

Fin ID Program Booklet



AWDF

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1. Methodology

1.1 General Methodology

The night before the RIB excursion the boat leader should make sure all the cameras are charged and that they all have SD cards, print off new data sheets and put them in the folder with 2 black pens, and check the battery life on the GPS. In the morning get all the equipment and sign it out.

Before the RIB excursion the boat leader should assign roles:

- At least two people on data sheet
- Two people for hydrophone
- The rest taking fin shots
- Everyone should be communicating throughout the interactions working as a team to make sure all individual cetaceans are photographed, and all behaviours recorded
- Instruction on how to use the RIB datasheet can be found on the 'RIB data sheet Instructions' document
- How to take Fin Shots can be found in the 'How to use Equipment folder'

It is important to make sure at least one of the photographers is experienced with taking Fin shots and that they have the best camera, or you will have nothing to ID*

Once returned from the RIB the whole team should go into the research room. The first step is to enter the data onto the data base via the online data entry form, instructions on how to do this can be found on the 'How to use the data entry form' cheat sheet. All cheat sheets can be found on the google drive in the cheat sheets folder and in section 4 of the Fin ID program booklet.

The next step is for the boat leader to follow the 'Boat leader responsibilities' cheat sheet. The volunteers then use the 'How to sort RIB photos' and 'How to Fin ID' cheat sheets, as well as the 'Fin ID quality charter' to complete the fin ID process.

Once fin ID is finished the last few instructions on the 'Boat leader responsibilities' cheat sheet explains how to store the data. The final step is to scan the data sheet using the 'How to scan data sheets' cheat sheet.

1.2 Program lead methodology

Lauren Hartny-Mills completed her PhD while being the lead research coordinator at AWdF. Her published paper from her PhD is titled 'Site Fidelity, Social Structure and Spatial Distribution of Short-Finned Pilot Whales, *Globicephala macrorhynchus*, off the South West Coast'. Any project lead of the Fin ID program should read this PhD and refer to it constantly. It is the Bible of the program!

Catalogues- The lead of the Fin ID programme should move the pictures of the unidentified whales from the unidentified catalogue to the master catalogue after checking that they are definitely new whales and that the picture quality is sufficient. The whales should be labelled the next number in the master catalogue with its unidentified number in brackets i.e., Unidentified 008 would be No. 376 (008).

Once a whale has been moved to the master catalogue and given a new name the interaction data base also needs to be changed to have this new name. The best way to do this is to go onto the

interaction data base and press control F on the keyboard and type in its unidentified name i.e., Unidentified 008. This will highlight all the cells with this name. Change them all to the new name i.e., No.376 (008). The unidentified number should be kept in brackets in the new name, so it still relates to the PowerPoints and if any mistakes are made in the interaction data base they can be fixed.

***The programme lead should do this as often as possible, therefore the unidentified catalogue will sometimes have no whales. The process allows the programme leader to double check the identifications and speeds up the fin ID process for everyone else involved.**

The program lead must also upload the new whale to the Fin ID software catalogue. Only the project lead should trace the new whales and add them to the Fin ID software catalogue, as this trace will be used to compare the whale for every future use of the software meaning the trace needs to be as good as possible.

Further information about programme lead methodology can be found in the Data Collection/Analysis/Storage section.

2. Data Collection/Analysis/Storage

2.1 RIB Data sheet instructions

- Always use a black pen so it can be scanned properly
- For start of interaction it is once you leave the port and for end of interaction it is once you re-entered the port
- Sea state should never be over 3, if it was over 3 the boats would not be in the water
- When recording the GPS make sure the accuracy is at least 3m
- When counting the number of individuals this is an estimate, it is observer science. The value needs to be fixed i.e., don't write 10+, it needs to be an actual number for statistics like 11. Also count the individuals using tally marks as it may increase throughout the interaction. If individuals are indistinguishable record them as that, don't try and guess.
- When recording group behaviour and formation only put one value for start, general and end i.e., don't put 3/4. If the group shows several behaviours or formations over the interaction for general put the behaviour the group did for most of the interaction.
- Only record synchronised dives once the whole group has been submerged for approximately 5 seconds
- Use tally marks when recording individual behaviour
- When recording boat speed and boat approach be honest, don't just always put appropriate and B.

