

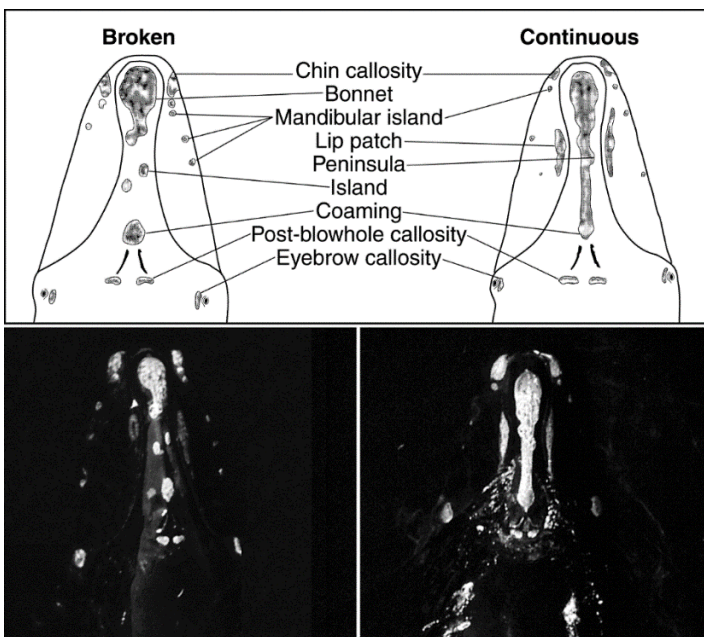
## Photographing Dead Right Whales for Individual Identification and Inclusion to the North Atlantic Right Whale Consortium (NARWC) Photographic Database/Catalog

### Introduction:

Right whales are individually identified primarily by callosity (hardened tissue) on the top of the head. Additionally, callosity located along the mouthline (“lips”), lower jaw/mandible and behind the blowholes can all aid in the identification of a carcass. Also any white scar, no matter how small, are used.

Individual ID of dead right whales can be very challenging due to a number of contributing factors: level of decomposition, the whale’s orientation (in the water or on land) and lack of additional ID markers on the ventral body, peduncle, flukes or flippers. High quality images of very specific body parts can make all the difference between making an ID or not. The following guide is intended for stranding teams, fisheries officers, biologists, park rangers and others who might be responding to a dead whale (dead on the beach or floating in the water) and are less familiar with right whale ID features and terminology. Here we will illustrate how to capture the most useful photographs for ID purposes. It is important to remember that while this guide will focus on specific features for ID, it is very important to photograph every part of the whale (even if the part is unidentifiable).

### Right Whale Id Terminology



**General:** It is always important to photograph every body part available and capture as much detail as possible. The absence of scars can be just as important as the presence of them. Clear and concise notes make a big difference. For example, if a mark/scar is seen in person but not photographed due to sea state, a clear note is very useful. When photographing, regardless of platform, note the frame numbers of corresponding images (ex. left mandibles, right ventral fluke) when able. This is especially important when shooting close up images where it is difficult to determine body part or orientation. When a carcass is very decomposed, little to no callosity tissue may be visible- however, those areas on the head and mandibles should still be thoroughly photographed.

**From the Air:** Aerial images can provide a surprising level of detail and information. Attempt to photograph all sides of the whale. It is common that a circling aircraft will provide better images of one side of the animal. If possible, changing the traditional circle could help obtain different angles by making either smaller or larger circles (oblong over circular) or even doing a straight pass along one side and/or over the top.

**From a Vessel:** Photographs from a vessel can often provide the best opportunity for field documentation. Depending on the size and maneuverability of the vessel, attempt to photograph all sides of the whale, working around the carcass slowly. Even if the water appears dark or turbid, shooting through the water can sometimes provide information (such as mandibular callosities or scars) that cannot be seen in the field but will appear in the photographs. Depending on the sea state, you might need to time the photograph to capture small details that can easily become obscured by water in difficult conditions.

The ability to get underwater imagery (still or video) using a camera attached to a pole (the photographer does not get in the water) can greatly improve our chances of ID. Assuming the whale is floating belly up, underwater video of the top (dorsal) side of the head, the mandibles, dorsal flukes and peduncle, and the fluke insertion can all lead to an identification. Be aware that details can also become obscured when underwater media is captured in the wash of the motor.

