WESTERN GRAY WHALE ADVISORY PANEL **WGWAP-19**

19th meeting **14-16 November 2018**

Moscow, Russia

REPORT OF THE WESTERN GRAY WHALE ADVISORY PANEL AT ITS 19TH MEETING

CONVENED BY THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE

CONTENTS

ACRONYMS

AUAR	Automated Underwater Acoustic Recorder
CHA	Critical Habitat Assessment
CMP	Conservation Management Plan
Company	Sakhalin Energy Investment Company Ltd
CV	Coefficient of Variation
DP	Dynamic Positioning
DMU	Discrete Management Unit
ENL	Exxon Neftegas Limited
BG	Biodiversity Expert Working Group under the auspices of Sakhalin Oblast Interdepartmental Environmental Council
GPS	Global Positioning System
GPNS	GazpromNeft-Sakhalin
HSE	Health, Safety and Environment
HSESAP	Health, Safety, Environment and Social Action Plan
IFAW	International Fund for Animal Welfare
IFC	International Finance Corporation
IO	Independent Observer
ISB	In Situ Burning
IUCN	International Union for Conservation of Nature
IWC	International Whaling Commission
NSCMB	National Scientific Centre of Marine Biology (formerly A.V. Zhirmunsky Institute of Marine Biology)
MMO	Marine Mammal Observer
MMP	Monitoring and Mitigation Programme
MMPP	Marine Mammal Protection Plan
MNR	Russian Ministry of Natural Resources and Ecology
MoC	Memorandum of Cooperation Concerning Conservation Measures for the Western Gray Whale Population
NGO	Non-Governmental Organization
NOAA	National Oceanic and Atmospheric Administration (USA)
NTF	Noise Task Force
OBN	Ocean Bottom Node
OPF	Onshore Processing Facility
OSR	Oil Spill Response
Photo-ID	Photo Identification
POI	Pacific Oceanological Institute
PML	Perimeter Monitoring Line
RHIB	Rigid Hull Inflatable Boat
RGWP	Russia Gray Whale Project
SEER	State Environmental Expert Review (Russia)
UAVs	Unmanned Aerial Vehicles
WGW	Western Gray Whale
WGWAP	Western Gray Whale Advisory Panel
WNP	Western North Pacific

EXECUTIVE SUMMARY

The 19th meeting of the Western Gray Whale Advisory Panel (WGWAP-19) was held in Moscow, Russian Federation, from 14-16 November 2018, immediately preceded by the 15th meeting of the Noise Task Force (NTF-15) from 11-12 November 2018. In opening the meeting, the Panel co-chairs noted that: (i) this would be the final meeting of the current Panel prior to a call for applications for the 2019-2021 period, (ii) Jane Alcock, the incoming General Manager of Sakhalin Energy's Health, Safety and Environment Department to succeed Stephanie Lock joined the meeting remotely, (iii) representatives of Gazprom Neft and its subsidiary GazpromNeft-Sakhalin (GPNS) attended the meeting as observers and (iv) an updated IUCN Red List assessment of the western sub-population of gray whales would soon be published, changing the status of whales that spend summer and autumn off north-eastern Sakhalin and southern Kamchatka from Critically Endangered to Endangered.

Giulia Carbone (IUCN) presented the results of the IUCN-commissioned independent evaluation of WGWAP and recalled that this was the fourth formal evaluation of WGWAP. The overall conclusion of the evaluation was that WGWAP continues to demonstrate its relevance to the conservation of western gray whales and has helped sustain the attention paid to these whales by regulators, industry, NGOs, scientists and the general public.

Greg Donovan summarised the work of the NTF since the last Panel meeting (WGWAP-18) with respect to the development of a Monitoring and Mitigation Plan (MMP) for the 2018 seismic survey. The NTF, the Panel and the Company put a considerable collaborative effort into developing the 2018 MMP, starting with the 2010 MMP and subsequent lessons learned from other seismic surveys. It was a major disappointment for everyone involved that the agreed MMP could not be fully implemented due to the Company's inability to obtain permission from Russian authorities to conduct acoustic monitoring, a key element of both mitigation and monitoring. The unusually late ice retreat and subsequent prolonged poor-visibility conditions further impaired MMP implementation. In order to prevent the survey from continuing far into peak whale season, the Company found it necessary to 'relax' some provisions of its own modified MMP. The Panel was pleased to note, however, that certain issues identified after the 2015 survey (e.g. concerning Marine Mammal Observer (MMO) recruitment, training, equipment, software and rotation) were fully addressed and the Panel welcomed the source-reduction experiment that was undertaken.

While the Panel was generally positive about the modifications to Sakhalin Energy's Marine Mammal Protection Plan (MMPP), it reiterated concerns regarding the Company's ability to comply with specific commitments, especially with regard to underwater noise and the mitigation of ship strikes. Reviews of oil spill response (OSR) planning documents led the Panel to revisit several outstanding recommendations, request certain new Company-generated documents, and recommend a site visit by a Panel representative in 2019 to carry out a first-hand evaluation of the Company's OSR readiness.

The scope of the Joint Programme in 2017 was limited to photo-identification and distribution surveys (i.e. it did not include benthos, acoustic or behaviour monitoring). The Panel was disappointed by the apparently fundamental changes in methods used to collect distribution data from shore and the lack of important details in the information presented regarding survey timing, study area coverage, and effort. The rationale for these changes was not provided nor was an explanation given to the Panel in advance for these changes (and other changes - see WGWAP-18 report, item 2.1.1.1). On a more positive note, the Panel welcomed the information provided by GPNS regarding its role in conducting the offshore distribution surveys as part of the Joint Programme. The Panel expressed continuing concern about the major and persistent decline in amphipod biomass in the nearshore (Piltun) feeding area, a decline that began in 2013 and reached its lowest level in 2016. It once again encouraged the companies to explore the nature and causes of this decline in much greater depth and detail. The Panel also expressed concern about the recurring southward shift of whale distribution in the nearshore feeding area, noted by both Joint Programme and Russia Gray Whale Project (RGWP, successor to the former Russia-US programme) scientists.

The annual population assessment conducted by Cooke estimated the 2017 numbers (excluding calves) as follows: 166-170 (CV=0.06-0.07) for whales that regularly visit Sakhalin; 225 (CV=0.05) for all Sakhalin whales; and 323 (CV=0.05) for all Sakhalin and Kamchatka whales. In all cases, the Sakhalin sub-population was estimated to have been increasing since photo-ID monitoring started in 1995. With regard to photo-ID effort, the Panel noted that the RGWP and Joint Programme catalogues had not been cross-matched since the 2011 season and recommended that the new whales sighted by each team during 2012-2018 be cross-matched. It reiterated the importance of long-term data series and the need for data collection protocols that are consistent and comparable. The Panel particularly commended the ongoing work of the RGWP and recommended that these studies continue. The Panel acknowledged and thanked the International Fund for Animal Welfare (IFAW) for supporting the work and encouraged it to continue doing so.

Sakhalin Energy presented the 2019 Scope of Work for the Joint Programme. As in 2017 and 2018, the field aspect will have only two components: photo-identification and distribution monitoring. The Panel reiterated its disappointment that vital aspects of the Joint Programme (e.g. annual benthic and acoustic monitoring) have been discontinued and that time-tested data collection methods have been changed without first assessing their comparability to methods previously used. While the Panel readily acknowledges that Sakhalin Energy’s first priority must be to meet its obligations under Russian law, it is unacceptable that the Panel is, time and again, informed of changes in the Joint Programme’s composition and methods only after the fact, such that either advice-giving is precluded by mismatches in timing or any advice that is given is either ignored or contradicted in practice.

Sakhalin Energy updated the meeting on progress with its Critical Habitat Assessment (CHA) and offsets strategy to comply with International Finance Corporation Performance Standards on Social and Environmental Sustainability (hereafter - IFC Performance Standards). The Panel highlighted the importance of further examining the occurrence and distribution of endangered North Pacific right whales as part of the process.

Svetlana Sheynfeld (Roszapovedcentre) described an ongoing process to establish a ‘Business and Biodiversity Initiative’ in Russia, to be included in the national project ‘Ecology’ scheduled for implementation in 2019-2024. The starting point was a decision of the Convention on Biological Diversity, and the initiative has been inspired and informed by the work of IUCN’s Business and Biodiversity Programme and the IFC Performance Standards.

Sakhalin Energy provided information on the Biodiversity Expert Working Group (BG) under the Sakhalin Oblast Interdepartmental Environmental Council, which provides a forum for discussions on matters of regional interest and concern, including marine mammal conservation.

Finally, meetings and site visits foreseen as possibilities in the 2019 workplan, contingent on adequacy of funding, include WGWAP-20 (Moscow), NTF-16, a field site visit to Sakhalin to inspect OSR equipment stockpiles and observe a practical exercise, a conservation management plan (CMP) stakeholder workshop, and a workshop on offset strategies.

1 INTRODUCTIONORY ITEMS

1.1 Welcome from IUCN

Giulia Carbone introduced Boris Erg, IUCN's Regional Director for Eastern Europe and Central Asia, who welcomed participants on behalf of IUCN. He described WGWAP as being uniquely positioned to work with governmental bodies, businesses and the scientific community to identify, document and address issues related to the conservation of gray whales in the western Pacific. He also commended this as a good example of how independent technical advisory bodies can play a constructive, effective role in the field of nature conservation. Erg expressed hope that the meeting would result in tangible benefits to gray whale conservation. He thanked Carbone and Anete Berzina-Rodrigo of IUCN for organizing the meeting cheerfully and efficiently, and all others in attendance for their interest and willingness to share information.

1.2 Co-chairs' welcoming remarks

The Panel co-chairs, Greg Donovan and Randall Reeves, noted that the NTF, in particular, had an eventful year given that Sakhalin Energy conducted a large-scale seismic survey in the summer of 2018 that required considerable work on the part of the NTF to finalize a monitoring and mitigation plan. They also noted that this would be the final meeting of the current Panel; future arrangements would be a major topic of discussion in the coming days.

On behalf of the entire Panel, the co-chairs thanked Berzina-Rodrigo and Carbone for their efficient organization and overall administration of the Panel. Jerome Duramy was acknowledged for his sterling work filling in for Berzina-Rodrigo while she was on maternity leave; the smooth transitions at both ends of his tenure were appreciated. Simon Delany, the meeting rapporteur, once again recorded the minutes in a thoroughly professional fashion; and again, as usual, he cleaned up the minutes and provided them to the Panel and Company within 24 hours each day. The Panel has always valued the dedicated efforts of the Russian-English interpreters, Grigory Shkalikov and Alexander Danilov; they bring both language skills and good humour to every meeting.

Before proceeding with the meeting agenda, the co-chairs paid tribute to the late Alexey Yablokov (1933-2017) of the Russian Academy of Sciences. Yablokov was a valued member of the Panel from the start (including the Independent Scientific Review Panel during 2004-2005). A minute's silence was observed in his honour.

It was also noted that this would be Stephanie Lock's last Panel meeting as a representative of Sakhalin Energy. On behalf of the Panel, the co-chairs thanked Lock for her consistently positive spirit and the collegial atmosphere that she brought to formal meetings and to our inter-sessional interactions (teleconferences etc.).

Finally, the co-chairs pointed out that before the end of this meeting, an updated IUCN Red List assessment of the western sub-population of gray whales would be published, changing the status of whales that spend summer and autumn off north-eastern Sakhalin and southern Kamchatka from Critically Endangered to Endangered, and noting in the associated documentation, "If the western subpopulation were defined to include only those whales that winter in the western North Pacific, then that subpopulation would be classified as Critically Endangered because the number of mature individuals in that group is most probably less than 50" (Cooke et al., 2018).

1.3 Participants

The List of Participants is given as Annex 1.

All but one of the ten current Panel members were present. Corinne Pomerleau was unable to attend as she was tending her newborn baby in British Columbia (Canada), but she joined portions of the meeting remotely (see items 6.1.3 and 10.4), as did Associate Scientist Brian Dicks (see item 4.3).

Jane Alcock, the incoming General Manager of Sakhalin Energy's Health, Safety and Environment Department (succeeding Stephanie Lock), joined the meeting remotely from her current posting in Oman.

The Panel again welcomed the numerous representatives of non-governmental organizations (NGOs), Russian Government agencies and institutions, and the Lenders and their consultants, all of whom attend and contribute significantly to WGWAP meetings as Observers. This engagement with various stakeholders is a vital part of the process.

Finally, the Panel was especially pleased by the representation at this meeting of Gazprom Neft and its subsidiary GazpromNeft-Sakhalin, also as Observers (see item 10.1). The lack of participation by other companies operating on the Sakhalin Shelf, in particular Exxon Neftegas Limited (ENL) and Rosneft, was a disappointment.

1.4 Adoption of agenda
The agenda, as adopted, is given as Annex 2.

1.5 Documents
The list of documents is given as Annex 3.

1.6 Report drafting procedures and timeline
The usual practice is for the Panel to produce its report after the meeting, based on documentation received in advance as well as on presentations and discussions during the meeting, as recorded in Delany's notes. The aim was once again to send a complete draft of the report to Sakhalin Energy for fact-checking by mid-January, and to make the final report publicly available by sometime in February 2019. The Panel stresses that its reports are not simply minutes of the meeting. The reports reflect information presented at and before the meeting, discussions at the meeting, and the Panel's findings, conclusions, recommendations, and other forms of advice developed post-meeting from internal discussions, conducted mainly by e-mail.

2 WGWAP EXTERNAL EVALUATION AND WAY FORWARD

Giulia Carbone (IUCN) presented the results of the IUCN-commissioned independent evaluation of WGWAP. The evaluation was organized around the five evaluation criteria recommended by the Organization for Economic Co-operation and Development's Development Assistance Committee: relevance, effectiveness, efficiency, legacy and impact, and independence. The evaluators were also asked to make recommendations on how performance might be improved and to start a conversation about the future of WGWAP. Carbone recalled that this was the fourth formal evaluation of WGWAP. It officially covered the period from the 1st quarter of 2015 through the 2nd quarter of 2018. For purposes of evaluating legacy and impact and identifying future scenarios, the evaluators broadened the time horizon of their review.

Some of the key issues raised in the evaluation are historical and have been present throughout the history of the Panel. Other issues are new or have changed over time. The evaluators confirmed that WGWAP follows an implicit Theory of Change: providing scientific advice to Sakhalin Energy, which is intended to help the Company minimize the impacts of its activities on western gray whales. The presence at Panel meetings of the lenders and observers, such as representatives of research institutes and NGOs, encourages a wider, more inclusive understanding of the scientific and conservation issues and provides greater incentive for the Company and other parties to follow the Panel's advice. The overall conclusion of the evaluation was that WGWAP continues to demonstrate its relevance to the conservation of western gray whales. The Panel has helped sustain the attention paid to these whales by regulators, industry, NGOs, scientists and the general public. According to the evaluation, if the Panel had not existed, it is extremely unlikely that a similar level of effort would have been made to minimize the impacts of the Sakhalin oil and gas industry on gray whales and their habitat.

Carbone suggested that the 10 recommendations offered by the evaluators, quoted in full in Table 1, provide a good starting point for discussion by the Panel, other parties directly involved in the WGWAP process, and all other stakeholders.

Table 1. Recommendations made by the evaluators

1.	The WGWAP should review the range of risks that it assesses to ensure that it is focusing adequate attention on less known, longer-term issues, such as feeding ecology, oil spill prevention, cumulative impacts, and fisheries.
2.	The WGWAP should consider whether it requires a Panel member who is a specialist on oil spill prevention and a Panel member with direct experience working for the oil industry, ideally with engineering and/or Health, Safety, and Environment expertise, who can help with an independent evaluation of company responses.
3.	Sakhalin Energy should formally provide its research plans, including research plans of the Joint Programme, to the WGWAP for review and input, on an annual basis.
4.	IUCN and the WGWAP should continue to produce publications in order to scale its impact. IUCN and the WGWAP should also consider publicizing its primary recommendations through the media in order to build support, encourage compliance, and scale its impact.
5.	Sakhalin Energy should prioritize providing full and timely information to the WGWAP to ensure its effectiveness. Sakhalin Energy should renegotiate with ENL policies regarding access to information in the Joint Programme, in order to ensure that any data developed with Sakhalin Energy funding can be provided to the WGWAP for the Panel's full review and consideration.
6.	Sakhalin Energy should demonstrate that its commitment to Western Gray Whale conservation and the success of the WGWAP is embedded into the company's corporate culture. Sakhalin Energy staff who regularly engage with the WGWAP should convey the positive value of the WGWAP to their superiors, ensuring a common understanding within the company of the value that the WGWAP has provided to Sakhalin Energy and a common commitment to the WGWAP's future success.
7.	The WGWAP, IUCN, and Sakhalin Energy should increase their joint engagement of the Russian government in WGWAP initiatives, building relationships and understanding within relevant Russian government agencies about the value of the WGWAP.
8.	The WGWAP, IUCN, Sakhalin Energy, and lenders should review budgets for both the WGWAP and the Joint Programme, to ensure that funding allocated to Western Gray Whale conservation issues is adequate to meet the requirements of Sakhalin Energy's HSESAP.
9.	Lenders, in addition to lender consultants, should engage more regularly and actively in WGWAP proceedings in order to ensure that WGWAP recommendations are implemented and to ensure compliance with lender and IFC social and environmental standards.
10.	The WGWAP, together with all stakeholders, should review scenarios in the report for continuation and/or transformation of the WGWAP after 2021. Following review, the WGWAP and IUCN should take steps to explore potential options, including, but not limited to, transforming the WGWAP into a range-wide initiative.

Finally, Carbone noted that the *Independent Evaluation of the Western Gray Whale Advisory Panel* report will be posted on IUCN's web site along with the IUCN's Management Response.

3 DEBRIEF AND REVIEW OF PRELIMINARY RESULTS FROM 2018 SEISMIC SURVEY

3.1 Sakhalin Energy's final Monitoring and Mitigation Plan, after-action report & lessons learned

Bastian Blonk provided the following general overview of the execution of the 2018 seismic survey. He acknowledged the excellent work of all involved including Central Commander Neil/Niru Dorrian, the JASCO team, the onshore and offshore MMOs, the WGWAP Advisory Group, and developers of the new data integration and visualization programme 'Mysticetus'.

The project objective was to obtain reservoir monitoring data without harm to people or the environment. Blonk summarised the project timelines, stressing the negative impact that denial of the Automated Underwater Acoustic Recorders (AUAR) permit had on the Monitoring and Mitigation Plan (MMP). To address this and help limit effects on whale behaviour due to noise exposure, precautionary adjustments based on a statistical analysis of the measured 2015 modelling errors were added to the acoustic modelling for prediction of noise levels within the Perimeter Monitoring Line (PML). This is not a precedent for the future, but was considered by the Company to be a safe and responsible way of dealing with the unexpected permit denial. Blonk gave assurance that every effort would be explored to prevent such a denial from happening again in the future.

Formal State Environmental Expert Review (SEER) approval – obtained several weeks later than anticipated because the final signing authority had been replaced in May – came just in time and included acceptance of the WGWAP-endorsed reasoning behind the 1,000 m exclusion zone for gray whales, which was welcomed as a positive outcome on that point.

Blonk summarized onshore monitoring and mitigation activities that were led by Dorrian and observed by the IUCN-appointed Independent Observer (IO), Grigoriy Tsidulko. Adverse weather conditions, considerably more severe than in many previous years, caused huge practical problems in implementing the Company's modified MMP. However, despite long commutes to observation stations, the onshore teams and associated communication set-up functioned very well, thanks to the selection of highly qualified staff and a well-prepared communication setup. The 'Mysticetus' programme, under the expert guidance of JASCO field analyst Héloïse Frouin-Mouy, performed per expectation and provided the context for making in-field decisions based on all available real-time onshore and offshore data.

A mismatch between the actual seismic airgun array and the one used for modelling was identified by the Company after the start of the survey and promptly rectified. A retrospective evaluation indicated that no cetacean-related shutdowns that should have been implemented had been missed because of this oversight.

Blonk summarised the offshore operations for both the streamer and Ocean Bottom Node (OBN) components, including standby time. He reiterated the impact that late ice retreat and subsequent prolonged poor-visibility conditions had on the operations. To avoid prolonging the survey far into peak whale season, the Company saw no alternative than to implement the MMP fully during periods of good visibility, rely on the chase (= scout) vessel to compensate for the inability of the shore-based crews to monitor during periods of poor visibility (as originally intended in the MMP). This required a continuous coordination between the Central Command and the MMOs on both the chase vessel and the seismic vessel.

During the operations there were 187 separate marine mammal sightings, resulting in 13 shutdowns, four during streamer and nine during OBN operations. The 'Seiche' Camera Monitoring System (CMS) identified the need for two of those shutdowns and contributed to two more. The offshore MMOs reported that they considered implementing the MMP very difficult, especially with respect to balancing the mitigation driver ('finish as early as possible') with providing full mitigation for individual animals. As a matter of transparency, the Company shared the MMO views with the NTF but Blonk emphasized that Sakhalin Energy personnel did not necessarily agree with all of them.

Blonk summarised the use of the new technologies, Mysticetus and the Seiche CMS. Mysticetus was considered the only feasible option for the 2018 surveys, and it was found to be suitable with a good support system behind it during the operations. The CMS provided adequate nightly coverage when weather conditions were reasonable. The offshore MMO report summarised findings from visual vs. CMS comparisons.

Finally, Blonk described the reduced-source experiment (something that the Panel had recommended be given priority) that was carried out immediately after completion of the Astokh OBN survey. Results are expected in mid-2019, with interpretation to come later in the year. He summarised lessons learned from the Company's perspective, including the consideration to update the MMP with a fall-back option for dealing with prolonged periods of adverse weather, and these lessons were taken into account in the Panel's overall conclusions (Item 3.4, below).

3.2 Report of IUCN's Independent Observer of Sakhalin Energy's 2018 seismic survey

The report of the Independent Observer (IO) appointed by IUCN (Tsidulko) is provided as document WGWAP-19/7 (corr.)[1].

Overall, Tsidulko found that the personnel in the Command Centre and on the vessels, as well as the onshore and offshore MMOs, worked hard to implement the Company's modified MMP. He was provided with every courtesy and the access needed to fulfil his role. The communications set-up worked extremely well, and 'Mysticetus' provided an excellent overview for the Central Commander to allow prompt decision-making. Tsidulko commended the good documentation (both in Russian and English) and training provided to the field teams, as well as their professionalism.

He highlighted some areas that were not necessarily problematic but should be considered for possible improvement in the future, including the locations of field camps, how visibility in poor conditions is defined, positioning of the Big-Eye binoculars, and monitoring of the exclusion zone in poor conditions.

Tsidulko concluded that Sakhalin Energy had demonstrated a commitment to implement mitigation measures but noted that as a result of the continually poor conditions, it had unilaterally decided to 'relax' some MMP provisions in the later stages of the seismic survey programme to allow timely completion. He emphasised that this issue would require further Panel discussion and consideration when developing advice for future seismic surveys. Whilst the Company, IUCN and the Panel put a great deal of thought, effort and resources into development of the agreed MMP, including consideration of lessons learned from previous MMPs and surveys, a challenge in developing future MMPs will be to find ways to account for weather conditions such as those that occurred in 2018.

3.3 Chair's summaries of NTF-14 meeting, inter-sessional work, and NTF-15 meeting

Donovan summarised the work of the NTF since the last Panel meeting (WGWAP-17) with an emphasis on the development of MMP for the 2018 seismic survey and subsequent developments and implementation in the field.

