

OPERATION SIGHTINGS: SIGHTINGS OF CETACEANS IN THE SOUTHERN HEBRIDES, SCOTLAND

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INTRODUCTION The Hebrides, Scotland, are situated geographically at the northwestern edge of the European continental shelf. The waters around the Hebrides have the lowest annual variation in sea temperature of any area around the British Isles, which, together with strong tidal streams, complex seabed topography, and mixing of water bodies around islands and headlands, results in areas of high biological productivity and hence high cetacean abundance.

Since 1997, the Hebridean Whale and Dolphin Trust has been assisting the Sea Watch Foundation in collating sightings of cetaceans from the coastal waters of Northwest Scotland. The aim of the *Operation Sightings* project is to establish and execute a co-ordinated programme of cetacean sightings throughout the Hebrides utilising a network of observers from whale and wildlife watching vessels, fishing boats, private yachts and ferries.

A summary of the data collected from this project was regularly collated and circulated to Scottish Natural Heritage (Scotland's governmental conservation body), participants of the scheme, and wildlife tour operators. In addition, the summaries were published in a variety of local newspapers, magazines and displayed upon the internet. This process of dissemination greatly increases local awareness of cetaceans in the Hebrides, helps with the process of monitoring cetacean populations and, moreover, allows contributors to the scheme to feel that their sightings are of value and are helping to contribute to the conservation of cetaceans in Northwest Scotland.

MATERIALS AND METHODS The Operation Sightings programme was conducted using simple sighting sheets and identification charts which were specifically designed for those taking part in the programme. Each sighting was defined as an encounter with an animal or a group of animals until such time that the animal is no longer in view.

The area within which sightings were collected ranged from 55°20' N - 59°20' N and 4°30' W - 9°00' W. Details were taken of the time and date of the sighting, the species observed and the reliability of this identification, as well as the estimated number of individuals within the encountered group. In most cases environmental data was also recorded (such as sea state, wind direction and water depth).

RESULTS In 1998, there were a total of 758 cetacean sightings collected from 42 vessels (including private yachts, commercial boats, fishing boats and ferries) and also reported by members of the general public. These sightings comprised eleven species. The most commonly sighted species were the harbour porpoise, *Phocoena phocoena* (372 sightings), and the minke whale, *Balaenoptera acutorostrata* (245 sightings). In addition, there were eleven sightings of killer whales, *Orcinus Orca*; 42 sightings of common dolphins, *Delphinus delphis*; 31 of bottlenose dolphins, *Tursiops truncatus*; three of Atlantic white-sided dolphins, *Lagenorhynchus acutus*; seven of white-beaked dolphins, *Lagenorhynchus albirostris*; 24 of Risso's dolphins,

Grampus griseus; five sightings of northern bottlenose whales, *Hyperoodon ampullatus*; two sightings of pilot whales, *Globicephala melas*, and two sightings of striped dolphins, *Stenella coeruleoalba*. In addition, there were 14 sightings of unidentified delphinids, although judging from their distribution, the majority of these may have been bottlenose dolphins, and 45 sightings of basking sharks. Seasonal patterns in sightings frequency are summarised in Figure 1 and the distribution of sightings are displayed in Figure 2.

DISCUSSION Harbour porpoise: Harbour porpoises were sighted throughout the year. A large percentage of the total number of porpoises sighted were reported from the waters around the Small Isles (Rum, Eigg and Muck) and around the Isle of Mull. Porpoise sightings were predominantly in inshore waters of depths of 30 metres or less. The number of reported sightings was greatest between May and September, which was probably influenced by an increase in sightings effort during this period (Fig. 1A).

Killer whale: This species was frequently sighted off the Ardnamurchan peninsular, and one identifiable individual was sighted around Coll and Tìree on at least three occasions from between May and September (Fig. 1B). This particular individual killer whale has been sighted regularly for the past twelve years as far north as the Isle of Lewis and as far south as the Isle of Islay (Evans, unpubl. data).

Minke whale: Sightings of minke whales predominated around the Small Isles and the north of Mull, but there were sightings throughout the Hebrides. The peak period for minke whale sightings was between May and September (Fig. 1C), but there were also sightings as late as December. Minke whales and harbour porpoises were often sighted in the vicinity of one another.

Common dolphin: Common dolphins were regularly sighted in the Sea of Hebrides and the waters around Skye and the eastern Outer Hebrides. They were not often seen inshore nor further north than the Isle of Skye. This species was only sighted between the months of May and September (Fig. 1D).

