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Title	**MEDIN data guideline for photo-identification of cetaceans and surface swimming sharks**
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Summary	This guideline defines the format of data and information produced from marine datasets collected using photo-identification techniques from field to archive. A template is provided if required.
Keywords	Cetacean, porpoise, dolphin, basking shark, photo identification.

Change history		
Version	**Date**	**Change**
1.0	2010-01-06	First draft of document
3.0	2010-05-24	Guideline adapted to fit new global guideline template.
3.1	2010-07-15	Minor edits following changes to common tables and specification of .csv format for transfer of data

1.1. Background

The Marine Environmental Data and Information Network (MEDIN) is working towards creating a framework of consistent standards covering the major types of data collection undertaken in the marine environment around the UK. The principle benefits of this suite of standards are:

- It allows the contracting organization to easily specify the format that any data should be returned in, ensuring it can be readily used and includes all relevant attributes
- It provides a consistent format for contractors to work to (rather than a different format for each contract)
- Data can be readily exported to Data Archiving Centres and other users
- It instills good practice amongst users

Each standard defines the data and information that must be stored with a particular data type to ensure it can be readily used and reused. As this type of information is specific for different data types, guidelines are developed for each type. This document describes one such format for the use of photo-identification of cetaceans and surface dwelling sharks. Other standards can be accessed via the MEDIN website www.oceannet.org.

1.2. Scope

This guideline covers the recording of data collected using photo-identification techniques and is based on the protocol developed by CCW. It covers both the raw data from such sampling, and the methodologies to be used (e.g. sampling devices used). The archive of derived media is covered in B01 the MEDIN data guideline for the archiving of digital photographs.

1.2.1 Licensing intentional disturbance

Since the introduction of section 9(4A) to the Wildlife and Countryside Act 1981, by the Countryside and Rights of Way Act 2000, it has been an offence to 'recklessly' or 'intentionally' disturb cetaceans in UK waters. Since the amendment of regulation 39(1)(b) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) by the Conservation (Natural Habitats &c.) (Amendment) Regulations 2007 it is now an offence to deliberately disturb wild animals of a Schedule 2 Species in such a way as to be likely significantly to affect: a) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young; or b) the local distribution or abundance of that species.

Please note that under the Conservation (Natural Habitats &c.) Regulations 1994 one of the major changes introduced to the legislation by the 2007 Amendment Regulations is regulation 46A (1) states that "It is an offence for any person authorised by virtue of a licence to which this paragraph applies to contravene or fail to comply with any condition which the licence requires him to comply with."

1.2.2 Licensing disturbance for photo-identification

Protocols must be followed to avoid excessive disturbance to the animals and ensure the data collected are of a certain standard and suitable nature for use in relevant scientific research programmes. In terms of photo-identification the data should be fit for use in mark-recapture modelling and other studies of population range, structure and distribution. Licensees are required to have experience in interpreting the behaviour of the animals and need an understanding of the assumptions of the mark-recapture models, which rely on photo-identification data. Of relevance here are:

- A marked animal will always be recognised if it is seen again under suitable conditions. This requires the regular updating of catalogues to include any new marks an individual might acquire so that this does not affect recognition of it.

- The individuals that are photographed should not represent a biased subset of the population. This can occur if part of the population does not mix freely with others in the population, for example, if a particular age class or gender tends not to associate with the wider group. Where this is the case, the population may be disproportionally represented in the end results.and photography of those is either greater or less than would occur by chance. For example, if particular age classes or genders tend to associate, that can cause problems.

- Every animal in the population should have the same probability of being captured on camera within one sampling occasion, this requires attempts to be made to photograph every individual present in an encounter irrespective of group size or how well marked it is.

It is therefore most important that the licensee makes as accurate an assessment of the group size as possible (and records this), and then attempts to photograph EVERY individual in the group.

1.2.3. Protocol for minimizing disturbance

Both the researchers holding licences and the boat operators have a responsibility to avoid disturbance levels beyond those essential for the photo

identification. Vessel skippers are ultimately in charge of the boats used in photo identification work; as such they have a responsibility regarding vessel handling in the proximity of cetaceans. Licensees not operating the vessel themselves must ensure that they engage boat operators who are suitably experienced in handling vessels in the proximity of cetaceans whilst minimising disturbance. Boat operators without suitable experience should gain this through a period of training with an experienced skipper. In addition, it would be beneficial to attend a training course such as the WiSe accreditation scheme.

