

WESTERN GRAY WHALE ADVISORY PANEL

Task Force Workshop

WGWAP:

Photo-ID Task Force

19-20 April 2009

Geneva, Switzerland

REPORT FINALISED 30 JUNE 2009

**CONVENED BY IUCN – INTERNATIONAL UNION FOR
THE CONSERVATION OF NATURE AND NATURAL RESOURCES**

1. Introductory items

1.1. Introduction of participants

The Workshop participants are listed in Annex 1. Most participants had attended previous Task Force meetings or were already well known in the context of WGWAP meetings. Bell introduced Efremov of SEIC as the WGW focal point and field coordinator working in Sakhalin with the SEIC team of scientists.

1.2. Appointment of chair and rapporteurs

Reeves was appointed as chair. Sarah Humphrey acted as rapporteur.

1.3. Summary recap of establishment and work of Photo-Id Task Force

The TF first met in Vancouver in October 2007 and its report (the “Vancouver report”) was considered at the 3rd WGWAP meeting (November 2007), at which time it was decided to continue the TF on an open-ended basis with a revised TOR. A series of tasks were identified at WGWAP 4 in April 2008, with a work plan and timelines. Timelines were revised at WGWAP 5 in December 2008 (Annex 4 of WGWAP 5 report) and it was agreed that this workshop would be organised if sufficient progress had been made.

1.4. Aims of meeting and expected product

Participants agreed that the workshop report be a stand-alone document that could be placed on the IUCN website along with the previous Photo-ID TF report once approved by SEIC and the Panel.

1.5. Adoption of agenda

The agenda in Annex 2 was adopted.

2. Documents and progress reports

2.1. Existing documents made available

The following background documents had been distributed by Larsen prior to the workshop:

PhID 1: A compilation of proposals and results for the Tasks on the photo-ID Task Force work plan. These had previously been circulated to the TF during the last few months as and when they were submitted.

PhID 2: Relevant extracts and annexes from WGWAP reports 3 to 5.

PhID 3: Report of the Vancouver 2007 Workshop.

2.2. New documents, including presentations

Yablokov’s preliminary report on phenetic variations in body form was tabled as PhID 4 (see item 5.2.)

Document PhID 5 tabled by Cooke contained some results of Tasks 2, 4 and 5. Document PhID 6 also tabled by Cooke contained some results of Task 9.

Results of comparison exercises by the two teams were presented verbally and recorded in the report.

2.3. Review of datasets received, including status of data on portal

Some tasks had required data to be submitted to IUCN. In the case of the catalogues the files were too large to be forwarded by email. The data files and associated documents had been placed on the IUCN portal with access restricted as appropriate. In the case of datasets, it was agreed by correspondence that these would be made available to TF members on request, subject in each case to the approval of the data providers.

A list of TF documents and datasets on the IUCN portal, and access permissions, was distributed as PhID 7. The operation of the portal is such that persons without access to a given file or folder do not see it at all.

Bell noted that SEIC was unable to access the IUCN portal from company computers due to internal restrictions in the SEIC network. Nevertheless, all persons needing access to data files had obtained them by one means or another.

3. Progress on Tasks in Photo-Id Workplan

3.1. Task 1 (cross-matching of the Sakhalin catalogues to 2007 season)

2007 recommendations

- *The Task Force **concludes** that the cross-matching of the catalogues up to 2005 has been completed successfully, and that all doubtful cases remaining after the initial matching exercise have been resolved satisfactorily. The great majority of identified whales are common to both catalogues, and there is agreement that all the remaining whales in each catalogue represent valid individuals.*
- *The Task Force **agrees** that a single catalogue is not necessary. It notes that the publication of both catalogues, coupled with the fact that the whales are so clearly identifiable, implies that, in effect, a joint catalogue already exists.*
- *The Task Force **recommends** that the cross-matching be updated each year, through exchange of the updated catalogues.*

3.1.1. Review of data received

Both teams had submitted their updated catalogues (through to and including the 2007 season) and Larsen confirmed receipt. Due to delays in obtaining a file from IBM that could be opened by the Russia-US team, the matching exercise was not completed until the first day of the meeting.

Each team reported that it had approached the matching exercise as new, and had re-examined the matches of the previous exercise that was completed prior to the 2007 Vancouver Task Force meeting.

Two members of the IBM team carried out the matching exercise independently, paging through the catalogue to use all aspects, and compared results at the end, without using last year's results.

