CHAPTER 3

GUIDELINES FOR DATA SHARING AND ARCHIVING

[CURRENTLY UNDER REVISION: **SUYDAM**]

3.1 Rules for Data Availability in the Scientific Committee

The issue of data availability is a complex and sensitive one. A balance must be struck between the needs of the Scientific Committee and the rights of the scientists who have invested considerable time and effort in collecting the data, particularly in the context of the RMP process. IWC The Data Availability Guidelines were discussed in 2003 (IWC 2004; JCRM 6 (suppl.):406-408), approved in 2004 (JCRM 6 (suppl.):57).

In 2003 the Scientific Committee agreed that the following three principles must be taken into account if a fair data availability solution was to be found, even if there are differences of opinion as to their relative importance:

1) Data represent a significant temporal and financial investment by scientists and research institutes – use of their data by others should be accompanied by appropriate safeguards.
2) The right of first publication is a generally accepted scientific norm.
3) If important management decisions are to be made, they should be based on a full scientific review of both data quality and analysis that can be independently verified.

The only remaining issue is whether the data are held by the Secretariat or by the data owner. Most members favoured the former but agreed that the most important issue was that once an application is approved, the data are sent promptly to the successful applicant(s) – i.e. normally within two weeks (see Procedure A (2) below).

Issues of data availability affect different categories of the Committee's work. What follows concerns data that the Scientific Committee believes is particularly important to its work. Requests of a more academic or general scientific nature should be dealt with on a bilateral basis.

Procedure A is the process for obtaining access to data for analyses that are needed to provide the best management advice on catch limits (e.g. the RMP and AWMP).

Procedure B is the process for obtaining access to data for analyses the Committee believes would be valuable in providing other advice to the Commission[25].

Note that the data themselves may in some cases be the same for both Procedure A and B. The difference lies in the objectives of the analyses. For Procedure A, it is essential that any requests for data are accompanied by a statement of the objectives of the study and the methods likely to be used (different timelines apply for novel methods rather than standard methods). Any application for data under Procedure A restricts use of the data to producing papers for the Scientific Committee that are directly relevant to providing management advice on catch limits.

Use of the word 'meeting' below includes Annual Meetings, Special Meetings and intersessional workshops. Applications can only be made by accredited persons in accordance with the Committee's Rules of Procedure.

3.1.1. Data Availability Group

The Scientific Committee shall be represented by a small group comprising the Chair, the Vice-Chair and the Head of Science, hereafter called the Data Availability Group.

3.1.2 Conditions for data recipients

Applications deemed suitable under Procedure A or Procedure B below are granted under the following conditions:

1) Data shall not be transmitted to third parties.
2) Papers may only be submitted to a Committee meeting in accordance with the time restrictions given below. Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.
3) Papers must carry a restriction on citation except in the context of lWC meetings.
4) Data owners are offered co-authorship.
5) Publication rights remain strictly with the data owner.
6) Data shall be returned, to the Secretariat or the data owner as appropriate, immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.
7) Data requesters sign a form agreeing to the above conditions. Such forms will be held by the data owner and the Secretariat.
8) ln the event of a breach of the conditions in (6), serious sanctions [to be determined] will apply.

3.1.3 Procedure A

The following shall apply with respect to data required for the process outlined in Table 2.1.1 (chapter 2, section 2.1) for the RMP,

[25] For example, the request for data for VPA analyses considered last year.

the AWMP (see section 2.3) and other information used to provide advice on aboriginal subsistence catch limits before the relevant SLAs have been completed. The rules apply to all data owners who wish their analyses to be considered as part of the process to provide advice on catch limits.

Data owners may submit data to be treated under this procedure, even if they do not intend to analyse the data themselves.

When an application for data under this procedure is submitted, the Data Availability Group shall (a) decide whether an application fulfils the criteria with respect to the objectives of the study and (b) determine whether the methods proposed are considered standard or novel. The small group may take advice from the data owner, applicant or other relevant scientists in this process.

1) lf they wish analyses to be considered by the Committee, data owners must make data used for the analysis available in an agreed form and specified resolution (if desired, to the Secretariat) no later than 6 months before the meeting at which they are to be used. Examples are given in Table 3.1.1 and section 3.1.3.1. These data shall be made available to accredited persons only under the conditions listed above. Data owners shall be notified of any such requests, including a description of the objectives of the study and the methods to be used.
2) The Secretariat or data owners shall respond (i.e. send the data) to requests for data approved by the small group promptly, normally within two weeks of receiving the request.
3) lf novel methods are to be used, Scientific Committee papers documenting data analysis and results shall be circulated no less than 3 months before the meeting at which they are to be considered. Any such papers should include sufficient documentation of the analysis for it to be fully reviewed and any associated analytical software shall be lodged with the Secretariat.
4) lf standard methods are used, Scientific Committee papers documenting data analysis and results shall be circulated no less than 2 months before the meeting at which they are to be used.
5) Alternative analyses carried out in response to papers submitted under (3) or (4) shall be circulated no less than 1 month before the meeting at which they are to be used.

Table 3.1.1 shows a hypothetical example of how Procedure A might function in practice.

Table 3.1.1.: A worked hypothetical example of how Procedure A functions

Years 0-2	Country A collects genetic samples from 200 animals.
Nov. year 2	The data are almost all processed and the country's scientists decide that they wish an mtDNA analysis of their data to be considered by the Scientific Committee at its Annual Meeting beginning 1 June year 3. They consult with the small group and are informed that one of the analyses they propose is considered 'standard' and the other 'novel '.
Dec. year 2	The mtDNA data are submitted to the Secretariat at the resolution given in Appendix 1 (sequences by animal, date position, sex, length). They are now available to accredited persons following Procedure A. This is notified to the Committee by the Secretariat.
Jan. year 3	An accredited person (Murphy) sends in a brief standard form proposal explaining: (1) the objectives of his research; (2) the methods; (3) the data required; and (4) agreement to abide by the conditions for data use. This is reviewed by the small group, deemed acceptable and a copy of the proposal and the agreement is sent to the data owners. They and Murphy are informed that the proposed method is considered novel and the implications of this are explained. The data are sent to the applicant by the Secretariat within 2 weeks of notification.
Feb. year 3	Another accredited person (Gonzalez) sends in a brief standard form proposal explaining: (l) the objectives of her research; (2) the methods; (3) the data required; and (4) agreement to abide by the conditions for data use. This is reviewed by the small group, deemed acceptable and a copy of the proposal and the agreement is send to the data owners. They and Gonzalez are informed that the proposed method is considered standard and the implications of this are explained. The data are sent to the applicant by the Secretariat within 2 weeks of notification.
I Mar. year 3	Papers by both the data owner and Murphy using novel methods are submitted to the Committee. The data owners' paper also includes the results of the standard analysis.
I Apr. year 3	Gonzalez' paper is submitted to the Committee.
I May year 3	Papers by the data owner and Murphy are presented.
I Jun. year 3	The Scientific Committee meeting.

