J. Black Sea/Mediterranean Environment
Vol. 32, No. 2: 141-150 (2026)

SHORT COMMUNICATION

First confirmed record of stranding minke whale *Balaenoptera acutorostrata* Lacépède, 1804 in Lebanon

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Abstract

The common minke whale, *Balaenoptera acutorostrata* Lacépède, 1804, is a rare visitor to the Mediterranean Sea. On 24 March 2025, a female individual stranded on the coastal area of Hannouch-Batroun in northern Lebanon. Morphometric measurements were recorded from the specimen, which had a total body length of 367 cm. No significant external scars or injuries were observed, and the cause of death has not yet been determined. This finding represents the first confirmed occurrence of the common minke whale from the Lebanese waters, providing new information on the distribution of this species in the poorly documented easternmost Levantine Basin.

Keywords: *Balaenoptera acutorostrata*, easternmost Mediterranean, Lebanon

Received: 24.09.2026, **Accepted:** 27.10.2026

Many populations of the common minke whale, *Balaenoptera acutorostrata* Lacépède, 1804, remain vulnerable due to commercial whaling, which is compounded by other significant threats such as climate change, fishing gear entanglements, marine litter and chemical pollution, and ship strikes. Given their long lifespans and the cumulative impact of these challenges, minke whales and baleen whales in general are at substantial risk, with their populations potentially facing severe declines (Risch *et al.* 2019). Minke whales inhabit all oceans, *B. acutorostrata* in the northern hemisphere, *B. acutorostrata* and *B. bonaerensis* in the southern hemisphere (Cooke *et al.* 2018). For the common minke whale, two putative subspecies have been recognised, *Balaenoptera acutorostrata*

acutorostrata in the North Atlantic, *Balaenoptera acutorostrata scammoni* in the North Pacific and one unnamed subspecies considered a dwarf form of *B. a. acutorostrata* in the Southern hemisphere (Rice 1998; Pastene *et al.* 2010). The common minke whale, *B. acutorostrata*, is the smallest species of Balaenopteridae and feeds mainly on krill, copepods and small schools of fish (Pierce *et al.* 2004). The sexual maturity of minke whale is attained when total body length reaches 8 m for males and 8.6 m for females, the neonatal ranged between 2.4-2.8m (Harms *et al.* 2008; Perrin and Brownell 2009; Christiansen *et al.* 2014).

Balaenoptera acutorostrata has been considered a "rare visitor species" to the Mediterranean with an average less than one record per year (IUCN 2023; Notarbartolo di Sciara and Tonay 2021), particularly in the eastern Mediterranean Sea (Ozturk *et al.* 2015). They presumably came from North Atlantic populations, entering via the Strait of Gibraltar, with one vagrant recorded in the Black Sea (Reeves and Notabartolo di Sciara 2006). Moreover, a comprehensive review of the cetacean fauna of the Levantine Basin indicated that the species occurs sporadically without establishing a stable resident population (Kerem *et al.* 2012). Along the Turkish coast, a 4-m stranded male was recorded on the coast of Erdemli (Mersin) in August 2005, also a 3.5-m female was found dead on the Adana-Yumurtalık shore in April 2015, representing the second sampled specimen from Türkiye (Öztürk *et al.* 2011, 2015). The first record from Hellenic waters concerned a carcass found floating off Skiathos Island (northwestern Aegean Sea) in May 2000 (Verriopoulou *et al.* 2001; Frantzis *et al.* 2003).

More recently, a monitoring program in Syrian waters from 2003 to 2021 documented a freshly dead minke whale calf at Banyas (Saad and Mahfoud 2022). Along the Israeli coast, *B. acutorostrata* has been recorded only occasionally (Scheinin *et al.* 2004), with four stranded calves and a different live sighting (Kerem *et al.* 2012). Despite these scattered records from neighbouring countries, no prior occurrence of *B. acutorostrata* has been reported from Lebanese waters (Gonzalvo 2009; Khalaf *et al.* 2013; ACCOBAMS 2022). In this study, we report a stranding event of a common minke whale calf, *B. acutorostrata*, in the Lebanese waters for the first time, extending the known distribution of this species in the eastern Levantine Basin.

Strandings of cetaceans along the Lebanese coastline have been continuously monitored since 2013 by the national stranding network, coordinated by the National Centre for Marine Sciences (NCMS), CNRS-L. On 24 March 2025, the dead minke whale was found stranded at the Hannouch area, located north of Batroun, Lebanon (34°18'10.21"N, 35°40'18.20"E) (Figure 1).

