

RESEARCH NOTE

Observations of bowhead whales in west Greenland during summer

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Abstract

Bowhead whales (*Balaena mysticetus*) are usually away from west Greenland waters during summer. Reported here is an observation of at least six bowhead whales in July 2022 in the Uummannaq Fjord system of west Greenland.

Keywords

Balaena mysticetus; eastern Canada–west Greenland stock; summer aggregation; migration; Uummannaq Fjord

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Abbreviations

SST: sea-surface temperature
IBCAO: The International Bathymetric Chart of the Arctic Ocean

Introduction

Bowhead whales (*Balaena mysticetus*) of the eastern Canada–west Greenland stock occur off west Greenland during January to June, most numerous from April (Tervo et al. 2009; Heide-Jørgensen et al. 2021). Tracked from the feeding grounds in Disko Bay in April and May 2009 and 2010, 78 tagged whales all left Greenland waters and migrated north-west towards the Canadian Arctic Archipelago during May and June (Heide-Jørgensen & Laidre 2021; Heide-Jørgensen et al. 2021). In July and August they were mainly distributed around Baffin Island and in the waters of the Canadian Arctic Archipelago (Nielsen et al. 2015; Heide-Jørgensen & Laidre 2021).

Observations

During land-based fieldwork in summer 2022, a number of bowhead whales were observed in a bay in south-west Svartenhuk Peninsula (Siggup Nunaa), in the northern part of Uummannaq Fjord, west Greenland (71.40°N, 55.03°W; Fig. 1). On 24 July 2022, a relatively small and

greyish, mottled bowhead whale was observed during a boat transfer from eastern Svartenhuk Peninsula to the bay of Tasiussap Imaa, a shallow bay in which there were several icebergs, ranging from bergy bits to large bergs. We got the impression that it was a stray young whale, but the following days revealed that several bowhead whales were in the bay. On 26 July, a single large whale was seen basking at the surface 150 m from the coast, and the same evening up to four large whales were simultaneously moving slowly back and forth off our campsite, most likely feeding (Fig. 1). The following day, four whales were again observed at approximately the same positions, and later, during a boat transfer a single whale was seen somewhat to the west of the four whales. Finally, the same evening, our boat captain observed two whales on his trip back to Uummannaq.

As the first observed whale was clearly different from the (at least) five observed the following days, altogether there was a minimum of six whales staying in the bay of Tasiussap Imaa in July 2022; it is possible that there were more. If only a single whale had been observed, it could easily have been characterized as