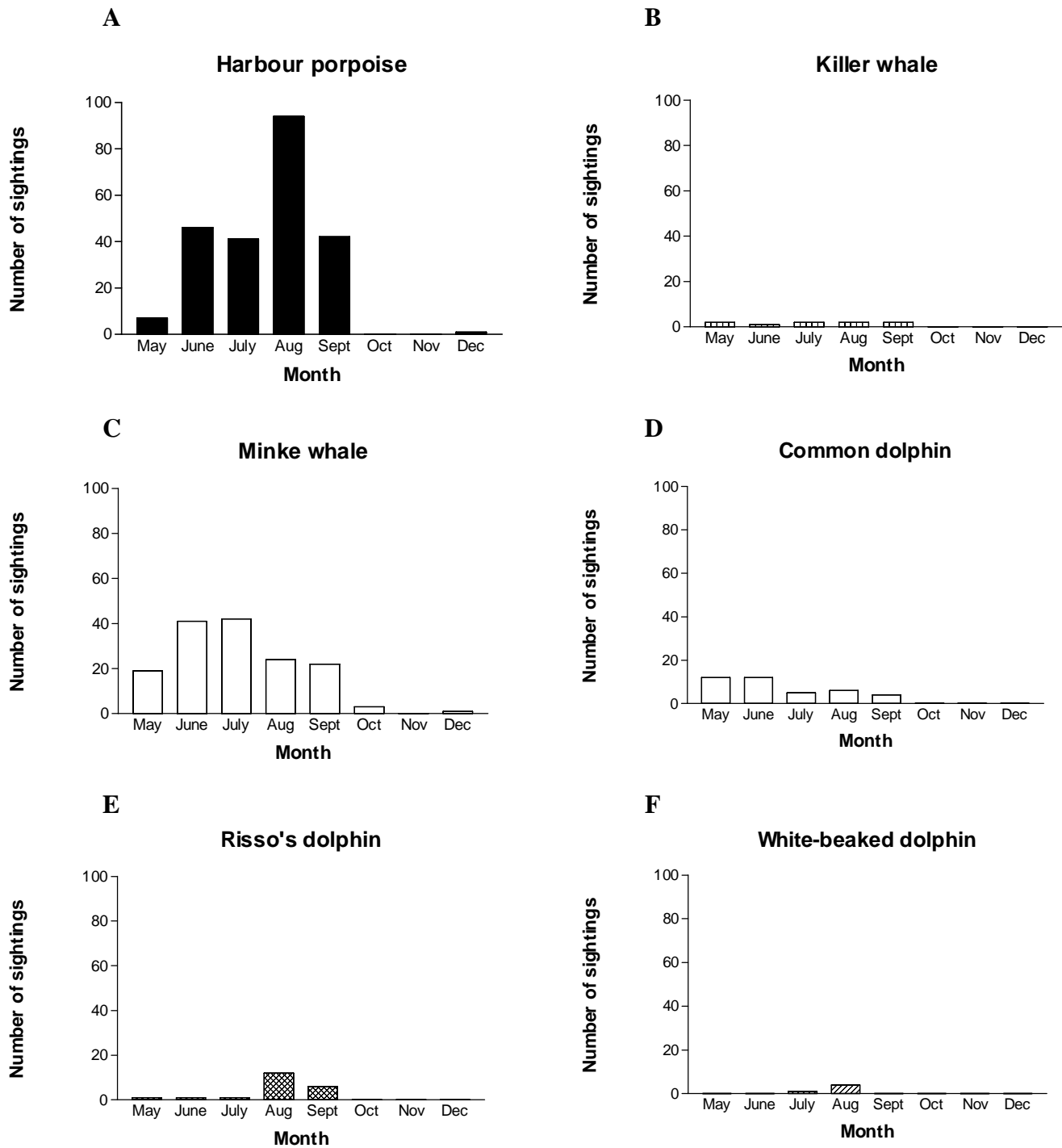
Risso's dolphins: This species was sighted to the north of Mull and the Small Isles, and also south of Skye and south of Tiumpan Head, Isle of Lewis. They were sometimes seen to be associating with white-beaked dolphins.

Atlantic white-sided dolphins and white-beaked dolphins: Atlantic white-sided dolphins were sighted around the Isle of Barra, whilst white-beaked dolphins were rarely seen in the southern Hebrides, but they were sighted around North Uist and Tiumpan Head, Isle of Lewis.

Bottlenose dolphin: Bottlenose dolphins were sighted throughout the year. Sightings were distributed around Mull, Coll, Loch Maddy (Uist) and Tiumpan Head (Isle of Lewis). These give potential evidence for a few resident groups of bottlenose dolphins existing within the Hebrides. It was discovered through the course of this project that bottlenose dolphins were often assumed to be common dolphins as many people were unaware of the existence of bottlenose dolphins in the area. On the other hand, systematic surveys of the Minches and Sea of Hebrides over the last seven years indicate the species to be scarce at least during summer in the region (Boran *et al.*, this volume).

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Fig. 1. Seasonal distribution of cetacean sightings in Northwest Scotland.



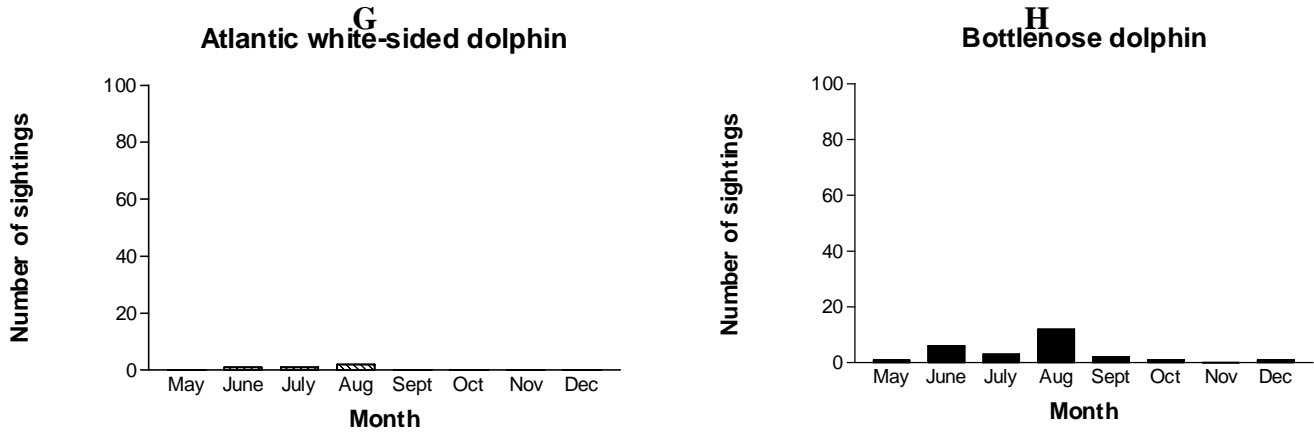


Fig. 2. The distribution of reported cetacean sightings during 1998.