Date: _____ Boat: _____		
Scribe: _____ Observer(s): _____		
Interaction Number: _____		
Start Time of Excursion: _____		Start Time of Interaction: _____
Finish Time of Excursion: _____		Finish Time of Interaction: _____
<u>Oceanic Cloud Cover</u> 0% (0) Up to 25% (1) Up to 50% (2) Up to 75% (3) Complete Cover (4)		<u>Beaufort Scale of Sea State</u> 0 – Flat (like a swimming pool) 1 – Ripples: 0.1m 2 – Small Wavelets: 0.2m 3 – Large Wavelets: 0.6m 4 – Small Waves: 1m 5 – Moderate Longer Waves: 1.2m 6 – Large Waves: 3m
<u>Species of Cetacean Observed During Interaction</u> Pilot Whale YES / NO Bottlenose Dolphin YES / NO Other: _____		<u>GPS Coordinates</u> Start of Interaction End of Interaction N: _____ N: _____ W: _____ W: _____
<u>Cetaceans Present Count</u> Total Number of Individuals: _____ Adults: _____ Juveniles: _____ Calves: _____ Indistinguishable: _____ Cetaceans present upon departure: YES / NO Total number of Individuals present upon departure: _____		<u>General Group Behaviour</u> Travelling (1) Bow Riding (2) Logging (3) Milling (4) Surfing (5) Wake Riding (6) Feeding (7) Start Behaviour: _____ End Behaviour: _____
		<u>General Group Formation</u> Tight (1) Loose (2) Groups Tight (3) Groups Loose (4) Start Formation: _____ End Formation: _____
<u>Boat Approach</u> 	<u>Group synchronised Dive:</u> YES/NO Dive 1 time: _____ (s) Dive 2 time: _____ (s) Dive 3 time: _____ (s) Dive 4 time: _____ (s) Dive 5 time: _____ (s)	<u>Individual Behaviour</u> Porpoising (swimming, whole body out of water) Spy-Hopping (Head & eyes vertical, out of water) Breaching (Most of body out of water) Fluke Slapping (Hitting surface with tail)
<u>Speed of Boat:</u> Appropriate (1) Fast (2)	<u>Other Boats Present:</u> _____	Adults/Juveniles Calves Flipper Out (Pectoral fins held above water) Fluke Out (Tail held above water) Approach (Moving towards and remaining close to the boat)
<u>Other Animals Present:</u> _____		<u>Comments:</u> _____

2.2 Catalogues

For both pilot whale and bottlenose dolphin there should be four catalogues. The 'master catalogue', 'multiple pictures', 'unidentified catalogue' and 'seen in the last six months'.

- The **master catalogue** should have the best picture available for each individual.
- For the **multiple pictures catalogue** the aim is to try to have multiple pictures of each whale from various angles and from the two sides of the fin.
- The **unidentified catalogue** is where the boat leader should upload a picture of a new whale. The programme lead will move the unidentified whales to the master catalogue. This process can be found in the methodology section.
- **Seen in the last six months** is used for the virtual RIB, as it is easier for virtual volunteers to look through the smaller catalogue rather than the whole master catalogue on their own. This should be updated after each RIB excursion.

The catalogues should be updated as regularly as possible. It is important to make sure when adding to the catalogue that the labels are all in the same format. All the pictures should have at least a quality rating of Q3. The catalogues should be updated using the PowerPoints and the research hard drive.

2.3 Fin ID software

The Fin ID software should be used alongside identifying the whales by eye. If a whale cannot be identified through looking at the previous PowerPoints it can be entered into the Fin ID software to aid its identification. The Fin ID software narrows the choice down, it does not always fully identify an individual. Therefore, all matches need to be compared by eye. Instructions on how to use the Fin ID software can be found on the Fin ID software cheat sheets.

2.4 Databases

- Pilot whale 2021
- Pilot whale interaction – Group generator
- Bottlenose dolphin 2021
- Bottlenose dolphin interaction
- Migratory species 2021

When returning from the RIB the data should be entered using the online data entry form. This should take out any mistakes. However, the boat leader should check that the sheet matches the database each time.

The databases for pilot whales, bottlenose dolphin and migratory species are all formatted the same, matching up with the RIB data sheet. The databases need to be checked for mistakes regularly. Each cell should only have one value i.e., 4 not 2/4 and no plus signs for discrete variables such as number of individuals e.g., write 10 not 10+.

For the interaction databases it is very important that all the names are in exactly the same format or the generator doesn't work. This includes font, font size and number of spaces etc. Each time a whale is inputted into a cell it needs to be exactly the same as previous times or the generator thinks they are two different whales.

Pilot whale interaction 2019 and 2020 databases can be found on the google drive formatted for statistics. The outlay of these databases can be copied for future years. Databases from previous years can be found on the research hard drive and have not been formatted for statistics.

2.5 Changing data sheets and data base

It is important to try and keep the databases the same throughout the year and as similar to other years as possible as it aids statistical comparisons.

However, there is a need for AWdF to be collecting data that is up to date with the most recent cetacean research. Therefore, if a volunteer provides enough evidence for variables to be included it should be considered. This was the case for adding group synchronised dive to the data sheet and database near the end of 2020.

The layout of the databases and the entry values are formatted to aid statistical analysis. Therefore, any new entries or changes to the format must be done with statistics in mind.

Before adding the new variables to the data sheet and database there should be a trail run of about a month. There must also be caution not to add too much to the database or make drastic changes halfway through the year as it makes statistical analysis difficult.

2.6 Data Analysis

2.6.1 Statistical

AWdF databases have been formatted to suit being analysed using R studio.

Statistical results from analyses of the 2020 Pilot Whale database:

- Significant difference between start and end cetacean group behaviour (P-value= $2.2e-16$)
- Significant difference between start and general cetacean group behaviour (X-squared = 689.76, df = 108, p-value < $2.2e-16$)
- The boat approach was shown to significantly affect whether the cetaceans were present upon departure (X-squared = 27.047, df = 9, p-value = 0.001374)
- The boat speed was shown to significantly affect whether the cetaceans were present upon departure (X-squared = 19.684, df = 3, p-value = 0.0001974)

If a volunteer has experience with R studio and would like to analyse AWdF data, they are free to do so. However, make sure the analysis is answering a specific scientific question that can be used by the Foundation as evidence when trying to influence and alter public opinion or whale watching practice.