3.1.3.1 Examples of data that could be lodged in accordance with Procedure A

(1) If genetic analyses are tabled, then by animal one would expect:

   (a) date sampled;
   (b) position sampled;
   (c) nuclear DNA microsatellites;
   (d) mtDNA sequences;
   (e) length, sex.

(2) If movement data analyses are tabled, then by animal one would expect:

   (a) day of first marking;
   (b) position of first marking;
   (c) day/position of ‘recapture(s)’ (harvest, photo-id, telemetry);
   (d) known additional data (e.g. length, sex).

3.1.3.2 Application under Procedure A of the Data Access Agreement

Applications made under Procedure A should be made to the contact persons identified in the summary files provided in section 3.1.5.

3.1.3.3 DEADLINES UNDER PROCEDURE A

Under Procedure A, there are deadlines for papers using those data to be submitted to the Scientific Committee (section 3.1.3). They are as follows:

Type of paper	Time before first day of SC Plenary
(a) Final datasets available	6 months
(b) Papers using novel methods	3 months
(c) Papers using standard methods	2 months
(d) Papers responding to those above ('b' and 'c')	1 month

3.1.4 Procedure B

This applies to data required for analyses deemed important in providing advice to the Committee other than catch limits (e.g. on the status of stocks not subject to whaling). For data not subject to Procedure A, the data owners shall produce, in collaboration with the Committee, a published protocol for data access that applies to requests generated by the Committee, to ensure clarity and a mutual understanding of the process.

1) The Committee shall specify the nature of the work and the data required during the meeting at which the recommendation is made, to the fullest extent possible in the time available at the meeting and in accord with the published protocol. lt should also name the appropriate scientists to undertake the work and designate an appropriate timeline.
2) Applications to the data owners following the published protocol referred to above, should be submitted by the Data Availability Group assisted by a nominated member of the relevant delegation or institute. The Data Availability Group will consult with relevant members of the Committee if further explanation or clarification is required.
3) lf the above process is followed, then the data owners will normally approve the applications within a specified time period in accordance with the published protocol.
4) Applications shall only be granted under conditions given above.

3.1.5 Data

A list of stocks with available datasets is given below. These are downloadable summary files of available data and a list of data held by the IWC Secretariat.

Western North Pacific common minke whales (2012)
Genetic data for the *Pre-Implementation Assessment* (Japan)[LINK]
Genetic data for the *Pre-Implementation Assessment* (USA)[LINK]
Genetic data for the *Pre-Implementation Assessment* (Korea)[LINK]
Sightings data for the *Pre-Implementation Assessment* (Japan)[LINK]
Sightings data for the *Pre-Implementation Assessment* (Korea)[LINK]

Western North Pacific common minke whales (2018)
Genetic data for the *Pre-Implementation Assessment* (Japan)[LINK]

Eastern North Pacific gray whales (2012)
Summary of data for the 2012 *Implementation Review*[LINK]

Bering-Chukchi-Beaufort Seas stock of bowhead whales (2012)
Summary of data for the 2012 *Implementation Review*[LINK]

Bering-Chukchi-Beaufort Seas stock of bowhead whales (2018)
Summary of data for the 2018 *Implementation Review*[LINK]

Applications for data held by the International Whaling Commission shall be copied to the Data Availability Group.

3.1.6 Protocols

At present, there are five agreed protocols for approaching the Institute of Cetacean Research (ICR), the Cetacean Research Center (CRC) and National Fisheries Research and Development Institute, the University of Auckland, the National Research Institute of Far Seas Fisheries (NRIFSF) and Fisheries Research Agency, and the Southern Ocean Research Partnership (SORP) for data available under Procedure B.

3.1.6.1 PROTOCOL FOR ACCESS TO SAMPLES/DATA FROM THE INSTITUTE OF CETACEAN RESEARCH (ICR)

3.1.6.1.1 Introduction

This protocol has been developed in the context of Procedure B of the IWC Scientific Committee's rules for data availability adopted at the 55th Annual Meeting (IWC 2004, pp. 56-57 and 406-408). Procedure B applies to data required for analyses deemed important in providing advice to the Committee other than catch limits. Conditions for data recipients (repeated below) as specified in the rules for data availability are applicable.

It was agreed that the Committee shall specify the nature of the work and the data required during the meeting at which the recommendation is made, to the fullest extent possible in the time available at the meeting and in accord with the published protocol. Requests to the ICR for data under Procedure B of the Scientific Committee's rules for data availability shall be submitted by the Data Availability Group assisted by a nominated member of ICR.

It was also agreed that if the correct process is followed, the data owners will normally approve the applications within a 'specified time period'; in this case ICR agrees that it will respond within 2 weeks of receiving an application.

3.1.6.1.2 Format of the application

The format for the application is based on the revised application for catch-at-age analyses agreed by all members of the Scientific Committee at the end of the Scientific Committee meeting in 2003 (IWC 2004, pp. 244-245).

(a) *Title* of the proposal, giving the broad subject of the proposed analyses.
(b) *Investigators:* the full name and affiliation of the principal investigator(s) and co-investigator(s) should be provided. This should include at least one scientist from ICR.
(c) *Objectives and rationale of the study* as specified by the by the Scientific Committee along with the appropriate reference to the report(s) of the Scientific Committee. This will include the reasons why the proposed analyses are important and how they fit into previous work.
(d) *Data to be used* will include a general description of all data to be used as well as data held by ICR. For the ICR-held data, the precise requirements will be given, including the level of disaggregation.
(e) *Description of the methods* likely to be used. The level of detail must be in accordance with the level of novelty of the proposed methods and the particular research questions they will address. References to similar analyses should be included where available.
(f) *Schedule of the work:* this should include estimated times for the various analyses to be carried out and an indication of which investigators will collaborate on individual components. If the project is a long-term project, annual progress reports will be required by ICR and the Scientific Committee.
(g) *Output of the research:* this will follow the rules for publication agreed at the Scientific Committee meeting and given below. ICR may consider requests for less stringent conditions (e.g. presentations at non-IWC scientific meetings, publications, etc.). Such requests should be detailed here.

