

**Report of the Planning
Meeting for the 2019 IWC-
POWER Cruise**

Report of the Planning Meeting for the 2019 IWC-POWER Cruise¹

The Planning Meeting was held at the Japanese Fisheries Agency crew house on 15-16 October 2018 (the report was drafted on 16 October).

INTRODUCTORY ITEMS

1.1 Opening remarks and welcoming address

Matsuoka (Convenor) welcomed the participants. Morita (Fisheries Agency) reiterated the importance of the IWC-POWER programme to Japan, noting that the ninth such cruise had been completed successfully. He thanked all the researchers and crew who participated in the cruise. He expressed his wish that the planning meeting would be fruitful and constructive and noted that Japan would work with the Russian authorities to try to obtain the necessary permit to hold the 2019 cruise in the western Bering Sea.

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 are extremely important to the IWC; a considerable amount of very valuable information is being accrued as discussed at the recent IWC-POWER Technical Advisory Group (TAG) meeting (SC/68A/Rep01) and the programme continues to provide an excellent example of international cooperation.

1.2 Election of Chair

Kato was elected Chair.

1.3 Adoption of Agenda

The adopted Agenda is given as Annex B.

1.4 Appointment of rapporteurs

Crance and Brownell 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 IWC/67B AND THE TAG MEETING (SC/68A/REP01)

2.1 Progress since last planning meeting

2.1.1 Distance and angle experiments

An updated analysis of the distance and angle experiments will be presented at the next Scientific Committee meeting that takes into account the recommendations made at the last planning meeting (IWC, 2019).

2.1.2 Abundance estimation

The TAG reviewed preliminary abundance estimates for blue whales, fin whales, sei whales, humpback whales and Bryde's whales. In light of discussions, revised papers will be presented at the next Scientific Committee meeting.

2.1.3 Analyses of marine debris data

The TAG welcomed a paper analysing the marine debris data, made some suggestions for its improvement and recommended that it be submitted for publication and to the forthcoming IWC Workshop on Marine Debris.

2.1.4 Other

The TAG developed a work plan for tasks to be completed over the next two years (SC/68A/Rep01, table 9). Its discussions related to a 'back-up' plan for 2019 are dealt with under the relevant agenda items below.

3. PRELIMINARY RESULTS FROM THE 2018 CRUISE

3.1 Sightings

Matsuoka presented the preliminary cruise report from the 9th annual IWC-POWER cruise. It was conducted between 03 July and 25 September 2018 in the central Bering Sea (the US-EEZ and the high seas area known as the 'doughnut hole') using the Japanese R/V *Yushin-Maru No. 2*. Researchers from Japan and the USA participated in the survey. The cruise had five main objectives (see Item 5) with particular focus in 2018 on the critically endangered North Pacific right whale population in the eastern Pacific. The survey was undertaken in accordance with IWC protocols. Survey coverage was about 75% of the planned trackline of about 2,200 n.miles, either in Passing with abeam closing mode (NSP) or Independent Observer passing mode (IO). An additional 421.6 n.miles were surveyed during transit between Japan and the research area. A significant number (3 schools/3 individuals) of North Pacific right whales were found, with two of the schools being detected and located acoustically. Fin whales (135/199) and humpback whales (80/115) were the most frequently sighted large whale species.

Gray whales (27/87) were only sighted early in the survey, north of 64°N while sperm whales (35/36) were found in the southern part of the survey area (in deep waters). A solitary North Pacific right whale was seen north of 64°N near St. Lawrence Island. There were no sightings of sei whales in the Bering Sea. Blue whales were sighted only during transit survey between Japan and Dutch Harbor. The Estimated Angle and Distance Training Exercises and Experiments were completed. 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 2nd 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 253 sonobuoys were deployed, for a total of almost 700 monitoring hours. Species detected include fin whales (about 50% of sonobuoys), sperm whales (about 30%), killer whales (about 20%), right whales (about 10%) and humpback whales (about 10%). Other species detected include gray whales (about 5%), Baird's beaked whales (about 0.5 %).

