

NEW RECORD OF THE HUMPBACK WHALE  
(*MEGAPTERA NOVAEANGLIAE*) IN THE ADRIATIC SEA*Tilen GENOV & Polona KOTNJEK*Morigenos – marine mammal research and conservation society, SI-1000 Ljubljana, Jarška cesta 36/a, Slovenia  
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## ABSTRACT

A report is submitted herein on the occurrence of a humpback whale in Slovenian territorial waters (Gulf of Trieste, North Adriatic Sea) during February, March and April 2009. This is the first confirmed and documented record of this species for Slovenia and the Gulf of Trieste, the second for the Adriatic Sea and the 14<sup>th</sup> for the Mediterranean Sea. The whale was observed from the coast and from a small inflatable boat. Its dorsal fin, tail fluke and other body parts were photographed for the purposes of photo-identification and dive times were recorded. The animal was estimated to be a sub-adult or a young adult, about 10–12 m long, apparently in good body condition. It is possible that the whale had come into the area by following food sources.

**Key words:** humpback whale, *Megaptera novaeangliae*, Adriatic Sea, Gulf of Trieste, Slovenia

NUOVA SEGNALAZIONE DI MEGATTERA (*MEGAPTERA NOVAEANGLIAE*)  
IN MARE ADRIATICO

## SINTESI

L'articolo tratta l'avvistamento di una megattera in acque territoriali slovene (Golfo di Trieste, Adriatico settentrionale) nei mesi di febbraio, marzo ed aprile del 2009. Si tratta della prima segnalazione confermata e documentata della specie per la Slovenia e per il Golfo di Trieste, la seconda per l'Adriatico e la quattordicesima per il Mediterraneo. La megattera è stata avvistata sia dalla costa che con l'ausilio di una piccola imbarcazione gonfiabile. La pinna dorsale, la coda e le altre parti del corpo sono state fotografate per la foto-identificazione dell'animale. È stata inoltre registrata la durata delle immersioni della megattera. È stato valutato che si tratti di un esemplare quasi adulto, della lunghezza di 10–12 m, apperentemente in buone condizioni. Gli autori suppongono che la megattera sia arrivata nel Golfo di Trieste seguendo risorse alimentari.

**Parole chiave:** megattera, *Megaptera novaeangliae*, mare Adriatico, Golfo di Trieste, Slovenia

## INTRODUCTION

The humpback whale (*Megaptera novaeangliae*) is a cosmopolitan species, found in all oceans of the world (Clapham, 1996; Clapham & Mead, 1999). The life cycle of the species consists of two main parts: during spring, summer and autumn, the whales are found in high-latitude areas, where most of the feeding takes place; in winter, whales spend time in the tropics and subtropics, where mating and calving takes place (Clapham, 1996). However, not all whales undertake the seasonal migration to the breeding areas (Brown *et al.*, 1995).

In the North Atlantic, humpback whales can be found from tropical waters to the arctic pack ice (Smith *et al.*, 1999). Whales from virtually all areas of the North Atlantic breed in the West Indies in winter and probably belong to one panmictic population (Katona & Beard, 1990; Clapham *et al.*, 1993; Mattila *et al.*, 1994; Larsen *et al.*, 1996; Clapham & Mead, 1999), although some data suggest that an eastern tropical North Atlantic breeding ground, possibly in the historic mating and calving ground off Cape Verde Islands, might also exist (Larsen *et al.* 1996; Jann *et al.*, 2003; Smith & Reeves, 2003).

The humpback whale is not regularly present in the Mediterranean Sea, where it is considered an occasional or visitor species (Frantzis *et al.*, 2004; Reeves & Notarbartolo di Sciara, 2006). The known occurrences of the humpback whale in the Mediterranean Sea are presented in Table 1. In 2002, a single (and very emaciated) humpback whale was observed off Senigallia, Italy, which is the only record of this species in the Adriatic to date (Affronte *et al.*, 2003).