3.1.6.1.3 Consideration of the proposal

If an application has been approved by the whole Scientific Committee at an annual meeting, it will normally be approved by ICR. However, the final decision will always remain the prerogative of ICR. ICR may request reviews by an internal review group and/or external experts. The following factors will be taken in to account by ICR when considering applications.

(a) *Priority:* highest priority for analysis/research of samples/data produced by Japan's Whale Research Programs under Special Permit, will be for the scientists that collected and obtained the data in any particular field.
(b) *Suitability of the requested data in the context of the proposed methods and the objectives of the research.*
(c) *Level of co-operation with ICR scientists.*

The response to an application for data will be communicated by the ICR's Director General to the Data Availability Group and may include requests for further information. If the research proposal is accepted, ICR will nominate a scientist, (normally one of the co-investigators) who shall be responsible for making the necessary arrangements to provide the required samples/data.

Agreed Scientific Committee conditions for data recipients

Applications deemed suitable under Procedure A or Procedure B below are granted under the following conditions:

(1) Data shall not be transmitted to third parties.
(2) Papers may only be submitted to a Committee meeting in accordance with the time restrictions given below. Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.
(3) Papers must carry a restriction on citation except in the context of IWC meetings.
(4) Data owners are offered co-authorship.
(5) Publication rights remain strictly with the data owner.
(6) Data shall be returned, to the Secretariat or the data owner as appropriate, immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.
(7) Data requesters sign a form agreeing to the above conditions. Such forms will be held by the data owner and the Secretariat. In the case of Procedure B, the Data Availability Group will sign the agreement on the Committee's behalf and ensure that the conditions of any agreement are met by any individual scientists involved in the analysis.
(8) In the event of a breach of the conditions in (6), serious sanctions [to be determined] will apply.

3.1.6.2 PROTOCOL FOR ACCESS TO SAMPLES/DATA FROM THE CETACEAN RESEARCH CENTER (CRC), NATIONAL FISHERIES RESEARCH AND DEVELOPMENT INSTITUTE

3.1.6.2.1 Introduction

This protocol describes the process of access to samples/data that held by the Cetacean Research Center (CRC), National Fisheries Research and Development Institute, Korea for analysis deemed important in providing advice to the Scientific Committee other than catch limits and has been developed in the context of Procedure B of the IWC Scientific Committee's rules for data availability adopted at the 55th Annual Meeting (IWC 2004, pp. 56-57 and 406-408). Conditions for data recipients as specified in the rules for data availability are applicable.

3.1.6.2.2 Format of the application

The format for the application should include the following items:

(a) *Title* of the proposal, giving the broad subject of the proposed analyses.
(b) *Investigators:* the full name and affiliation of the principal investigator(s) and co-investigator(s) should be provided. This should include at least one scientist from CRC.
(c) *Objectives and rationale of the study* as specified by the Scientific Committee along with the appropriate reference to the report(s) of the Scientific Committee. This will include the reasons why the proposed analyses are important and how they fit into previous work.
(d) *Data to be used* will include a general description of all data to be used as well as data held by CRC. For the CRC-held data, the precise requirements will be given, including the level of disaggregation.
(e) *Description of the methods* likely to be used. The level of detail must be in accordance with the level of novelty of the proposed methods and the particular research questions they will address. References to similar analyses should be included where available.
(f) *Schedule of the work:* this should include estimated times for the various analyses to be carried out and an indication of which investigators will collaborate on individual components. If the project is a long-term project, CRC and the Scientific Committee will require annual progress report
(g) *Output of the research:* this will follow the rules for publication agreed at the Scientific Committee meeting and given below. CRC may consider requests for less stringent conditions (e.g. presentations at non-IWC scientific meetings, publications, etc.). Such requests should be detailed here.

3.1.6.2.3 Consideration of the application

If an application has been approved by the whole Scientific Committee at an annual meeting, it will normally be approved by CRC. However, the final decision will always remain the prerogative of CRC. CRC may request reviews by an internal review group and/or external experts. The following factors will be taken in to account by CRC when considering applications.

(a) *Priority:* highest priority for analysis/research of samples/data produced by CRC, will be for the scientists that collected and obtained the data in any particular field.
(b) Suitability of the requested data in the context of the proposed methods and the objectives of the research.
(c) Level of co-operation with CRC scientists.

The response to an application for data will be communicated by the Director of CRC to the Data Availability Group and may include requests for further information. If the research proposal is accepted, CRC will nominate a scientist, (normally one of the co-investigators) who shall be responsible for making the necessary arrangements to provide the required samples/data.

Agreed Scientific Committee conditions for data recipients

Applications deemed suitable under Procedure A or Procedure B below are granted under the following conditions:

(9) Data shall not be transmitted to third parties.
(10) Papers may only be submitted to a Committee meeting in accordance with the time restrictions given below. Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.
(11) Papers must carry a restriction on citation except in the context of IWC meetings.
(12) Data owners are offered co-authorship.
(13) Publication rights remain strictly with the data owner.
(14) Data shall be returned, to the Secretariat or the data owner as appropriate, immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.
(15) Data requesters sign a form agreeing to the above conditions. Such forms will be held by the data owner and the Secretariat. In the case of Procedure B, the Data Availability Group will sign the agreement on the Committee's behalf and ensure that the conditions of any agreement are met by any individual scientists involved in the analysis.
(16) In the event of a breach of the conditions in (6), serious sanctions [to be determined] will apply.

3.1.6.3 PROTOCOL FOR ACCESS TO DATA FROM THE UNIVERSITY OF AUCKLAND UNDER PROCEDURE B FOR THE IN-DEPTH ASSESSMENT OF WESTERN NORTH PACIFIC COMMON MINKE WHALES

3.1.6.3.1 Introduction

This protocol describes the process of accessing genetic data held by CS Baker at the University of Auckland, New Zealand, that the Scientific Committee believes would be valuable in the In-Depth Assessment of the Western North Pacific Common Minke Whales. This protocol has been developed in the context of Procedure B of the IWC Scientific Committee's rules for data availability, adopted at the 55th Annual Meeting (JCRM 6 (suppl.):57). Applications can be made only by accredited persons (in accordance with the Committee's Rules of Procedure).

3.1.6.3.1 Format of the proposal

A brief standard form proposal should comprise:
(1) the objectives of the research;
(2) the methods;
(3) the data required; and
(4) an agreement to abide by both the General and Specific conditions for data use (shown below).