3.3 Biopsy sampling

A total of 76 biopsy (skin and sometimes blubber) samples were collected from 6 species: blue whales (6), fin whales (24), humpback whales (29), gray whales (7), North Pacific right whales (3) and killer whales (7).

3.4 Photo-identification

Preliminary analyses of the photo-identification data revealed about 200 unique individuals from 7 species: North

¹Presented to the meeting as SC/68A/Rep02.

Pacific right whales (3), gray whales (41), blue whales (8), fin whales (69), humpback whales (39), common minke whales (2) and killer whales (33).

3.5 Other

A total of 19 objects of marine debris were observed, considerably less than previous cruises. Considerable fewer items of marine debris were seen than on previous 2010-16 cruises.

*The Planning Meeting was **extremely impressed** with the provision of the draft report so soon after the completion of the 2018 survey and **thanked** all of the scientists and crew for undertaking a most successful cruise. It also **expressed** thanks the Government of Japan for the long-time provision of the vessel and the Government of the USA for providing the acoustic equipment and the scientific permits to survey in the US waters and enter a US port. Finally, the Planning Meeting **thanked** the cruise leader, Matsuoka, for his hard work and dedication to this project and gave him a round of applause to acknowledge his leadership skills.*

It was noted that the several North Pacific right whale sightings reflected the historical catch distribution with some to the east of the US-designated critical habitat.

3.6 Recommendations from cruise team

3.6.1 VHF radios

On the 2018 cruise, photographers had used VHF radios on loan from NOAA. During photo-identification 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.

*The meeting **recognised** the value of having VHF radios on board, **thanked** NOAA for the loan of equipment in 2018 and **agreed** that Donovan and Matsuoka would investigate whether these can be acquired for 2019 and beyond within the existing budget.*

3.6.2 Lightroom, camera and computer equipment

Images collected during the 2018 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 IWC Lightroom Photographic Database be updated and improved. The new IWC-POWER laptop with fast processor, high resolution wide screen and ample memory and drive storage was welcomed. The cruise report recommended that LR and the most recent photographic database is installed on the IWC-POWER laptop prior to the 2019 POWER cruise. The cruise report also recommended that 1-2 new batteries (EN-EL15) are purchased for the IWC Nikon D7000 camera.

*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 is available on the IWC laptop prior to the 2019 cruise. They will also ensure that two new batteries are bought for the Nikon D7000 camera.*

4. GENERAL ISSUES

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

The Fisheries Agency is hoping to provide the *Yushin-Maru No. 2* or a similar vessel with an international license for the 2019 cruise.

Although no other countries will be able to provide vessels this year, it was noted that at the TAG meeting (SC/68A/Rep01), other countries are being encouraged to participate more fully in the IWC-POWER programme in the future.

4.2 Budget (including accommodation and food costs)

Donovan reported that despite the overall cut in the IWC Scientific Committee budget, the level of funding available in 2019 and 2020 for the cruise will be the same as in 2018. However, this has only been able to be achieved by using funds available from previous years that had previously been earmarked for work on the long-term database and updating the IWC lightroom photographic catalogue. The meeting was informed that the costs for food and accommodation on the vessel is the same as in previous years (¥2,500).

4.3 Research permit for Russian waters

Terai (Fisheries Agency of Japan, FAJ) explained that the permit application for 2018 IWC-POWER survey in the western Bering Sea had been submitted to Russia via diplomatic channels, but the application was refused in June, with no specific reasons for the refusal being provided. Terai explained that the FAJ will consult with the Ministry of Foreign Affairs on the best way to obtain the reason for the refusal and to diplomatically reach out to the relevant Russian authorities in order to maximise the chances of approval for the 2019 survey permit for the western Bering Sea.