The Russia-US team worked aspect-by-aspect in their comparisons and recorded comments wherever there was any uncertainty.

3.1.2. Presentation and review of matching results

Both independent matching exercises yielded identical results, which can be summarised as follows:

- 178 catalogue whales in total
- 18 whales are unique to the Russia-US Catalogue
- 9 are unique to the IBM catalogue (as permanent members of the IBM catalogue; two of these are identified as temporary whales by the Russia-US team: see below)
- 151 whales are shared between the two catalogues

In addition, each team identified some “temporary whales”:

IBM team: 9 temporary whales, none of which match whales in the Russia-US catalogue

Russia-US team: 5 temporary whales, of which two match whales in the IBM catalogue.

The definition of temporary whales is given in the Vancouver report. In brief, they are whales for which there are useable photos of just one or two aspects, but not the required right side photograph. A temporary whale may or may not match a whale in the catalogue or another temporary whale. It may become a new catalogue whale, or be matched with an existing catalogue whale, at a later date when photos of the right side are obtained.

Of the 18 whales unique to the Russia-US catalogue, 14 have not been seen since the IBM research started (2002), and most of these were only seen as calves. Thus, it is unlikely that they are alive today.

The matching exercise resulted in no revisions of any matches found in the previous matching exercise that compared the 2005 catalogues, but some catalogue photos had been replaced with better images, and some temporary whales appended to the 2005 catalogues had gained full status in the 2007 catalogues, based on new photographs of the right side.

3.1.3. Action arising

The teams agreed to exchange their matching data files including the comments on individual matches.

The Task Force **agreed** that the matching update had been successful, and **recommended** that it be repeated annually (resources permitting), using the same approach (submission of both updated catalogues to IUCN, followed by blind independent matching). Unresolved temporary whales should continue to be appended to the catalogues that are exchanged for matching. Whenever a temporary whale is upgrade to (or combined with) a catalogue whale, this should be recorded in the catalogue entry (i.e, the catalogue entry should include a previous temporary whale number if there is one).

3.2. Task 2 (comparison exercise of subset of the annual sighting histories)

The Task arises from the 2007 Vancouver recommendation:

- *The Task Force **agreed** that the correctness and consistency of resightings was unlikely to be a major problem. In order to confirm this preliminary conclusion, it would be wise to undertake a comparison exercise for a subset of the resightings. The Task Force therefore **recommends** that a small group works to design such an exercise.*

A detailed proposal for conducting the comparison had been circulated by email and agreed by the Task Force after a round of revision (see PhID 1).

3.2.1. Review of data received

A table of annual sighting histories by aspect, supplemented by photos of each body aspect collected in each year, was requested for a specified set of 20 whales. Such a table was prepared and compiled by each team separately using its own data.

3.2.2. Presentation and discussion of initial analysis

Document PhID 5 provided a superficial analysis of the data received. There were no obviously anomalous sighting histories, except that one whale listed by IBM in the 2008 Photo-Id report (Document WGWAP 6/5) as a calf in 2003 matched a whale that had first been seen by Russia-US in 1997. It was reported that this calf designation was an error that had been corrected in the electronic version of the database.

3.2.3. Examination by each team of the photographs (if felt necessary)

Although the author of PhID 5 had not found any obvious mis-matches, the TF decided that it would be worthwhile to take advantage of the skill of Bradford, Tyurneva and Tombach-Wright (all present at the workshop) to check the matching of each photograph in the two data sets submitted for this task.

The results were received later in the workshop. The best images from the two teams of the 20 selected individuals were compared over the full history of annual sightings. The teams confirmed in each case that both full sighting histories were the same whale. There were six cases where one aspect could not be confirmed in a specific sighting, or where an aspect was not in the one team's catalogue. In each case a more definitive aspect was available to confirm the comparison.

The TF noted that there was full agreement on the validity of the identity and annual sighting histories of each of these 20 whales. This strengthened confidence in both datasets and in particular their suitability for analyses based on annual sighting histories.

3.2.4. Action arising

The TF concluded that Task 2 had been successfully completed.

3.3. Task 3 (protocols for ID-photos from dead animals and whale watching vessels)

2007 recommendation

- *The Task Force notes the scientific value of matching dead whales, such as by-caught whales, with the whales in the catalogues, and **recommends** that an advisory protocol be developed to help ensure that identifiable photos are obtained from dead whales.*

3.3.1. Presentation and discussion of draft protocols

Weller summarised progress made to date with regard to Task 3. The overarching objective was to develop a graphics-based advisory protocol to help ensure that photographs of a quality useable for individual recognition are obtained from any dead or living western gray whale recorded anywhere in the range.