3.1.6.3.2 General conditions for data recipients

All applications for Data Use are granted under the following conditions:

(1) Data shall not be transmitted to third parties.
(2) Papers may only be submitted to a Committee meeting in accordance with the time restrictions given below. Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.
(3) Papers must carry a restriction on citation except in the context of IWC meetings.
(4) Data owners are offered co-authorship.
(5) Publication rights remain strictly with the data owner.
(6) Data shall be returned, to the Secretariat or the data owner as appropriate, immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.
(7) Data requesters sign a form agreeing to the above conditions. Such forms will be held by the data owner and the Secretariat. In the case of Procedure B, the Data Availability Group will sign the agreement on the Committee's behalf and ensure that the conditions of any agreement are met by any individual scientists involved in the analysis.
(8) In the event of a breach of the conditions in (6), serious sanctions [to be determined] will apply.

3.1.6.3.3 Specific conditions of the application (University of Auckland)

(1) All applications will be addressed to the Data Availability Group, which, in consultation with CS Baker (as Data Owner), will decide if the application meets the criteria that the objectives and analyses will provide valuable advice for the In-Depth Assessment (other than catch limits) to the IWC.
(2) The Data User must forward a draft paper documenting the data analyses and results to CS Baker (as Data Owner) with a copy to the Secretariat, one month prior to the meeting of the Scientific Committee (or any intersessional meetings or workshops in which the data are to be used), and agree to provide the Data Owner with the following options in regard to the final report to the Committee:
    (i) Review the analysis in the interest of accuracy, with the intent to resolve any substantial errors that might have arisen in data coding by the Data Owner, or transfer or formatting by the Data User.
    (ii) Collaborate with the Data User as co-author, if the Data Owners feels they are able to extend the scope of the analyses and/or the conclusions of the draft paper.
    (iii) Prepare a rebuttal for consideration by the Scientific Committee, if the Data Owners do not agree with the analyses or conclusions reached by the Data User.

The Data Availability Group will ensure that the applicant(s) have signed the agreement to abide by the general and specific conditions for data use. The applicant will then be sent the data (in its submitted form) by the Secretariat (within two weeks). CS Baker, University of Auckland (as Data Owner) will be sent a copy of both the proposal and agreement.

3.1.6.4 PROTOCOL FOR ACCESS TO SAMPLES/DATA FROM THE NATIONAL RESEARCH INSTITUTE OF FAR SEAS FISHERIES (NRIFSF), FISHERIES RESEARCH AGENCY, JAPAN, FOR DATA AVAILABILITY

3.1.6.4.1 Introduction

Far Seas Fisheries Research Laboratory (the present NRIFSF) has presented the protocol for data availability for the Comprehensive Assessment of Cetaceans in the past, but it has become unsuitable for new rules for data availability adopted at the 55th IWC Scientific Committee (JCRM 6 (suppl.):57). This protocol has been reorganized from that of the Institute of Cetacean Research, Tokyo, applying to Procedure B. Conditions for data recipients as specified in the rules for data availability are applicable.

It was agreed that Procedure B applied to data for analysis deemed important in providing advice to the Committee other than catch limits. However, the position of the Government of Japan has not changed on the matter of small cetaceans stated every year at the opening of the Committee. That is, the activities of the Commission with the population management of whales should be limited to the matters concerning whales listed on the Nomenclature of the International Whaling Conference Final Act (1946). Therefore, this protocol applies to only sample/data of large cetaceans obtained through the research activities of NRIFSF.

It was also agreed that if the correct process is followed, the data owners will normally approve the applications within a 'specified time period'; in this case NRIFSF agrees that it will respond within seven weeks of receiving an application.

3.1.6.4.2 Format of the application

The format for the application should include the following items:

(a) *Title* of the proposal, giving the broad subject of the proposed analyses.
(b) *Investigators:* the full name and affiliation of the principal investigator(s) and co-investigator(s) should be provided. This should include at least one scientist from NRIFSF.
(c) *Objectives and rationale of the study* as specified by the Scientific Committee along with the appropriate reference to the report(s) of the Scientific Committee. This will include the reasons why the proposed analyses are important and how they fit into previous work.
(d) *Data to be used* will include a general description of all data to be used as well as data held by NRIFSF. For the NRIFSF-held data, the precise requirements will be given, including the level of disaggregation.
(e) *Description of the methods* likely to be used. The level of detail must be in accordance with the level of novelty of the proposed methods and the particular research questions they will address. References to similar analyses should be included where available.
(f) *Schedule of the work:* this should include estimated times for the various analyses to be carried out and an indication of which investigators will collaborate on individual components. If the project is a long-term project, annual progress reports will be required by NRIFSF and the Scientific Committee.
(g) *Output of the research:* this will follow the rules for publication agreed at the Scientific Committee meeting and given below. NRIFSF may consider requests for less stringent conditions (e.g. presentations at non-IWC scientific meetings, publications,

etc.). Such requests should be detailed here.

3.1.6.4.2 Consideration of the proposal

If an application has been approved by the whole Scientific Committee at an annual meeting, it will normally be approved by NRIFSF. However, the final decision will always remain the prerogative of NRIFSF.

3.1.6.5 SOUTHERN OCEAN RESEARCH PARTNERSHIP (SORP): DATA AVAILABILITY PROTOCOL

This protocol describes the process of accessing datasets held by members of the Southern Ocean Research Partnership (the Partnership). The Partnership is an international consortium for non-lethal whale research that aims to maximse the conservation outsomes for Southern Ocean whales through an understanding of the post-exploitation status, health, dynamics, and environmental linkages of their populations, and the threats they face. The Partnership ethos is that of open collaboration and communication.

This protocol has been developed in the context of Procedure B of the IWC Scientific Committee's rules for data availability, adopted at the 55th Annual Meeting of the International Whaling Commission (IWC 2004, pp. 406-408).

The Partnership retains the right to decline requests for access to datasets for analyses that form the basis of primary SORP project objectives already in progress by Partnership members or that form components of work in progress by students completing graduate qualifications.

3.1.6.5.1 Format of the proposal

A brief standard form proposal (dated) should include:

1. the full name and affiliation of the principal investigator(s) and co-investigator(s),
2. the objectives of the research and how these may contribute to the objectives of SORP projects,
3. the proposed methods and how these differ from, or contribute to, ongoing analyses of the Partnership members,
4. specifics of the data required and details of aggregation or disaggregation,
5. date by which the data are required and length of time for which the data are required,
6. a schedule for reporting,
7. a list of publications anticipated,
8. proposed authorship on publication(s);
9. a signed copy of this Data Availability Protocol, agreeing to the **General** and **Specific** conditions listed below.