Once the reasons for the refusal are understood, it may be necessary for the Steering Group to modify the final research plan discussed here (e.g. with respect to final survey area, cruise track design and/or research items).

A timetable for the actions required and responsible persons to try to obtain permission is given as Annex D.

5. PRIORITIES AND 2019 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 back-up plan should be developed. Both the original plan (hereafter 'Russian option' originally discussed at last year's planning meeting) and the backup plan (hereafter 'US option') are incorporated into the discussion below. With respect to the US option, the TAG had made the following observations:

*The TAG **agreed** that the draft backup plan, considering the waters of the US EEZ also covered in 2011 and 2012, should form the basis of further discussions at the planning meeting for the 2019 cruise (or, if Russian waters are covered in 2019, this plan should be enacted in 2020). Those discussions should consider potential strategies to maximise IO data for sei whales including:*

- (1) *the possibility of undertaking IO mode surveys on the way to Dutch Harbor before entering the main research area by including an international scientist onboard from Japan (the acoustician and equipment could still be picked up in Dutch Harbor);*

- (2) the possibility of developing a more flexible strategy depending on sei whale encounters; and
- (3) the possibility of modifying the proposed research area slightly (e.g. by covering areas south of the EEZ but not as far as in 2010-12).

5.1 Research priorities

The Planning Meeting confirmed that the 2019 cruise objectives will be broadly the same as in previous years but the details will differ depending by option 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, acoustic information will only be collected under the US option.

Either option 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:

- (1) information for the ongoing assessments of North Pacific sei, humpback and gray whales in terms of abundance, distribution and stock structure;
- (2) information on the critically endangered North Pacific right whale population in the eastern North Pacific;
- (3) 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
- (4) 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 US option, a primary focus will be to collect IO data to allow the estimation of $g(0)$ for this species (no such data are available from previous cruises) and thus develop comprehensive abundance estimates.

5.2 Research area(s)

Fig. 1 shows the boundaries of the Russian option (single stratum) and the US option (two strata) for 2019.

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. Given the high priority assigned to obtaining IO data for sei whales under the US option, the planning meeting agreed that the Cruise Leader should be given flexibility with respect to cruise tracks if sei whale areas are encountered in that:

- (a) additional lines (they do not need to be 'random') are undertaken in the area to increase IO sample size - this can be in the research area or on transit to the research area; and
- (b) recognising that the IO work is of highest priority, then if time is short, the eastern stratum may not be completely covered.

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 reiterated that if sightings are made 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 whales under the US option, 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 meal times (lunch and supper) during only 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. If sei whales are encountered then IO mode will be considered by the Cruise Leader, as well as extra lines.

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 2018, 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

Table 1

Proposed itinerary for the IWC-POWER cruise assuming 76 days (Russian option) and 85 days (US option). For reasons of refuelling and supplies, the maximum time in the research area will be about 60 days for the Russian option and 55 days for the US option.

Option 1: Russian option		Option 2: US option	
Date	Event	Date	Event
11 July 2019	Pre-cruise meeting at Shioyama	06 July 2019	Vessel departs Shioyama
12 July 2019	Vessel departs Shioyama	14 July*	Vessel arrives Dutch Harbor (DH) Alaska
18 July	Vessel arrives Petropavlovsk-Kamchatskiy	16 July	Pre-cruise meeting in DH
21 July	Vessel departs Petropavlovsk-Kamchatskiy	17 July	Vessel leaves DH
26 July	Vessel starts survey in research area	19 July	Vessel starts survey in research area
12 September	Vessel leaves the research area	11 September	Vessel leaves the research area
16 September	Vessel arrives Petropavlovsk-Kamchatskiy	14 September	Vessel arrives Kodiak
19 September	Vessel leaves Petropavlovsk-Kamchatskiy	16 September	Post-cruise meeting
24 September	Post-cruise meeting	17 September	Vessel leaves Kodiak
25 September	Vessel arrives Shioyama	28 September	Vessel arrives Shioyama

*if high density sei whale areas are encountered the vessel may be delayed due to time spent collecting IO data.