**From Land:** Similar to other platforms, you need to get as much of the whale photographed with as much detail as possible. A few simple steps can greatly improve image quality and our chances of ID. For each body part, it's helpful to shoot a series of images starting wide and then zooming in a little more for each additional image until you have captured a close up image of the area in question. For example, if focusing on a scar on a flipper start by shooting the flipper from far enough as to see the entire flipper and it's orientation. Then use a series of photographs to slowly zoom in and capture the scar in detail. If focusing on a mandible, capture the entire mandible in a frame from distance to show orientation. Then use the series to slowly zoom in and focus on groups of mandibular islands (this is very helpful to show spacing between the mandibular islands).

Sand and mud can obscure details. Please consider rinsing any muddy callosity tissue and/or scars before photographing. Even if the carcass will be rolled dorsal side up during a necropsy, it's still important to photograph the ventral head, body, flippers, peduncle and fluke. Then repeat your steps once the whale is rolled to capture the dorsal side. Any attempt to get an elevated image shooting down onto the animal is also much appreciated.

## Photographing Dead Right Whales- Checklist of important body parts to photograph

### HEAD

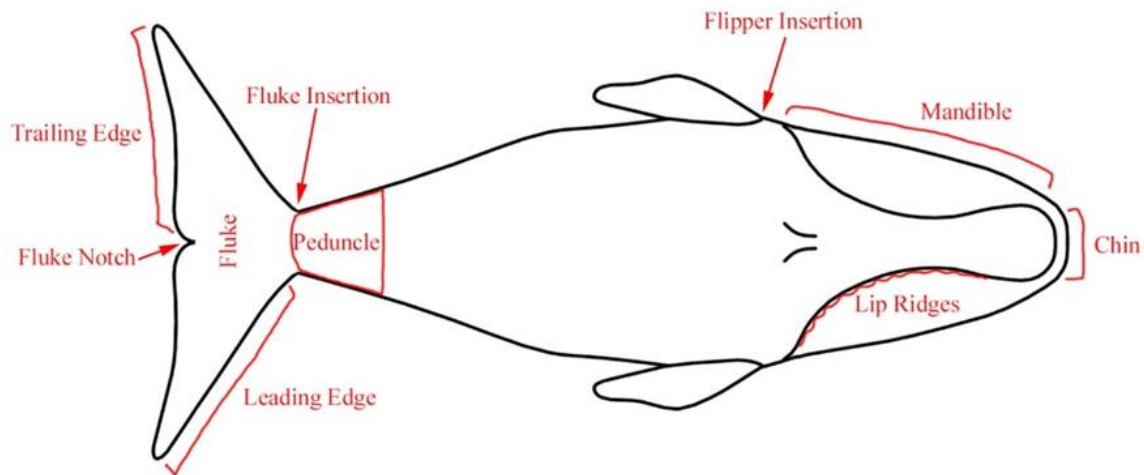
- |                          |  |                          |  |
|--------------------------|--|--------------------------|--|
| <input type="checkbox"/> | Head - Ventral, dorsal, front/head on, and from both sides. Photographing this area includes focusing on the callosity on top of the head.                             | <input type="checkbox"/> | Mandibles - both sides. Photographing this area includes focusing on the mandibular island(s) callosity.                                     |
| <input type="checkbox"/> | Mouthline/lip ridges – crenulations along the lower jaw/mouth; photograph from several different angles! Photographing this area includes capturing the lip callosity. | <input type="checkbox"/> | Chin - this is the area between the two chin callosities.  |
|                          |  | <input type="checkbox"/> | Blowholes – Photographing this area includes capturing the post-blowhole callosity. Photographs from an elevated view are especially useful. |

### Body

- |                          |   |                          |   |
|--------------------------|---|--------------------------|---|
| <input type="checkbox"/> | Body - all parts shot in a series along the length of the whale, dorsal and ventral | <input type="checkbox"/> | Flipper insertion                                   |
| <input type="checkbox"/> | Flippers - both flippers, dorsal and ventral  | <input type="checkbox"/> | Genital slit  |
|                          |   | <input type="checkbox"/> | Any scars (anywhere on the body) regardless of size |

