakhalin Watch WWF Russia

The Panel was pleased at this relatively large turnout by Observers and emphasised that it places great importance on their participation and support.

Anete Berzina of IUCN facilitated meeting preparations and logistics. Jennifer Ross-Jones served as rapporteur. Interpreters Alexander Danilov and Viacheslav Chudinov provided simultaneous Russian-English translation. The Panel sincerely appreciates the efforts by all of these individuals as they helped make this a successful meeting.

Recent changes have occurred at Sakhalin Energy where Stephanie Lock has replaced Richard Evans as General Manager for Health, Safety and Environment (HSE), and at IUCN where the responsibility for Panel support has been shifted from the Global Marine and Polar Programme (GMPP) to the Business and Biodiversity Programme (GBBP) under Gerard Bos (see Item 2). The Panel welcomes both Lock and Bos and hopes to establish cordial and effective working relationships with them and their teams in the coming months.

In his opening remarks, Reeves referred to evidence that gray whale numbers off Sakhalin are increasing (see Item 17.2). Multiple parties have claimed credit for this welcome trend – something Reeves described as a 'taking credit syndrome' that often accompanies good-news stories about wildlife populations. In a situation like this one, however, it is impossible to assign all of the credit to any single group or individual. Rather, various people, companies, organizations and agencies must be recognized as having played a role of some kind in ensuring that the whales have the conditions they need – enabling them to feed intensively in the summer and autumn months off Sakhalin and then carry out long-distance winter and spring migrations in order to complete their annual reproductive cycle. The slow but steady increase (so far) in Sakhalin gray whales is something for all of those involved in the WGWAP process to celebrate; we need to do everything we can to make sure it continues. The question of whether an Asian breeding population of gray whales still exists and, if so, whether any individuals from this population migrate to Sakhalin, remains to be resolved (see item 17.1).

[1] http://cmsdata.iucn.org/downloads/ntf5report_final_en.pdf
[2] http://cmsdata.iucn.org/downloads/ntf6report_final_en.pdf

1.2 Adoption of agenda

The draft agenda circulated prior to the meeting was adopted without any major change (Annex 2).

1.3 Documents

The list of documents is given in Annex 3. Those designated as public are available on the WGWAP website.[3]

1.4 Report drafting procedures and timeline

The Panel's anticipated report production schedule was not met for several previous meetings and in order to avoid setting up unrealistic expectations this time, Reeves decided not to set a fixed date for report finalization. However, the Panel will work as quickly and efficiently as possible to make sure the report is final and publicly available well before the holiday season.

2 IUCN UPDATE

Gerard Bos introduced himself as GBBP Director at IUCN and welcomed all participants to the meeting. Among the key activities of the GBBP are the management of two other independent expert panels: one in Nigeria providing advice to Shell on remediation of oil spills in the Niger Delta, the other advising Holcim (a Switzerland-based building materials and aggregates company) and developing sector-level 'best practice' guidelines for the cement and building materials industry.

A decision was made by IUCN leadership to transfer the management of WGWAP 'back' to the GBBP as of June 2014.[4] Bos noted that this arrangement fits very well within IUCN's overall business engagement strategy.[5]

Bos explained that IUCN regarded this meeting to be crucial in the history of WGWAP for three reasons, as follows:

(1) An exceptional number of Observers was present, including two from ENL, four from NGOs, four/five from government regulatory agencies and three from the Lenders, and Sakhalin Energy had a particularly strong presence because of the meeting location;
(2) Preliminary results of the Third External Evaluation of WGWAP were presented and participants were given the opportunity for face-to-face exchanges with the evaluator;
(3) It has been ten years since the first IUCN panel on western gray whales was convened in collaboration with Sakhalin Energy and eight years since WGWAP was established in 2006. A great deal of important and rigorous work, resulting in numerous recommendations for the conservation of Sakhalin gray whales, has been carried out over the past decade as reflected by the material available on the WGWAP website.[6]

According to Bos, IUCN is prepared to continue in its role as convener of the Panel and as manager of the overall WGWAP process, e.g. to ensure that the right stakeholders are at the table, the Panel delivers according to the agreed ToR, the recommendations made by the Panel are tracked, and the lessons learned are disseminated to appropriate stakeholders.

Concerning the 'roadmap' and 'stock taking' work mentioned in previous WGWAP reports, Bos stated that progress had been limited, in part because of the aforementioned management changes at IUCN. Bos expressed a wish to meet with Panel members, Company officials and other stakeholders before taking this work further.

In conclusion, Bos reconfirmed that IUCN considers Independent Scientific and Technical Advisory Panels (ISTAPs) as providing a unique type of platform to engage industries with the conservation community, science, civil society and governments. IUCN convenes and manages such panels on the basis of five key principles: accountability, independence, relevance, engagement and transparency.

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[3] http://cmsdata.iucn.org/downloads/wgwap_14_3_full_list_of_documents_v_30_09_2014_en.pdf
[4] The Independent Scientific Advisory Panel (ISRP), precursor of WGWAP, had been convened and managed by the GBBP in 2004-2005.
[5] http://www.iucn.org/about/work/programmes/business/bbp_aboutus/strategy/
[6] http://www.iucn.org/wgwap

3 THIRD BIENNIAL EXTERNAL EVALUATION OF WGWAP

After a brief presentation by Turner on his initial findings, participants were asked to give thought to his suggestions and have individual discussions over the next day and a half, on the understanding that a broader discussion of the 'way forward' would take place in the afternoon of Day 3. See Item 19, below.

4 OTHER UPDATES

4.1 Outstanding business from previous meetings, including the status of recommendations[7]

Berzina presented a summary of the status of all Panel recommendations since 2004 (i.e. including those of the ISRP). In total, 511 recommendations have been made, the majority of them related to noise issues (Fig. 1). Berzina considered that good progress had been made overall, with 87% of all recommendations closed (for whatever reason, and the reason can vary; see later), 9% open (same comment), 3% rejected by Sakhalin Energy and 1% retracted by the Panel (Fig. 2). The further details and a breakdown of closed and open recommendations are seen in Figs 3 and 4.

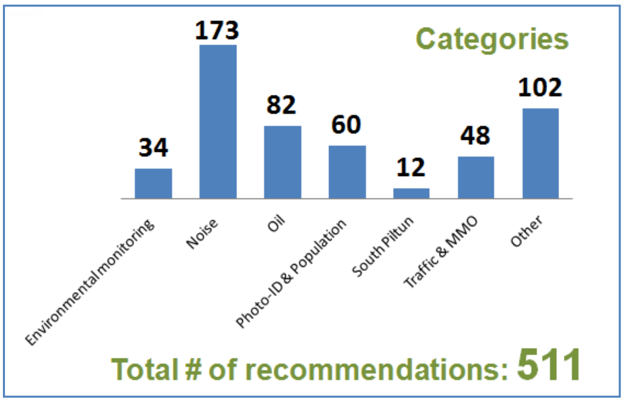


Fig.1. Number of recommendations by category, 2004-2013.

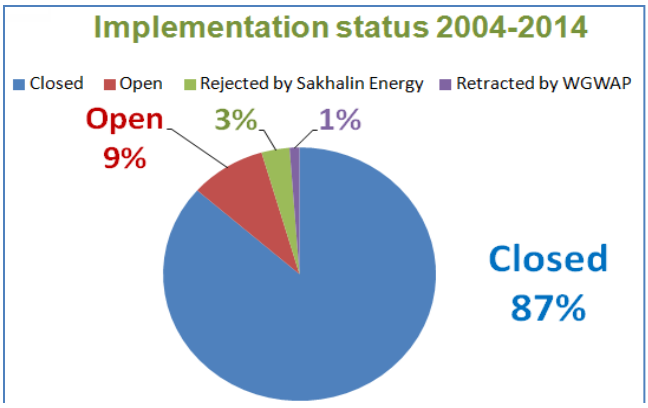


Fig. 2. Implementation status of all recommendations, 2004-2014

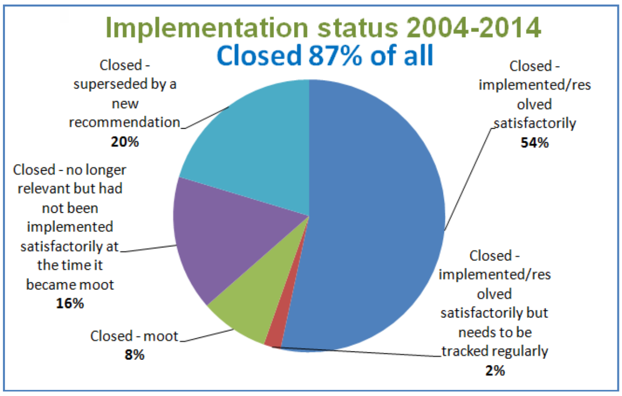


Fig. 3. Implementation status and breakdown of closed recommendations by sub-category.

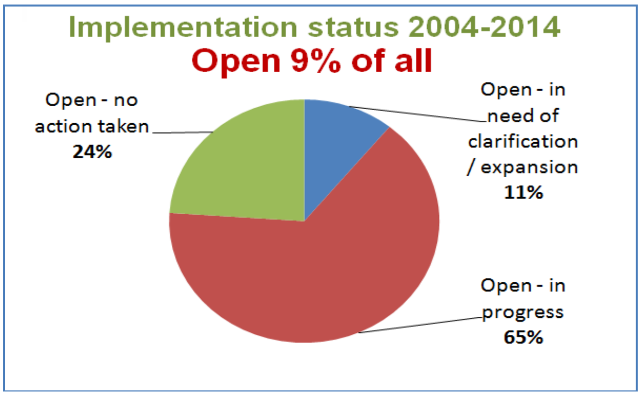


Fig. 4. Implementation status and breakdown of open recommendations by sub-category.

Reeves will continue working with Berzina to update the status of open recommendations, based on reports, new information and progress made at this meeting.

[7] Further details on the recommendations can be found at the WGWAP website http://iucn.org/wgwap/wgwap/recommendations/ and more details and the texts of all recommendations can be found in the WGWAP Recommendations Database which is publicly available at https://portals.iucn.org/wgwap/.

4.2 Inter-departmental Working Group (IWG)/MNR

Three official meetings of the Interdepartmental Working Group on Western Gray Whale Conservation (IWG) under the Russian Federation Ministry of Natural Resources and Environment (MNR) had taken place since WGWAP-13: November 2013, April and August 2014. Yablokov (a member of the IWG) summarized the main topics discussed and findings of those meetings as follows:

- Reports by Sakhalin Energy and ENL on their gray whale mitigation and monitoring programs in 2013 and 2014 were reviewed and approved;
- It was recommended that both companies investigate and consider in their operations and planning the ecological conditions of the Piltun feeding area and the environmental carrying capacity of the region to support gray whales;
- Consideration was given to questions surrounding ENL's planned pier construction in Piltun Lagoon (see Item 10). It was noted that although a public environmental assessment concluded that this project as outlined by ENL should not be allowed to proceed because of environmental risks, the project was given approval by the official State Environmental Expertisa, subject to the mitigation procedures proposed by the company to protect gray whales and other biota, and the IWG endorsed this decision to approve;
- Consideration was given to the potential impacts of net fishing within the Piltun feeding area and the need for the Sakhalin Oblast Administration to restrict fishing during the gray whale feeding season at Piltun;
- The IWG emphasized the importance of getting other oil and gas companies operating on the Sakhalin Shelf to become more seriously engaged in monitoring gray whales and to adhere to higher mitigation standards;
- The IWG endorsed the initiative under the project of United Nations Development Programme /Global Environmental Facility (UNDP/GEF) to develop guidelines and instructions for monitoring large whales and minimizing the impacts of offshore economic activities in the Russian Far East shelf seas, based on the experience obtained from the joint Sakhalin Energy and ENL program (see Item 12, below);
- Authorities were encouraged to address the Government of Chukotka as well as regional representatives of the Russian Federal Service for Supervision of Natural Resource Usage (Rosprirodnadzor-RPN) requesting that more attention be given to the study of whales harvested by aboriginal people for subsistence.

Tsidulko, who attended the most recent IWG meeting (21 August 2014), added that a major topic addressed was ENL's planned 2015 seismic survey and that company's stated plans for mitigation and monitoring of gray whales (see Item 5.4, below).

Vladimirov stated that at the November 2013 IWG meeting Sakhalin Energy had confirmed that all final reports on the Company's 2010 Astokh 4D seismic survey had been submitted and approved by the Russian Federation (RF) authorities. He also indicated that following NTF-6 in April 2014, Sakhalin Energy had presented an outline to IWG of the Company's approach to monitoring and mitigation for its planned 2015 seismic survey and received the IWG's endorsement of both the survey design and the changes that would be required in response to the NTF-6 report.

4.3 Holarctic Conference

The 8th International Conference on Marine Mammals of the Holarctic was held in Saint-Petersburg, Russia, on 22-26 September 2014. The Conference included a workshop (sponsored by UNDP and WWF-Russia) to review the practices of oil and gas companies with regard to marine mammal monitoring and mitigation. A presentation was made by a representative of Sakhalin Energy on the company's mitigation and monitoring program for gray whales. Also Gazprom's environmental policy for biodiversity preservation, as approved by its board of directors in 2011, was presented (Gazprom is the majority shareholder of SEIC). The Marine Mammal Council (headed by Yablokov) presented its latest iteration of the draft Guidelines for Monitoring Large Cetaceans during Industrial Activities on the Shelf of the Russian Federation Far Eastern Seas. Finally, the workshop was advised of directives initiated by President Putin to require intensified efforts by offshore oil and gas operators to preserve biodiversity.

A major event at the Conference was a roundtable discussion on western gray whales organized by IFAW, attended by several scientists involved in WGWAP as well as representatives from Sakhalin Energy, Gazprom and other oil and gas companies. The six reports presented and the discussions that followed concerned genetics, distribution, social behaviour, associations between individuals, and demography.

The exceptional importance of near-shore waters near the mouth of Piltun Lagoon for lactating females and calves was highlighted as was the concept of the Sakhalin population being a management unit. Cooke gave a presentation on his population assessment work, which concludes that the population is demographically self-contained and increasing (see Item 17.2).

During the Conference, Aimee Lang from the U.S. National Oceanic and Atmospheric Administration (NOAA, La Jolla, California) presented an update on her genetic studies of Sakhalin gray whales. Significant differences in both nuclear and mitochondrial DNA exist between Sakhalin whales and those that are part of the eastern North Pacific population, supporting the demographic independence of Sakhalin whales and indicating that mating is not random with respect to feeding ground origin. Given recent evidence that some Sakhalin whales migrate to the eastern North Pacific, multiple hypotheses have been generated to explain how the signal of non-random mating of the Sakhalin whales is generated; it is not possible to differentiate between these hypotheses from currently available information (see Item 17.1 below).

4.4 Memorandum of Cooperation on WGW conservation

4.4.1 Presentation

Donovan reported on the recent signing of the 'Memorandum of Cooperation Concerning Conservation Measures for the Western Gray Whale Population' by three of the range states, Japan, Russian Federation and the USA; it is expected that the other range states will also sign the memorandum (it is presently being examined by Canada, China, Mexico and the Republic of Korea).

The background to this important event was the development of the draft Conservation Management Plan (CMP) for western gray whales authored by several Panel members and endorsed by IUCN and subsequently the International Whaling Commission (IWC). Both organisations have recognised the need for this plan to be updated in the light of recent information regarding population structure and movements of the animals feeding off Sakhalin Island (and see Item 17.1 that reports on the IWC rangewide workshop). In order to progress matters, last year the IWC contracted Valentin Ilyashenko, the IWC Commissioner for the Russian Federation, to work with range states both within and outside the IWC to assist in the implementation of the CMP and develop the Memorandum of Cooperation.

Within the Memorandum, the countries agree that collectively and individually they will work to improve the status gray whales and increase protection of their habitat, subject to the availability of resources in the context of the CMP. The countries will meet periodically at the biennial IWC meetings to discuss progress and report back on developments, specifically to *inter alia* the Chair of WGWAP and IWC Head of Science. It is expected that the WGWAP will provide its views on progress to the participant countries. The countries have appointed a coordinator for the work (Igor Mikhno from Russia) who will initially be funded from the IWC CMP fund.

4.4.2 Panel conclusion

The Panel **welcomed** this news and indicated its willingness to co-operate in the updating of the CMP, assuming the required resources are available.

5 INDUSTRY UPDATES

5.1 Sakhalin Energy 2015/16 seismic plans

Van der Veen summarised Sakhalin Energy's seismic acquisition plans for the 2015 season. A 350 km^2 streamer seismic survey across Piltun-Astokh and a 290 km^2 streamer seismic survey across Lunskoye are currently planned. Both surveys would be repeats of 1997 3D baseline surveys.

The option of additional Ocean Bottom Node (OBN) recording was still being considered. Whether OBN data will be recorded simultaneously with the streamer seismic, or as a separate survey, was also under review, pending the outcome of the tender exercise that was nearing completion at the time of the meeting.

Since WGWAP-13 and subsequent NTF meetings, Sakhalin Energy has become aware of a planned 2015 seismic survey by ENL in adjacent acreage, which would coincides in timing with Sakhalin Energy's planned work. The ENL programme is meant to cover approximately 1,600 km^2 across that company's Odoptu, Chayvo and Arkutun-Dagi licenses, as well as Rosneft's North-Chayvo license area. It is clear that the two companies would have to agree on some form of time sharing to make all of these surveys possible in 2015.

Van der Veen estimates that the entire Sakhalin Energy Piltun-Astokh survey will take about 30 days including weather-related (and other) downtime. He emphasized that the contracted seismic vessel would be in position and ready to begin the survey as early in the season as ice conditions allow, i.e. by around 10 June.

5.2 Other Sakhalin Energy work and planned activities

Lock provided a brief update on Sakhalin Energy's activities for 2014-2017 not directly related to the proposed 2015 seismic survey. This presentation was in keeping with the Panel's standing request to be kept informed of planned activities. There were no surprises as all items were essentially as reported for 2013-2016 at WGWAP-13 (see Item 2.3.2 in the report of that meeting).

A report on noise measurements taken at the Company's offshore platforms has been completed and it was to be presented and discussed at NTF-7.

5.3 Other activities on Sakhalin Shelf in 2014/15 and beyond, including IUCN database

5.3.1 Presentation on activities

Berzina provided an update on the joint work by her and Zanda Krukle, a PhD student in environmental sciences specialising in noise management issues, over the past two years compiling information on oil and gas activities on the Sakhalin Shelf by other companies (i.e. besides Sakhalin Energy). To set the scene and provide context, Berzina began by summarising general trends observed and forecasted for offshore exploration in Russia between 2014 and 2025, based on information published in September 2014 by RPI, a research and consulting firm specialising in the Russian energy market. The exploration intensity was expected to increase, with the total of meters drilled in the Sea of Okhotsk forecasted to double or triple over the next ten years.[8]

As announced during the recent Sakhalin Oil and Gas Conference (September 2014), Sakhalin is now experiencing a 'second wave' of offshore oil and gas projects. Activities in close proximity to the gray whale feeding areas are expected to intensify, including a number of seismic surveys planned or announced in 2015 (see Fig. 5). This makes coordinated and standardized environmental monitoring and mitigation efforts essential.

