# Report of the Planning Meeting for the 2020 IWC-POWER Cruise

Tokyo, Japan, 20 January 2020

# Report of the Planning Meeting for the 2020 IWC-POWER Cruise[1]

The Planning Meeting was held at the Japanese Fisheries Agency Crew House on 20 January 2020 (the report was drafted on 21 January).

## 1. INTRODUCTORY ITEMS

### 1.1 Opening remarks and welcoming address

Matsuoka (Convenor) welcomed the participants. Moronuki (Fisheries Agency) reiterated the importance of the IWC-POWER programme to Japan although it had left the IWC last year, noting that the tenth such cruise had been completed successfully. He thanked all the researchers and crew who participated in the cruise. He hoped that the next phase of the programme could be completed in co-operation with the IWC and its Scientific Committee. He looked forward to a fruitful and constructive planning meeting and noted that Japan was working with the Russian authorities to try to obtain the necessary permit to hold the 2020 cruise in the western Bering Sea and also recognised the importance of developing a backup plan in the event that permission could not be obtained.

On behalf of the IWC, Donovan thanked the organisers for providing the excellent facilities in the Japanese Fisheries Agency Crew House. He also expressed continued appreciation to the ship's crew on behalf of the IWC and the researchers; the crew's cooperation on the cruises is essential for the continued success of the research. The IWC-POWER cruises have been extremely important to the IWC and our knowledge of whales in the North Pacific regions that had largely been unstudied in recent decades; a considerable amount of very valuable information is being accrued as was discussed at the recent IWC-POWER TAG meeting (SC/68B/REP/01). The programme continues to provide an excellent example of international cooperation.

### 1.2 Election of Chair

Kato was elected Chair with Matsuoka as co-Chair.

### 1.3 Adoption of Agenda

The adopted agenda is given as Annex B.

### 1.4 Appointment of rapporteurs

Crance, Brownell and Palka were appointed rapporteurs, assisted by Donovan and Matsuoka.

### 1.5 Review of documents

The list of documents is given as Annex C.

## 2. REVIEW OF DISCUSSIONS AT SC68A AND THE TAG MEETING

### 2.1 Progress since last planning meeting

#### *2.1.1 Distance and angle experiments*

The TAG had reviewed an updated analysis of the 2010-18 distance and angle experiments that took into account comments made at the previous TAG and Scientific Committee meetings. The analysis showed that although (as expected) there is variation in ability to estimate angles and distances there was no evidence of any systematic underestimation or overestimation that would translate into any significant bias in abundance estimates. A final version of the paper will be presented at the next Scientific Committee meeting.

#### *2.1.2 Abundance estimation*

The TAG received updated and new analyses of the 2010-18 data to obtain estimates of abundance for the main large whale species. This included both standard line-transect approaches and spatial modelling approaches. The work was well received and some suggestions were made to facilitate completing the analyses before the next Scientific Committee meeting. Provided the updates can meet the one month deadline, it is hoped that they can be agreed upon at SC68B.

#### *2.1.3 Analyses of marine debris data*

The TAG welcomed an updated version of the paper analysing the marine debris data that has been submitted for publication (SC/TAG/2020/WP/09).

[1]Presented to the Scientific Committee as SC/68B/REP/02.

*2.1.4 Medium-term plans*

The TAG reviewed the results of the IWC-POWER programme thus far (recognising that Phase I was almost complete) in the light the development of the medium-term plan. A revised list of priority species/populations was developed that will be proposed to the Scientific Committee.

*2.1.5 Backup plan for 2020*

The TAG meeting recognised the need to develop a backup plan for the 2020 cruise which is proposed to be in Russian waters. The TAG developed options for the backup plan (all in the high seas so no permit is required) that are discussed further below.

## 3. PRELIMINARY RESULTS FROM THE 2019 CRUISE

### 3.1 Sightings

Matsuoka presented a short summary of the preliminary cruise report from the 10th IWC-POWER cruise that took place from 3 July to 25 September 2019; more details can be found in the report of the TAG meeting (SC/68B/REP/01). The cruise was successfully conducted and good (over 75%) coverage of the planned tracklines was achieved. Fin (239 sightings/405 individuals) and humpback (147/289) whales were the most frequently seen species with sightings of blue, sei, gray, sperm and common minke whales, as well as several small cetacean species being sighted. No North Pacific right whales were seen although there were some acoustic detections.

The crew of the vessel and international researchers worked well together to meet the objectives of the survey and follow IWC guidelines.

### 3.2 Acoustics

An acoustic component was included for the 3rd time to acoustically monitor for the presence of marine mammals, with a particular focus on detecting and locating North Pacific right whales. A total of 229 sonobuoys were deployed, for a total of over 820 monitoring hours. Species detected included fin whales (over 55% of sonobuoys), sperm whales (over 50%), killer whales (over 35%), blue whales (about 25%), humpback whales (over 20%), and North Pacific right whales (about 5%). The acoustic data were consistent with the distribution data from the sightings.

### 3.3 Biopsy sampling

A total of 75 biopsy (skin and sometimes blubber) samples were collected from five species: blue (12), fin (45), humpback (12), gray (2) and sei (4) whales.

### 3.4 Photo-identification

Preliminary analyses of the photo-ID data revealed about 122 unique individuals from six species: gray (6), blue (16), fin (51), humpback (30) and killer (19) whales.

### 3.5 Other

A total of 42 objects of marine debris were observed.