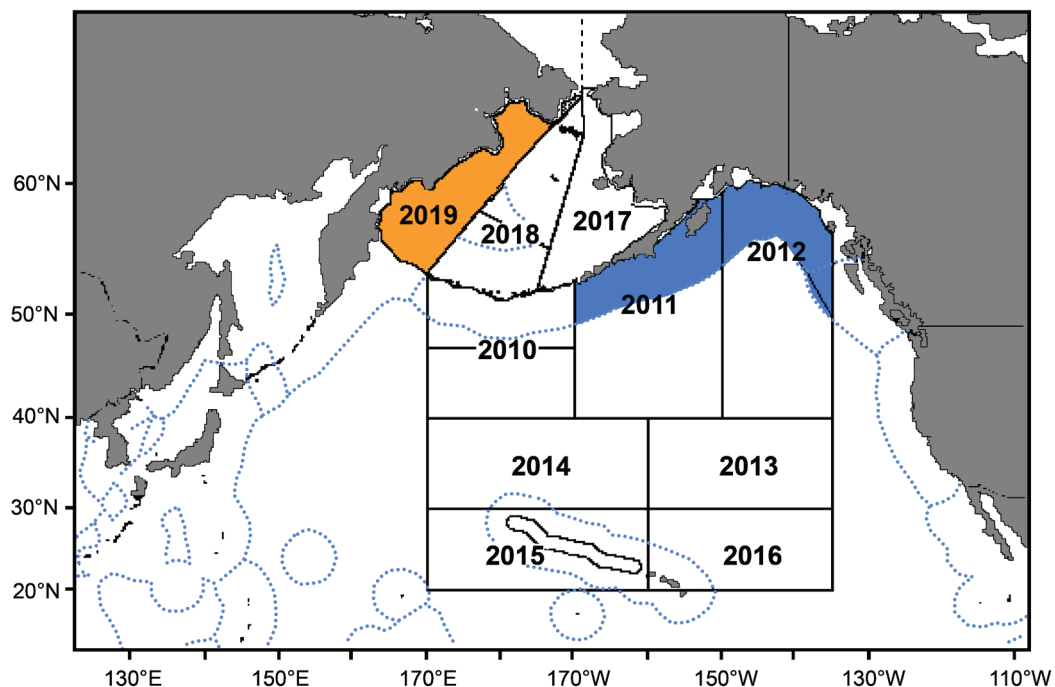


Fig. 1. Map showing the areas surveyed thus far under IWC-POWER (2010-18) with the proposed 2019 area. The preferred Russian option is shown in orange and the back-up US option is shown in blue.

<21 knots; sea state <Beaufort 6. 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 (and see discussion under Item 6.1). 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 (including an English language version if time allows, as recommended by the TAG, see SC/68A/Rep01) and data forms where appropriate. As also recommended by the TAG report, 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 are observed). Generic codes will be developed and information on species or photographs will be included as comments.

The meeting agreed that Donovan and Matsuoka should update the Guidelines for Researchers as necessary for the 2019 cruises. Matsuoka will develop an English language version of the data acquisition system.

5.6 Biopsy sampling

5.6.1 Priority species

The highest priority species for biopsy sampling is the North Pacific right whale, followed by the blue, fin, gray and sei whales. The eastern North Pacific right whale population is critically endangered and may number only about 30 animals, and genetic information is urgently required – however, as described under Item 5.7.1, initial priority for this species is for photographs. Blue whales are unlikely to be encountered often but are of considerable interest given their low numbers and uncertainty regarding population