He began by providing a short overview of the objectives of an MMP:

(a) prevent physical injury to the animals of concern, in this instance gray whales (exclusion zone);

[1] https://www.iucn.org/sites/dev/files/wgwap19_7_final_io_report_131118.pdf

(b) avoid behavioural disturbance within the primary feeding area (bounded by the Perimeter Monitoring Line, PML);

(c) minimise the cumulative exposure of whales to noise; and

(d) collect data essential for improving mitigation in the future.

The NTF, the Panel and the Company put considerable collaborative effort (see Table 2) into developing the 2018 MMP, starting with the 2010 MMP and subsequent lessons learned from the 2010 and 2015 seismic surveys.

Table 2. Summary of the work undertaken to develop a consensus MMP for the 2018 seismic survey[2]

Meeting	Dates	Venue
NTF-11	7-8 November 2016	Moscow, Russia
WGWAP-17	11-13 November 2016	Moscow, Russia
NTF-12	31 March – 2 April 2017	Gland, Switzerland
SGM (small group)	6-7 July 2017	Durham, North Carolina, USA
NTF-13	11-13 November 2017	Amsterdam, The Netherlands
WGWAP-18	15-17 November 2017	Moscow, Russia
NTF-14	14-17 March 2018	Gland, Switzerland

The final agreed MMP had been largely completed by the time of WGWAP-18 but some outstanding technical and logistical details (including consideration of protocols) remained to be finalised at NTF-14. It was therefore extremely disappointing for the Company and Panel to learn that the acoustic component of the consensus MMP (key to both monitoring and mitigation) was refused a permit by the Russian Federation shortly after the NTF-14 meeting. Details can be found in a Panel statement[3] released on 17 May 2018. The final 'Company MMP' was not the consensus MMP agreed by the Panel since the acoustic component had to be removed. The Company (based upon modelling advice from JASCO) developed an alternative approach for the mitigation aspects of the MMP. That approach was agreed by the Panel as the best that could be done in such circumstances.

The conclusions and recommendations from NTF-15 are incorporated below as these were accepted by the Panel.

3.4 Discussion and Panel conclusions

The Panel thanked the Company, the Central Commander, the Lead MMO, the IO and JASCO. Their detailed reports enabled a thorough review of the 2018 survey.

3.4.1 Planning and field set-up

It was a major disappointment for everyone involved that the final consensus MMP could not be fully implemented due to the Company's inability to obtain permission from Russian authorities to conduct acoustic monitoring. The Panel thanked JASCO and the Company for informing it promptly and reacting quickly by developing a fall-back position. The Panel agreed that the modelling approach implemented by the Company (but see below) was the best that could be done in the circumstances.

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[2] All reports are available on the WGWAP website: https://www.iucn.org/western-gray-whale-advisory-panel

[3] https://www.iucn.org/western-gray-whale-advisory-panel/panel/statements-and-letters

However, the Panel **stresses** that (i) an acoustic component remains essential for any future MMPs, (ii) all concerned parties should seek ways to ensure that this type of event is not repeated in the future, and (iii) contingency plans are developed and tested in advance should it happen again.

In addition to the lack of an acoustic component in the final Company MMP, which was at least known before the survey started, the actual conduct of the 2018 survey was dominated by the unforeseen environmental conditions, including but not restricted to the fact that sea ice forced a delay in start-up. While this was clearly beyond anyone's control, the Panel **stresses** that in future survey planning, an attempt should be made to take into account the possibility that such poor conditions will occur again.

The Panel was pleased to note that the issues identified after the 2015 survey (e.g. in regard to MMO recruitment, training, equipment, software and rotation) had been fully addressed. The Panel **commends** the Company for these efforts and **agrees** that a similar process should be followed in future surveys. The Panel also **agrees** that the communications policy worked well as did the Central Command teams and the chain-of-command protocols; given the difficult environmental conditions, these aspects of the 2018 survey can be considered exemplary and should serve as a model for future surveys.

As noted above, during the survey the Company identified an error in the acoustic modelling arising out of the sound source configuration. Although the total volume was slightly smaller, the configuration of the airgun array was different from that modelled with respect to lateral energy – the energy that is most relevant to potential disturbance of the whales (although not relevant to the geophysics of the survey). Despite the fact that the NTF had previously recommended that the actual sound source be modelled, the Panel **acknowledges** the prompt action of the Company in notifying the WGWAP Advisory Group once the error was discovered and undertaking revised modelling work. Fortunately, a retrospective review showed that the survey would not have been affected (i.e. no whale-related shutdowns would have been needed) if the correct results had been available. The Panel **strongly reiterates** that for any future surveys, modelling must be based upon the actual specifications and configurations of the equipment being used.

3.4.2 Role of the WGWAP Advisory Group

The Panel **agrees** that the WGWAP Advisory Group approach was generally effective and the co-operation of the Company in providing regular updates during the survey was appreciated. The Panel **recommends** that a similar approach be followed for future surveys and **agrees** that the terms of reference should be clarified to ensure that 'requests by the Company for advice' are clearly distinguishable from messages simply meant to inform the Advisory Group.

3.4.3 Role of IUCN's Independent Observer

The Panel **reiterates** that an Independent Observer (IO) is an essential component of the MMP. It agrees that the IO's involvement worked well on this occasion and thanked Tsidulko, IUCN and the Company for the organisation and co-operation that led to a thorough report. It **agrees** that IOs should be appointed for future surveys and **suggests** that, when drafting future terms of reference for IOs, consideration is given to streamlining communications between the IO and the WGWAP Advisory Group and clarifying the meaning of 'independence'.

3.4.4 MMP implementation

As discussed and explained above, the original MMP endorsed by the Panel could not be followed due to the lack of a permit for acoustic work. The Panel also **notes** that the modified Company MMP was not fully followed – as the Company stated, it took decisions, reluctantly, to 'relax' provisions when it became clear that the survey was well behind schedule. While the Panel **recognises** that this situation was not covered by the design of the MMP, the decision to relax the provisions related to the protection of individuals actually occurred when most individuals were present (i.e. late in the season). The Panel **stresses** that this in fact is opposite to the trade-off between population and individual, which is at the core of the philosophy in the MMP, i.e. the motivation leading to the primary measure of starting and finishing the survey as soon as possible is to complete it before most of the whales have arrived in the feeding area. Once all or most of the animals have arrived, the MMP is meant to increase the protection given to individuals. Ways to address this must be developed prior to the next survey, and this is considered further below.

3.4.5 Lessons for future surveys and workplan

As stated before, the Panel **stresses** that the emphasis for future seismic surveys should be to minimise the potential effects of sound on whales by designing them to (a) minimise the area covered and (b) minimise the sound source (i.e. the energy put into the water that is potentially disturbing to whales). With respect to (b), the Panel **welcomes** the experiment undertaken at the end of the 2018 survey and **looks forward** to receiving the results in 2019. This will enable discussions to begin early with regard to future surveys.

The Panel also **recommends** that the PML be reviewed in light of new data that have become available since the line was initially developed for Sakhalin Energy's 2010 seismic survey – particularly but not limited to the early-season data. Preparations for this work should begin at the next NTF meeting.

Finally, the Panel **recommends** that work begins now to ensure that future MMPs deal clearly with the potential for extended inclement weather. This should involve, among other things, examining further the trade-off between 'population' and 'individual', considering modelling results and scenarios (including updated information on whale occurrence throughout the season as well as the PML), and finding an appropriate balance between clarity and flexibility.

Related to this at the more practical level, it is important that work begins to look at the most efficient way to monitor the PML or exclusion zone in poor visibility (including at night). Issues to consider include:

(a) examining the pros and cons of using of a vessel (chase/scout or dedicated);

(b) use of 'new' technology (including consideration of information obtained in 2018 using, for example, drones and/or infrared camera systems); and

(c) evaluation of existing 'pre-dusk scan' guidance.

The Panel recognised that despite best efforts of all concerned, no acoustic data were collected and only very limited visual data were collected in 2018. The Company announced that at present it has plans for some basic analyses of distribution and behaviour. The Panel **recommends** that an advisory group be established including both Panel members and scientists nominated by the Company to provide advice on analyses, including (a) consideration of pooling data across years as previously recommended; (b) whether acoustic modelling and vessel position information can be used for the 2018 data; and (c) examining the results from the 2015 ENL seismic surveys when published.

4 SAKHALIN ENERGY ACTIVITIES IN 2018 AND PLANS FOR 2019 ONWARDS

4.1 Update on Marine Mammal Protection Plan

Jon Hancox (Ramboll Environ) provided an overview of progress on revisions and modifications to Sakhalin Energy's MMPP, the latest version of which was provided to the Panel at this meeting following comments made at the NTF-14 meeting last March. The MMPP is a part of the Company's *Health, Safety, Environment and Social Action Plan* (HSESAP. It is thus considered a covenanted document under the loan and any changes from earlier versions must be agreed by the Lenders. Extensive comments from Panel members (and Associate Scientist Brian Dicks), the Company, and Ramboll Environ on earlier drafts had been collated with the Company's responses and summarized by Ramboll in a spreadsheet for Panel review.

Following a discussion of several specific topics (e.g. the recent change in the IUCN Red List status of western gray whales), the Panel expressed appreciation for this compilation and indicated that it was generally satisfied with the outcome (also see WGWAP-18 report, item 5.1.1). Necessary changes and updates to methods and references had been made, and the document was considered much improved. The next steps are: (i) the Company incorporates further changes on the basis of the collated comments and the discussions at this meeting and provides the revised version to Ramboll for a final check, (ii) Ramboll sends the document for approval to the Lenders and (iii) the final approved MMPP is uploaded on the Sakhalin Energy website.

While the Panel was generally positive about the modifications to the MMPP, it reiterated its concern regarding the Company's ability to comply with specific commitments, especially with regard to underwater noise. Several clear examples of this problem were discussed. For instance, although the circumstances were not anticipated (as described under Item 3), the Company's decision to proceed with the 2018 seismic survey despite the absence of real-time acoustic monitoring was in clear violation of the procedures specified in the MMPP for managing the potential impacts of seismic survey noise on gray whales. However, the Company's recent unwillingness to conduct passive acoustic monitoring during years without seismic surveys cannot be ascribed to an unprecedented situation – as noted in previous Panel meetings, without some type and level of monitoring it is not possible for the Company to determine if it is meeting its own guidelines as stated in the MMPP. In addition, without establishing an acceptable passive acoustic control site and monitoring every year and not only in 'seismic' years, the Company will not be able to meet its monitoring objectives as specified in the MMPP to evaluate cumulative impacts and long-term environmental trends associated with industry activities. The Panel **re-iterates** its willingness to assist the Company in finding feasible options for conducting targeted, systematic acoustic monitoring that will make it possible to come closer to meeting those objectives. This problem will be taken up in discussions of the Noise Task Force. The Panel **recommends** that the Company adopts the revised MMPP and adheres to all of the measures specified and ensures that adequate monitoring is undertaken to allow it to confirm that it is following the MMPP.

The Panel had also recommended (Recommendation 18/14) that speed limits listed in the MMPP be described as mitigation measures for marine mammals only if they are lower than the limit that would have been set in the absence of marine mammal-related considerations. The Panel understands that the 35-knot speed limit being used is based on the operationally optimal vessel speed and has little or nothing to do with marine mammal protection. This Recommendation is presently classified as "Closed – implemented resolved /satisfactorily" based on information from the Company that it had been acted upon.

However, the latest version of the MMPP (doc. WGWAP 19/08) continues to list all speed limits, including the 35 knot limit, as mitigation measures. A vessel moving at 35 knots is likely to kill a gray whale on impact; a 35-knot speed should in no case be considered a mitigation measure for marine mammals. The Panel's Recommendations WGWAP 17/08 and WGWAP 17/09 advised that an increase in speed from 21 to 35 knots would be acceptable for a provisional period of 2 years pending a more refined assessment of the risk. This was not based on a conclusion that a speed of 35 knots was safe for gray whales, but on a provisional determination that the number of whale/vessel encounters was likely to be low given the whale densities encountered in those corridors to date, such that vessel strikes would be acceptably infrequent, albeit likely fatal if they do occur. The higher speed limit does not represent a mitigation measure, but the relaxation of a mitigation measure, based on an estimation of low risk.

The Panel hereby reclassifies Recommendation 18/14 as ‘open – no action yet taken’ and **requests** that the next version of the MMPP not list the 35-knot speed ‘limit’ as a mitigation measure.

4.2 Report on regular Marine Mammal Observer programme and ship strike avoidance measures, including speed limit implementation

Andrey Samatov presented the report on the 2017 MMO programme (doc. WGWAP 19/10) and some preliminary data from 2018. There were 88 sightings of 179 gray whales in 2017. The distance at which these sightings were made ranged from 0.5 to 7 km, with an average of > 3 km. Nine sightings were at distances of less than or equal to the 1 km ‘safety’ distance. Four of these cases required no avoidance action to be taken by the vessel while 5 cases elicited either vessel slowdown (1 time) or course change (4 times).

During daylight and good visibility (> 1 km or 0.5 nmi), the crew change vessels were allowed to travel at up to 35 knots, otherwise the speed limit was 21 knots. The higher limit applied for approximately 2/3 of the total travelling time in 2017 and 2018. The increased speed limit was in accordance with Panel Recommendations 17/08 and 17/09 that the higher speed was acceptable for a provisional period of 2 years pending more refined estimation of the risk.

The Panel was pleased to hear last year that Recommendation 17/08, to install video cameras to monitor the sea in front of the vessels, had been implemented. However, the Panel **recommends** that some representative footage be viewed to check whether the quality is sufficient to be useful in the event of a strike on a whale or some other incident. Experience in similar circumstances has been that sea spray and salt coating on the lenses of cameras mounted outside the vessel can render the recordings unusable, prompting those cameras to be relocated inside.

Panel Recommendation 17/09 was that accelerometers be installed to detect vessel strikes. This has not been implemented. At WGWAP-18, the Company reported that speed was being continuously recorded by a Global Positioning System (GPS) installed on the vessels specifically for this purpose, and that these data could, in principle, be used to detect unexplained changes in acceleration (possibly related to striking a whale). The Company stated at this meeting that no unusual changes in acceleration had been reported, but the data were not examined. At WGWAP-18 the Panel expressed skepticism that the GPS data would have sufficient temporal resolution to detect strikes of whales, especially given that even glancing blows to a whale could be fatal at such high speeds, and that such events could be of very short duration. The Panel had offered to discuss the matter inter-sessionally with the Company. The Panel now **re-iterates** this offer. To start the process moving, the Panel **requests** that IUCN obtain from Sakhalin Energy a sample of the GPS data collected so far, or, if that is not permissible, a summary analysis of the data collected so far, to be provided to the Panel for review. Without such an analysis, it is not possible to judge whether a GPS can serve the same purpose as an accelerometer.

The Panel notes that the 2-year provisional period, that was specified in Recommendations 17/08 and 17/09 pending a more refined risk analysis, has now expired, without the issue having been resolved. The Panel’s initial judgment, that the likelihood of vessel strikes was probably low, was based on the rates of reported whale encounters up to that time. The number of gray whales encountered in the crew change corridor in 2017 (18) was above the previous annual average (10) and most of the encounters were near the southern end of the corridor from the PA-A platform to shore, near Nogliki (doc. WGWAP 19/10, Fig. 5.9). Thus, there appears to be a general and recurring redistribution of whales southward from the Piltun area (see item 6.1.1, below), including to areas within the crew change corridor. The risk of vessel strikes is probably still relatively low, but the matter should be kept under review, and a modified speed limit considered for these parts of the corridor if data from 2018 and 2019 suggest a regularly high presence of whales there. The Panel **recommends** that Sakhalin Energy report back at WGWAP-20 on the findings from its review of the distribution data in relation to ship strike risk in the corridor. In the meantime, the Panel **emphasizes** the importance of making progress on implementation of Recommendation 17/09 so that if any vessel strikes do occur, they are detected. This task can also be considered as contributing to the general aim of developing a body of tested 'good practice' that could be followed by other operators in comparable circumstances.

4.3 Update on oil spill response planning and drills

In her presentation on this topic, Lock reminded participants that Sakhalin Energy conducts an oil spill response (OSR) programme that includes more than 180 exercises per year across the Company's assets. Large-scale exercises have been conducted on an annual basis covering the use of dispersant (2013), recovery of spilled oil in ice (2014), at-sea response to a large spill incident (2015, involving 12 vessels and including oiled wildlife recovery), mobilization of international resources from overseas and testing customs clearances (2016), and a loss of well control (2017). No major exercise was conducted in 2018 but the usual programme of 180 smaller exercises was implemented.

Lock concluded by noting that Sakhalin Energy appreciated the critical advice provided over the years by the Lenders and the Panel – the latter represented by Brian Dicks, formerly a member of the Panel and for the last several years, an Associate Scientist.

Dicks joined the meeting remotely for this session and reported that he had examined a number of documents (19/14, 19/28, 19/29, 19/30) and submitted brief reviews in advance of the meeting (documents WGWAP-19/31, 19/32). In reviewing outstanding Panel recommendations to the Company concerning its OSR programme, Dicks drew particular attention to recommendation WGWAP 18/15 (made in 2017) urging that a Panel representative, along with a Lender representative (PCCI), be allowed to attend a major exercise, visit OSR equipment stockpiles, and review OSR training procedures on-site in 2018. While a site visit did not happen in 2018, Lock stated that it should be possible in 2019. The Panel **recommends** that the planning of a site visit begin immediately, with a target date in September of 2019.

Recommendation 18/15 also requested that the Panel review a revised oil-in-ice response manual, but Dicks was advised that revisions to the manual had been postponed to 2019. Sakhalin Energy confirmed that review by the Panel would be welcomed once the revised manual becomes available.

With regard to recommendations WGWAP 18/16 and WGWAP 18/17, the Company had provided Dicks with the Net Environmental Benefit Analysis (NEBA) procedures for In Situ Burning (ISB) and Oily Waste Management and, as mentioned above, he had reviewed them in advance of this meeting. With regard to ISB in ice, Dicks noted that the document provided was primarily an approval document and contained little practical information about how a burn might be carried out. He noted that a regulation referred to in the document (*STO 318.04.69-2015*) likely contains such information and Lock agreed to provide it to Dicks; the Panel **requests** that IUCN follow up on this agreed exchange. As there is likely to be considerable overlap between the revised version of the oil-in-ice response manual and the ISB-in-ice overview, these two documents should be reviewed together in 2019.

Regarding recommendation WGWAP 18/17 on disposal of oily waste, Dicks remains convinced that the Company's procedures for at-sea oil recovery, shoreline clean-up, and short-term handling of oily wastes (temporary storage) both at sea and on shores are well tried and tested. However, he expressed concern about (i) whether predicted volumes and types of oily waste are realistic – volumes of oily liquids and beach sediments appear realistic but little attention has been paid to the likely volumes of oily debris (stranded timber, seaweed and plastic) that is common on some shorelines close Sakhalin II operations; and (ii) the fact that documentation he has seen contains little technical information on aspects of final disposal of oily waste. Clarification would be welcomed regarding (a) whether the likely elevated salt content of recovered liquid oil will affect final re-processing of the oil and how this will be managed, and (b) the fate of oily beach material and oily debris, which are likely to become landfill. He asked Sakhalin Energy whether biological treatment/processing and controlled incineration of oily sand have been considered as final disposal options.

In response, Lock said that the Company had constructed a waste handling facility for bioremediation of oily wastes in Smirnikh, but problems of land classification and permission meant that use of the facility had proven infeasible, at least for the present. The Company is now planning to make use of all available options and is seeking support from relevant stakeholders. The Company acknowledged that dealing with oily waste is a significant concern on Sakhalin, current regulations are ambiguous, and the available options are inadequate. The Panel emphasizes that the aforementioned recommended site visit by a Panel representative in 2018, now 2019, could help to ensure that the issue is addressed.

In response to a question from the Panel concerning how quickly after taking up their positions Sakhalin Energy employees receive necessary OSR training, Lock confirmed that procedures were in place to ensure that such training is undertaken in timely fashion and the process is tracked and transparent. There are scheduled refresher periods, and all staff receive appropriate refresher training over time.

During discussion the Company was asked whether OSR training and exercises adequately take into account adverse conditions (ice, bad weather) that often prevail during spills. Lock noted (and Dicks agreed) that OSR exercises are conducted year-round in all kinds of conditions. Dicks and others nonetheless expressed overall concern about the effectiveness of response in winter ice, which would undoubtedly make any sizeable spill extremely challenging. The Company pointed out that the worst-case discharge scenario in its OSR plans conformed to Russian Federation requirements, and that agreements were in place with ENL and other international partners to assist one another (share equipment, personnel etc.) should the need arise.

4.4 Other activities 2019-2021

As it has in past years, the Company provided a document listing all of its planned offshore activities for the coming years (doc. WGWAP-19/13). The Panel **thanked** the Company for providing this document. Many of the activities listed are repeats from previous years, though the Panel would like to have additional information and an opportunity to make suggestions on some of them that might disturb gray whales. For example, the Company listed under 'Annual Survey and Inspection of Subsea Assets and Maintenance at all Locations' that it will conduct seabed surveys using side-scan sonar and multi-beam echosounders. Some types of echosounders may have harmful effects on cetaceans, e.g. multi-beam echosounders have been implicated in cetacean stranding events (Southall et al. 2013[4]), so ideally the use of these and other active acoustic sources should be avoided or at least minimized. The Panel therefore **requests** that IUCN follow up with Sakhalin Energy to obtain (and provide to the Panel) information on the types and specifications (e.g. source amplitude, frequency

[4] Southall, B.L., Rowles, T., Gulland, F., Baird, R.W. and Jepson, P.D. 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar. Available at: https://iwc.int/2008-mass-stranding-in-madagascar

characteristics, beam patterns) and use patterns (e.g. number of operational hours, location of operations relative to gray whale distribution) of echosounders (see Recommendation WGWAP-18/03). In general, the Panel **recommends** that the Company use only high-frequency types of echosounders specially designed for shallow-water mapping, i.e., those that are more likely to be outside the hearing range of gray whales. Another perennial source of significant noise is that from vessels using dynamic positioning (DP) as part of certain operations (e.g. ‘sand control’). While it accepts the need for DP, the Panel hopes that its use can be minimized as such sources of continuous noise have, in the past, resulted in elevated noise levels within the gray whale feeding area; the lack of ongoing acoustic monitoring makes it difficult or impossible to verify whether such noise levels are occurring in the feeding area, so limiting noisy activities is of even greater importance.

Further, under ‘Vessel-based Monitoring Programmes’ the Company listed ‘deployment of acoustic stations (AUARs) for new vessel noise measurement’ in 2019. The Company confirmed at WGWAP-19 that these measurements were to be made and, additionally, that it was currently in the planning stages to have these stations left in the water after the vessel testing so that additional acoustic data could be collected in 2019. The Panel **commends** the Company for committing to make these acoustic measurements and **requests** that IUCN obtain updates on progress periodically through the winter and spring. Such updates should then be provided to the Panel so it can help the Company to ensure the work is as useful and efficient as possible. The Company made a commitment at the meeting to seek the Panel’s input.

Finally, with respect to other offshore activities, the Company listed a ‘temporary beach landing facility’ near Onhore Processing Facility (OPF)/LUN-A (i.e. approximately 60 km south of the nearshore gray whale feeding area) for landing ‘large equipment for OPF Compression Project (July-August 2019)’. The Panel requested additional information on this project and the Company responded that the facility would be installed and removed in the summer and the process would not involve any construction as a submerged barge would be used as a temporary pier. Given the considerable distance from feeding areas and the lack of noise and vessel activity that might have been associated with construction, the Panel is not overly concerned about the potential for this activity to disturb whales.