*Recommendation*

*The Planning Meeting was* **impressed** *with the provision of the draft cruise report and* **thanked** *all of the scientists and crew for undertaking a most successful cruise. It also* **expressed** *thanks to the Government of Japan for the long-time provision of the vessel and the Government of the USA for providing the acoustic equipment, experts and the scientific permits to survey in US waters and enter a US port. Finally, the Planning Meeting* **thanked** *the cruise leader, Matsuoka, for his hard work, dedication to the project and leadership skills.*

### 3.6 Recommendations from cruise team

*3.6.1 VHF radios*

On the 2018 and 2019 cruises, photographers had used VHF radios on loan from NOAA. During photo-ID experiments it is useful to be able to coordinate between researchers on separate platforms in order to maximise the number of individuals photographed, rather than have three isolated photographers all focusing on the closest animal. The cruise report recommended that VHF radios are available for future cruises.

*Recommendation*

*The meeting* **recognised** *the value of having VHF radios on board,* **thanked** *NOAA for the loan of equipment in 2019 and agreed that Donovan and Matsuoka would investigate whether these can be acquired for 2020 and beyond within the existing budget.*

*3.6.2 Lightroom, camera and computer equipment*

Images collected during the 2019 cruise were again uploaded to Lightroom, greatly reducing post-processing time, facilitating development of rapid photo-analysis summaries and expediting image access/sharing. The cruise report had recommended

that this process continues and that the guidelines for the IWC Lightroom Photographic Database be updated. The new IWC-POWER laptop with fast processor, high resolution wide screen and ample memory and drive storage was welcomed. The cruise report also recommended that the IWC Nikon D7000 camera and GPS unit be serviced and if necessary or possible, replaced.

*Recommendation*
*The meeting* **reiterated** *the value of the IWC-POWER Lightroom photographic database and Donovan and Matsuoka will ensure that an updated manual and the most recent version of the database are available on the IWC laptop prior to the 2020 cruise. They will investigate the possibility of purchasing a new IWC camera if the Nikon D7000 cannot be repaired.*

## 4. GENERAL ISSUES

### 4.1 Availability of research vessel(s) from Japan and elsewhere

The Fisheries Agency of Japan is hoping to provide the *Yushin-Maru No. 2* or a similar vessel with an international license for the 2020 cruise.

Although no other countries will be able to provide vessels this year as a formal part of the IWC-POWER programme, it was noted that: researchers from the Pacific Islands Fisheries Science Center are embarking on a winter research cruise to study cetaceans and seabirds around the main Hawaiian Islands aboard the NOAA Ship *Oscar Elton Sette* from January to March, a time of year not previously studied. The survey is called the Winter Hawaiian Islands Cetacean and Ecosystem Assessment Survey (WHICEAS, pronounced 'why-sees'). There is also a proposal for a US cruise in the Gulf of Alaska in 2022.

### 4.2 Budget (including accommodation and food costs)

Donovan reported that funds for the 2020 cruise had been approved. The meeting was informed that the costs for food and accommodation on the vessel is the same as in previous years (¥2,500 per day).

### 4.3 Research permit for Russian waters

Suzuki (Fisheries Agency of Japan) explained that the permit application for the 2020 IWC-POWER survey in the Western Bering Sea had been submitted to Russia in December 2019 via diplomatic channels (the application for the 2019 cruise in those waters had been refused in March 2019 but no specific reasons for the refusal had been provided). It was noted that the IWC Chair and the Secretariat had also written to the Russian Commissioner seeking support for the application.

## 5. PRIORITIES AND 2020 CRUISE PLAN (INCLUDING BACKUP PLAN)

Given the potential difficulties in obtaining a permit for Russian waters in 2019, noted under Item 4.3, it was **agreed** that a backup plan should be developed. Both the original plan (hereafter 'Russian option' originally discussed at last year's planning meeting) and the backup plan (hereafter 'backup plan') are incorporated into the discussion below.

### 5.1 Research priorities

The Planning Meeting confirmed that the 2020 cruise objectives will be broadly the same as in previous years but the details will differ depending on the options as discussed below. The cruise will thus focus on the collection of line transect data to estimate abundance as well as collection of biopsy and photo-identification data. For logistical reasons, no acoustic work will be undertaken under the Russian option.

Either option, the Russian or the backup, will make a valuable contribution to the work of the Scientific Committee on the management and conservation of populations of large whales in the North Pacific in a number of ways, including providing:

(a) information for the ongoing assessments of North Pacific sei, humpback and gray whales in terms of abundance, distribution and stock structure;
(b) information on endangered North Pacific right whales;
(c) baseline information on distribution, stock structure and abundance for a poorly known area for other cetacean species/populations, including those that were known to have been depleted in the past but whose status is unclear; and
(d) essential information for the development of the medium-long term international programme in the North Pacific to meet the Commission's long-term conservation and management objectives.

For the Russian option, a primary focus will also be to complete the surveyed area for fin whales to obtain comprehensive abundance estimates. For the backup option, a primary focus will be to collect IO data to allow more robust estimation of $g(0)$ for at least fin and sei whales as well as to provide comparable coverage of the western part of the southern stratum of the 2010 survey.