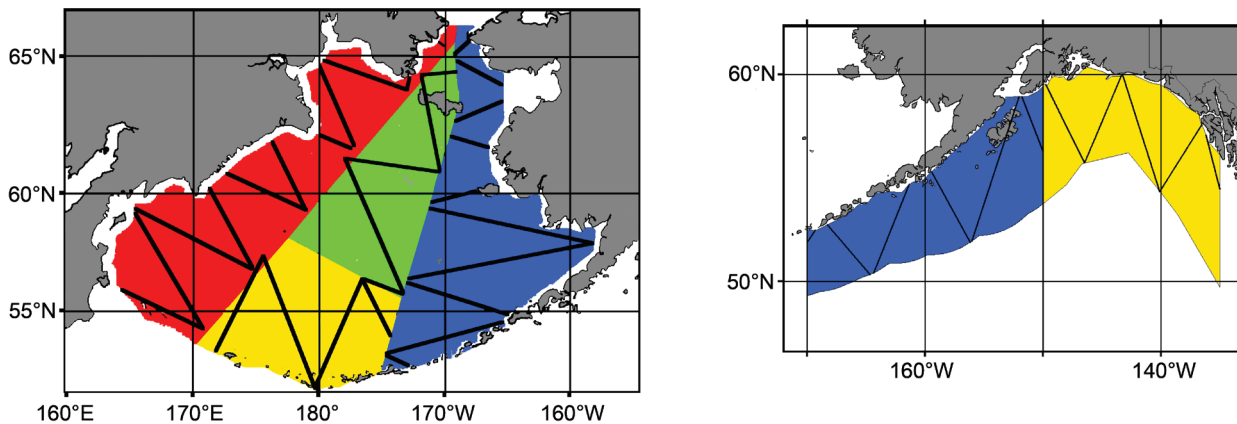


Fig. 2. Proposed tracklines for the Russian option (left, western stratum only) and the US option (right). After consultation, it is possible that the Russian stratum may be altered and revised tracklines developed. Note the need for flexibility to obtain sufficient IO data for sei whales for the US option may mean that not all of the eastern stratum is covered. The vessel will detour around Kodiak Island with priority there being given to North Pacific right whale research (acoustics and, if possible, visual).

structure. Sei, fin and gray whale samples will contribute to the IWC's ongoing assessment work. 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 (<1g) 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 would be determined by the subjective judgment of biologists who have 20+ years' experience in the field. They should err on the side of caution and not biopsy an animal that appeared too young.

3.6.3 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 or (if decided for the Russian option - see the discussion on CITES permits under Item 6) Russian samples. The blubber sample will be retained whole (i.e. not be split) and, for the US option, 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-identification and/or video taping 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-identification of adult 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-identification work.

5.7.2 Equipment and collection

The existing camera equipment is considered sufficient, with the additional batteries and memory cards recommended under Item 3.6. If funds can be found, VHF radios will also be available (see Item 3.6).

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. As discussed during the TAG meeting, 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 and is available 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 Secretariat.

5.8 Acoustic studies

5.8.1 Priority species

Acoustic studies will only be undertaken under the US 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) to conduct all acoustic monitoring operations on the cruise.

The general acoustic schedule will involve deployment of one sonobuoy every three hours, as well as one at night, leading to 6 buoys per day under good conditions. When drifting for fog, then no new deployment would be necessary unless the battery runs out. Crance will determine the necessary number of sonobuoys.

Crance, Matsuoka and Clapham will develop an appropriate strategy for the disposal of trash at Kodiak.

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/68A/Rep01). The protocol adopted for recording such material (15 minutes in every hour) will continue in 2019 to prevent compromising cetacean sightings searching effort.

5.9.2 Oceanographic studies

As noted previously (IWC, 2017), 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.

5.9.3 Satellite tagging studies

No activities are planned for the 2019 cruise. IWC (2017) had agreed that the use of such equipment should be considered when designing the medium-term programme.

6. LOGISTICAL ISSUES FOR THE 2019 CRUISE (INCLUDING BACKUP PLAN)

6.1 International researchers and allocation of research personnel

For the Russian option, all researchers will join the vessel in Japan. For the US option, the acoustician will join the vessel at Dutch Harbor.