If students would like to statically analyses AWdF data for a research project they should be sent a sample of the data along with the research enquiry form.

2.6.2 GIS Mapping

Weekly and monthly GIS maps should be produced depicted the location of the interactions. These maps are usually added to the weekly research presentations allowing volunteers to gain a better understanding of the data collection they are involved in. Many volunteers will have GIS experience and will want to be involved in using AWdF data to make maps for various projects.

2.7 Family Groups

On the right-hand side is a list of the family groups from 2019. What whales were seen on each interaction only started being recorded again in November 2020 as demonstrated by the interaction databases.

2019			
INDIO - 227	CRUZCAMPO - 208	BRUJA - 110	LIDA - 139
Lydia - 79	Merlin - 24	Jupiter - 192	Gonzalo - 20
Dion* - 164	Mateo - 219	Arte* - 140	Febo - 226
Mendo - 68	Yubena - 233	Susanita - 109	Edite - 120
Lies - 203	Pocia - 138		Chris - 32
Slash - 293	Dion* - 164		Adolf - 296
Arsenio - 9	Oscar - 157		Sies - 1
Arte* - 140	Itati - 121		Debra - 13
Andres - 37	Maxime - 218		Maya - 191
Marianne - 27	Lilo - 231		Raquel Dos - 42
Taata - 205	Teide - 149		
Amy - 243	Elena - 267		
Einstein - 304	Damon - 266		
Enevi - 117	Ribena - 282		
Mariko - 28	Palmi - 232		
Bellatru - 156	Dilo - 217		
	Gundalf - 209		

new individuals in red; individuals not seen in 2019 filled in gray

In previous years the data for the population dynamics studies through fin identification was collected while on whale watching tourists' boats, with excursion covering the whole SW coastline of Tenerife for up to four hours. Due to the pandemic the data for 2020 and at least the beginning of 2021 has been collected while on a scientific RIB. Although the RIB arguably allows for greater pictures during interactions, each excursion more or less stays in the same area and is only one trip per day.

This also means there is currently no way of checking how robust and reliable the current family groups are. However, by continuing the interaction database and using the group generator there is a greater chance than ever to get a reliable understanding of the family groups, especially when volunteers are able to go back on the whale watching boats.

Using the interaction database and generator, some solid family groups have been recorded. The current rule is whales need to be seen together at least three time before they are considered a family. If three whales are seen together three times (Sies, Chris and Emita) and then two of these whales have also been seen together with another whale three times (Sies, Chris and Nilo) then this family can be considered to consist of four individuals (Sies, Chris, Emita and Nilo).

Through this methodology these are the current family groups from the generator as of 10.03.21.

- No.001 Sies, No.032 Chris, No.033 Emita, No.090 Nilo, No.319 (057), No.321 (059), No.358 (070)
- No.011 Matilde, No.226 Febo, No.351 (056)

- No.017 Cebrian, No.021 Gladys, No.323 (058)
- No.176 Marlon, No.347 (051), No.363 (0600)
- No.231 Lilo, No.233 Yubena, No.312 Buttercup
- No.315 Lesley (008), No.322 (014)

The matriarchs of these family groups are currently unknown. The family groups should be reviewed each month.

2.8 Storage

After fin ID the boat leader should upload the photos in the folders on the SD cards to the research hard drive as part of their boat leader responsibilities. The scanned datasheets should also be added to the research hard drive after each excursion. Instructions on how to do this can be found on the 'How to scan data sheets' cheat sheet.

Each week/month the project lead should download the updated databases from the google drive and upload them onto the research hard drive. The updated versions of the catalogues should also be uploaded onto the research hard drive, along with any new literature reviews or documents relating to fin ID or cetacean behaviour.

Each month everything that is on the research hard drive should be uploaded onto the Treasa hard drive. Uploading storage to the hard drives should only be done after everything has been checked.

3. Training/Monitoring Volunteers

3.1 New Volunteers

The first step of training new volunteers is to show them the research induction which can be found on the google drive. When presenting the induction have a copy of the RIB data sheet and a camera at hand to demonstrate the processes clearly. Also show the new volunteers the 'RIB data sheet instructions' document.

On the RIB new volunteers should firstly be paired with the data collection team. The boat leader should run through the data sheet with the volunteer during an interaction, then for the next interaction they should have a go at filling in the data themselves. The new volunteer should experience every role on the RIB excursion if possible, so after they fill in the data sheet, they should swap with one of the photographers for the next interaction. Again, the boat leader or someone of similar experience should talk them through this role making sure they understand what it is they need to do. For training fin photographers, it is important to emphasise the need for divider shots.

When the RIB team returns, the new volunteers should be paired with someone that understands the fin ID process and can be trusted to teach them good habits. The new volunteer should also be provided with all the cheat sheets demonstrating how the whole process works. Once the fin ID process is finished, ask the new volunteer if they understood everything and if not, go over it with them again.

It is vital to teach new volunteers correctly or it can severely negatively impact the standard of data collection.

3.2 Training Boat leaders

When training a volunteer or a coordinator on how to be a boat leader run through the 'boat leader responsibilities' cheat sheet with them. Before they are boat leader themselves, get them to help you when you are boat leader.

The programme lead should have a meeting every couple of weeks with the current boat leaders to make sure everyone understands the process and to get feedback.