Table 1

Proposed itinerary for the IWC-POWER cruise assuming 76 days (Russian and backup option). For reasons of refuelling and supplies, the maximum time in the research area will be about 60 days for the Russian option and 53 days for the backup option.

| Option 1: Russian | | Option 2: Backup | |
|---|---|---|---|
| Date | Event | Date | Event |
| 11 July 2020 | Pre-cruise meeting at Shiogama | 10 July 2020 | Pre-cruise meeting in Shiogama |
| 12 July | Vessel departs Shiogama | 11 July | Vessel departs Shiogama |
| 18 July | Vessel arrives Petropavlovsk-Kamchatskiy | 17 July | Vessel starts research area survey |
| 21 July | Vessel departs Petropavlovsk-Kamchatskiy | 13 August | Vessel completes first half of survey |
| 26 July | Vessel starts survey in research area | 17 August | Vessel arrives Kushiro for refuelling |
| 12 September | Vessel leaves the research area | 20 August | Vessel leaves Kushiro |
| 16 September | Vessel arrives Petropavlovsk-Kamchatskiy | 25August | Vessel starts research area survey |
| 19 September | Vessel leaves Petropavlovsk-Kamchatskiy | 18 September | Vessel completes survey |
| 24 September | Post-cruise meeting on vessel | 24 September | Vessel arrives Shiogama |
| 25 September | Vessel arrives Shiogama | 25 September | Post-cruise meeting in Shiogama |

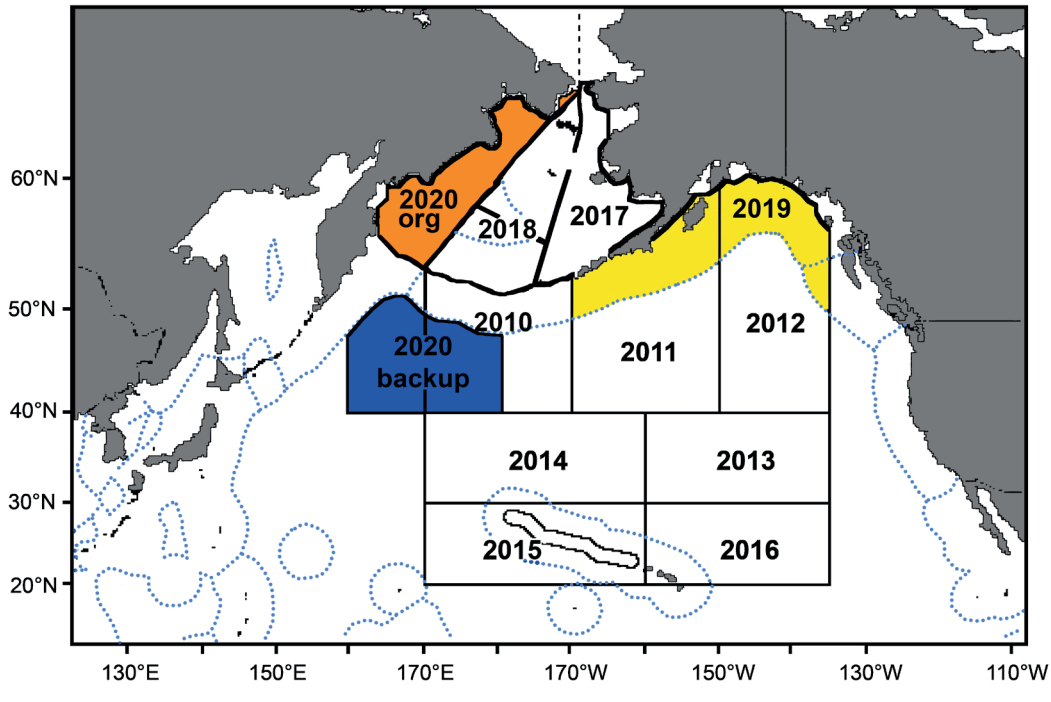


Fig. 1. Map showing the areas surveyed thus far under IWC-POWER (2010-19) with the proposed 2020 area. The preferred Russian option is shown in orange and the back-up option is shown in blue.

### 5.2 Research area(s)

Fig. 1 shows the boundaries of the Russian option (single stratum) and the backup option (two strata) for 2020.

### 5.3 Research vessel and days available (general itinerary)

The proposed itineraries for each option are provided in Table 1.

### 5.4 Cruise track design

Fig. 2 shows the proposed cruise track design for each option.

### 5.5 Sighting survey (including transit)

*5.5.1 Survey modes and allocation of effort (including number of crew, research speed)*

Activities are classified into two principal groups: 'on-effort' and 'off-effort'. On-effort activities are times when full search effort is being executed and conditions (such as weather and sea conditions) are within acceptable parameters to conduct research. Off-effort activities are all activities that are not on-effort. All sightings recorded while the ship is on-effort are classified as primary sightings. All other sightings are secondary sightings. The meeting re-iterated that if sightings are made