5 IMPLEMENTATION OF INTERNATIONAL FINANCE CORPORATION PERFORMANCE STANDARDS FOR SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

5.1 Update on critical habitat assessment and offset strategy for Sakhalin II project (marine mammals)

Natalia Tsarenko presented the update on behalf of Sakhalin Energy. She noted that little had changed concerning results of the critical habitat assessment since the WGWAP-18 meeting a year ago (see item 6 of WGWAP-18 report) but that considerable effort had gone into documentation for that aspect of the Company’s IFC implementation, drawing heavily on MMO data and the published literature. In addition, she reported progress on development of Sakhalin Energy’s offset strategy.

With regard to the Critical Habitat Assessment (CHA), she noted listed areas designated by various organizations (e.g. WWF, IUCN, Conservation International) as ‘international conservation priorities’, pointing out that the Sakhalin II project falls within WWF’s Sea of Okhotsk Global 200 marine ecoregion. Also, some bird habitat near the project is designated under the Important Bird Areas programme of BirdLife International.

As discussed at last year’s meeting, two discrete management units (DMUs) have been delineated – the offshore DMU in north-eastern Sakhalin and the inner Aniva Bay (lagoons) DMU in southern

Sakhalin. Seven nationally designated protected areas are situated in or close to the DMUs – Lunsky Bay, Chayachy Island, Lyarvo Island, Makarov nature reserve, 'Zhdanko Ridge' nature reserve, Dolinsky nature reserve, and 'Korsakovsky Elnik' nature reserve. None of these are listed as strict nature reserves or wilderness areas.

Sakhalin Energy initially identified five species of marine mammals for consideration in the Company's CHA – gray whale (specifically the western Pacific stock or population), bowhead whale, North Pacific right whale, fin whale, and Steller sea lion. At this meeting, Tsarenko clarified that only the gray whale was judged by Sakhalin Energy as qualifying for a CHA according to criteria set out in IFC Performance Standard 6 'Biodiversity Conservation and Sustainable Management of Living Natural Resources (hereafter IFC Performance Standard 6).

Regarding the offset strategy, Tsarenko again summarized much of what had been presented at the last meeting (see item 6 of WGWAP-18 report). A few new details were provided, such as (i) a grant to the Boomerang Club to support its efforts to protect marine mammals in Sakhalin near-shore waters (e.g. by removing derelict fishing gear), investigate strandings, and undertake disentanglement or marine mammal 'rescue' work, (ii) bringing GPNS into the Joint Programme, and (iii) contributions to a 'round-table' discussion on entanglement at the 2018 Holarctic Conference.

5.2 Discussion and Panel conclusions

In response to Tsarenko's request for Panel advice on whether the gray whale's qualification for a CHA should be classified as Tier 1 or Tier 2, this should have no bearing on the Company's overall strategy and is, in any event, a matter of interpretation. The important thing is that the habitat near Sakhalin is recognized as critical to this population of gray whales.

One major issue raised by the Panel was the Company's negative conclusion concerning the North Pacific right whale as a potential subject of a CHA. Alexander Burdin, in particular, argued that the numbers of right whales in the Sea of Okhotsk, including in waters off eastern Sakhalin Island, are greatly depleted from commercial whaling in the 19th and 20th centuries. In his view, further investigation of historical and recent evidence may show that Sakhalin deserves to be viewed as an aggregation area for this endangered species. Tsarenko indicated that she would welcome any help that Panel members could provide to ensure that she has access to all available information that is relevant to this question. It was noted that Ovsyanikova et al. (2015) compiled recent observations of right whales in Russian Far East waters through 2014, and the presentation by GPNS at the present meeting (see item 10.1.1) indicated that there were four sightings of seven right whales in August and October 2018 offshore of northeastern Sakhalin. The Panel **recommends** to Sakhalin Energy that it (a) ensure all available data on right whale occurrence in the region, including MMO data and opportunistic sightings, strandings, and detections from other sources, are compiled and made publicly available, ideally through peer-reviewed publication, and (b) re-evaluate the North Pacific right whale as a candidate for CHA as part of IFC Performance Standard 6 compliance.

Finally, it was noted that both the MMO data and the data collected by groups like Boomerang Club on Sakhalin represent a valuable source of information on marine mammals of the region. The Panel commends Sakhalin Energy for the extensive compilation of MMO data in particular which was carried out as part of its IFC PS6 implementation work, and the Panel encourages that such data on all marine mammal species be made more widely available.

6 GRAY WHALE RESEARCH AND MONITORING IN 2017 AND 2018

6.1 Final results from the Company on the 2017 fieldwork and preliminary results of 2018 field programme (including progress on studies using long-term data)

6.1.1 Distribution

6.1.1.1 COMPANY PRESENTATION

Valeriy Vladimirov summarized the distribution of gray whales off northeastern Sakhalin in 2017 based on observations in the summer and early autumn. Document WGWAP-19/16 also provided cursory information on the results of this component of the Joint Programme. Unlike in past years, a separate report detailing this research and the related results was not produced. Vessel-based distribution surveys were conducted in the offshore feeding area and followed standard methods and protocols used between 2001 and 2016. Shore-based surveys of the nearshore feeding area did not use the standard visual observer methods and protocols used between 2003 and 2016, despite stating otherwise in the 2017 scope of work approved by ENL and Sakhalin Energy (see document WGWAP-19/18). Instead, onshore surveys in 2017 were conducted by two photo-identification teams using unmanned aerial vehicles (UAVs). This change in the shore-based methods raises a myriad of problems and concerns regarding how to interpret the results provided for 2017 and more broadly within the context of the existing time-series. The rationale for changing the methods was not described.

6.1.1.2 SHORE-BASED DISTRIBUTION SURVEYS

Shore-based ‘surveys’ using UAVs were conducted in the nearshore feeding area from 2 June through 26 September. Details on the methods used to conduct these ‘surveys’ were not provided nor were any data regarding survey timing, study area coverage and effort. In light of these limitations, the following summary of the Company presentation should be considered with an awareness that data derived from standard methods from 2003-2016 may or may not be comparable to data collected in 2017 using UAVs.

The maximum count of whales on a single day in the nearshore feeding area in 2017 (n=36) occurred on 12 August. Although not specified in the presentation, the Panel assumes that this result came from a synchronized survey covering each of the 13 pre-defined observation sites along the northern and southern spits. In contrast, document WGWAP-19/16 (see Fig. 7) reported the “maximum simultaneous number of whales recorded in the Piltun feeding area” as 20. In either case, maximum counts of 36 or 20 represent the lowest number ever reported in the nearshore feeding area since the inception of the industry-sponsored shore-based distribution work in 2003. By way of comparison, the mean maximum count for the five-year period between 2012 and 2016 using standard methods was 60.6 whales (range = 40-111). In five of the years between 2003 and 2016, shore-based counts exceeded 100, with a maximum of 138 reported in 2005. Finally, a ship-based survey of the nearshore feeding area was conducted in August 2017 and counted only seven whales – the methods of this survey were not provided to the Panel.

As has been regularly observed since 2003, most of the whales sighted from shore in 2017 tended to be near the mouth of Piltun Lagoon. Several peculiarities about their distribution were noted, however, including: (1) the aforementioned all-time low number of whales using the nearshore feeding area, (2) the near absence of whales north of the lagoon mouth in July and August and (3) the increased number and persistent presence of whales south of the lagoon mouth, where some of the highest densities (i.e. whales per km^2) were recorded.

6.1.1.3 OFFSHORE VESSEL-BASED DISTRIBUTION SURVEYS

In the offshore feeding area, four complete surveys were conducted between July and September 2017. These included surveys on 8 and 22 July and 2 and 23 September. Whales were seen feeding throughout the entire offshore area, similar in distribution to what was observed in 2014-2016, although a slight eastern and southern shift of about 10 km in both directions was detected in 2017. During these surveys, a total of 87 sightings of 178 whales were recorded. The number of whales counted per survey was not provided exception for the survey on 2 September when 70 whales were recorded. During the preceding five years (2012-2016) the average maximum number of whales counted during surveys completed in the offshore feeding area was 51.4 (range = 37-67). Document WGWAP-19/16 (see Fig. 6) provides a plot of sightings along with associated group sizes in 2017, but does not provide results on density (i.e. whales per km^2). One synchronized survey of both the nearshore and offshore feeding areas was completed, during which time 90 whales were counted (document WGWAP-19/16, Fig. 7). In comparison, during the preceding five years (2012-2016), the average number of whales counted during synchronized nearshore-offshore surveys was 101 (range = 75-127). Neither the date of the synchronized survey completed in 2017 nor the numbers of whales counted in each of the two feeding areas were provided in the presentation or document WGWAP-19/16.

6.1.1.4 Discussion and Panel conclusions

The Panel thanked the Company for its presentation on the distribution component of the 2017 research programme and welcomed the news that onshore distribution work commenced in June, providing some of the only early-season data available. That being said, most of the remaining discussion centred on the Panel's strong sense of disappointment with two issues.

(1) The apparently fundamental changes in the methods used to obtain distribution data from shore

The rationale for these changes was not described nor was an explanation given for not informing the Panel in advance of the 2017 field season - the Panel was only made aware of the changes at the present meeting (WGWAP-19). The Panel has repeatedly stressed the importance of the long-term distribution data collected by shore-based visual observers and the need for continuing to collect such data in a consistent and comparable manner over time. The scope of work for the 2017 research programme, as approved by ENL and Sakhalin Energy (see WGWAP-19/18), clearly stated that the methods used for shore-based monitoring would remain the same as in the past. Although Vladimir Vertyankin offered his opinion that the UAV approach provided comprehensive coverage of the nearshore feeding area and Samatov expressed his opinion that the locations of all observed whales had been determined, and this may prove true, in the absence of any ground-truthing experiments to compare the standard visual observer methods with the UAV methods it is impossible to know if the 2017 results are comparable to the 2003-2016 time-series. The Panel therefore **concludes** that the 2017 shore-based distribution data are of limited value.

(2) *The lack of important details regarding survey timing, study area coverage and effort*

The lack of detail in the Company's presentation and especially in document WGWAP-19/16 makes the lack of a stand-alone report on distribution studies even more regrettable. The Company's failure to provide the Panel with essential, basic information on the 2017 programme of work (e.g. survey timing, study area coverage, research effort, related results) significantly impairs the Panel's ability to provide informed feedback, advice and aid in interpretation, as prescribed in the WGWAP terms of reference.

Finally, the Panel **reiterates its concern** about an emerging pattern (since about 2013) of declining numbers of whales in the nearshore feeding area and the persistent southward redistribution of whales within that area. This concern is further underscored by the reported decline in total amphipod biomass near shore (see items 6.1.3.1 and 2). Recalling previous Panel recommendations, and in light of what could be a 'failing' nearshore feeding area for gray whales, it is essential for the companies and their scientists to undertake robust analyses of the multi-year distribution data set, incorporating benthic data as possible. Further, it is important that the shore-based distribution methods return to what they were pre-2017, i.e. with surveys carried out on a weekly basis (as was verbally confirmed by Samatov to have been the case in 2018), so that long-term patterns and trends in distribution can be addressed appropriately. Finally, the Panel **encourages** the Company to reinstate the benthic monitoring programme (at least in the nearshore area) to help track changes in the ecosystem. This is especially critical for what is arguably the most important population segment – mothers and calves.

6.1.2 Photo-ID and biopsy

6.1.2.1 PRESENTATION

Olga Tyurneva presented an overview of information collected during the 2017 Joint Programme photo-identification surveys. Document WGWAP-19/17 also provided detailed information on this component of the research. A catalogue of 283 whales identified between 2002 and 2017 is now available. Of the 283 whales, 128 (45%) were first identified as calves and are therefore of known age.

In 2017 photo-ID work was undertaken by three teams, one based on Sakhalin Energy vessels working mostly in the offshore feeding area between 7 July and 13 October and two shore-based teams collecting data in the nearshore feeding area between 2 July and 29 September using both digital SLR cameras equipped with telephoto lenses (i.e. standard-method photography) and UAVs equipped with digital cameras. The field efforts in 2017 differed from those in 2016 when one vessel-based team, two shore-based teams (including feasibility experiments using UAV photography) and one small boat-based (launched from shore) team were deployed. The 2017 effort also differed from what appeared in the 2017 scope of work, as approved by ENL and Sakhalin Energy (see document WGWAP-19/18), which is that a photo-identification team would use a small boat launched from shore to photograph whales in the nearshore feeding area and collect biopsies on a time-available basis.

Together, the three photo-identification teams working in 2017 collected nearly 19,000 photographs of gray whales and identified 72 individuals (including first-year calves). Of these 72 whales, 52 were identified in the nearshore feeding area and 21 in the offshore feeding area – only one whale was seen in both feeding areas. No biopsies were collected. The ship-based effort resulted in the identification of 21 individuals in the offshore area during 3 days and 8 whales in the nearshore area during 2 days. Unlike previous years, there was no dedicated small-boat effort in the nearshore feeding area.

When comparing shore-based photography to UAV photography, UAV methods resulted in more whales being identified by the team working on the northern spit but the opposite was true for the team working on the southern spit, where more whales were identified using standard methods. Tyurneva commented that the higher number of individuals identified using UAVs in the north was likely due to the more offshore distribution of the whales in portions of that area, which makes shore-based photography less effective.

Of the 21 whales identified in the offshore feeding area, 20 were sighted only in that area during 2017 (i.e. they were not sighted in the nearshore feeding area). Of the 52 whales identified in the nearshore area, 51 were identified only in that area (i.e. they were not sighted in the offshore area). Only one individual was seen in both feeding areas. The apparent degree of movement between the offshore and nearshore feeding areas in 2017 is less than 2016 when 7 whales were sighted in both feeding areas but both of these years stand in contrast to the apparently high degree of such movement in other years. In 2015, for example, 47 of the 102 whales sighted in the offshore area were also sighted in the nearshore area and 52 of the 113 whales sighted in the nearshore area were also sighted in the offshore area. According to Samatov, this situation can be explained by the small numbers of whales identified in the offshore area in 2016 and 2017 when effort there was limited by unfavourable weather conditions and vessel scheduling problems. Overall, the number of whales identified exclusively in the offshore feeding area between 2002 and 2017 was only 6 while the number of whales sighted exclusively in the nearshore feeding area was 146. This result is certainly related, in part, to the fact that mother-calf pairs do not use the offshore feeding area.

Nine calves and no previously unidentified non-calves were identified in 2017. Six of the calves were still associated with their mothers when first sighted while three calves were reported to have been weaned and independent of their mothers at the time of their first being sighted. No mother-calf pairs or independent calves of the year have ever been sighted in the offshore feeding area.

The assessment of whale body condition using photographs continued in 2017. Of the 63 non-calf whales identified individually in 2017, 21, including the six mothers accompanying calves, were judged to be in “poor” body condition. This is the highest percentage of whales (33.3%) rated to be in poor condition since this annual assessment was started in 2003. In comparison, between 2003-2016 the proportion of whales reported to be in poor body condition ranged from 9.7% (2012) to 21.3% (2016). Document WGWAP-18/19 stated that the condition of many whales judged to be in poor condition in 2017 improved over the course of the feeding season.

Finally, UAV-based photography and videography were used to identify locations where whales were feeding (from the presence of mud plumes) and related surfacing-diving behaviour. This approach was also used to identify when calves began to feed or at least began to contact bottom sediments and generated mud plumes.

6.1.2.2 DISCUSSION AND PANEL CONCLUSIONS

The Panel thanked Tyurneva for her presentation and highlighted the importance of the photo-identification work. It emphasized that information such as that contained in the sighting history tables (document WGWAP-19/18) is especially useful.

In response to a question from Dmitry Lisitsyn (Sakhalin Environmental Watch) as to whether photographs showing scars, wounds and other evidence of contact with fishing gear were being used to evaluate the frequency of such contact, Tyurneva stated that every instance of skin damage was recorded but that methods for categorizing and analysing these records was still being developed. Panel members noted that images obtained between 1995-2005 by the Russia-US research team had been analysed to characterize and estimate scarring rates related to fishing gear entanglements and vessel strikes (Bradford et al. 2008). On a related note, Dave Weller pointed out that (1) one of the whales shown on the final slide of the presentation by Tyurneva bore clear evidence of entanglement and therefore the sighting history and information on the condition of that individual over time should be reviewed, and (2) a whale sighted offshore by MMOs in 2018 (p. 47 of NTF-15/4), appeared to be in very poor condition, which suggested that its sighting history and information on its condition over time should be reviewed. The Panel **recommends** that prior to the next meeting Sakhalin Energy (a) pursue an updated analysis of the scarring data, following the methods developed by Bradford et al. (2008), to determine whether the rates of anthropogenic scarring have changed over time, and (b) review individual sighting histories for evidence of entanglement timing and changes in condition over time.

Finally, the Panel noted that the number of whales identified in 2017 (n=72 including only 52 whales identified in the nearshore feeding area), represents the lowest number identified in the 2002-2017 time-series with the exception of 2002 when the research programme was initiated. In comparison, a mean of 141.6 whales (range 128 to 171) were identified in the five-year period between 2012-2016. The apparently low number of whales using the nearshore feeding area is further reflected in the unprecedented low counts made during shore-based distribution surveys in 2017 (see item 6.1.1). That being said, both the photo-identification and shore-based distribution survey methods were changed in 2017, with no dedicated small-boat effort and the use of UAVs to collect distribution data, respectively. Therefore, it is not possible to determine whether the reduced number of whales observed in the nearshore feeding area represented an actual decline in the abundance of whales in this area or was merely a reflection of the changed field effort.

This provides further evidence, should it be needed, of the issues raised under Items 6.1.1.4 concerning the need to maintain the integrity of the long-term data sets by continuing to collect data that are consistent and comparable over time. Moreover, when major changes to field protocols are necessary, they must first be tested to ensure their comparability with previous methods.

In any event, the Panel remains **concerned** about the low numbers of whales reported in the nearshore feeding area in 2017.

6.1.3 Progress on studies using long-term data

6.1.3.1 BENTHIC STUDIES AND ECOLOGICAL CARRYING CAPACITY

Benthos and hydrological data collected by the Joint Programme between 2002-2016 were summarized in WGWAP-19/16. Over that period, one of the programe's major objectives was to monitor the distribution, composition and biomass of presumed prey species in the nearshore (Piltun) and offshore gray whale feeding areas (document WGWAP-18/7). The benthic sampling component of the programme was discontinued in 2017 and as a result no further sampling has been carried out since 2016.

Samatov summarized one of the major studies produced from long-term data on benthos – "Carrying Capacity of Ecosystem for Gray Whales (*Eschrichtius robustus*) in their Known Feeding Areas off Northeast Sakhalin Island" authored by a team of researchers (Vyacheslav Labay *et al*.) at Sakhalin Scientific Research Institute for Fisheries and Oceanography (SakhNIRO). The presentation had been given at the 2018 Holarctic Conference and Samatov shared it at this meeting with the permission of the authors, none of whom were present.

The stated goal of the study was to evaluate the carrying capacity of the ecosystem for gray whales in their known feeding areas off northeastern Sakhalin. The investigators analysed a broad range of data including: (i) the diet of gray whales via archival data and published literature; (ii) the formation of feeding areas described on the basis of an analysis of a large volume of oceanographic data (salinity, water temperature, bottom sediments, chl-a concentration); (iii) the structure, abundance indicators and interannual variability of the macrobenthos and its particular components thought to be important in the diet of gray whales and (iv) descriptions of benthic-feeding fish and their purported competitive relationships with gray whales.

Changes in the abundance and distribution patterns of gray whales in the nearshore and offshore feeding areas have been reported based on monitoring data from 2002–2016. One of the most significant findings from the benthic sampling conducted in the nearshore feeding area was an ongoing decline in total amphipod biomass. Analysis of long-term data (2002-2016) on amphipod abundance in this area revealed a sudden decrease in biomass beginning in 2013. One of the hypotheses presented by Labay et al. for this decline was consumption of macrobenthos by whales and bottom-feeding fishes, namely starry flounder and white-spotted eelpout.

The environmental carrying capacity of gray whale feeding areas in the periods of high biomass of benthos (2002–2004) and low benthos biomass (2013–2016) was calculated. The main conclusion of the work by Labay et al. was that increased predation by gray whales and bottom-feeding fish has depleted prey in the nearshore feeding area and that those resources are now at a critical state and can no longer sustain the feeding population of gray whales. The high biomass of benthos in the offshore feeding area supposedly provides sufficient prey to sustain an order of magnitude more whales than the currently estimated level of abundance.

6.1.3.2 Discussion and Panel conclusions

The Panel thanked Samatov but noted that it was unfortunate that none of the report's authors were present and that the full document was not made available for the Panel's review. This made it impossible to get clarification of important aspects of the work as presented.

In WGWAP-19/16, no mention was made of the decline in amphipod biomass in the nearshore feeding area from 2013-2016 despite the fact that this decline is of major concern. The sharp decline of amphipods at Piltun in 2013 was attributed, as stated in doc. WGWAP-17/6, to lower salinity levels linked to an Amur River flood event that year. According to the presentation at this meeting, the proposed hypothesis to explain the continued declines in 2014, 2015 and 2016 is an increase in the number of foraging gray whales together with predation by bottom-feeding fish. Because of the implications for feeding energetics and therefore the overall health and productivity of the Sakhalin gray whale population, the Panel has repeatedly encouraged the companies to explore the nature and causes of the decline of amphipod biomass in much greater depth and detail than has been done to date and recommended that they consider multiple explanatory hypotheses including biophysical events or processes in the regional marine ecosystem (see WGWAP-18 report, item 2.1.2; also Recommendation WGWAP-18/06).

The Panel welcomed the effort made to synthesize and analyze the large dataset on benthos collected by the companies' scientists since 2002 – a unique dataset of great scientific value. However, the method used for calculating the ecosystem carrying capacity has some weaknesses and does not make the most of the extensive long-term dataset available. The Panel therefore **recommends** that more advanced (e.g. bioenergetics) models be applied that take into consideration factors such as age and sex of the whales (see Villegas-Amtmann et al. 2015) and result in a much more robust estimation of the carrying capacity of both the nearshore and offshore feeding areas. This is particularly important in light of the apparently deteriorating critical condition of the nearshore benthic habitat (at least in terms of the amphipod biomass in recent years). The implications for gray whales could be extremely serious, particularly for mother-calf pairs that feed only in the nearshore area.

The Panel was disappointed to learn that no benthic sampling occurred in 2017 or 2018. Despite the great importance of the nearshore feeding area to gray whales, especially mother-calf pairs, there is no up-to-date information on the status of the amphipod biomass there. The Panel is also extremely concerned that the Joint Programme will not include benthic sampling in 2019 and again **recommends** that the decision to discontinue this important research be reconsidered by the companies (see WGWAP-18 report, item 2.1.2.2 and recommendations).

Finally, the Panel asked how it could gain access to documents from the Company's 'environmental monitoring programmes' as required by government authorities for offshore assets. These reports, such as "*2017 Offshore Assets Environmental Monitoring Programmes Summary Results and Strategy 2018+*," are produced by Sakhalin Energy and contain information on benthos and other issues (e.g. toxins) relevant to the work of the Panel. In the case of benthic data, the Panel acknowledges that the reports can likely serve only as a proxy for more detailed information, but given the discontinuation of dedicated benthic sampling, any data would be informative. Therefore, the Panel **recommends** that IUCN coordinate with Sakhalin Energy and seek access to these monitoring reports for Panel review.