3.3 Monitoring Volunteers

After each RIB trip, the fin ID PowerPoint and the databases should be checked by the boat leader to ensure data has been entered correctly. At the end of each week the project lead should look over each PowerPoint and the databases to double check there are no mistakes.

If a volunteer is struggling with any of the roles or keeps making the same mistake go over the process with them again and make sure they are paired with someone who is capable.

4. Cheat sheets

4.1 How to use the data entry form

1. Click on **CLEAR**.
2. Click on the checkbox next to the species of cetacean observed, or type in the species code.
3. ONLY WITH MULTIPLE SHEETS PER INTERACTION, ELSE SKIP THIS STEP
Fill in the **Boat** and the **Interaction number**. Make sure those fields aren't red anymore.
4. Click on **AUTOFILL**.
5. **Check if the automatically entered data is correct. Most of the time it isn't!**
6. Fill out the form, the same way as the datasheet.

Empty fields on the datasheet stay empty on the digital form as well!

Formatting doesn't matter!
(f. ex. 10:15 or 10.15 or 1015)
(f. ex. 28 03 15.3 or 28° 03° 15.3 or 283153)

HOWEVER, ZEROs in Coordinates do!
(f. ex. 28 05 09.2 NOT 28 5 9.2)
(f. ex. 16 45 56.0 NOT 16 45 56)

If you haven't input the zeros correctly, the field will become yellow.

7. Check if your entered data is correct and **no fields are red or yellow**.
8. Click on **SUBMIT**, then click on "Yes" if you are sure your data is correct. That's it!

EXAMPLE:

CLEAR		AUTOFILL		SUBMIT	
Date:	01.11.2020	Boat:	MO - Moises	Interaction Number:	1
Observer:	Tom Test	Photographer:	Sam Sample		
Start time of Excursion:	8:15	Start time of Interaction:	8:30	Finish time of Excursion:	10:15
		Finish time of Interaction:	09:00		
Oceanic cloud cover	(1) Up to 25%	Beaufort Scale of Sea State	(1) Ripples: 0.1m		
Species of Cetacean observed During Interaction		GPS Coordinates			
Pilot Whale <input type="checkbox"/>		Start of interaction	N: 20° 03' 20.2"	End of interaction	N: 20° 03' 42.9"
Bottlenose Dolphin <input type="checkbox"/>		W: 164° 19' 8"		W: 164° 22' 22"	
Other (Species Code):	ASD				
Cetaceans Present		General Group Behaviour	Group Formation		
Total Number of Individuals	10	Start	(2) Bow Ride	(2) Loose	
Number of Adults		General	(4) Milling	(4) Groups/Loose	
Number of Juveniles		End	(6) Wake Ride	(2) Loose	
Number of Calves	2				
Number of Indistinguishable	8				
Speed of Boat	(1) Appropriate	Individual Behaviours			
Boat Approach	B	Porpoising			
		Spy-Hopping			
		Breaching		3	
		Fluke Slapping			
		Flipper Out		1	
		Fluke Out			
Number of other Boats Present		Cetaceans present upon departure:	YES		
Name of other Boats Present		Other Animals Present:			
Comments					
Calf 1	(1) Clinging to:	Interaction with the boat	(2) No	Position of calf (if travelling)	(3) Middle of pod
Calf 2	(2) Free in pod	(1) Yes		(2) Side of pod	
Calf 3					
Calf 4					

4.2 Boat Leader Fin ID responsibilities

1. Make Fin ID power point within the daily presentation folder on the google drive named Fin ID then the date (i.e., Fin ID 09.10.2020). *copy structure from previous PowerPoints

My drive > RIB > Photo ID > Daily presentation

2. Complete Fin ID process with the team, leave no person behind!!!
 - Make sure everyone is in the same room
 - Split the team into pairs, pair new volunteers with experienced volunteers who are sufficient with the process. Each pair should be of similar ability, so no one gets left behind.
 - Each pair should sort their photos into folders as demonstrated on the Fin ID cheat sheet.
 - The pair with the best camera (try and make this the boat leader pair or someone of similar experience) should upload the best picture of each individual they have onto the PowerPoint
 - The other pairs should then upload any pictures of whales that are not on the PowerPoint or replace one of the pictures on PowerPoint if the picture quality is better
 - Once this is complete you should know how many whales you need to identify as a group!
 - The boat leader should then assign each pair different whales to identify
 - This ensures that no pair is IDing the same whale and the process is much faster
 - If a pair thinks they have a new whale double check using the Fin ID software.
 - Nobody should leave until all fins are Identified. If a pair has finished identifying the fins, they were assigned then they should help the other pairs.
3. Once team Fin IDing is complete check the power point slides, and make sure all identifications are correct (**VERY IMPORTANT**).
4. Check that data has been inputted correctly on the data base and that the data sheets match the data base.
5. Upload the new Unidentified whales to the Unidentified folder on the google drive. Make sure the images are labelled correctly i.e., Unidentified 007.