For 2019, the following framework for researcher involvement was agreed, depending upon destination:

Russian option*		US option*	
Matsuoka Zharikov	Cruise Leader Russia	Matsuoka Crance	Cruise Leader USA, Acoustician
Probably a NOAA scientist Yoshimura	USA Japan	Probably a NOAA scientist Yoshimura	USA Japan

*Korea will 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 will be Hakamada. For the Russian option, Zharikov will act as home port organiser and for the US option, Crance will take on the role.

6.2.2 Sightings: equipment, data, permits and responsible persons

As in previous years, ICR (Matsuoka) and Kyodo Senpak (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. Matsuoka will ensure that the necessary equipment, including darts, plugs and vials are available.

For the Russian option, the Russian authorities will also require portions of each biopsy sample if permission to undertake biopsy sampling is given. For practical reasons related to transportation, the Planning Meeting agreed that skin samples are to be stored in alcohol not frozen. The details of shipping will depend on the CITES import and export permits obtained. A small intersessional group was established comprising Matsuoka (Convenor), Morita, Brownell and Zharikov to examine the CITES situation and determine the appropriate unloading and shipping procedures to be followed.

For the US option, the same process as used previously will be followed.

6.2.4 Photo-identification: equipment, permits and responsible persons

As in previous years, ICR (Matsuoka) and Kyodo Senpak (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. 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

For the US option, acoustic equipment will be loaded in Dutch Harbor, where Crance will join the vessel. No permits are required. Data will be archived at NOAA's Marine Mammal Laboratory.

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 US option, there will also be contact with the US Coast Guard by the US researcher, as needed (usually upon entry and exit from US waters); given that the vessel has AIS, there is no need for regular communication with the 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 and sea temperature information

It was agreed that fog information will be required and this will be obtained as usual via a Japanese agency. Clapham will liaise with Matsuoka regarding obtaining the latest NOAA information.

6.3.4 Other official communications

For both of the options, arrangements will be made to comply with any requirements specified in the permit. Zharikov will investigate the situation for the Russian option and the US researcher will be responsible for communicating with the US authorities (e.g. with respect to sightings of North Pacific right whales) under the US 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 or US dollars depending upon home port).

6.4 Meetings (including responsible persons)

6.4.1 Pre-cruise Meeting

If the Russian option is followed, all researchers will join the vessel in Japan and the pre-cruise meeting will be held in Shiogama and organised by Hakamada. If the US option is followed, the acoustician will not join the vessel until Dutch Harbor so there will be two pre-cruise meetings: the first will be held in Shiogama as for the Russian option, and the second will be in Dutch Harbor on 13 July organised by Crance.

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

6.4.2 Post-cruise Meeting

If the Russian option is followed, the post-cruise meeting will be held in Shiogama when the vessel returns to port; it will be organised by Hakamada. If the US option is followed, the post-cruise meeting will be held in Kodiak and organised by Crance.

6.5 Reports

6.5.1 Planning meeting report

The planning meeting report will be uploaded onto the IWC website as a Scientific Committee report for SC/68A.

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 SC/68B.

6.6 Press releases

The Cruise Leader (or representative) in consultation with the IWC (Kate Wilson and Greg Donovan) and the US or Russia will prepare a press release before and after the cruise. The IWC, ICR, US/Russia 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 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 to 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. Based on previous experience, no security problems are anticipated for the USA. 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 in light of the present meeting and the preceding TAG 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 2019.