3.1.6.5.2 General conditions for data recipients

All applications for data use are granted under the following conditions:

1. Data shall not be transmitted to third parties.
2. Data Owners are offered co-authorship.
3. Publication rights remain strictly with the Data Owner.
4. Data shall be returned, to the SORP Secretariat or the Data Owner as appropriate, immediately after it has been used for the agreed purpose and any copies destroyed, unless approval for further use is requested and granted.
5. Data requesters sign a form agreeing to the above conditions. Such forms will be held by the Data Owner and the SORP Secretariat.

3.1.6.5.3 Specific conditions of the application (Southern Ocean Research Partnership)

NB: The specific conditions below are provided as a guide only. Specific conditions with regard to acknowledgements, analyses, publications, authorship etc., will be further developed on a case by case basis between the Data Owner, the SORP Secretariat and the Data User.

1) All applications will be addressed to the SORP Secretariat, which, in consultation with the data owner, and the SORP Scientific Steering Committee, will decide if the application meets with the objectives and ethos of the Partnership.
2) The Data User will acknowledge the use of the SORP dataset by the following statement,

*Data provided by the Southern Ocean Research Partnership were all based upon non-lethal samples collected under a protocol approved by [*name the animal ethics committee*]. These data were provided by the Partnership for the purpose of collaborative investigation.*

3) Except where negotiated individually with the SORP Secretariat and the Data Administrator, the Data User will forward a draft paper documenting the data analyses and results to the Data Owner with a copy to the SORP Secretariat, one month prior to submission or presentation at any meetings/workshops/conferences in which the data are to be used.
4) Agree to provide the Data Owner with the following options in regards to the final dissemination of the data analyses and results:
   (i) Review the analysis, in the interest of accuracy, with the intent to resolve any substantial errors that might have arisen in data coding by the Data Owner or Data Administrator, or transfer or formatting by the Data User.
   (ii) Collaborate with the Data User as co-author, if the Data Owner or Administrator feels they are able to extend the scope of the analyses and/or the conclusions of the draft paper.
   (iii) Prepare a reply for consideration by the SORP Scientific Steering Committee, if the Data Owners do not agree with the analyses or conclusions reached by the Data User.
5) A member of the SORP Secretariat will indicate by signature of this protocol, that he or she will ensure that the applicant(s) have signed the agreement to abide by the general and specific conditions for data use. A signed copy of this agreement and attached proposal will be sent to the Data Owner and the SORP Secretariat, at which time the data will be transmitted to the Data User.

Dataset requested (brief description or file name) *Title of proposal (attach full proposal to this protocol and form)*

In regards to the dataset requested above, I, the Data User, agree to abide by the **General** and **Specific** conditions listed above:

Name of Data user			
Signature		Date	
Address			

Name of Data Owner			
Signature		Date	

Data Availability procedures and proforma for SORP data can be found here [LINK TO "*DataAvailabilityAgreement_SORP_FINAL*"].

3.1.6.6 SOUTHERN HEMISPHERE BLUE WHALE CATALOGUE TERMS OF REFERENCE AND SHARING AGREEMENT (SHBWC)

The Southern Hemisphere Blue Whale Catalogue Terms of Reference and Sharing Agreement (SHBWC) were finalized in 2016 (JCRM 18(supplement):438-439, 2017).

The Southern Hemisphere Blue Whale Catalogue (SHBWC) is an international collaborative effort to improve knowledge on Southern Hemisphere blue whales by comparing photo-identification catalogues among different researchers and institutions.

Any researcher or institution working on photo- identification of blue whales in the Southern Hemisphere is welcome to contribute to the SHBWC.

Once the user agrees to contribute photographs with the SHBWC, basic information regarding contact details and research area will be requested by the catalogue curator (Centro de Conservacion Cetacea). In addition, two agreements will need to be signed and dated:

(1) SHBWC sharing agreement and;
(2) IWC Data Availability Agreement under Procedure B (the process for obtaining access to data for analyses the Committee believes would be valuable in providing other advice to the Commission).

After procedures are accepted, researchers will receive a user ID and password. Before photo-identification submission, researchers belong to a restricted access user category and cannot see other contributed photo-identifications.

- Each photo-identification should be uploaded with associated location (e.g. latitude/longitude) and date information, with optional categories to associate additional information (e.g. genetic data). The location/date and other associated photo- identification information is only visible to regional catalogue managers.
- Photographs from each region (see 'Protocols and Procedures') should be uploaded into the geographic area corresponding to the source of the photo.
- Once photo-identifications have been uploaded, user access is upgraded so that it is possible to see photo-identifications contributed by other groups and suggest possible matches. No location or date information is disclosed on the photo-identification database.
- Your name and contact information will be released to those requesting further information.

When a match is found, catalogue owners will be contacted and informed of the finding. If approved by both parties, the information will be used for publication. For IWC assessment purposes, this information can also be disclosed in unpublished papers, co-authored by contributors, which contribute to the Committee work (IWC Data Availability Agreement).

By accepting to contribute and use the SHBWC, the user agrees to the following SHBWC sharing agreement:

1) photographs will only be used for the purposes of comparing blue whale identification catalogues;
2) all photographs and data are copyrighted to the contributing organisations and individuals, and may not be used or reproduced without permission;
3) any individual matches found as a result of comparing catalogues will be reported immediately to the contributor;
4) any announcements of a match or matches between catalogues, including publications of any sort, should include names

representing both/all catalogues as authors of the match;

5) data providers will communicate beforehand with each other and come to agreement to determine co- authorship of announcements or publications. After approval of use if obtained, any use of the photographs and matches should include acknowledgement of both the data provider and the SHBWC as appropriate;
6) prior written consent of the original data providers is required to use data contained in SHBWC in any publication, product, or commercial application (press releases, scientific or popular publications, web sites, funding or reporting documents, advertisements, etc.); and
7) users will not hold the SHBWC liable for errors in the data. While we have made every effort to ensure the quality of the database, we cannot guarantee the accuracy of the data.

In addition, the IWC Data Availability conditions for use of data is considered a fundamental part of this sharing agreement and includes the following rules and conditions:

1) data shall not be transmitted to third parties;
2) papers may only be submitted to a Committee meeting in accordance with the following time restrictions:
    - novel methods – three months before the Scientific Committee meeting;
    - standard methods - two months before the Scientific Committee meeting; and
    - alternative analyses submitted in response to earlier papers - one month before the Scientific Committee meeting.

Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis:

1) papers must carry a restriction on citation except in the context of IWC meetings;
2) data owners are offered co-authorship;
3) publication rights remain strictly with the data owner; and
4) data shall be returned to the data owner immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.

3.1.5 Agreement[ADDED FROM THE WEBSITE]

For the successful operation of the agreement, certain conditions must be met that ensure the rights of the data holders. An example of the standard Data Availability Agreement (DAA) letter, as the one below, can be found here [LINK TO "*DataAvailabilityAgreement*"]. This DAA must be signed by each Data requesters.

3.1.6 Report on data availability requests

The Data Availability Group reports annually to the Committee on all received requests for data access and their outcome.

3.1.7 Reference

International Whaling Commission. 2003. Report of the Scientific Committee. J. Cetacean Res. Manage. (Suppl.) 5:1-92.
[MISSING REFERENCES – TO FIX]

	International Whaling Commission: Data Availability Conditions for use of Data

NOTE: 1 FORM PER USER IF MORE THAN 1 PERSON

With respect to the data received from

Insert name of data provider and short description of data here

I agree to abide by the following rules and conditions:

(1) Data shall not be transmitted to third parties.
(2) Papers may only be submitted to a Committee meeting in accordance with the following time restrictions:

- Novel methods – 3 months before the Scientific Committee
- Standard methods - 2 months before
- Alternative analyses submitted in response to earlier papers - 1 month before

Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.

(3) Papers must carry a restriction on citation except in the context of IWC meetings.
(4) Data owners are offered co-authorship.
(5) Publication rights remain strictly with the data owner.
(6) Data shall be returned, to the data owner immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.

Name			
Signature		Date	
Address			

3.2 Procedure to consider applications for the use of acoustic data, tissue samples or photo-identification photographs

3.2.1 Research Proposal: Request for use of: (1) IWC IDCR/SOWER; and/or (2) IWC-POWER samples/data

The Committee has procedures to consider applications for the use of acoustic data, tissue samples or photo-identification photographs collected in IWC research programmes (i.e. SOWER and POWER and other IWC datasets), outside the Data Availability system.

The user proposal form for SOWER and POWER data can be downloaded here.

The POWER Cruise Steering Group reviews (E-MAIL) these proposals.

3.3 IWC Guidelines for Photo-Identification Catalogues on data access and data sharing

The Committee finalised the IWC Guidelines for Photo-Identification Catalogues in 2017 (IWC 2018, pp. 408-412).

3.3.1 Background

The International Whaling Commission (IWC) has a history of using data and analyses from photo-identification catalogues to assist with its work. (Within this document the term 'photo-identification catalogue' describes a database that includes whale identification photographs with corresponding dates and geographic positions.) Photo-identification data have been used to identify patterns of movement, residency, habitat use, population structure and to estimate abundance and other population parameters (e.g. Bradford *et al.*, 2008; Calambokidis *et al.*, 2009; Carroll *et al.*, 2011; Koski *et al.*, 2010; Wedekin, *et al.*, 2010; Whitehead *et al.*, 2008; see also *Rep. int. Whal. Commn*., *Special Issue* 12, 1990).

Recognising the great value of such studies (e.g. IWC, 1990), the IWC has supported the development of photo- identification catalogues to facilitate assessment work (e.g. Southern Hemisphere humpback whales, Southern Hemisphere blue whales and Pacific gray whales). Such catalogues can also assist in providing information on entanglement, ship strikes and health status (e.g. Knowlton, *et al*., 2012).

The IWC has supported (financially or by submitting photographs from IWC cruises) what can broadly be considered two types of photo-identification catalogues:

(1) 'independent' catalogues that are pertinent to specific on-going assessments but for which maintenance and control belongs outside the IWC; and

(2) 'repository' catalogues that have IWC oversight.

Repository catalogues are supported for the general value of their data and potential use for assessment in the future whether or not they are currently being used by the IWC in an on-going assessment (e.g. the Antarctic Humpback Whale Catalogue). Catalogues can move from one status to another during the progress of assessments. In repository status, catalogue holders need only submit an annual report (see reporting, below). For an on-going assessment, the data requested may include full catalogues, re-sighting records, and possibly additional, associated data (behaviour, sex, age class, etc.). In this case, if an independent catalogue has received funding it would provide a summary report in addition to the contributed data.

3.3.1.1 CONSERVATION AND SCIENTIFIC BENEFITS OF SHARED CATALOGUES

Photo-identification catalogues are usually compiled from regional surveys in an area that typically represents only part of the range of the focal species. The effective study and management of whales at the population level benefits from a broad (full range if possible) spatial coverage. These are wide ranging animals that travel across regional and international boundaries and comprehensive research and management depends on the collaboration among researchers as well as governments. An important role for the IWC, in being able to provide the best scientific basis for conservation and management advice, is to encourage such collaboration to allow broad and robust assessments of cetaceans.

For example, to understand broad ecological patterns or undertake range-wide assessments, it is necessary to combine ('reconcile') catalogues amongst research groups. The comparison of photo-identification catalogues between regions can reveal whale movement patterns, migration routes, and determine breeding and feeding area linkages. Using photo- identification data from throughout a species or population's range allows for a greater understanding of population structure and provides data for a more comprehensive abundance estimate. Examples of outputs from some large ocean- wide catalogue reconciliations are given in Table 3.3.1.

3.3.1.2 DATA ACCESS FOR SHARED CATALOGUES

For population assessments where there is no reconciled IWC catalogue or for which the IWC has not developed a data availability agreement, the IWC uses analyses of data from multiple catalogues but the data themselves are not necessarily available to all Committee members (or even shared among the different contributors). However, any scientist (including catalogue holders of contributed data) may submit a request for data access to the data owner(s) through the IWC and its usual data availability process[26]. Such requests are facilitated if the request is submitted to the Scientific Committee for endorsement before being submitted to the data owners. Requests are handled on a case-by- case basis by the IWC Data Availability Group (Chair, Vice-chair and Head of Science) that works to facilitate an appropriate data sharing agreement although the ultimate decision remains with the data owner. Requests must include a proposal that specifies the intended analysis and how it benefits the Scientific Committee and/or adds to the scientific knowledge of the species in question.

Data sharing agreements are in place for established IWC collaborative catalogues, such as the Antarctic Humpback Whale Catalogue and the Southern Hemisphere Blue Whale Catalogue. Researchers studying populations that correspond to these species and geographic designations are encouraged to join these collaborative catalogues and make use of the reciprocal data sharing agreements.