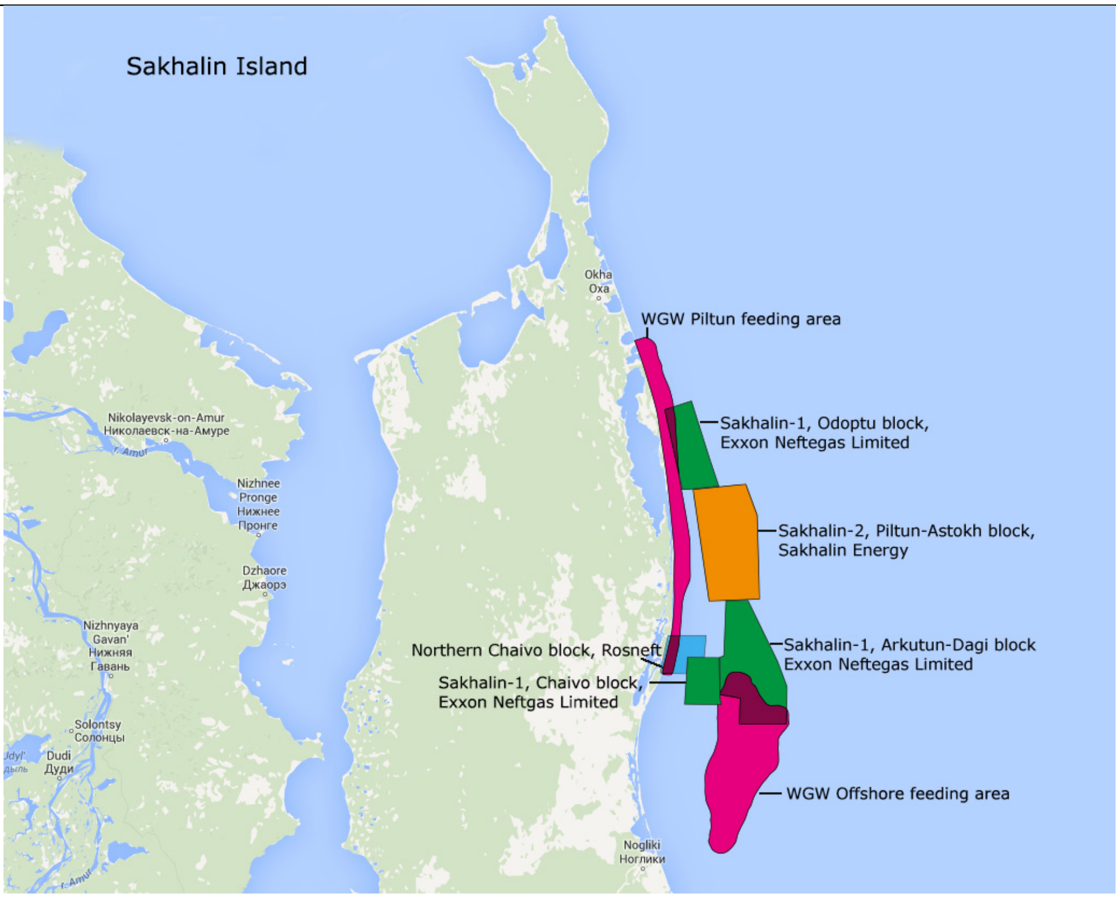
Within the Arkutun-Dagi block of the Sakhalin-I project, ENL has completed installation of the year-round offshore drilling platform 'Berkut' with the largest topsides in the industry. Production at this platform was expected to begin in December 2014. ENL is also planning to drill as series of wells from its 'Orlan' platform (Chaivo block) in 2014-2015 and it has obtained the State Environmental Expert Review (SEER) approval for construction of temporary unloading facilities needed for reconstruction of the Odoptu 2 (Northern) wellsite. Finally, ENL has announced plans to carry out 3-D seismic surveys in all three of its Sakhalin-I project blocks (Odoptu, Chaivo and Arkutun Dagi) in 2015 (see Item 5.4).

At the time of this meeting, Rosneft was carrying out a 2-D seismic survey in its Northern Chaivo block and had launched a drilling campaign in that same block earlier in the year with an intention to begin production there in December 2014. Rosneft was also planning to carry out a 3-D seismic survey at North Chaivo in 2015 (although the Panel learned after the meeting that this work may in fact be subsumed as part of the planned ENL 2015 seismic survey programme mentioned above). Finally, Rosneft had recently obtained exploration and production licenses for the Lebedinsky and Veninsky (Sakhalin-III) blocks, with production estimated to begin within a few years.

In autumn 2013, Gazprom began gas production in its Kirinsky block as part of Sakhalin-III, with large reserves discovered following exploration work there. In 2014 Gazprom also completed its 3-D seismic

[8] See the summary at http://www.rogtecmagazine.com/ru-blog/rpi/ based on www.rpi-research.com

programme within its East-Odoptinsky block as part of Sakhalin-III, which is located close to gray whale feeding areas.



Note: This schematic is based on publicly available information and included only for illustrative purposes. The designation of areas on this map and the presentation of the material do not imply the expression of any opinion on the part of IUCN concerning the legal status of any area, its authorities or operators, or the delimitation of its boundaries. Coordinates, boundaries etc. on the map are not exact and therefore should not be used as such.

Fig. 5. Schematic showing the approximate development blocks where seismic surveys are planned / announced for 2015 on and near the gray whale feeding areas off north-eastern Sakhalin.

5.3.2 Update on the GIS database

Berzina recalled that during WGWAP-12, the Panel had emphasised the importance of getting better information on activities of other companies that could affect the whales, either directly (e.g. through ship strikes, toxic contamination of the whales or their food resources) or indirectly (e.g. through noise exposure, other types of disturbance). In order to support the WGWAP process, Berzina, in collaboration with the web development team from Unitgraphics, has been developing an interactive map of oil and gas development and other activities around the Sakhalin and Kamchatka feeding areas. This map is intended to be a 'living source of information' and to be regularly updated through media monitoring, tender information, internet research and other sources. It is based solely on information that is publicly available, including but not limited to what can be obtained from websites of oil and gas companies, associations and service providers; tender documents; Russian governmental bodies; industry regulators; Russian and international media; and NGOs.

The map – a web application and a website with associated data and detailed information (Fig. 6) – is solely for the use of those involved in the WGWAP process including task forces. In particular, it is meant to be a reference to be consulted when considering cumulative, aggregate or interactive effects from the various human activities in the region. The map currently includes a number of filters with integrated sub-layers: occurrence, feeding and wintering areas of gray whales on both the eastern and western sides of the North Pacific; migration routes based on 2010-2012 satellite tagging data; oil and gas development projects, operators and infrastructure; major shipping lines/sea routes; fisheries zones; and protected areas that could be relevant to gray whale conservation.

The second phase of the map's development, which is ongoing, includes regular updating of previously compiled data and information. Scientists and other experts involved in the WGWAP process have been provided with access to the map and the regularly updated sheets of detailed information on each of the projects mentioned above as well as others in various stages of development. Due to its sensitive nature, the map is currently not available for use by the broader public. IUCN has determined that it will be necessary to carry out a careful analysis of constraints, terms and conditions of use, mechanisms for dissemination etc. before this tool is made more widely available.

During the initial mapping exercise, Berzina consulted with some members of the Panel and other stakeholders for guidance on the types of information needed (e.g. fields, blocks, operators, infrastructure, whale areas, stages of project development) and the form of interactivity required. All input received thus far has been taken into account in development of the current map.

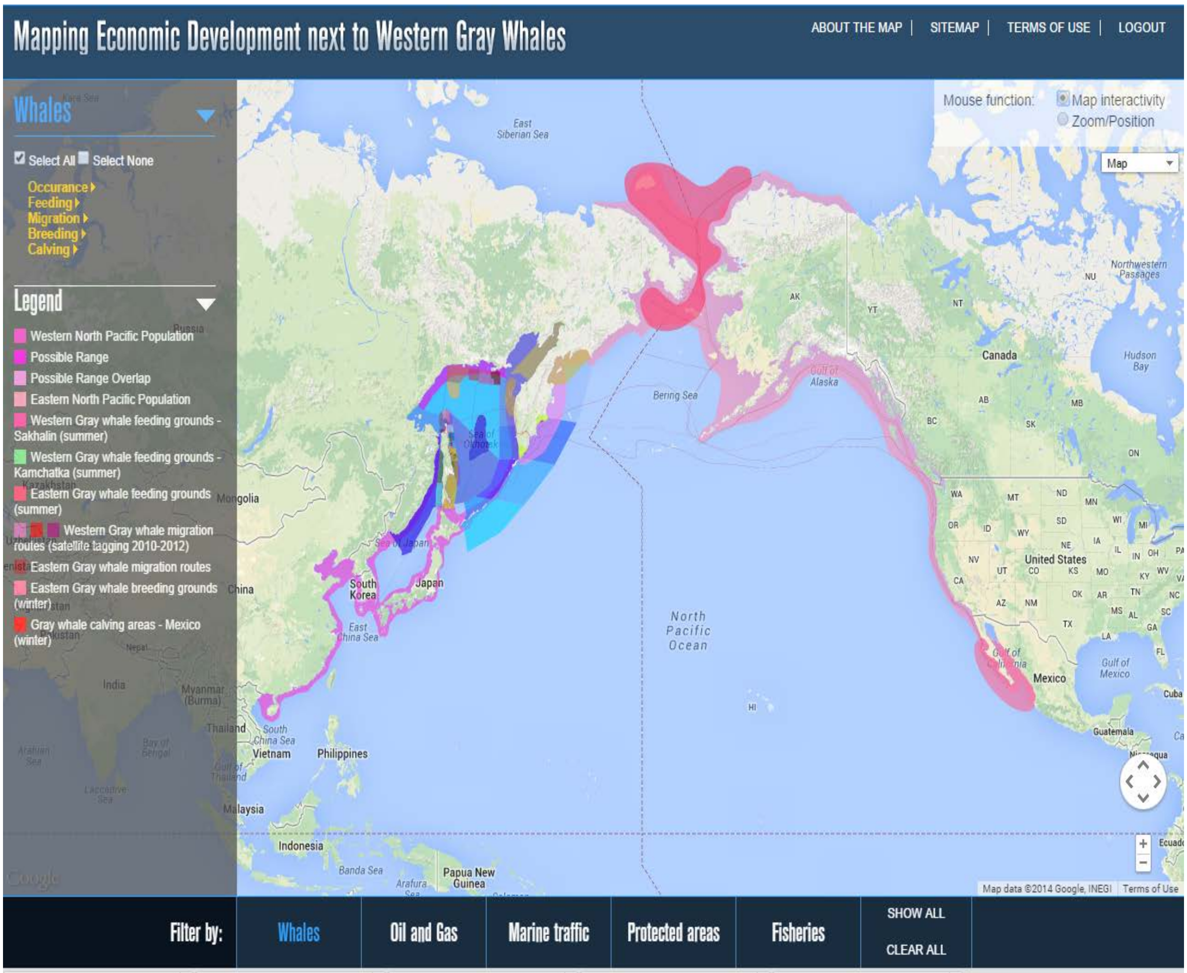


Fig. 6. Screen shot of activities map.

5.3.3 Panel conclusions

The Panel **recognised** the excellent work undertaken by IUCN, especially Berzina, with respect to the mapping tool and associated information on cetaceans and human activities in the Sakhalin and adjacent regions. The Panel **agreed** that the tool largely meets the original objectives[6].

In terms of any possible future development, the Panel **recommends** the establishment of a small Steering Group comprising a member of the Panel (Donovan), a representative of the Company (Lock) and a representative from IUCN (Berzina). The Terms of Reference of the Steering Group are to:

(1) refine the objectives for the mapping tool in the light of the original Panel recommendation[9] and experience to date;
(2) request and review suggestions from users for improvements in the light of the objectives and associated costs, determine whether or not they should be undertaken and, as necessary, prioritise them;
(3) consider the issue of confidentiality of its use;
(4) report back briefly to the Panel at each future meeting.

5.4 ENL seismic surveys planned for 2015

5.4.1 Presentation from ENL

Swindoll provided a presentation on behalf of ENL and his written summary is provided here, exactly as received after the meeting:

> *"On 1 October at the WGWAP-14 meeting, Mike Swindoll (ENL) presented a summary of western gray whale protection measures planned during ENL's 2015 seismic survey program, as previously presented to the 12th meeting of the MNR IWG on 21 August 2014.*
>
> *During summer 2015, ENL, as operator of the Sakhalin-1 Consortium, has contracted to acquire seismic data over the three Sakhalin-1 fields: Odoptu, Chayvo and Arkutun-Dagi. This will be the first Sakhalin-1 seismic survey since 2001 and first since the mid-1990s for some Sakhalin-1 license areas, and will provide data needed for reservoir development. Mitigation measures during seismic data acquisition are based on IUCN's recommendations for responsible seismic surveys and experiences of operations off Sakhalin Island, and include or exceed best practices endorsed by MNR IWG. The survey will utilize three streamer source vessels (two with 12 streamers, one with 4 streamers), with a schedule that maximizes productivity, minimizes number of source passes, and minimizes time near Piltun feeding area during critical feeding periods. The four-month acquisition schedule includes significant allowance for technical, weather and environmental down time. Survey of the Odoptu and Chayvo fields, which are closest to the near-shore feeding area, will begin as soon as ice clears (early June) when the numbers of feeding whales are expected to be lowest.*
>
> *The mitigation strategy for the survey will focus on the three key risks to western gray whales: collision [ship strikes], injury to hearing, and impacts on feeding. The goal is to be protective of all gray whales from injury and to minimize disturbance during the peak feeding period, specifically ensuring that mother-calf pairs are not exposed to sound levels affecting feeding.*
>
> *Mitigations include:*
>
> > *(1) Marine Mammal Protection Plan (MMPP) tailored to the seismic program;*
> > *(2) Managed energy levels and soft start of the seismic source;*
> > *(3) Shut-down criteria and buffer distances based on real-time measurement / modelling of noise levels with behavioural and safety thresholds;*
> > *(4) Dedicated research vessel for monitoring and mitigation support; and*
> > *(5) Marine Mammal Observers (MMOs) on all vessels and at each onshore distribution station to monitor whale behaviour and distribution.*
>
> *The annual ENL-SEIC Joint WGW Monitoring Program will be expanded to include the entire June-September period. Tagging and satellite telemetry is also being considered (if regulatory approvals and support from IWC are obtained). Additionally, technology for low visibility periods is also being assessed to improve sighting ability."*

5.4.2 Discussion

The Panel thanked Swindoll for the presentation and indeed for his attendance and participation in the meeting. The Panel enquired as to whether ENL's MMPP[10], particularly as tailored to the seismic

[9] Recommendation WGWAP-12/20. In its WGWAP-12 report, the Panel stressed the need "…to have map resources available on the WGWAP website that could be used for reference when considering cumulative, aggregate or interactive effects from the various human activities in the region. Given the scale and extent of oil and gas activities, it would be helpful to have on the website a system whereby summaries of individual projects could be called up by clicking on an overview map," (Item 9.2, WGWAP-12 report).

programme, could be made available to the Panel and other stakeholders. Unfortunately, although this inquiry was passed along within ENL subsequent to WGWAP-14, the Panel was informed that the MMPP would not be made available. The Panel acknowledges and indeed appreciates that ENL has announced plans to pursue monitoring and mitigation strategies as recommended by the Panel and others, it also notes that 'the devil is in the details', particularly when it comes to field implementation of these strategies, which can be complex, e.g., when to call for a shutdown in poor visibility conditions or presence of mother-calf pairs.

Also, presumably the MMPP contains reference of some kind to the cumulative impacts of all ENL activities. As this Panel and its predecessor gray whale panels have repeatedly emphasized, cumulative impacts can only be assessed in a comprehensive manner by considering all relevant activities and not, for example, by looking only at a single company's seismic programme in one season (see Item11).

Further, the Panel expressed concerns about how staffing would be accomplished given the numerous areas that will require monitoring by experienced personnel. Swindoll explained that ENL would work with Sakhalin Energy to coordinate MMOs and behavioural teams, i.e. via the Joint Programme. He indicated that the plan is to have at least one experienced MMO at each shore station and three behavioural teams that rotate through the shore observation stations.

Finally, the Panel was advised by Swindoll and Rutenko that ENL has planned extensively for the acoustic monitoring stations, which will use a new generation of equipment that according to Sakhalin Energy was developed jointly by the two companies (to be discussed at NTF-7). Sakhalin Energy indicated that it plans to use the same stations as ENL.

5.5 Panel conclusions on 2015 activities

Panel members noted with **great concern** the projected level of seismic activity (and indeed other activities) near the feeding grounds in 2015 that may adversely affect gray whales. The Panel, in association with experts from the Sakhalin Energy, developed detailed monitoring and mitigation measures for the 2010 seismic survey that have subsequently been used to develop principles and guidelines for responsible practice (Nowacek *et al.*, 2013) which have been endorsed by IUCN and the IWC. In planning for its 2015 seismic survey, Sakhalin Energy has, to its credit, pursued a transparent process involving extensive discussions with the Panel's Noise Task Force to develop the MMP as well as submission of its plans to a State Environmental Expert Review (SEER). This is in contrast to other operators who have chosen, for example, not to submit their plans to a SEER and instead are relying on the seismic vessel's general permit to operate.

The Panel **draws attention** to the letter sent by IUCN to the then Prime Minister Putin on 19 May 2010 expressing serious concern about a proposed Rosneft Lebendskoye 3-D seismic survey that was to take place after the Sakhalin Energy 3-D survey.[11] The principles outlined in that letter remain:

(1) that the primary mitigation measure must be for any seismic surveys near the feeding grounds to be undertaken as early in the season as the ice conditions allow (i.e. once the ice has departed in early June) and must be completed as soon as possible and certainly before the end of July – this is to ensure that the minimum number of whales (if any) are affected;
(2) that other mitigation and monitoring measures are in place in accord with the principles established in 2010 and endorsed by IUCN and others.