The TF agreed that the template provided by Weller offered a useful basis on which the work could proceed. Several modifications to the draft template were suggested, including that:

- (1) a photograph of a stranded gray whale be included;
- (2) the depiction of the range be restricted so as to exclude that of eastern gray whales;
- (3) the range description not be made too prescriptive – there may be sightings outside the currently known range
- (4) a data request form be developed, in both web-based and hard-copy form, to help collect supplemental information related to contributed photographs (e.g. location, date, name and contact for observer, and data regarding the whale).

It was suggested that this data-request form follow the general template used by the IWC to track ship strikes. The TF emphasised the importance of having the final protocol translated into relevant languages of the range states. Finally, it was agreed that the IWC would be an appropriate point of contact to which photographs and data should be sent, in addition to local contact points in each range state.

Bell reported that at a meeting the previous week the Russian Department of Fisheries had suggested that fishermen be encouraged to take and submit photos. This would be useful and it may be possible to facilitate it in some way. Weller noted that in this context the call for information should clearly outline what information would be most useful. Yablokov noted some key audiences that are active in the area, including border guards, schoolteachers and fishermen.

3.3.2. Action arising

It was agreed that further development of this task should be carried out by Larsen and Weller as part of the IUCN rangewide conservation effort. **IUCN should report back** on progress to the next GWGAP meeting.

3.4. Tasks 4-5 (review criteria for judging mother-calf pairs and unidentified calves)

2007 recommendations

- *The Task Force **recommends** that the field criteria for judging mother-calf pairs be reviewed, and that, if appropriate, a scoring system be developed for the degree of evidence of the relationship, along the lines of that used for southern right whales.*
- *The Task Force **concludes** that identification of unaccompanied calves is not straightforward, and **recommends** that criteria for calf identification be reviewed.*

3.4.1. Presentation and discussion of draft proposal

Document PHiD 5 presented results from the comparison of the subset of 20 whales discussed under Task 2. There were only four calves in this subset, two of which had been confirmed by both teams. Due to an oversight, the teams had not been asked for their cow-calf linkages. In view of the small sample size in the subset, PHiD 5 proposed that the entire sets of cow and calf data be compared.

The two teams' criteria for identifying calves are given in the Vancouver 2007 report. Tyurneva explained that some whales are entered as possible calves or possible mothers in the IBM dataset, with a question mark to indicate that there is some doubt about the designation.

3.4.2. Further analysis at the workshop

The TF agreed to compare all annual cow and calf identifications (i.e. cow-calf pairs, plus unaccompanied calves) of the two teams up to 2007 at this meeting.

The TF was informed that this comparison was based on the most recent version of the datasets of each team, and that the numbers do not necessarily match those given in document WGWAP 6/5, which is based on an earlier version.

The Russia-US and IBM photo-identification teams, with the help of Cooke, compared calf assignments (including unaccompanied calves), mother assignments, and mother-calf linkages (when available) for the years 2003 to 2007. The IBM had not attempted any calf assignments in 2002. The IBM team recorded unaccompanied calves as "possible calves".

Comparison of calf designations

The results of the calf designation comparison are summarised in Table 1. During 2003-2007 a total of 38 calves were identified by the Russia-US team and 29 calves and possible calves were identified by the IBM team. Of these, 27 whales were identified as calves or possible calves by both teams. Four whales identified as calves by the Russia-US team were seen by the IBM team in the same year but not designated as calves or possible calves. No calves or possible calves identified by the IBM team were recorded as non-calves by the Russia-US team. Eight whales identified as calves by one team were not seen by the other team in that year.

Table 1. Summary of comparison of identification of calves by the Russia-US and IBM photo-identification teams

Year	Rus-US calves ¹	IBM calves ²	Common calves	Rus-US calf; IBM non-calf	Rus-US calf; IBM not seen	IBM calf; Rus-US non-calf	IBM calf; Rus-US not seen
2003	9 + 2 ³	9 + 1	9 + 1		1		
2004	6 + 2 ³	2	2	2	4		
2005	5 + 1	4	4	1	1		
2006	4	3 + 2	2 + 2				1
2007	9	6 + 2	6 + 1	1	1		1

¹Calf numbers: e.g. 7 + 2 means 7 accompanied calves plus two unaccompanied calves.