All catalogues sponsored in whole or in part by the IWC **must** have a data availability agreement that facilitates access for Scientific Committee members. These agreements should ensure that proposals endorsed by the IWC Scientific Committee for its work will be granted with agreed safeguards with respect to publication rights; the protocols for data access will be published on the IWC website.

Table 3.3.1: Examples of results from ocean-wide photo-identification catalogue reconciliations.

Acevedo, J. *et al.* 2007. Migratory destinations of humpback whales from the Magellan Strait feeding ground, Southeast Pacific. *Marine Mammal Science*, 23(2), pp.453-463. Constantine, R. *et al.* 2012. Abundance of humpback whales in Oceania using photo-identification and microsatellite genotyping. *Mar Ecol Prog Ser* 453: 249-261. Garrigue, C. *et al.* 2011. Movement of individual humpback whales between wintering grounds of Oceania (South Pacific), 1999 to 2004. *J. Cetacean Res. Manage*, 3, pp.275-281. Mizroch, S. A. *et al.* 2004. Estimating the adult survival rate of Central North Pacific humpback whales. *Journal of Mammalogy* 85(5):963-972. Weller, D.W. *et al.* 2012. Movements of gray whales between the western and eastern North Pacific. *Endangered Species Research*, 18(3), pp.193-199.
Publications from YoNAH - North Atlantic humpback whales Smith, T. D., *et al.* 1999. An ocean-wide mark-recapture study of the North American humpback whale (*Megaptera novaeangliae*). *Marine Mammal Science* 15:1-32. Stevick, P. T. 2001. Errors in identification using natural markings: rates, sources, and effects on capture-recapture estimates of abundance. *Canadian Journal of Fisheries and Aquatic Sciences* 58: 1861-1970. Stevick, P. T., *et al.* 2003. North American humpback whale abundance and rate of increase four decades after protection from whaling. *Marine Ecology Progress Series* 258: 263-273. Stevick, P. T. *et al.* 2006. Population spatial structuring on the feeding grounds in North Atlantic humpback whales (*Megaptera novaeangliae*). *Journal of Zoology*, 270(2), 244-255.
Publications from SPLASH - North Pacific humpback whales Barlow, J. *et al.* 2011. Humpback whale abundance in the North Pacific estimated by photographic capture-recapture with bias correction from simulation studies. *Marine Mammal Science* 27(4): 793-818. Calambokidis, J. *et al.* 2008. SPLASH: Structure of populations, levels of abundance and status of humpback whales in the North Pacific. Final report for Contract AB133F-03-RP-00078. 57pp. Available from <http://www.cascadiaresearch.org/files/Projects/Archived_projects/SPLASH/SPLASH-contract-Report-May08.pdf> Straley, J. *et al.* 2009. Assessment of mark-recapture models to estimate the abundance of a humpback whale feeding aggregation in Southeast Alaska. *Journal of Biogeography* 36(3): 427-438.

3.3.2 Objectives of the guidelines

To date, the IWC collaborative catalogues have been developed on an *ad hoc* basis responding to specific needs. Whilst this has worked to a greater or lesser extent – we envision that IWC assistance to facilitate collaboration amongst research groups and the development of reconciled catalogues may increase (e.g. with gray whales in the western North Pacific). It is therefore important to develop guidelines for photo-identification catalogues either (a) being sponsored by the IWC or (b) contributing photo data/analyses of such data to the IWC for assessment purposes. The conditions for these two types may vary in some instances. The aim is that catalogues adhere to common standards (e.g. with respect to photograph subject and quality, data submission, maintenance and reporting) such that they provide data at a level sufficient to allow the IWC to meet its population assessment and conservation goals. The guidelines are general in scope and intended for use by all kinds of photo-identification projects of large whales. (This may be expanded to small cetaceans in due course.) They are not guidelines on field techniques, although appendices providing

[26] For more information, see the IWC Scientific Committee Data Availability protocol, Procedure B <https://IWC.int/data-availability>.

examples of good practice may be developed at a later stage. The guidelines should be regularly reviewed and updated (approximately every three years unless justification arises to do so more frequently).

For use in population assessments, photo-identification catalogues must be fully reconciled internally. Identification photographs should be submitted to the IWC (see discussion below) with at least date and location data.

3.3.3 Catalogue contributions for population assessment - protocols

3.3.3.1 PHOTO SUBJECTS FOR LARGE WHALES, BY SPECIES
Primary photo subjects commonly used in bold (varies by region).

- Blue whales – **left and right side with dorsal fin**, fluke if available
- Fin whales – **dorsal fin** and flank; **chevron and blaze** (requires 3-4 photos of each side)
- Sei whales – **dorsal fin, flank** (requires 2 photos of each side)
- Bryde's whales - **left and right side with dorsal fin**
- Minke whales and dwarf minke whales - **left and right side with dorsal fin**
- Humpback whales – **fluke**; left and right dorsal fin and/or flank if no fluke available
- Omura's whales – **left and right side with blaze, chevron, and dorsal** (requires 2-3 photos of each side)
- Gray whales - **left and right side with dorsal hump**; fluke
- Right whales – **callosity patterns**; **vertical view of head**, lateral left and right sides of head
- Bowhead whales – **vertical view, entire dorsum**
- Sperm whales – **fluke**

Fluke, dorsal side, and flank photos should be linked for individual whales whenever possible. Note: Prominent scars or other physical anomalies should be photographed wherever they appear on the body.

3.3.3.2 CATALOGUE ORGANISATION
The objective is to facilitate matching, either new photographs within an existing catalogue[27] and/or between catalogues[28]. There are several ways to achieve this, such as grouping photographs within a catalogue based on similar natural markings – colour or dorsal fin shape, for example – that facilitates the inter-matching process. New identification photos can then be compared first to similarly marked animals, speeding up the process to finding a match, if it exists[29]. See Gendron and Ugalde de la Cruz (2012), Agler *et al.* (1990), and Allen *et al.* (1994) as examples for blue whales, fin whales, and humpback whales, respectively. This can be an appropriate way to organise catalogues, whether the catalogue is in printed or electronic format. Note that data sets that are not organised in this recommended format are still of value and can be 'salvaged.'

3.3.3.3 INTERNAL CATALOGUE RECONCILIATION
The inter-matching of photographs can be conducted manually (by eye) or computer-assisted (generally custom software and often species specific). Using the manual method, photographs can be compared in printed format, electronic format or a combination of both formats. This step may vary by species, by catalogue size, and by the staffing and funding resources available to the catalogue. All methods are valid as long as a clean validated dataset is produced.