Given the number and scope of the potential surveys and their proximity to the feeding grounds discussed above, the Panel **stresses** that it is not possible for all of these to operate independently at the same time whilst meeting the agreed primary mitigation measure with respect to start and finish times. The Panel **urges** the Russian Authorities and the Companies involved to work together to:

(1) ensure that seismic activities near the gray whale feeding areas are synchronised appropriately to ensure that the primary mitigation measure can be met (recognising that this may mean it is infeasible for all projected surveys to be undertaken in 2015) and

[10] MMPP and MMP were used interchangeably in this discussion. The former is usually meant to refer to a company's comprehensive document outlining all of its marine mammal protection measures, while the MMP (monitoring and mitigation plan) is unique to a specific activity such as a seismic survey.
[11] http://cmsdata.iucn.org/downloads/letter_from_iucn_to_putin_may_2010.pdf

(2) ensure that monitoring and mitigation measures are established and implemented in accordance with the IUCN- and IWC-endorsed guidelines and principles. In this regard, the Panel is willing to review plans to ensure that they do follow the guidelines and principles. It **requests** IUCN to inform the relevant Companies and Authorities of this recommendation as soon as possible.

6 RESULTS OF 2013 SEIC/ENL JOINT PROGRAMME

The overall Joint Programme report for 2013 (WGWAP-14/05 and 06) was provided to participants as background. In addition, the 2013 reports on individual subject areas were provided and are discussed below. Two of the subjects were introduced at the meeting by the lead investigator – acoustics (Rutenko) and photo-ID (Tyurneva). The other two were introduced at the meeting by Vladimirov.

6.1 Acoustics

6.1.1 Presentation

The 2013 acoustics monitoring program took place for a 2-month period without incident (WGWAP-14/13 and14; also WGWAP-14/15 containing the sonograms was made available to the Panel on a confidential basis). Two of the systems installed in the Offshore feeding area were lost, presumably because of heavy trawl fishing in the southern part of that area according to Rutenko. The only other equipment issue occurred with the 'Control' station, where something got caught on the hydrophone and caused the channel to overload for several days. The debris was eventually dislodged, likely by one of the large storms that occurred during the season.

One addition to the 2013 acoustics program in 2013 was a dedicated recording session at the platforms. Noise generated by or near the platforms had been identified in the past, and Pacific Oceanological Institute (POI) conducted this dedicated recording session in response to recommendation WGWAP-12/005.

6.1.2 Panel discussion and conclusions

The Panel thanked Rutenko for this presentation. Detailed discussion of the acoustic data was deferred to the NTF meeting scheduled immediately after WGWAP-14, but the Panel noted some initial concern about a small number of time periods at some of the stations. Starting at 0600 hr on 17 August and continuing through 0600 hr on 18 August at the PA-B 10 station, noise levels were almost continuously at levels of 110-120 dB in the 20-2000 Hz band, which exceed the exposure criteria recommended by the Panel in WGWAP 2/INF15[12]. Additionally, on 20-21 September, levels were between 110-120 dB. The duration and elevation of noise levels during these periods are of particular concern because the PA-B 10 station is located in the middle of the whale feeding ground, not at its perimeter, and these levels of continuous noise are likely to cause behavioral disruption or disturbance. Finally, on 8 September at between 0900-1400 hr the noise level was continuously at 130 dB in 20-15000 Hz and 20-2000 Hz bands. The character of this noisy period is not consistent with a vessel operating near the station, so while the *Katun* was apparently in the area and caused spikes at this station, the loud period was qualitatively different.

It was expected that the NTF would have detailed discussions of these noisy periods and the rest of the 2013 acoustics report at the earliest opportunity.

6.2 Benthic and hydrology

6.2.1 Presentation

Sakhalin Energy reported that a full sampling programme, consistent with the earlier benthic studies, had been completed in 2013 and was currently underway in 2014. Sampling in 2013 was conducted from RV *Pavel Gordienko* in two periods, one in July (Piltun area only) and the other in September/October (Piltun area and Offshore feeding area). Due to the untimely death of Dr Fadeev, analysis of the 2013 benthic samples was not yet complete at the time of this meeting but was expected by the end of 2014. Given the circumstances, the Russian authorities have agreed that 2013 and 2014 data can be submitted together in 2015. As an interim measure, Sakhalin Energy prepared a review of benthic studies 2002–2012 (WGWAP-14/07 and 08) which was submitted to the authorities in place of the 2013 report.

[12] http://cmsdata.iucn.org/downloads/inf_15.pdf

6.2.2 Panel discussion

The Panel thanked Vladimirov for this report. Discussions of this subject can be found under Item 15, below.

6.3 Photo-ID

6.3.1 Presentation

Tyurneva presented document WGWAP-14/11-12 which reported results from photo-id work conducted off Sakhalin in the 2013 season (30 June – 18 October) as part of the Institute of Marine Biology's (IBM's) programme. The IBM team logged 43 hours of photo-id effort from Rigid Hull Inflatable Boat (RHIBs) in the Piltun feeding area and 13 hours of RHIB effort in the Offshore feeding area. A total of 122 individuals were identified, of which 113 had been identified in previous years, six were calves of the year, and three were previously unknown non-calves. Three cow-calf pairs were identified: two of the mothers had been observed with calves in previous years. Of the 122 individuals, 54 were observed only in the Piltun area, 54 were observed only in the Offshore area and 14 were observed in both areas. A further four individuals were identified from photos by a group operating on Piltun sand spit. One more individual was identified from photos supplied by Sakhalin Environment Watch that were taken in August 2013 on the east coast of Sakhalin (approx. 50°40'N) in the coastal waters adjacent to Vostochny Reserve, about 250 km south of the Piltun lighthouse. This whale had first been photo-identified by the IBM team in 2012. Thus a total of 127 individuals identified in 2013 were included in the IBM Sakhalin data set.

Unlike in 2012, there was no effort in the Chaivo area in 2013. There was no planned effort off Kamchatka in 2013, but one photo was received of an individual sighted in Vestnik Bay. This whale had not previously been photo-identified anywhere.

As in previous years, the observed body condition of whales improved throughout the season: the proportion with poor body condition (body condition scores 2-4) declined from over 50% in July to less than 10% in October. Based on the latest observed body condition of each individual, 25 out of 122 whales (20%) had poor body condition in 2013 (WGWAP-14/11-12).

6.3.2 Panel discussion

The Panel thanked Tyurneva for this report. Discussions of this subject can be found under Item 7, below.

6.4 Distribution

6.4.1 Presentation

Vladimirov presented a short summary of document WGWAP-14/9-10 relating to distribution of whales off north-eastern Sakhalin in 2013. Distribution surveys were conducted both by offshore and onshore teams but effort was severely limited by poor weather. Vladimirov noted that the near-shore distribution was similar to previous years but also that an apparent trend of animals moving to the more eastern and deeper part of the Offshore feeding area continued in 2013. Overall, however, his conclusion from comparing distribution maps was that the distribution has not varied greatly over the years with industry-sponsored surveys.

6.4.2 Panel conclusions

The Panel welcomed the information provided by the Company and **reiterated** the importance of this long-term data set for conservation and management and the need for continuing to collect data that are consistent and comparable. Given the difficulties caused by poor weather conditions, the Panel cautioned against over-interpretation of the 2013 results. It also noted that the IWC is preparing for an expert workshop on spatial/habitat modelling and that the long-term Sakhalin data set could provide a valuable case study for that workshop. Therefore the Panel **encourages** scientists from the Joint Programme to participate in the IWC workshop.

6.5 Progress on integrated analysis

6.5.1 Presentation

Sakhalin Energy reported that a draft report had been submitted to the companies at the beginning of 2014 and comments were provided to the team at Moscow State University that is responsible for this work. Sakhalin Energy gave its approval around a month ago and was still awaiting the final report at the time of this meeting. The Company told the Panel that it would share the report once it is released.

6.5.2 Panel conclusion

The Panel welcomed the news that the report was nearing completion and looks forward to receiving the final version. However, it notes its **concern**, as it has several times in the past regarding this and other issues, that as one of the Panel's primary functions is to advise the Company on scientific matters, it would have been appropriate for Panel members to have assisted the Company in the review process rather than merely receiving a final report.

7 2014 SEIC/ENL JOINT PROGRAMME

7.1 Presentation

The Panel did not expect to receive results of the 2014 programme but rather a brief verbal update from Sakhalin Energy on general progress of the season to date. Vladimirov stated that the teams were still in the field at the time of this meeting and he chose to give essentially the same presentation to the Panel meeting that he had given to NTF-6 in April 2014 in anticipation of the then-upcoming field season. He indicated that the vessel operating schedule had been changed in some ways as a result of experience gained in 2013. Most of the changes concerned the photo-ID programme. As in the past, some photo-ID effort was made in 2014 in both the Piltun (near-shore) and Offshore whale feeding areas. In general, Vladimirov expressed satisfaction that the switch to using multiple platforms had been successful, increasing mobility of the teams, eliminating competition among the teams for ship time, and reducing program costs.

7.2 Discussion

7.2.1 Acoustics

Vladimirov was asked why, in view of both companies' planned seismic surveys for 2015, acoustic monitoring did not begin earlier in the 2014 season (e.g. June or July) in order to obtain 'undisturbed' baseline acoustic data for the time when the seismic work is meant to be conducted near the whale feeding areas in 2015. His response was that acoustic monitoring is viewed as part of the overall monitoring program and as such, its value is enhanced when all components of the Joint Programme are synchronous and integrated.

However, the Panel again stated that it would be useful for the companies to acquire 'quiet acoustic data' during periods when there is little or no industry-related activity, to serve as control or reference data for the periods when there is a great deal of such activity. This was discussed in some detail at NTF-6 and during WGWAP-13 (see Item 9.4 in the report of WGWAP-13 and also Item 3.2 in the NTF-4 report). Vladimirov stated that Sakhalin Energy would consider this suggestion jointly with ENL. Rutenko pointed out that two acoustic stations had been deployed in June this year and that data from those deployments would be included in the 2014 acoustics report.

7.2.2 Photo-ID and biopsy sampling

In discussion concerning the photo-ID and biopsy components of the Joint Programme, the Panel requested an update on progress with implementation of recommendation WGWAP-13/006 calling on Sakhalin Energy to measure the noise signatures of a RHIB and a Fast Response Cutter (FRC) jet-drive in order to determine whether the latter is suitable for use (from a noise perspective) in the photo-ID and biopsy work. As a part of that recommendation, it was understood that only RHIBs would be used in the Joint Programme until the Panel had an opportunity to review the evidence and compare the noise signatures of the two types of boat.

Sakhalin Energy explained that, contrary to the Panel's recommendation, FRC jet-drive boats have been used for the ship-based photo-ID work whereas RHIBs have been used for the shore-based Joint Programme photo-ID and biopsy work.

Rutenko reported that the measurements had been obtained during the week prior to this meeting (24 September) and that within the coming month or two his team would complete the analysis and provide it to Sakhalin Energy. The Panel was pleased to learn that the field study had finally been completed and looked forward to a report from the Noise Task Force concerning the results and their implications.

The Panel noted that in 2014 the gray whales were subjected to approaches by three photo-id teams (two shore-based plus one vessel-based) plus the biopsy programme, and expressed concern about the potential effects of this level of disturbance by researchers. Previous biopsy work by the Russia-US team had been conducted in conjunction with the photo-id work. The Panel questions whether a separate biopsy team is necessary (see also Item 14.4).

The operations of the Russia-US and IBM teams overlapped for approximately one month in 2014, with the Russia-US team deployed during July-August and the IBM team during August-October. Vladimirov explained that the inshore IBM photo-id team generally avoided operating close to the Russia-US team.

8 MMOs AND SHIP STRIKES

8.1 2013 MMO closeout report

The Panel was provided with the 2013 MMO program closeout report (WGWAP-14/16 and 17).

8.2 Results of MMO observations in new provisional vessel corridor in 2013 and 2014

In May 2013, Sakhalin Energy decided to proceed, on a trial basis, with its proposal (made at WGWAP-13; document WGWAP-13/20) to change the vessel traffic corridor south from the LUN-A platform, making the route more direct and nearer to shore and thus reducing operational costs, sailing time and exhaust emissions. The Company assured the Panel at WGWAP-13 that risks to whales would be mitigated by vessel speed restrictions and the presence of MMOs onboard the supply and other vessels using this new route. The Panel agreed to the proposed change on the understanding that it would be "implemented for one year, on a provisional basis, for reconsideration at a future Panel meeting based upon a report from the Company concerning MMO effort, whale observations and recorded vessel speeds" (Item 12.2 in WGWAP-13 report).

8.2.1 Presentation

At this meeting, no written report was provided but Komarov gave a slide presentation showing the few marine mammal observations made from vessels traveling in the new corridor (which keeps roughly 12-25 km from shore) in 2013 (and in 2014 to date). In 2013 there were 11 transits of the corridor on 'good weather' days with experienced MMOs on-board (2 transits in June, 2 in August, 1 in September, 3 in October and 3 in November). The only cetacean sightings were of killer whales and harbour porpoises. In 2014 there had been 4 such transits by the time of this meeting (3 in June, 1 in July) with sightings of minke whales and fin whales but no other cetaceans. Sakhalin Energy gave assurance that the record of observations for the remainder of 2014 will be included in the 2014 MMO closeout report, to which the Panel will have access next May. Although sightings of pinnipeds are common along this near-shore route, the available evidence, including observations by MMOs as well as vessel captains and crews, has led the Company to conclude that cetaceans, particularly gray whales, are not likely to be encountered often. The Company indicated that although it intends to make this corridor permanent, it does not intend to include special MMO coverage on vessels using the corridor.

8.2.2 Panel conclusion

The Panel thanked Komarov for his presentation and looks forward to receiving and reviewing the full and final report (including effort information) on the results of the 2-year trial of the new corridor. The Panel **recommends** that Sakhalin Energy provide this report (per the terms of recommendation WGWAP-13/20) for evaluation at the next full WGWAP meeting.

8.3 SEIC proposal for change in speed limit for crew change vessels

8.3.1 Presentation

Komarov presented a new proposal from Sakhalin Energy concerning its vessel traffic management policy. A speed limit of 21 knots has been in effect for Sakhalin Energy's crew change vessel corridor since 2009. That limit represented an increase from the limit of 17 knots which had been in effect prior to 2009. According to Komarov, the speed limits on Sakhalin Energy vessels have been, from the start, intended to minimize the risk of accidental strikes on gray whales, with no reference to the comfort and safety of passengers and crew or to Russian Federal commitments under international conventions.

The Company recently concluded, based on concerns about human health risks (apparently having to do mostly with sea sickness) and maritime safety issues (including compliance with the International Maritime

Organization (IMO) and Russian Federation requirements), that it wishes to review its speed limit policy as reflected in the MMPP) Therefore, the Company has commissioned a summary MMO report that will include data on marine mammal encounters and provide the basis for a subsequent analysis of ship strike risk. This report, which was expected to be available by the end of this year, would be viewed by Sakhalin Energy as full implementation of recommendation WGWAP-6/21 which is currently classified as 'Open – no action yet taken'.

8.3.2 Panel conclusion

The Panel welcomes this action by the Company and looks forward to reviewing the report at the earliest opportunity.

The Company also announced that it plans to commission a full analysis of ship strike risk making use of data in the summary MMO report and addressing the full array of concerns related to human comfort and safety, compliance with Federal and international standards etc.

In accordance with its terms of reference, the Panel **recommends** that before this analysis proceeds, it be given an opportunity to review and advise on the planned approach, scope and methodology of the analysis as well as on potential analysts who should be considered for the contract.

8.4 IWC ship strike workshop in Panama

8.4.1 Presentation

Donovan briefly reported on relevant aspects of an IWC Workshop on ship strikes held in Panama in June 2014 (IWC/CC65/Rep01)[13]. The ship strike issue can be considered from a number of perspectives including animal welfare, human welfare and population-level threats. It is the last that is likely to be of particular importance to western gray whales. Recommendations with respect to data and analyses referred to the need for increased collection/reporting efforts and in particular submission of data to the IWC global ship strikes database[14]. An agreed protocol for strandings has been developed with respect to *inter alia* determining whether a ship strike was the cause of death. Effort is being put into spatial and habitat modelling to identify high-risk areas for ship strikes and thus to assist in prioritising mitigation efforts. As noted above under Item 6.4, the IWC will be holding an expert workshop on spatial/habitat modelling.

With respect to mitigation approaches, it was agreed that where possible, the most effective is to separate whales from vessels in space and time (e.g. through traffic separation schemes and corridors). However, in many cases this may not be possible and it was agreed that in such cases, slowing down is the only thing that has been demonstrated to be effective in reducing lethal strikes on whales. A 10 knot limit has been shown to be effective where it has been introduced. The best available scientific evidence shows a clear reduction in lethal strikes when speeds are reduced to 14 knots and less. Emphasis was placed on the fact that other methods (e.g. MMOs, technology) require careful evaluation. Simulation modelling can be an important component of evaluation and the IWC Scientific Committee intends to develop such a framework.

8.4.2 Panel conclusion

The Panel **welcomed** this information, reiterated the importance of evaluating proposed mitigation measures including the use of MMOs and technology, and looks forward to receiving updates on progress with spatial/habitat modelling and the development of a simulation framework to assist in the evaluation of mitigation measures.

[13] https://archive.iwc.int/pages/view.php?ref=3468
[14] http://iwc.int/ship-strikes

9 NOISE ISSUES

9.1 NTF-5 and NTF-6 meetings

9.1.1 Presentation

Donovan, Chair of the NTF (Noise Task Force), summarised the work undertaken since WGWAP-13. Two meetings had been held in Amsterdam (NTF-5: 11-12 October 2013, NTF-6: 3-4 April 2014). The primary focus of both was the proposed 2015 seismic survey outlined under Item 5.2. Other noise-related issues are reported under Item 9.4 below. He emphasised that the planned 2015 survey was some 2.5 times the size of the 2010 Astokh 4-D survey, extending farther north and coming closer to shore, thus even nearer to the Piltun feeding area. The work of the NTF continues to be governed by the principles and approach developed for the 2010 survey and the starting point for discussions was the 2010 Monitoring and Mitigation Plan (MMP).

With respect to *noise thresholds*, the NTF considered the results from 2010 and 2012 surveys as well as some possible new guidelines from the US National Oceanic and Atmospheric Administration. It was agreed that at present there was no need to change the threshold values from what were used for the 2010 survey.

With respect to the *perimeter monitoring line* (PML – in essence the seaward boundary of the Piltun feeding area), the task force had agreed at NTF-5 to work to update the PML with new data acquired since 2010 exercise. The Company did not present any new analyses at NTF-6 although it reported verbally that additional analyses had been undertaken. The report of NTF-6 reiterated that the following work was relevant: (1) list the available data sets (ensure they are up-to-date) and identify any that are anomalous (e.g. 2005 from previous analysis); (2) provide updated density maps by agreed time periods; (3) select final data sets; and (4) review the method used to calculate the PML and modify it if needed and recalculate the PML. At NTF-6 it was recommended that the Company provide a full paper that takes these issues into account and provide this to NTF-7. Also, the importance of obtaining early-season data for the planning of future seismic surveys was again stressed in the report of NTF-6.

