

A note on killer whales in the Gulf of St. Lawrence, including an account of an attack on a minke whale

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INTRODUCTION AND METHODS

Killer whales (*Orcinus orca*) have been reported from June through October in the Gulf of St. Lawrence, where they are represented by sightings and strandings from widespread localities (Vladykov 1944; Sergeant and Fisher 1957; Sergeant *et al.* 1970; Lien *et al.* 1979). In June and July, killer whales have been reported to be abundant in the region of the Strait of Belle Isle, perhaps following rorquals passing through the Strait (Sergeant and Fisher 1957) *en route* to Labrador and Davis Strait.

Since 1979, the Mingan Island Cetacean Study (MICS) has carried out extensive ship-board, aerial and land-based surveys for cetaceans in the Gulf of St. Lawrence, particularly along the North shore, from the Saguenay River to the Strait of Belle Isle. The principal study area has been in the sector which includes the Mingan Island and the northwest coast of Anticosti Islands (Sears 1982; Sears and Williamson 1982). In addition, MICS has logged sightings of marine mammals by participants in a volunteer sighting network (including fisherman, fisheries officers, wildlife biologists and workers in coastal environmental programmes).

RESULTS AND DISCUSSION

Twelve sightings and two strandings of killer whales have been recorded in the Gulf of St. Lawrence since 1977, all along the north shore

of the Gulf. In addition, regular, unconfirmed reports have been received of killer whales in the northeastern Gulf as the ice breaks up in spring (Table 1). Even collectively, this represents relatively few observations given the rather extensive effort.

While killer whales are seen almost every year in the Gulf, they do not appear abundant. Mitchell and Reeves (1988 - this volume) estimate that at any given time the population is probably in the tens rather than hundreds. Approximately 90% of the MICS survey effort has been directed at the Quebec North Shore; even in years when searches covered a wider area of the Gulf (Sears and Williamson 1982), surveys yielded relatively smaller percentages of marine mammal sightings in the southern than in the northern Gulf. Our own observations of killer whales from small boats include the following of an attack on a 6 m long minke whale (*Balaenoptera acutorostrata*):

On September 16 1984, we encountered three killer whales (an adult male, one animal of the same size, presumed to be a female and a smaller animal of undeterminable sex) at about 50°07'N and 63°53'W in Jacques Cartier Channel. The visibility was excellent and the sea calm. We were attracted to the area at 0900 hours by considerable splashing. By the time we approached, at 0910 hours, the splashing had ceased. The killer whales had apparently killed the minke whale, as they where, by then, milling. At 0920 hours, one of

TABLE 1
Records of Killer whales in the Gulf of St. Lawrence 1977 through 1987
(S = sightings; ST = stranding).

Date	Location/Lat. & Long.	No.	Event	Source
Late June 1977	Brador Baie, Quebec 51°24'N, 57°20'W	1	S	G. Chapdelaine
Mid June 1978	Mingan Islands, Quebec 50°11'N, 64°12'W	1	S	G. Chapdelaine
15 July 1980 to 15 Aug. 1980	Natashquan, Quebec 50°06'N, 61°53'W	3	S	R. Greendale
23 June 1982	Gulf of St. Lawrence 49°30'N, 66°30'W	3	S	R/V Polar Prince MICS
15 Aug. 1982	Tadoussac, Quebec	several	S	Mitchell and Reeves 1988 – this volume
Summer 1983	St. Augustine, Quebec 51°09'N, 58°26'W	1	ST	MICS
21 July 1983	St. Paul River, Quebec	7	S	MICS
6 Sept. 1983 or 9 June 1983	N. of Anticosti Is. 49°38'N, 62°08'W	1	S	Mitchell and Reeves 1988 – this volume
16 Sept. 1984	Mingan Islands, Quebec 50°07'N, 63°53'W	3	S	MICS
Spring 1985	Old Fort Bay, Quebec 51°19'N, 57°55'W	1	ST	MICS
3 July 1986	Mutton Bay, Quebec	2	S	Mitchell and Reeves 1988 – this volume
2 Oct. 1986	Mingan Islands, Quebec 50°12'N, 64°17'W	4	S	MICS
23 Oct. 1986	Mingan Islands, Quebec 50°08'N, 64°27'W	3	S	MICS
22 June 1987	Harrington Harbor, Que. 59°36'N, 50°23'W	3	S	MICS/Quebec-Labrador Foundation

the killer whales surfaced with part of a bloody carcass, containing several ribs, protruding from its mouth. Thereafter, we found portions of blubber with ventral pleats, the largest weighting approximately 25 kilograms, which bore teeth marks. Black-legged Kittiwakes (*Rissa tridactyla*) were seen scavenging on the many smaller pieces of whale flesh at the surface.

That killer whales kill and eat marine mammals is well documented (see Martinez and Klinghammer 1970 and Perrin 1982 for reviews). Large groups of 10–40 killer whales have been observed attacking such cetaceans as blue whales, *B. musculus* (Tarcy 1979), narwhals, *Monodon monoceros* (Steltner *et al.* 1984), humpback whales, *Megaptera novaeangliae* (Whitehead and Glass 1985) and

sperm whale, *Physeter catodon* (Arnbom *et al.* 1987). Smaller groups have been observed preying on Dall's porpoises, *Phocoenoides dalli* (Barr and Barr 1972) and cow-calf pairs of gray whales, *Eschrichtius robustus* (e.g. Morejohn 1968; Baldrige 1972).

Hancock (1965) watched seven killer whales pursue and kill a minke whale in Barkley Sound off Vancouver Island, British Columbia and six killer whales chased and killed a minke whale in the Gulf of Alaska (Anon. 1977). A killer whale taken in the Newfoundland whale fishery contained flesh of a minke whale (Sergeant and Fisher 1957). The minke whale has been documented from stomach contents to be a major prey item of killer whales in the Antarctica region (Shevchenko 1975; Yuhkov *et al.* 1975).

From reports, it appears that killer whales were once much more abundant in the Gulf than they are present and frequently preyed upon white whales or belugas (*Delphinapterus leucas*) in the St. Lawrence estuary during the spring and fall (Vladykov 1944; Mitchell and Reeves 1988 – this volume). Belugas, once abundant in the Gulf of St. Lawrence, have declined in recent years; the present population is estimated to be constant at 500 (R. Michaud, pers. comm.). If the beluga was an important source of food for killer whales in the Gulf of St. Lawrence, their decline may be a factor in the present apparent scarcity of the killer whale in this region.

Vladykov (1944) reported that as many as 40 killer whales were involved in one attack on a white whale. The largest pod we have observed contained 7 animals; the average 2.8 (n = 9). Reports by fisherman of killer whales in the northeast Gulf during the spring ice break-up also usually have involved single animals or small pods. These observations coincide with the departure from the Gulf of young harp seals (*Pagophilus groenlandicus*) and the spring run of Atlantic salmon (*Salmo Salar*) through the Strait of Belle Isle.

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