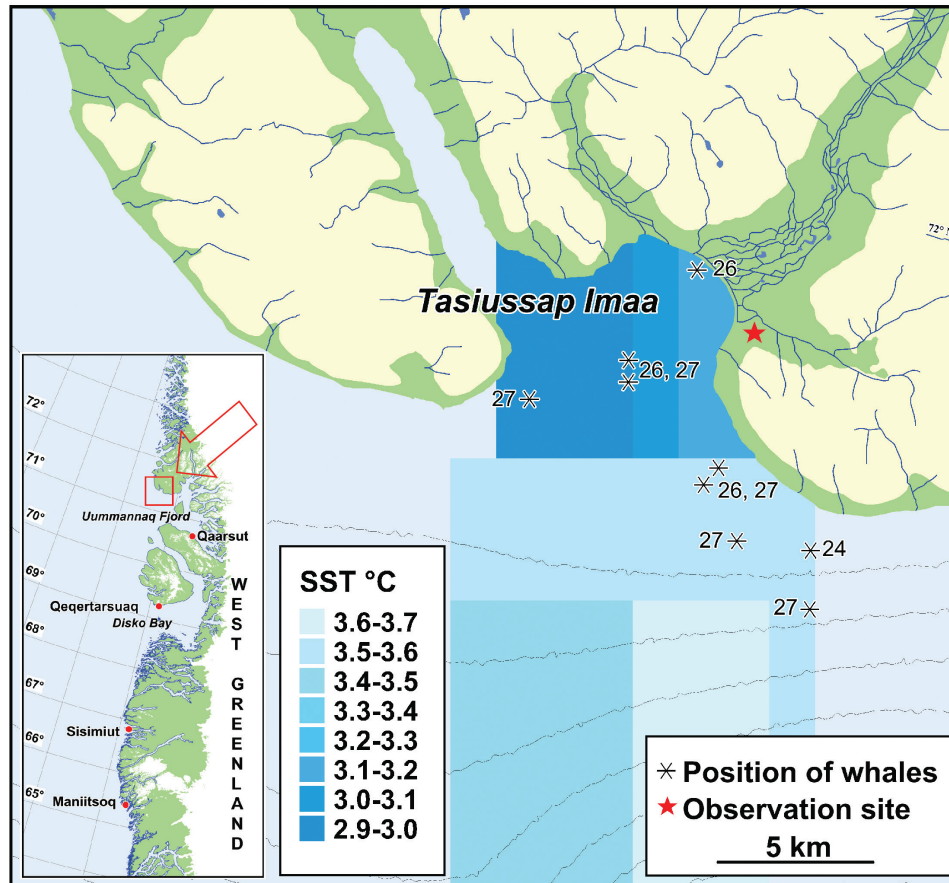


Fig. 1 Positions of at least six different bowhead whales, observed 24–27 July 2022. The numbers by the asterisks indicate the observation date in July. Bathymetry is shown with depth curves with an equidistance of 25 m, interpolated based on the IBCAO, version 4 (Jakobsson et al. 2020). The depth model is probably not accurate in the specific area, as icebergs with a keel much deeper than 25 m were present in the bay. Daytime SSTs on 26 July 2023 (shown in shades of blue) in the bay and the waters south of are derived from Aqua-MODIS (NASA Ocean Biology Processing Group 2023a).

a stray animal, but since several individuals were observed, some of which were apparently feeding, this is not likely.

Another observation is worth mentioning in this context. On 3 June 2022, a bowhead whale was caught and landed at Qaarsut, in Uummannaq Fjord, 110 km south-east of the site where we observed the whales (M.P. Heide-Jørgensen, pers. comm.). This was also outside the normal season for bowhead whales in west Greenland and at a location where bowhead whales usually do not occur. People in Uummannaq told us that bowhead whales had been observed during summer in the region in recent years.

Discussion

Eschricht & Reinhard (1866) reported in detail the arrivals and departures of bowhead whales from whaling stations (Sisimiut and Qeqertarsuaq) in west Greenland

between 67° and 70°N and more scattered observations further south to Maniitsoq at 65°N and north to Upernavik at 73°N during the years 1780 to 1839. At Sisimiut the arrival dates ranged between 28 November and 22 January, with an outlier on 10 February, and at Qeqertarsuaq between 12 November and 6 January. The days of last annual observations at Sisimiut ranged from 12 February to 9 April and at Qeqertarsuaq from 26 April to 25 June. These dates correspond to the occurrence pattern seen today, and only one observation from July was reported by Eschricht & Reinhard (1866): a young whale was captured on 11 July 1803 near Saitok Island (probably Saatut), in Uummannaq Fjord, resembling the 2022 observations reported here. This is the only historical observation in the Uummannaq Fjord system known to us.

Examining movements of bowhead whales in relation to SST, Chambault et al. (2018) found that the whales target areas with SSTs between −0.5 and 2 °C. On 26 July

2022, the SST in the area where we observed the whales ranged from 2.9 to 3.2 °C, with the lowest values in the bay itself (Fig. 1). The average SST for the period 20 to 27 July ranged from 4.6 to 6.3 °C (NASA Ocean Biology Processing Group 2023a, 2023b). This is considerably higher than the preferred temperatures reported by Chambault et al. (2018). Based on this information, the Tasiussap Imaa bay seems not to be an optimal habitat for bowhead whales.

Whether our observations, along with those of local residents, are early signs of a new summer ground for bowhead whales in west Greenland or they represent a short-lived occurrence in a species that shows flexibility in movement patterns and habitat selection (see Chambault et al. 2018) is hard to assess. But with the increasing warming in the Arctic (Rantanen et al. 2022), it is likely that the bay's importance as a summer habitat for the whales will be of short term, because the SSTs in the future will deviate even more from the temperatures preferred by the whales.

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Disclosure statement

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