1.2.4. Procedures to minimise disturbance:
1. On sighting individuals or groups of cetaceans, assess first whether they are receptive to sustained contact and photo identification. If they repeatedly move away from the vessel leave the animals.
2. Be especially careful around calves; avoid actively splitting groups or boxing them in against the land. When within 500 metres of the group, never drive directly at them, and in all cases, avoid speeds exceeding 10 knots. In some cases, one may be maintaining a steady course at a greater speed than this, and cetaceans approach to bow-ride. This is acceptable so long as one does not change one's behaviour suddenly.
3. Do not make sudden changes of course or speed, and where possible close in on the group/individual gradually. When within 500 metres of the group, allow individuals to approach the vessel rather than persistently steering towards them.
4. Avoid turning off the engine unless one expects to be stationary for more than 10 minutes. Then, when turning the engine on again, do so only when you are confident there are no cetaceans nearby.
5. Leave the group after a maximum of 40 minutes or once the entire group has been photographed (whichever comes first). If the animals change their behaviour and become noticeably unreceptive and this persists for several minutes, leave the group within 5 minutes of observing this.
6. If other vessels join you during the photo-identification encounter, explain to them on radio or mobile phone what you are doing and why (unless they already know).
7. Avoid two vessels conducting photo-identification of the same individual or group within 30 minutes of one another. If two vessels are in the same area, the vessel already engaged in photo identification should communicate to ensure there is no duplication of effort, and the second vessel should move on.
8. Do not approach cetaceans for photo-identification purposes within harbour areas or when passenger boats are in the vicinity.
9. On completion of photo-identification activities, adherence to any relevant codes of good practice related generally to minimising disturbance to marine wildlife is expected. Within byelaw areas speed limits should be adhered to at all times.

10. Nothing in this protocol shall override any provision made in the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs) (as amended).

1.3.   Using this data guideline

This guideline is split into sections which refer to information that can be collated at different levels. Information that is likely to be the same for all samples (e.g. ship used, datums used) is collated in the 'Survey Information' table. If stations are used the information that is common to each station and sample is collected in the 'Station Information' table, The 'Sample Data' for a photo-identification survey is collated in the 'Encounter Information and Image' tables respectively. The survey information stated in this guideline is common to all MEDIN guidelines and may be used in part to derive a MEDIN discovery metadata record. Where the survey is part of a ship cruise then the cruise report may hold the required information.

The tables below outline the data fields, a description and, where available, a term list and/or format given at the end of each field which should be used to store the data. Each field is mandatory, optional or conditional as indicated by M, C or O respectively. In the absence of an existing spreadsheet or database to hold the below information, it is recommended that the template available to download from the [MEDIN website](#) is used. Instructions for completion are provided in the template. If the data is to be submitted to a Data Archiving Centre it should be submitted including in the format set out in this document.

To submit this data to a Data Archive Centre the data must be saved and transferred in the .csv file format.

1.4. Further information on the SeaDataNet, ICES and EPSG term lists

The available catalogues of term lists used for this MEDIN data guideline are provided primarily by SeaDataNet, the International Council for the Exploration of the Sea (ICES) and European Petroleum Survey Group (EPSG). If a term is not available in a recommended list then please contact MEDIN (at helpmeMEDIN@medin.org) to arrange for the term to be added.

The SeaDataNet list may be viewed at http://seadatanet.maris2.nl/v_bodc_vocab/welcome.aspx . By clicking on the list any term may be searched for by using the drop-down menus or all terms viewed by clicking search. The terms may be viewed in groups of 15 or may be downloaded into an excel file.

The ICES term lists are available at http://www.ices.dk/datacentre/reco/ Once on the site you can select which list you require from the 'Reference Code List' drop-down box. The results are shown for the selected list and may be downloaded into MS Excel by selecting the inverted green arrow.