6.1.3.3 Other Joint Programme publication priorities

In addition to the above-mentioned study by Labay et al., which according to Samatov is expected to be published in a journal sometime in 2019, Samatov provided an overview of the Joint Programme's other publication priorities. He made special mention of Mike Scott from ENL who has had a lead role in moving these priorities forward.

In 2018, three documents (unpublished) were submitted for consideration by the International Whaling Commission's (IWC) Scientific Committee at its annual meeting in May – one on long-term (2002-2017) photo-identification (Tyurneva et al.) and two others on genetic analyses that have since been formally published (Brüniche-Olsen et al. 2018a, 2018b). In addition, a paper on the biology of *Ampelisca eschrichtii*, one of the gray whales' main (presumed) prey species off Sakhalin was published (Durkina et al. 2018).

A number of presentations based on Joint Programme data were made at the 2018 Holarctic Conference, including the Labay et al. presentation (item 6.1.3.1) as well as presentations on the three aforementioned IWC Scientific Committee documents. Several of the presentations covered topics discussed at this meeting (e.g. use of drones for photo-identification, current distribution and abundance of gray whales off Sakhalin) but others covered topics of great interest that were not discussed at WGWAP-19 – namely 'near-bottom activity' of gray whales off Sakhalin (Bobkov et al.), use of an infrared detection system for monitoring gray whales (Kalinin and Scott), and mitigation and monitoring of multiple seismic surveys in proximity of gray whales at Sakhalin in 2015 (Aerts et al.).

Although no details were provided, Samatov indicated that a few other papers were either in review after journal submission or in preparation, including five on acoustics and one on pollutants.

6.2 Russia Gray Whale Project 2018 results and 2019 plans

Burdin summarized the results of 2018 field studies conducted by RGWP (formerly the Russia-U.S. Programme). This research programme started in 1995 as a pilot project and has been ongoing annually since 1997, funded in large part by IFAW. It represents the 20+-year time-series that has served as the foundation for western gray whale population assessment. The 2018 season resulted in the photo-identification of 23 individuals, including three calves and six previously unidentified non-calves. There are now 276 individuals in the RGWP catalogue. Because no surveys are conducted by the RGWP in the offshore feeding area and poor weather conditions hampered the researchers' ability to carry out routine surveys of the nearshore area in 2018, the number of whales photo-identified was not a reliable indicator of the number present. The pattern of sightings of gray whales in 2018 was notably different from that in previous years, with nearly all of the animals in 2018 observed south of the mouth of Piltun Lagoon. Burdin expressed his concern that anthropogenic impacts (e.g. from seismic survey activity, from ENL's sealift operations near the lagoon entrance and inside Piltun Lagoon) in recent years could have been among the factors causing the whales' redistribution, along with changes in benthic communities and reduced abundance of prey. His main concern is that the number of whales using the nearshore (Piltun) feeding area appears to be declining (only 23 whales identified in 2018 compared with 46 in 2017) and that the southerly shift of distribution could be related to ever-increasing oil and gas activities on the Sakhalin shelf.

Burdin reported that the RGWP is expected to continue its work in 2019 at both Sakhalin and eastern Kamchatka (Kronotsky Gulf). Boat-based effort will be expanded to include renewed biopsy sampling and the recruitment of new students into the programme. In addition to photo-ID, the work in 2019 is expected to result in new information on: (i) genetic structure and individual relatedness, (ii) diet via stable isotope and fatty acid analyses and (iii) pregnancy and stress hormones via collection of faeces.

6.3 Photo catalogues and cross-matching

The RGWP and Joint Programme catalogues have not been cross-matched since 2011. The Panel **recommends** that IUCN liaise with IWC and the companies to ensure that the whales newly photo-identified by each team during 2012-2018 be cross-matched.

Following a long-standing recommendation of the Panel, Donovan provided an update on his continued efforts within the IWC to facilitate development of a combined photo-identification catalogue and related database, inclusive of information from Sakhalin and Kamchatka collected by the RGWP and the Joint Programme. This combined catalogue and database would be held under the auspices of the IWC and use of the material would follow the guidelines specified in the IWC's time-tested data sharing agreement.

In his discussions with both parties to the Joint Programme (Sakhalin Energy and ENL), there was agreement that this effort should move forward. Similarly, the RWGP has expressed interest in achieving this goal. Donovan confirmed that the IWC's offer to co-ordinate the cross-matching and to curate a combined catalogue still stands. With that, the Panel thanked Donovan for his efforts and encouraged him to continue these important negotiations. Further, the Panel **encourages** all parties involved to take up the offer from the IWC, noting that the matter has been under discussion for a considerable time.

7 POPULATION ASSESSMENT

7.1 Status of gray whales in the western North Pacific

7.1.1 Current

Doc. WGWAP-19/22 (rev.) contains an updated population assessment of western gray whales. The assessment used photo-ID data collected off Sakhalin and Kamchatka by the National Scientific Centre of Marine Biology, Far East Branch of Russian Academy of Sciences (NSCMB FEB RAS, formerly A.V. Zhirmunsky Institute of Marine Biology, IBM FEB RAS) and RGWP, in addition to sex determinations from biopsies, photographic matches between Sakhalin or Kamchatka and Mexico, and results of long-range tracking of animals from Sakhalin to the eastern North Pacific. An individual-based population model was fit to the data under a range of stock structure hypotheses that had been developed by the IWC Scientific Committee for the purpose of informing future research, management and conservation options (see item 7.2).

There has been no cross-matching of the photo-id catalogues of the RGWP (successor to the former Russia-US project) and the NSCMB catalogues since 2011a. For whales first seen after 2011 ('new' whales) it was necessary to use data from only one catalogue. The resulting estimates of the number and trend of whales feeding off Sakhalin were essentially the same regardless of which catalogue was chosen.

At its latest meeting in May 2018, the IWC Scientific Committee endorsed a number of candidate stock structure hypotheses for population modelling purposes. There are eight hypotheses in total, but only five mutually distinct ones with respect to gray whales in the western North Pacific. The hypotheses involve a Western Feeding Group, consisting of whales from the eastern North Pacific wintering population that feed off Sakhalin and Kamchatka in summer. Under some hypotheses, some of the whales feeding off Kamchatka belong to a Northern Feeding Group that includes the bulk of the eastern North Pacific Population. Under some hypotheses, a Western Breeding Stock also exists. This stock is presumed to migrate through Asian waters in winter and includes some of the whales feeding off Sakhalin and/or Kamchatka.

The population estimates for the Sakhalin area are potentially affected by which stock structure hypothesis is assumed, and whether all whales that have visited Sakhalin, or only those that migrate regularly to Sakhalin, are included.

The estimates of number of whales by summering ground (without regard to breeding stock affiliation) were virtually independent of the stock structure hypothesis. The estimated numbers of gray whales in 2017 (excluding calves) were: 166-170 (CV=0.06-0.07) for whales that regularly visit Sakhalin; 225 (CV=0.05) for all Sakhalin whales; and 323 (CV=0.05) for all Sakhalin and Kamchatka whales. In all cases, the Sakhalin population was estimated to have been increasing since photo-ID monitoring started in 1995, and to have approximately tripled in size during 1995-2017.

Depending on the stock structure hypothesis, estimates of the size (excluding calves) of the Western Feeding Group in 2017 ranged from about 150 to 320, while estimates for the putative Western Breeding Stock (for those hypotheses where such a stock is assumed to exist) were all below 100 whales in 2017.

7.1.2 Historical

In order to assess the scope for potential recovery of western gray whales, doc. WGWAP 19/22 (rev.) also includes an attempt to estimate past trends in the populations of gray whales in the eastern and western North Pacific. The author assumed that all waters 5-50 m deep were ‘potential gray whale feeding habitat’ (recognizing, however, that gray whales can feed in waters much deeper than 50 m), and mapped those in the eastern and western North Pacific, and in the Pacific Arctic and sub-Arctic (Bering and Chukchi Seas). It was also assumed that the northern feeding habitat was available in summer to whales from both the eastern and western breeding stocks, although today it is used mainly or exclusively by whales from the eastern North Pacific. Under these assumptions, apart from the northern areas, there is a much greater areal extent of potential feeding habitat in the western than the eastern North Pacific. Although most gray whales in the eastern North Pacific appear to feed very little in winter, the author’s hypothesis (WGWAP 19/22 (rev.)) holds that those in the western North Pacific could have had more opportunities for year-round feeding.

There is historical evidence of significant catches over a long period by pre-modern whaling in some Asian countries, which may have depleted gray whales in the western North Pacific by the late 19th century. They were further reduced to a small remnant by modern whaling in the 20th century. Cooke’s preliminary result from fitting a population model to his reconstruction of removal data led him to suggest that the western population was larger in the past (~25 000 whales) and that the eastern population expanded as a result of the depletion of the western population, which would have reduced the competition for prey resources in the northern feeding grounds. Published estimates of historical ice cover were used to estimate the area that would have been accessible to gray whales: it was thought that summer ice cover fluctuated around a roughly constant level from 1850-1980 but has been declining sharply since. Thus, some recent habitat expansion due to ice retreat is likely, but the western population was too small by the mid-20th century to benefit from such expansion.

The Panel concluded there is considerable uncertainty surrounding the assumptions and results of this analysis. That being said, attempts to incorporate historical whaling and ecological/climatic factors into modelling exercises, could be relevant to recovery strategies for western gray whales. Therefore, while noting the highly provisional nature of findings to date, the Panel encourages relevant scientific fora such as the IWC Scientific Committee to consider such approaches.

7.2 Summary of results of IWC range-wide workshops on stock structure

Donovan summarised the report of the fifth IWC Scientific Committee range-wide workshop on gray whales (IWC doc. SC/67b/Rep07) held at the Granite Canyon Laboratory of the Southwest Fisheries Science Center in California from 28-31 March 2018. The overarching objective of the workshop was focused on setting the final modelling specifications so that they could be reviewed at the annual meeting of Scientific Committee in May 2018. The specific tasks of the fifth workshop were to: (a) review and update the results of the modelling work identified at the fourth range-wide workshop in 2017 (IWC 2018a) and the 2017 Scientific Committee meeting (IWC 2018b), (b) consider any new information, especially regarding bycatch (incidental mortality from both entanglement in fishing gear and ship strikes), mixing matrices and stock structure, (c) examine a management plan proposed by the Makah Indian Tribe (submitted by the USA to the IWC) for hunting gray whales in Washington state (IWC doc. SC/67b/Rep07, Annex E, Appendix 1) and (d) develop a workplan for revising the scientific components of the Conservation Management Plan (CMP) for western gray whales.

The workshop completed all of those tasks. Importantly, and particularly relevant to the work of the Panel, two stock structure hypotheses (3a and 5a) were given priority for future modelling. Hypothesis 3a assumes that while two breeding stocks (Western and Eastern) may once have existed, the Western breeding stock is extirpated. Whales show matrilineal fidelity to feeding grounds, and the Eastern breeding stock includes three feeding aggregations: Pacific Coast Feeding Group, Northern Feeding Group, and Western Feeding Group. Hypothesis 5a assumes that both breeding stocks are extant and that the Western breeding stock feeds off both coasts of Japan and off Korea and in the northern Okhotsk Sea mainly west of the Kamchatka Peninsula. Whales feeding off Sakhalin include both whales that are part of the extant Western breeding stock and remain in the western North Pacific year-round, and whales that are part of the Eastern breeding stock and migrate annually between Sakhalin and the eastern North Pacific. New estimates of abundance for western gray whales that correspond with the various stock structure hypotheses outlined above were provided to the Scientific Committee by Cooke (IWC doc. SC/67B/ASI/02).

Regardless of whether they spend all or only a fraction of their time there, Donovan emphasized that gray whales in the western North Pacific (WNP) represent an important conservation unit. The summering area off Sakhalin represents the only presently known major gray whale feeding habitat in the WNP and threats from habitat perturbation, ship strikes and in particular fishing gear entanglements (Lowry et al. 2018) are recognized both there and throughout the whales' range. The IWC and IUCN have long agreed that the whales in the WNP are in need of continued efforts to complete and implement the CMP. This will require renewed engagement with range states and stakeholders to determine how to manage and mitigate human activities that are known (or likely) to be detrimental to the whale population(s).

8 GOVERNMENT UPDATES

8.1 Activities of Biodiversity Group /Environmental Council at Sakhalin MNR level

8.1.1 Presentation

Tsarenko, who serves as Secretary of the BG under the Sakhalin Oblast Interdepartmental Environmental Council, provided a presentation reminding meeting participants of the BG's mandate and summarizing its discussions relevant to gray whales at its semi-annual meetings in November 2017 and May 2018 (the next meeting was scheduled for late November 2018).

The BG is chaired by the Director of the Department of Environmental and Water Resources Protection and its membership includes representatives of resource management and research agencies, academic institutions, NGOs (notably Sakhalin Environment Watch, WWF and Boomerang Club), and oil and gas companies operating in the region (notably Sakhalin Energy, ENL and GPNS among others). The BG's intended role is to function as "a collegial competent body formed to develop proposals, recommendations for resolving urgent issues in the sphere of environmental protection, effective use of natural resources, ensuring environmental safety of the population and social and economic development of the region." In practice, the BG provides a forum for discussions on matters of regional interest and concern, often centring on salmonid and marine mammal conservation (monitoring and protection measures). Decisions (= recommendations) are agreed on the basis of majority vote, with the chair's vote prevailing in the case of a tie, and submitted for further consideration and action by the Interdepartmental Environmental Council.

At the November 2017 meeting, after receiving a presentation by the ENL Environmental Project Manager, the BG recommended that "oil and gas companies operating offshore north-east Sakhalin strictly follow the recommendations outlined in the supply vessel movement regulation." It also endorsed the Boomerang Club's marine mammal protection project and decided to form a sub-body called the Marine Mammals Protection Section.

At the May 2018 meeting, following a presentation of Sakhalin Energy's MMP for the impending Piltun-Astokh 4-D seismic survey, the BG 'encouraged' the company to present results of its MMP implementation at the next meeting and made a more general recommendation that oil and gas companies "inform the Federal Fishery Agency on planned seismic surveys in advance to allow for the necessary planning of fishery research." In addition, ENL was encouraged to report on results of its efforts to detect the presence of gray whales early in the season with the aid of an infrared camera system, and the Marine Mammals Protection Section was encouraged to elaborate on its efforts to address the issue of salmon fishery management in gray whale areas off NE Sakhalin. Finally, after a presentation by Samatov introducing the concept of a business and biodiversity platform, the BG encouraged relevant materials to be distributed to members.

In closing her presentation at this meeting, Tsarenko emphasized that the BG provides an excellent platform for information sharing among government officials, companies and NGOs.

8.1.2 Discussion and Panel conclusions

During the discussion, Lisitsyn, a regular participant in the BG, explained that the group has no decision-making authority over aquatic and marine resources, which are ultimately subject to regulation by federal agriculture and fisheries agencies. Therefore, in practice those BG recommendations that are adopted by the Environmental Council become guidelines for the relevant regional ministry, which follows them if it chooses to do so. Collaboration with federal agencies is more involved and requires involvement of Sakhalin Oblast. At a meeting on 20 July 2018 of the commission that oversees fisheries on the island (chaired by the vice-governor), recommendations concerning the entanglement risk to gray whales were reviewed. However, given the recent installation of a new governor on the island, Lisitsyn judged the likelihood of strengthened measures to reduce the risk of whale entanglement to be very low for the present. He attributed the lack of salmon nets in the Piltun area in 2018 to the forecasted poor salmonid runs rather than to regulatory action.

The Panel expressed appreciation to both Tsarenko and Lisitsyn for bringing this information to its attention and took note of the suggestion made by several participants that it would be worthwhile for IUCN to monitor the BG's activities and possibly to engage with it directly or indirectly. Such engagement could be facilitated through the BG's business and biodiversity platform.

8.2 Business and Biodiversity Initiative in Russia: current situation and perspectives

Svetlana Sheynfeld (RosZapovedCentre, Ministry of Natural Resources and Ecology [MNR]) described an ongoing process, launched by MNR, to establish a 'Business and Biodiversity Initiative' in Russia. The starting point was a decision of the Convention on Biological Diversity, and the initiative has been inspired and informed by the work of IUCN's Business and Biodiversity Programme and the International Finance Corporation's Performance Standards. Also, the UNDP/GEF project "Mainstreaming biodiversity conservation into Russia's energy sector, policy and operations" demonstrated to the government, civil society, local communities and businesses, the benefits of using the mitigation hierarchy approach when trying to limit the impacts of development on nature. The Business and Biodiversity Initiative is expected to create an incentive for companies to adopt and maintain the mitigation hierarchy approach. The initiative will be included in the national project 'Ecology', to be implemented in 2019-2024. Although this project does not explicitly include marine mammals among the 'rare' species at present, the idea of expanding the list by engaging relevant stakeholders awaits governmental approval.

Sheynfeld said that links with regional groups including the Sakhalin BG (see item 8.1 above) would be established through pilot projects. She expects the initiative to establish offices for biodiversity conservation in various parts of the federation, including on Sakhalin, by 2021. Before it is rolled out in the regions, however, a certain amount of organizational groundwork needs to be completed and a community of experts needs to be built up to raise awareness and promote the concept. Sakhalin Island could become a good early example. Getting regional groups involved in the federal group would improve the latter's standing and outreach across the country. Regarding potential links with the Panel, Sheynfeld envisioned the biodiversity group or groups as having thematic meetings on a regular basis, preferably involving businesses that wish to engage. Her department intends to confer with the minister every quarter, focusing each time on a specific industry or set of industries. An extraordinary meeting to address the challenges of gray whale conservation is a possibility and Sheynfeld gave assurance that she would liaise with the Panel if she sees value in this. The WGWAP-20 meeting in Moscow might provide a good opportunity.

Samatov confirmed that the Company welcomed these developments, and he agreed that the experience on Sakhalin might serve as an example for other regions. He also emphasized that the Company would welcome gray whales being added to the priority species list.

Sheynfeld concluded that the WGWAP experience of engaging the business sector in a constructive way with the goal of benefitting biodiversity may serve as a 'best practice' example and she looked forward to cooperative engagement with IUCN and WGWAP in early 2019.

9 FUTURE OF JOINT PROGRAMME

9.1 Sakhalin Energy's plans

9.1.1 Company presentation

Samatov presented the 2019 Scope of Work for the Joint Monitoring Programme and at the same time gave brief summaries of aspects of the programme's implementation in 2018. The companies' goal and objectives have not changed and are not planned to change in the immediate future, the 'specific tasks' for the Joint Programme being to (i) determine the spatial distribution of gray whales off NE Sakhalin during what is considered the main feeding season, (ii) assess abundance, demographic characteristics, structure and dynamics of the population and (iii) complete and publish 'interdisciplinary, multi-component' analyses of the multi-year data sets.

As in 2018, the field aspect will have only two components in 2019: photo-identification and distribution monitoring. Regarding the former, Samatov stated that the same methods and approaches will be used in 2019 as in 2018, with two vehicle-supported, shore-based photo-ID teams operating on a daily basis from the beginning of July to the end of September. The hand-held photographic and videographic effort will again be supplemented in 2019 in some unspecified way by shore-based UAVs (in 2018 the UAV effort produced around 20,000 images from 193 'missions'). No details were provided on how, or if, the photographic and videographic material from the two methods (handheld and UAV) were or will be compared, reconciled or integrated for analysis. Vessel-based photo-ID in the offshore feeding area was carried out by GPNS on behalf of the Joint Programme in 2018 and this arrangement apparently will continue in 2019 (see item 10.1.2 below).

Regarding the distribution monitoring component, the shore-based effort apparently will be carried out ‘periodically’ by the same individuals who are responsible the photo-id effort (using cameras and drones), as in 2018. ‘Synchronised’ surveys will be used as a means of calibrating the results of drone surveys and the results from ‘traditional’ surveys by teams at the shore observation posts using binoculars. Synchronisation in this context means that the observation teams on the north and south spit operate in coordinated fashion to achieve complete and synchronous coverage of the entire nearshore study area. When possible, coverage of the offshore feeding area (apparently by the GPNS team) would be timed to coincide.

Mention was made of the potential to employ new technology (besides drones), e.g. infrared cameras to monitor whale movements from fixed sites on shore. However, it was unclear whether or to what extent Sakhalin Energy (as opposed to ENL) would be involved in this aspect.

9.1.2 Discussion and Panel conclusions

During the discussion, Samatov confirmed that ‘traditional’ distribution surveys from shore (standard elevated observation posts, teams of observers using binoculars) were conducted in 2018 (six ‘complete’ surveys) and would be again in 2019 on a weekly basis. The Panel’s dissatisfaction with the changed method (and lack of advance notification) used for the distribution component of the 2017 programme can be found under item 6.1.1.4. Whilst cautiously welcoming the apparent return to ‘traditional’ surveys in 2018 and 2019, the Panel expressed dissatisfaction and concern that no clear advance explanation was provided in sufficient time to comment on (a) how the data collection methods had changed in 2017 and 2018 and (b) if, and if so, how the companies had sought to ensure that the long time-series of distribution data would not be significantly compromised.

Given this situation, the Panel **recommends** that Sakhalin Energy, with or without its Joint Programme partners, include a ‘traditional’ shore-based component of distribution monitoring in the 2019 field effort. This is particularly important because 2018 was an ‘activity’ year (Piltun-Astokh seismic survey) and the distribution monitoring effort was seriously impaired by exceptionally poor ice and weather conditions. Moreover, there is reason to believe that major changes have recently occurred in the whales’ nearshore prey base and in their relative use of the two northeastern Sakhalin feeding areas. As a result, the ability to compare patterns of whale distribution in 2019 and those of previous years, when the types and levels of potential anthropogenic disturbance differed markedly, is critical. The Panel further **recommends** that Sakhalin Energy provide, for consideration at the WGWAP-20 meeting, a clear explanation of the analyses conducted by the companies to compare the results of ‘traditional’ distribution monitoring with drone-based monitoring in order to evaluate compatibility or consistency between the two approaches.

The Panel expressed concern that having the same individuals responsible for photo-ID (operating still cameras, video cameras and drones) and distribution monitoring created a risk that one or the other programme component could be compromised. Samatov stated his view that, except under exceptionally challenging environmental conditions (e.g. bad weather), this should not be a problem.

In response to a question concerning the methodology of synchronised surveys, Vertyankin (who was involved in carrying out these surveys) explained that the two observation teams started from the same point and moved respectively north and south to minimize the chances of double-counting any whales. Also, the two teams kept in contact by telephone.

There was confusion concerning the regularity of distribution surveys throughout the season. In the past, the Joint Programme scope of work specified that surveys would be conducted daily, conditions permitting. More recently, it has been specified that the surveys would be ‘periodic’. In response to this point, Samatov stated that the plan was to conduct a synchronised survey once a week. In any event, the Panel pointed out that this was another change in methods from previous years, and noted its displeasure that it had not been clearly explained and justified prior to being implemented.

When asked how the Joint Programme would ‘manage’ the challenges associated with the ENL and GPNS seismic surveys planned for summer 2019, Samatov replied that the Joint Programme would be implemented as planned, from July to October, and the two companies’ monitoring programmes for their seismic surveys would be additional and separate. He also confirmed that there would be no ‘competition’ among the companies for personnel and other assets needed to carry out the various tasks. The Panel is sceptical given the experience in 2015 when both Sakhalin Energy and ENL conducted major seismic survey programmes as well as the Joint Programme.