The objective of the NTF's ongoing work is to provide the Panel with a final proposed MMP; the Company has reconfirmed its commitment to the 2010 approach. The primary mitigation measure remains to start and finish the survey as soon as possible, i.e. while there are fewer whales in the feeding grounds, and this inevitably involves some *trade-off* between the potential exposure of the earliest-arriving individuals to relatively high doses of sound against the need to minimise the absolute number of whales exposed to noise levels above the behavioural threshold. The greater extent of the proposed 2015 survey and its proximity to the Piltun feeding area make finding this balance considerably more difficult than it was in 2010.

NTF-6 discussed several modifications to the 2010 MMP proposed by the Company.

In order to reduce 'down-time' during periods of poor visibility, the Company proposed the use of *night vision technology*. The task force agreed that such technology showed promise but stressed that a proper evaluation of effectiveness was required. It was agreed that for NTF-7 the Company should provide full documentation of the proposed system(s) that would be sufficient to verify effectiveness under a range of conditions (including information on field experiments conducted under different conditions); without this, it would not be possible to evaluate whether this technology will enable relaxation of the 2010 protocols.

The NTF also considered an approach that would modify the 2010 *A-zone definition*, in effect introducing a 'rolling' A-zone. The task force agreed that this showed great promise in reducing down-time without compromising the effectiveness of mitigation and recommended that this be developed into a formal proposal with an approach for practical implementation to be considered at NTF-7.

Acoustic monitoring is a key component of the MMP and the NTF welcomed information on the introduction of improved acoustic equipment. Given the importance of obtaining real-time information, a small group was established to examine various approaches and report back to NTF-7.

In addition to looking at the details of *behavioural monitoring* as part of the MMP, the NTF noted that this was of industry-wide interest given the uncertainty surrounding the effects of seismic surveys on whales. As such, the task force assigned considerable value to the idea of developing a common approach (e.g. protocols, software, pool of observers etc.) that would allow and facilitate the combining of data sets and the carrying out of joint analyses. Although this subject is outside the immediate scope of the NTF and the

Panel, the NTF requested that IUCN approach the wider industry and encourage discussion of this issue over the longer term.

With respect to the forthcoming SEIC survey, the NTF agreed that the 2010 protocols should form the basis for behavioural monitoring and agreed that the Company should provide these to NTF-7 for review and re-evaluation in light of the increased extent of the survey (e.g. with respect to the number and location of observation teams, possible trade-offs between scans and focal follows). The NTF welcomed the news that an experienced team from Australia was expected to lead the behavioural monitoring work and recommended in the NTF-6 report that the leaders of that team be brought to Sakhalin for at least a part of the 2014 season so that they could become familiar with the field conditions, Russian team members, equipment, software etc. The NTF requested that it receive an inter-sessional progress report on the development of teams and training.

With respect to *MMOs*, the Company reported that they will be trained and experienced and that four of them will be stationed on the seismic vessel. It proposed not to use a *scout vessel* because, based on the 2010 experience, the Company is convinced that use of such a vessel is both inefficient and potentially more disturbing to the whales. The NTF agreed that this matter warranted consideration and recommended that additional documentation be provided, without which it would not be possible to assess whether the lack of such a vessel might compromise the effectiveness of the MMP.

Even with the preliminary acoustic analysis, it is clear that establishing an effective MMP consistent with the 2010 principles will be much more difficult than it was in 2010. Given that, it is important to *simulate various options to minimise exposure* as well as using the 2010 baseline as a baseline. The NTF agreed that the Company should consider at least the following options:

(1) the sliding-boundary protection zone (described above);
(2) dividing the region into Northern and Southern blocks and completing the Northern block first;
(3) options for line sequencing if a single block was used to complete A-lines as quickly as possible;
(4) various scenarios for down-time (including different assumptions for the effectiveness of night vision binoculars).

The task force recommended that a full written report of the simulation exercise (including the approach used and the assumptions made) be available well in advance of NTF-7. Panel members of the NTF indicated that they would be willing to provide advice on the simulation study.

The task force recommended that the Company provide the existing 2010 protocols document to NTF-7 with any proposed modifications to it shown in track changes.

In addition, the NTF Chair assigned small groups to report back to NTF-7 on: the use of digital acoustic recording tags (DTAGs); information on early-season sightings (within the planned seismic survey time window); and approaches for future surveys, especially regarding a possible alternative for sound source verification.

Finally, the NTF recognised the importance of considering the activities of other companies at the same time. It has some information on activities of ENL and Rosneft and requested that IUCN try to obtain more.

At the conclusion of NTF-6, the Company made a statement about its views on the 2015 seismic survey.[15]

9.1.2. Panel discussion

The Panel thanked Donovan and the NTF for their hard work since WGWAP-13 and **endorsed** the NTF-5 and NTF-6 reports.

[15] "The early start and finish of the operation is the key mitigation measure, as accepted by the WGWAP. Based on initial modelling done to date for the 2015 survey (Racca, 2014, NTF-6/8), the operation cannot avoid exposure of some whales to sound levels that might lead to a behavioural response. The 2010 mitigation protocols did not envisage such a scenario. The consequence of this is that strict application of the 2010 mitigation measures will extend the survey, thereby exposing increasing numbers of whales to sound levels that might lead to a behavioural response. To this end, the Company will explore modifications to the 2010 protocols that will allow the survey to proceed while achieving the primary mitigation measure of starting and finishing early. The Company will present the results of this study by an intersessional communication." – Item 6 of NTF-6 report.

The Panel concluded that the NTF-5 report contained no recommendations that would lend themselves to formal adoption and inclusion in the numbered list of Panel recommendations. All but two of the agreements, requests and recommendations in the NTF-6 report concerned intra-task force matters or had been obviated by the time of this meeting due to the long interval between WGWAP-13 and WGWAP-14 and the fact that NTF-7 was to take place immediately after WGWAP-14. In other words, there would have been no time before NTF-7 for the responsible party to implement any recommendation from NTF-6 that might have been adopted and carried forward by the Panel. The two exceptions in the NTF-6 report related to:

(1) a recommendation that a serious effort be made to publish a short paper in the peer-reviewed literature summarizing the results of Sakhalin Energy's 2012 seismic survey monitoring effort, even though the data were relatively sparse and the results unlikely to be conclusive;
(2) a request that IUCN, in consultation with the Panel, contact the appropriate Russian authorities (e.g. the IWG) to obtain more precise information (dates and location) on non-Sakhalin Energy activities (including but not restricted to seismic surveys) in the proximity of the Sakhalin feeding areas in 2015 and report back to the Panel and the NTF as soon as possible.

With respect to the former, the Panel **endorsed** the Task Force recommendation. With respect to the latter, the Panel agreed that this request has been largely realized (see Items 5.3., 5.4 and 5.5, above) and the Panel is confident that Berzina will continue to track the issue on the Panel's behalf in the coming months.

The question of the timeframe for completing the work of the NTF and the Panel on the proposed 2015 seismic survey is covered under the following item (9.2).

9.2 Time-critical issues relating to 2015 seismic survey to be settled at this meeting

The Company requires advice from the Panel on the MMP for the proposed 2015 survey by mid-December 2014. This presents a number of practical and logistical challenges. After considerable discussion the Panel established the following process.

(1) The NTF-7 report is completed as quickly as possible after its meeting from 3-5 October;

(2) The NTF-8 meeting is held on 17, 18 and possibly 19 November. The report is finalised at the meeting venue by representatives of the Panel and the Company who will remain at the venue for up to three days following the meeting so that the report can be posted on the IUCN website before Monday 24 November 2014. The report will also be circulated directly to Panel members and Observers by IUCN, with a request for written comments from the Observers by Monday 1 December 2014;

(3) The comments are received and collated by IUCN and circulated directly to the Panel by 3 December. IUCN and the Panel will have organized a virtual meeting (WGWAP-15) as soon as is practical after that, but within the period 4-10 December 2014. The Panel will send its final advice to the Company through IUCN no later than Friday, 12 December 2014. This will take the form of a short WGWAP-15 report which, given the time constraints, will not have gone through the usual procedure of being sent to the Company for fact-checking. The WGWAP-15 report will be posted on the WGWAP website once the Panel has determined it to be final.

9.3 Noise impact assessment for ENL pier construction and associated traffic in 2014/15

This topic is discussed under Item 10.

9.4 Other noise-related issues

At NTF-5 and NTF-6 the task force considered a number of noise-related issues in addition to those associated with the proposed 2015 seismic survey. These included the boat experiment that is also discussed above under Item 7.2. The initial recommendation (WGWAP-13/006) for the experiment had been developed by the Joint Programme Task Force. At NTF-6, the Company stated that a different boat would be purchased (with two outboard motors) and used rather than the water-jet vessel. It also noted that it was likely that other boats would be operated in 2014 and that it would provide the overall vessel plan and associated noise signature information for discussion at NTF-7.

The NTF also discussed: the publication of the seismic guidelines paper (Nowacek *et al*., 2013) and the associated publicity organised by IUCN[16]; progress with the *Endangered Species Research* theme section on the 2010 seismic survey being edited by Reeves and Donovan; and the recordings taken at the platform in response to recommendations WGWAP-12/005 and 13/007. This last item was to be taken up again at NTF-7.

10 ENL PIER CONSTRUCTION PROJECT IN PILTUN LAGOON

The Panel has discussed this project in the past (see Item 3.2 in the WGWAP-13 report) and noted its concern about its potential impacts on the whales in their critical near-shore feeding habitat. ENL has periodically needed to deliver heavy cargo to its Odoptu site on the northern Piltun spit. Originally the company had proposed to build a pier outside but near the mouth of the lagoon, but Russian authorities denied the request and therefore the cargo was transported over land. The current proposal is to construct a temporary unloading facility (TUF) on the eastern shore of the lagoon. This would involve the transport of heavy cargo via ocean tug-barges to the lagoon entrance, then transfer of the barges to shallow-draft tug boats capable of navigating the shallow water in the mouth and inside the lagoon itself. Dredging of the sandbar at the lagoon entrance will likely be necessary to allow efficient and safe passage.

The Panel sees at least four primary concerns with this project's operations at the mouth of Piltun Lagoon, where the highest densities of feeding whales often occurs. These are: (i) vessel traffic and potential for ship strikes on whales at or near the lagoon mouth; (ii) noise created by the tug boats and other vessels and equipment that would operate in this area; (iii) disturbance of the lagoon ecosystem, e.g. from dumping more than 100,000 m^3 of sand into the lagoon during construction of the TUF and dredging the lagoon entrance to maintain adequate water depths for the tugs and barges, which in turn could compromise benthic communities immediately outside the lagoon that provide the whales with vital foraging habitat; and (iv) risk of barges and supply vessels running aground and *inter alia* spilling fuel or cargo in the area.

The Panel expressed its appreciation to Knizhnikov for providing an update on the environmental assessment and permitting process for the pier construction project (WGWAP-14/Inf.10). Although the Panel was not in a position to review and comment in detail on this major ENL project at this meeting, it is **extremely concerned** about the project's potential impacts on gray whales and their critical habitat around the mouth of Piltun Lagoon. The Panel's concern centres on the noise that will be generated by the project during its operational phase, which may be greater and affect a larger area than was outlined in the EIA, and on the risks to the whales' feeding habitat as mentioned above. The NTF will take up the noise-related concerns on this topic, including the information provided in document WGWAP-14/Inf.10; the Environmental Monitoring Task Force (EMTF) will address the sand/benthos and toxic spill issues (see Item 15, below); and the Panel as a whole will consider the issue of ship strikes in due course.

Among points raised at this meeting were the following:

- Optional approaches exist for accomplishing ENL's objectives without the need for any of the disruptive and risk-prone activities proposed to take place in and near the mouth of Piltun Lagoon (see WGWAP-14/Inf.10);
- Calculations by Vedenev of source levels for tug boats such as those to be used for this project suggest that underwater noise levels would far exceed what is 'safe' for whales and particularly for the mothers and calves that stay very close to shore and are mostly concentrated in the vicinity of the mouth of Piltun Lagoon;
- If the proposed project were to go ahead, at the very least mitigation measures to reduce sound transmission into sensitive areas near the lagoon mouth (e.g. bubble screens, cofferdams) should be considered;
- In keeping with the Panel's Terms of Reference (item 3(c)[17]) that require consideration of the potential impacts of oil and gas activities around Sakhalin Island not only on gray whales but also

[16] See media release in English and Russian at http://iucn.org/wgwap/?14297/Keeping-Whales-Safe-in-Sound
[17] http://cmsdata.iucn.org/downloads/tor_wgwap_2012.pdf

on ‘related habitats’, the Panel draws attention to the need, when evaluating this proposed project, to consider the implications for seals, seabirds, salmon and other biota near and inside the mouth of Piltun Lagoon.

In response to these points, Swindoll noted that ENL had followed the Russian regulatory process pertaining to this project, and believed that it had made its process transparent to all parties.

11 CUMULATIVE EFFECTS

11.1 General update

Nowacek presented an update on this issue, specifically referring to a recent publication on North Atlantic right whales (NARWs) (Schick et al. 2013). This paper used a Bayesian framework, incorporating data on sightings, health (e.g. body and skin condition) and the relative risk represented by a whale’s geographical location, to estimate the animal’s overall health and survival probability. It was shown how the results for individual whales could be extrapolated to draw conclusions about the health of the whole population.

The Panel believes that this approach is worth pursuing with Sakhalin gray whales as longitudinal data exist for individual whales and the health of the population is of paramount concern. For such an analysis, food availability and toxin exposure are additional factors that would be helpful to include. Though the population has been increasing (see Item 17), it is important to develop tools for assessing the health of the population as industrial activities continue to expand off Sakhalin and probably elsewhere in the animals’ range. Having indicators of changes in the health of individual whales as well as the population would be beneficial.

The Panel has set itself the task of investigating cumulative effects (see, for example, recommendation WGWAP-12/022) and while it recognizes that there are differences between Sakhalin gray whales and NARWs, it continues to believe that formal consultation with the developers of the approach used by Schick *et al*. (2013) is needed. Nowacek reported that additional development of the NARW model is planned to include acoustic threats and their potential to affect health, e.g. via the stress response, and such input could and should also be incorporated into a model for western gray whales. Therefore, given the internationally recognized importance of having means to quantify and assess cumulative effects, the Panel **recommends** that a one-day workshop be organized by IUCN (in close consultation with Nowacek and other Panel members) and held in conjunction with the spring 2015 WGWAP meeting, and that experts in this field (e.g. Schick or Clark, the lead and senior authors, respectively, of the NARW paper) be invited to participate. Since the IWC Scientific Committee is also working on the cumulative effects issue, the Panel **agreed** that the possibility of WGWAP-IWC collaboration on the planning and conduct of the recommended workshop should be explored.

With respect to this issue, the Panel **recalled** that Sakhalin Energy has subscribed to the International Finance Corporation’s (IFC’s) principles and has repeatedly requested help from the Panel in pursuing the subject of cumulative effects both through the NTF (where it is a standing item on the agenda) and at plenary meetings of the Panel (e.g. see Item 5 in the WGWAP-13 report).

11.2 IWC Arctic Workshop

11.2.1 Presentation

Donovan presented a summary of the relevant aspects of the Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic (IWC/65/Rep07) held in Anchorage in March 2014[18] and attended by some members of the Panel and Company and some Observers.

Changes in the Arctic due to climate change have led to, and are likely to lead to more, changes in the environment and in human activities. The objectives of the workshop were to: identify concerns of stakeholders; identify knowledge gaps, especially in order to be better able to prioritise threats and identify mitigation measures; obtain input from stakeholders on priorities; and assist in coordinating efforts across international boundaries and increasing international collaboration.

[18] https://archive.iwc.int/pages/search.php?search=%21collection103&k=

The Workshop included sessions on initial 'framing' of the issues followed by sessions on shipping; oil and gas development; and indigenous/subsistence concerns. The conclusions were developed in the context of two themes: (1) actual and potential threats facing cetaceans in the Arctic, knowledge gaps and how to fill them (including the need for collaborative studies); and (2) guidelines and principles for monitoring and mitigation and the development of a collaborative 'model' or approach for dealing with Arctic issues.

A number of conclusions and recommendations were made. Several focussed on the need for IWC collaboration with existing initiatives (e.g. Arctic Council, International Maritime Organization) to ensure that cetacean 'interests' are represented. Others concentrated on the need for increased communication, collaboration and data sharing among those involved in existing and emerging developments in the Arctic, especially the oil and gas, maritime shipping and fishing sectors. Considerable emphasis was placed on the involvement of multiple stakeholders – IGOs, IWC member states, national agencies, industry, subsistence communities and NGOs. It was noted that effective mitigation requires *inter alia* participation of all stakeholders from an early stage, including identifying whether/what problems exist; developing monitoring, mitigation and compliance measures; and reconciling competing priorities. The need to encourage stakeholder participation in all relevant IWC activities was stressed.

The need for common standards as well as monitoring and mitigation measures across the Arctic was emphasised by many stakeholders, including in relation to: environmental impact assessments for new activities (to include synergistic and cumulative aspects); mechanisms for ensuring effective mitigation and compliance; research programmes to assess threats, develop mitigation and monitor populations; resources and action plans to deal with catastrophic events such as oil spills; and agreements governing the conduct of potentially conflicting activities (e.g. resource development and subsistence hunting).

The Workshop also highlighted the value of specialist workshops on threats and common approaches to address them, such as: specification of data and analytical requirements for identifying high-risk areas for cetaceans at the correct geographical and temporal scales; evaluation of 'non-direct' threats including chemical pollution, noise and climate change; and methods to examine synergistic and cumulative effects.

Donovan noted that WGWAP had been frequently cited during the Workshop as representing a positive approach, and that considerable overlap existed between the topics discussed there and those discussed at the present and past WGWAP meetings, e.g. activity scheduling conflicts between stakeholders (Item 5.5), the need for common standards regarding monitoring and mitigation (Item 12) and the future of WGWAP (Item 19).

11.2.2 Panel conclusion

The Panel **welcomed** this information, noted its relevance to aspects of WGWAP work and looks forward to receiving updates on progress.

12 DRAFT GUIDELINES FOR MONITORING LARGE CETACEANS DURING INDUSTRIAL ACTIVITIES ON THE SHELF OF THE RUSSIAN FEDERATION FAR EASTERN SEAS (DEVELOPED UNDER UNDP/GEF PROJECT 'MAINSTREAMING BIODIVERSITY IN THE ENERGY SECTOR OF THE RUSSIAN FEDERATION')

12.1 Presentation

The Global Environmental Facility (GEF), under a project managed by UNDP, is funding the development of Guidelines for Monitoring Large Cetaceans during Industrial Activities on the Shelf of the Russian Federation Far Eastern Seas and Guidelines for Mitigation Measures for Large Cetaceans during Industrial Activities on the Shelf of the Russian Federation Far Eastern Seas (see Item 2.4 in the WGWAP-13 report). This work is part of a program called Mainstreaming Biodiversity in the Energy Sector of the Russian Federation and is intended as a way of implementing some of the recommendations made over the years by WGWAP and the IWG. It seeks to generalize and apply more widely the practices followed by Sakhalin Energy and ENL to monitor Sakhalin gray whales and mitigate the potential impacts of those companies' activities on gray whales and other biodiversity in the region.