The inspection and sampling were carried out by a team of experts from NCMS, according to the standard protocol recommended by the "Observatoire PELAGIS" (Dars *et al.* 2021). Identifying and measuring the animal was the first

intervention. The sex, the freshness of the carcass, and the presence of obvious lesions (signs of capture, collision, bites, etc.) were systematically recorded. In addition, tissue and organ samples were collected from the skin, blubber, muscle, lung, liver, kidney, and stomach. They were preserved at -20 °C for future research. The specimen was photographed, and the whole process was filmed.

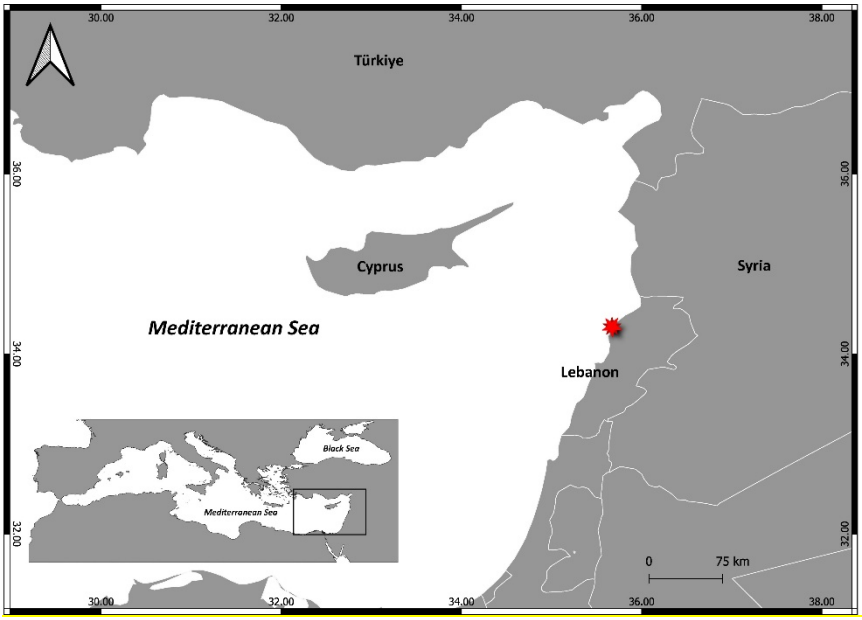


Figure 1. Stranding site of common minke whale *Balaenoptera acutorostrata* at Hannouch, Batroun coastal area, Eastern Mediterranean, indicated by a red star (34°18'10.21"N, 35°40'18.20"E)

Following the decomposition code based on postmortem observations, the carcass of the animal was categorized as DCC 1, extremely fresh (Ijsseldijk *et al.* 2019). The whale was initially found stranded alive in the afternoon of 24 March 2025. On the next day, however, when researchers of the CNRS-L, NCMS arrived at the stranding site, they found the minke whale had died before arriving. The body was not bloated, skin and mucous membranes were intact with cadaveric rigidity, absence of serum separation, and eyes were not glassy, all together corresponding to this level. The specimen was identified as female common minke whale, *Balaenoptera acutorostrata*, based on body size, pointed rostrum and presence of a white band across each flipper (Figure 2).

Morphological measurements were recorded (Table 1) and based on the total body length and stomach content, the stranded minke whale was found to be a nursing calf.



Figure 2. The stranded minke whale at Hannouch, Batroun coastal area, Eastern Mediterranean, showing the full body with the pointed rostrum. (A) left side; (B) right side.

The minke whale's body weight was estimated from its total length (TL = 367 cm) using the power relationship $W = aL^b$. The equation of Lockyer (1976) ($W = 0.049574\,L^{2.31}$, with W in t and L in m) gave about 1,000 kg. Gunnlaugsson *et al.* (2020) reported an exponent of b = 2.91 for directly weighed North Atlantic common minke whales a (0.015424) was set to give the same mass as Lockyer's equation at 7 m TL. With this value, the second relationship gave about 680 kg. The total body weight of the minke whale based on the body length was therefore estimated approximately to be between 680 and 1,000 kg. However, we estimated its weight visually on site as approximately 400 kg as the individual was thin, showing moderate concavity of the body laterally.

Although the external examination revealed poor body condition, based on the protocol by Ijsseldijk *et al.* (2019), no evident lesions or injuries related to disease or human-caused interaction, including boat collision and net entanglement. The internal examination revealed no macroscopic lesions, internal bleeding, or abnormalities or parasites in the kidneys or lungs. Due to the high level of

freshness when the whale was found, the examination of the stomach showed that it was empty, with some whitish liquid, and parasitic gelatinous cysts detected. Two gelatinous, translucent, ovoid cysts (approx. 0.5 × 0.2 mm) were found free in the stomach contents. Each consisted of a smooth, pale grey-green hyaline capsule enclosing a central, opaque, yellowish mass of fine coiled filamentous structures. Their nature (parasitic stage or prey-derived material) could not be determined at the time of examination.

