A note on a pygmy right whale (*Caperea marginata*) sighting in the southwestern Pacific Ocean

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ABSTRACT

There are no previously published sightings of pygmy right whales (*Caperea marginata*) from the southwest Pacific Ocean. This note reports a sighting of 14 pygmy right whales approximately 445km southeast of Christchurch, New Zealand, at 17:30 on 5 January 2001 (46°26'S, 177°18'E). No cow-calf pairs were observed. Although feeding was not directly observed, several animals defecated during the observation period. The faeces were bright red and formed into small red clumps that bobbed at the water's surface which implies that the whales had recently been feeding in the immediate area. It appears that pygmy right whales may aggregate at the Sub-tropical Convergence during the austral summer and that this area may represent an important feeding ground.

KEYWORDS: PYGMY RIGHT WHALE; SURVEY-VESSEL; DISTRIBUTION; FEEDING GROUNDS; PACIFIC OCEAN; SOUTHERN HEMISPHERE

INTRODUCTION

The pygmy right whale (*Caperea marginata*) is the smallest (<7m) of the baleen whales. Little is known of its life history and it has only rarely been observed in the wild (e.g. Baker, 1985; Kemper, 2002a). It is found only in the Southern Hemisphere and is presumed to have a circumpolar, temperate distribution based on the available records. This note represents the first published sighting from the southwest Pacific Ocean.

MATERIALS AND METHOD

The 2000-2001 International Whaling Commission – Southern Ocean Whale and Ecosystem Research Programme (IWC-SOWER) Circumpolar Cruise was conducted from 5 January to 5 March 2001. The cruise was the 23rd in a consecutive series of Antarctic cruises conducted by the IWC primarily to estimate the abundance of Antarctic minke whales (*Balaenoptera bonaerensis*) (e.g. see Matsuoka *et al.*, 2003). The vessels departed Wellington on 5 January. The date change associated with crossing the International Date Line was made upon leaving Wellington. Permission was granted by the Ministry of Foreign Affairs and Trade, New Zealand, for a sightings survey within the 200 n.mile Exclusive Economic Zone (EEZ) of New Zealand, but only conducted in passing mode. Sighting effort was conducted by the bosun and topmen from the barrel (crow's nest) and the upper bridge where the helmsman, captain or officer-on-watch, international researchers, and the chief engineer or deputy were also present. Primary search effort was only conducted in acceptable weather conditions. These conditions are defined as being able to see a minke whale blow at a distance of at least 1.5 n.miles, with wind speed less than 20 knots. The sighting survey was conducted at an average of 11.5 knots.

RESULTS

The sighting was made at 46°26'S, 177°18'E (approximately 445km southeast of Christchurch, New Zealand) while *en route* to the Antarctic aboard the *Shonan-Maru No.2* at 17:30 on 5 January 2001. Weather conditions were optimal at the time of the sighting with visibility estimated at 13km and a wind speed of 11 knots. The temperature was 15.1°C, the sea surface temperature 13.1°C and the water depth was approximately 2,500m. The initial radial sighting distance was estimated to be 1.5km. Shortly after the initial sighting, vessel speed was reduced from 11.5 to 2.5 knots as the animals crossed the trackline within 35m of the bow.

The animals were identified as pygmy right whales by the presence of an arched jawline (Fig. 1), and a prominent dorsal fin positioned about two-thirds back on their bodies. Body lengths were estimated to be 5.5-6.5m except for one probable juvenile estimated to be 4m long. These length estimates are in agreement with Ross *et al.* (1975); the largest animal they measured was an adult female 6.4m long. There were 14 animals present and no cow-calf pairs, although the 4m animal did appear to keep company with another, larger animal.

As the whales swam past the bow it was possible to look almost straight down at them from above, the head shape of a pygmy right whale has a very narrow profile, similar to an Antarctic minke whale and quite unlike a right whale (*Balaena* spp.). The head was small, narrow and pointed, with a noticeably raised blowhole, visible when the animals exhaled. A mid-dorsal ridge extended from the leading edge of the blowhole to the tip of the rostrum. The arched lower lip was sometimes evident when the head was lifted during surfacing, but was usually not seen. The dorsal fin was medium-sized, pointed and falcate. The whales swam surprisingly quickly, suggesting that these whales are hydrodynamically efficient (during the observation a splinter group briefly increased their swim speed to an estimated 6-8 knots without apparent effort).

The body colour was dark greyish above and pale ventrally with some white sweeping up on the sides that was also similar to minke whales. The body colour showed some variation that may possibly be age-related. The apparent juvenile (4m long and very little visible body scarring – see below) was greyish above and pale pinkish ventrally (Fig. 2). Presumed adults (>5.5m long, heavy body scarring)

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appeared more brownish in photographs. Another colour pattern perhaps age-related was the presence of a thin white outline on the dorsal surface of the lower lip on what appeared to be older individuals (Fig. 3); some less-scarred individuals, including the smallest one, did not show this feature. All of the animals observed well had a fairly conspicuous, pale chevron varying in width and shape on their sides and back (Figs 1-3). The chevron extended from about the area of the pectoral flippers and angled forward, with the apex on the mid-body line of the back and pointing forwards.

Fig. 1. Pygmy right whale showing arched lower jaw and blowhole ridge. Photograph by Robert Pitman.

Fig. 2. An apparently juvenile pygmy right whale identified by the lack of oval scars and different colouration (see text for details). Photograph by Robert Pitman.