A team of Russian experts led by Yablokov has been tasked to develop the aforementioned guidelines for gray whales and other cetaceans in the north-western Pacific Ocean. A first draft of the *monitoring* guidelines has been presented to the oil companies for review and comments. Once the comments have been considered and a revised draft is completed, the team will submit its final guidelines document(s) to UNDP (within the next six months according to Yablokov) for transmittal to state authorities responsible for protecting marine biological resources: Rosprirodnadzor, the Russian Federal Fisheries Agency (Rosrybolovstvo) and, possibly, the Russian Border Guard. The guidelines will then be presented to MNR for adoption and regulatory approval. The final status of the document(s) is not entirely clear at this point. That is, it is uncertain whether the guidelines will remain voluntary or become mandatory.

12.2 Discussion

During discussion it was noted that Sakhalin Energy and some other operators had not yet given their official response on the guidelines document (WGWAP-14/Inf.9) and Sakhalin Energy representatives expressed interest in receiving at least general advice from the Panel before doing so. Yablokov noted that the translated version of the monitoring guidelines document (WGWAP-14/Inf.9) had already been revised based on four official reviews received immediately prior to the St Petersburg conference (Item 4.3). Therefore it is important to note that the Panel's suggestions below refer to what is a 'work in progress'.

12.3 Panel conclusion

The Panel **expressed its appreciation** to both Yablokov and Vedenev for their hard work in bringing this important project of developing monitoring guidelines as far as they have. There is an obvious tension between the urgent need to develop and implement guidelines of this kind and the fact that it is an enormous and complex task (see detailed points below). This is especially the case because of the broad array of activities to which the guidelines are expected to apply, including not only the oil and gas industry but also commercial fishing, shipping, naval exercises, marine construction etc. In some cases, it is not clear that a 'one size fits all' approach makes sense although the principle of developing regulations that account for all potentially harmful activities, and not just oil and gas exploration/development activities, is a sound one.

Whilst good progress has been made, considerably more work will be needed before the task is complete and before such a document could be recommended as final.

Based on their reading of WGWAP-14/Inf. 9 and discussions during the meeting, Panel members offered the following thoughts on how the document (including in some instances both monitoring and mitigation) should be improved. In making these comments the Panel **emphasizes** the great value to conservation, as well as to industry and regulators, of developing such guidelines rather than simply continuing the present *ad hoc* approach.

12.3.1 Objectives of the document

The objective, scope and approach of the current draft document needs to be reviewed. It appears to be more prescriptive than is appropriate, given that the guidelines are intended to be applied to so many different activities, companies and contexts (see 'Objectives of monitoring' below) and that practical and analytical methods are constantly evolving. It would be preferable for the guidelines to be more generic (e.g. identify steps to be followed, principles to maintain, provide examples of and references to surveys, methods and analytical techniques that have been successfully used given particular objectives – see point (2) below). Establishing a process for regulatory and permitting authorities to obtain expert advice on a case by case basis would be valuable to consider.

12.3.2 Objectives of monitoring

(1) Clarity must be provided on the many potential objectives of the monitoring. It needs to be clear what types of change the monitoring is meant to detect and what types of activity are expected to be responsible for the change. The nature of the objectives will significantly affect the methods that should be used and the appropriate spatial and temporal scales. The species or population(s) of concern (e.g. range, seasonal occurrence, habitat preferences, conservation status etc.) also may help determine the objectives and methods.

(2) For example, monitoring for the possible effects of a single seismic survey lasting a few weeks or months and covering a discrete area (e.g. the 2010 Astokh 4-D survey see point (3) below) is quite different to monitoring the overall regional process of industrial development involving either or

both ‘special’ and ‘routine’ ongoing operations. The latter probably requires large-scale (population-level) whale surveys at regular intervals to monitor trends in abundance and/or distribution.

(3) The MMP developed by Sakhalin Energy in collaboration with the Panel for the single 2010 Astokh 4-D seismic survey appears to have been used as a model in some ways. It is important to emphasize that, as explained by Nowacek *et al.* (2013, p 375), seismic surveys and other noisy activities in different environments may require different types of observation platforms, equipment, methods etc. than applied at Sakhalin in 2010. The principles described in the ‘practical roadmap for planning, executing, evaluating and improving the design of a responsible seismic survey’ (Nowacek *et al*. 2013, Fig. 1, p 359) are the key (and see below).

(4) The current draft document assumes that *adequate* baseline data on species distributions, movements, population sizes, behaviour and population dynamics will be available in advance, i.e. before it is decided to allow an activity to proceed. This is the ideal but requires several years of good data which may not be realistic; an approach or approaches to deal with this must be provided.

12.3.3 Practical issues

(1) Rather than having the different activity agents, countries and operators carry out their individual MMPs and associated whale surveys independently, a preferable approach (e.g. for broader objectives such as monitoring population size and/or distribution, or for activities that occur simultaneously or consecutively) would be to have a common programme, or series of programmes, in which at least some aspects involve sharing or pooling of resources. The different projects could contribute equitably or proportionally, for example, to support dedicated whale population surveys using highly trained and experienced teams for field data collection and laboratory analyses. This might not only make implementation more efficient but also help ensure better quality and more uniformity of data and analysis.

(2) Full implementation of the draft guidelines would require large numbers of trained personnel at all levels: planning and MMP design, field operations, data management, real-time and post hoc analyses, interpretation of results for regulatory applications, etc. More thought needs to be given to how this manpower demand can be met.

(3) Full implementation will also mean that enormous volumes of data will be collected and analysed and that the data will be made publicly available. It is essential that the objectives of acquiring data are considered ahead of time and that procedures are put in place to ensure that appropriate analyses are conducted in a timely manner, reviewed by experts and the results used to guide policies. The document should provide advice on how this might be done.

(4) Related to this, the document should give consideration to the value of having a central archive of data collected in pursuance of the required monitoring. The curating authority should be empowered not only to receive data, but also to provide guidelines and protocols for collecting data and formats for submission. Over time, the project-specific data submissions would accumulate to form a usable baseline data repository.

(5) Specifically with regard to the acoustic elements of the MMP guidelines, it will be important to update specifications for threshold criteria. For example, frequency weighting of sound levels should be considered.

13 NON OIL-RELATED ISSUES

13.1 Salmon fishing and potential impacts on whales

13.1.1 Discussion

During the summer of 2013 Sakhalin Energy drew the Panel’s attention to the fact that salmon fishing was underway in the vicinity of the entrance to Piltun Lagoon. After a number of exchanges of information with Company contacts as well as colleagues from the Russia-US photo-id team, the Panel sent a letter to relevant Federal and Oblast authorities expressing its concern about the potential impacts of this activity on gray whales, specifically in regard to entanglement in rope and netting.[19] A response received from the Minister of Natural Resources and Environment of Sakhalin Oblast indicated that the fishery had been closed at Piltun, effective from 24 August 2013, and that future decisions concerning net deployment in areas used by gray whales off Sakhalin would take account of advice from the Sakhalin Research Institute of Fisheries and Oceanography (SakhNIRO) and the Sakhalin Basin Administration for Fisheries and Conservation of Bio Resources.[20] Other materials received in response to the Panel's statement of concern indicate that officials from the Federal Fisheries Agency do not share our concern that gray whales could become entangled in the types of gear used by Sakhalin salmon fishermen[21].

The salmon fishing issue was addressed subsequently in a paper by Weller et al. submitted to the IWC Scientific Committee in May 2014 (WGWAP-14/Inf.5). Weller et al. also noted that during the summer of 2013, a gray whale ('Ponchik') was observed and photographed off Sakhalin with a rope entanglement on its peduncle which the authors concluded may have been the result of interaction with the salmon fishery.

Although the Panel had been led to believe that salmon fishing at Piltun would not be continued in 2014, reports were received last summer (2014) indicating that fishermen at Piltun had expressed interest in continuing and that some fishing possibly had occurred.

Burdin gave a presentation at this meeting in which he summarized the Weller et al. paper and provided the welcome news that 'Ponchik' had been observed again in July 2014 with no rope on his peduncle and no evident serious injury. It was therefore inferred that this entanglement had been resolved without human intervention.

Lisitsyn (Sakhalin Environment Watch) provided additional information on the fishing situation in 2014. The number and locations of sites where salmon nets can be set are determined by Oblast authorities. In 2009 and 2010, one site was approved between Piltun and Chaivo and in 2011, none was approved. Those were known as 'lean' years for salmon. However, in 2013 and 2014 (predicted to be 'fat' years), 14 and 13 sites were approved, respectively. Only one net was actually deployed in 2014 according to Lisitsyn. He added that in 2014 fishermen told his team that a whale (reportedly > 10 m long) had become entangled and was dead when found (date and location unspecified). The net was repaired and redeployed to fish. No further information on this event was available to the Panel but it **requests** that IUCN follow this up with Sakhalin Environment Watch to see if more details can be obtained.

Nevenchina (Sakhalin Oblast Ministry of Environment Protection and Natural Resources) referred to the above-mentioned correspondence between the Panel and government officials and requested further clarification concerning the issue of relative risks to whales from different types of 'set net'. It was noted that gray whales are known to die in 'set nets' in Japan but it is important that an authoritative analysis is provided to Russian authorities explaining differences in gear types and terminology, and summarizing the state of knowledge concerning relative risks of trapping or entangling large whales.

13.1.2 Panel conclusion

It appears that salmon fishing effort at Sakhalin will continue to be determined primarily on the basis of strength of the salmon runs, with no specific regard for risks to gray whales. The 2015 season is predicted to be a 'fat' year for salmon at Sakhalin according to Lisitsyn. Also according to Lisitsyn, there is constant pressure to expand fisheries in the region and to exploit the fish resources to the fullest. It is therefore reasonable to expect the potential risk to gray whales from entanglement in net fisheries off Sakhalin to remain.

The Panel **reiterates** that throughout the world, wherever cetaceans and fishing nets or lines occur together, entanglements occur which can result in the animals' injury or death. The Panel also **reiterates its concern** over the present situation. The issue will be kept on its agenda and the 2015 workplan will include the commissioning of an expert analysis on the nature and degree of risk to gray whales from salmon fishing at Piltun.

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[19] https://cmsdata.iucn.org/downloads/wgwap_soc_re_salmon_fishing___letters_to_russian_authorities_07082013.pdf.
[20] https://cmsdata.iucn.org/downloads/sakhalin_mnr_response_re_salmon_fisheries_08_10_2013.pdf
[21] https://cmsdata.iucn.org/downloads/sakhniro_response_re_salmon_fisheries_26_08_13.pdf)

13.2 Disentanglement training

13.2.1 Presentation

Donovan reported on progress made in an IWC context with respect to disentanglement training in Russia. The IWC has a disentanglement expert on its staff as well as a Whale Entanglement Response Network and a set of guidelines and principles.[22] The primary message, despite this effort, is that 'disentanglement' is not the solution of the problem, 'prevention' is.

Discussions took place at the recent IWC Biennial Meeting in Slovenia among the Russian Commissioner to the IWC, the IWC Secretariat and representatives from IFAW (who may be contributing funds for the exercise). The IWC has guidelines for training workshops and that specify the skills needed by those who participate in disentanglement efforts. The discussions are ongoing with regard to where a Workshop might take place (inside or outside Russia), who will participate etc. It is hoped that the training can be arranged within 2015.

13.2.2 Panel conclusion

The Panel **welcomed** this news, noting the threat of entanglement to gray whales in Russia and throughout their range (see Item 13.1) and **encouraged** efforts to ensure that training occurs.

13.3 Cruise ship visits

At this meeting, the issue of cruise ship visits to the Piltun feeding area was brought to the Panel's attention for the first time. Burdin summarized reports of tourist activity observed at Piltun in 2014. A large (91 m) ship, anchored within approximately a kilometer of shore near the lagoon entrance, launched eight or nine inflatable boats with tourists on-board. These boats were seen to approach groups of whales, including mother/calf pairs, and remained clustered, with the people on several boats often observing the same group of whales at the same time.

During the discussion it became clear that visitation by cruise ships is not new at Piltun and that the opportunity to observe gray whales on their feeding ground is one of the features used by tour companies to promote high-end cruises to the region. It also became clear that no standard protocols are being applied to prevent or minimize disturbance to the whales from these close approaches.

It was generally agreed that it is important for this apparent gap in oversight or enforcement by the appropriate Russian authorities to be addressed somehow. However, with the information that was available at this meeting, the Panel was not in a position to comment further. The IWC has long been working to develop guidelines for responsible whale watching and these are readily available on its website along with a compendium of whale watching regulations from around the world[23]. The Panel **requests** that IUCN compile information on the tour companies that are known to advertise or offer cruises to Piltun and provide this to the Panel as soon as possible but no later than the next full WGWAP meeting. Once it has a better idea of the nature and scale of cruise ship visitation and understands how best to communicate with the operators and the relevant authorities (e.g. border guards), the Panel will consider an appropriate strategy for trying to improve the situation.

14 PHOTO-ID AND GENETICS

14.1 Russia-US programme results from 2013-2014; plans for 2015

Burdin provided an update on the Russia-US team's photo-ID and biopsy work at Piltun, which began in 1994. The team's catalogue contains 223 unique individuals, current through 2013. Twelve individuals, including nine calves, were added to the catalogue in 2014. Seven of the females observed in 2014 were known to have had calves in previous years and two were observed with calves for the first time. The total number of known reproductive females identified since 1995 is 33. One individual observed for the first time with a calf in 2014 is known to be 10 years old, which adds to what is known concerning age at first reproduction in this population.

[22] http://iwc.int/entanglement
[23] http://iwc.int/whalewatching

The large data set which contains more than 5,100 observations of identifiable individuals, spanning 17 field seasons, has allowed analyses of association patterns and regularity of occurrence (residency) of the whales that feed off Sakhalin. These analyses identified multiple clusters of individuals with relatively high association indices and similar residency patterns, and the results were integrated with what is known (through both genetics and photo-identification) concerning relatedness of individuals within each cluster. The Panel welcomed the presentation and thanked Burdin for bringing this information to the meeting. He was encouraged to continue to refine the analyses and ensure that maps of sightings are properly corrected for effort. Also the Panel was intrigued by the preliminary genetic findings on relatedness of individuals and looked forward to the publication of final results.

When asked about the Russia-US team's plans for 2015, Burdin indicated that he expects to receive sufficient funding from IFAW to allow the team to be in the field again in 2015 during July and August, with effort similar to that in 2013 and 2014.

14.2 Sakhalin and Kamchatka catalogue comparisons

The last cross-comparison of catalogues was presented at WGWAP-13 using data through 2011. The Russia-US and IBM Sakhalin catalogues each contained 205 whales of which 187 were common to both, making a total of 223 distinct individuals, not all of which were thought to still be alive. Of the 150 whales in the Kamchatka catalogue, 85 had been matched with the IBM Sakhalin catalogue. A further 1 whale had been matched between the Kamchatka and Russia-US catalogues (in addition to those whales common to the IBM and Russia-US catalogue that matched individuals in the Kamchatka catalogue).

In 2012 and 2013, 21 new whales were added to the Russia-US catalogue, 23 new whales to the IBM Sakhalin catalogue and 7 new whales to the Kamchatka catalogue. Noting the value of the cross-comparison, the Panel **requests** the Russia-US and IBM teams to conduct a cross-comparison exercise for the Sakhalin data through to 2013, to be organized by IUCN using the same procedure as in previous years. Berzina should contact the two teams about this shortly. The Panel greatly appreciates the co-operation of the two teams in conducting the cross-comparison exercise in past years.

14.3 Cross-matching with other areas

As reported to the April 2014 IWC Scientific Committee workshop (IWC 2014; see Item17.1), a total of 29 Sakhalin whales have been matched to whales observed in other areas (excluding Kamchatka), in addition to the three satellite-tagged Sakhalin whales that were tracked to the eastern North Pacific. The 29 matches included 26 photo-id matches and 3 genetic-only matches: 19 to Mexico, 4 to California, 5 to the Pacific Northwest (mainly the Vancouver Island region in Canada) and 1 to a whale found dead in Japan. The list is not necessarily complete and a more thorough and extensive comparison of catalogues may yield further matches.

14.4 Joint Programme photo-ID and biopsy plans for 2015 season

Sakhalin Energy reported that the Joint Programme's plans for photo-ID and biopsy work in the 2015 season had not yet been finalized.

14.5 Panel conclusions and recommendations

As noted under Item 7, the Panel remains concerned about potentially redundant disturbance to whales from the three photo-id teams (two from the Joint Programme and one from the Russia-US project). The Panel **recommends** that every effort be made to exchange data from biopsies gathered to date and the co-ordination of field work to avoid sampling the same whales multiple times. To assist in this process, the Panel believes there is merit in reconstituting the Photo-ID (and Biopsy) Task Force to consider in detail the various issues that have arisen since that task force's last report in 2009.[24]

Although it was not possible in the time available at this meeting to prepare detailed terms of reference for a reconstituted Photo-ID/Biopsy Task Force, the Panel intends to do so after the WGWAP-14 report is finalized and will include a task force meeting (preferably in conjunction with a Panel meeting) in its 2015 workplan.

[24] http://cmsdata.iucn.org/downloads/wgwap_photo_id_tf_report_3.pdf

15 ENVIRONMENTAL MONITORING

In VanBlaricom's absence at this meeting, Reeves and Dicks kept him informed of discussions via e-mail and he responded with relevant comments that were passed along to the meeting via Dicks and Reeves.

Regarding Item 6.2 (above), VanBlaricom noted that comprehensive monitoring of the Piltun area ecosystem (including benthic biota and hydrology) is fundamental to understanding the character and status of the prey and other resources upon which the whales depend. The whales likely would not come to this area during the summer and autumn seasons if it were not for the dense prey populations that have been so carefully documented by Fadeev and his colleagues. Yet even though the data on benthic communities in the region have been of high quality, comprehensive, detailed, consistent in space and time, reproducible, and effectively communicated to the Panel, we still don't fully understand why the whales concentrate there as they do. It is the Panel's position that the benthic sampling program should continue, without compromising the standards established to date for sampling design and methods, sampling frequency and spatial distribution, and analytical methods. Continuity in a time series of data is essential to the interpretation of causes of any observed variations in the distribution, behaviour, ecology or population dynamics of Sakhalin gray whales. The Panel therefore **recommends** that all possible efforts be made to maintain the long-term program of benthic monitoring on the north-eastern Sakhalin shelf in areas used by gray whales for foraging. The Panel stands ready to assist Sakhalin Energy and other interested parties in maintaining and managing the time series.

