Photo Identification Project Summer 2024

By, Rose Pollard

At the beginning of my contract at Manx Whale and Dolphin Watch, I was tasked with updating the photo identification catalog of Risso's dolphins (*Grampus griseus)*. This was overall, a massive project to undertake, and I worked on it intermittently throughout my four and a half months on the island. There were multiple facets to the project; first I had to update and complete the Manx catalog, then I had to reach out to other organizations around the British Isles, then write data sharing agreements to have both parties to approve of and sign, and finally, match our catalog with the catalogs of others. As my time here comes to a close, I can say I have succeeded. This project tested the skills I already possessed as well as taught me so many new things. It was my first time creating any sort of document pertaining to data sharing and collaborating with a range of other scientists on an international level. While I have participated on a photo identification project before, this was the first time I have done it entirely by hand, not using any software to help. In this article, I will break down the project in its entirety and how it was completed. I will discuss the importance of photo identification and the data collected and what it means moving forward.

So what is photo identification? Risso's dolphins (*Grampus griseus*) return to Manx waters (12 nautical miles surrounding the island) annually during the summer season (April-October). They are quite a unique dolphin; with a blunt shaped head and a tall, fairly straight, dorsal fin, they are easily identified. Risso's diet consists of mostly cephalopods including squid, octopus, and cuttlefish. The beaks of these animals cause scarring on the body of the dolphin while they predate upon them. Risso's are unique because their scars never go away, their scars are white in color and they accumulate over time. They can also obtain scars from fights with one another, skin conditions, and collisions with boats. As they age, they become whiter in overall color as the scars start to cover their entire body. Since these scars never go away, we can use them to identify individual dolphins, similar to a human fingerprint. Some are more subtle and some have large notches out of their fins or backs making them more easily recognizable. We use these individual identifications to track the animals over the years.

My first task was to update our catalog of individuals. When I began the project, the Manx catalog had a total of 211 individuals. After going through 15 encounters of dolphins,

sorting and editing images, counting individuals, and comparing to our catalog, I identified 45 total individuals, adding 29 new individuals. The Manx catalog now sits at a total of 240 individual Risso's dolphins. This alone took me about a month, working on it between events and other projects. Once the catalog was finished, then it was time for the next step: swapping with other organizations.

I reached out to a total of nine other organizations, all nine of which had a catalog to share with us. This amounted to a total of five catalogs to compare with, Scotland, Wales, Cornwall, Ireland, and Northern France (the Scotland catalog is an amalgamation of multiple smaller organizations to create one single catalog). Wales had matched with our catalog previously, but not for 11 years, and we had matched with Cornwall previously 12 years ago, and never compared with Scotland, Ireland, or France before. Since our catalog only dates back to 2007, the data shared formerly was quite limited. Our catalog now has encounters up through 2024 allowing for much more in depth and accurate matches between regions.

Once all the organizations had signed their data sharing agreements and had sent us their photo identification catalogs and we sent them our finalized catalog, the regional matching could begin. I started with the Welsh catalog from SeaWatch Foundation, collaborating with a student doing her masters under supervision there. The individuals from Wales were photographed in northern Wales, specifically Bardsey and Anglesey. Any population in southern Wales are widely un-catalogued at this point in time. I went through every one of the 269 individuals in their catalog and matched them to ours. My matches were checked by the entire Manx Whale and Dolphin Watch team to ensure accuracy and integrity. Once the entire catalog was sorted, we sent our findings back to the team at SeaWatch Foundation for confirmation. They also did the same, went through our catalog and sent it back to us to get our thoughts and insights. After a long process of going back and forth comparing our notes, we were able to confirm a total of 28 matched individuals. This means that 28 of our local individuals within our catalog, have been sighted and photographed around northern Wales at least once. We knew there was an overlap in our populations, but this is the most accurate breakdown of individuals as of now.

This was the first time anyone has done any matching between the Isle of Man and Scotland, so we did not know what to expect. After going through all the individuals across the Scottish catalogs, we made zero definitive matches. Though it was a slightly less satisfying process, it is still important data to have. At this time, we can assume that the Risso's dolphins in

Manx waters are not traveling north when they leave the island in the winter, however we cannot say with certainty.

It was also the first time anyone had matched between the Isle of Man and France, so again, we did not have any preconceived notions of what to expect. We have made zero definitive matches in France. The French catalog is fairly new and not very large, but given the data we have at this time, we can hypothesize that the Risso's in Manx waters are not traveling down to France in the winter season.

As for Cornwall, we know there is overlap in individuals since matching has been done on their end previously. However, it has been 12 years and we have not completed this part of our photo identification project yet. Despite my time coming to an end on the Isle of Man, I will be continuing this project from the United States. I will be working remotely to complete the matching between Cornwall and the Isle of Man so we can have final and definitive numbers of Risso's dolphin overlap around the entirety of the British Isles. I will also continue to attempt to match with Ireland, but since I only received the catalog today (my last day at MWDW), it'll have to be done remotely as well. Their catalog has not been updated since 2009, so the data will be limited.

Before I leave the Isle of Man and begin my journey back to the United States, I had to make one last update to the Manx Whale and Dolphin Watch Risso's catalog. This week we had some good weather and the opportunity to go out on a boat to collect data. Since this has been a particularly windy summer on the island, these opportunities have been few and far between. With perfect sunny weather and not a breath of wind, we came across a pod of five Risso's first thing in the morning on our trip out. My first time using a proper DSLR camera and attempting to photograph wild dolphins, I wasn't expecting to get any clear images. I was pleasantly surprised! I was able to clearly photograph four of the dolphins! I created an encounter for the day, sorted for the best images, edited, and matched. None of them had been spotted in the Isle of Man before, meaning I got to add four new individuals to our catalog, bringing our catalog total up to 244. I am so glad I was able to do this. Now I have done every single step of the photo-identification process; taking photos, editing, uploading, and matching.

This has been such an incredible project to work on, I am so grateful for my time at MWDW and the things it has taught me. I look forward to taking these skills with me throughout

my entire career, and being able to attribute my expertise to my time at Manx Whale and Dolphin Watch on the Isle of Man.