Short Note

Galemys, 33: 64-68, 2021
ISSN 1137-8700
e-ISSN 2254-8408
DOI: 10.7325/Galemys.2021.N8

First record of dwarf sperm whale (*Kogia sima*) in the north of Spain

Primer registro de cachalote enano (*Kogia sima*) en el norte de España

Pablo Covelo[1] & Alfredo López[1, 2]

1. Coordinadora para o Estudo dos Mamíferos Mariños CEMMA, Apartado 15, 36380 Gondomar, Pontevedra, Spain.
2. Departamento de Biología & CESAM, Universidade de Aveiro, Campus de Santiago, Av. João Jacinto de Magalhães, 3810-193 Aveiro, Portugal.

* Corresponding author: pablo_cov@yahoo.es

The dwarf sperm whale *Kogia sima* (Owen, 1866) is a small cetacean species with a maximum length of 2.7 m that inhabits tropical and temperate seas worldwide, generally in deep waters near the edge of the continental shelf, although most of the knowledge about the species biology and distribution is based on stranded individuals (McAlpine 2018). In the east Atlantic, the distribution range goes from South Africa to Portugal including Macaronesian archipelagos (Maigret & Robineau 1981, Ross 1984, Gonçalves *et al*. 1996, Van Waerebeek *et al*. 2009, Hazevoet *et al*. 2010, Pérez-Gil *et al*. 2011, Freitas *et al*. 2012, Elwen *et al*. 2013, Benchoucha *et al*. 2018, Vingada & Eira 2018). Additionally, extra-limital records have been reported from the United Kingdom (one individual) (Dunn *et al*. 2012), Atlantic coast of France (four individuals) (Van Canneyt *et al*. 2016), Faroe Islands (one individual) (Bloch & Mikkelsen 2009) and Italy (three individuals) (Baccetti *et al*. 1991, Maio *et al*. 2017). In Spain the dwarf sperm whale has been recorded in the Canary Islands (Pérez-Gil *et al*. 2011) and in Andalucía in the southern coast of the Iberian Peninsula (Valverde & Camiñas 1996, Gutiérrez-Expósito *et al*. 2012). The species is included in the Spanish List of Wild Species in Regime of Special Protection, but not in the Spanish Catalogue of Endangered Species (Real Decreto 139/2011).

On February 24th, 2019 a natural resources ranger notified the Galician stranding network of a live stranded cetacean in the beach of Coroso, Ribeira (A Coruña, Galicia, 42º34'N, 008º58'W). It was described as a "shark-like" cetacean of approximately 2 m length, that made us think about *Kogia* sp., being later confirmed by mobile phone video images sent by the ranger (Fig. 1). The compact and robust body, dorsal blackish-grey and ventral pale white, squarish-conical head with no beak, snout overlapping the lower jaw, small flippers, dark patch surrounding the eye, and high, falcate dorsal fin on its mid-back identified it as *Kogia sima*. It was also observed the expelling of the reddish-brown liquid (liquid feces) (Fig. 1b) that Kogiidae use as a distraction tactic to cloud the water and escape from predators (Scott & Cordaro 1987). This liquid is stored in the lower intestine

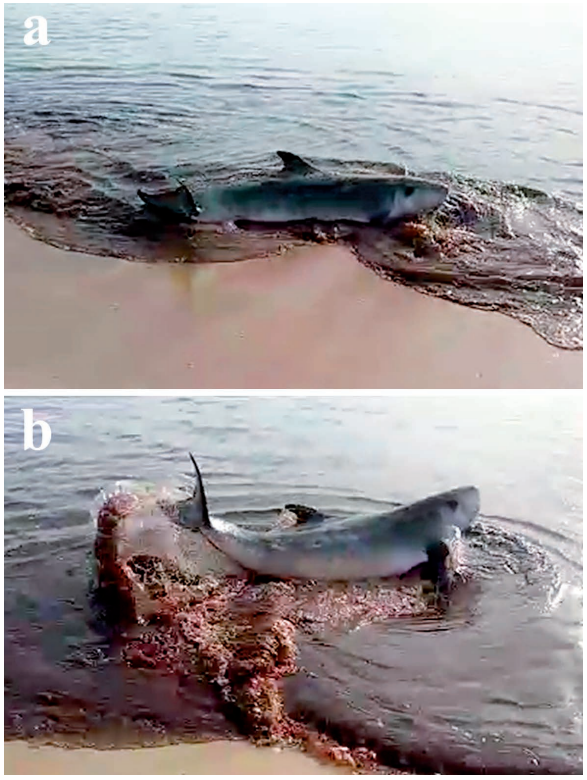

Figure 1. Video frames of the first stranding event on February 24th. **a**) morphological characteristics of the species can be observed. **b**) expelling of the reddish-brown liquid feces that dyed the surrounding water.

of the whale. On this occasion the whale expelled the liquid due to the stress and fear of the stranding situation.