9.2 Panel’s consideration of further engagement on Joint Programme design and plans

The Panel **reiterates** its disappointment that the Panel’s advice had not been requested or enabled concerning significant changes in the Joint Programme as discussed under Items 6.1.1.4 and 6.1.3.2.

Firstly, the Panel has repeatedly emphasized the need for validation or calibration testing of new methods before they are adopted in order to ensure that comparable data are available for year-on-year comparative analyses. There had been no mention in the documents or presentations prior to this meeting, and the Panel had not been notified, of how, or even if, the Company intended to do this.

Secondly, the decision-making timetable often continues to *not include* opportunities for meaningful Panel input, despite the good-faith efforts by the Company’s HSE leadership, the Panel and IUCN to achieve such input to the Joint Programme ‘refresh’ over the last two years (see reports of JPTF-2 and 3 meetings in May and November 2016 and the report of WGWAP-17, item 5). The Company has been, in effect, wasting an opportunity (actually a *responsibility* according to the WGWAP Terms of Reference) to receive and benefit from the advice of the Panel. It had been hoped that the time when the Panel was only able to comment retrospectively (and often negatively) on Company activities were in the past. Recent developments suggest otherwise.

Questions related to timing of delivery of documentation to Russian regulators versus timing of delivery to WGWAP have plagued the process from the beginning, as have the difficulties that arise, chronically, from trying to advise only one of two companies that function in partnership to design and implement the gray whale monitoring programme. While the Panel readily acknowledges that Sakhalin Energy’s first priority must be to meet its obligations under Russian law, we cannot accept what appears to be the current state of play, by which the Panel is, time and again, informed of changes in the Joint Programme’s composition and methods only after the fact, such that either advice-giving is precluded by mismatches in timing or any advice that is given is either ignored or contradicted in practice.

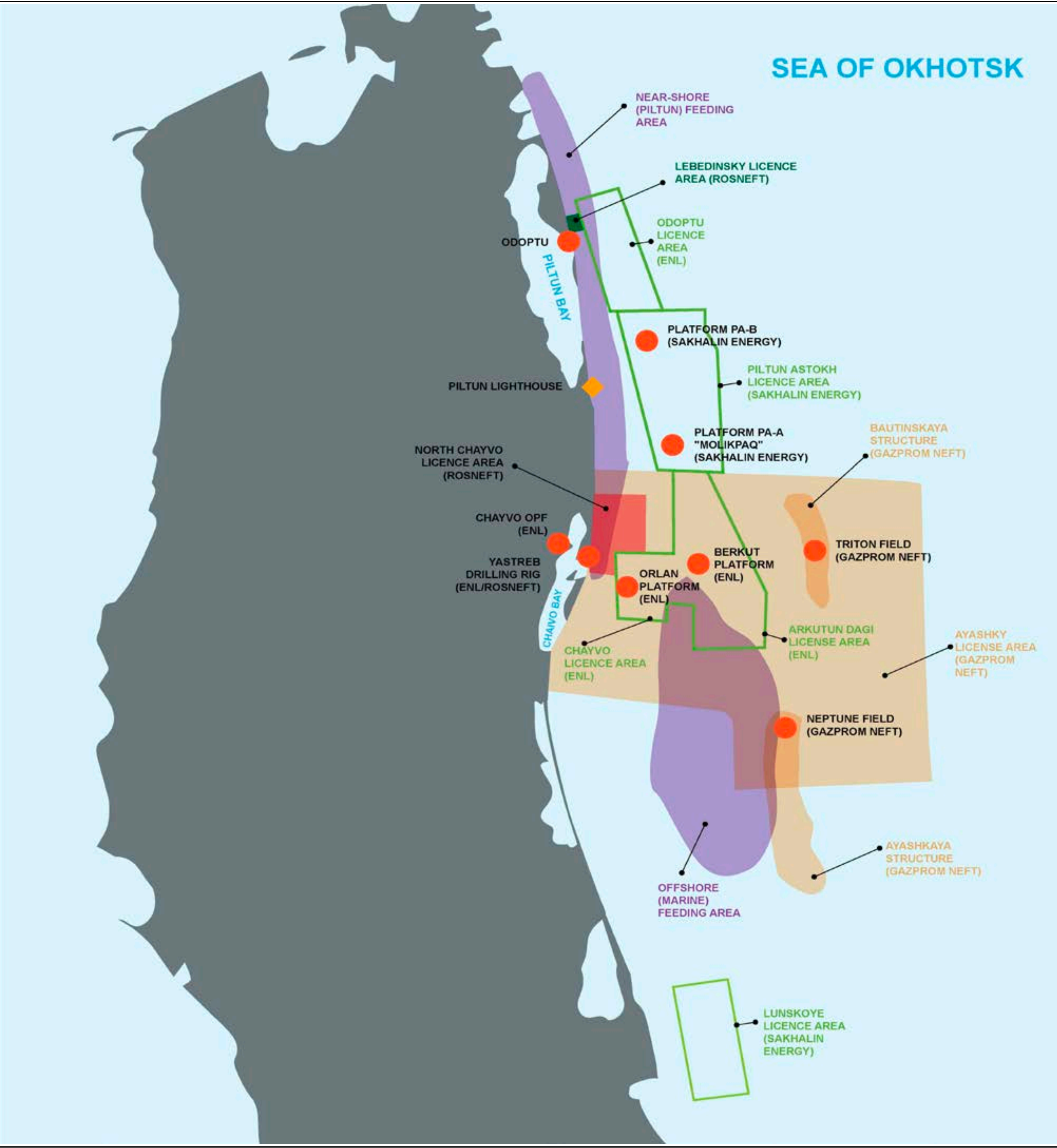
10 MANAGING OTHER ISSUES ON THE SAKHALIN SHELF

10.1 Update on other oil and gas companies in and near the whale feeding areas in 2018 and beyond

10.1.1 Overview of PJSC “Gazprom Neft”

The Panel welcomed the participation of several representatives of Gazprom Neft as observers, as well as the two presentations given, one (summarized here) by Shaukat Bakiev, who heads the Health, Safety and Environment (HSE) Department of Gazprom Neft’s Block for the Development of Offshore Projects, and the other (summarized under item 10.1.2) by Boris Dotsenko, who heads the HSE Department of Gazpromneft-Sakhalin.

Gazpromneft-Sakhalin (GPNS) is a subsidiary of Gazprom Neft. Its core operations are exploration, appraisal and development of offshore oil and gas fields. The company is the geological survey operator at the Dolginskoye oil and gas field, the Northwest license area, Kheysovsky license area, North Wrangel license area and Ayashsky license area in the Sea of Okhotsk. The Ayashsky license area is located on the north-eastern Sakhalin Shelf, 55 km offshore and adjacent to the eastern border of the offshore feeding area of gray whales. Maximum water depth in the license area is around 90 m (see Map 1).



Note: This schematic map is based on publicly available information (including from company websites, Joint Programme reports and other sources) and it is included here only for illustrative purposes. The designation and depiction of areas on this map should not be interpreted as any opinion on the part of IUCN or WGWAP concerning the legal status, authorities or operators, or delimitation of boundaries. Coordinates, boundaries etc. on the map are not exact and therefore should not be used as such.

Map 1. Schematic map showing the approximate locations and boundaries of GPNS development areas in or near the gray whale feeding areas off north-eastern Sakhalin. Also shown are neighbouring development areas and structures of Sakhalin Energy and ENL.

To date, GPNS has completed drilling and testing of an exploration well in the Bautinskaya structure of the Ayashsky license area. The decision to drill there followed in-depth geophysical (seismic) surveying and 3D seismic data analyses. This is where Neptun, one of the largest oil and gas fields on the Sakhalin Shelf, was discovered in 2017.

In his presentation, Bakiev indicated that geophysical surveys would continue, and the next project implementation phase would be determined in due course. He emphasized that environmental protection, including protection of marine mammals, is a high priority for the company and that it conducts environmental monitoring in accordance with programmes approved by the relevant government agencies of the Russian Federation.

10.1.2 Environmental monitoring and control at Ayashsky and other licence areas of LLC "Gazpromneft-Sakhalin" in 2018

10.1.2.1 Company presentation

On behalf of GPNS, Dotsenko gave a presentation on that company's gray whale monitoring programme off northeastern Sakhalin in 2018. While the overarching aim of this programme is to provide broadly based environmental monitoring relative to development activities in the Ayashky License Block (Sakhalin-3), an area located adjacent to the offshore gray whale feeding area, a dedicated component of the programme focuses on collecting data on and characterizing the spatial and temporal distribution of the whales. As part of its 2018 field effort, GPNS conducted vessel-based line transect distribution surveys and photo-identification missions under the auspices of the Joint Programme. This work was carried out from the GPNS ship *Siem Sapphire* and covered an area southeast of Chayvo Bay that extended between 51°48' to 52°12'N and 143°30' to 143°56'E in waters 35-65 m deep.

The transects used in 2018 were similar to those used by the Joint Programme in the past but two modifications were made, as follows: (i) the innermost north-south transect lines were moved offshore (to the east) to address apparent entry/exit issues related to Russia's 12-nautical mile Exclusive Economic Zone (EEZ) and (ii) the west-east portion of each transect, as well as the outermost north-south lines, were extended further offshore (to the east). Four complete surveys, two of which spanned two days, were conducted on the following dates: 15-16 August (98 whales counted), 16-17 September (137 whales counted), 28 September (124 whales counted) and 9 October (78 whales counted). In general, the distribution of whales in the offshore feeding area in 2018 appeared similar to what had been observed in the recent past (but direct comparisons were not provided in the presentation).

Gray whales and seals were the most commonly observed marine mammals in the study area, but sightings of porpoises (species not provided), minke whales and killer whales were also recorded. Of particular interest to the Panel were four sightings of seven North Pacific right whales. These sightings occurred on 24 August and 5-6 October. The sightings on 24 August and 6 October were near the offshore gray whale feeding area while those on 5 October were further away, south of 50°N and east of 145°E. Finally, 136 sightings of fin whales were reported in a vessel transit corridor between northeastern and southern Sakhalin.

Vessel-based photo-identification research was carried out between 23 July and 26 October. When conditions were suitable, a 7.3 m Rigid Hull Inflatable Boat (RHIB) was deployed from the *Siem Sapphire* for purposes of approaching and photographing gray whales. In total, over 131 hrs of effort were dedicated to photo-identification. The RHIB was deployed 10 times for photography, and images were collected an additional 15 times from the *Siem Sapphire*. The first photograph collected in 2018 was on 4 August and the last image was taken on 15 October. In total, 221 sightings of 428 gray whales were recorded and over 11,000 images collected. Olga Tyurneva of NSCMB FEB RAS, is processing the photographs collected as part of the Joint Programme.

Dotsenko clarified the relationship between GPNS and the Joint Programme, indicating that initial contact among the three companies had been made in early 2017. Following meetings to discuss the 2018 scope of work, the management of GPNS agreed that the company would become a third partner in the Joint Programme. This arrangement involves interactions among the three energy companies, regulatory and state authorities, and public organizations. Finally, Dotsenko noted that planning was underway for continued collaboration as part of the Joint Programme in 2019.

10.1.2.2 Discussion and Panel conclusions

The Panel thanked Dotsenko for his presentation and GPNS for participating in and contributing to the meeting. The company's commitment to environmental monitoring with respect to planned activities off Sakhalin as well as in other areas where it operates is commendable and welcome.

Alexey Knizhnikov (WWF, Russia) also welcomed the participation of GPNS and, at the same time, expressed disappointment that representatives of ENL did not attend. He encouraged IUCN to continue its efforts to recruit other companies into the Panel process, even if only as observers.

Given the proximity of the Ayashky license block to the offshore gray whale feeding area, the Panel asked whether GPNS had any noise-generating activities planned for 2019. Dotsenko confirmed that the company's work plan for 2019-2021 included seismic surveys in both the Neptun and Triton fields. Regarding seismic surveys, the Panel was informed of 3D OBN surveys planned for the Neptun field in 2019 and the Triton field in 2020. Details of the 2019-2021 schedule of work are still being planned but Dotsenko noted that ENL had been consulted about the timing of its 2019 seismic survey in the vicinity of the nearshore feeding area. With respect to timing of its own surveys, GPNS has proposed September for the survey in the Neptun field. Finally, Dotsenko mentioned that his company was in the process of investigating how to design an acoustic monitoring programme. It intends to follow 'best practices' for this and looks forward to discussing methodology with appropriate experts, including Panel members.

The Panel highlighted the scientific interest in the North Pacific right whale sightings during the 2018 monitoring work and stressed that any photographs or additional information about these sightings would be welcomed internationally as a contribution to the conservation of this endangered species (Cooke and Clapham 2018). The Panel therefore **recommends** that IUCN follow this up with the company to obtain any photographs and additional details that might be available on these sightings. The photographs and information could then be shared with relevant right whale specialists. Also, the Panel encourages GPNS to consider the use of passive acoustic devices to learn more about the occurrence of right whales in and near the company's license areas.

The effort being made by GPNS to collect data on seabirds and record observations of marine debris routinely was welcomed by the Panel. As an additional component of data collection, the Panel **recommends** that information (location, gear type, vessel type etc.) be recorded on fishing activities in and near the offshore feeding area. Data of this nature would improve understanding of potential threats to gray whales (and right whales) from entanglement in fishing gear.

Finally, given the apparent changes in whale distribution in, and usage of, the offshore feeding area, the Panel was asked for advice on how to improve design of the transect grid for distribution surveys there. The Panel suggested an adaptive strategy such that the standard grid could be modified (e.g. add a new line or extend an existing line) if animals were sighted beyond the boundaries of the existing survey grid. Members of the Panel offered to follow up with more detailed advice if requested.

10.1.3 IUCN overview of 2018 activities and future plans of other operators

At the Panel's request, Berzina-Rodrigo presented a short overview of nine oil and gas projects (including Sakhalin-2) located off northeastern Sakhalin in or near gray whale feeding areas (doc. WGWAP-19/26). Based on information available in the public domain (such as company websites, tenders, press releases and media), she summarized each project's operators and participants, current stage and existing assets/infrastructure, and highlighted key activities in 2018 (or new information that has recently become available) and plans for 2019 and beyond.

Rosneft (which has been invited to WGWAP meetings but not yet attended) is involved in seven of those nine projects (a licence holder for six) either directly via its subsidiaries or in partnership with other companies, including ExxonMobil (USA), Sakhalin Oil and Gas Development Co., Ltd. (Japan) and ONGC Videsh (India) as participants in the Sakhalin-1 project, and Petroleum and Chemical Cooperation (Sinopec, China) for North Veninsky block of the Sakhalin-3 project. Gazprom, acting via its subsidiaries, leads development of the Ayashky block of the Sakhalin-3 project with Neptun and Triton fields discovered in 2017-2018 (see items 10.1.1 and 2, above).

Five out of the nine projects are now in the production phase – Sakhalin-1 operated by Exxon Neftegas Limited (ENL), Sakhalin-2 operated by Sakhalin Energy, Northern Tip of Chaivo field operated by Rosneft subsidiary RN-Shelf Far East, Lebedinskoye field and Offshore Odoptu field Northern dome (also called Odoptu Sea field Northern dome) operated by another Rosneft subsidiary, RN-Sakhalinmorneftegaz. Oil and gas are extracted from both onshore and offshore facilities, ranging from onshore drilling rigs and sites using wells extending several kilometres offshore, to offshore platforms with pipeline systems for transporting products to processing plants and export terminals on shore.

Some new information on Rosneft activities came from the company's 2017 Annual and Sustainability Reports published in 2018[5], which confirm that the area and resource base of Lebendiskoye field (located within the Piltun feeding area) has been expanded, and a pipeline between Lebedinskoye field and Odoptu Sea field was constructed along with other associated infrastructure. As of 1 January 2018, Lebedinskoye field had four oil production wells on shore, while adjacent Odoptu Sea field (the Northern Dome) had 28 oil production wells and seven injection wells in operation. In the Northern Tip of Chaivo field (which also overlaps the nearshore feeding area) oil is produced from five wells drilled from shore in shallow waters. In 2018, Elvary Neftegas (owned by Rosneft) was preparing to develop its prospective Kaygansko-Vasyukanskoye Sea field. No new information was available on Venineft's North-Veninskoye (Sakhalin-3) gas production project (a joint venture between Rosneft and Sinopec). Previously, it was reported that drilling and pipeline construction (12.5 km) for this project would begin in 2019.

Following a 2017 seismic survey carried out by Rosneft's subsidiary RN-Shelf-Arctic at Deryuginsky prospective field, exploration drilling was planned to start in 2018-2020. At the time of this meeting, however, no further information was available on work that took place in 2018. Environmental monitoring associated with the exploration operations were supposed to include observations of marine mammals, birds and animals of the coastal zone, as well as mapping of aquatic biota.

In 2017 Rosneft's Arctic Scientific Centre produced an Atlas of Marine Mammals in Russia's Arctic and Far East, which includes information on the distribution of 43 species, based on the results of the company's long-term research activities and marine mammal observations in these regions (Belikov et al. 2017). The atlas was presented and distributed at the 2018 Holarctic Conference (see item

[5] See https://www.rosneft.com/upload/site2/document_file/a_report_2017_eng.pdf and https://www.rosneft.com/upload/site2/document_file/RN_SR2018_eng_web_1.pdf

11.3.2). In addition, Rosneft reportedly has produced guidelines for assessing the impacts of seismic surveys on marine mammals from marine geological surveys but it was not possible to obtain (or verify the existence of) this report.

The Sakhalin-1 project operated by ENL (which was invited but chose not to attend this meeting) is now in the production phase across its three fields – Chaivo, Odoptu and Arkutun Dagi. Oil and gas are extracted from both onshore and offshore facilities, including an onshore drilling rig with record-long wells extending offshore as well as two offshore platforms with a pipeline. Information in the public domain on future plans is very limited, but there are plans to expand natural gas extraction from Chaivo field, and this will require the drilling of additional wells and the expansion of existing onshore and offshore facilities. Although no reference was found in the open sources consulted, the fact that ENL was planning for a seismic survey in 2019 was mentioned several times during the meeting.

10.2 Update on cruise ship visits to Piltun

An issue first brought to the Panel's attention at the WGWAP-14 meeting concerns visitation of the Piltun feeding area by cruise ships that deploy small boats to approach whales for the benefit of tourists. In light of discussions at that meeting, the Panel requested that IUCN compile information on the tour companies that are known to advertise or offer cruises to Piltun and provide this information for consideration at the next meeting (recommendation WGWAP-14/007).

At the WGWAP-16 meeting, IUCN provided a compilation of information on cruise-ship companies known to have advertised or offered cruise itineraries that included visits (or at least potential visits) to the Sea of Okhotsk and the Sakhalin gray whale feeding areas in 2015-2017 (document WGWAP-16/19). Although it was clear that visits to the Piltun area, specifically to observe gray whales, continued to be advertised by some tour companies, it could not be determined whether the cruises actually occurred.

A brief presentation during the WGWAP-18 meeting provided information on a visit to the Piltun area by the Silversea cruise ship *Silver Discoverer*, which anchored about 2 km offshore of Piltun on 1 September 2017. Ten inflatable boats reportedly were launched with about ten people aboard each of them. Several of the boats were observed to approach 2-3 gray whales before returning to the ship. The ship was present in the area for a total of about five hours. It was also noted that another cruise ship from Heritage Expeditions visited the Piltun area in 2017. At that time, the Panel noted that a photograph contained in the IUCN compilation of cruise ship information (document WGWAP-18/28) appeared to be of an emaciated gray whale with markings suggestive of entanglement. The Panel requested that IUCN try to track down the photographer and obtain any related information as well as additional photographs if available. No additional details regarding this image have been acquired.

Communications between IUCN, several members of the Panel and Silversea ensued following the WGWAP-18 meeting. Specific information describing the types of photo-identification images useful for scientific purposes were provided to Silversea. As a result of these efforts, the following collections of photographs were provided to the Panel by Ms. Cory Ann Hom-Weaver, *Silver Discoverer* (Silversea Cruises) 2017 as summarized in Table 3.

Table 3. Photographs available from the 2017 *Silver Discoverer* cruise in the region.

Date	No. images	Location
Gray whales		
1 September 2017	19	Piltun Lagoon (Sakhalin)
8 September 2017	61	Utashud Island (Kamchatka)
Killer whales		
24 August 2017	110	Russkaya Bay (Kamchatka)
9 September 2017	Unknown*	Russkaya Bay (Kamchatka)

Weller and Burdin reported that inspection of the gray whale images by the Russia Gray Whale Project (i.e. Burdin) confirmed the identification of a 2017 mother-calf pair off Piltun on 1 September 2017. Two of the whales photographed by the cruise boat tourists on 8 September 2017 near Utashud Island (eastern Kamchatka) (Table 3) were matched by O. Tyurneva in the both NSCMB Kamchatka and Sakhalin gray whale catalogues and a third one was matched in the NSCMB Kamchatka catalogue only.

10.3 Update on interactions between fisheries and gray whales in Russia

As anticipated at the last meeting (see WGWAP-18 report, item 7.3.3), the paper prepared jointly by Panel members and Associate Scientists, “Entanglement risk to western gray whales from commercial fisheries in the Russian Far East,” was published in 2018 (Lowry et al. 2018). An earlier version of the manuscript had been circulated by IUCN to regulatory authorities and research institutes on Sakhalin to raise awareness and ensure that entanglement risks to gray whales are considered when future salmon (and other) fishing permits are issued.

All participants were asked to provide new information on this topic.

Vertyankin mentioned that in most years two fixed salmon nets (set nets according to terminology in Lowry et al. 2018) are installed, about 2 km apart, near the mouth of Piltun Lagoon. He also stated that the fishermen there had been briefed about the dangers involved in attempting to disentangle whales and informed of whom to call for assistance. Vertyankin also said that in September 2016 a young gray whale (a calf, KOGW272, observed multiple times previously in August according to Olga Tyurneva) was seen at Piltun with signs of recent entanglement, including a rope with around 25 fishing floats attached. The animal was 500 meters away from shore and moving quickly southward. The monitoring teams obtained a few photographs and a video recording. The whale was not seen again during the monitoring season. Lisitsyn added that this individual had not been seen and identified in either 2017 or 2018 and therefore its survival following entanglement was in doubt.

Natalia Lysitsina (Sakhalin Environment Watch) said that she had made a formal request to the Government of Sakhalin that salmon fishing with set nets be banned near Piltun. She was advised by the regulators that such a ban could not be imposed because there was a lack of evidence of entanglement in the area. They added that the request could be reviewed if such evidence became available.

Under item 6.1.2.2 (above), the Panel recommends an updated analysis of scarring on gray whales off Sakhalin to further evaluate the rate of injury from gear entanglement and ship strike.
The Panel once again thanked the observers for contributing this important information.

10.4 Pacific herring die-off in Piltun Lagoon, summer 2018

10.4.1 Presentation

Lisitsyn gave a brief presentation on a Pacific herring die-off event in early June 2018 in Piltun Lagoon. The first report of the die-off by local residents occurred on 6 June. They reported that dead fish were observed along more than 40 km of coastline, with the largest concentration on an 11 km stretch. Some 450 tons of dead herring was estimated based on sampling at 28 points along the coast. The most recent previously reported herring die-off in the region was in 1999.

