

Photo-identification protocol

Each image should be evaluated for photographic quality and grade of distinctiveness of the fin (Whitehead et al. 1997, Urian et al. 1999, Wilson et al. 1999, Ingram et al. 2003, Read et al. 2003, Berrow et al. 2012, Nicholson et al. 2012).

Image quality

All dolphin images should be graded from 1 to 3 following criteria published by Ingram (2000):

- *Photo Grade 1* - Well-lit and focused shots taken perpendicular to the dorsal fin at close range
- *Photo Grade 2* - More distant, less well-lit, or slightly angled shots of dorsal fins
- *Photo Grade 3* - Poorly lit or out of focus shots taken at acute angles to the dorsal fin.

Grade of distinctiveness of the fin

The images of dorsal fin should be graded from 1 to 3 following criteria published by Ingram (2000):

- *Severity Grade 1* - Marks consisting of significant fin damage or deep scarring that were considered permanent
- *Severity Grade 2* - Marks consisting of deep tooth rakes and lesions with only minor cuts present
- *Severity Grade 3* - Marks consisting of superficial rakes and lesions.

Example



Fig. 1 Photo Grade 1 and Severity Grade 1



Fig. 2 Photo Grade 2 (the photo is backlit), Severity Grade 1



Fig. 3 Photo Grade 1 and Severity Grade 2



Fig. 4 Photo Grade 1, Severity Grade 3



Fig. 5 Photo Grade 3, Severity Grade 1



Fig. 6 Photo Grade 2, Severity Grade 2



Fig. 7 Photo Grade 2, Severity Grade 3



Fig. 8 Photo Grade 3, Severity Grade 2



Fig. 9 Photo Grade 3, Severity Grade 3

Photo Identification step by step

- Set the quality of the pictures. Only pictures scored as ≤ 3 (photo grade + severity grade) will be further analysed.
- Define the number of different individuals present inside the folder of the sighting and choose the best pictures (left and right side) for each one.
- Compare the best pictures of each individual with the photo-identified dolphins stored in the Darwin catalogue.
- If the individual is already present, write the date of the sighting inside the individual's page.
- If the individual is not already present, add the new fin. Define name and Id code.
- Write the recaptures on the database Alghero-Fotoidentificati.

Refereces

- Ingram S. D. (2000). *The ecology and conservation of bottlenose dolphins in the Shannon Estuary, Ireland* (Doctoral thesis). University College Cork, Corcaigh, Ireland. 213 pp.
- Read A. J., Urian K. W., Wilson B., Waples D. M. (2003). *Abundance of bottlenose dolphins in the bays, sounds, and estuaries of North Carolina*. Marine Mammal Science 19(1): 59-73.
- Urian K. W., Hohn A. A., Hansen L. J. (1999). *Status of the photo-identification catalog of coastal bottlenose dolphins of the western North Atlantic*. Report of a workshop of catalog contributors. NOAA Technical Memorandum NMFS-SEFSC-425. 24 pp.
- Ingram S., Rogan E. (2003). *Estimating abundance, site fidelity and ranging patterns of bottlenose dolphins (Tursiops truncatus) in the Shannon Estuary and selected areas of the west-coast of Ireland*. Report to the National Parks and Wildlife Service, 1-28.
- Wilson B., Thompson P., Hammond P.S. (1999). *Estimating size and assessing trends in a coastal bottlenose dolphin population*. Ecological Applications 9(1), 288-300
- Berrow S., O'Brien J., Groth L., Foley A., Voigt K. (2012). *Abundance Estimate of Bottlenose Dolphins (Tursiops truncatus) in the Lower River Shannon candidate Special Area of Conservation, Ireland*. Aquatic Mammals 38 (2): 136-144.
- Whitehead H., Gowans S., Faucher A., Mccarrey S. W. (1997). *Population analysis of northern bottlenose whales in the Gully, Nova Scotia*. Marine Mammal Science 13: 173-185.