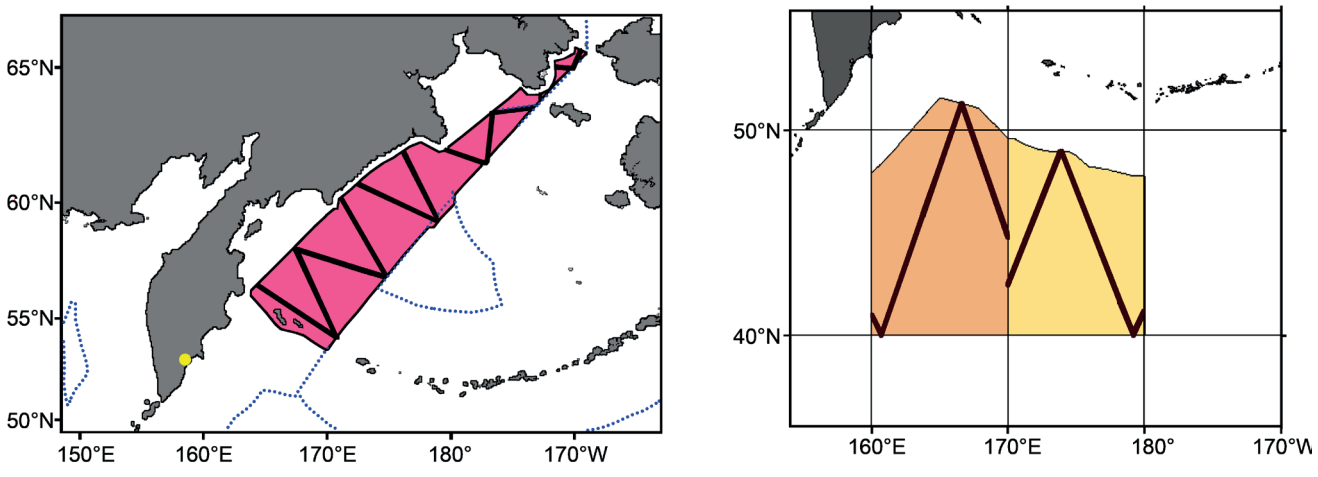


Fig. 2. Proposed tracklines for the Russian option (left) and the backup option (right). The Russian option excludes the Anadyr Gulf and waters around Karaginskiy Island to facilitate the granting of a permit. The actual tracks can be further modified if requested.

outside official research hours (e.g. before sightings effort begins in the morning), then these should be recorded as 'off-effort' sightings as they can contribute useful information on distribution even though they are not suitable for abundance estimation.

For both options, the survey will alternate modes between Normal Closing Mode (NSP) and Independent Observer Mode (IO) (*circa* every 50 n.miles). However:

(1) if the high density of whales in the research area causes problems for the observers in discriminating between the same and different schools while conducting IO mode survey, searching mode will be changed to NSP; and
(2) given the high priority assigned to obtaining IO data for sei and fin whales, the Cruise Leader in consultation with the captain may decide to increase IO effort beyond 50%.

Research hours during the cruise will be the same as on previous POWER cruises. This will involve a maximum 12 hours per day between 6:00 and 19:00, including 30 minutes for meals (lunch and supper) during IO mode. Days will begin 60 minutes after sunrise and end 60 minutes before sunset. For biopsy sampling/photo-identification work on priority species, there may be occasions when it is beneficial to extend the research activities outside the normal research hours. The basis for any such extension of research hours will involve mutual agreement between the captain and cruise leader and an allocation of equivalent time-off the following morning or evening.

The research day in transits will begin 30 minutes after sunrise and end 30 minutes before sunset, with a maximum of a 12-hour research day. Time-zone changes will be in 30-minute intervals, coming into effect at midnight. Research mode will operate after Day 2 when on transit.

As in the previous cruises, two topmen will observe from the barrel at all times in passing mode. Two primary observers will be in the barrel whenever full searching effort using reticle binoculars and angle board is conducted. Two primary observers (Captain and helmsman) will be at the upper bridge with binoculars with reticles, regardless of the research mode. Also present on the upper bridge, whenever the sighting survey is conducted, will normally be the Chief Engineer (or an alternate). With four researchers on board, the Cruise Leader should ensure that the number of researchers searching from the Upper Bridge is standardised. In IO mode, there will be an additional person on the IO platform (e.g. researcher). The number of researchers to be used is discussed further in Item 13.1 below.

As in 2019, a speed of 11.5 knots (through the water) will be maintained during research, although in conditions of heavy swell, searching speed might have to be reduced.

### *5.5.2 Acceptable conditions*

The usual guidelines will apply, i.e. visibility (in principle for seeing common minke whales) >2.0 n. miles; wind speed <21 knots; sea state <Beaufort 6. The upper ranges of these conditions are not suitable to reliably see common minke whales but are sufficient for the other large whale species.

### *5.5.3 Angle and distance experiment*

The experiment is designed to calibrate and identify any biases in individual observers' estimation of angle and distance. The experiment should be conducted during weather and sea conditions representative of the conditions encountered during the survey. The equipment and methods will follow the improved approach developed since 2015. Attempts will be made to conduct the experiment in higher wind speeds (e.g. 15 knots) but with due consideration given to time and other constraints. The detailed protocol can be found in the Guide for Researchers.

*5.5.4 Data recording and format*

The survey will be conducted using the ICR data acquisition system (an English language version is now available in response to a previous recommendation of the TAG, see SC/68A/REP/01) and data forms where appropriate. Whilst cetaceans are the priority, opportunistic data on other taxa may be collected at the discretion of the cruise leader (e.g. turtles or pinnipeds).

*Recommendation*
*The meeting* **agreed** *that Donovan and Matsuoka will update the Guidelines for Researchers as necessary for the 2020 cruise.*

**5.6 Biopsy sampling**

*5.6.1 Priority species*

Biopsy sampling will only be undertaken for the backup option. The highest priority species for biopsy sampling is the North Pacific right whale, followed by blue, fin, gray and sei whales. Medium-priority species include sperm, common minke and killer whales.

With respect to humpback whales, for the Russian option the priority is to obtain samples from animals encountered north of 60°N; the origin of the animals in this northern portion of the Bering Sea is unclear. Elsewhere, humpback whales have been sampled in large numbers and so in those areas the species is considered low priority for biopsy sampling, although (as for other large whale species encountered) opportunistic samples are useful.