According to Lisitsyn, one proposed explanation for the 2018 die-off was that depleted oxygen levels in the lagoon had been caused by drifting ice near shore that was blocking off the lagoon entrance. Measurements of oxygen levels in the northern part of the lagoon were low and samples from dead fish showed no sign of pollution. An analysis of satellite images led Lisitsyn and his team to suggest an alternative to the ice-drift hypothesis – that blockage by an ice trail which ENL started building in 2018 to reinforce its cross-lagoon pipeline had formed what was essentially an ice levee cutting off flow to approximately two-thirds of the lagoon. Though the ice started disappearing on 16 May, the ice trail was still blocking the flow until at least 20 May. Lisitsyn added that a rock pier constructed by ENL inside Piltun Lagoon in 2015 also may have impeded water exchange between the lagoon and the sea, thus affecting conditions for spawning herring in the northern portion of the lagoon. He acknowledged that ENL disagreed with both of these hypotheses and insisted that neither the ice trail nor the pier had anything to do with the herring die-off event. Lisitsyn said that independent experts were reviewing the information.

10.4.2 Discussion and Panel conclusions

The Panel has repeatedly mentioned the need to better understand the role of Piltun Lagoon as a major driver of benthic productivity in the gray whale feeding area. A working hypothesis advanced in the past by Panel member Glenn VanBlaricom and further developed in the proposal prepared by Panel members Corinne Pomerleau and Lloyd Lowry for the May 2016 meeting of the Joint Programme Task Force (JPTF-2 meeting, Annex D[6]) is that there are “functional ecological linkages among nutrients, sediments, detritus, and planktonic organisms exported via estuarine and tidal flows from Piltun Lagoon to the adjacent gray whale feeding area on the shelf,” providing a spatial subsidy to the whales’ prey base. The Panel continues to be concerned that the recent decline in amphipod biomass in the Piltun area could be linked to ecological processes related to lagoon outflow. The Panel therefore **recommends** that the potential causal link between the pier and the pipeline, including the ice trail, on the one hand, and outflow from the lagoon into the nearshore environment on the other, is investigated in the context of the recent herring die-off. In this regard, Lisitsyn offered to provide the Panel with a report produced in 2008 by Sakhalin Environment Watch and WWF concerning the potential ecological consequences of the construction of the ENL pipeline.

There was a brief discussion concerning the cause of the Pacific herring die-off in 1999. One of the possibilities proposed at the time was oil pollution (oil products and dispersants) due to a spill from the Molikpaq platform. However, Samatov stated that the cause was an oxygen depletion event, confirmed by official scientific and regulatory conclusions. He also emphasized that the potential causes of the 2018 die-off event should not be discussed in a forum w here ENL is not represented. The Panel agreed that such die-off events occur naturally from time to time due to lack of oxygen but also emphasized the importance of ensuring that an objective assessment is carried out given the potential relevance to the declining availability of prey to gray whales in this key part of their range.

[6] see https://www.iucn.org/sites/dev/files/content/documents/jptf-2_may_2016_report_final.pdf

11 RANGE-WIDE ISSUES: UPDATING OF IWC/IUCN CONSERVATION MANAGEMENT PLAN AND IMPLEMENTATION OF MEMORANDUM OF COOPERATION ON WESTERN GRAY WHALE CONSERVATION

11.1 Progress towards completion of Conservation Management Plan and initial planning of a stakeholder workshop

Donovan provided an update on the Western Gray Whale CMP. The common objectives of these plans are to: (1) improve the conservation status of a cetacean population, (2) create a 'living document' that contains the best available scientific information on a given population at a given time, including known or suspected threats, as well as descriptions of actions needed to conserve the population, and (3) guide and co-ordinate mitigation and management efforts amongst all range states and relevant stakeholders (e.g. shipping and fishing organizations, oil and gas companies, tourism, inter-governmental organisations, NGOs, military).

In practice, a CMP must be pragmatic and achievable and outline the legal framework, governance and timelines under which it exists. The fundamental underlying principle of a CMP is to use the best scientific information to help manage human activities that can or could affect, in this case, western gray whales and thereby maximize the chances for recovery of the population throughout its historical range. While recognising that the highest priority is to improve the conservation status of the population, this principle needs to also account for the interests of stakeholders to the extent possible and consider scientific uncertainty in setting priorities and determining actions.

For the purposes of this CMP, 'western gray whales' are considered to be whales that spend at least parts of their lives in the western North Pacific in the waters of the Russian Far East (including southern and western Kamchatka but not necessarily areas farther north than 55°N off eastern Kamchatka), Vietnam, China, Japan and the Koreas. The IWC has agreed that the need for a CMP is not dependent on a particular stock structure hypothesis, but rather emphasizing that: (a) gray whales that spend time in the western North Pacific are an important 'conservation unit', irrespective of their wintering ground(s), (b) the summering area off Sakhalin represents the only presently known major gray whale feeding habitat in the western North Pacific and (3) the number of whales in the western North Pacific remains small, albeit slowly increasing.

Since 2004, both IUCN and the IWC have emphasized the need for a CMP to mitigate anthropogenic threats facing gray whales throughout their western North Pacific range. The outline of such a CMP was initiated at an IUCN-convened workshop in Tokyo in summer 2008 (IUCN 2009). A draft of the CMP was completed in 2010 (Brownell et al., 2010) and that draft was endorsed by IUCN and the IWC [7]. Efforts to update the 2010 CMP are well underway, including relatively extensive revision of some sections. To accomplish this work, a correspondence group was initiated during the fifth IWC Scientific Committee range-wide workshop in March 2018 (see item 7.2, above), followed by a meeting of a small drafting group at IUCN headquarters just prior to the WGWAP-19 meeting in November 2018. Importantly, with the completion of the IWC range-wide workshops, a robust modelling framework is now available to inform the CMP and help set priorities for addressing actual and potential threats throughout the range of western gray whales. The immediate priority of the drafting group is to complete and circulate a revised version of the CMP at least 3 months, and preferably 6 months, prior to the stakeholder workshop described below.

In 2014 a Memorandum of Cooperation Concerning Conservation Measures for the Western Gray Whale Population (the MoC) in support of the CMP was signed by Japan, Russian Federation and the USA. In 2016, this memorandum was also signed by Mexico and the Republic of Korea. These

[7] https://www.iucn.org/western-gray-whale-advisory-panel/about-gray-whales/rangewide-conservation-issues

signatory range states, all presently members of the IWC but acting independently of the commission, share a common concern about the conservation status of western gray whales and have endorsed the CMP, agreeing to facilitate its implementation based on scientific advice from the IWC Scientific Committee and the IUCN WGWAP. A near-term priority is to have other range states, notably Canada and China, sign the MoC.

An important component of the overall effort is a stakeholder workshop (tentatively planned for September 2019) to help finalize management aspects of the CMP and develop a strategy for CMP implementation. As presently envisioned, the workshop would be co-sponsored by the IWC, IUCN, and the signatories to the MoC, and participants would include representatives of national and local governments, industry (e.g. oil and gas, fishing, shipping, tourism), IGOs and NGOs. The main objectives would be to: (1) review and further update the CMP, accounting for any new scientific or other information, (2) establish a stakeholder steering group to monitor CMP implementation, (3) arrange for a CMP coordinator and (4) establish a workplan and consider funding mechanisms to implement the actions of the CMP. The IWC has a small CMP fund to partially finance the stakeholder workshop. It is expected, however, that after the first year of CMP implementation, range states will contribute the funds necessary to advance the conservation actions described in the plan.

Dr. Hidehiro Kato, Professor Emeritus, Tokyo University of Marine Science and Technology, is the coordinator of the MoC and a stakeholder workshop steering group has been established, including Donovan, Reeves, Kato, one representative from each MoC signatory country, and representatives of other key stakeholders (to be decided). A virtual meeting of the steering group, with the following goals, is planned for January 2019: (a) agree a draft workshop agenda based upon objectives, (b) determine a potential venue and dates, (c) agree the full steering group membership (inclusive of stakeholders), (d) agree on invited workshop participants and (e) develop a budget and identify the financial means by which to support it. Workshop details are to be finalized and invitations issued in the first quarter of 2019.

11.2 Other range-wide scientific issues

11.2.1 Gray whale observations in Russia outside the Sakhalin feeding areas

Burdin reported that in late June of 2018 the RGWP logged three days of photo-ID effort in Olga Bay (Kronotsky Gulf, southeastern Kamchatka) in late June, during which time 23 gray whales were sighted and 20 were photo-identified. Three of the identified whales were matched to the Sakhalin catalogue and three to the combined Kamchatka-Sakhalin catalogue. Whales observed in Olga Bay were mostly young animals but some adult whales were also present. One mother-calf pair was observed in Olga Bay on 26 June and this same pair was later observed in the area of Piltun Lagoon (on 1 August).

Vertyankin commented that his observations of gray whales in recent years along the southeastern Kamchatka coast suggest a southward migration in spring and a northward migration in December. He urged that the Kamchatka survey work be resumed but noted that funding was needed. The current policy of Kronotsky preserve is to reduce scientific personnel and to develop tourism in anticipation of the area being converted to a national park. With that in mind, there should be potential for establishing links between scientists and tour groups so that images collected by tourists can be used for photo-identification (see item 10.2, above).

11.2.2 Issues discussed at 10th International Conference "Marine Mammals of the Holarctic" related to gray whales"

The 10th international conference on Marine Mammals of the Holarctic was held in Arkhangelsk (Russia) from 28 October to 3 November 2018. About 250 scientists from 13 countries participated in the conference. A special section devoted to the study of gray whales was chaired by Alexander Burdin and Vladimir Vladimirov. A number of presentations based on Joint Programme data were made, including that by Labay et al. (item 6.1.3.1) as well as presentations on the three aforementioned IWC Scientific Committee documents (item 6.1.3.2). Several of the presentations covered topics discussed at this meeting (e.g. use of drones for photo-identification, current distribution and abundance of gray whales off Sakhalin) but others covered topics of great interest that were not discussed at WGWAP-19 – namely 'near-bottom activity' of gray whales off Sakhalin (Bobkov et al.), use of an infrared detection system for monitoring gray whales (Kalinin and Scott), and mitigation and monitoring of multiple seismic surveys in proximity of gray whales at Sakhalin in 2015 (Aerts et al.). Unfortunately, no question-and-answer sessions were allowed after the gray whale presentations because of time constraints. The only in-depth discussions of issues related to western gray whales took place in two roundtables: "Entanglement of Marine Mammals in Debris and Fishing Nets, Restriction of Fishing in the Gray Whale Feeding Area in Piltun Bay" and "Regulatory and Technical Measures to Mitigate the Negative Impact of Navigation on Marine Mammals in the Russian Arctic and Subarctic Area."

A notable presentation was made by Panel member Alexander Vedenev entitled 'Lessons Learned on Acoustic Monitoring of the Western Gray Whale (*Eschrichtius robustus*) on Sakhalin Island and the Contribution of the WGWAP to the Development of Mitigation Measures to the Acoustic Impact of Noise from Oil Production'. He recounted some of the history of the Panel and stressed the collaborative nature of the work of the Noise Task Force, particularly with regard to the development of monitoring and mitigation plans for Sakhalin Energy's seismic surveys. However, he also noted the lack of progress on population-level cumulative (acoustic) impact assessment and the failure of the Panel and Company to reach agreement on the importance of maintaining an acoustic monitoring programme in years with no seismic survey, and particularly on the need for a new control station to monitor true baseline acoustic conditions.

Conference participants recommended that scientific monitoring programmes in feeding areas of gray whales be continued. They noted that the recent interruption in collection of valuable time-series data on benthic communities, gray whale behaviour, and acoustic parameters of industrial noise was unfortunate and recommended that those elements be reinstated. Also, participants recommended that greater use be made in the monitoring programmes of new high-tech tools such as unmanned aerial vehicles (drones) and infrared camera systems.

11.2.3 U.S. Navy whale detections in East and South China Seas

Southall provided an update on acoustic detections of marine mammals presumed to be gray whales in parts of the East China Sea and South China Sea. As described at previous Panel meetings, these pulsed signals continue to be detected beginning in autumn from southbound animals through spring from northbound animals; signals are rarely detected in summer in these areas. Detections are always in water shallower than 150 m depth and the signals are often heard from small groups, the largest including at least 14 vocalizing individuals (the overall group size may have been larger) spread over an area of ~30 nmi^2. The characterization of these signals as coming from gray whales is based in part on their similarity in frequency range (and to some extent signal structure) with some known gray whale signals, but also their lack of similarity to known signals from any other baleen whale species, many of which are commonly detected and tracked with these listening systems.

There still has not been a match of these detected signals to a confirmed gray whale sighting. While it is challenging to make progress at getting information from these systems released, given national security considerations, several efforts are underway to (i) further evaluate the received signals in light of other recordings and (ii) use remote-sensing methods to look for gray whales at the locations where detections have occurred. The Pacific Oceanological Institute (POI) continues its work to identify gray whale sounds from recordings made over the years at Sakhalin. Features from the detected calls in potential wintering areas to the south will be used to inform classifiers, via Roberto Racca's coordination with POI, and Southall has requested unclassified access to a recorded signal of the type that has been characterized as coming from a gray whale in Chinese waters. Also, sources in the Navy have been asked to identify specific locations or even relatively broad areas where the signals have been detected so that this information can be provided to whale researchers who are using satellite imagery to detect and identify marine mammals.

12 WGWAP PLANS FOR 2019-2021 AND OPTIONS FOR BEYOND 2021

12.1 WGWAP workplan 2019

Carbone updated the meeting on the process of recruitment to the Panel for 2019-2021. IUCN procurement policies require that a recruitment process for new panel members is opened every three years, and the 3-year terms of the current Panel all expire at the end of 2018. The recruitment process for a Panel chair was already under way at the time of this meeting, and once that process was completed, it was planned to proceed with a call for applications to fill out the rest of the Panel. Carbone emphasized that all current members were welcome to re-apply.

The envisioned workplan, as set out at the meeting and below, is entirely contingent on adequacy of funding in 2019. At the time of the meeting, there was no agreed budget for 2019.

The 'monitoring' component of the workplan for 2019 will consist of the following:

- Reviewing 2018 results of gray whale monitoring programme and providing advice on analyses as appropriate;
- Providing broad advice on components of long-term monitoring programme (e.g. objectives, field methods, analytical approaches) via correspondence and possibly meeting(s);
- Reviewing publications and advising on implications;
- Providing advice on analyses of benthic sampling results;
- Reviewing the entire programme at WGWAP-20 meeting (and NTF-16 meeting for acoustics issues).

Tasks related to other regular themes, all to be reviewed at WGWAP-20 and/or NTF-16, will consist of the following:

- Annual population assessment (consider photo-ID cross-matching);
- Advising on oil spill response – finalize recommendations on manuals, site visit to observe field exercise;
- Planning and participating in IUCN-IWC CMP stakeholder workshop;
- Continuing to address seismic survey-related issues (primarily NTF) – advise on post-survey analyses, evaluate 'new' technologies, further consider trade-off between protecting individuals and population as a whole, review and possibly redesign 'perimeter monitoring line' for future surveys;
- Continuing to advise on biodiversity offset strategy – review of Company proposals, quantification, possibly form an Offsets Task Force, possibly produce a paper for publication.

Other tasks to be considered, depending on the budget, are the following:

- Producing 'best practice guidelines' brochures on, for example, seismic survey monitoring and mitigation, oil spill response, ship strike prevention;
- Developing a motion relevant to the Panel's work for presentation at IUCN's 2020 World Conservation Congress.

Specific tasks to be undertaken by the WGWAP Secretariat at IUCN include, but are not limited to, the following:

- Overseeing recruitment and contracting of the new Panel;
- Providing support for Panel (and task force) meetings;
- Supporting development of publications;
- Contributing to organization of (and possibly participating in) the CMP stakeholder workshop;
- Developing and implementing a new communications strategy;
- Continuing to develop a model for post-2021 engagement (including consultation with key stakeholders).

Meetings and site visits foreseen as 2019 possibilities include WGWAP-20 (Moscow), NTF-16, a field site visit to inspect oil spill response equipment stockpiles and observe a practical exercise, the CMP stakeholder workshop, and a workshop on offsets.

12.2 Options for beyond 2021

The current arrangement, including a budget (subject to negotiation annually) and mechanisms for Panel review and the delivery of advice and recommendations (according to the existing Terms of Reference), is confirmed through an agreement between IUCN and Sakhalin Energy until 31 December 2021. However, considerable revision of the project's scope, structure and financing will be required if a conservation programme for western gray whales is to continue beyond 2021.

The independent evaluation (see item 2, above) provided a basis for beginning to define and evaluate future options. Among the general findings of the evaluation were that most stakeholders support a continuation of some sort. Concern was expressed by some respondents that the incentives for Sakhalin Energy to maintain 'best practices' are bound to diminish in the absence of an advisory body that has at least a modicum of 'leverage'. Others were confident that the reputational risk to the Company from failing to maintain 'best-practice' standards provides sufficient incentive. Regardless, there was general agreement that the current well-established pattern of regular review by an expert panel, annual population assessment, and advice in the form of recommendations that are made public and tracked for compliance, coupled with the terms of a binding loan agreement under which the Company operates, provides a level of assurance to all stakeholders that due consideration is being given to monitoring and mitigating impacts on the whales.

Four future scenarios were identified in the evaluation, as follows:

(a) WGWAP as presently constituted is disbanded;

(b) WGWAP continues essentially in its present form;

(c) WGWAP is reconvened by the Russian government with a mandate defined under new Terms of Reference;

(d) WGWAP is transformed into a range-wide ‘western’ gray whale conservation initiative under the joint auspices of IUCN and the IWC.

The evaluation concluded that scenarios 1 and 4 were more likely, 2 and 3 less so. It considered that either scenario 3 or scenario 4 would likely improve the conservation of gray whales, whereas scenario 1 would lead to a deterioration and scenario 2 would keep things essentially unchanged. With regard to scenario 3, the initiative described by Sheynfeld (item 8.2, above) may represent an opportunity for IUCN and Sakhalin Energy to liaise more closely with government agencies, industry and NGOs and thereby widen the scope of cooperation to a Sakhalin-wide scale and eventually to at least a regional scale (i.e. throughout the Russian Far East).

It was generally agreed that the reach of the Panel (or other body that replaces it) will need to go beyond a single company or even two companies; greater emphasis will need to be given to cumulative impacts of multiple types of human activities; the scope of oversight will need to extend to more of the range of ‘western’ gray whales than is presently the case; tighter, more explicit links with government agencies will be essential; and the funding base will need to be considerably broader (and deeper) than it has been thus far. Ideally, at least some of the panel’s work should be integrated with Russian (and other range states’) decision-making processes. In other words, the panel should have official standing. There was also a strong consensus that the international character and composition of the Panel is important and should be maintained in any future body.

A future body with multiple constituencies (stakeholders), possibly including several companies, government agencies, and/or NGOs, all of which contribute funding and receive ‘independent’ advice, would inevitably need to take into account differences in values, priorities, objectives, and expectations. Such challenges would require a major effort by IUCN as convener to negotiate terms that are acceptable to each of these entities while at the same safeguarding a high level of scientific rigour, breadth of expertise, independence, and transparency.

At least provisionally, scenario 4 appears to be the most promising of the options. The MoC already provides a mechanism for range-wide governmental buy-in, and the existing CMP which has been developed collaboratively under the aegis of both IUCN and the IWC, provides a conceptual scientific, technical, and administrative framework (see item 11, above). Ideally, range state governments would provide base funding for project administration, and other stakeholder groups would supplement such funding in return for both (i) expert independent advice on matters of interest and concern to them and (ii) the reputational benefits of being associated with this highly regarded conservation initiative.

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14 SUMMARY OF RECOMMENDATIONS AND REQUESTS FROM THE 19TH MEETING OF WGWAP

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
3 DEBRIEF AND REVIEW OF PRELIMINARY RESULTS FROM 2018 SEISMIC SURVEY					
WGWAP-19/01	**3.4.2**	The Panel **agrees** that the WGWAP Advisory Group approach was generally effective and the co-operation of the Company in providing regular updates during the survey was appreciated. The Panel **recommends** that a similar approach be followed for future [seismic] surveys and **agrees** that the terms of reference should be clarified to ensure that 'requests by the Company for advice' are clearly distinguishable from messages simply meant to inform the WGWAP Advisory Group.	**Sakhalin Energy, IUCN**	**Future seismic surveys**	
WGWAP-19/02	**3.4.5**	The Panel … **recommends** that the Perimeter Monitoring Line [PML, as included in seismic survey monitoring and mitigation plans] be reviewed in light of new data that have become available since the line was initially developed for Sakhalin Energy's 2010 seismic survey – particularly but not limited to the early-season data. Preparations for this work should begin at the next NTF meeting.	**Sakhalin Energy**	**Future seismic surveys with progress update at NTF-16**	
WGWAP-19/03	**3.4.5**	… the Panel **recommends** that work begins now to ensure that future MMPs [Monitoring and Mitigation Plans] deal clearly with the potential for extended inclement weather. This should involve, among other things, examining further the trade-off between 'population' and 'individual', considering	**Sakhalin Energy**	**Future seismic surveys with progress update at NTF-16**	