²The IBM team designates unaccompanied calves as "possible calves"

³Including one unaccompanied calf whose mother was subsequently determined genetically.

There were no discrepancies of the kind where one whale was seen prior to a year in which the other team considered it to be a calf.

Comparison of cow (mother) designations

Mothers were designated by the IBM team from 2003 onwards. Table 2 shows the result of comparison of mother designations for the years 2003-2007. There were 35 mother designations by the Russia-US team, of which two were purely genetic (without behavioural

indication). There were 22 mother designations by the IBM team, plus one “possible mother”. Of these, 20 mother designations were common to both teams. Of the two mothers and one possible mother identified only by the IBM team, all three animals were genetically male according to the Russia-US data.

Table 2. Summary of comparison of identification of mothers by the Russia-US and IBM photo-identification teams

Year	Rus-US mothers	IBM mothers	Common mothers	Rus-US mother only	IBM mother only
2003	9 + 1 ¹	7 + 1 ²	6	3 + 1 ¹	1 ³ + 1 ^{2,3}
2004	6 + 1 ¹	2	2	4 + 1 ¹	0
2005	5	4	4	1	0
2006	4	3	2	2	1 ³
2007	9	6	6	3	0

¹This mother was not observed with the calf but was determined genetically.

²One whale recorded as possible mother

³Genetically male in Russia-US dataset.

Comparison of cow-calf linkages

In the case of the IBM dataset, cow-calf linkages for 2003 had yet to be entered. Comparison was thus only possible for the years 2004-07. Of the 14 common mothers listed in Table 2 for these years, both teams recorded the same mother-calf pair in all 14 cases.

3.4.3. Discussion and action arising

Reeves thanked the teams for their hard work. The TF concluded that the comparisons envisaged in Task 4 and 5 have been completed, and that this had been a useful exercise.

The TF concluded that there was no reason to doubt the positive calf identifications, but that identification of an individual as a non-calf was not always reliable. There were four likely such cases in the IBM dataset. The TF could not rule out the possibility that in addition to the four identified cases listed in Table 2 a further small number of calves might have been recorded by one or both teams as non-calves.

It was explained that the population model as implemented in the assessments to date does not assume that all cow-calf pairs in each year are seen, but it does assume that the cow-calf pairs that are recorded really are cow-calf pairs. It is not assumed that all calves in a year are seen, but it is assumed that any whales recorded as unaccompanied calves truly are calves, and that all whales identified in a year but not recorded as calves are indeed not calves. To determine the effect on the population assessment of a failure to correctly determine the calf/non-calf status of animals seen would require a sensitivity analysis. The TF **recommended** that this question be addressed when a population assessment based on the joint data set is conducted (see item 3.6.).

All of the IBM mother and cow-calf pair designations were either confirmed or definitely excluded by the Russia-US team data. Bradford reported that biopsy samples had been collected for 56 of 61 (92%) mother-calf pairs assigned by the Russia-U.S. team using behavioural and sightings-based criteria. Fifty-five of the 56 pairs (98%) were supported by genetic analysis. The one behavioural mother-calf association that was rejected by the

genetics is no longer recognized in the Russia-U.S. dataset, leaving five pairs assigned solely from behavioural criteria, 55 pairs from behaviour and genetics, and three pairs solely from genetic information.

The TF concluded that there remained little uncertainty in the designations of mothers and mother-calf pairs, because the IBM designations were either confirmed or definitely rejected by the Russia-US data, which were, in turn, largely confirmed by genetic data.

Both teams reported that they were investigating barnacles on whales, and Bradford reported that the Russia-US team was examining the potential of using barnacles in photographs to identify calves in the field. The TF suggested that barnacles on carcasses could be used to estimate age, using the age of the oldest barnacles on a carcass.

3.5. Task 6 (compare criteria for each team for recording body condition and agree on coding system to enable joint analyses)

2007 recommendation

- *The Task Force **recommends** that each database continues to include information on skinny whales and that the two teams compare their criteria for determining such whales so as to ensure a level of consistency that would allow analyses of combined datasets*

3.5.1. Review of proposal

PhID 1 (Task 6) contains a brief review of each team's protocols and the potential for standardisation. The author noted that the criteria were different and that the annual totals by body condition were not directly comparable between the two teams. However, this does not matter provided that the comparison is performed on an individual basis (comparing scores of individual whales).