Prior to the arrival of the scientists, the cetacean managed to refloat itself thanks to peduncle energetic movements. The animal was not observed or located again that day or in the following days during the search that was carried out from the coast in the nearby area.

On March 18th, 2019 the Galician stranding network was notified of a dead cetacean floating in the harbour of Ribeira (42º33'N, 8º59'W), just 1.3 km away from the location of the stranding event previously described. The body was in an advanced decomposition condition (Fig. 2), but with a visual inspection it was identified as *Kogia sima*. It was a 210 cm male. Taking into account the matching total length, body condition and the rarity of the species in the area, we concluded that it was the individual recorded on February 24th, that probably died and sunk before resurfacing and being carried to shore by local currents.

Due to the body condition and deteriorated flippers and fins, only a few biometrics could be measured (Table 1). The deterioration of the internal organs did not allow for collection of samples for histopathology studies. Only cephalopod beaks and crustacean remains were found and collected inside the stomach. Measurements and weight of the testicles are included in Table 1; considering testicles weight and length, and total body length, this was a sexual mature male according to Plön (2004). Regarding parasites, one copepod *Pennella* sp. was observed externally, and three cestode *Phyllobothrium* sp. were recorded in ventral blubber.

The complete skeleton was cleaned and stored in CEMMA collection, except for the phalangeal bones lost prior to necropsy due to decomposition. Vertebral formula was 7C, 12T, 12L, 22Ca (total 53). It had 12 rib pairs and 10 chevron bones. No pelvic bones were found, confirming their lack in family Kogiidae that we have observed previously in *Kogia breviceps* (Blainville, 1838) necropsies. The skull (Fig. 3) measurements are included in Table 2. In each mandible there were nine alveoli, but only 13 teeth were present, with a size between 17.6 and 27.1 mm. No teeth were observed in maxillary bones.

Some of these biometric data (Tables 1 and 2) confirm the first visual identification of the species, and this allow us to discard the similar pygmy sperm whale: a) the relation of the length from tip of the snout to blowhole, with the total body length (9.0%); b) alveoli number in mandibles; c) length of mandibular symphysis, which is not ventral keeled; d) skull total length; e) width of vertex; f) the relation of the basal width of rostrum with the skull total length (47,8%); g) the ethmoid disposal over the vomer (Ross 1984, Willis & Baird 1998, Porter & Morton 2003, Vélez-Juarbe *et al*. 2015). Considering this information, the dwarf sperm whale will be added to the list of 22 cetacean species recorded previously in Galicia (López 2017).

Searching for previous references of this species in the north of Spain, we found that the catalogue of the Natural History Museum of the *Sociedade Galega de Historia Natural* located in Ferrol (A Coruña) includes two dwarf sperm whales in the cetacean osteological collection (SGHN 2008). The skulls of these two individuals (museum codes MA0299 and MA0295E00) and body biometrics of the second one (there were no body biometrics

Figure 2. Dwarf sperm whale reported on March 18th, presumed to be the same individual that the first one.

Table 1. External measurements, testicle measurements and testicle weight of dwarf sperm whale *Kogia sima*.

Total length from tip of the snout to fluke notch	210 cm
Length from tip of the snout to the centre of the blowhole	19 cm
Length from tip of the snout to the centre of the eye	24 cm
Length from tip the snout to the tip of jaws	6 cm
Length from tip of the snout to the anterior insertion of flipper	35 cm
Length from tip of the snout to the genital orifice	96 cm
Length from tip of the snout to anus	159 cm
Right testicle length	47 mm
Right testicle width	8.4 mm
Left testicle length	43 mm
Left testicle width	8 mm
Right testicle weight	1,189 g
Left testicle weight	1,160 g