There are a number of ways of describing a spatial dataset. Common horizontal coordinate reference systems include WGS84 and British National Grid. Common vertical coordinate reference systems include Highest Astronomical Tide and Ordnance Datum Newlyn (ODN). It is important that the coordinate reference system used for a data set is recorded so accurate conversions can be carried out between reference systems. Currently the EPSG database of coordinate reference systems (http://www.epsg.org/Geodetic.html) is not intuitive and MEDIN are in communication with them to improve this service. In brief, to find a code, click on the OGP Online Registry and if you know the title (e.g. WGS84) then type this in the 'Name' field and click search. The name, code and further information are then displayed. If you are looking for a specific type of reference system such as 'vertical' then click in the 'Type' box, hover over coordinate reference system and click on vertical and then click the search button and all recorded vertical reference systems are shown. If you want to search for a reference system in a particular part of the world (e.g. Northern Ireland Grid) then you may do so by submitting a term to the 'Area' box or fill out the appropriate latitude and longitude then click search.

1.5.   Relationship between MEDIN data guidelines and MEDIN discovery metadata

The MEDIN discovery metadata format is aimed at allowing the non-informed user to discover data sets and it is likely that one 'discovery' data set record will contain a large range of data types that are in turn covered by a range of data guidelines. To enable individuals to re-use data of a specific nature (e.g. benthic invertebrate data) then related information must be collected (e.g. data owner, reference systems used etc.) Some of the information which is collected at the Survey Level in a data guideline is also required to create a discovery metadata record. Who creates the MEDIN discovery record for a dataset is case specific, dependant on the organisation, and the relationship it has with a Data Archive Centre. However it is intended that the information collected at the 'Survey Information' level is re-used for creating a MEDIN discovery metadata record. More details on the MEDIN discovery metadata standard can be found at www.oceannet.org

2.1. Project Information.

If your collection of data forms part of a wider project or time series then the below details must be recorded.

M, C, O indicate which fields are mandatory, conditional or optional.

Heading	M, C, O	Description	Recommended Term List or Format
Project name	M	The nationally/internationally accepted version of the project name	Free text; (e.g. Rapid Climate Change)
Project website	C	If a Project website exists give the address	e.g. (http://www.noc.soton.ac.uk/rapid/rapid.php)
Project start date	M	The date that the project started	Date; yyyy-mm-dd; (e.g. 2001-01-24)
Project end date	C	The date that the project is due to finish	Date; yyyy-mm-dd; (e.g. 2007-01-24)
Project code	M	Provide a code to uniquely identify the project and allow links to be made between the tables.	Free text; (e.g. RCC)

2.2. Survey Information (Data Activity).

The survey information is a uniquely identifiable programme of data collection such as a research cruise or survey event. This information is likely to be the same for all sample events (e.g. stations) and subsamples in a given data set such as a cruise. Note that in the event that these are not common to all sample events then they should be specified for each one. These fields are common throughout many other MEDIN data guidelines and only need to be given once and referenced if your data set is composed of many data types and therefore conforms to a number of MEDIN Data Guidelines. Where data collection is undertaken on research vessels the data below can often be sourced in the Cruise Summary Report.

M, C, O indicate which fields are mandatory, optional or conditional respectively.

Heading	M, C, O	Description	Recommended Term List or Format
Survey name	M	Title of the survey	Free text; (e.g. Menai Straight Benthic Survey 2004)
Survey description	M	Brief description of the purpose of the survey and other types of measurements that were made for the survey.	Free Text
Survey code	M	A unique code for the survey to allow links to be built between this and sample event data (the cruise identifier code could be used)	Free text; (e.g. JCR3022)
Responsible organisation	M	Organisation who has funded the work	Term List; European Directory of Marine Organisations (e.g. 28: Centre for Environment, Fisheries and Aquaculture Science, Lowestoft Laboratory)
Survey start date	M	The date and time that the survey started.	Date or DateTime; yyyy-mm-dd or yyyy-mm-dd hh:mm:ss (e.g. 2009-01-24 12:33:00)
Survey end date	M	The date and time that the survey ended.	Date or DateTime; yyyy-mm-dd or yyyy-mm-dd hh:mm:ss (e.g. 2009-02-16 16:33:00)
Spatial coordinate reference system	M	Describes the system of spatial referencing. I.e. the datum used to provide details of latitude and longitude.	Term List; http://www.epsg.org/Geodetic.html (e.g. WGS84 is EPSG::7030)
Position fix	M	Give the method and source of the position	Free Text; (e.g. Differential GPS taken from