My drive > RIB > 2020 Database > Unidentified Fin ID sightings

7. Fill out Pilot whale Fin ID interaction excel for the RIB excursion.

My drive > RIB > 2020 Database > Pilot whale Fin ID interaction excel

8. Obtain all of the S.D cards used on the RIB and check all of the photos are in the correct folders and the photos and folders are named appropriately (see: How to Sort RIB Photos)
9. Transfer each of the main folders from each S.D card (e.g., 09.11.2020 Moises RIB Jess and Holly) to the hard drive into the following folder

TOSHIBA EXT> Research> RIB> Interactions 2020> Month e.g., November

10. Delete the main folders from each S.D card (e.g., 09.11.2020 Moises RIB Jess and Holly) and return the S.D card to the butter tub
11. Make sure all of the equipment has been put away (and signed in) and ensure there are 6 blank data sheets in the clipboard for the next RIB day

NOTE: Boat leaders must also ensure the ocean plastic data has been correctly filled out, for the ocean plastic cheat sheet go to:**My Drive> Cheat Sheets> How to Ocean Plastic**

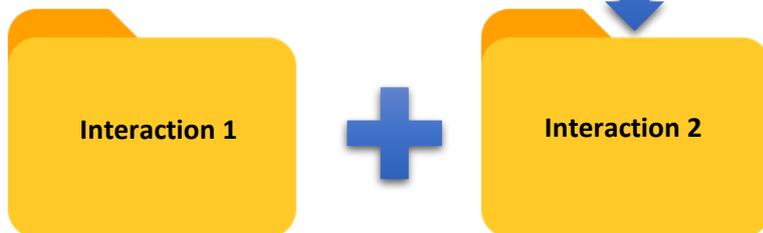
4.3 How to sort RIB Photos



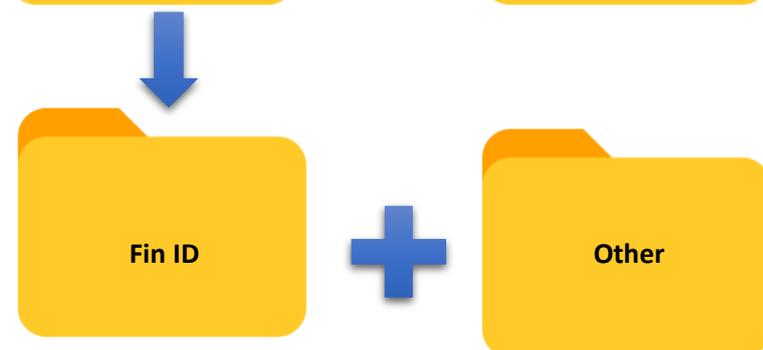
Camera S.D Card Photo Album
 Note: there should be no photos left in this folder after they have been sorted



Create Folder with Today's Interactions
 Name this folder: DATE, BOAT (Moises RIB/Chema's Rib), NAME OF OBSERVERS



Within this folder create Folders for each Interaction



Within each interaction folder create a Fin ID folder and Other Folder

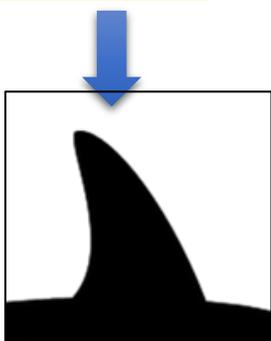
Note: The Other folder should contain all of the photos containing whales/dolphins which are not good enough for Fin ID

*The best way to sort your photos into Fin ID or 'Other' is to go through each photo and if one is Fin IDable take a note of the number of that picture i.e., IMG_0789. Once you have a list of all the pictures that can be used for ID, select them all and move them over to the fin ID folder. Move the rest of the photos left to the 'Other' folder.

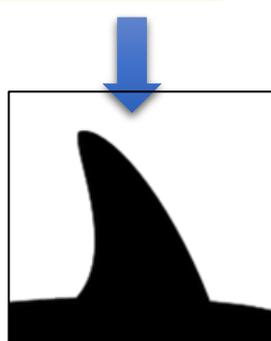


Fin ID Photos

Look through the photos in the Fin ID folder and work out how many different whales have been pictured and make a folder for each of them.



Possibly No.139 Lida



Unidentified 103

Labelling Photos

Once the whales have been identified label the pictures the same as on the PowerPoint i.e., No.139 Lida or if it is a new whale Unidentified 103. If there are multiple pictures of the same whale label each picture with (1), (2), (3) ... at the end of the name i.e., No.139 Lida (3) or Unidentified 103 (3).

*If a photo needs to be cropped for fin ID, keep both the original photo and the cropped version. Label the cropped version the same as the original but put (cropped) at the end i.e., No.139 Lida (3) (cropped)

Final step is to go back and label the whale folders the name of the identified whale i.e., change the name of folder 'Whale 1' to No.139 Lida

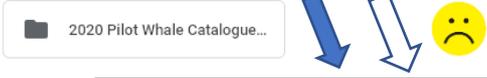
4.4 How to Fin ID

3 Fin shot examples from the same RIB excursion



HINT* - If you or one of the other members of the fin ID team find a match in one of the previous Fin ID PowerPoints, check to see if any of the other whales you are trying to identify from that interaction are also in the PowerPoint as the same whales are usually together (also look at the family groups)

First for Fin IDs look through previous Fin ID PowerPoints and **2021 Pilot Whale Catalogue**



(unidentified folder will sometimes not have any whales in it)

If **not found** in 2021 Pilot Whale Catalogue look through Pilot **Whale Unidentified**