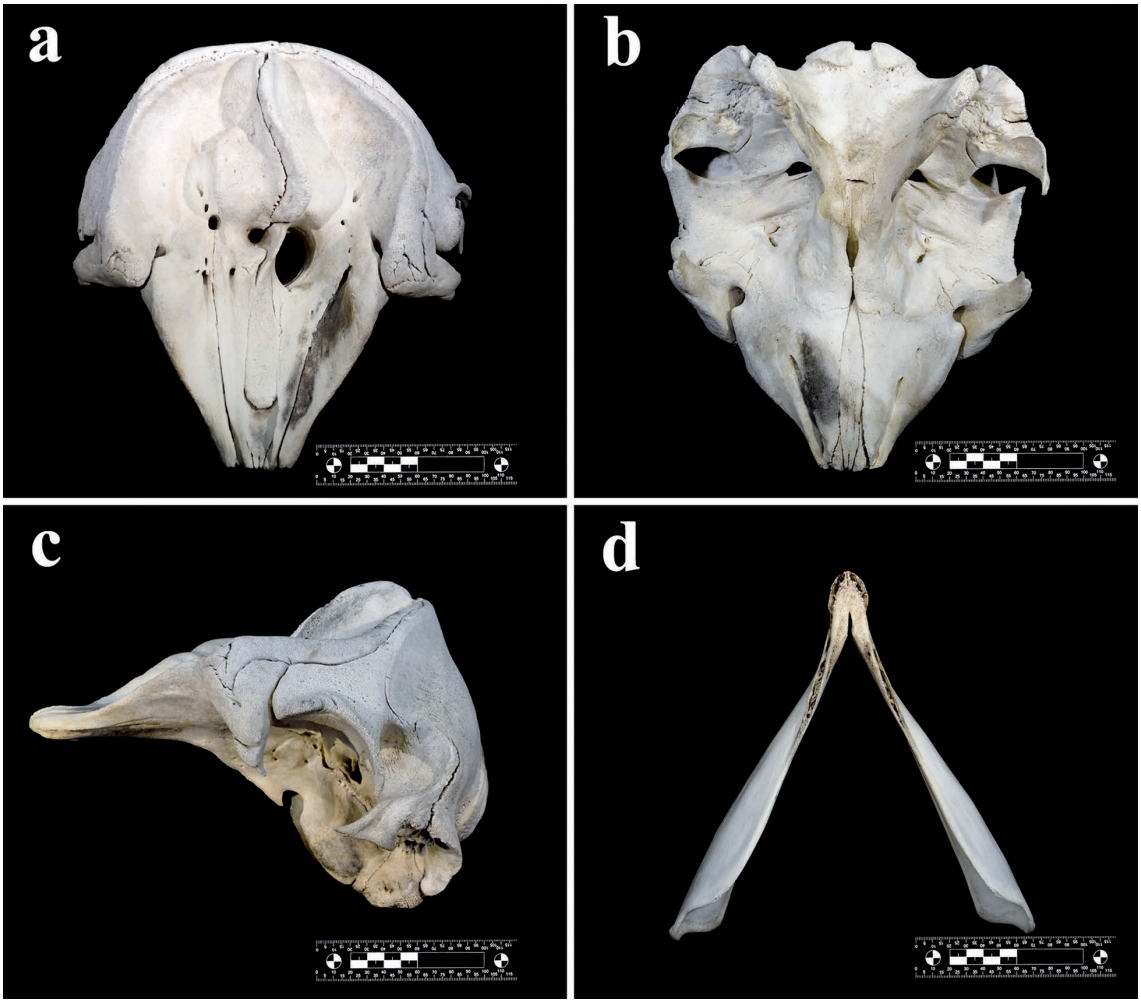

Figure 3. Skull of dwarf sperm whale. **a**) dorsal view. **b**) ventral view. **c**) left lateral view. **d**) dorsal view of the mandibles.

Table 2. Skull measurements (mm) of dwarf sperm whale *Kogia sima* according to Ross (1984).