method and source		fix instrument.	the ships navigation equipment.
Horizontal positional accuracy	M	How accurate the spatial positions are likely to be	Number; units = meters (e.g. 15)
Depth coordinate reference system	C	Give the reference to which the depth has been calculated e.g. Highest astronomical tide. Mandatory if seabed depths are given for each sample.	Term List http://www.epsg.org/Geodetic.html (e.g. ODN is EPSG::5701)
Vertical positional accuracy	C	How accurate the vertical resolution is. Must be provided if seabed depths are given.	Number; units = meters (e.g. 0.5)
Platform type	O	The platform type (e.g. Research Vessel) from which the sampling device was deployed.	Term list SeadataNet Platform Classes (L061) (e.g. 31)
Ship name	O	The name of the ship from which the sampling device was deployed.	Term list SHIPC at http://www.ices.dk/datacentre/reco/ (e.g. 74LG Lough Foyle)
Cruise report reference	O	Cruise report reference if applicable.	Free text; in reference format. e.g. Litt, E.J. 2009. PHiXT 4. 30 July to 2 August 2009 *RV Prince Madog* POL Coastal Observatory Liverpool Bay Cruise Report. POL Coastal Observatory, Liverpool.
Project code	M	State the code of the project given in the project table to allow links to be made between the tables.	Free text; (e.g. RCC)

2.3. Fixed Station Information.

In many cases a fixed point, transect or area is returned to on a number of occasions to form a time series. The actual sample event may not be in exactly the same location each time however due to ship movements or sampling strategy, however it is useful to record both the position which is intended to be sampled (fixed) and the actual sampling position (sample).

Therefore, the information below must be included if a fixed point, transect or area is used as the basis for replicate profiles or for repeat monitoring surveys. Actual profile coordinates should be placed in the sample event table. A fixed station may be a point, transect, or an area. If the fixed station is a transect or an area then the secondary latitude and longitude fields must be completed.

Heading	M, C, O	Description	Recommended Term List or Format
Local station identifier	M	A unique identifier for the station	Free text. e.g. Stanton Bank site 4 (point) e.g. Liverpool/Dublin transect (transect) e.g. Lagan Estuary (area)
Primary Latitude (decimal degrees)	M	The primary latitude of the fixed station given in decimal degrees. For a point this field is set to the point latitude; for a transect it is set to the latitude of the start of the transect; for an area it is set to the southern edge of the box. Units are positive north.	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. 54.5837
Primary Longitude (decimal degrees)	M	The primary longitude of the sample given in decimal degrees. For a point this field is set to the point longitude; for a transect it is set to the longitude of the start of the transect; for an area it is set to the western edge of the box. Units are positive east (West is negative, East is positive).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. -5.5837
Secondary Latitude (decimal degrees)	C	The secondary latitude of the fixed station given in decimal degrees. For a point this field is not required; for a transect it is set to the latitude of the end of the transect; for an area it is set to the northern edge of the box. Units are positive north.	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. 55.7393

Secondary Longitude (decimal degrees)	C	The secondary longitude of the sample given in decimal degrees. For a point this field is not required; for a transect it is set to the longitude of the end of the transect; for an area it is set to the eastern edge of the box. Units are positive east (West is negative, East is positive).	Decimal degrees; minimum of two and a maximum of five decimal places. e.g. -3.7394
Description of fixed station spatial form	M	Describe if the fixed station is a point, transect or an area.	Term list; SeadataNet Geospatial Feature Type (L021) (e.g. point)

2.4. Encounter Information.   (Sample event information) This information describes the encounters occurring during the survey. This table holds information on the location of each encounter.