3.5.2. Discussion and action arising

Health status has implications for of reproduction and survivorship. The TF recognised that skinniness is a potential early warning index for eventual impacts on abundance. In contrast, a downturn in reproduction or population size might not be directly detectable until some years later.

Donovan noted the value of tracking how the body condition of an individual whale changes over the season. This would require the two teams' data to be compatible – ideally using the same criteria but otherwise with a clear conversion factor (or common currency). The comparisons have to account for the time factor, because body condition can improve visibly during the feeding season.

Tyurneva explained that the IBM team attempts to assess body condition (BC) for all sightings with useable photographs of the appropriate regions of the individual. These photographs are rated into 5 classes as described in the IBM 2008 photo-id report (WGWAP6 6/5). For dedicated surveys in the field, a series of photos is taken at every sighting whenever possible, to maximize the probability of capturing the desired body regions for body condition (BC) assessment. Assessing BC from photographs obtained opportunistically (from the deck of the vessel) has proven difficult, and these photographs are often categorized as unknown. The IBM team is not specifically aiming for monthly BC assessments but rather the team tries to determine BC at every sighting where appropriate photographic information has been obtained.

Bradford explained that the Russia-US team aims to score three body regions per sighting - i.e. the diagnostic conditions - and comes up with a once-monthly determination of body condition. Monthly determinations are used for analytical purposes but also because it is not possible to score every region/attribute on every sighting, so using a monthly determination maximizes use of incomplete sighting data. A monthly determination is also considered appropriate because the number of body region scoring categories (three for one region, two for the other two regions) is low enough to avoid making subjective decisions about degrees of characteristics that are changing on a continuum.

The TF agreed as a first step to examine the potential for determining a conversion factor between the two teams' body condition assessments, by determining the number of cases where a direct comparison could be made.

The common research periods for both teams for the years 2002-2005 were:

2002: 13.08. – 25.09.
2003: 21.07. – 13.09.
2004: 30.07. – 12.09.
2005: 12.07. - 09.09.

Each team compiled its sightings of individual whales during the common period by date. This amounted to 1,265 Russia-US sightings and 481 IBM sightings. Assuming that (a) sightings within approximately 10 days represent potential comparisons and (b) separate sightings of the same animal within around 20 days count as only one potential comparison, then inspection of the data reveals that there are some 89 potential comparisons involving 79 whales.

At this stage, it is not known for how many of these *potential* comparisons suitable information on body condition is available. However, it is certain that the actual number of comparisons that can be achieved will be less than 89 and perhaps considerably fewer than that.

On this basis, the Task Force **agreed** that it was unlikely that a 'common currency' can be developed for the existing datasets given the probable sample size, and hence that effort by each team to investigate this further was unwarranted. The question as to whether a common set of criteria should be developed for future studies requires further discussion. It was agreed that Task 6 had been completed as specified.

3.6. Task 7 (population analysis based on joint data set)

2007 recommendations

- *Based on a preliminary comparison of the sightings histories, the Task Force **concludes** that the data sets complement each other to a considerable extent. Combining the datasets eliminates most of the gaps in the sightings histories, and thus would potentially improve the precision of population analyses based on these data.*
- *The Task Force therefore **recommends** that specifications for population analyses using the combined data be drawn up, and that permission be sought from the relevant parties to enable these to be conducted.*

3.6.1. Review of proposal

Cooke had circulated the proposal contained in PhID1, to fit the population model that had originally been developed by the first ISRP (Reeves *et al.* 2005) to the revised data. This model has been used in subsequent assessments presented to the WGWAP, the IWC Scientific Committee and to the September 2008 Range-wide workshop held in Tokyo.

3.6.2. Action arising

The TF endorsed the proposal, and considered that the existing data availability agreement was the appropriate basis for managing the data sharing required for this analysis.

The TF emphasised that it was important that there be clarity over which version of each dataset was to be used for the joint analysis. The data sets should be submitted to Larsen at IUCN for forwarding to the persons performing the analysis. Larsen would keep track of all versions received, and maintain a record of who has access to such.

Broker met with representatives of the two teams during the week of WGWAP-6 to agree details of data sharing conditions, authorship and related issues. The teams have been asked to confirm their agreement by email.

The TF **recommended** that the population assessment using the joint data be presented at the 7th WGWAP meeting, subject to resources (see item 4.2., Workplan).