Total (condylobasal) length	274.8
Rostrum length measured ventrally	112.3
Basal width of rostrum measured ventrally	131.3
Width of rostrum at its midlength measured ventrally	79.3
Breadth of skull across zygomatic processes of squamosals	239.1
Height of vertex	192.4
Width of vertex	13.9
Width of supra-occipital at narrowest part between posterior margins of temporal fossae	173.1
Tip rostrum to anterior border of left naris	118.9
Height of ventral border of foramen magnum	66.1
Length maxillary tooth groove, right	76.3
Length maxillary tooth groove, left	65.2
Width between outer margins of occipital condyles	70.5
Tip of rostrum to hind margin of pterygoids near the midline	151.7
Length of mandible	237.8
Height of mandible at coronoid process	68.3
Length of mandibular symphysis	27.9
Length of tooth row, lower left	93.1
Length of tooth row, lower right	92.7
Height dorsal border of foramen magnum to vertex	125.1

data for the first one) were examined by the authors of this note following reference identification keys and notes to differentiate the two Kogiidae species (Ross 1984, Willis & Baird 1998, Porter & Morton 2003, Vélez-Juarbe *et al.* 2015). Both of them were reidentified as pygmy sperm whales (*Kogia breviceps*), correcting previous identification. No other references for the species were found in the area. Therefore, to our knowledge, the individual stranded in Ribeira is the first documented record of dwarf sperm whale in the north of Spain.

Acknowledgements

We thank Eladio J. Ramírez for the report of the first stranding and the video images that allowed the identification, CEMMA volunteers that helped with the necropsy and bone cleaning, and staff of the Natural History Museum of Ferrol that facilitated us to examine their bone collection. We are grateful to reviewers José Antonio Pis Millán and Carlos Nores for their suggestions, that improved this note.
The Galician stranding network is supported by the regional government *Xunta de Galicia / Dirección Xeral de Patrimonio Natural*, that also provided the legal permits for the management of cetacean species and the collection of biological samples. Alfredo López is funded by national funds (OE), through FCT - *Fundação para a Ciência e a Tecnologia, I.P.*, in the scope of the framework contract foreseen in the numbers 4, 5 and 6 of the article 23, of the Decree-Law 57/2016, of August 29, changed by Law 57/2017, of July 19. CESAM is supported by FCT/MCTES (UIDP/50017/2020+UIDB/50017/2020).

References

Baccetti N., Cancelli F. & Renieri T. 1991. First record of *Kogia simus* (Cetacea, Physeteridae) from the Mediterranean Sea. *Mammalia*, 55: 152-154.

Benchoucha S., Tamsouri M.N. & El Aamri F. 2018. First stranding record of *Kogia sima* (Owen, 1866) in Morocco (Strait of Gibraltar). *Journal of the Black Sea/ Mediterranean Environment*, 24(2): 175-179.

Bloch D. & Mikkelsen B. 2009. A northermost record of dwarf sperm whale (*Kogia sima*) (Owen, 1866) from the Faroe Islands. *Aquatic Mammals,* 35(2): 306-307. DOI: 10.1578/am.35.2.2009.306

Dunn J., Still R. & Harrop H. 2012. *Britain's Sea Mammals: whales, dolphins, porpoises and seals, and*

where to find them. Wild Guides, Princeton University Press, 128pp.

Elwen S.H., Gridley T., Roux J-P., Best P.B. & Smale M.J. 2013. Records of kogiid whales in Namibia, including the first record of the dwarf sperm whale (*Kogia sima*). *Marine Biodiversity Records,* 6: e45. DOI: 10.1017/s1755267213000213

Freitas L., Dinis A., Nicolau C., Ribeiro C. & Alves F. 2012. New records of cetacean species for Madeira archipelago with an updated checklist. *Boletim do Museu Municipal de Funchal,* 62 (334): 25-43.

Gonçalves J.M., Barreiros J.P., Azevedo J.M.N. & Norberto R. 1996. Cetaceans stranded in the Azores during 1992-1996. *Arquipelago, Ciencias Biologicas e Marinhas* 14A: 57-65. http://hdl.handle.net/10400.3/1492

Gutiérrez-Expósito C., Rivilla J.C., Alís S., Máñez M., Garrido H., Jiménez F.J. & Cobo M.D. 2012. Veinticinco años (1986-2011) de monitorización de varamientos de mamíferos marinos en el litoral de Doñana (Huelva, SO España). *Galemys, Spanish Journal of Mammalogy* 24: 86-90. DOI: 10.7325/Galemys.2012.N09

Hazevoet C.J., Monteiro V., López P., Varo N., Torda G., Berrow S. & Granavita B. 2010. Recent data on whales and dolphins (Mammalia: Cetacea) from the Cape Verde Islands, including records of four taxa new to the archipelago. *Zoologia Caboverdiana,* 1(2): 75-99.