Found in 2021 Pilot Whale Catalogue



Found in Pilot Whale Unidentified



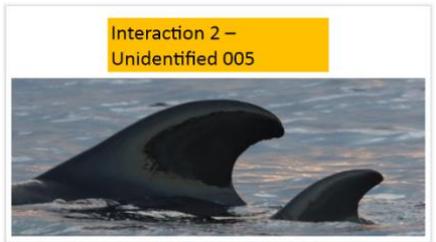
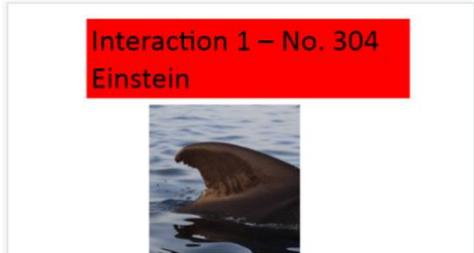
Not found in Pilot Whale Unidentified



The boat leader will make a Power Point on the google drive that everyone can access labelled Fin ID then the date (e.g. Fin ID

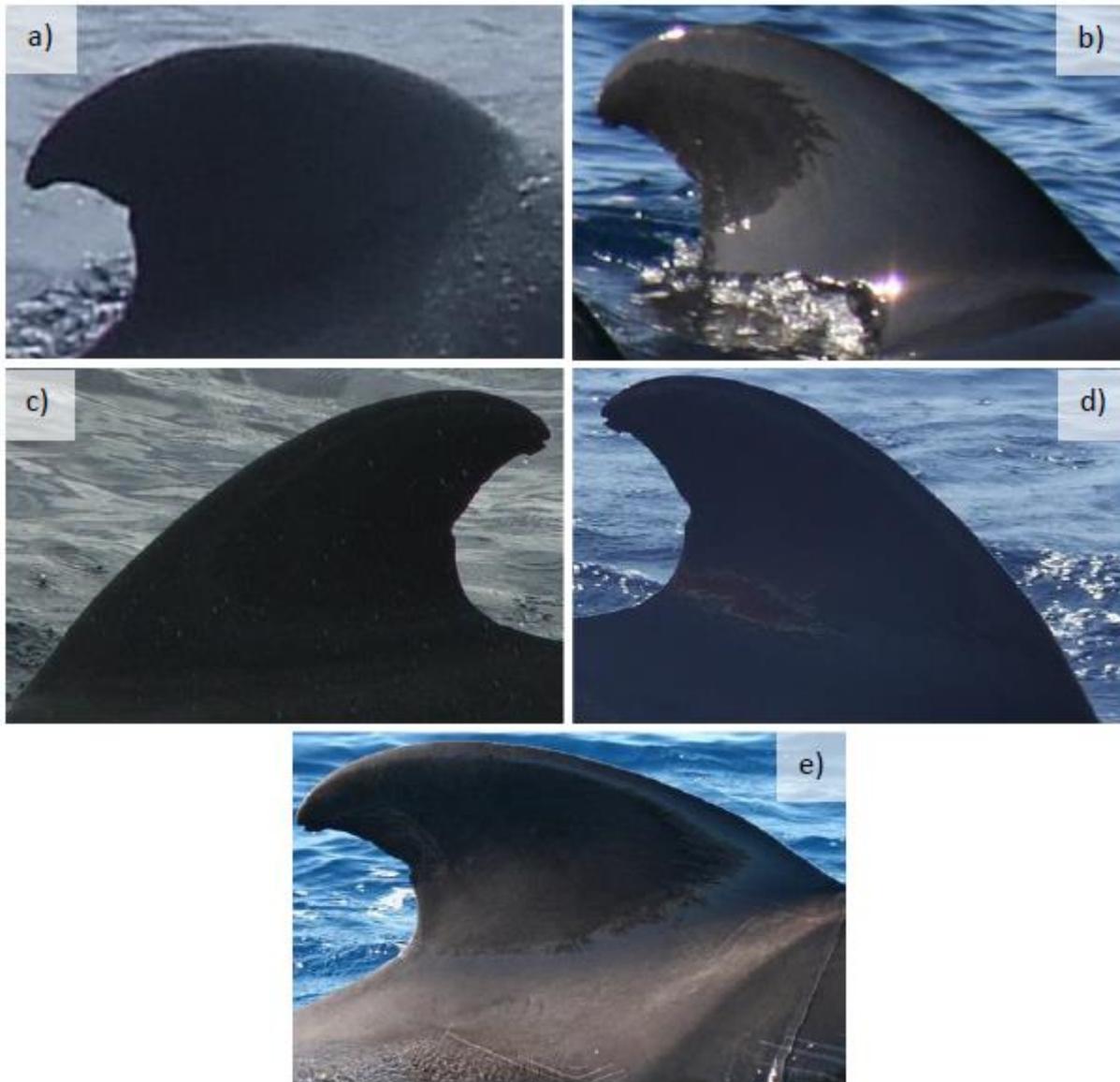
Once a Fin Shot has been Identified from either of the catalogues, upload it to the power point with the interaction number then the whale number and name (e.g. Interaction 1- No.304 Einstein or Interaction 2- Unidentified 004).