The Panel was pleased to learn that sampling conducted in 2013 and 2014 appears to have been consistent with previous years and agrees that a combined 2013-2014 data release next year makes sense under the circumstances. In case unexpected anomalies become evident in analysis of the 2013 data (for which the report is expected to be available by the end of 2014), the Panel would like to receive from Sakhalin Energy (via IUCN) either a preliminary summary or the full report as soon as available so that the Panel's review could begin well ahead of its next meeting.

VanBlaricom observed from his reading of document WGWAP-14/8 that there was new information on gray whale foraging based on fatty acid biomarker, fatty acid signature and stable isotope analyses. Although the report concludes that such data are difficult to interpret, in his view the preliminary analyses support the Panel's longstanding position that the question of a potential contribution (subsidy) from the lagoon to the Sakhalin shelf and near-shore whale feeding area remains open. The data and text in WGWAP-14/8 suggest an important role of Piltun Lagoon in supplying sediments of characteristic grain size to the benthic habitat of the shelf outside but near the lagoon entrance. It is reasonable to suppose, based on the sediment data, that detrital organic material associated with the sediments benefits the productivity of gray whale prey populations in some way. VanBlaricom concluded from his diving observations off the lagoon mouth a few years ago that enormous loads of suspended sediment were being transported from the lagoon and into near-shore waters. Also, the colour of the water indicated high concentrations of very fine sediments and detrital matter.

The Panel has a continuing interest in reviewing the synthesis work reportedly conducted by Fadeev before his death (see Item 6.2 in the WGWAP-13 report for details) and intends to pursue further its own analysis of the mechanisms that drive productivity in the Piltun gray whale feeding 'hotspot'. The question remains: What is making this particular area so productive and attractive to the whales, and especially to mothers and calves during the months immediately before and after weaning? To address this question, which the Panel believes should be of central importance to the companies operating in the region as well as the authorities responsible for preserving the ecological health of the region, the Panel intends to re-activate the EMTF (led by VanBlaricom) in 2015 under terms of reference to be developed after the finalization of this report.

At WGWAP-13 (Item 8.3 in the report of that meeting) the Panel repeated its interest in seeing the Company add analyses of Polychlorinated Biphenyls (PCBs) and Polybrominated Diphenyl Ethers (PBDEs) to its environmental monitoring effort, citing an earlier recommendation to that effect (recommendation WGWAP-10/011) and acknowledging the Company's continuing view that such analyses are not warranted. Informal discussions at this meeting failed to resolve the issue. Sakhalin Energy reported that such sampling and analyses had not been included in either the 2013 or 2014 programme. As mentioned previously by the Panel, industrialization often results in elevated residues of PCBs and PBDEs in coastal marine ecosystems and PCB and PBDE environmental residues are highly persistent, lipophilic, and typically concentrate with upward transmission through food webs. Thus, knowledge of residues in sediments, in gray whale prey organisms, and indeed in the whales' tissues, is important for assessing risks in a conservation context. To minimize costs, a sampling interval of more than one year could easily be justified. Sakhalin Energy agreed to review its position and report back to the Panel at the next meeting.

16 OIL SPILL PLANNING AND RESPONSE

16.1 Report on 2013 site visit

16.1.1 Presentation

Dicks visited Sakhalin in July 2013 in order to attend a Tier 3 Oil Spill Response (OSR) exercise. He took the opportunity during that visit to obtain and review OSR-related documentation that had become available since WGWAP-13, which he had not been able to attend. Lender representatives from Environ/PCCI and an international OSR equipment stockpile specialist attended the July 2013 exercise along with Dicks.

The Tier 3 exercise was based on a subsea pipeline spill of 5,000 tonnes of Vityaz Crude, close to the Pilutn-Astokh A platform (Molikpak). During the exercise three offshore response vessels deployed booms and skimmers at the spill site, a team of 27 responders with boats, booms and skimmers were deployed to the Piltun Lagoon entrance to implement protection measures and recover oil, and a further 5 'simulated' response vessels were deployed to spray dispersants at sea. At the start of the exercise Sakhalin Energy established two groups in Yuzhno, an Emergency Coordination Team (ECT) to oversee spill response and a Crisis Management Team (CMT) to look after broader management issues, coordinate with government agencies and deal with the media.

Overall, the two teams operated well. Without going into detail (see document WGWAP-14/29), the exercise was well organised and well executed. The deployment of protection and clean up resources at Piltun Lagoon steered clear of setting out unrealistic defensive booming as had been proposed in earlier Oil Spill Response Plans (OSRPs), and a realistic boom deployment for oil recovery, related to currents and weather conditions, was successfully set up.

It was important to see participation by regulatory agencies: Agency for Support and Coordination of Russian Participation in International Humanitarian Operations (EMERCOM) of the Ministry of Civil Defense and Emergencies of the Russian Federation (onshore response) and the State Marine Pollution Control, Rescue and Salvage Administration (MPCRSA) of the Ministry of Transport the Russian Federation (at sea response) in the ECT, as well as support and cooperation from ENL.

A debriefing after the drill provided an opportunity to review problems and discuss solutions. A number of relatively minor criticisms were expressed (e.g. over-optimism regarding oil recovery, problems with deployment of an inappropriate skimmer at sea, minor niggles with information exchange in the ECT and CMT). A particular concern was whether the command centre facilities were adequate to cope with the likely prolonged nature of a large spill. The simulated activation of international OSR resources from Singapore was a new item for a drill. A particular success of the exercise was the rapidly organised official permitting for dispersant use, which is understood to be a first for Sakhalin Energy. The exercise dealt well with temporary storage for oily waste at Piltun and it also transpired that oil which was recovered at sea could be transferred to storage on the Molikpak. However, removal of wastes from the beach to final disposal was not tested and this aspect of response was an opportunity missed. In similar fashion, although spraying of dispersant by helicopters under a sharing agreement with ENL was simulated, actual deployment of these resources was not tested.

16.1.2 Panel conclusions and recommendations

As a result of conducting the Tier 3 exercise, recommendation WGWAP12/011 has been fulfilled.

The Panel **recommends** that transfer of oily beach wastes to final disposal and helicopter dispersant spraying (using water) are tested in drills in 2015.

Several participants expressed the view dispersants should not be used under any circumstances. With respect to the issues of safety and effectiveness, the Panel noted that the key factor is that dispersants should be used only in deep water (more than 20 m) and where there is adequate mixing energy (wind and waves) to achieve the expected degree of dispersion and dilution. In the context of gray whales, the Panel has made it clear in earlier reports (WGWAP-3 and WGWAP-12) that dispersants should **not** be used in or adjacent to feeding areas because it is important to prevent whales from coming into contact with dispersed oil either directly or indirectly (via their prey). It was noted that the use of dispersants is permitted in Russia and if applied correctly, they can be effective.

16.2 Reviews of OSRPs and other SEIC documents

Sakhalin Energy provided the following documents for review at WGWAP-14:

- Oil spill exercise reports (31 in total) for drills conducted in 2012, 2013 and the early part of 2014;
- OSRPs for Piltun-Astokh Offshore and Lunskoye Offshore;
- Oil in Ice Manual (this was compared with reports of spill response in the Arctic prepared by the International Tanker Owners Pollution Federation (ITOPF).

The review of oil spill exercise reports is a regular feature of Panel meetings. As noted in previous Panel reports, the annual Company programme of drills is comprehensive, ranging from small desk-top drills to major equipment deployments at sea and on shore. The reports include critiques of what went well and what did not and these comments are used to improve spill response and equipment handling. One of the reports described an at-sea response exercise in April 2014 that was conducted in winter ice conditions. Ice-breaking standby vessels, which carry OSR equipment, were used to create leads in the ice and deploy brush skimmers. This is the first report of such an exercise that the Panel has seen, although exercises in ice have been conducted previously. It is encouraging that the Company tests its ice response resources in severe winter conditions. As noted above, the Panel has recommended that exercises that include helicopter dispersant spraying and final disposal of oily wastes are included in the 2015 programme.

Given the volume of the OSRP documentation (approx. 700 pages in each plan) and time constraints, only the Piltun-Astokh Offshore OSRP was reviewed in preparation for WGWAP-14. It was compared with an earlier version which had been reviewed in 2009. With 200 pages of procedure backed up by 21 appendices, the plan is comprehensive, but is far too detailed to be a functional and easy-to-use operational plan. There is a considerable amount of information on environmental considerations (including gray whales) in the plan, but it is not set out in simple terms, such as those the Panel employs in its spill-related recommendations. Nevertheless, Dicks's attendance at OSR exercises and visits to the OSR equipment stockpiles have revealed that the OSR teams are well acquainted with gray whale sensitivities and appropriate clean-up responses. One notable improvement to the OSRP is the removal of unrealistic defensive boom deployments in and around the lagoon entrances. These have been replaced with realistic strategies based on the findings of oil spill exercises at Piltun.

A number of additional OSR guidance handbooks are listed in the appendices, and these have been provided to the Panel (during the meeting) for future consideration. For completeness, Sakhalin Energy also provided the OSRP for the Liquid Natural Gas (LNG) Terminal at Prigorodnoye for review, as it had been included in the 2009 review.

Oil spill response in ice was also briefly considered. Technical summaries of Arctic response, prepared by ITOPF and available at its website[25], are simple and easy to understand, as well as realistic in terms of appraising the difficulties and limitations of Arctic spill response. The latest version of Sakhalin Energy's Oil in Ice Manual (version 3; available at the Sakhalin Energy website[26]) is consistent with the ITOPF studies, and as such could now be considered to reflect international good practice. Comments provided by the Panel regarding an earlier version have also been incorporated in version 3. The improvements to the manual are, unfortunately, unlikely to make oil spill response in difficult winter conditions any easier.

16.3 Discussion and plans for further work

The Panel's reviews of OSR equipment began when Sakhalin Energy's stockpiles were established in 2006/2007, and as equipment begins to age, operating companies usually implement a rolling programme of replacement and updating. The Panel **requests** that the Company provides an update on its replacement programme at the next meeting.

[25] http://www.itopf.com/knowledge-resources/documents-guides/arctic-cold-climates/

[26] http://www.sakhalinenergy.com/en/library/folder.wbp?id=d549dc6e-b573-4fd5-9d83-f083f7c4b04e

17 POPULATION ASSESSMENT

17.1 IWC rangewide workshop on gray whales

17.1.1 Presentation

Donovan summarised the report of an IWC workshop held in April 2014 which began the process of a rangewide review of the population structure and status of gray whales in the North Pacific Ocean (SC/65b/Rep08). The Workshop objectives were to:

(1) review available information (especially new telemetry, genetics and photo-ID data) and reappraise the population structure and movements of gray whales with a focus on examining status;
(2) develop a modelling framework to better assess the status of gray whales and the potential impact of human activities and possible changes in regime or climate in the light of the stock structure hypotheses;
(3) provide information for updating the IUCN/IWC Conservation Management Plan for western gray whales and develop a mechanism for updating the plan.

Considerable effort during the Workshop was devoted to the development of plausible stock structure hypotheses for the whole North Pacific based on a through compilation and review of the available evidence, including photo-ID, genetic, sightings, catch, life history and satellite telemetry data. An important recommendation was for an analysis of all available data to place bounds on the proportion of whales that move from Sakhalin to the eastern North Pacific and *vice-versa*.

The Workshop recommended three hypotheses to be considered the highest priorities for inclusion in the initial modelling framework. An example of one of these is shown in Fig. 7.

The development of a population dynamics model for North Pacific gray whales rangewide will necessarily be an iterative process. The first step of developing an age- and sex-aggregated model which includes multiple stocks (two or three depending on the hypothesis under consideration) would be taken primarily to understand whether sufficient data are available to justify the various stock structure hypotheses and whether parameterization of the model based on the associated hypotheses can provide reasonable fits to the data. The first-step model will explore assumptions regarding the dynamics prior to the 1990s of the whales that feed off Sakhalin.

The results of the initial model fits will be used to refine the stock structure hypotheses, including rejection of some hypotheses which are found to be clearly inconsistent with the available data. The second step is to extend the model to include age and sex structure and to include data on mixing proportions based on photo-identification, telemetry and genetics data. Subsequent steps may be required depending on the degree to which it proves possible to mimic the available data, and to explore the potential impacts of future catches and other human activities. A second workshop will be held in March 2014 which will focus on examining and refining the modelling effort.

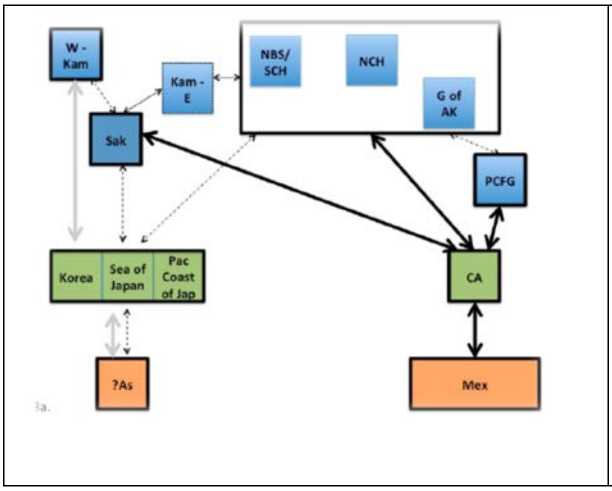

Fig. 7. In this example hypothesis, there are two breeding stocks (Asia and Mexico), although the Asian stock may have been extirpated.

Whales show matrilineal fidelity to feeding grounds, and the Mexico stock includes three feeding sub-stocks:

(1) Pacific Coast Feeding Group (PCFG),
(2) Northern Bering Sea (NBS)/Southern Chukchi (SCH)-Northern Chukchi-Gulf of Alaska (‘Northern’)
(3) and Sakhalin.

In addition to the modelling work, the Workshop made several important research recommendations including: the development of a 'Single Nucleotide Polymorphism (SNP) panel' to allow integration of analyses/data between labs and over time and to allow low-quality samples (bone/baleen) to be used; additional sampling (biopsy/photo-ID) in key areas, e.g. northern Chukchi Sea, to see if additional structure exists in northern feeding areas; additional telemetry work in key areas, especially Sakhalin, Kamchatka and Chukotka; and examination of the existing acoustic data (e.g. in the Aleutians) for gray whale presence in various locations and at various times.

17.1.2 Panel conclusion

The Panel welcomed news of this important workshop and ongoing work which is directly relevant to the WGWAP and to the IUCN/IWC CMP.

17.2 Update on population assessment including resolution of issues identified at WGWAP-13

17.2.1 Presentation of the most recent assessment

An updated population assessment using only the Russia-US team's data was presented in document WGWAP-14/34 (public); a population assessment using the combined data from the Russia-US team, the IBM team at Sakhalin and the Kamchatka photo-id research effort was presented in document WGWAP-14/35 (confidential).

Since the assessment presented at WGWAP-13, two additional years of data have been processed by the Russia-US and IBM teams. Therefore, for these new assessments, Russia-US data from 1994-2013 and IBM and Kamchatka data from 2002-2011 were available.

The updated assessment using only the Russia-US data (WGWAP-14/34) applied essentially the same model as used in previous years, and showed that the Sakhalin population is continuing to increase. An estimated 40 mature females were alive in 2013 and this number was increasing at a rate of 1-2 animals per year.

At WGWAP-13, problems associated with combining the three data sets were encountered and these could not be resolved at that time. As noted in document WGWAP-14/35, the three data sets show marked differences in composition, with subadult animals (aged 1-7) being underrepresented in the two Sakhalin data sets relative to the Kamchatka data set, while mothers with calves are over-represented, particularly in the Russia-US data set. To accommodate these features, the assessment model was developed further in document WGWAP-14/35 to allow for different stage-specific availability factors in the three data sets.

Using all three data sets, the best-fitting model (on the AIC criterion) included inter-annual variability in the calving rate, but not in the calf survival rate, and individual variability in both calving rate and sampling availability.

The assessment using all three data sets shows similar trends to that using only the Russia-US data set, and gives a similar estimate for the mature female population size in 2013 (38) but a higher estimate of the aged 1+ population, due to larger numbers of subadult animals estimated to be alive in recent years and a correspondingly higher estimated calf survival rate (0.80 as compared with 0.70 for the Russia-US data set alone).

In response to a question from the Company, Cooke prepared an addendum to WGWAP-14/35 after the meeting to show the results of fitting to the IBM data alone. To fit the IBM data alone, it was necessary to make the following additional assumptions: (i) the sex determinations from biopsies of the Russia-US team were used for whales seen by both teams; (ii) the age-at-maturity profile from the fit to the full data was used; and (iii) calf designations by the IBM team were treated as 'possible calves' for years prior to 2006, for the reasons explained in the last Photo-ID Task Force report[27]; also see WGWAP-9 meeting report). With these assumptions, results from fitting the IBM data alone are broadly similar to those from fitting the Russia-US data alone or the combined data set (Table 1 and Fig. 8).

In concluding his presentation at the meeting, Cooke noted that Kamchatka data on subadult whales showed that calves not seen at Sakhalin for several years following their first year should not be presumed dead, because at least some of them are seen at Kamchatka as subadults. Whether or not these individuals will

[27] http://cmsdata.iucn.org/downloads/wgwap_photo_id_tf_report_3.pdf

return to the Sakhalin population as adults can only be ascertained after 10 years or so of further data become available. Therefore, apparent calf survival rates from Sakhalin data alone are probably not a reliable measure of population health. The calving rate (number of calves brought to Sakhalin in a given year, relative to number of females 'ready' to calve in that year) may be a better measure because it shows significant inter-annual variability and changes are potentially detectable within 2-3 years.

		Data set	
Parameter/quantity	**RUS+IBM+KAM**	**RUS**	**IBM**
Non-calf annual survival rate	0.979 (0.004)	0.979 (0.004)	0.987 (0.006)
Median calf annual survival rate	0.80 (0.04)	0.70 (0.05)	0.58 (0.06)
Mean age at 1st parturition (yr)	10.5 (0.5)	10.1 (0.5)	10.1 (0.5)
Sex ratio (female proportion)	0.39 (0.04)	0.40 (0.04)	0.41 (0.04)
Mature female population in 2013	38 (2)	40 (2)	37 (2)
Mean annual growth rate 2003-13 of mature female population (% p.a.)	2.7 (0.4)	3.7 (0.5)	5.0 (1.1)
Aged 1+ population in 2013	176 (3)	155 (4)	165 (6)
Mean annual growth rate 2003-13 of aged 1+ population (% p.a.)	4.6 (0.2)	4.0 (0.2)	3.5 (0.5)

Table 1. Estimates (SE in parentheses) of selected population parameters from fitting to: (i) the combined data set; (ii) Russia-US data only; and (iii) IBM data only (subject to the above qualifications).