López A. 2017. Mammalia. In: Bañón R. (Ed.) *Inventario de la biodiversidad marina de Galicia: Proyecto LEMGAL*. Consellería do Mar, Xunta de Galicia, Santiago de Compostela, 567-570.

Maigret J. & Robineau D. 1981. Le genre *Kogia* (Cetaca, Physeteridae) sur les cotes du Sénégal. *Mammalia,* 45(2): 199-204. DOI: 10.1515/mamm.1981.45.2.199

Maio N., Pollaro F., Gasparro A., Petraccioli A., Mezzasalma M., Guariglia M., Galiero G. *et al.* 2017. New record of Dwarf Sperm Whale *Kogia sima* (Owen, 1866) from the Mediterranean Sea (Cetacea Kogiidae). *Biodiversity Journal*, 8(4): 947-950.

McAlpine D.F. 2018. Pygmy and Dwarf Sperm Whales: *Kogia breviceps* and *K. sima*. Pp. 786-788. In: Würsig B., Thewissen J.G.M. & Kovacs K.M. (eds.) *Encyclopedia of Marine Mammals*. Academic Press. 1158pp. DOI: 10.1016/B978-0-12-804327-1.00209-0

Pérez-Gil E., Martín V., Pérez-Gil M., Castrillón J., Servidio A., Neves S., Ruiz L. *et al.* 2011. Pygmy and Dwarf Sperm Whales in the Canary Islands. *Abstracts of the 25th Conference of the European Cetacean Society*, Cádiz, pp. 214.

Plön S. 2004. *The status and natural history of pygmy (*Kogia breviceps*) and dwarf (*K. sima*) sperm whales off Southern Africa*. PhD Thesis. Rhodes University, Grahamstown, South Africa. 551 pp.

Porter L. & Morton B. 2003. A description of the first intact dwarf sperm whale from the South China Sea and a review of documented specimens of the Kogiidae (Cetacea) from Hong Kong. *Systematics and Biodiversity,* 1(1): 127-135. DOI: 10.1017/S1477200003001038

Ross G.J.B. 1984. The smaller cetaceans of the south east coast of southern Africa. *Annals of the Cape Provincial Museums*, 15(2): 173-410.

Scott M.D. & Cordaro J.G. 1987. Behavioral observations of the dwarf sperm whale *Kogia simus*. *Marine Mammal Science,* 3: 353-354. DOI: 10.1111/j.1748-7692.1987.tb00322.x

SGHN. 2008. *Catálogo dos fondos mariños do Museo da Natureza da Sociedade Galega de Historia Natural*. Sociedade Galega de Historia Natural y Consellería de Pesca e Asuntos Marítimos, Xunta de Galicia. 170 pp.

Valverde J.A. & Camiñas J.A. 1996. On dwarf sperm whale *Kogia simus* (Owen, 1866), Physeterioidea, in Spain: a correction. *European Research on Cetaceans,* 10: 168-171.

Van Canneyt O., Dars C., Authier M., Dabin W., Demaret F., Dorémus G., Peltier H. & Spitz J. 2016. *Les échouages de mamifères marins sur le littoral français en 2015*. Rapport scientifique de l'Observatoire PELAGIS. 37pp + annexes.

Van Waerebeek K., Ofori-Danson P.K. & Debrah J. 2009. The cetaceans of Ghana, a validated faunal checklist. *West African Journal of Applied Ecology*, 15(1). DOI: 10.4314/wajae.v15i1.49428

Vélez-Juarbe J. Wood A.R. de Gracia C. & Hendy A.J.W. 2015. Evolutionary patterns among living and fossil Kogiid sperm whales: evidence from the Neogene of Central America. *PlosOne*, 10(4): e0123909. DOI: 10.1371/journal.pone.0123909

Vingada J. & Eira C. 2018. *Conservação de cetáceos e aves marinhas em Portugal continental: O projeto LIFE+ MarPro*. LIFE+ MarPro, Aveiro. 258pp.

Willis P.M. & Baird R.W. 1998. Status of the dwarf sperm whale *Kogia simus* with special reference to Canada. *Canadian Field - Naturalist*, 112: 114-125.

Submitted: 1 September 2021
Accepted: 15 November 2021

Associate editor was L. Javier Palomo