If fin shot was not found in either of the catalogues, add it to the power point and label it the next number in the unidentified catalogue (e.g. Unidentified 005)



When a fin shot is uploaded to the power point check to see if you have a picture of the same fin, so we all label them

4.5 Quality Charter



Examples of fin images assigned to each quality rating (Q1-5).

a) No good- Q1 **b)** Poor- Q2 **c)** Acceptable for ID- Q3 **d)** Good- Q4 **e)** Excellent- Q5

Fin images with a quality rating of ≥ 3 is considered sufficient quality for a positive identification to be made.

*this is taken from Laurens PhD. This might seem harsh at times but if you don't stick by this charter, it can cause havoc down the line, especially when it is a new whale.

4.6 How to scan data sheets

1. Make sure all of the data sheets are completely filled in
2. Check the data sheet matches up with the data on the database (very important !!!)
3. Insert the hard drive to your laptop
4. Connect your laptop to the printer WIFI (this step may not be necessary)
5. Download the HP Smart app
6. Log into AWdF account on the app
 - volunteerawdf@gmail.com
 - Ilovewhales!
7. Place the sheet FACE DOWN on the scanner section of the printer and on the app select the Printer Scan icon and then press scan.
8. The scanned sheet should appear on your screen
9. Then save the sheet (it will be a pdf) to the hard drive in the correct folder

For saving RIB data sheets on the hard drive go to -

RESEARCH - RIB - DATABASES - SCANNED DATASHEETS 2021- (SELECT WHATEVER SPECIES WAS RECORDED ON THAT SHEET) - (SELECT THE MONTH) - then save the scanned data sheet as RIB and then the date. i.e., **RIB 11.11.2020**

For saving Landbase data sheets on the hard drive go to -

RESEARCH - LANDBASE STATION - SCANNED DATA SHEETS 2021 - (SELECT THE MONTH) - (SELECTED WHAT TYPE OF LB DATASHEET YOU SCANNED)

- For the **Interaction sheet**, save it as LBS IN then the date i.e., **LBS IN 11.11.2020**
 - For **RIB Interaction sheet**, save it as LBS RIB then the date i.e., **LBS RIB 11.11.2020**
 - For the **Weather Log (WL)**, save it as LBS WL then the date i.e., **LBS WL 11.11.2020**
 - For the **Ferry Obs and Vessel sheet**, save it as LBS boats then the date i.e., **LBS boats 11.11.2020**
10. Once complete add the data sheet to the 2021 folder on the wooden shelves.

7. Outcomes

7.1 Weekly/Monthly

Report weekly findings on conservation google drive within the research folder. The research email has access to this drive. Within the folder there are three databases- pilot whale, bottlenose dolphin and migratory. Below is an example of the Pilot whale database.

Week	No. of Rib excursions	No. of interactions	No. of whales Successful Photographed	No. of newly identified whales	No. of Rib approaches
11.01.21	1	1	1	0	1
18.01.21	2	4	16	0	4
25.01.21	2	5	11	7	7
January total	5	10	28	7	12
01.02.21	2	1	6	0	0
08.02.21	2	4	5	0	2
15.02.21	2	3	5	0	12
22.02.21	2	2	2	0	2
February Total	8	10	18	0	16
01.03.21	2	3	5	0	4
08.03.21	2	5	6	3	1
15.03.21	2	3	8	1	2

There is also an interaction excel tab for each month in these databases. An example of Pilot Whale January 2021 can be found below.

Date	Interaction	Whale 1	Whale 2	Whale 3	Whale 4	Whale 5	Whale 6	Whale 7	Whale 8	Whale 9	Whale 10
14.01.2021		1 No.249 Coors									
19.01.2021	1	No.320 (057)	No.319 (054)	No.033 Emita	No.032 Chris	No.001 Sies	No.321 (059)				
19.01.2021	2	No.149 Teide	No.253 Daniel								
21.01.2021	1	No.226 Febo	No.176 Marlon	No.057 Yasmina	No.348 (052)	No.011 Matilde	No.347 (051)	No.351 (056)			
21.01.2021	2	No.253 Daniel									
21.01.2021	1	No.226 Febo	No.176 Marlon	No.057 Yasmina	No.348 (052)	No.011 Matilde	No.347 (051)	No.351 (056)			
21.01.2021	2	No.253 Daniel									
26.01.2021	1	No.370 (094)	No.371 (095)	No.372 (096)	No.373 (097)						
26.01.2021	2	Unidentified 094	No.374 (099)	Unidentified 100							
26.01.2021	3	No.033 Emita	No.032 Chris	No.319 (054)							
28.01.2021	2	No.335 (023)	No.332 (019)*								
		Whales Seen	No. of times seen	Families seen							
	1	No.249 Coors	1	Sies	No.320 (057)	No.319 (054)	No.033 Emita	No.032 Chris	No.001 Sies	No.321 (059)	
	2	No.320 (057)	1	Febo	No.226 Febo	No.176 Marlon	No.057 Yasmina	No.348 (052)	No.011 Matilde	No.347 (051)	No.351 (056)
	3	No.319 (054)	2								
	4	No.033 Emita	2								
	5	No.032 Chris	2								
	6	No.001 Sies	1								
	7	No.321 (059)	1								
	8	No.149 Teide	1								
	9	No.253 Daniel	3								
	10	No.226 Febo	2								
	11	No.176 Marlon	2								
	12	No.057 Yasmina	2								
	13	No.348 (052)	2								
	14	No.011 Matilde	2								
	15	No.351 (056)	2								
	16	No.370 (094)	1								
	17	No.371 (095)	1								
	18	No.372 (096)	1								
	19	No.373 (097)	1								

This shows all of the whales that were seen in January 2021 and what whales were seen together. From this you can determine what family groups were seen. A monthly map should also be generated using GIS showing the locations of each family group.