On behalf of the IWC, Donovan thanked all those who had participated in the meeting. The IWC-POWER cruises

Table 3
Task list for the 2019 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 October
(3)	Develop protocol for unloading and shipment of biopsy samples based on investigation of CITES permits for the Russian option.	Morita, Brownell, Matsuoka and Zharikov	In time for permit applications
(4)	Submit permit applications to Russia for 2019 and the USA for 2019 and 2020.	Government of Japan (with support from, Clapham, Zharikov, the IWC and the Secretariat)	Timing to be determined by Japan (probably late 2018 early 2019)
(5)	Decide where the 2019 cruise will be in light of permit situation.	Steering Group based upon advice from Japan	By early April 2019
(6)	Update 'Guide for Researchers' including the Lightroom manual, purchase new equipment in light of budget and update IWC computer.	Matsuoka and Donovan	By SC/68A
(7)	Develop English language version of the ICR data acquisition system.	Matsuoka	Prior to cruise

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. The

meeting had been facilitated by the very good cruise report. The meeting adopted the report by email on 3 October 2018.

REFERENCES

- International Whaling Commission. 2019. Report of the Planning Meeting for the 2018 and 2019 IWC-POWER Cruise in the North Pacific, 15-17 September 2017, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 20: 27pp.
- International Whaling Commission. 2017. Report of the Planning Meeting for the 2016 IWC-POWER Cruise in the North Pacific, 9-10 October 2015, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 18:477-87.

Annex A

List of Participants

Nobuo Abe

Captain, Kyodo Senpaku Co., Ltd., Japan.

Robert Brownell

Southwest Fisheries Science Center, USA.

Jessica Crance

Alaska Fisheries Science Center, USA.

Greg Donovan

Head of Science, IWC.

Takashi Hakamada

Institute of Cetacean Research, Japan.

Hidehiro Kato

Institute of Cetacean Research, Japan.

Hyun Woo Kim

Cetacean Research Institute, National Institute of Fisheries Science, Korea.

Koji Matsuoka

Institute of Cetacean Research, Japan.

Tomio Miyashita

National Research Institute of Far Seas Fisheries, Japan.

Yuuki Morita

Fishery Agency of 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.

Ryota Terai

Fishery Agency of Japan.

Yoshiko Soeda

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 IWC/67b and the TAG meeting (SC/68A/Rep01)
 - 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 2018 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 2019 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 2019 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
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Annex C

List of Documents (same as for TAG meeting)