3.7. **Task 8 (potential for analyses using photo-Id and other data that could help measure the effects of anthropogenic disturbance)**

2007 recommendation

- *The Task Force **recommends** that a small group be established to evaluate the potential for analyses using photo-ID and other data that could help measure the effects of anthropogenic disturbance on the whales.*

3.7.1. Review of proposal

Cooke had circulated the proposal in PhID1, but the full details had not been worked out. The idea was to use the photo-id data to assess what proportion of the whales visit each area each year and how long they stay, and to stratify this by population components. The analysis would not explicitly examine anthropogenic impacts, but it would produce intermediate results that could be correlated with environmental and anthropogenic factors. The photo-id data potentially provide information that mere distribution surveys alone cannot provide. They can provide an index not only of the density of whales in each area but also of the turnover and residency, as well as an indication, when distribution changes, of which whales are involved in the shift.

Broker noted the title of this task is problematic, as it may be difficult to establish causes for changes or to attribute such changes specifically to anthropogenic effects (as opposed to environmental or other factors that may have an influence).

The TF recognised that it would be difficult to link cause and effects, but considered that there was merit in analysing the shifts in distribution that had occurred in terms of the movements of individual whales.

Bradford reported that she has been examining spatial patterns of space use in her work, with reference to individuals and population segments, residency and turnover, using the Russia-US data set, which is necessarily limited to the near-shore Piltun area. She expected some results to be ready for presentation at the Society for Marine Mammalogy biennial conference at the end of 2009.

The TF recognised that this kind of work is both demanding and pioneering, and agreed that it was not in a position to propose specific analyses at this time, but it encouraged work by both teams. The complementary nature of the data meant that sharing of data between the teams could be especially valuable.

3.7.2. Action arising

The TF **recognised and welcomed** Bradford's ongoing work on space-use patterns. It **emphasised** that a broader study incorporating the data from both the Russia-US and IBM teams would increase the value of this type of work.

The TF **agreed** that this kind of analysis should be discussed as part of the planned workshop, to be held outside the GWAP framework, on how to integrate different data sets to examine anthropogenic effects on whales. If and when this workshop goes ahead, teams are encouraged to present to the workshop progress on any work undertaken on this topic.

It was **agreed** that Task 8 be removed from the TF's own list of tasks to complete

3.8. Task 9 (examine extent of overlap in research effort)

2007 recommendations

- The Task Force **agrees** that the primary way to optimize the photo-ID research would be through combined analyses of the two data sets.
- The Task Force **agrees** that the extent of overlap in the research effort in time and space should be examined, and **requests** that each team prepare a broad graphical summary of their hours of photo-ID research effort by square and time period. Based on this, the need for a more extensive analysis can be assessed.

3.8.1. Review of data received

This work arose from concern about the potential for disturbance from two research boats (as opposed to one) if the teams are operating in the same area at the same time. Each team submitted data on hours of research effort by position and date for 2002-2007.

3.8.2. Presentation and review of analysis

A preliminary analysis was presented in PhId 6. This analysis involved calculation of overlap in coverage by the two teams at two spatial resolutions (10 and 20 mile squares) and time resolutions (1 and 2 weeks). The analysis indicated that overlap had generally been fairly low, but had increased, notably in 2007. Maps of the distribution of effort showed that in 2007 in particular, the IBM effort had been focussed around the mouth of Piltun Lagoon, in the same area as a majority of effort by the Russia-US team.

In its Vancouver report the TF had emphasised the complementary nature of the data sets during 2002-2005, but this aspect has not yet been examined for the 2006-2008 data.

The IBM Photo-ID report for 2008 (document WGWAP 6/5) indicates a wider spread of effort in 2008, with less overlap with the area of operation of the Russia-US team, and less effort in total. The TF welcomed in particular the increased effort off Kamchatka since 2007.

The TF noted that the grid resolution of 10x10 miles used to define overlap was fairly coarse, and that the two teams were not necessarily operating in close proximity at any one time.

Broker noted that at a practical level the photo-ID work by the IBM team is not carried out as a unique effort, but is combined with other research programmes. The IBM team's efforts tend to follow the distribution of whales, and the effort is therefore dynamic. For example, if more whales are offshore, the team tends to spend more time offshore. Some overlap around the Piltun Lagoon is however inevitable. Muir further noted that effort is contingent on weather.

Donovan noted that ideally research effort would be allocated according to a spatial and temporal design, but recognised the above logistic constraints.

