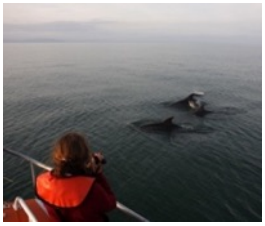

Skills Clinic: Photo ID

Sea Watch's Monitoring Officer, Katrin Lohrengel, gives tips for taking pictures to help identify individual cetaceans.

With digital camera technology having revolutionized photography, making it widely available and accessible in recent years, we receive a large volume of beautiful wildlife images alongside sightings every year. Some photographers are stumped, however, when we respond to their amazing photographs of aerial acrobatics with "What a lovely picture! Did you happen to get any fin shots?" Equally, we are always heartbroken when the response to that is, "I did, but I deleted them all as they were a bit boring."

Fin pictures might not seem the most exciting but while we may "ooh" and "aah" over a fantastic image of a dolphin doing a backflip, it's the fin pictures that help us with our work and ultimately, further conservation.

Many species of cetaceans can be identified by individual marks on their fins, bodies or tail flukes. By taking photo-identification pictures, we are able to learn more about individual movements, habitat preferences, life cycles and population size. This is why we photograph dolphins during our surveys - and then spend hours analysing and matching them by eye to our extensive photo-ID catalogue. The good news is that anyone can contribute to this work. We are always happy to receive pictures from members of the public. On one memorable occasion, a picture taken by a member of the public revealed that one of our adoptable dolphins, NicNic, likes to winter in the Isle of Man!

Figure 1: Sea Watch team collecting photo-identification images.

It is legal for anyone to photograph cetaceans but before you run and grab your camera and jump on a boat, please be aware that actively approaching cetaceans requires a licence from a statutory environmental agency (Natural England, Natural Resources Wales, or NatureScot), and it is an offence to do so without one. Luckily, many cetaceans are curious and will approach boats to bow-ride and, in some cases, will even get close enough to land to be photographed. If you are in luck and are approached by cetaceans, remain calm and maintain a steady course and speed, ideally parallel to their path of travel. This will allow them to go on with their business without interference and gives you the best angle to take photo-ID pictures!

Let the cetaceans come to you - don't approach them, unless you have a licence!

Choosing your camera

What are some things you need to consider when attempting to photograph cetaceans? First off, the best camera is always the one that you have on you. As many people who spend time with wildlife will tell you, often the most spectacular encounters happen when you least expect them. A phone camera may not be our 'weapon of choice' but under some circumstances it may be sufficient. Better to try and rejoice when you luck out than to give up before you have started! That said, if you have more time to prepare, there are definitely more suitable options.

Generally, we would recommend using a Digital Single Reflex camera with one or more zoom lens that ideally spans 18-200mm focal length. Sometimes it helps to have a lens that goes to 300 or even 400 mm. We use a Canon 7D Mark II, but particularly if you are starting out, a less expensive model is worth considering to familiarise yourself with the workings of SLR cameras.

Figure 2: A typical digital SLR camera.

Starter models can be bought fairly cheaply, brand new, but you may also want to consider more expensive used models that have been professionally restored. When buying a used camera, take note of the shutter count. This is the number of times the shutter has clicked shut and in this case, the lower the better. Most cameras live to a shutter count of about 100,000 so it is advisable when buying second hand to pick one that has had less than 10,000 actuations.

You may find a bargain second hand...

Picking a suitable lens

Once you've chosen your camera, it is time to think about lenses. One of the most common lenses used in cetacean science and the one that we use most frequently in Cardigan Bay is a 75-300mm lens although we also sometimes use 100-400mm. You may think the longer the better and sometimes that is true. However, apart from length, you also want to consider weight. Longer lenses are often heavy which may mean your arms tire quickly and you are not be able to hold it as stable as a shorter lens. Depending on the species you are photographing, it may be worthwhile sticking to a shorter lens. For example, while our 75-300mm lens is probably my first choice, it can be a little bit too close when bottlenose dolphins are bow-riding. However, when dealing with shy Risso's, I often wish it was just a little bit longer.

Think about length and weight

Figure 3: A variety of telephoto zoom lenses.

Another thing to look out for is the image stabiliser feature which helps reduce shake in images, and given that you are trying to photograph a fast-moving animal from a moving platform while you're balancing without holding onto anything, this is always useful!

As with most photographic equipment, lenses do not come cheaply but if you are looking to save a little, it is worth to consider non-brand specific lenses such as Tamron or Sigma that produce lenses to fit most big brand cameras at a lower price. While not up to the standard of some of the more expensive lenses, these do generally provide value for money and are a good way of giving photography a go without splashing out too much cash to begin with. However, with a limited budget, it is worth investing more in a good quality lens than in a top of the range camera body. Most modern cameras do all that you need.

Nowadays, the quality of the lens is more important than the camera body

Knowing where the picture is taken

An optional extra that is useful for us in particular is a geotagging receiver that can be bought for most SLR cameras (and may be incorporated within it anyway). These lightweight devices can be attached to your camera and in addition to recording date and time of your photograph, they

also save the latitude and longitude of where your picture was taken.

Tips on camera settings

If you are unfamiliar with the different settings of an SLR, these cameras may seem daunting if so far you have only snapped pictures on your mobile. So, the best thing you can do is to familiarise yourself with them before you set out to photograph wildlife.