Heading	M, C, O	Description	Recommended term list or format
Encounter ID	M	This attribute field links the images to the encounter data for the group of animals present when the images were captured. Although the values created for EncounterID are formatted like the ImageID (above) field they are independent and will often differ. CCW will supply every licensee with the Europhlukes compatible organisation code. Where a licensee or their organisation has previously collected data to this format they will continue sequential numbering from the last assigned value.	Free text; xx_xxx_nnnnn Where: "xx" represents the species code for the species captured in the image (see Table 4). "xxx" represents the Europhlukes compatible organisation code. "nnnnn" represents a sequentially assigned integer value pre-fixed with 'leading zeros' to standardise length. The integer value will increment by a value of 1 for each successive image captured and will run from 1 to infinity. (e.g. TT_CCW_00001 e.g. TT_CCW_00777)
Start time	M	The start time of the encounter	DateTime; yyyy-mm-dd hh:mm (e.g. 2007-10-01 13:14)
End time	M	The end time of the encounter	DateTime; yyyy-mm-dd hh:mm (e.g. 2007-10-01 13:14)
Start latitude of station (decimal degrees)	M	The start latitude of the encounter given in decimal degrees. Units are positive latitude North (North is positive, South is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. 52.5237)
Start longitude of station (decimal degrees)	M	The longitude of the encounter given in decimal degrees. Units are positive longitude East (East is positive, West is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. -5.5837)

End latitude of station (decimal degrees)	M	The end latitude of the encounter given in decimal degrees. Units are positive latitude North (North is positive, South is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. 52.5237)
End longitude of station (decimal degrees)	M	The end longitude of the encounter given in decimal degrees. Units are positive longitude East (East is positive, West is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. -5.5837)
Extent	C	Use relevant regional sea code for area of sighting.	Term list; See Appendix 1 (e.g.)
Bearing from observer	O	Record the bearing that the encounter was seen from the observer.	Decimal; units = degrees (e.g.
Behaviour	M	Note the behaviour of the group of animals witnessed during the encounter. All witnessed behaviours should be recorded; separate different behaviours with the "+" symbol.	Term list; T - travel SS - slow swim NS - normal swim FS - fast swim SF - suspected feeding FF - feeding B - bow riding R - resting S - socializing L - leaping P - physical contact O - other NR - not recorded U – unknown (e.g. T e.g. T+SF+P)
Group size	M	Record the number of individuals present in the group.	Integer. (e.g. 12)
Adults	C	Record the number of adults present in the group.	Integer. (e.g. 5)
Juveniles	C	Record the number of juveniles present in the group;	Integer.

		include all sub-adults. Classify those not yet in their second year as calves.	(e.g. 5)
Calves	C	Those animals which are not yet in their second year but are no longer newborn	Integer. (e.g. 5)
Newborn calves	C	Record the number of newborn calves in the group. These are identifiable by foetal folds.	Integer. (e.g. 5)
Encounter notes	O	Any further notes about the encounter.	Free text.

2.5 Sample Analysis and Techniques (Data Production Tools).

Note that in some instances the information in this category is likely to be the same for all samples within a data set and may also be used to complete fields in the discovery metadata. If the data is different for each sample then this should be specified.

Heading	M, C, O	Description	Recommended term list or format
Methodology	M	Any written methodology used should be referenced and linked. This includes transect pattern, equipment specification, camera specification, number of observers, field of vision of observers (degrees)	Free text.
Storage medium	C	If samples were taken please	
Analytical Laboratory or Organisation	M	The laboratory/organisation that analysed the samples	Term list; RLABO at http://www.ices.dk/datacentre/reco/ (e.g. UNIC Unicomarine Ltd, Letchworth Laboratory)
Analytical personnel	O	Names of the personnel who were involved in analysing the samples	Free text, personnel initials given and separated by semi-colon if more than one personnel used; (e.g. J. Bloggs analysed all samples).
Sampling analysis notes	O	Any further notes on sample analysis that may be of relevance	Free text; (e.g. 10% of samples were checked by B. Begger for QC purposes)
Quality Control Scheme	M	Description of any quality control scheme that the laboratory participated in during the analysis.	Free text; (e.g. National Marine Biological Analytical Quality Control Scheme)

2.6 Image Information. This information must be included for each image captured. Images are linked to encounters by the Encounter ID

Photo-identification studies of cetaceans rely on fit for purpose images, associated metadata, and a broader class of data recording details of the encounters in which individual animals are captured as images.

For an image to be fit for photo identification purposes it needs to be in focus, portray the salient features of the animal captured perpendicular to the camera, and be supplied to a technical standard compatible with existing research programmes and archives. Some suggestions on how to create fit for purpose images is given in Annex 1. It is vital that images can be related to their associated data with unique identifiers. For this reason, a naming convention is outlined in Table 1 below.

Digital images that are in focus and show salient features (generally dorsal fin & part of the back) should be downloaded as high resolution TIFF files (with associated shooting information).