3.8.3. Action arising

The TF **recommended** that the two teams liaise with regard to planning of future field work.

4. Future work plan for Photo-Id Task force

4.1. List of outstanding tasks and new tasks arising from this meeting

4.2. Work plan with timeline

The TF agreed that the previous list of tasks had been cleared. The TF agreed a new list of tasks consisting of the following:

Task 1. Cross-matching of the catalogues to be conducted annually, starting with the 2008 catalogues ("2008" catalogue means the catalogues based on data collected up to and including the 2008 field season).

Timeline: The 2008 catalogues should be submitted to IUCN by 1 September 2009.

The cross-matching should be completed in time for WGWAP 7 (expected December 2009).

Task 2. Outreach materials to get ID photos from carcasses and platforms of opportunity. To be taken forward by the IUCN range-wide project.

Timeline: Progress report to be submitted by IUCN to WGWAP 7.

Task 3. Population assessment based on joint data set (through 2007).

Timeline:

Template for the data sets to be supplied by Cooke to the teams by July 31.

Final data sets to be received at IUCN by October 31.

Analysis to be presented to WGWAP 7 in December (and to TF pre-meeting if held).

4.3. Discuss whether to recommend continuation of Photo-Id Task force

All members agreed that the TF should continue, but that in order to function effectively it would need to meet in person, preferably in conjunction with WGWAP meetings. A 1-day meeting in conjunction with WGWAP 7 planned for December 2009 was the TF's preferred option. The TF recognised that this arrangement was less convenient for TF members who would not otherwise attend the WGWAP meeting.

The TF **recommended** that the membership of the TF be formally specified by the WGWAP, and that Larsen be informed whenever this changes.

4.4. Data safeguards and data sharing policy

The TF agreed that the data-sharing procedure used this year be continued. All data to be shared should be sent to IUCN, who will in turn, make them available only to TF members requesting access, subject to the permission of the data providers. In the case of data exchange between the teams, data are not to be forwarded by IUCN until comparable data have been received from each team.

Larsen further requested that when data are provided, the provider should specify the conditions under which they were provided (e.g. regarding distribution and access) as per the protocol proposed at WGWAP 4 and adopted at WGWAP 5.

Yablokov queried access to data for purposes other than the aforementioned list of specific identified TF tasks. Reeves noted that the provision of data in these circumstances is discretionary and cannot be regulated by the TF. It was **agreed** that if a new use for the photo-id data is considered relevant to WGW conservation, a paper should be submitted to WGWAP outlining the case for this. The WGWAP would then decide whether it should become a task for the TF (see, for example, item 5.2.).

5. Other business

5.1. Other recommendations to WGWAP arising from the photo-id TF (i.e. other than those in work plan)

The TF congratulated the two teams' efforts and spirit of collaboration, and encouraged that this continue.

5.2. Other

Yablokov summarised his paper (PhID 4) on phenetic variations in body form that can be detected from photos. Similar work has been done on sperm and killer whales and dragonflies, amongst other species.

He has identified about 200 such features in the gray whale. This line of research opens up opportunities to look at age, sex, family status, and relationships based on the shape of the muzzle, eyes, genitalia, etc. He believes eastern and western gray whales as well as subgroups may be distinguishable in this way. He reminded the TF of his request for suitable images, and believes some 60,000 images are now available and also welcomed collaboration. This is very time-consuming work and he has a potential co-worker in St Petersburg, Russia. The short report circulated is part of a longer review looking at different species, which can be made available.

The TF encouraged Yablokov to provide a paper in advance of the next WGWAP explaining the value of the approach for WGW conservation.

6. Adoption of report to GWAP

The report was presented verbally to the GWAP 6 meeting, and was largely finalised by TF participants before leaving Geneva. Some further revisions were agreed by email. It was agreed that the TF report could be posted on the IUCN Panel website when it has been finalized and Sakhalin Energy and the Panel have approved its release.

References

Reeves, R.R., Brownell, R.L., Burdin, A., Cooke, J.C., Darling, J.D., Donovan, G.P., Gulland, F.M.D., Moore, S.E., Nowacek, D.P., Ragen, T.J., Steiner, R.G., VanBlaricom, G.R., Vedenev, A. and Yablokov, A.V. 2005. Report of the Independent Scientific Review Panel on the Impacts of Sakhalin II Phase 2 on Western North Pacific Gray Whales and Related Biodiversity. IUCN, Gland, Switzerland and Cambridge, UK. 123pp.
<http://www.iucn.org/themes/marine/sakhalin/isrp/index.htm>.