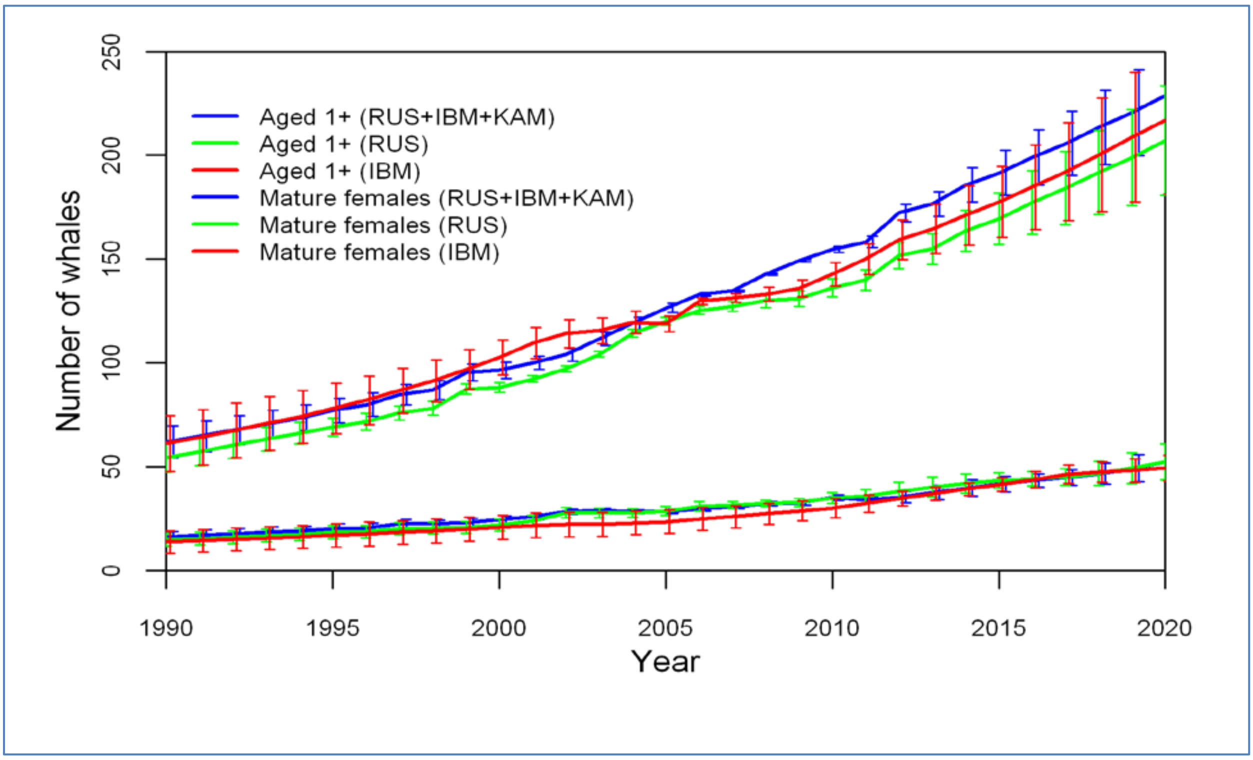

Fig. 8. Estimated population trajectories for: (i) mature females and (ii) all animals aged 1 and above (excluding calves).

17.2.2 Possible assessment by the Joint Program

Vladimirov confirmed that under the Joint Programme, Sakhalin Energy and ENL are considering the development of their own population assessment, so that they would not be reliant on the Panel's assessments, but that this work has not yet progressed. Following WGWAP-13, the possibility that the companies would commission an independent review of Cooke's population assessment had been considered in teleconferences involving IUCN, Panel members and the Company. However, at this meeting Vladimirov indicated that, after considering the results of the previous independent review (document WGWAP-10/9), the companies had concluded that a further review was not warranted.

17.2.3 Panel discussion and conclusions

As of 2013, Sakhalin Energy ceased supporting dedicated photo-id work in Kamchatka because of a directive from Russian authorities to conduct research only within the area of its concessions. In light of the latest assessment results, the Panel **reiterates** its view that a resumption photo-id work in Kamchatka is desirable and directly relevant to assessing the status of whales feeding off Sakhalin if an alternative means of support can be found.

The Panel **stresses** that regular updates of the population assessment are mandated in its Terms of Reference. These assessments are likely to remain uncontroversial so long as the population continues to increase, but it is important that they be continued so that any unexpected downturn that does occur will be detected. In the Panel's view, the availability of industry-independent population assessments is an important element of the process.

The most recent assessment shows that the Sakhalin population of gray whales has continued to increase over the last 20 years and, therefore, that the cumulative population-level impact of industrial activities and other anthropogenic factors over this period has been sustainable (although it is possible that the population would have grown faster in the absence of such impact). While this result is encouraging, a precautionary approach to the management of future levels of industrial and other activity in the Sakhalin region is still warranted. The magnitude of activities that potentially cause acoustic and other disturbance to the whales and their feeding habitat is likely to be greater in future years than it has been to date.

The Panel also **emphasises** that population assessments do not address the issue of stock structure (see Item 17.1).

18 SATELLITE TAGGING

18.1 Review of new information

18.1.1 Presentation

Mate gave a presentation summarizing the movements of gray whales tagged with satellite telemetry devices off Sakhalin in 2010 and 2011. Some of the results had been provided to the Panel previously. Mate also described and showed slides of a new device that he proposes could be valuable for use on gray whales at Sakhalin. The new device introduced is what he calls an 'Advanced Dive Behaviour' (ADB) tag, which combines location information with time-depth and acceleration monitoring. He has trialled this tag on other species and is eager to apply it to gray whales. In his view, the ADB tag is potentially useful to consider as an alternative or complement to other multi-sensor tags as it stays attached longer (weeks/months as opposed to days for DTAGs) and records aspects of behaviour (but not sound, which is a strength of the DTAGs). The ADB tag is attached by implantation whereas the DTAG is attached by suction cup. Both types of tag require retrieval to secure much of the archived (non-location) data.

A striking feature of the new information provided by Mate is that at least some of the gray whales off Sakhalin occupy exceptionally small individual home ranges (defined in his study as the smallest polygon that contains 95% of a whale's locations). In fact, not only did the calculated home ranges of the Sakhalin whales prove to be much smaller than those of female gray whales with calves that were tracked by Mate in an earlier study in the eastern North Pacific, but they also appear to be among the smallest of any large whales studied to date. Mate suggested that the very small home ranges observed in his study confirm and corroborate the high productivity of the Piltun feeding area as documented in the benthic sampling work of the Joint Programme led by Fadeev (see Item 15). Mate also speculated that this could be interpreted to mean there is potential for a considerable increase in the number of whales using the Sakhalin Shelf as a summer/autumn feeding area. Finally, he drew attention to his findings from tagging gray whales in the eastern Pacific (specifically whales that are part of the Pacific Coast Feeding Group) that departure dates from feeding areas to the wintering grounds in Mexico are individually variable, and he suspects the same is true of Sakhalin whales. That is, different individuals or small groups (possibly in part according to life stage and body condition) likely depart for the wintering grounds at different times.

18.1.2 Panel discussion

The Panel was pleased to receive this new information and thanked Mate for providing it.

During a short discussion following Mate's presentation, there was some consideration of the suitability of ADB tags for use during a seismic survey. If the primary purpose of tagging at that time would be to obtain good data on whale behaviour under measured received levels at specific whale locations, then unlike D-tags, ADB tags would not provide such levels. Data from ADB tags would have to be paired with modelled received levels, which are labour intensive to obtain and less reliable than measured levels. It was noted that the 1 Hertz sampling rate of the ADB tag may not be high enough to characterize what the whales are doing underwater. As is the case for the tags deployed previously on gray whales off Sakhalin, there are potential health impacts to consider with any implanted tag, especially if animals are tagged early when the seismic survey occurs since animals are more likely to be in a poorer nutritional state.

However, it was also recognised that in the context of a seismic survey, there is value in having the longer data series on individual whale movements provided by ADB tags than the short time frame offered by DTAGs, given the need for information before, during and after such surveys.

In conclusion, the Panel **emphasises** that the starting point of any study should be determining its objective(s). Once that is clear, the most appropriate tool or tools could then be selected. The tool or tools must fit the objective(s), and therefore careful deliberation is needed before making a decision on whether tagging of any form would be beneficial.

18.2 Plans for future tagging

Sakhalin Energy and ENL reported that they were considering a tagging program of some kind at Sakhalin in 2015 but that no decision had yet been taken on which type of tag(s) to use, number of tags to be deployed or other details. After some discussion on the pros and cons of the various options, the Panel was not in a position to provide clear advice although it emphasized that the NTF had already spent considerable time developing a proposal for D-tag deployment in conjunction with the next Sakhalin Energy seismic survey and this topic was again on the agenda for NTF-7. Therefore the Panel **encourages** both companies to take advantage of the advice provided in the NTF and IWC Scientific Committee reports as they continue their deliberations on whether to mount a tagging program in 2015 and what type(s) of tag to deploy if they decide to proceed. Further, it is important that due consideration be given to the potential cumulative or aggregate impacts on the whales if disturbance from tagging were added to the unavoidable disturbance from seismic survey(s) and associated activities in and near the Piltun feeding area anticipated in 2015. As always, there would need to be a careful analysis of a trade-off between the value of information to be gained by tagging and the risk to the animals' health.

19 WGWAP WAY FORWARD

The discussions on this topic were informed by, and framed around, a presentation by Stephen Turner concerning his preliminary findings and recommendations from the Third External Evaluation of the WGWAP. Because of the preliminary nature of Turner's presentation, the Panel does not consider that it is in a position to summarize results here and instead leaves this to Turner and IUCN to manage separately, in due course.

Following Turner's presentation under agenda Item 3 on the first day, a small subset of participants met informally to start thinking about a process to address some of the issues identified in the external evaluation. On Day 3, Turner reported back to the plenary on the small group's findings. He outlined a proposed approach for beginning to map a way forward from 2015-2016.

As an initial step, a Scoping Group will be convened by IUCN to work over the next three months (via phone and e-mail) to develop a way forward and begin to identify approaches to the long-term future engagement of a broader range of stakeholders (i.e. industry, science, national regulators, lenders, IUCN and the interested public), possibly going beyond the current Panel process's focus on Sakhalin gray whales. In order to facilitate progress, the Scoping Group is expected to:

- Conduct an initial review of relevant findings and recommendations in the Evaluation.
- Define objectives and methods for a broad engagement and consultation with stakeholders
- Prepare several alternate proposals or scenarios for the future which would be considered during a structured consultation process prior to the WGWAP meeting in May 2015.
- Begin the wider engagement/consultation process with stakeholders (including other companies, regulators, civil society).

The Scoping Group will include representatives from the Panel, Sakhalin Energy, IUCN, the Lenders and possibly the Russian authorities (Federation and Oblast level).

It is anticipated that a first report on progress by the Scoping Group will be shared with the Panel and Observers by the end of March 2015, i.e. well in advance of the May 2015 Panel meeting. All parties agreed that a substantial amount of time should be dedicated at that Panel meeting to discuss how to move forward on potential future structures and processes, and on how to increase the ability of this and other panel processes to advise effectively on conservation policies and practices industry-wide.

20 WGWAP WORKPLAN

20.1 Remainder of 2014

The workplan for the remainder of 2014 consists of:

- Drafting and finalization of the WGWAP-14 report.
- For Panel members involved in the Noise Task Force, preparation for and participation in NTF-7 and NTF-8 (dates and venue to be determined), followed by drafting and finalization of the reports of both of those NTF meetings.
- Preparation for WGWAP-15 which will be a 'virtual' meeting via electronic media early in December 2014. The entire Panel will be expected to review both the NTF-7 and NTF-8 reports as well as the input received from Observers. IUCN will have arranged for Observers to have the opportunity to review and comment on both reports in advance of WGWAP-15.
- Drafting and finalization of the WGWAP-15 report no later than mid-December in order to accommodate the requirement of Sakhalin Energy to meet its commitments for planning the 2015 seismic survey.

20.2 Beyond 2014

The deadline for submission of the Panel's draft 2015 workplan is the end of October. IUCN will share the draft with Sakhalin Energy and refer back to the Panel concerning suggested modifications, on the understanding however that Panel contracts for 2015 will be in place no later than early January 2015.

Among the potential elements of the workplan that were discussed are the following:

- The next full (face to face) meeting of the Panel will likely be in the spring – either April or May. As mentioned earlier (see Item 19), one major focus (but not the only topic) of that meeting will be to consider options for the future of this Panel and potentially other forms of engagement related to energy exploration and production activities off Sakhalin and possibly elsewhere in the region;
- The possibility of a second full Panel meeting in 2015 was not ruled out but requires further thought and discussion:
- At least one Noise Task Force meeting is anticipated in 2015;

- The Panel intends to convene two other task forces in 2015, contingent on availability of funds. Some travel and possibly a meeting will be required for the EMTF (see Item 15). A meeting of the Photo-ID (and Biopsy) Task Force would probably best be scheduled back-to-back with a full Panel meeting (or possibly a NTF meeting since there is considerable overlap in membership between the two task forces) (see Item 14.4);
- An update of the population assessment is expected in 2015 when more data have become available;
- As proposed in the 2014 workplan, Nowacek should make presentation on and promote the seismic survey MMP at an appropriate event;
- The Panel intends to commission an expert evaluation of the risks to gray whales from salmon fishing off Sakhalin;
- The Panel should be formally represented at one or more IWG meetings;
- The Panel Chairman should participate in ongoing work of the IWC Scientific Committee with regard to gray whale population structure and assessment;
- The Panel Chairman should represent WGWAP at the IWC Scientific Committee's special gray whale workshop in March 2015 and annual meeting in San Diego in May 2015.

21 REFERENCES

Nowacek, D.P., Bröker, K., Donovan, G.P., Gailey, G., Racca, R., Reeves, R.R., Vedenev, A.I., Weller, D.W. and Southall, B.L. (2013). Responsible practices for minimizing and monitoring environmental impacts of marine seismic surveys with an emphasis on marine mammals. *Aquatic Mammals* 39(4), 356–377. doi:10.1578/AM.39.4.2013.356.

Schick, R.S., Kraus, S.D., Rolland, R.M., Knowlton, A.R., Hamilton, P.K., Pettis, H.M., Kenney, R.D. and Clark, J.S. (2013). Using Hierarchical Bayes to understand movement, health, and survival in the endangered North Atlantic right whale. PLoS ONE 8(6): e64166. doi:10.1371/journal.pone.0064166.

22 SUMMARY OF RECOMMENDATIONS FROM THE 14TH MEETING OF WGWAP

Recommendation Number	Cross-Reference	WGWAP Recommendation & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
5. INDUSTRY UPDATES					
WGWAP-14/001	Item 5.3.3.	The Panel **recommends** the establishment of a small Steering Group comprising a member of the Panel (Donovan), a representative of the Company (Lock) and a representative from IUCN (Berzina). The Terms of Reference of the Steering Group are to: (1) refine the objectives for the mapping tool in the light of the original Panel recommendation and experience to date; (2) request and review suggestions from users for improvements in the light of the objectives and associated costs, determine whether or not they should be undertaken and, as necessary, prioritise them; (3) consider the issue of confidentiality of its use; (4) report back briefly to the Panel at each future meeting.	Donovan (WGWAP), Berzina (IUCN), Lock (Sakhalin Energy)	Each future meeting	
WGWAP-14/002	Item 5.5.	The Panel **urges** the Russian Authorities and the Companies involved to work together to: (1) ensure that seismic activities near the gray whale feeding areas [in 2015] are synchronised appropriately to ensure that the primary mitigation measure [starting surveys as early in the season as the ice conditions allow and completing them as soon as possible and certainly before the end of July] can be met	IUCN	As soon as possible	

Recommendation Number	Cross-Reference	WGWAP Recommendation & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
		(recognising that this may mean it is infeasible for all projected surveys to be undertaken in 2015) and (2) ensure that monitoring and mitigation measures are established and implemented in accordance with the IUCN- and IWC-endorsed guidelines and principles. The Panel **requests** IUCN [the Responsible Party for implementing this recommendation] to inform the relevant Companies and Authorities of this recommendation as soon as possible.			
8. MMOs AND SHIP STRIKES					
WGWAP-14/003	Item 8.2.2	The Panel **recommends** that Sakhalin Energy provide the full and final report (including effort information) on the results of the 2-year trial of the new corridor (per the terms of recommendation WGWAP-13/20) for evaluation at the next full WGWAP meeting.	Sakhalin Energy	WGWAP meeting in spring of 2015	
WGWAP-14/004	Item 8.3.2	The Panel **recommends** that before the full analysis of ship strike risk is carried out, making use of data in the summary MMO report and addressing the full array of concerns, Sakhalin Energy provides the Panel with an opportunity to review and advise on the planned approach, scope and methodology of the analysis as well as on potential analysts who should be considered for the contract.	Sakhalin Energy	Before this analysis proceeds	

Recommendation Number	Cross-Reference	WGWAP Recommendation & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
9. NOISE ISSUES					
WGWAP-14/005	Item 9.1.2	The Panel **recommends** that a serious effort be made to publish a short paper in the peer-reviewed literature summarizing the results of Sakhalin Energy's 2012 seismic survey monitoring effort, even though the data were relatively sparse and the results unlikely to be conclusive.	Sakhalin Energy and its contractors	As soon as possible	
13. NON OIL-RELATED ISSUES					
WGWAP-14/006	Item 13.1.1	The Panel **requests** that IUCN follow up with Sakhalin Environment Watch to see if more details can be obtained concerning the report of an entangled whale (reportedly > 10 m long) which was found dead by fishermen in 2014 (date and location unspecified).	IUCN	No later than next full WGWAP meeting	
WGWAP-14/007	Item 13.3	The Panel **requests** that IUCN compile information on the tour companies that are known to advertise or offer cruises to Piltun and provide this to the Panel as soon as possible but no later than the next full WGWAP meeting.	IUCN, WGWAP	No later than next full WGWAP meeting	
14. PHOTO-ID AND GENETICS					
WGWAP-14/008	Item 14.2	Noting the value of the cross-comparison, the Panel **requests** the Russia-US and IBM teams to conduct a cross-comparison exercise for the Sakhalin data through to 2013, to be organized by IUCN using the same procedure as in previous years.	IUCN, Russia-US team, IBM team	As soon as possible but not later than next full WGWAP meeting	

Recommendation Number	Cross-Reference	WGWAP Recommendation & Requests	Responsible Party/Parties	Target Completion Date	Sakhalin Energy Response
WGWAP-14/009	Item 14.4.	The Panel remains concerned about potentially redundant disturbance to whales from the three photo-id teams (two from the Joint Programme and one from the Russia-US project) and a separate biopsy team from the Joint Programme. The Panel **recommends** that every effort be made to exchange data from biopsies gathered to date and the co-ordination of field work to avoid sampling the same whales multiple times.	Sakhalin Energy and other interested parties	As soon as possible but with report back at next full WGWAP meeting	
15. ENVIRONMENTAL MONITORING					
WGWAP-14/010	Item 15	The Panel **recommends** that all possible efforts be made to maintain the long-term program of benthic monitoring on the north-eastern Sakhalin shelf in areas used by gray whales for foraging.	Sakhalin Energy and other interested parties	Confirmation of continuation at next full WGWAP meeting	
16. OIL SPILL PLANNING AND RESPONSE					
WGWAP-14/011	Item 16.1.2.	The Panel **recommends** that transfer of oily beach wastes to final disposal and helicopter dispersant spraying (using water) are tested in drills in 2015.	Sakhalin Energy	2015	
WGWAP-14/012	Item 16.3	The Panel **requests** that the Company provides an update on its programme to replace OSR equipment.	Sakhalin Energy	Next full WGWAP meeting	

ANNEX 1. LIST OF PARTICIPANTS

Panel Members Present

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

Brian DICKS
7 High Street
Hadleigh IP7 5AH
Suffolk
UK

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

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

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

Grigory TSIDULKO
Marine Mammal Council
Nakhimovskiy Ave, 36
Moscow 117997
Russia

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

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

Associate Scientist

Alexander BURDIN

Sakhalin Energy Investment Company Ltd.