Recommendation Number	**Cross-Reference Agenda item**	**WGWAP Recommendation**	**Responsible Party/Parties**	**Target Completion Date**	**Response from responsible party/parties**
		modelling results and scenarios (including updated information on whale occurrence throughout the season as well as the PML), and finding an appropriate balance between clarity and flexibility.			
WGWAP-19/04	**3.4.5**	The Panel recognised that despite best efforts of all concerned, no acoustic data were collected and only very limited visual data were collected in 2018. The Company announced that at present it has plans for some basic analyses of distribution and behaviour. The Panel **recommends** that an advisory group be established including both Panel members and scientists nominated by the Company to provide advice on analyses, including (a) consideration of pooling data across years as previously recommended; (b) whether acoustic modelling and vessel position information can be used for the 2018 data; and (c) examining the results from the ENL surveys when published.	**Sakhalin Energy, IUCN**	**Progress update at NTF-16**	
4 SAKHALIN ENERGY ACTIVITIES IN 2018 AND PLANS FOR 2019 ONWARDS					
WGWAP-19/05	**4.1.**	While the Panel was generally positive about the modifications to the MMPP [Marine Mammal Protection], it reiterated its concern regarding the Company's ability to comply with specific commitments, especially with regard to underwater noise… The Panel **re-iterates** its willingness to assist the Company in finding feasible options for conducting targeted, systematic acoustic monitoring that will make it	**Sakhalin Energy**	**Summer 2019 and tracked regularly thereafter**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
		possible to come closer to meeting those objectives. This problem will be taken up in discussions of the Noise Task Force. The Panel **recommends** that the Company adopts the revised MMPP and adheres to all of the measures specified and ensures that adequate monitoring is undertaken to allow it to confirm that it is following the MMPP.			
WGWAP-19/06	**4.2**	… the Panel **recommends** that some representative footage [from video cameras installed to monitor the sea in front of Sakhalin Energy's crew change vessels in response to Recommendation WGWAP 17/08] be viewed to check whether the quality is sufficient to be useful in the event of a strike on a whale or some other incident.	**Sakhalin Energy**	**WGWAP-20**	
WGWAP-19/07	**4.2**	Panel Recommendation 17/09 was that accelerometers be installed to detect vessel strikes. This has not been implemented. At WGWAP-18, the Company reported that speed was being continuously recorded by a Global Positioning System (GPS) installed on the vessels specifically for this purpose, and that these data could, in principle, be used to detect unexplained changes in acceleration (possibly related to striking a whale). The Company stated at this meeting that no unusual changes in acceleration had been reported, but the data were not examined. At WGWAP-18 the Panel expressed skepticism that the GPS data would have sufficient temporal resolution to detect strikes of	**IUCN, Sakhalin Energy**	**31 March 2019**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
		whales, especially given that even glancing blows to a whale could be fatal at such high speeds, and that such events could be of very short duration. The Panel had offered to discuss the matter inter-sessionally with the Company. The Panel now **re-iterates** this offer. To start the process moving, the Panel **requests** that IUCN obtain from Sakhalin Energy a sample of the GPS data collected so far, or, if that is not permissible, a summary analysis of the data collected so far, to be provided to the Panel for review. Without such an analysis, it is not possible to judge whether a GPS can serve the same purpose as an accelerometer.			
WGWAP-19/08	**4.2**	The Panel notes that the 2-year provisional period [of an increased speed limit for Sakhalin Energy's crew change vessels from 21 to 35 knots], that was specified in Recommendations 17/08 and 17/09 pending a more refined risk analysis, has now expired, without the issue having been resolved .... The risk of vessel strikes is probably still relatively low, but the matter should be kept under review, and a modified speed limit considered for these parts of the corridor if data from 2018 and 2019 suggest a regularly high presence of whales there. The Panel **recommends** that Sakhalin Energy report back at WGWAP-20 on the findings from its review of the distribution data in relation to ship strike risk in the corridor.	**Sakhalin Energy**	**WGWAP-20**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/09	**4.3**	In reviewing outstanding Panel recommendations to the Company concerning its OSR [Oil Spill Response] programme, Dicks drew particular attention to recommendation WGWAP 18/15 (made in 2017) urging that a Panel representative, along with a Lender representative (PCCI Inc.), be allowed to attend a major exercise, visit OSR equipment stockpiles, and review OSR training procedures on-site in 2018. While a site visit did not happen in 2018, Lock stated that it should be possible in 2019. The Panel **recommends** that the planning of a site visit begin immediately, with a target date in September of 2019	**Sakhalin Energy**	**September 2019**	
WGWAP-19/10	**4.3**	With regard to ISB [In Situ Burning] in ice, Dicks [WGWAP Associate Scientist] noted that the document provided was primarily an approval document and contained little practical information about how a burn might be carried out. He noted that a regulation referred to in the document (*STO 318.04.69-2015*) likely contains such information and Lock [of Sakhalin Energy] agreed to provide it to Dicks; the Panel **requests** that IUCN follow up on this agreed exchange.	**IUCN, Sakhalin Energy**	**As soon as possible in 2019**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/11	**4.4**	[Sakhalin Energy indicated that in coming years] it will conduct seabed surveys using side-scan sonar and multi-beam echosounders. Some types of echosounders may have harmful effects on cetaceans …, so ideally the use of these and other active acoustic sources should be avoided or at least minimized. The Panel therefore **requests** that IUCN follow up with Sakhalin Energy to obtain (and provide to the Panel) information on the types and specifications (e.g. source amplitude, frequency characteristics, beam patterns) and use patterns (e.g. number of operational hours, location of operations relative to gray whale distribution) of echosounders (see Recommendation WGWAP-18/03).	**IUCN, Sakhalin Energy**	**WGWAP-20**	
WGWAP-19/12	**4.4**	In general, the Panel **recommends** that the Company use only high-frequency types of echosounders specially designed for shallow-water mapping, i.e., those that are more likely to be outside the hearing range of gray whales.	**Sakhalin Energy**	**Update on progress at WGWAP-20**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/13	**4.4**	[Sakhalin Energy indicated its intention to deploy] 'acoustic stations (AUARs) for new vessel noise measurement' in 2019. The Company confirmed at WGWAP-19 that these measurements were to be made and, additionally, that it was currently in the planning stages to have these stations left in the water after the vessel testing so that additional acoustic data could be collected in 2019. The Panel **commends** the Company for committing to make these acoustic measurements and **requests** that IUCN obtain updates on progress periodically through the winter and spring. Such updates should then be provided to the Panel so it can help the Company to ensure the work is as useful and efficient as possible. The Company made a commitment at the meeting to seek the Panel's input.	**IUCN, Sakhalin Energy**	**Winter/spring 2019**	
5 IMPLEMENTATION OF INTERNATIONAL FINANCE CORPORATION PERFORMANCE STANDARDS FOR SOCIAL AND ENVIRONMENTAL SUSTAINABILITY					
WGWAP-19/14A	**5.2**	The Panel **recommends** to Sakhalin Energy that (a) it ensure all available data on right whale occurrence in the region, including MMO [Marine Mammal Observers] data and opportunistic sightings, strandings, and detections from other sources, are compiled and made publicly available, ideally through peer-reviewed publication […].	**Sakhalin Energy**	**As soon as feasible**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/14B	**5.2**	The Panel **recommends** to Sakhalin Energy that it … (b) re-evaluate the North Pacific right whale as a candidate for CHA [Critical Habitat Assessment] as part of compliance with IFC Performance Standard 6.	**Sakhalin Energy**	**As soon as feasible**	
6 GRAY WHALE RESEARCH AND MONITORING IN 2017 AND 2018					
WGWAP-19/15A	**6.1.2.2**	[Regarding the Joint Programme's photo-ID data set], the Panel **recommends** that … Sakhalin Energy (a) pursue an updated analysis of the scarring data, following the methods developed by Bradford et al. (2008), to determine whether the rates of anthropogenic scarring have changed over time […]	**Sakhalin Energy**	**Prior to WGWAP-20**	
WGWAP-19/15B	**6.1.2.2**	[Regarding the Joint Programme's photo-ID data set], the Panel **recommends** that … Sakhalin Energy … (b) review individual sighting histories for evidence of entanglement timing and changes in condition over time.	**Sakhalin Energy**	**Prior to WGWAP-20**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/16	**6.1.3.2**	The Panel welcomed the effort made to synthesize and analyze the large dataset on benthos collected by the companies' scientists since 2002 – a unique dataset of great scientific value. However, the method used for calculating the ecosystem carrying capacity has some weaknesses and does not make the most of the extensive long-term dataset available. The Panel therefore **recommends** that more advanced (e.g. bioenergetics) models be applied that take into consideration factors such as age and sex of the whales (see Villegas-Amtmann et al. 2015) and result in a much more robust estimation of the carrying capacity of both the nearshore and offshore feeding areas.	**Sakhalin Energy**	**Update on progress at WGWAP-20**	
WGWAP-19/17	**6.1.3.2**	The Panel was disappointed to learn that no benthic sampling occurred in 2017 or 2018. Despite the great importance of the nearshore feeding area to gray whales, especially mother-calf pairs, there is no up-to-date information on the status of the amphipod biomass there. The Panel is also extremely concerned that the Joint Programme will not include benthic sampling in 2019 and again **recommends** that the decision to discontinue this important research be reconsidered by the companies (see WGWAP-18 report, item 2.1.2.2 and recommendations).	**Sakhalin Energy**	**Update on progress at WGWAP-20**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/18	**6.1.3.2**	[..] the Panel asked how it could gain access to documents from the Company's 'environmental monitoring programmes' as required by government authorities for offshore assets. … the Panel **recommends** that IUCN coordinate with Sakhalin Energy and seek access to these monitoring reports for Panel review.	**IUCN, Sakhalin Energy**	**31 March 2019**	
WGWAP-19/19	**6.3**	The Russia Gray Whale Project and Joint Programme catalogues have not been cross-matched since 2011. The Panel **recommends** that IUCN liaise with IWC and the companies to ensure that the whales newly photo-identified by each team during 2012-2018 are cross-matched.	**IUCN, IWC, Sakhalin Energy, ENL, and GazpromNeft-Sakhalin**	**Prior to WGWAP-20**	
9 FUTURE OF JOINT PROGRAMME					
WGWAP-19/20	**9.1.2**	… the Panel **recommends** that Sakhalin Energy, with or without its Joint Programme partners, include a 'traditional' shore-based component of distribution monitoring in the 2019 field effort. This is particularly important because 2018 was an 'activity' year (Piltun-Astokh seismic survey) and the distribution monitoring effort was seriously impaired by exceptionally poor ice and weather conditions. Moreover, there is reason to believe that major changes have recently occurred in the whales' nearshore prey base and in their relative use of the two northeastern Sakhalin feeding areas. As a result, the ability to compare patterns of whale distribution in 2019 and those of previous years, when the types and levels of	**Sakhalin Energy**	**2019 field season**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
		potential anthropogenic disturbance differed markedly, is critical.			
WGWAP-19/21	**9.1.2**	The Panel … **recommends** that Sakhalin Energy provide, for consideration at the WGWAP-20 meeting, a clear explanation of the analyses conducted by the companies to compare the results of 'traditional' distribution monitoring with drone-based monitoring in order to evaluate compatibility or consistency between the two approaches.	**Sakhalin Energy**	**Update on progress at WGWAP-20**	
10 MANAGING OTHER ISSUES ON THE SAKHALIN SHELF					
WGWAP-19/22	**10.1.2.2**	The Panel highlighted the scientific interest in the North Pacific right whale sightings during the 2018 monitoring work [of GazpromNeft-Sakhalin] and stressed that any photographs or additional information about these sightings would be welcomed internationally as a contribution to the conservation of this endangered species …. The Panel therefore **recommends** that IUCN follow this up with the company to obtain any photographs and additional details that might be available on these sightings.	**GazpromNeft-Sakhalin via IUCN**	**As soon as feasible**	

Recommendation Number	Cross-Reference Agenda item	WGWAP Recommendation	Responsible Party/Parties	Target Completion Date	Response from responsible party/parties
WGWAP-19/23	**10.1.2.2**	The effort being made by GPNS [GazpromNeft-Sakhalin] to collect data on seabirds and record observations of marine debris routinely was welcomed by the Panel. As an additional component of data collection, the Panel **recommends** that information (location, gear type, vessel type etc.) be recorded on fishing activities in and near the offshore feeding area. Data of this nature would improve understanding of potential threats to gray whales (and right whales) from entanglement in fishing gear.	**Gazprom Neft via IUCN**	**As soon as feasible**	
WGWAP-19/24	**10.4.2**	The Panel has repeatedly mentioned the need to better understand the role of Piltun Lagoon as a major driver of benthic productivity in the gray whale feeding area [and] continues to be concerned that the recent decline in amphipod biomass in the Piltun area could be linked to ecological processes related to lagoon outflow. The Panel therefore **recommends** that the potential causal link between the pier and the pipeline, including the ice trail, on the one hand, and outflow from the lagoon into the nearshore environment on the other, is investigated in the context of the recent herring die-off.	**Biodiversity Expert Working Group (BG) under the Sakhalin Oblast Interdepartmental Environmental Council via Sakhalin Energy**	**Update on progress at WGWAP-20**	

ANNEX 1. LIST OF PARTICIPANTS

Panel Members Present

Alexander BURDIN
Kamchatka Branch of Pacific Geographical Institute
Partizanskaya, 6
Petropavlovsk-Kamchatsky, 683000
Russian Federation

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

Greg DONOVAN (Co-chair)
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

Corinne POMERLEAU (remotely)
Centre for Earth Observation Science
University of Manitoba
586 Wallace Building
Winnipeg, Manitoba R3T 2N2
Canada

Randall REEVES (Co-chair)
Okapi Wildlife Associates
27 Chandler Lane
Hudson
Québec J0P 1H0
Canada

Brandon SOUTHALL
Southall Environmental Associates, Inc & University of California, Santa Cruz
9099 Soquel Drive, Suite 8, Aptos, CA 95003
USA

Grigory TSIDULKO
Marine Mammal Council
Nakhimovskiy Ave, 36
Moscow 117997
Russian Federation

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

David WELLER
Marine Mammal & Turtle Division
Southwest Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration 8901 La Jolla Shores Drive La Jolla, CA 92037-1022
USA

Associate Scientist

Brian Dicks (remotely, Day 1)

Sakhalin Energy Investment Company Ltd.

Jane Alcock (remotely)
Bastian Blonk (Day 1 & 2)
Mike Donaghy, MDA Ltd.
Stephanie Lock (Day 1 & 2)
Ruslan Oblekov (Day 1 & 2)
Roberto Racca, JASCO

Aoife Reynolds, Shell International
Andrey Samatov
Natalia Tsarenko
Olga Tyurneva (Day 2 & 3)
Valery Vladimirov (Day 2 & 3)

IUCN

Anete Berzina-Rodrigo
Giulia Carbone
Simon Delany, Rapporteur
Boris Erg (Day 1)

Observers – Lenders

Jonathan Hancox, Ramboll
Bruce Mate, Ramboll
Oki Kondo, Mizuho Bank
Adam Fitchet, Ramboll (remotely, Day 1)
Frank Marcinkowski, PPCI Inc (remotely, Day 1)

Observers - NGOs

Ludmila Ametistova, WWF Russia (Day 2 & 3)
Alexey Knizhnikov, WWF Russia
Dmitry Lisitsyn, Sakhalin Environment Watch
Natalia Lisitsyna, Sakhalin Environment Watch
Maria (Masha) Vorontsova, IFAW International

Observers – Russian Authorities

Svetlana Sheynfeld, Information and Analytical Centre for Protected Areas Support of the Ministry of Natural Resources and Environment of the Russian Federation (Day 3)

Other Observers

Shaukat S. Bakiyev, Gazprom Neft

Alexander Boltnev, Russian Research Institute of Fisheries and Oceanography (VNIRO) (Day 1)

Boris A. Dotsenko, Gazpromneft-Sakhalin (Day 2 & 3)

Anastasia V. Ivanova, Gazprom Neft

Olga Kalashnikova, Shell Exploration and Production Services (Russian Federation) (Day 1)

Hidehiro Kato, Tokyo University of Marine Science and Technology, Japan / Coordinator of the Western Gray Whale Memorandum of Cooperation (MoC) of Range States (Day 2 & 3)

Natalya Kryukova, VNIRO (Day 1 & 2)

Matvey Mamaev, A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences

Vladimir Vertyankin, Kronotsky Zapovednik (Nature Reserve) (Day 2 & 3)

Elena Vorontsova-Kasumyan, Marine Mammal Council (Day 1 & 3)

Interpreters

Alexander Danilov

Grigory Shkalikov

ANNEX 2. FINAL MEETING AGENDA

WESTERN GRAY WHALE ADVISORY PANEL		**14-16 November 2018**
19th meeting	**Radissson Blu Belorusskaya Hotel, Rooms "Mozart" & "Beethoven"** **Moscow, Russian Federation**	
FINAL AGENDA AND TIME SCHEDULE		
Day 1 - Wednesday, 14 November 2018		**Documents / presentations**
1. INTRODUCTIONS		
08:45 – 09:00	Welcome coffee	
09:00 – 09:30	**1. Organizational matters** 0:30 [Reeves, Donovan, IUCN] 1.1 Welcome from IUCN 1.2 Co-chairs welcoming remarks 1.3 Brief introductions of all participants 1.4 Adoption of agenda 1.5 Documents 1.6 Report drafting procedures and timeline 1.7 Logistics	WGWAP-19/1 WGWAP-19/2 WGWAP-19/3 WGWAP-19/4 WGWAP-19/24 WGWAP-19/INF.18
2. WGWAP EXTERNAL EVALUATION AND WAY FORWARD		
09:30 – 10:30	**2. WGWAP External Evaluation and way forward** 1:00 2.1 Recommendations of WGWAP External Evaluation 2015-2018 and lessons learned [Carbone/IUCN] 2.2 Management responses by IUCN & Sakhalin Energy and action plan 2.3 Q&A and discussion (focusing on next steps)	WGWAP-19/5 WGWAP-19/5-RU
10:30 – 10:50	Coffee break	
3. DEBRIEF AND REVIEW OF PRELIMINARY RESULTS FROM SAKHALIN ENERGY'S SEISMIC SURVEY 2018		
10:50– 12:50	**3. Debrief on 2018 seismic survey and preliminary results** 2:00 3.1 Sakhalin Energy's final Monitoring and Mitigation Plan, after-action report & lessons learned [Sakhalin Energy] 3.2 Report of IUCN's Independent Observer of Sakhalin Energy's 2018 seismic survey [Tsidulko] 3. Chair's summary of NTF-14, intersessional work (incl. Advisory Group) and NTF-15 [Donovan] 3.4 Q&A and discussion 3.5 Conclusions and suggestions for recommendations *Relevant open recommendations (on the understanding that they would have been addressed in depth before or at NTF-15):* • *WGWAP-16/005 A & C on seismic survey planning, recruitment, equipment, testing and training* • *WGWAP-18/11 on experimental work regarding reduced sound source during OBN part of survey*	NTF-14/REPORT WGWAP-19/6 WGWAP-19/7 (corrigendum) WGWAP-19/27 WGWAP-19/INF.1
12:50 – 13:50	Lunch	

4. OTHER SAKHALIN ENERGY ACTIVITIES IN 2018, 2019 AND BEYOND		
13:50 – 15:20	**4.1 Updates on other Sakhalin Energy activities in 2018 and plans for 2019 onwards** 1:30 4.1.1 Updated Marine Mammal Protection Plan (MMPP) [Sakhalin Energy] 4.1.2 Report on regular Marine Mammal Observer (MMO) programme and ship strike avoidance measures, including speed limit implementation [Sakhalin Energy] 4.1.3 Oil spill response planning and drills [Sakhalin Energy, Dicks] 4.1.4 Other activities 2019-2021[Sakhalin Energy] 4.1.5 Conclusions and suggestions for recommendations *Relevant open recommendations:* • *WGWAP-17/08 on dashcams* • *WGWAP-17/09 on accelerometers* • *WGWAP-18/02 on noise activities with potential to violate MMPP* • *WGWAP-18/03 on noise-generating systems or tools* • *WGWAP-18/15 on oil spill-related actions* • *WGWAP-18/16 on review of net environmental benefit analysis of in-situ burning as a part of OSR planning* • *WGWAP-18/17 on review of oily waste disposal documentation* • *WGWAP-18/18 on new crew vessel noise signatures*	WGWAP-19/8 WGWAP-19/9 WGWAP-19/10-EN/RU WGWAP-19/11 WGWAP-19/13 WGWAP-19/14 WGWAP-19/28 WGWAP-19/29 WGWAP-19/30 WGWAP-19/31 WGWAP-19/32
5. IMPLEMENTATION OF INTERNATIONAL FINANCE CORPORATION (IFC) PERFORMANCE STANDARDS FOR SOCIAL AND ENVIRONMENTAL SUSTAINABILITY		
15:20 – 16:00	**5.1 Update on Sakhalin Energy's plans for IFC PS6 implementation and progress with the development of key associated documents** 0:40 5.1.1 Presentation on the draft updated strategy on offsets (conservation actions) and progress with biodiversity action plan, focusing on the marine component [Sakhalin Energy] 5.1.2 Q&A and discussion 5.1.3 Conclusions (including next steps and expectations for additional Panel input)	WGWAP-19/15-EN/RU
16:00	Adjourn	

<table>
<tr><td colspan="2"><u>Day 2 – Thursday, 15 November 2018</u></td><td><u>Documents / presentations</u></td></tr>
<tr><td colspan="2">INTRODUCTIONS</td><td></td></tr>
<tr><td>08:45 – 09:00</td><td>Welcome coffee</td><td></td></tr>
<tr><td>09:00 – 09:05</td><td>Introductions of new participants in the room (if any)</td><td></td></tr>
<tr><td colspan="3">6. OUTCOMES OF PROGRAMMES ON GRAY WHALE RESEARCH AND MONITORING IN 2017 AND 2018 & ANNUAL POPULATION ASSESSMENT</td></tr>
<tr><td>09:05 – 12:00
(incl.20 min coffee break at an appropriate moment during the session)</td><td>6.1 Summary of 2017 fieldwork results and 2018 preliminary results (incl. progress with studies/analysis using long-term data) 2:40
6.1.1 Update on progress with interdisciplinary, multi-component analysis of Joint Programme data and preparation of peer-reviewed scientific publications (using long-term data obtained from photo-ID, biopsy and genetics, distribution, acoustics, benthic and other components between 2002-2016) [Sakhalin Energy]
6.1.2 Distribution [Sakhalin Energy]
6.1.3 Photo-ID (incl. drone technology) and biopsy
• Sakhalin Energy/ENL Joint Programme [Sakhalin Energy]
• Russia Gray Whale Project [Burdin]
• Update on joint Photo-ID catalogue under IWC auspices [Donovan]
• Cross-matching of new whales sighted during 2012-present [Donovan]
• Annual assessment of biological and demographic characteristics of western gray whales [Cooke]
6.1.4 Q&A and discussion

Relevant open recommendations:
• WGWAP-16/012 on stable isotopes analyses of whale skin plus prey sampling
• WGWAP-16/017 on definitive IBM dataset
• WGWAP-16/020 on assessment of tag injury from photos
• WGWAP-17/04 on Companies' analysis of complete dataset to determine 'core use' areas etc.
• WGWAP-18/07 on RGWP continuation
• WGWAP-18/08 on cross-matching photo-ID catalogues 2012-2016</td><td>WGWAP-18/21-EN/RU
WGWAP-19/12-EN/RU
WGWAP-19/16-EN/RU
WGWAP-19/17-EN/RU
WGWAP-19/18-EN/RU
WGWAP-19/20
WGWAP-19/21
WGWAP-19/22 (revised)
WGWAP-19/INF.2
WGWAP-19/INF.10
WGWAP-19/25-EN/RU
WGWAP-19/33-EN/RU</td></tr>
<tr><td>12:00 – 13:00</td><td>Lunch</td><td></td></tr>
<tr><td colspan="3">7. MANAGING / ADDRESSING ISSUES AT THE SAKHALIN REGIONAL LEVEL</td></tr>
<tr><td>13:00 – 13:20</td><td>7.1. Government updates 0:20
7.1.1 Update on the activities of the Biodiversity Group / Environmental Council at Sakhalin MNR level [Tsarenko]
7.1.2 Q&A and discussion</td><td>WGWAP-19/INF.11
WGWAP-19/INF.12
WGWAP-19/INF.13
WGWAP-19/INF.14</td></tr>
</table>