ANNEX 1: Workshop Participants

GWAP

Randall Reeves (Meeting Chair)
Justin Cooke (Chair of the Task Force)*
Greg Donovan (Co-Chair of the Task Force)*
Grisha Tsidulko*
Dave Weller*
Alexey Yablokov*

SEIC

Doug Bell*
Christina Tombach-Wright*
Judith Muir
Koen Broker*
Olga Tyurneva*
Vladimir Efrimov

Associate Scientists

Amanda Bradford*

IUCN

Finn Larsen*
Sarah Humphrey
Laura Riddering

Translation

Grigory Shkalikov

* Members of Photo-Id Task Force

ANNEX 2

Agenda

1. Introductory items
 - 1.1. Introductions of participants
 - 1.2. Identification of rapporteur(s)
 - 1.3. Summary recap of establishment and work of Photo-Id Task Force
 - 1.4. Aims of meeting and expected product (reporting procedures)
 - 1.5. Adoption of agenda
2. Documents and progress reports
 - 2.1. Existing documents made available
 - 2.2. New documents, including ppt presentations
 - 2.3. Review of data sets received, including status and data on portal
3. Progress on tasks in Photo-Id Workplan (Report of WGWAP 5, Annex 4)
 - 3.1. Task 1 (cross-matching of the Sakhalin catalogues to 2007 season)
 - 3.1.1. Review of data received
 - 3.1.2. Presentation and review of matching results
 - 3.1.3. Action arising incl. recommendations for future updating
 - 3.2. Task 2 (comparison exercise of subset of the annual sighting histories)
 - 3.2.1. Review of data received
 - 3.2.2. Presentation and discussion of initial analysis
 - 3.2.3. Examination by each team of the photographs
 - 3.2.4. Action arising
 - 3.3. Task 3 (protocols for ID-photos from dead animals and whale watching vessels)
 - 3.3.1. Presentation and discussion of draft protocols
 - 3.3.2. Action arising
 - 3.4. Tasks 4-5 (review criteria for judging mother-calf pairs and unidentified calves)
 - 3.4.1. Presentation and discussion of draft proposal
 - 3.4.2. Comparative analyses conducted during the meeting
 - 3.4.3.. Discussion and action arising
 - 3.5. Task 6 (compare criteria for each team for recording body condition and agree on coding system to enable joint analysis)
 - 3.5.1. Review of proposal
 - 3.5.2. Action arising
 - 3.6. Task 7 (population analysis based on joint data set)
 - 3.6.1. Review of proposal
 - 3.6.2. Action arising
 - 3.7. Task 8 (potential for analyses using photo-Id and other data that could help measure the effects of anthropogenic disturbance)
 - 3.7.1. Review of proposal
 - 3.7.2. Action arising

- 3.8. Task 9 (examine extent of overlap in research effort)
 - 3.8.1. Review of data received
 - 3.8.2. Presentation and review of analysis
 - 3.8.3. Action arising

- 4. Future work plan for Photo-Id Task force
 - 4.1. List of outstanding tasks and new tasks arising from this meeting
 - 4.2. Workplan with timeline
 - 4.3. Discuss whether to recommend continuation of Photo-Id Task force
 - 4.4. If so, discussion and recommendations on:
 - 4.4.1. TOR, modus operandi
 - 4.4.2. Membership
 - 4.4.3. Data safeguards and data sharing policy
 - 4.4.4. Operation of IUCN Portal

- 5. Other business
 - 5.1. Other recommendations to WGWAP arising from the Photo-Id TF
(i.e. other than those in work plan)
 - 5.2. Other

- 6. Adoption of report to WGWAP

ANNEX 3. List of Documents

- PhID 1: Anon. A compilation of tasks and proposals for the photo-ID TF.
- PhID 2: Anon. Relevant extracts and annexes from WGWAP reports 3 to 5.
- PhID 3: Anon. Report of TF 1 (Vancouver 2007 Workshop).
- PhID 4. Yablokov, A. Some phenetic variations of the WGW body form which can be detected from photos.
- PhID 5 Cooke J.G. Report on photo-id tasks 2, 4 and 5. Comparison of sighting histories; criteria for mother-calf pairs; criteria for unaccompanied calves.
- PhID 6. Cooke J.G. Report on Task 9: overlap of research effort in time and space.