The only species of large whales recorded in the Gulf of Trieste (North Adriatic Sea) to date are the fin whale (*Balaenoptera physalus*) and the sperm whale (*Physeter macrocephalus*), the former being occasional in the area and the latter being very rare (Kryštufek & Lipej, 1993; Lipej *et al.*, 2004).

Herein, we report on the occurrence of a single humpback whale in Slovenian territorial waters (Gulf of Trieste, North Adriatic Sea) during February, March and April 2009. This is the first confirmed and documented record of this species for Slovenia and the Gulf of Trieste, the second for the Adriatic Sea, and the 14<sup>th</sup> for the Mediterranean Sea.

**Tab. 1: Known records of the humpback whale (*Megaptera novaeangliae*) occurrence in the Mediterranean Sea (adapted from Reeves & Notarbartolo di Sciara (2006).**

**Tab. 1: Doselej znana pojavljanja kita grbavca (*Megaptera novaeangliae*) v Sredozemlju; prirejeno po Reeves & Notarbartolo di Sciara (2006).**

Date	Location	Sex	Size	Notes	Reference
Nov 1885	Toulon, France		6.8 m	by-caught	Aguilar, 1989
14 Mar 1986	Majorca, Balears, Spain			sighting of two individuals, possibly a female with calf	Aguilar, 1989
Mar 1990	Bay of Aiguablava, Catalonia, Spain			sighting of one possible adult	personal comm. from A. Aguilar to Frantzis <i>et al.</i> , 2004
2 Oct 1992	Gulf of Gabés, Tunisia		8 m	by-caught	Chakroun, 1994
21 May 1993	Cavalaire, France	F	7 m	by-caught	Bompar, 2000
Aug 1993	Toulon, France			sighting of two individuals	personal comm. from R. Sears to Frantzis <i>et al.</i> , 2004
24 Jan 1998	Gulf of Oristano, W. Sardinia, Italy		7–8 m	sighting	Frantzis <i>et al.</i> , 2004
17 Apr 2001	Bay of Tolo, Myrtoon Sea, Greece		8–11 m	sighting	Frantzis <i>et al.</i> , 2004
19 Jul 2002	Lefkada Island, Greece			sighting	Frantzis <i>et al.</i> , 2004
4 Aug 2002	Senigallia, Italy			sighting	Affronte <i>et al.</i> , 2003
5 Apr 2003	Tartous, Syria	M	785 cm	stranded dead	Saad, 2004
17 Feb 2004	Corfu Island, Greece	F	7.2 m	by-caught	Frantzis <i>et al.</i> , 2004
2 Apr 2004	Siracusa, Sicily, Italy		about 10 m	by-caught alive and released	Centro Studi Cetacei, 2006
Feb-Apr 2009	Slovenian waters, Gulf of Trieste		10–12 m	repeated sightings	this paper

## MATERIAL AND METHODS

We received initial reports on whale sightings from Slovenian harbour masters and local fishermen. We were able to respond to one of these reports (made by a phone call), located the animal and identified the species. The whale was observed from the coast (from high vantage points) and from a small inflatable boat. Photographs of right and left sides of the dorsal fin and the ventral side of the tail fluke were taken for the purpose of photo-identification. Additionally, photos and video footage of the rostrum, blowhole, pectoral fins, thorax, tail stock and dorsal side of the tail fluke were taken, in order to assess the animal's condition. When the whale was observed from a boat, time and GPS position were recorded throughout each sighting, and the whale's dives were timed with a stopwatch and recorded onto the data sheets (except during the first sighting, in which photo-identification and assessment of the animal's condition was the primary objective). A biopsy was performed with a crossbow and a biopsy dart, and a sample taken for genetic, toxicological and other analyses, as well as sex determination.

## RESULTS

The initial report of a whale was received on 10 February 2009. At the time, the species was unknown. The whale was spotted by fishermen and local people several times in the next few days, but the species was not

identified, although some descriptions (*i.e.*, very long pectoral fins) indicated that it might be a humpback whale. On February 16<sup>th</sup>, the authors responded to a phone call about a whale sighting, managed to locate the whale and to identify the species as the humpback whale. The animal was estimated to be about 10–12 m long, compared to the research vessel (5.7 m). It appeared to be in good body condition (Fig. 1). The animal was poorly to moderately scarred.