Analogue images that are in focus and show salient features (generally dorsal fin & part of the back) should be scanned for each encounter. The digital outputs of scanned analogue photography will be saved in Tagged Image File Format (TIFF) (preferably using LZW compression to limit file size).

Heading	M, C, O	Description	Recommended Term List or Format
ImageID	M	Image data related to license returns will form a catalogue of images rather than animals, so each image will have a unique Europhlukes compatible identifier. N.B. this attribute field links the spreadsheet record to individual image, the entry here will be identical to the filename prefix used to name the image file.	Free text; xx_xxx_nnnnn Where: "xx" represents the species code for the species captured in the image (see Appendix 1). "xxx" represents the Europhlukes compatible organisation code.

| | | Although the values created for ImageID are formatted like the EncounterID (below) field they are independent and will often differ.

The Licencing authority will supply every licensee with the Europhlukes compatible organisation code.

Where a licensee or their organisation has previously collected data to this format they will continue sequential numbering from the last assigned value. | "nnnnn" represents a sequentially assigned integer value pre-fixed with 'leading zeros' to standardise length. The integer value will increment by a value of 1 for each successive image captured and will run from 1 to infinity. (e.g. TT_CCW_00001 e.g. TT_CCW_00777) the respective image file name should reflect this code e.g. TT_CCW_00001.tif |
|---|---|---|---|
| EncounterID | M | This attribute field links the images to the encounter data for the group of animals present when the images were captured.

Although the values created for EncounterID are formatted like the ImageID (above) field they are independent and will often differ.

CCW will supply every licensee with the Europhlukes compatible organisation code.

Where a licensee or their organisation has previously collected data to this format they will continue sequential numbering from the last assigned value. | Free text; xx_xxx_nnnnn

Where:
"xx" represents the species code for the species captured in the image (see Appendix 1).
"xxx" represents the Europhlukes compatible organisation code.
"nnnnn" represents a sequentially assigned integer value pre-fixed with 'leading zeros' to standardise length. The integer value will increment by a value of 1 for each successive image captured and will run from 1 to infinity. (e.g. TT_CCW_00001 e.g. TT_CCW_00777) |

Image quality	M	The latitude of the station given in whichever format was used to record at the time of sampling including relevant units such as degrees, minutes and seconds.	Term list; 0 = Poor quality, not usable 1 = Below average quality, only distinctive animals identifiable 2 = Average quality, both distinctive & indistinctive animals identifiable 3 = Excellent quality photo (e.g. 3)
Distinctiveness	M		Term list; 1 - Not distinctive: very little information content in pattern, markings or leading and trailing edge features 2 - Average amount of information content: 2 features or 1 major feature are visible on the animal 3 - Very distinctive: features evident even in distant or poor quality photo (e.g. 2)
Date	M	The date on which the image was taken	Date format yyyy-mm-dd (e.g 2007-09-23)
Time	M	The time at which the image was taken	Time; hh:mm (e.g. 13:14)
Latitude of station (decimal degrees)	M	The latitude of the station given in decimal degrees. Units are positive latitude North (North is positive, South is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. 52.5237)
Longitude of station (decimal degrees)	M	The longitude of the station given in decimal degrees. Units are positive longitude East (East is positive, West is negative).	Decimal degrees; minimum of two and a maximum of five decimal places. (e.g. -5.5837)
Extent	C	Use relevant regional sea code for area of sighting	Term list; See Appendix 1
Gender	C	Enter the relevant gender code	Term list; M - male F - female

			PM – possible male PF – possible female NR – not recorded (e.g. PM)
Species	M	Enter relevant species code	Term list; (e.g. TT)
Age Class	C	Enter integer value representing the age class of the animal captured in the image: Newborn: below 1/2 of an adult length; constantly in close association with an adult; dorsal fin typically low and rounded; dark, lead-grey coloration with visible foetal creases; immature swimming style with stereotyped surfacing pattern when breathing. Calf: about 1/2 of an adult length; in clear association with an adult, but not as strictly as a newborn; light grey coloration, occasionally brownish, usually lighter vertical stripes left by foetal creases Juvenile: about 2/3 of an adult length; usually swimming in association with an adult, but sometimes independently; coloration generally slightly lighter than the adult Adult: adult size	Term list; 0 = new born 1 = calf 2 = juvenile 3 = adult 4 = unknown (e.g. 3)
Status	M	Enter the status of the animal It is assumed that most photo identification images will have this attribute entry coded as "A".	Term list; D - dead A - alive S - stranded & re-floated at time of