Mike DONAGHY, MDA Ltd

Stephanie LOCK

Sergey KOMAROV (Day 1)

Roberto RACCA, JASCO

Alexander RUTENKO, POI FEB RAS

Anton SHIVAEV (Day 3)

Olga TYURNEVA, IBM FEB RAS

Marko van der VEEN

Alexey VLADIMIROV

Thomas ZENGERLY

IUCN

Anete BERZINA

Gerard BOS

Jennifer ROSS-JONES (Rapporteur)

Stephen TURNER (External WGWAP Evaluator)

Observers – Russian Authorities

Olga KOSTENKO, Rosprirodnadzor, Sakhalin Oblast Territorial Body (Day 1)

Maria LARIONOVA, Sakhalin Oblast Ministry of Environment Protection and Natural Resources (Days 2 & 3)

Elena NEVENCHINA, Sakhalin Oblast Ministry of Environment Protection and Natural Resources (Day 1 & 2)

Olga RIZHKOVA, Sakhalin Oblast Ministry of Environment Protection and Natural Resources

Victor SURKOV, Rosprirodnadzor, Far East Department

Observers – NGOs

Anna FILIPPOVA, IFAW Russia

Dmitry LISITSYN, Sakhalin Environment Watch

Alexey KNIZHNIKOV, WWF Russia

Evan SPARLING, Pacific Environment

Observer - Lenders & Others

Jonathan HANCOX, ENVIRON

Valery KRIPA, Exxon Neftegas Limited

Bruce MATE, ENVIRON

Mike SWINDOLL, Exxon Neftegas Limited

Ryosuke UEDA, Mizuho Corporate Bank Ltd

Observers - Sakhalin Energy Investment Company Ltd.

Andrey SAMATOV

Elena SOLONENKO (Day 1 & 3)

Larisa YAMOMOTO

Interpreters

Alexander DANILOV

Viacheslav CHUDINOV

ANNEX 2. FINAL MEETING AGENDA

WESTERN GRAY WHALE ADVISORY PANEL		**29 September – 1 October 2014**
14th meeting		**Mega Palace Hotel, Yuzhno-Sakhalinsk, Russia**
FINAL AGENDA AND TIME SCHEDULE		
29 September, Day 1		**Documents**
09:00 – 09:30	**1. Opening matters** 0:30 [Reeves] 1.1 Introductions and logistics 1.2 Adoption of agenda 1.3 Documents 1.4 Report drafting procedures and timeline	WGWAP-14/1 WGWAP-14/2 WGWAP-14/3 WGWAP-14/4
09:30 – 09:50	**2. IUCN update** 0:20 [Bos] 2.1 Introduction to Gerard Bos and brief update on IUCN administration and convening of the WGWAP 2.3 Brief update on efforts made to engage other companies/stakeholders 2.4 Brief report on status of work on roadmap and stock taking 2.5 Brief update on other IUCN activities	
09:50 – 10:15	**3. Third Biennial External Evaluation of the WGWAP** 0:25 [Turner] 3.1 High-level overview of the preliminary findings 3.2 Initial reflections & brief discussion (with in-depth session on Day 3)	
10:15– 10:30	*Coffee break*	
10:30- 11:15	**4. Other updates** 0:45 4.2 Outstanding business from previous meetings, including the status of recommendations [Reeves, Berzina] 4.2 IWG/MNR meeting reports [Yablokov, Tsidulko, others who attended] 4.3 Verbal report from relevant sessions at Holarctic Conference, including Roundtable on Oil&Gas Industry and Marine Mammals [Yablokov, Burdin, others who attended] 4.4 Memorandum of Cooperation on WGW conservation/IWC (Donovan)	WGWAP-14/INF.1 WGWAP-14/INF.2 WGWAP-14/INF.13 WGWAP-14/INF.14
11:15 – 13:00	**5. Industry updates** 1:45 5.2 Sakhalin Energy 2015/16 seismic plans [SEIC] 5.3 Other Sakhalin Energy work and planned activities [SEIC] 5.4 Other activities on Sakhalin Shelf in 2014/15 and beyond, including IUCN database [Berzina, Russian Panel members, others with information]	WGWAP-14/33
13:00– 14:00	*Lunch break*	

13:45 – 15:00	**6. Results of 2013 SEIC/ENL Joint Programme** 1:15 [SEIC] 6.1 Acoustics 6.2 Benthic and hydrology 6.3 Photo-ID and biopsy 6.4 Distribution 6.5 Progress on Integrated Analysis	WGWAP-14/5 WGWAP-14/6 WGWAP-14/7 WGWAP-14/8 WGWAP-14/9 WGWAP-14/10 WGWAP-14/11 WGWAP-14/12 WGWAP-14/13 WGWAP-14/14 WGWAP-14/15
15:00 – 15:30	**7. Verbal updates on 2014 SEIC/ENL Joint Programme and plans for 2015** 0:30 [SEIC]	
15:30 – 15:45	*Coffee break*	
15:45 – 16:45	**8. MMOs and ship strikes** 1:00 8.1 SEIC presentation on results of MMO observations in new provisional vessel corridor in 2013 and 2014 [SEIC] 8.2 Evaluation of results and Panel follow-up [Tsidulko] 8.3 Brief report on IWC ship strike workshop in Panama [Donovan]	WGWAP-14/16 WGWAP-14/17 WGWAP-14/INF.7
16:45	*Adjourn*	
18:30	*Dinner*	
30 September 2014, Day 2		**Documents**
09:00 – 10:30	**9. Noise issues** 2:15 9.1 Report of NTF-6 and NTF-7 meetings [Donovan] 9.2 Time-critical issues relating to 2015 seismic survey to be settled at this meeting [Donovan, SEIC]	WGWAP-14/31 WGWAP-14/32
10:30 – 10:45	*Coffee break*	
10:45 – 11:30	9.3 Presentation and discussion of noise impact assessment for ENL pier construction 2014/15 and associated traffic [Knizhnikov, Vedenev, Nowacek, Tsidulko] 9.4 Other noise-related issues [SEIC, Tsidulko] 9.5 Schedule of work for NTF in remainder of 2014-15 for seismic survey and other matters [Donovan]	WGWAP-14/INF.10
11:15 – 12:00	**10. Cumulative effects** 0:45 10.1 Presentation of PCoD (Population Consequences of Disturbance) approach [Nowacek] 10.2 IWC Arctic Workshop report [Donovan]	WGWAP-14/INF.6 WGWAP-14/INF.11
12:00 – 12:30	**11. Draft Guidelines for Monitoring Large Cetaceans during Industrial Activities on the Shelf of the Russian Federation Far Eastern Seas (developed under UNDP/GEF Project “Mainstreaming Biodiversity in the Energy Sector of the Russian Federation”)** 11.1 Presentation from Panel members [Yablokov, Vedenev] 11.2 Discussion	WGWAP-14/INF.9
12:30 – 13:30	*Lunch break*	

13:30 – 14:15	**12. Non Oil-related issues** 0:45 12.1 Presentation on salmon fishing and potential impacts on whales [Burdin, others with information] 12.2 Cruise ship visits [Tsidulko, Vedenev, Burdin]	WGWAP-14/INF.5
14:15 – 14:30	**13. Disentanglement training program** 0:15 [Donovan] 13.1 Update on plans (if any)	
14:30– 14:45	*Coffee break*	
14:45 – 15:30	**14. Photo-ID and genetics** 0:45 14.1 Russia-US programme results from 2013-2014; plans for 2015 [Burdin] 14.2 Update on Sakhalin and Kamchatka catalogue comparisons [Cooke] 14.3 Update on cross-matching with other areas [Cooke] 14.4 Verbal update on Joint Programme plans for 2015 season [SEIC]	WGWAP-14/INF.4
15:30	*Adjourn*	
1 October 2014, Day 3		**Documents**
08:30 – 09:00	**Special session: ENL presentation on WGW protection measures while planned ENL Seismic Survey 2015 (as presented at the MNR/IWG meeting, 21 August 2014, Moscow)** 0:30 [Swindoll]	
09:00 – 09:30	**15. Environmental monitoring** 0:30 [Reeves for VanBlaricom] 15.1 Discussion of need for further work, particularly on physical, biological and ecological factors driving high benthic productivity of Piltun feeding area	
09:30 – 10:15	**16. Oil spill planning and response** 0:45 [Dicks] 16.1 Report on 2013 site visits 16.2 Reviews of OSRPs and other materials to date 16.3 Discussion and plans for further work	WGWAP-14/18 WGWAP-14/19 WGWAP-14/20 WGWAP-14/21 WGWAP-14/22 WGWAP-14/23 WGWAP-14/24 WGWAP-14/25 WGWAP-14/26 WGWAP-14/27 WGWAP-14/28 WGWAP-14/29 WGWAP-14/30
10:15– 10:30	*Coffee break*	
10:30 – 11:30	**17. Population assessment 1:00** 17.1 Report from IWC rangewide workshop on gray whales [Donovan] 17.2 Update on population assessment including resolution of issues identified at WGWAP-13 [Cooke, Reeves] 17.3 Discussion and action arising	WGWAP-14/34 WGWAP-14/35-1 (Revised) WGWAP-14/35-2 (Addendum) WGWAP-14/INF.3

11:30 – 12:00	**18. Satellite tagging** 0:30 18.1 Review of new information, if any [Mate] 18.2 Plans (if any) for 2015 season [Mate, Tsidulko] 18.3 Future planning and funding	
12:00– 13:00	*Lunch break*	
13:00 – 14:30	**19. WGWAP way forward** 1:30 19.1 Preliminary report and recommendations of the Third External Evaluation of the WGWAP [Turner] 19.2 Discussion and next steps on the future of WGWAP, including roadmap and stock taking	
14:30 – 14:45	*Coffee break*	
14:45 – 16:00	**20. WGWAP workplan** 1:15 [Reeves] 20.1 Timing of ‘deliverables’ for remainder of 2014 20.2 Workplan for 2015	
16:00	*Adjourn*	

ANNEX 3. LIST OF DOCUMENTS

DOCUMENT #	TITLE	LANGUAGE	STATUS
Primary documents			
WGWAP-14/1	Final agenda (including time schedule)	English	Public
WGWAP-14/2	Final agenda (including time schedule)	Russian	Public
WGWAP-14/3	List of documents distributed in connection with the 14th meeting of the WGWAP	English	Public
WGWAP-14/4	Список документов, распространяемых в соответствии с 14м заседанием КГЗСК	Russian	Public
WGWAP-14/5	Report of the Joint Programme for the Okhotsk-Korean Gray Whale Monitoring off the North-East Coast of Sakhalin, 2013	Russian	Public
WGWAP-14/6	Report of the Joint Programme for the Okhotsk-Korean Gray Whale Monitoring off the North-East Coast of Sakhalin, 2013	English	Public
WGWAP-14/7	Benthos studies in the feeding grounds of gray whales, 2013	Russian	Public
WGWAP-14/8	Benthos studies in the feeding grounds of gray whales, 2013	English	Public
WGWAP-14/9	Distribution and Abundance of Gray Whales in North-East Sakhalin Waters in July – November 2013	Russian	Public
WGWAP-14/10	Distribution and Abundance of Gray Whales in North-East Sakhalin Waters in July – November 2013	English	Public
WGWAP-14/11	Photo-identification of Gray Whales (Eschrichtius robustus) off the Northeast Coast of Sakhalin Island in 2013	Russian	Public
WGWAP-14/12	Photo-identification of Gray Whales (Eschrichtius robustus) off the Northeast Coast of Sakhalin Island in 2013	English	Public
WGWAP-14/13	Acoustic and Hydrophysical Surveys Offshore Northeastern Sakhalin Island August 1 through October 6, 2013	Russian	Public
WGWAP-14/14	Acoustic and Hydrophysical Surveys Offshore Northeastern Sakhalin Island August 1 through October 6, 2013	English	Public
WGWAP-14/15	Sonograms of the Joint Programme for the Okhotsk-Korean Gray Whale Monitoring off the North-East Coast of Sakhalin, 2013	-	Confidential
WGWAP-14/16	2013 Marine Mammal Observer Programme, Close-out Report	Russian	Public
WGWAP-14/17	2013 Marine Mammal Observer Programme, Close-out Report	English	Public
WGWAP-14/18	Oil-in-Ice Manual, Sakhalin Energy Investment Company Ltd., Rev.03, 2013	English	Confidential

DOCUMENT #	TITLE	LANGUAGE	STATUS
WGWAP-14/19	Report on training for level 3 oil spill response at sea for Piltun-Astokh oil field, Sakhalin Energy Investment Company Ltd., 2013	Russian	Confidential
WGWAP-14/20	Offshore Facility Training Report, Sakhalin Energy Investment Company Ltd., 2013	Russian / partly English	Confidential
WGWAP-14/21	Report on the OSR training at Piltun Bay, Sakhalin Energy Investment Company Ltd. / Ecospas, 2012	Russian	Confidential
WGWAP-14/22	Oiled Wildlife Response during OSR TIER 3 exercise at South Piltun on July 17, 2013, Sakhalin Energy InvestmentCompany Ltd.	English	Confidential
WGWAP-14/23	Report on Complex Condensate-in-ice Spill Response Exercise at the Lunskoye Offshore Field, SakhalinEnergy Investment Company Ltd.,2014	English	Confidential
WGWAP-14/24	Oil Spills Prevention and Response Plan for Piltun-Astokh Offshore Operations, Volume 1, SakhalinEnergy Investment Company Ltd.	English	Confidential
WGWAP-14/25	Oil Spills Prevention and Response Plan for Piltun-Astokh Offshore Operations, Volume 2 (Appendices), Sakhalin Energy Investment CompanyLtd.	English	Confidential
WGWAP-14/26	Oil Spills Prevention and Response Plan for Lunskoye Offshore Operations, Volume 1, Sakhalin Energy Investment Company Ltd.	English	Confidential
WGWAP-14/27	Oil Spills Prevention and Response Plan for Lunskoye Offshore Operations, Volume 2 (Appendices), Sakhalin Energy Investment CompanyLtd.	English	Confidential
WGWAP-14/28	SEIC Corporate Emergency Response Drill Plan-Schedule for 2014	English	Confidential
WGWAP-14/29	Sakhalin Energy Tier 3 Exercise, July 2013: Summary of findings from a site visit to Sakhalin Island, 14-19 July 2013 B.Dicks, WGWAP	English	Public
WGWAP-14/30	Review of OSR documentation provided by Sakhalin Energy during a site visit to Sakhalin Island, 14-19 July 2013 B.Dicks, WGWAP	English	Public
WGWAP-14/31	WGWAP 5th Noise Task Force Meeting (NTF-5) Meeting Report, 2013	English	Public
WGWAP-14/32	WGWAP 6th Noise Task Force Meeting (NTF-5) Meeting Report, 2014	English	Public
WGWAP-14/33	Compilation of information sheets on other operator activities in the Sea of Okhotsk from the IUCN mapping exercise, updated v. August -September 2014	English	For internal use only
WGWAP-14/34	Updated Population Assessment of the Sakhalin Gray Whale Aggregation based on the Russia-US photo identification study at Piltun, Sakhalin, 1994-2013	English	Public

DOCUMENT #	TITLE	LANGUAGE	STATUS
WGWAP-14/35-1 (Revised)	Population Assessment of the Sakhalin Gray Whale Aggregation based on photo identification data from Sakhalin and Kamchatka	English	Confidential
WGWAP-14/35 -2 (Addendum)	Population assessment using the IBM photo-ID data set	English	Confidential
For information documents			
WGWAP-14/Inf.1	10th meeting minutes of IWG/MRN, November 2013	Russian/ English	Public
WGWAP-14/Inf.2	11th meeting minutes of IWG/MRN, April 2014	Russian/ English	Public
WGWAP-14/Inf.3	Report of the IWC Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales (La Jolla, 8-11 April 2014)	English	Public
WGWAP-14/Inf.4	Russia-US research programme report: Status of western gray whales off northeastern Sakhalin Island, Russia in 2013	English	Public
WGWAP-14/Inf.5	On the risks of salmon fishing trap-nets to gray whales summering off Sakhalin Island, Russia	English	Public
WGWAP-14/Inf.6	Report of the IWC Workshop on Impacts of Increased Marine Activities on Cetaceans in the Arctic (Anchorage, Alaska, USA, 6-7 March 2014)	English	Public
WGWAP-14/Inf.7	Report of the Joint IWC-SPAW Workshop to Address Collisions Between Marine Mammals and Ships with a Focus on the Wider Caribbean (Panama, 18-20 June 2014)	English	Public
WGWAP-14/Inf.8	Report of the IWC Workshop on Mitigation and Management of the Threats Posed by Marine Debris to Cetaceans (Honolulu, 5-7 August 2014)	English	Public
WGWAP-14/Inf.9	Draft Guidelines for Monitoring Large Cetaceans during Industrial Activities on the Shelf of the Russian Federation Far Eastern Seas (developed under UNDP/GEF Project “Mainstreaming Biodiversity in the Energy Sector of the Russian Federation”), 2014	Unofficial translation in English	For internal use only
WGWAP-14/Inf.10	NGO submission of Expert Analysis of the Impacts on Western Gray Whales of the Construction of Temporary Unloading Facilities by Exxon in Piltun Bay, Russia	English	Public
WGWAP-14/Inf.11	Schick et al. (2013) Using Hierarchical Bayes to Understand Movement, Health, and Survival in the Endangered North Atlantic Right Whale, PLoS ONE 8(6): e64166. doi:10.1371/journal.pone.0064166	English	Public
WGWAP-14/Inf.12	Memorandum of Cooperation concerning Measures for the Western Gray Whale Population	English	Public
WGWAP-14/Inf.13	8th International Conference "Marine Mammals of Holarctic": Collection of Abstracts, 22-27 September 2014, St.Petersburg, Russia	English	Public