The whale was mostly observed performing regular surfacings, with occasional fluke-ups. It would often change direction while swimming, but sometimes followed the same course for periods of up to one hour. Breaching, where the whole body except the tail fluke left the water, was also observed. On several occasions, the animal was seen swimming on the side, with one lobe of the tail fluke out of the water, or slowly spinning around the body axis, just below the water surface. Direct feeding, production of bubbles or open mouth was not observed.

Large numbers of gilt sardines (*Sardinella aurita*) were reported in the area in that period and numerous specimens were seen lying motionless on the water surface or swimming feebly belly up in the vicinity of the whale. Moreover, large aggregations of seagulls were seen feeding in the same area.

The durations of a total of 845 dives were recorded. Dive time duration ranged between 3 seconds and 5 minutes 28 seconds, although on the first day of observation (when dive times were not systematically re-



**Fig. 1: Humpback whale (*Megaptera novaeangliae*) in Slovenian waters, apparently in good condition. (Photo: T. Genov)**

**Sl. 1: Očitno zdrav kit grbavec (*Megaptera novaeangliae*) v slovenskih vodah. (Foto: T. Genov)**

corded), the whale also performed dives lasting up to 10 minutes. For most of the time, the whale performed a series of 2-3 short dives, usually lasting between 3-30 seconds, followed by a single long dive, usually lasting between 1 and 4 minutes. The mean duration of the dives was 49 seconds. Among all dives recorded, 13% ( $n = 108$ ) of all dives lasted <15 seconds, 59% ( $n = 502$ ) between 15 and 60 seconds, and 28% ( $n = 235$ ) >60 seconds. The mean duration of dives lasting more than 1 minute was 2 minutes 4 seconds.

The whale was observed mostly in waters off the town of Piran, in an area covering approximately 27 km<sup>2</sup>. It remained relatively close to the coast, with the shortest distance of 200 m and the longest of 2.8 km from shore. Depths in the area where the whale was observed ranged between 12 and 38 m. The animal remained in the area until the middle of March, when it moved to the Italian side of the Gulf of Trieste, to the shallow waters (roughly between 4 and 10 meters of depth) off the town of Grado. It then returned to Slovenian waters within a few days. Soon after, the whale apparently disappeared in the second half of March, but then briefly re-appeared in the second half of April.

## DISCUSSION

The mean length of physically mature male and female humpback whales is 13.0 m and 13.9 m, respectively (data from Chittleborough, 1965, in Clapham & Mead, 1999). From the same data, mean lengths at independence (one year of age) were 9.9 m for males and 9.7 for females. Mean lengths at the average age at attaining sexual maturity (five years) were 11.8 m for males and 11.9 m for females. Based on the estimated size of the whale and the data above, and on the amount of scarring on the body (Chu & Nieukirk, 1988), we assume the animal to be a sub-adult or a young adult. It is likely that the animal is on the brink of attaining sexual maturity, but has not yet attained physical maturity or maximum size. The whale appeared to be in good body condition. The physical appearance of the whale did not differ from typical humpback whales (believed to be in good health) in the Atlantic (R. Seton, *pers. comm.*; T. Genov, *pers. observ.*). The animal showed no abnormal behaviour or any signs of illness or distress.

Humpback whale groups are small and unstable in majority of cases, with individuals frequently changing associates, although some long-term associations have been recorded (Clapham, 1993). Single animals are commonly observed (Clapham, 1993). Therefore, a single humpback whale is no exceptional event. However, data from the North Atlantic feeding ground (Clapham, 1993) suggest that most single animals are juveniles of either sex. This would support the possibility of the animal reported here being a sub-adult.