If you are comfortable doing so, we would recommend setting the camera to shutter priority as this will allow you to adjust every aspect of your settings to the often-changing environmental conditions. Your shutter speed should ideally be at least 1/500 sec in order to prevent blurring from the animal movement. Higher shutter speeds will take images more quickly but in order to get a well-lit shot, you need to adjust it in response to environmental conditions; lowering it for dark days and upping it on sunny days. Try to have the aperture around f8 or f11 for depth of focus, and adjust the ISO rating accordingly.

Taking control of the settings can yield better results

Many cameras will have a continuous shooting mode which will allow you to take images in rapid succession and is a good option to maximise your chances of getting the right picture. Should you be overwhelmed by the options that the camera offers, sports mode is more likely to yield good results than automatic which often struggles to keep up with fast moving subjects.

It is a good idea to practice on other subjects before trying it on cetaceans; photograph the same thing on different settings and see how it affects the lighting and sharpness of your image, or practice photographing moving targets; we recommend gulls for target practice but your pets or reluctant family will suffice as well!

Practice so you get used to your kit, before you go out looking for cetaceans!

The ideal shot

For bottlenose dolphins, you should aim to photograph the dorsal fin. Ideally, the animal should be parallel with the boat with the sun behind the photographer. This will give you a well-lit picture at right-angles. Although photographs in silhouette often give a nice aesthetic image, identifying marks on the fin may be lost and this is therefore best avoided.

Understanding your subject

Photographing cetaceans may seem overwhelming at first and it can be helpful to understand what they are doing; travelling animals will surface fairly frequently and consistently, following a set direction, whereas animals that are feeding or socialising will be much less predictable - though often also the most photogenic! If the water is very calm, you may be able to see the animals moving under the surface and this can greatly increase your chances of snapping them as they come up to breathe. If you are on a boat, when safe to do so, it may be helpful to have someone sitting on the wheelhouse roof or similar elevated position to help you track the animals from a higher vantage point.

Common problems

While thrilling to watch, dolphins are not always easy to photograph, particularly from a moving platform. The most common issue encountered is that the animals are too far away. There is not much you can do about this besides hoping that they come closer unless you have a licence that allows you to approach them, or a good quality telephoto lens.

Figure 4: When individuals are far away, it becomes impossible to identify fine-scale features such as the pattern of small nicks in the dorsal fin.

Some things you may have more control over is the lighting and angle by controlling the course of the boat - although you want to be mindful not to disrupt the movement of the animals.

We would recommend checking the first few images you've taken to see if you need to adjust your settings or are better off switching to a different lens. Below are some examples of common problems.

Figures 5a & b: Socialising animals (left) can be harder to photograph than travelling individuals where one can position oneself parallel to the animals (right).

Figures 5c & d: When dolphins are travelling fast, the spray can often obscure identifying features on the fin (left) and when in a closely-knit group or with a calf, the other individual may conceal part or all of the fin (right).

Figures 5e & f: The dorsal fin may be at the wrong angle (left) or obscured by an object - in this case a jellyfish! (right).

If you are encountering other species, most of these principles still apply but, depending on the species, you may need to adjust your methodology slightly. Most dolphin species, such as bottlenose dolphin, can be identified by their dorsal fins. In species such as common dolphin, you may be focusing more upon coloration than on nicks and notches, and in others, such as Risso's dolphins, you may want to retain a good amount of the body as well as the scarring patterns on their bodies as they can also have important identifying features.

In large species, such as humpback whale, while you can use the dorsal fin to an extent to identify individuals, the more unique features are often found on their tail flukes. Humpback whales are born with individual white patterns on the ventral side of their flukes which they will often show lifted out of the water when they dive deeply. In order to obtain a good picture of this, you will want to be behind the animal rather than parallel. This is also true for species such as sperm whales that have no obvious dorsal fin but may have nicks or notches on their flukes.

Figures 6a & 6b. Ideal images for photo-ID: bottlenose dolphin fin (left), humpback whale tail fluke (right).

Photo ID features for various species

Species	Features	Species	Features
Harbour porpoise	*Nicks on dorsal fin, scars, pigment areas*	Northern bottlenose whale	*Nicks and notches on dorsal fin, scars, pigment areas*
Bottlenose dolphin	*Nicks on dorsal fin, scars, scratches, pigment spots*	Beaked whales (*Mesoplodon* spp.)	*Nicks and notches on dorsal fin, scars, pigment areas*
Risso's dolphin	*Nicks on dorsal fin, scars and scratches on back, pigment patterns*	Sperm whale	*Notches on trailing edge of tail fluke*
Common dolphin	*Nicks on dorsal fin, scars, scratches, pigment spots*	Minke whale	*Nicks and notches on dorsal fin, fin shape, scars, pigment areas*
White-beaked dolphin	*Nicks on dorsal fin, scars, scratches, pigment spots*	Fin whale	*Shape and size of chevron/blaze, fin shape, scars*
Killer whale	*Shape of grey saddle patch, scars on back, fin shape and nicks*	Humpback whale	*Pattern on underside of tail fluke, fin shape*
Long-finned pilot whale	*Nicks and notches on dorsal fin, scars, pigment areas*	North Atlantic right whale	*Pattern of callosities on the head*