			photo taken (e.g. A)
Primary Features	M	Record the identifying feature captured in the image.	Term list; Whole Animal Head Chin Body Dorsal Fin Peduncle Tail (e.g. Dorsal Fin)
Primary View	M	Record the aspect from which the identifying feature is viewed in the image.	Term list; Front Left Right Dorsal Ventral Back (e.g. Right)
Secondary Feature(s)	C	If more than one identifying feature is captured in the image then it/ they should be listed here.	Term list; Whole Animal Head Chin Body Dorsal Fin Peduncle Tail (e.g. Tail)
Secondary	C	If more than one identifying feature is captured in	Term list;

View		the image then the aspect(s) from which it/ they are viewed should be listed here.	Front Left Right Dorsal Ventral Back (e.g. Right)
Mother-Calf link	C	Record ImageID of suspected mother or calf where the mother or calf is identifiable	Free text; link to ID in format <xx_xxx_nnnnn> (e.g. TT_CCW_00002)
Genetic sample taken	C	It is assumed that most licence returns will have this attribute entry coded as "1" by default; a different entry would only be required if a genetic sample was taken under licence.	Term list; 1 = None 2 = Opportunistic 3 = Dedicated (e.g. 1)
Diet sample taken	C	It is assumed that most licence returns will have this attribute entry coded as "1" by default; a different entry would only be required if a diet sample was taken.	Term list; 1 = None 2 = Opportunistic 3 = Dedicated (e.g. 1)
Contaminant sample taken	C	It is assumed that most licence returns will have this attribute entry coded as "1" by default; a different entry would only be required if a contaminant sample was taken.	Term list; 1 = None 2 = Opportunistic 3 = Dedicated (e.g. 1)
Acoustic Data collected	C	It is assumed that most licence returns will have this attribute entry coded as "1" by default; a different entry would only be required if acoustic data was gathered.	Term list; 1 = None 2 = Opportunistic 3 = Dedicated (e.g. 1)

Morphometrics available	C	It is assumed that most licence returns will have this attribute entry coded as "1" by default; a different entry would only be required if morphometric data was gathered.	Term list; 1 = None 2 = Opportunistic 3 = Dedicated (e.g. 1)
Photographer	M	Name of individual responsible for image capture	Free text; (e.g. Jo Bloggs)
Data source	M	Name of organisation or individual to whom licence to disturb was issued.	Free text; (e.g. Jo Bloggs/ CCW)
Copyright	M	Name of organisation or individual whom owns the image copyright. Where joint ownership of copyright exists separate each owner with a "/"	<name>
Image Notes	O	Additional notes relating to the image e.g. other animals seen etc	Free text;

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Appendix 1 – Species codes.

Vernacular name:	Scientific name:	Code:
Northern right whale	Eubalaena glacialis	Eg
Minke whale	Balaenoptera acutorostrata	Ba
Sei whale	Balaenoptera borealis	Bb
Blue whale	Balaenoptera musculus	Bm
Fin whale	Balaenoptera physalus	Bp
Humpback whale	Megaptera novaeangliae	Mn
Sowerby's beaked whale	Mesoplodon bidens	Mb
Blainville's beaked whale	Mesoplodon densirostris	Md
Cuvier's beaked whale	Ziphius cavirostris	Zc
Northern bottlenose whale	Hyperoodon ampullatus	Ha
Sperm whale	Physeter macrocephalus	Pm
Harbour porpoise	Phocoena phocoena	Pp
White-beaked dolphin	Lagenorhynchus albirostris	Lal
Atlantic white-sided dolphin	Lagenorhynchus acutus	Lac
Risso's dolphin	Grampus griseus	Gg
Bottlenose dolphin	Tursiops truncatus	Tt
Striped dolphin	Stenella coeruleoalba	Sc
Common dolphin	Delphinus delphis	Dd
Killer whale	Orcinus orca	Oo
Long-finned pilot whale	Globicephala melas	Gme