Dive times were similar to those reported for feeding humpback whales in Alaska (Dolphin, 1987). In that study, the majority of dives were shorter than 2.8 min, which was the overall average for all dives (including those over depths of up to 120 m). The average value of dives for whales feeding over depths of up to 20 m (similar to depths in the present paper) was 1.21 min (Dolphin, 1987), but singing humpback whales can also dive for more than 10 minutes (Chu, 1988).

It is impossible to determine whether the whale was feeding in the area or not. However, the lateral swimming by the animal, the presence of gilt sardines and seagulls feeding on the water surface in the vicinity of the whale suggest feeding activity. Humpback whales are known to feed, among other prey species, on *Sardina* sp. and *Sardinella* sp. (Clapham & Mead, 1999). Furthermore, the dive pattern, mostly characterised by a few short dives, followed by a long one, is consistent with possible feeding.

Photo-ID comparison with the North Atlantic Humpback Whale Catalogue (NAHWC), which currently contains over 6,000 individual humpback whales and is curated at the College of Atlantic (Seton *et al.*, 2002), did not produce any matches (R. Seton, *pers. comm.*). The whale will be given a new HWC# code and added to the NAHWC catalogue. Analyses of skin samples are pending.

The humpback whale used to be considered rare in the Mediterranean (Aguilar, 1989), but the number of records in the last 20 years has increased (Frantzis *et al.*, 2004). This increase in humpback whale sightings could be the result of previous sightings going unreported or of an actual increase in the occurrence of the species in the region (Frantzis *et al.*, 2004). The reason why this animal was found in the North Adriatic, one of the narrowest and remotest parts of the Mediterranean, remains unknown. The apparently good health status of the whale and the presence of large numbers of gilt sardines (which are not very common in the area), suggest that the whale followed food sources rather than becoming disorientated or lost.

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## NOVO OPAŽANJE KITA GRBAVCA (*MEGAPTERA NOVAEANGLIAE*) V JADRANSKEM MORJU

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### POVZETEK

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**Ključne besede:** kit grbavec, *Megaptera novaeangliae*, Jadransko morje, Tržaški zaliv, Slovenija

### REFERENCES

- Affronte, M., L. A. Stanzani & G. Stanzani (2003):** First record of a humpback whale, *Megaptera novaeangliae* (Borowski, 1781) in the Adriatic Sea. *Annales, Ser. Hist. Nat.*, 13(1), 51–54.
- Aguilar, A. (1989):** A record of two humpback whales, *Megaptera novaeangliae*, in the western Mediterranean Sea. *Mar. Mamm. Sci.*, 5(3), 306–309.
- Bompar, J.-M. (2000):** Les cétacés de Méditerranée. Edisud, La Calade, Aix-en-Provence, 188 p.
- Brown, M. R., P. J. Corkeron, P. T. Hale, K. W. Schultz & M. M. Bryden (1995):** Evidence for a sex-segregated migration in the humpback whale (*Megaptera novaeangliae*). *Proc. R. Soc. Lond. B*, 259, 229–234.
- Centro Studi Cetacei (2006):** Cetacei spiaggiati lungo le coste italiane. XIX. Rendiconto 2004. *Atti Soc. Ital. Sci. Nat., Atti Mus. Civ. Stor. Nat. Milano*, 147(1), 145–157.
- Chakroun, F. (1994):** Status of cetaceans in Tunisian marine waters. *Eur. Res. Cetaceans*, 8, pp. 107.
- Chittleborough, R. G. (1965):** Dynamics of two populations of the humpback whale, *Megaptera novaeangliae* (Borowski). *Aust. J. Mar. Freshw. Res.*, 16, 33–128.
- Chu, K. (1988):** Dive times and ventilation patterns of singing humpback whales (*Megaptera novaeangliae*). *Can. J. Zool.*, 66, 1322–1327.
- Chu, K. & S. Nieukirk (1988):** Dorsal fin scars as indicators of sex, age and social status in humpback whales (*Megaptera novaeangliae*). *Can. J. Zool.*, 66, 416–420.
- Clapham, P. J. (1996):** The social and reproductive biology of humpback whales: an ecological perspective. *Mamm. Rev.*, 26, 27–49.
- Clapham, P. J. & J. G. Mead (1999):** *Megaptera novaeangliae*. *Mamm. Species*, 604, 1–9.
- Clapham, P. J., D. K. Mattila & P. J. Palsbø II (1993):** High-latitude-area composition of humpback whale groups in Samana Bay: further evidence for panmixis in the North Atlantic population. *Can. J. Zool.*, 71, 1065–1066.