*5.6.2 Equipment*

Biological sample collection will be by using biopsy sampling (skin/blubber collected by projectile dart). Projectile biopsies will be collected using either a compound crossbow or the Larsen gun system. During any single encounter, no more than five biopsy sampling attempts per individual will be made. It is rare that an animal would be targeted for biopsy more than twice during one encounter, but conservatively five sample attempts will be allowed as necessary. If signs of harassment such as rapid changes in direction, prolonged diving and other behaviours are observed from an individual or a group, biopsy will be discontinued on that individual or group. The animals to be sampled will either approach the vessel on their own or be approached by the research vessel during normal survey operations. The projectile biopsy sample will be collected from animals within approximately 5 to 30m of the bow of the vessel.

For safety reasons, life vests are to be worn for all activities below the bridge, including biopsy sampling.

For large cetaceans, small samples (<1 gram) will be obtained from free-ranging individuals using a biopsy dart with a stainless steel tip measuring approximately 4cm in length with an external diameter of 9mm and fitted with a 2.5cm stop to ensure recoil and prevent deeper penetration (so that only 1.5cm of the tip is available to penetrate the animal). Between sample periods, the biopsy tips are thoroughly cleaned and sterilized with bleach following the established protocol. Biological samples may be collected from adults, juveniles, females with calves and calves. The same size biopsy dart would be used for calves as for adults. No biological samples will be taken from 'newborn' calves. The age of a calf will be determined by the subjective judgment of experienced field biologists. They should err on the side of caution.

*5.6.3 Sample storage*

Samples will be frozen and stored in cryo-vials. Each sample will be split into skin and blubber, the latter not being required for genetic analysis. The skin samples will be divided at sea into the IWC samples and Japanese samples. The blubber sample will be retained whole (i.e. not be split) and held at ICR since analyses of blubber (e.g. for contaminants, hormones, fatty acids) generally require larger amounts of tissue and splitting already small quantities may render such analyses impossible.

**5.7 Photo-identification studies**

*5.7.1 Priority species*

As appropriate and decided by the Cruise Leader, research time will be allocated for the photo-ID and/or videotaping of large whales, with the priority by species as for biopsy sampling (see above). The estimated daily number of miles to be steamed in searching mode has a built-in allowance for such work. Generally, large whales will be approached within approximately 15-20m. Photo-ID of adults and juveniles will occur. If the opportunity arises, females accompanied by calves may be approached for photo-identification, but efforts will cease immediately if there is any evidence that the activity may be interfering with pair bonding, nursing, reproduction, feeding or other vital functions. It was agreed that, for North Pacific right whales, attempts should be made to obtain identification photos (of the head, with a lateral approach) before a biopsy sample is taken. If, in the judgment of the Cruise Leader, the animal concerned is very evasive, then a biopsy can be attempted from any angle; but photographs are the initial priority.

For safety reasons, life vests are to be worn for all activities below the bridge, including photo-ID work.

*5.7.2 Equipment and collection*

The existing camera equipment is considered sufficient if the Nikon D7000 can be fixed (see Item 3.6.2). If funds can be found, VHF radios will also be available (see Item 3.6.1). US scientists offered to assist with equipment loan as needed.

*5.7.3 Analysis and archiving*

A master set of all photographs taken on the IWC-POWER cruises is kept at the IWC Secretariat within an Adobe Lightroom database; these are copyright of the IWC. Even if a researcher uses their own camera, the photographs remain the property of the IWC.

As noted under Item 3.6, the instructions for use of the Lightroom database will be updated.

Photographs that have been examined and catalogued as individuals for identification purposes will also be archived within a set of IWC-POWER Catalogues. It is important to share such information with other researchers working in the North Pacific through the IWC protocol (*www.iwc.int*) to apply for use of the photographs (available from the IWC Secretariat through the IWC-POWER pages on the IWC website as well as via the Scientific Committee Handbook). The final decision on access is made by the IWC-POWER steering group. All researchers wishing to use the photographs must obtain formal permission from the IWC Secretariat.

**5.8 Acoustic studies**

*5.8.1 Priority species*

Acoustic studies will only be undertaken under the backup option. The highest priority species for acoustics will be North Pacific right whales, followed by blue whales. As in previous cruises, the acoustician will not disclose the species detected on sonobuoys to avoid biasing the sighting effort of the observers, with the exception of North Pacific right whales.

*5.8.2 Equipment*

Equipment will be provided by the Alaska Fisheries Science Center (AFSC), including sonobuoys, laptop computer, antennae, cables, and analytical software. AFSC will also provide a dedicated, experienced acoustic observer (Crance or alternative) to conduct all acoustic monitoring operations on the cruise.

Ideally, the general acoustic schedule will involve deployment of one sonobuoy every 20-25 n.mile, as well as one at night, leading to 6 buoys per day under good conditions, provided sufficient buoys are available. When drifting for fog, one buoy can be monitored for the full 8 hours; no new deployment would be necessary unless the battery runs out or the buoy unexpectedly fails. The acoustic expert will determine the necessary number of sonobuoys deployed per day.

*Recommendation*

*Japan will examine if sonobuoys can be used in the Japanese EEZ (including laws on acceptable frequencies). If it is permissible, decisions on whether to launch will be at the discretion of the Cruise Leader and Captain in consultation with the Acoustician). A small group comprising Crance, Matsuoka, Suzuki and Brownell was established to work on logistics and permissions for the acoustic work.*

*5.8.3 Analysis and archiving*

The NOAA Marine Mammal Laboratory will continue to act as the curator of acoustic data on behalf of the IWC. Proposals for use of these data should be submitted through the IWC Secretariat in the usual manner.

**5.9 Other studies**

*5.9.1 Marine debris*

The Planning Meeting reiterated the importance of observations of marine debris and analyses of the data collected to date was discussed at the TAG meeting (SC/68B/REP/01). The protocol adopted for recording such material (15 minutes in every hour) will continue in 2020 to prevent compromising cetacean sightings searching effort.