All of the animals had concave, oval scars scattered over most of the visible parts of their bodies (Figs 1-3). These scars were approximately 5-10cm at their widest, and in most cases the long axis of the scar was parallel to the long axis of the whale. These were presumably healed wounds from the bites of cookie-cutter sharks (*Isistius* spp.; Jones, 1971). The number of visible bites per animal ranged from <10 to dozens and it appeared that bigger animals were the most heavily pocked with scars. No fresh bites were seen on any of the animals, suggesting that they had been bitten in another part of their geographic/temporal range. Baker (1985) suggested that this species is a winter breeder based on observations of stranded animals. Matsuoka *et al.* (1996) also noted the presence of presumed cookie-cutter shark bites on animals observed in the southern Indian Ocean.

Fig. 3. Pygmy right whale showing chevrons, oval scars presumably from bites of cookie-cutter sharks (*Isistius* sp.) and a thin white outline on the lower lip. Photograph by Robert Pitman.

Initially, the animals formed a fairly tight group, milling and rolling at the surface. During most of the 10-minute observation period, the whales swam slowly near the surface, at an estimated 3 knots. No prolonged diving was observed; the longest dive did not exceed three minutes. When surfacing, the head and blowhole usually appeared before the dorsal fin was exposed, although sometimes the head and fin were exposed simultaneously. The blows seen initially were thin and columnar and very similar to Antarctic minke whales, but on closer approach the blows became smaller and puffier. The whales appeared to be responding to the vessel because after closing within approximately 300m, most of their blows were not visible anymore. This inconspicuous surfacing behaviour has also been reported by Ivashin *et al.* (1972) and Ross *et al.* (1975).

DISCUSSION

Although no feeding was directly observed, most animals defecated during the observation period. The faeces were bright red and formed into small red clumps that bobbed at the surface. This implies that the whales had recently been feeding in the immediate area. Stomach contents of pygmy right whales indicate that they eat copepods of the genus *Calanus* (Ivashin *et al.*, 1972). The stomach of one individual that stranded in False Bay, South Africa, in March 1990 contained 99.9% copepods, mainly *Centrophages brachiatus* and *Calanoides carinatus* (Sekiguchi *et al.*, 1992). The bright red faeces observed are consistent with a diet of copepods. Also, the milling, apparently resting, behaviour initially seen may also be related to the small scale vertical movement of copepods in the water column, with a considerable number of patches moving to the surface in the evening (Kawamura, 1974).

There are no previously published sightings of pygmy right whales from the southwest Pacific Ocean, although the sighting reported here is within the expected geographical range of this species (Kemper, 2002b). The sighting occurred just at the Sub-tropical Convergence (sea surface temperature was 13.1°C), where large concentrations of *Calanus tonsus* are known to occur (Kawamura, 1974). Kawamura (1974) indicated that the mean summer surface temperature at the Sub-tropical Convergence is 9°-13°C. He found large, dense patches of copepods and small euphausids on or near the Convergence south of Australia and New Zealand (Fig. 4). A single sighting of 80 pygmy right whales in late November 1992 in the southeast Indian

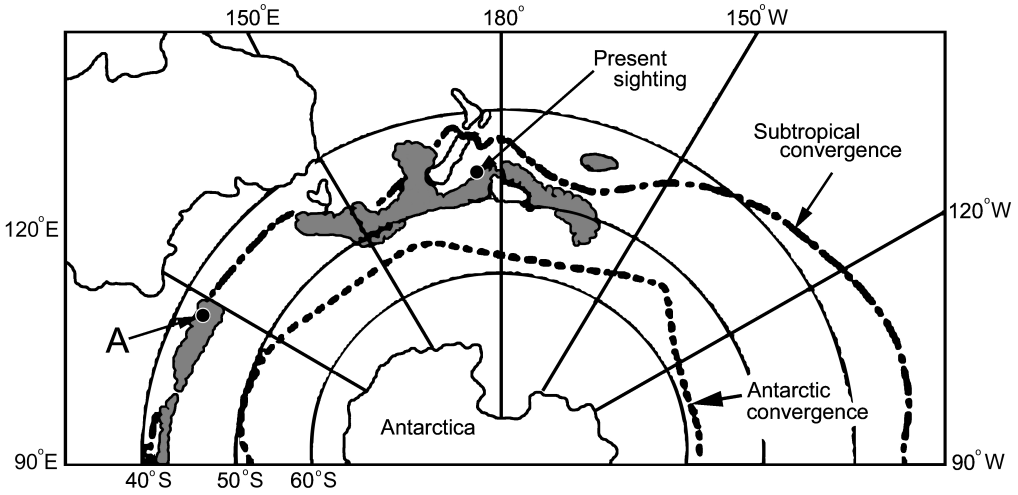

Fig. 4. Location of pygmy right whale sighting described in this note and distribution of *Calanus tonsus* in the Southern Ocean (shaded area; from Kawamura, 1974; see text for details). A: sighting by Matsuoka *et al.* (1996).

Ocean in the morning was also just south of the Sub-tropical Convergence in an area with a large concentration of *C. tonsus* (Matsuoka *et al.*, 1996), no cow-calf pairs were sighted. This limited information provides some evidence that pygmy right whales may aggregate at the Sub-tropical Convergence during the austral summer and that this may represent an important feeding ground.

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