- Dolphin, W. F. (1987):** Dive behavior and estimated energetic expenditure of foraging humpback whales in southeast Alaska. *Can. J. Zoo.*, 65, 354–362.
- Frantzis, A., O. Nikolaou, J.-M. Bompar & A. Cammedda (2004):** Humpback whale (*Megaptera novaeangliae*) occurrence in the Mediterranean Sea. *J. Cetacean Res. Manage.*, 6(1), 25–28.
- Jann, B., J. Allen, M. Carrillo, S. Hanquet, S. K. Katona, A. R. Martin, R. R. Reeves, R. Seton, P. T. Stevick & F. W. Wenzel (2003):** Migration of a humpback whale (*Megaptera novaeangliae*) between the Cape Verde Islands and Iceland. *J. Cetacean Res. Manage.*, 5(2), 125–29.
- Katona, S. K. & J. C. Beard (1990):** Population size, migrations and feeding aggregations of the humpback whale (*Megaptera novaeangliae*) in the western North Atlantic Ocean. Reports of the International Whaling Commission, Spec. Issue 12, 195–305.
- Kryštufek, B. & L. Lipej (1993):** Whales (Cetacea) in the northern Adriatic. *Annals for Istrian and Mediterranean Studies*, 3, 9–20. (*In Slovene*)
- Larsen, A. H., J. Sigurjónsson, N. Lien, G. Vikingsson, & P. J. Palsbø (1996):** Population genetic analysis of nuclear and mitochondrial loci in skin biopsies collected from Central and northeastern North Atlantic humpback whales (*Megaptera novaeangliae*): population identity and migratory destinations. *Proc. R. Soc. Lond. B*, 263, 1611–1618.
- Lipej, L., J. Dulčić & B. Kryštufek (2004):** On the occurrence of the fin whale (*Balaenoptera physalus*) in the northern Adriatic. *J. Mar. Biol. Ass. U.K.*, 84, 861–862.
- Mattila, D. K., P. J. Clapham, O. Vasquez & R. Bowman (1994):** Occurrence, population composition and habitat use of humpback whales in Samana Bay, Dominican Republic. *Can. J. Zoo.*, 71, 1898–1907.
- Reeves, R. R. & G. Notarbartolo di Sciara (2006):** The status and distribution of cetaceans in the Black Sea and Mediterranean Sea. IUCN Centre for Mediterranean Cooperation, Malaga, Spain. 137 p.
- Saad, A. (2004):** First record of a humpback whale stranding on the coast of Syria (Eastern Mediterranean). *FINS*, 1(1), pp. 10.
- Seton, R. E., J. M. Allen & S. K. Todd (2002):** Curation of the North Atlantic Humpback Whale Catalogue and Associated Databases. Progress Report to Northeast Fisheries Science Center (NEFSC), National Marine Fisheries Service. College of the Atlantic, Bar Harbor, Maine, 10 p.
- Smith, T. D. & R. R. Reeves (2003):** Estimating American 19<sup>th</sup> Century Catches of Humpback Whales in the West Indies and Cape Verde Islands. *Caribb. J. Sci.*, 39(3), 286–297.
- Smith, T. D., J. Allen, P. J. Clapham, P. J. Hammond, S. Katona, F. Larsen, J. Lien, D. Mattila, P. J. Palsbø, J. Sigurjónsson, P. T. Stevick & N. Øien (1999):** An ocean-basin-wide mark-recapture study of the North Atlantic humpback whale (*Megaptera novaeangliae*). *Mar. Mamm. Sci.*, 15(1), 1–32.