SC/Oct2018/TAG/WP

1. International Whaling Commission. 2019. Report of the Planning Meeting for the 2018 and 2019 IWC-POWER Cruise in the North Pacific, 15-17 September 2017, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 20: 27pp.
2. International Whaling Commission. 2017. Report of the Meeting of the IWC-POWER Technical Advisory Group (TAG), 7-9 October 2015, Tokyo, Japan. *J. Cetacean Res. Manage. (Suppl.)* 18:459-76.
3. International Whaling Commission. 2019. Report of the Scientific Committee. *J. Cetacean Res. Manage. (Suppl.)*. 1-109. (Extract)
4. International Whaling Commission. 2019. Report of the Scientific Committee. Annex Q. Report of the Standing Working Group on Abundance Estimates, Status of Stocks and International Cruises. *J. Cetacean Res. Manage. (Suppl.)* 20:394-412. (Extract)
5. Draft cruise report of the 2018 IWC-POWER.
6. Summary of IWC-POWER surveys (2010-18).
7. Kitakado, T., Inai, K., Yasuhara, T., Hamabe and Matsuoka, K. Manual for the abundance estimation using IWC-POWER sighting survey data.
8. Inai, K., Matsuoka, K. and Kitakado, T. Abundance estimation for the North Pacific humpback whales using IWC-POWER data.
9. Inai, K., Matsuoka, K. and Kitakado, T. Preliminary reports of the abundance estimation for fin, sei and Bryde's whales in the North Pacific Ocean using IWC-POWER data.
10. Yasuhara, T., Matsuoka, K. and Kitakado, T. Abundance estimation of marine debris in the North Pacific using IWC-POWER data.
11. Crance, J. *et al.* Results of passive acoustic detections and a comparison to sighting data during the IWC-POWER cruises, 2017-18 (summary of Powerpoint figures).
12. Zharikov, Matsuoka, K., and Morita, Y. Draft working plan of preparations for 2019 IWC-POWER cruise.
13. Matsuoka, K. and Hakamada, T. Proposal for the backup plan of 2019 IWC-POWER.
14. Kitakado, T., Inai, K., Yasuhara, T., Hamabe and Matsuoka, K. Preliminary report of the abundance estimation of blue whales in the North Pacific using IWC-POWER data from 2010-16.
15. Hakamada, T. Progress Bryde's whale abundance estimate considering $g(0)$ using IWC-POWER data
16. Miyashita, T. Results of the Russian sighting surveys in the Sea of Okhotsk 2015-17.
Extracts from: Gushcherov, P.S., Tiupeleev, P.A., Blokhin, S.A., Shkarupa, M.A., Samanov, V.I. and Miyashita, T. 2017. Cruise report of the cetacean sighting survey in the northern part of the Sea of Okhotsk in 2016. Paper SC/67a/ASI03 presented to the IWC Scientific Committee, May 2017, Bled, Slovenia (unpublished). 26pp. [Paper available from the Office of this Journal].;
Gushcherov, P.S., Tiupeleev, P.A., Shkarupa, M.A., Makrak, S.V., Samonov, V.I. and Miyashita, T. 2018. Cruise report of the cetacean sighting survey in the eastern part of the Sea of Okhotsk in 2017. Paper SC/67b/ASI17 presented to the IWC Scientific Committee, April-May 2018, Bled, Slovenia (unpublished). 26pp. [Paper available from the Office of this Journal].; and
Myasnikov, V.G., Vinnikov, A.V., Ryabov, A.A., Tyupeleev, P.A., Gushcherov, P.S., Samanov, V.I. and Miyashita, T. 2016. Cruise report of the cetacean sighting survey in the northern part of the Sea of Okhotsk in 2015. Paper SC/66b/IA17 presented to the IWC Scientific Committee, June 2016, Bled, Slovenia (unpublished). 25pp. [Paper available from the Office of this Journal].
17. Miyashita, T. 2005. Cruise report of the minke whale sighting survey in the Sea of Japan in 2004. Paper SC/57/NPM1 presented to the IWC Scientific Committee, June 2005, Ulsan, Korea (unpublished). 5pp. [Paper available from the Office of this Journal].
18. Kim. Korean sighting surveys.

Annex D

Plan of Preparations for 2019 IWC-POWER Cruise Related to Permits

Action	Timing	Involved persons
Clarification of the cause of unsuccessful application for 2018 cruise.	As soon as possible in October 2018	Zharikov, Morita
Revision of necessary changes, preparation of new draft (in English).	Early November 2018	Zharikov, Matsuoka, Morita
Incorporating appropriate recommendations and statements into the protocol of Joint Japanese-Russian Fisheries Commission.	Autumn 2018	Morita
Clarification of necessary CITES permits to be issued from Russia (export, introduction from the sea) and Japan (import, re-export, introduction from the sea (if the vessel will not call to Russian port)), assuming biopsy sampling will be conducted both within Russian EEZ and high sea. These samples will be landed to Russia, but an alternative scenario where the vessel will not call to Russian port should be also considered.	Autumn 2018	Matsuoka (Convenor), Morita, Brownell, Zharikov
Translation of the adopted plan into Russian, submitting it through the diplomatic channel.	Before January 2019	Zharikov, Morita
Consultations with Russian authorities.	January-April 2019	Zharikov
Decision on Russian option or US option.	Early April if possible*	Steering Group
CITES permit and vessel certification (if positive decision).	As soon as possible	Zharikov, Matsuoka, Yoshida, Morita

*A decision to ship sonobuoys to Dutch Harbor will be taken in April, recognising that if permission for the Russian option is obtained later, the buoys may have to be stored there to be used on the 2020 cruise.