8. SCOPE OF WORK FOR PROGRAMMES ON GRAY WHALE RESEARCH AND MONITORING IN 2019 AND BEYOND		
13:20- 16:00 (incl.20 min coffee break at an appropriate moment during the session)	**8.1 Programme plans in 2019 and beyond** 1:30 8.1.1 Scope of work of Sakhalin Energy/ENL Joint Programme 8.1.2 Update on Russian Gray Whale Project plans for 2019 and beyond [Burdin] 8.1.3 Q&A and discussion on overall challenges and opportunities (including but not limited to synergies, etc.) 8.1.4 Conclusions concerning further engagement of Panel in reviewing and advising on Joint Programme into future *Relevant open recommendations:* • *WGWAP-18/06 on the nature and causes of the decline in amphipod biomass* • *WGWAP-18/07 on RGWP continuation* • *WGWAP-18/09 on 2019 planning and Panel's input* • *WGWAP-18/10 on sampling during quiet, undisturbed periods*	WGWAP-19/19-EN/RU WGWAP-19/INF.2
16:00	Adjourn	
Day 3 – Friday, 16 November 2018		**Documents / presentations**
INTRODUCTIONS		
08:45 – 09:00	Welcome coffee	
09:00 – 09:05	Introductions of new participants in the room (if any)	
9. MANAGING / ADDRESSING OTHER ISSUES ON THE SAKHALIN SHELF		
09:05 – 09:45	**9.1 Update on other oil and gas activities in and near the whale feeding areas in Sakhalin / Sea of Okhotsk in 2018 and beyond** 0:40 9.1.1 Introductory remarks from PJSC "Gazprom Neft" [Bakiyev] 9.1.2 Results of the implementation of the project "Environmental Monitoring of the Okhotsk-Korean Gray Whale Population" by LLC "Gazpromneft-Sakhalin" [Dotsenko] 9.1.3 Short IUCN overview on 2018 activities and future plans of other operators [Berzina-Rodrigo] 9.1.4 Discussion and conclusions	WGWAP-19-INF.15 WGWAP-19-INF.16-EN/RU WGWAP-19/26 (updated)
09:45 – 09:55	**9.2 Update on cruise ship visits to Piltun in 2018, 2019 and beyond** 0:10 9.2.1 Update on exchanges with cruise/expedition companies [IUCN, Weller] 9.2.2 Discussion and conclusions (including suggestions on how IUCN should work with tour operators / associations around sharing information on cetacean sightings and education/mitigation approaches, etc.)	WGWAP-19/23
09:55 – 10:20	**9.3 Update on interactions between fisheries and gray whales in Russia** 0:25 9.3.1 Publication of the scientific paper on fisheries interactions with whales [Reeves, Weller] 9.3.2 Update on the 2018 fisheries season and interactions with whales, including outcomes of Sakhalin Oblast Fisheries Agency meeting (July 2018) [Sakhalin Energy, NGOs, Panel members with information) 9.3.3 Discussion and conclusions (incl. next steps and reflection on next year strategy)	WGWAP-19/INF.3
10:20 – 10:35	**9.4 General update by NGOs on managing/addressing other issues** 0:15 9.4.1 Update on anomalous Pacific herring die off in Piltun Lagoon, summer 2018 [Lisitsyn/Sakhalin Environment Watch] 9.4.2 Update on any other issues 9.4.3 Discussion and conclusions	WGWAP-19/INF.9

10:35 – 10:55	Coffee break	
10. MANAGING / ADDRESSING ISSUES AT THE RUSSIAN NATIONAL LEVEL		
10:55 – 11:25	**10.1. Government updates** 0:30 10.1.1 Business and Biodiversity Initiative in Russia: current situation and perspectives [Sheynfeld/Roszapovedcentr of MNR] 10.1.2 Q&A and discussion	WGWAP-19-INF.17
11. RANGE-WIDE ISSUES: CONTRIBUTION TOWARDS IMPLEMENTATION OF MEMORANDUM OF COOPERATION ON GRAY WHALE CONSERVATION AND PROGRESS & UPDATING OF IUCN/IWC CONSERVATION MANAGEMENT PLAN (CMP)		
11:25-12:35	**11.1 Process and timeline to update 2010 Conservation Management Plan (CMP) and implementation of Memorandum of Cooperation (incl. Panel input)** [Donovan, Kato] 1:10 11.1.1 Progress made and final steps planned to complete the CMP (including final IWC Scientific Committee Workshop reviewing the range-wide status of North Pacific gray whales & Panel members' input, as well as progress made at small group drafting workshop, November 2018) 11.1.2 Update of maps of gray whale distribution in the North Pacific on seasonal basis 11.1.3 Plans for a Stakeholder Workshop to develop a strategy for CMP implementation 11.1.4 Q&A and discussion **11.2 Other rangewide scientific issues** 11.2.1 Any gray whale observations outside Sakhalin feeding areas, including Kamchatka [Vertyankin/Kronotsky Nature Reserve, others with information] 11.2.2 Issues related to gray whales discussed at the 10th International Conference "Marine Mammals of the Holarctic" related to gray whale issues other than those discussed under other agenda items) [Burdin, Vedenev, other participants present] 11.2.3 Any other range-wide scientific issues 11.2.4 Q&A and discussion	WGWAP-19/INF.4 WGWAP-19/INF.5 WGWAP-19/INF.6 WGWAP-19/INF.7 WGWAP-19/INF.8 WGWAP-19/INF.10 WGWAP-19/INF.19
12:35 – 13:35	Lunch	
12. PLANS FOR 2019-2021 AND OPTONS FOR BEYOND 2021		
13:35 - 15:35 *(coffee in session)*	**12.1 WGWAP Workplan 2019 and focus areas for 2020-2021** [Co-chairs, IUCN] 1:00 12.1.1 Presentation of workplan 2019 (incl. overview of focus areas/elements for 2020-2021 and a proposal for the programmatic approach for CMP implementation and the role of the Panel) 12.1.2 Discussion (focusing on issues/deliverables the Panel should be focusing on 2019-2021) **12.2 Options for beyond 2021** [IUCN] 1:00 12.2.1 Scenarios for a WGWAP beyond 2021 and possible modus operandi 12.2.2 Discussion	
15:35 – 15:45	**13. ANY OTHER BUSINESS** 0:10	
15:45 – 15:55	**14. WGWAP-19 CLOSING REMARKS** 0:10	
15:55	Adjourn	

ANNEX 3. LIST OF DOCUMENTS

List of documents and materials distributed in connection of the 19th meetings of the WGWAP (with links to download those designated as public)

DOCUMENT #	TITLE	LANGUAGE	STATUS
PRIMARY DOCUMENTS			
GENERAL			
WGWAP-19/1	Provisional agenda (including time schedule)	English	Public
WGWAP-19/2	Предварительная повестка дня КГЗСК-18 (включая расписание)	Russian	Public
WGWAP-19/3	List of documents distributed in connection with the 19th meeting of the WGWAP	English	Public
WGWAP-19/4	Список документов, распространяемых в соответствии с 19м заседанием КГЗСК	Russian	Public
WGWAP-19/24	Working document containing a stratified list and full text of open WGWAP recommendations and current status flagged for consideration at WGWAP-18 and sorted by agenda item, as of 13 November 2018 (based on the public WGWAP Recommendations Database accessible online)[8]	English	Public
AGENDA ITEM 2. WGWAP EXTERNAL EVALUATION AND WAY FORWARD			
WGWAP-19/5	Independent Evaluation of the WGWAP by Chris Allan and David Gordon, Ajabu Advisors, November 2018	English	Public
WGWAP-19/5-ru	Russian translation of the Executive Summary of the Independent Evaluation of the WGWAP by Chris Allan and David Gordon, Ajabu Advisors, November 2018	Russian	Public
AGENDA ITEM 3. DEBRIEF AND REVIEW OF PRELIMINARY RESULTS FROM SAKHALIN ENERGY'S SEISMIC SURVEY 2018cr			
NTF-14/REPORT	14th Noise Task Force, March 2018	English	Public
WGWAP-19/6	Pre-read on the Overview on the Execution of 2018 4D Seismic over Piltun-Astokhskoye	English	Confidential
WGWAP-19/27	Sakhalin Energy's presentation: Update on Execution of 2018 Seismic Surveys (Piltun-Astokhskoye)	English	Public
WGWAP-19/7 (corrigendum)	Report of the IUCN's Independent Observer (IO) to 2018 4D Seismic Survey at Piltun-Astokhskoy	English	Public

[8] For the current and most up to date information on the status of recommendations, please refer to the WGWAP Recommendations Database, accessible through the WGWAP website: https://www.iucn.org/western-gray-whale-advisory-panel/recommendations or directly at https://portals.iucn.org/wgwap/.

AGENDA ITEM 4. OTHER SAKHALIN ENERGY ACTIVITIES IN 2018, 2019 AND BEYOND			
WGWAP-19/8	Revised updated Sakhalin Energy's Marine Mammal Protection Plan (MMPP)	English	For internal use at this stage [9]
WGWAP-19/9 (updated)	Overview document on how the comments on MMPP have been addressed during the Ramboll review (updated version 8 Nov 2018)	English	For internal use only
WGWAP-19/10_ru	Программа наблюдения за морскими млекопитающими в 2017 г., заключительный отчет	Russian	Public
WGWAP-19/10_en	2017 Marine Mammal Observer Programme, Close-out Report	English	Public
WGWAP-19/11_en	Presentation on the Sakhalin Energy's Marine Mammals Observation Programme	English	Public
WGWAP-19/11_ru	Презентация о Программе наблюдений «Сахалин Энерджи» за Морскими млекопитающими	Russian	Public
WGWAP-19/13	List of Sakhalin Energy's offshore activities 2019-2022	English	For internal use only
WGWAP-19/14	Sakhalin Energy's presentation on WGWAP recommendations on oil spill preparedness and company comments/updates	English	For internal use only
WGWAP-19/28	Update/reply from Sakhalin Energy's Emergency team on WGWAP-18 recommendations related to oil spill	English	For internal use only
WGWAP-19/29	Sakhalin Energy's Emergency Prevention and Response Standard: Procedure for decision making on the application of burning of marine oil spills in ice conditions at the Piltun-Astokhskoye and Lunskoye fields	English	Confidential
WGWAP-19/30-ru	План ЛРН для Пильтун-Астохского месторождения Компании «Сахалин Энерджи» / ООО «Экоцентр МТЭА», Книга 4. Перечень мероприятий по охране окружающей среды (включая Оценку воздействия на окружающую среду). 7. Обращение с отходами производства и потребления при аварийной ситуации (ПМООС и ОВОС Ред. 02 стр. 7-1 из 30)	Russian	Confidential
WGWAP-19/30-en	Chapter 7. "Industrial and consumer waste management in emergency situations", in: OSRP for the Sakhalin Energy's Piltun-Astokhskoye Field / Sakhalin Energy / LLC Environmental Centre IFPA, Book 4. List of environmental protection measures (including Environmental Impact Assessment), EMP and EIA Rev. 02, p. 7-1 of 30	English	Confidential
WGWAP-19/31	Review note from B.Dicks, WGWAP Associate Scientist on document WGWAP-19/30	English	For internal use only
WGWAP-19/32	Review note from B.Dicks, WGWAP Associate Scientist on document WGWAP-19/29	English	For internal use only

[9] The final version will be available on the Sakhalin Energy's website: http://www.sakhalinenergy.ru

AGENDA ITEM 5. IMPLEMENTATION OF INTERNATIONAL FINANCE CORPORATION (IFC) PERFORMANCE STANDARDS FOR SOCIAL AND ENVIRONMENTAL SUSTAINABILITY			
WGWAP-19/15_en	Presentation by Sakhalin Energy: Critical Habitat Assessment for Sakhalin II Project (Marine Mammals)	English	For internal use only
WGWAP-19/15_ru	Презентация «Сахалин Энерджи»: Оценка критичности местообитаний Проект «Сахалин-2» (морские млекопитающие)	Russian	For internal use only
AGENDA ITEM 6. OUTCOMES OF PROGRAMMES ON GRAY WHALE RESEARCH AND MONITORING IN 2017 AND 2018 & ANNUAL POPULATION ASSESSMENT			
WGWAP-19/12_en	Presentation on the results of monitoring of distribution and abundance of gray whales in the coastal waters of the north-east of Sakhalin in 2017	English	Public
WGWAP-19/12_ru	Презентация о Результатах мониторинга распределения и численности серых китов в шельфовых водах северо-восточного Сахалина в 2017 г.	Russian	Public
WGWAP-19/16_ru	Отчет по Программе мониторинга серых китов у северо-восточного побережья острова Сахалин в 2017 г. (вкл. Приложение I. Опубликованные работы по Совместной Программе)	Russian	Public
WGWAP-19/16_en	Report on Gray Whale Monitoring Program off the Northeast Sakhalin Island in 2017 (incl. Appendix 1. Joint Program Publications)	English	Public
WGWAP-19/17_ru	Фотоидентификация серых китов (*Eschrichtius robustus*) у северо-восточного побережья о. Сахалин в 2017 году (Приложение II. к отчету по Программе мониторинга серых китов у северо-восточного побережья острова Сахалин в 2017 г.	Russian	Public
WGWAP-19/17_en	Photo-Identification of Gray Whales (Eschrichtius robustus) off the Northeast Coast of Sakhalin Island in 2017 (Appendix 2 to the Report on Gray Whale Monitoring Program off the Northeast Sakhalin Island in 2017)	English	Public
WGWAP-19/18_ru	Программа мониторинга серых китов на северо-восточном шельфе острова Сахалин на 2017 год	Russian	Public
WGWAP-19/18_en	2017 Scope of Work for Gray Whale Monitoring Off the North-East Coast of Sakhalin Island	English	Public
WGWAP-19/20_en	Presentation on the Joint Gray Whale Monitoring Programme preliminary results in 2018[10]	English	For internal use only
WGWAP-19/20_ru	Презентация о предварительных результатах Совместной программы по мониторингу серых китов в 2018 г.	Russian	For internal use only
WGWAP-19/21 (updated)	Joint Programme’s Publication Priorities 2018 and Prospects for 2019+ (updated)	English	For internal use only

[10] Note for reference: Scope of Work of the 2018 Programme for Gray Whale Monitoring Off the North-East Coast of Sakhalin Island available as document WGWAP-18/21-EN/RU https://www.iucn.org/sites/dev/files/wgwap_18-21-en_2018_joint_program_en.pdf & https://www.iucn.org/sites/dev/files/wgwap_18-21-ru_2018_joint_program_ru.pdf

WGWAP-19/22 (revised)	Western Gray Whale population assessment update with reference to historic range and recovery prospects (J.G.Cooke)	English	Public
WGWAP-19/25_en	Presentation delivered at the 10th International Conference on Marine Mammals of the Holarctic 2018 and presented by Sakhalin Energy at WGWAP-19: Carrying capacity of ecosystem for gray whales (Eschrichtius robustus) in their known feeding areas off north east Sakhalin Island by Labay V.S., Kim Sen Tok, Smirnov A.V., Chastikov V.N.,Shevchenko G.V., Tskhai Zh.R., Sakhalin Scientific Research Institute for Fisheries Management and Oceanography (SakhNIRO)	English	Public
WGWAP-19/25_ru	Presentation delivered at the 10th International Conference on Marine Mammals of the Holarctic 2018 and presented by Sakhalin Energy at WGWAP-19: ОЦЕНКА ЭКОЛОГИЧЕСКОЙ ЕМКОСТИ СРЕДЫ ДЛЯ СЕРЫХ КИТОВ (ESCHRICHTIUS ROBUSTUS) В ИЗВЕСТНЫХ РАЙОНАХ НАГУЛА У СЕВЕРО-ВОСТОЧНОГО ПОБЕРЕЖЬЯ О-ВА САХАЛИН, Лабай В.С., Ким Сен Ток, Смирнов А.В., Частиков В.Н., Шевченко Г.В, Цхай Ж.Р., Сахалинский научно-исследовательский институт рыбного хозяйства и океанографии	Russian	Public
WGWAP-19/33_en	Presentation delivered at the 10th International Conference on Marine Mammals of the Holarctic 2018 and presented by Sakhalin Energy at WGWAP-19: Use of Unmanned Aerial Vehicle (UAV) during Western Gray Whale Joint Programme - Onshore Photo-ID, Sakhalin Energy – Exxon Neftegaz Limited, Chayvo - South-Piltun - Odoptu, Sakhalin, Russian Federation 2016 - 2018, Prepared by Peter van der Wolf, environmental consultant Geocon	English	Public
WGWAP-19/33_ru	Presentation delivered at the 10th International Conference on Marine Mammals of the Holarctic 2018 and presented by Sakhalin Energy at WGWAP-19: Использование беспилотного летательного аппарата (дрона) в ходе совместной программы мониторинга серых китов Фотоидентификация с берега «Сахалин Энерджи Инвестмент Компани Лтд.» – «Эксон Нефтегаз Лимитед», Чайво – Южная часть зал. Пильтун – Одопту, Сахалин, Российская Федерация, 2016 – 2018 гг. Подготовил Питер ван дер Вольф, консультант по экологическим вопросам, «Геокон»	Russian	Public
AGENDA ITEM 8. SCOPE OF WORK FOR PROGRAMMES ON GRAY WHALE RESEARCH AND MONITORING IN 2019 AND BEYOND			
WGWAP-19/19_ru	2019 Scope of Work for Gray Whale Monitoring Off the North-East Coast of Sakhalin Island	English	Public
WGWAP-19/19_en	Программа мониторинга серых китов на северо-восточном шельфе острова Сахалин на 2019 год	Russian	Public
AGENDA ITEM 9. MANAGING / ADDRESSING OTHER ISSUES ON THE SAKHALIN SHELF			
WGWAP-19/26 (updated)	IUCN overview on other operator activities offshore Sakhalin in or near gray whale feeding areas (based on publicly available information and input at this meeting)	English	Public

WGWAP-19/23	Update on Obtaining Photographs Useful for Scientific Purposes from Cruise Ship Passengers (note by D.Weller)	English	Public
FOR INFORMATION DOCUMENTS			
AGENDA ITEM 1. INTRODUCTIONS			
WGWAP-19/INF.18	IUCN global press release on the IUCN Red List update, 14 November 2018 (which includes western gray whales and other species)	English, Russian, and other languages	Public
AGENDA ITEM 3. DEBRIEF AND REVIEW OF PRELIMINARY RESULTS FROM SAKHALIN ENERGY'S SEISMIC SURVEY 2018			
WGWAP-19/INF.1	WGWAP Public Statement on Acoustic monitoring during Sakhalin Energy's 2018 seismic survey and associated responses	English/ Russian	Public
AGENDA ITEM 6. OUTCOMES OF PROGRAMMES ON GRAY WHALE RESEARCH AND MONITORING IN 2017 AND 2018 & ANNUAL POPULATION ASSESSMENT			
WGWAP-19/INF.2	Presentation on Gray whale research off north east Sakhalin in 2018 (by A.Burdin and M.Mamaev, Russia Gray Whale Project)	English	Public
AGENDA ITEM 7. MANAGING ISSUES AT THE SAKHALIN REGIONAL LEVEL			
WGWAP-19/INF.11	Regulations for the activities of the Biodiversity Expert Working Group (EWG) under the Interdepartmental Environmental Council of the Sakhalin Oblast (approved by the decision of Interdepartmental Environmental Council of the Sakhalin Oblast Minutes of the Meeting No. 1 dated 27 April 2018)	English	For internal use only
WGWAP-19/INF.12	Minutes of the Biodiversity Expert Working Group (EWG) under the Sakhalin Oblast Interdepartmental Environmental Council, Yuzhno-Sakhalinsk – 25 May 2018	English	For internal use only
WGWAP-19/INF.13	Minutes of the Biodiversity Expert Working Group (EWG) under the Sakhalin Oblast Interdepartmental Environmental Council, Yuzhno-Sakhalinsk – 28 November 2017	English	For internal use only
WGWAP-19/INF.14_en	Presentation by N.Tsarenko: Biodiversity Expert Working Group (BG) Activity under the Sakhalin Oblast Interdepartmental Environmental Council	English /	For internal use only
WGWAP-19/INF.14 ru	Presentation by N.Tsarenko: Деятельность Рабочей экспертной группы по биоразнообразию (РЭГ БР) при экологическом совете Сахалинской области	Russian	For internal use only
AGENDA ITEM 9. MANAGING / ADDRESSING OTHER ISSUES ON THE SAKHALIN SHELF			
WGWAP-19/INF.15	Remarks by S.Bakiev, Gazprom Neft on company activities	Russian (with unofficial translation in English)	For internal use only
WGWAP-19/INF.16 en	Presentation by GazpromNeft-Sakhalin: Results of the implementation of the project "Environmental Monitoring of the Okhotsk-Korean Gray Whale Population", 2018	English	For internal use only

WGWAP-19/INF.16 ru	Презентация от «Газпромнефть-Сахалин»: Результаты реализации проекта «Проведение экологического мониторинга Охото-Корейской популяции серого кита», 2018	Russian	For internal use only
WGWAP-19/INF.3	Lowry, L., Burkanov, V., Altukhov, A., Weller, W., Reeves, R. (2018). Entanglement risk to western gray whales from commercial fisheries in the Russian Far East. Endangered Species Research, doi: 10.3354/esr00914 (including Russian translation and associated IUCN news)	English/ Russian	Public
AGENDA ITEM 10. MANAGING / ADDRESSING OTHER ISSUES ON THE NATIONAL LEVEL			
WGWAP-19 /INF.17	Presentation by S.Sheynfeld, Roszapovedtcentr/MRN: О ПЕРСПЕКТИВАХ РАЗВИТИЯ В РОССИИ ИНИЦИАТИВЫ «БИЗНЕС И БИОРАЗНООБРАЗИЕ» (Perspectives for the Development of a Business and Biodiversity Initiative in Russia"	Russian	Public
AGENDA ITEM 11. RANGE-WIDE ISSUES: CONTRIBUTION TOWARDS IMPLEMENTATION OF MEMORANDUM OF COOPERATION ON GRAY WHALE CONSERVATION AND PROGRESS & UPDATING OF IUCN/IWC CONSERVATION MANAGEMENT PLAN (CMP)			
WGWAP-19/INF.4	Report of the Fifth Rangewide Workshop on the Population Structure and Status of North Pacific Gray Whales (March 2018, California), SC/67b/Rep07 (see summary at IWC SC report Annex O)[11]	English	Public
WGWAP-19/INF.5	Corresponding sections (and relevant annexes) of the Report of the IWC Scientific Committee (SC67, Bled, April-May 2018), IWC/67/Rep01(2018)	English	Public
WGWAP-19/INF.6	Annex O to the IWC Scientific Committee (SC67, Bled, May 2017): Report of the Sub-Committee on Cetacean Stocks that are or might be the Subject of Conservation Management Plans (CMPs) (includes Appendix 3 to Annex O: Progress Report on IUCN WGWAP Work from June 2016 to May 2018)	English	Public
WGWAP-19/INF.7	Annex S to the Report of the IWC Scientific Committee (SC67, Bled, April-May 2018): Report of the Ad Hoc Working Group on Photo Identification	English	Public
WGWAP-19/INF.8	Cooke J.G. (2018) Abundance estimates for western North Pacific gray whales for use with stock structure hypotheses of the Range-wide Review of the Population Structure and Status of North Pacific gray whales. IWC document SC/67b/ASI, May 2018	English	Public
WGWAP-19/INF.9	Materials provided by D.Lisitsyn, Sakhalin Environment Watch: Материалы общественного расследования о причинах массовой гибели тихоокеанской сельди в заливе Пильтун в мае 2018 г (Public investigation materials on the causes of the mass death of Pacific herring in Piltun Bay in May 2018) & related news story and images	Russian	Public

[11] Previous reports have been part of the earlier WGWAP meeting INF document packages, see Annex with Document List to the WGWAP reports at https://www.iucn.org/western-gray-whale-advisory-panel/panel/meetings/glance-meeting-reports

WGWAP-19/INF.10	Сборник тезисов X-ой Международной конференции «Морские млекопитающие Голарктики», посвящѐнной памяти А.В. Яблокова, г. Архангельск, 29 Октября – 02 Ноября 2018 г. (Abstract book of the 10th International Conference on Marine Mammals of the Holarctic in memory of A.V.Yablokov, Arkhangelsk, Russia, 29 October – 2 November 2018)	Russian/ English	Public
WGWAP-19/INF.19	Presentation: Результаты мониторинга серых китов (Eschrichtius robustus) в акватории Кроноцкого заповедника и Южно-Камчатского заказника в 2012 - 2018 годах (The results of monitoring gray whales (Eschrichtius robustus) in the waters of the Kronotsky Reserve and South Kamchatka Reserve in 2012 – 2018) by V.Vertyankin, Kronotsky Nature Reserve and O.Tyurneva, FEB RAS	Russian	For internal use only