Table 1. Morphological measurements of the minke whale stranded at Hannouch, Batroun coastal area, the Eastern Mediterranean

Code	Description	Measurement (cm)	Details
L1	Total body length	367	From tip of the rostrum (snout) to the notch of the median notch
L2	Tip of rostrum to tip of dorsal fin	269	Midline distance to the apex (tip) of the dorsal fin
L4	Tip of rostrum to axilla (armpit, anterior insertion of flipper)	122	Along the body side to anterior base of the flipper
L5	Tip of rostrum to genital orifice	238	Straight-line distance from snout tip to the genital orifice along the ventral body side
L6	Tip of rostrum to anus	267	Straight-line distance from snout tip to the anus along the ventral body side
L7	Length of pectoral fin	57	From the axilla (armpit, anterior insertion of flipper) to the top of the fin
L8	Size of the tail flukes	77	Distance between the tip of the flukes
L9	Size of dorsal fin	13	Distance from the tip to the insertion of dorsal fin
L10	Width of dorsal fin	21	Dorsal body midline from front base (origin) to rear base (insertion) of dorsal fin
L11	Girth at blowhole	180	Circumference of the body at the level of the blowhole
L12	Girth at anus	92	Circumference of the body at the level of the anus
E13	Blubber thickness	2.5	Measured in front of the dorsal fin; includes skin and blubber, typically taken dorsally on the right side

On the posterior part near the anal and genital area of the body, six ectoparasites were found preliminarily identified as *Pennella* sp. They were collected for further morphological study (Figure 3).



Figure 3. *Pennella* sp. observed on the posterior part of the minke whale at Hannouch, Batroun coastal area, the Eastern Mediterranean

The main observations support the idea that the individual found stranded on the Lebanese coast is a common minke whale, *B. acutorostrata* of less than a year-old female according to total body length, suggesting that the animal was still a nursing calf (Van Waerebeek *et al.* 1999; Christiansen *et al.* 2014). Common minke whales are born with a total body length of between 2.4 m and 2.8 m, and are weaned when they are between 4.5 m and 5.5 m in length (Van Waerebeek *et al.* 1999; Harms *et al.* 2008; Perrin and Brownell 2009; Christiansen *et al.* 2014). Therefore, animals whose body length is between 2.8 m and 4.3 m can be defined as nursing calves (Fraija-Fernández *et al.* 2015). However, previous reports of common minke whale calves with a body length less than 3.5 m have shown that when dissected, animals still had milk in various digestive stages along the gastrointestinal tract (Harms *et al.* 2008; Shoham-Frider *et al.* 2014).

The present record of a common minke whale calf on the Lebanese coast represents the first documented occurrence of this species in Lebanese waters and constitutes a new country record for the eastern Levantine Basin, as no previous references exist. This finding extends the known distribution of the species along the eastern Mediterranean coastline, filling a geographical gap between previously documented records from Syria to the north and Israel to the south (Scheinin *et al.* 2004; Kerem *et al.* 2012; Saad and Mahfoud 2022). The calf status of the individual, consistent with similar records from both the western and eastern Mediterranean (Van Waerebeek *et al.* 1999; Fraija-Fernández *et al.* 2015; Maio *et al.* 2016), adds further weight to the hypothesis that the Mediterranean Sea, including its eastern basin, may serve as a calving, migrating route or nursery

ground for North Atlantic populations of this species. Further observations are, however, required to support this hypothesis.

The common minke whale, *B. acutorostrata*, is classified as Least Concern (LC) globally according to the IUCN Red List (Cooke *et al.* 2018). However, it is rarely observed in the Mediterranean Sea, where records average fewer than one per year (IUCN 2023). Similarly, ACCOBAMS considers the North Atlantic minke whale a non-regular species within its Agreement Area, reflecting its uncommon occurrence in the region.

An updated inventory of cetacean species inhabiting the Lebanese marine area should be compiled, accounting for changes in species distribution and any newly discovered or reclassified species. This revised list would support accurate conservation assessments, inform marine management policies, and enhance our understanding of regional biodiversity.

Acknowledgement

The authors would thank the volunteers for their assistance during the fieldwork and Mr. Elie Tarek for his support. This study was financially supported by the National Centre for Marine Sciences (NCMS), National Council for Scientific Research in Lebanon (CNRS-L).

Competing interest: No potential conflict of interest was reported by the authors.
Ethics committee approval: There is no necessity for ethical approval for this research.
Financial disclosure: This research did not receive any specific grant.
Author contributions: S.J. and AO. planned the study. A.O., S.J., C.M. and M.F. collected the samples. A.O. performed the laboratory work. S.J. and A.O. wrote the initial manuscript draft with input from all the authors. M.L. and M.G, visualisation (map preparation). All authors contributed to the article and approved the submitted version.

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