*5.9.2 Oceanographic studies*

As noted previously (e.g. IWC, 2016), sufficient time cannot be devoted to oceanographic studies to collect worthwhile data and thus no such studies will be undertaken. Consideration can be given to external requests for simple sampling if considered practicable, but no such requests had been received to date.

*5.9.3 Satellite tagging studies*

No activities are planned for the 2020 cruise. IWC (2016) had agreed that the use of such equipment should be considered when designing the medium-term programme. If satellite equipment is available for potential use in the 2020 cruise its use must be discussed within the Steering Group **prior** to approval for use **and** follow IWC guidelines, including the need for an experienced tagger to carry out the work.

## 6. LOGISTICAL ISSUES FOR THE 2020 CRUISE (INCLUDING BACKUP PLAN)

**6.1 International researchers and allocation of research personnel**

All researchers will join the vessel in Japan. For the backup plan there is the possibility of the researchers leaving or joining the vessel at the refuelling port in the middle of the cruise.

For 2020, the framework detailed in Table 2 for researcher involvement was agreed, depending upon destination.

Table 2

Personnel for each cruise option.

| Russian option* | | Backup option 1st leg/ 2nd leg | |
|---|---|---|---|
| Matsuoka | Cruise Leader | Matsuoka/Murase | Cruise Leader |
| Zharikov? | Russia | Gilpatrick/Possibly Olson | USA |
| Gilpatrick | USA | Crance/Wright or Kimber | USA, Acoustician* |
| Katsumata | Japan | Katsumata/Katsumata | Japan |
| | | Yoshimura/Takahashi* | If no acoustics |

*Korea may be able to provide an experienced scientist as a backup.

### 6.2 Transportation of data, samples and equipment including permits

#### *6.2.1 Home port organiser and entry/exit permits*

The home port will be Shiogama and the home port organiser in Japan (and Kushiro for the backup plan refuelling) will be Hakamada. For the Russian option, Zharikov will act as home port organiser.

#### *6.2.2 Sightings: equipment, data, permits and responsible persons*

As in previous years, ICR (Matsuoka) and Kyodo Senpaku (Yoshimura) will check the sightings equipment to ensure that all is working/available. No permits are required. Within two months of the end of the cruise, all validated sightings data will be forwarded to IWC by the Cruise Leader (Matsuoka).

#### *6.2.3 Biopsy: equipment, samples, permits and responsible persons*

Biopsy samples will be taken using the Larsen gun system or a compound crossbow for the backup option; no biopsy sampling will occur if the Russian option is implemented. Matsuoka will ensure that the necessary equipment, including darts, plugs and vials are available. For the backup option, the same process as used previously will be followed using a permit for 'introduction from the sea'. For the backup option, ICR will ensure that the IWC samples are sent to the SWFSC in accordance with CITES procedures. A small intersessional group was established comprising Matsuoka (convenor), Taguchi and Brownell to finalise the process following past experience.

#### *6.2.4 Photo-identification: equipment, permits and responsible persons*

As in previous years, ICR (Matsuoka) and Kyodo Senpaku (Yoshimura) will check the camera equipment to ensure that all is working/available. Donovan and Matsuoka will ensure that the additional equipment agreed under Item 3.6 is purchased/serviced as possible. No permits are required. Matsuoka will submit all identification photographs/videos and accompanying data to IWC within two months of the cruise.

#### *6.2.5 Acoustics: equipment, permits and responsible persons*

No acoustic work will be undertaken on the Russian option. For the backup option with acoustics, acoustic equipment (as much as possible will be sent well in advance) will be loaded in Shiogama, where Crance will join the vessel for the first part of the cruise. Testing of cables/GPS already fitted on the vessel will be undertaken by the crew in conjunction with Crance, well in advance of the cruise so that new equipment can be purchased if necessary. Data will be archived at NOAA's Marine Mammal Laboratory.

Arrangements to dispose of the trash materials in Shiogama (including costs) will be determined by a small group comprising Matsuoka, Crance and Yoshimura.

### 6.3 Communications

#### *6.3.1 Safety aspects (daily report, etc.)*

The vessel will be equipped with AIS. Daily vessel position reports will be submitted to ICR, NRIFS, the Fisheries Agency and Kyodo Senpaku Co Ltd. For the Russian option, daily reports may be necessary depending on the area, and in this case Zharikov will be responsible for contacting the relevant authorities. For the backup option there is no need for regular communication with the Japanese Coast Guard.

#### *6.3.2 Between Cruise leader and IWC*

As in previous years, weekly reports (every Monday) will be provided to the IWC Secretariat and members of the Steering Group.

#### *6.3.3 Weather information*

It was agreed that fog information will be required and this will be obtained as usual via a Japanese agency.

#### *6.3.4 Other official communications*

For the Russian option, arrangements will be made to comply with any requirements specified in the permit. Zharikov will investigate this. There are no additional requirements for the backup option.

*6.3.5 Private communications*

Researchers may send and receive private communications, including e-mails, at their own expense. Prepaid cards such as the KDDI card (super world card) can be used for private voice communications. Private accounts must be paid by researchers before departing the home port at the end of the cruise. Payment must be in cash (Japanese yen).

**6.4 Meetings (including responsible persons)**

*6.4.1 Pre-cruise meeting (and possible mid-cruise meeting)*

For both options, all researchers will join the vessel in Japan and the pre-cruise meeting will be held in Shiogama and organised by Hakamada. If there is a change in personnel in Kushiro under the backup plan, there will need to be a mid-cruise meeting on 18 August to facilitate the handover. The venue is to be decided.