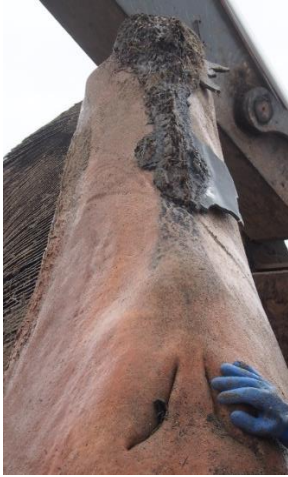
### Fluke/Peduncle

- |                          |                                  |                          |                            |
|--------------------------|----------------------------------|--------------------------|----------------------------|
| <input type="checkbox"/> | Peduncle – dorsal and ventral    | <input type="checkbox"/> | Fluke – dorsal and ventral |
| <input type="checkbox"/> | Fluke notch – dorsal and ventral | <input type="checkbox"/> | Fluke insertion            |
| <input type="checkbox"/> | Leading fluke edge               | <input type="checkbox"/> | Trailing fluke edge        |

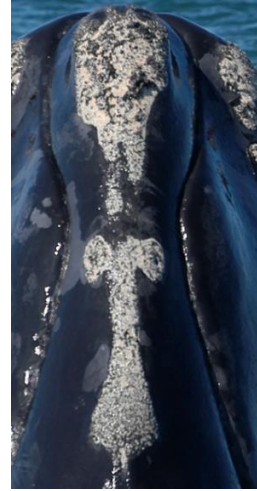


**All photographs of dead right whales (regardless of quality) should be submitted to the NARWC.**

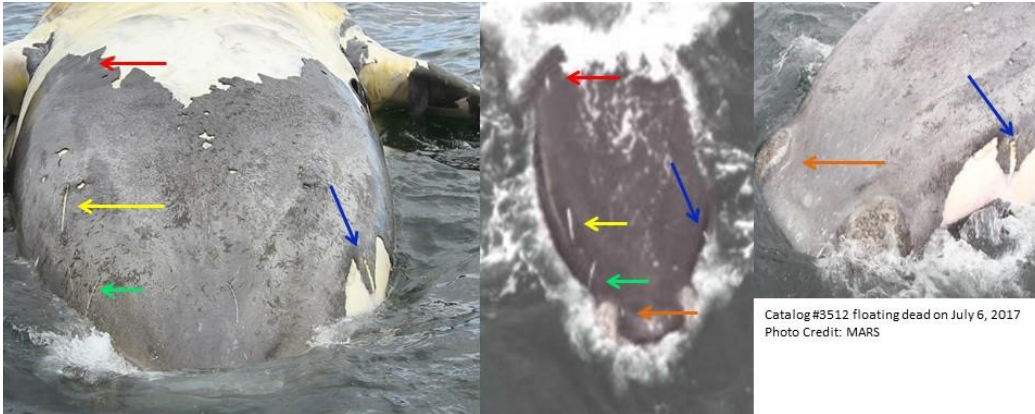
Callosity tissue in a dead right whale



Callosity tissue in a living right whale



**Examples of how small details can lead to successful matches** - Matches like this (below) can only be accomplished when all aspects of a whale are photographed and cataloged. This includes photographs that are obscure, distant or even out of focus.



Catalog #3512 floating dead on July 6, 2017 Photo Credit: MARS

Catalog #3512 alive in 2011 Photo Credit: FWC

Catalog #3512 floating dead on July 6, 2017  
Photo Credit: MARS



Right mandible of #1911

Photo: DFO/Northwest Atlantic Fisheries Center

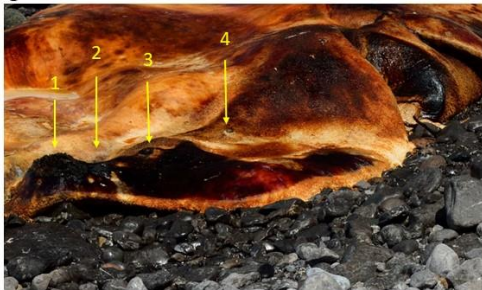


Photo: Sea to Shore Alliance

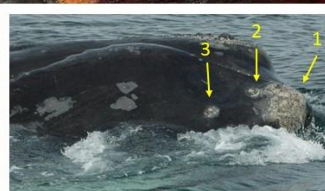


Photo: Center for Coastal Studies