Each month the family groups should be reviewed and updated.

The rest of goals will usually be specific to that month and will be shown on the conservation monthly monitoring framework document.

7.2 Annually

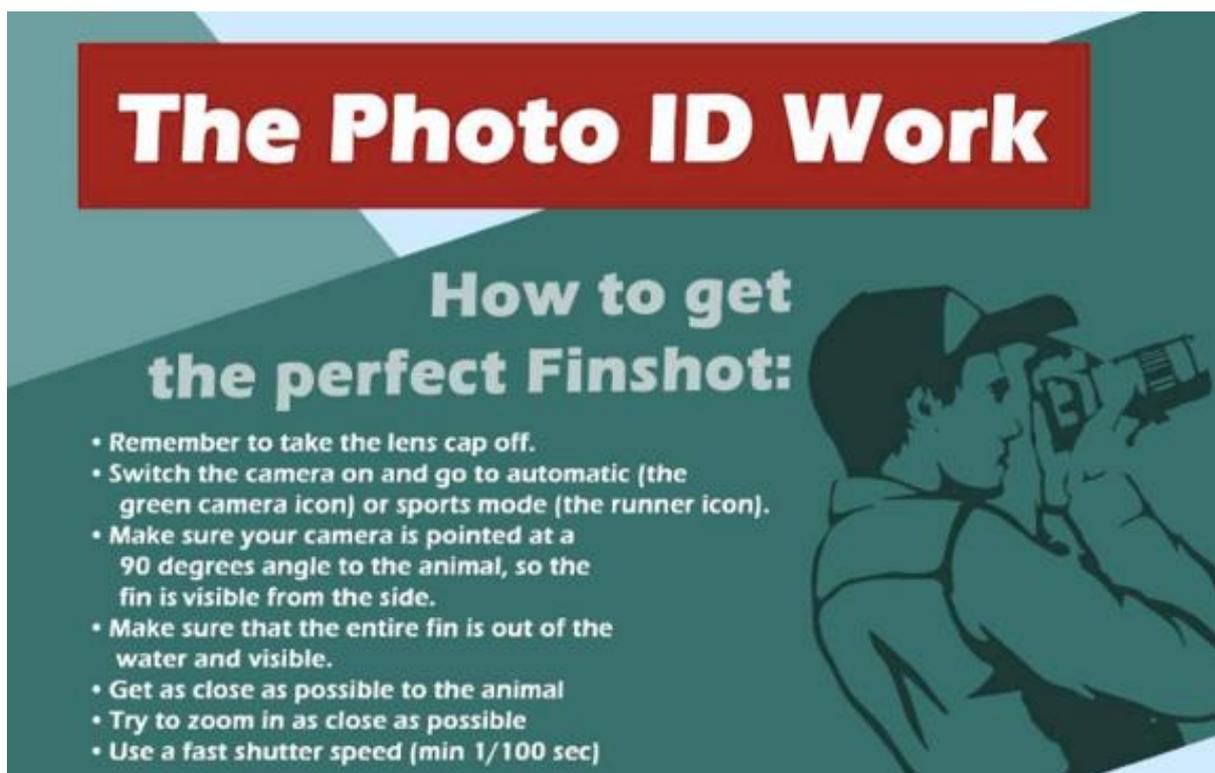
At the end of the year there should be an annual report summarising the raw data for both fin ID and cetacean behaviour. This should also include the updated family groups, any statistical analysis and maps generated from that year's data. A copy of the 2020 report can be found on the google drive (and also in the outcomes folder). Future reports should have a similar template.

8. Inventory

- 4 cameras fully charged with SD cards
- Folder with 6 data sheets
- 2 black pens
- GPS with spare batteries

9. How to Use equipment

9.1 Camera - How to take Fin Shots



The Photo ID Work

How to get the perfect Finshot:

- Remember to take the lens cap off.
- Switch the camera on and go to automatic (the green camera icon) or sports mode (the runner icon).
- Make sure your camera is pointed at a 90 degrees angle to the animal, so the fin is visible from the side.
- Make sure that the entire fin is out of the water and visible.
- Get as close as possible to the animal
- Try to zoom in as close as possible
- Use a fast shutter speed (min 1/100 sec)

The infographic features a stylized illustration of a person in a cap and jacket holding a camera up to their eye, ready to take a photo. The background is a dark teal color with a white and red banner at the top.

- Between each interaction make sure a divider shot is taken * **VERY IMPORTANT**
- Try and get a picture of every whale in the group, don't focus on one whale too much or you will have 100s of pictures of the same whale.

9.2 How to use the handheld GPS

Coordinates should be recorded at the start and end of every interaction. To record the coordinates, turn on the GPS by pressing the button on the side. Then press 'page' until you come to the 'compass' icon, then hold down enter. Only record the GPS when the accuracy is 3 metres or less. Turn off the GPS after recording the coordinates as the battery runs out fast. The GPS can take a while to fully load so make sure you turn it on before the end of the interaction, or the boat will start moving before you GPS gains full signal.

10. List of Publications

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