The Cruise Leader will ensure that the report of the pre-cruise meeting(s) is/are circulated to the IWC-POWER Steering Group when completed.

*6.4.2 Post-cruise meeting*

For the Russian option, the post-cruise meeting will be held in Shiogama when the vessel returns to port; it will be organised by Hakamada. For the backup option, the post-cruise meeting will be held in Shiogama, on 25 September and organised by Hakamada.

**6.5 Reports**

*6.5.1 Planning meeting report*

This planning meeting report will be uploaded onto the IWC website as a Scientific Committee report for SC68B.

*6.5.2 Cruise report*

As usual, the cruise report will be drafted on the return journey of the cruise following the guidelines provided by Donovan. The report will be discussed at the next planning meeting and then a final version will be sent to the Secretariat for submission to the next Scientific Committee meeting after that.

**6.6 Press releases**

The Cruise Leader (or representative) in consultation with the IWC Secretariat (Kate Wilson and Greg Donovan) and, if necessary, Russia will prepare a press release before and after the cruise. The IWC, ICR, Russia (if required) and Japan Fisheries Agency press releases should be released simultaneously. The IWC website will also include a press release pointing to the relevant IWC-POWER cruise web page; consideration will be given to providing a weekly or bi-weekly review of activities on the IWC website as the cruise progresses, along with a summary at the end of the cruise. Any additional press releases during the cruise precipitated by unusual observations (e.g. the finding of right whales) will be circulated for comment and approval by the Steering Group and the Cruise Leader prior to release.

**6.7 Security**

For the Russian option, the Fisheries Agency, ship agents and Zharikov will investigate the situation for Petropavlovsk-Kamchatskiy and ensure that adequate security measures are in place. No security problems are anticipated for the backup option. The IWC banner will be readily visible.

## 7. OTHER

**7.1 Data validation and analysis**

Work on data validation continues at the Secretariat. Where difficulties have arisen, these are being dealt with in cooperation with the Cruise Leader.

**7.2 IWC website**

Donovan reported that he will liaise with the Secretariat's Communications Officer, Kate Wilson, to update the IWC-POWER pages so that they are updated in light of the present meeting and the preceding TAG meeting after the reports are adopted at the 2020 Scientific Committee meeting. Crance will provide a selection of interesting acoustic recordings (e.g. of the Baird's beaked whale) and Donovan and Taylor will review the photographic archive to update those sections of the website.

## 8. CONCLUDING REMARKS AND ADOPTION OF REPORT

A list of action points arising from the meeting is given as Table 3. Kato thanked the meeting members for their participation and looked forward to a successful cruise in 2020.

The Captain thanked the participants for their work and promised the full and active participation of the crew to ensure another successful cruise in 2020.

Table 3

Task list for the 2020 cruise.

| Item | Task | Responsible persons | Timeline |
|---|---|---|---|
| (1) | Update IWC-POWER pages on the website. | Secretariat and Steering Group | Continuing task |
| (2) | Contact researchers and check availability. | Brownell and Steering Group | By end of February |
| (3) | Decide where the 2020 cruise will be in light of permit situation. | Steering Group based upon advice from Japan | By 1 April 2020 |
| (4) | Determine logistics and permissions for acoustic work for the backup plan. | Crance, Matsuoka, Brownell and ?? | By 1 May 2020 |
| (6) | Update 'Guide for Researchers' including the Lightroom manual, purchase new equipment in light of budget and update IWC computer. | Matsuoka and Donovan | By SC68B |

On behalf of the IWC, Donovan thanked all those who had participated in the meeting. The IWC-POWER cruises are a particularly important component of the IWC's work. As the meeting has recognised, they are an excellent example of international collaboration. He stressed the importance of an enthusiastic and efficient crew, without whom the cruises could not succeed. He asked that the meeting's appreciation to the crew be conveyed to them.

The meeting thanked the Government of Japan for providing such excellent facilities and, in particular, the Chair and the interpreters who had performed their difficult tasks with their customary efficiency and good humour. Discussions at the meeting had been facilitated by the availability of the very good cruise report of the 2019 cruise.

The meeting adopted the report by e-mail on 1 February 2020.

## Reference

International Whaling Commission. 2016. Report of the Meeting of the IWC-POWER Technical Advisory Group (TAG), 8-10 October 2014, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 17:443-58.

# Annex A

# List of Participants

| | |
|---|---|
| Robert Brownell | Southwest Fisheries Science Center, USA |
| Jessica Crance | Alaska Fisheries Science Center, USA |
| Greg Donovan | Head of Science, IWC |
| Yoshihiro Fujise | Institute of Cetacean Research, Japan |
| Takashi Hakamada | Institute of Cetacean Research, Japan |
| Yurie Hosoda | Fisheries Agency of Japan |
| Hidenori Kasai | Captain, Kyodo Senpaku Co., Ltd., Japan |
| Hidehiro Kato | Institute of Cetacean Research, Japan |
| Koji Matsuoka | Institute of Cetacean Research, Japan |
| Tomio Miyashita | National Research Institute of Far Seas Fisheries, Japan |
| Joji Morishita | Tokyo University of Marine Science and Technology, Japan |
| Hideki Moronuki | Fisheries Agency of Japan |
| Hiroto Murase | Tokyo University of Marine Science and Technology, Japan |
| Debra Palka | Northeast Fisheries Science Center, USA |
| Shinichi Suzuki | Fisheries Agency of Japan |
| Mioko Taguchi | Institute of Cetacean Research, Japan |
| Megumi Takahashi | Institute of Cetacean Research, Japan |
| Hideyoshi Yoshida | National Research Institute of Far Seas Fisheries, Japan |
| Isamu Yoshimura | Kyodo Senpaku Co., Ltd., Japan |
| Saemi Baba | Interpreter, Japan |
| Hiroko Yasokawa | Interpreter, Japan |