Matches must be **unequivocal**, based on good quality photographs, and exhibiting a minimum of three match points[30]. All inter-matches should be confirmed by a second matcher. For IWC catalogues, the IWC **must** conduct/oversee cross- matching exercises on catalogue subsets to confirm internal reconciliation (and estimate errors) at specified intervals.

3.3.3.4 IMAGE QUALITY CODING
The quality coding of photographs is undertaken by most catalogues to ensure (as much as possible) that there is an equal probability that matches will be recognized and to reduce the amount of bias highly distinctive or indistinctive individuals might otherwise produce. It is essential that such coding is used in IWC catalogues and that the method is documented. Typically catalogues use 3, 4, or 5 quality categories (excellent – poor) in their coding systems, based on features such as the angle and distance of the animal relative to the camera, lighting, and focus. See Friday *et al.* (2000) and Mizroch and Harkness (2003) for examples of quality coding. Catalogues that have already been coded need not change their system. For the IWC, photographs of upper quality only are to be submitted (i.e. top 2 of 3 codes; top 3 of 4; top 4 of 5). Details will be agreed upon for individual catalogues.

Note the important difference between quality and distinctiveness. Photo quality is based on the features of the photo (above) regardless of how well the whale in the photo is marked. The tendency is to code the photo of an indistinctive whale with few natural marks as a poor-quality photo; this bias must be avoided as must the reverse.

3.3.3.5 SUBMISSIONS TO THE IWC
Submission of photos and data varies by the type of catalogue in relation to the IWC (Table 3.3.2):

(1) *Independent catalogues for use in assessments; catalogue not held by IWC*
These catalogues are pertinent to specific on-going assessments but maintenance and control belongs outside the IWC.

(2) IWC partially funded catalogue, with IWC oversight
These are catalogues for which the IWC provides funding and has an agreed oversight role. It is important that these

[27] Reconciling a catalogue internally.
[28] Reconciling two or more catalogues.
[29] After this first comparison, a new photo should still be matched to entirety of catalogue.
[30] A match point is a unique physical feature recognizable in both photographs (e.g. a nick in the dorsal fin, a specific swirl or spot(s) in the pigmentation, a scar).

catalogues meet IWC standards with respect to use of data and analyses in assessments. With these catalogues, the Scientific Committee can request additional photographs or data should it need to for an assessment. These may be repository or independent catalogues.

(3) IWC fully funded catalogues

These are catalogues that are funded by the IWC (and held by, although not necessarily in, the Secretariat). For these catalogues, all photographs and available data are required to be held in the database. These will be repository catalogues.

3.3.3.6 ARCHIVING

Following accepted best practice, all catalogues should back-up and archive their photos and data in multiple places including long-term offsite storage (e.g. backed up on 2-3 hard drives as well as on an institutional or cloud server). IWC funded catalogues are obligated to do this and to include confirmation of archival storage in their report to the IWC (see below).

3.3.3.7 REPORTING

A report should be submitted to the IWC for every year of funding; in a few cases this is an annual report. Templates for such reports will be provided by the IWC (they may vary if an assessment is on-going, for example). Normally the report would include the geographic areas, years/seasons, and number of individuals compared to the existent catalogue, along with results of the comparisons yielding the number of matches, the number of newly identified individuals, and the subsequent total number of identified individuals in the catalogue. The report should also contain a detailed Methods section that describes how inter-matching and quality coding were conducted. Data archival locations should be listed and recent publications generated from catalogue data should be provided. It is suggested that established long- term catalogues include a periodic error estimation in their reporting. Information on validation and error checking should be included in the report.

For a report example, see a recent annual report from the Antarctic Humpback Whale Catalogue, Stevick *et al.* (2015). Reports are required from both assessment and repository catalogues.

N.B. TECHNICAL APPENDICES INCLUDING EXAMPLES OF GOOD PRACTICE MAY BE ATTACHED TO THESE GUIDELINES THAT WILL BE REGULARLY UPDATED

Table 3.3.2: Submission of photos and data to the IWC from three different kinds of catalogues.

'Independent' catalogues for use in assessments, not held by the IWC	IWC funded catalogues	
	Partially funded catalogue, with IWC oversight	Fully funded catalogue, held at IWC
Images Photo format in the highest jpg resolution available[1] (RAW is too large)[2] Best identification photo(s) per individual. Higher quality photographs only (to be agreed on a case by case basis). Associated data can be included in the metadata of images (but this is not required). **Associated data**[3] Data submitted as a flat file (i.e. in Excel) and in IWC-specified order (on a case by case basis; the IWC will inform research groups specifically). Include a record for every year (or season) that an individual is photographed (only one set of identification photo(s) is submitted)[4]	**Images** The highest resolution available (including RAW if available). Best identification photo(s) per individual, per region. Higher quality photographs only (to be agreed on a case by case basis). Associated data included to the extent possible. **Associated data**[3] Data submitted as a flat file (i.e. in Excel) and in IWC-specified order (on a case by case basis; the IWC will inform research groups specifically). All sightings will be documented (within and between years).	**Images** The highest resolution available (including RAW if available). Best identification photo(s) per individual per sighting. Higher quality photographs only (to be agreed on a case by case basis). Associated data included to the extent possible. **Associated data**[3] The data will be held by the IWC in an appropriate database format. All sightings will be documented (within and between years).

[1]Note that it is better to collect fewer photos of the highest resolution than more photos in a lower resolution. Low resolution photos are unusable for photo-ID.

[2]RAW format might be accepted for archive purposes if the IWC is the main holder of single range-wide catalogue. Otherwise it is expected that research groups will archive their original photos and submit highest resolution copies to the IWC.

[3]This will include some or all of the following (to be specified on a case by case basis and dependent on availability). **At a minimum: whale identification number; image file name; photo subject (e.g. left side); date** (A resource for data standards regarding dates is ISO 8601: https://www.iso.org/iso-8601-date-and-time-format.html)**; position expressed as lat/lon** (Researchers are encouraged, but not required, to use a GPS logger to embed GPS data directly into the photos' metadata. It is also possible to add location data to photos using easily available, inexpensive software. If only a rough location is known submit the approximate lat/lon but identify it as approximate). Additional data: behaviour; sex; mother or calf designation; biopsy sample number; satellite tag number; comments. Comment to be qualitative, e.g. info on association with another known individual, unusual behaviour, unusual scar.

[4]There may be assessments that wish to examine the fluidity of inter-seasonal residencies, in which case all records within a season would be requested.

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