# Annex B

# Agenda

1. Introductory items
   - 1.1 Opening remarks and welcoming address
   - 1.2 Election of Chair
   - 1.3 Adoption of Agenda
   - 1.4 Appointment of rapporteurs
   - 1.5 Review of documents
2. Review of discussions at SC68A and the TAG Meeting (SC/68B/REP/01)
   - 2.1 Progress since last planning meeting
     - 2.1.1 Distance and angle experiments
     - 2.1.2 Abundance estimation
     - 2.1.3 Analyses of marine debris data
     - 2.1.4 Other
3. Preliminary results from the 2019 cruise
   - 3.1 Sightings
   - 3.2 Acoustics
   - 3.3 Biopsy sampling
   - 3.4 Photo-identification
   - 3.5 Other
   - 3.6 Recommendations from cruise team
     - 3.6.1 VHF radios
     - 3.6.2 Lightroom, camera and computer equipment
4. General issues
   - 4.1 Availability of research vessel(s) from Japan and elsewhere
   - 4.2 Budget (including accommodation and food costs)
   - 4.3 Research permit for Russian waters
5. Priorities and 2020 cruise plan (including backup plan)
   - 5.1 Research priorities
   - 5.2 Research area(s)
   - 5.3 Research vessel and days available (general itinerary)
   - 5.4 Cruise track design
   - 5.5 Sighting survey (including transit)
     - 5.5.1 Survey modes and allocation of effort (including number of crew, research speed)
     - 5.5.2 Acceptable conditions
     - 5.5.3 Angle and distance experiment
     - 5.5.4 Data recording and format
   - 5.6 Biopsy sampling
     - 5.6.1 Priority species
     - 5.6.2 Equipment
     - 5.6.3 Sample storage
   - 5.7 Photo-identification studies
     - 5.7.1 Priority species
     - 5.7.2 Equipment and collection
     - 5.7.3 Analysis and archiving
   - 5.8 Acoustic studies
     - 5.8.1 Priority species
     - 5.8.2 Equipment
     - 5.8.3 Analysis and archiving
   - 5.9 Other studies
     - 5.9.1 Marine debris
     - 5.9.2 Oceanographic studies
     - 5.9.3 Satellite tagging studies
6. Logistical issues for the 2020 cruise (including backup plan)
   - 6.1 International researchers and allocation of research personnel
   - 6.2 Transportation of data, samples and equipment including permits
     - 6.2.1 Home port organiser and entry/exit permits

6.2.2 Sightings: equipment, data, permits and responsible persons
6.2.3 Biopsy: equipment, samples, permits and responsible persons
6.2.4 Photo-identification: equipment, permits and responsible persons
6.2.5 Acoustics: equipment, permits and responsible persons
6.3 Communications
6.3.1 Safety aspects (daily report etc.)
6.3.2 Between Cruise leader and IWC
6.3.3 Weather and sea temperature information
6.3.4 Other official communications
6.3.5 Private communications
6.4 Meetings (including responsible persons)
6.4.1 Pre-cruise Meeting
6.4.2 Post-cruise Meeting
6.5 Reports
6.5.1 Planning meeting report
6.5.2 Cruise report
6.6 Press releases
6.7 Security
7. Other
7.1 Data validation and analysis
7.2 IWC website
8. Concluding remarks and adoption of Report

# Annex C

# List of Documents (same as for TAG Meeting)

**SC/TAG/2020/WP/**

01. International Whaling Commission. 2020. Report of the 2018 meeting of the IWC-POWER Technical Advisory Group (TAG). *J. Cetacean Res. Manage (Suppl.)* 21: 311-332.
02. International Whaling Commission. 2020. Report of the Planning Meeting for the 2019 IWC-POWER Cruise. *J. Cetacean Res. Manage. (Suppl.)* 21: 333-346.
03. Matsuoka, K. *et al.* Cruise report of the 2019 IWC-POWER.
04. Summary of IWC-POWER surveys (2010-19).
05. Crance, J. and Matsuoka, K. Results of the passive acoustic component of the IWC-POWER cruises, 2017-19.
06. Hakamada, T. Estimation of *g*(0) for North Pacific sei whale based on 2019 POWER sighting data.
07. Iani, K., Matsuoka, K. and Kitakado, T. Abundance estimation for the North Pacific large baleen whales using IWC-POWER data (2010-18).
08. Kitakado, T. and Matsuoka, K. Measurement errors in the distance and angle in the line transect surveys in the IWC-POWER data and their possible impact to the abundance estimation.
09. Yasuhara, Matsuoka, K. and Kitakado, T. Abundance estimation of floating marine debris in the North Pacific using 2010-16 IWC-POWER data.
10. Kitakado, T. and Inai, K. Power analysis for the IWC-POWER.
11. Matsuoka, K., Takahashi, M. and Hakamada, T. Proposal for the backup plan of 2020 IWC-POWER future survey.
12. Inai, K. and Kitakado, T. Some progress on simulation studies for assessing effectiveness of spatial line transect methods.
13. Hakamada, T. Updates on estimation of *g*(0) for North Pacific sei whale.
14. Inai, K. Updates on humpback in Kamchatka.