

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/236892865>

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

Article · January 1988

CITATIONS

8

READS

38

2 authors, including:



Frederick Wenzel

National Oceanic and Atmospheric Administration

38 PUBLICATIONS 363 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Cape Verde humpback whales [View project](#)



Population structure and conservation status of white-beaked (*Lagenorhynchus albirostris*) and Atlantic white-sided dolphins (*Lagenorhynchus acutus*) across the North Atlantic [View project](#)

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

Frederick Wenzel and Richard Sears
Mingan Island Cetacean Study Inc.,
285 Green Street St. Lambert, Quebec J4P 1T3 Canada

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 shipboard, 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

Date
Late J
Mid Ju
15 July
15 Au
23 Jun
15 Au
Summ
21 Jul
6 Sept
9 Jun
16 Sep
Sprin
3 July
2 Oct
23 O
22 Ju
the
bloo
truc
por
larg
whi
tiw
ing
at t
7
ma
Kli
vie
hav
as
nar
198
no

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* (Tarpy 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; Yukhov *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.

REFERENCES

- Anon. 1977. The Alaska sportsman. Alaska Magazine, March 1977: 36-37.
- Arnbom, T., V. Papastavrov, L. S. Weilgart and H. Whitehead 1987. Sperm whales react to an attack by killer whales. *J. Mammal.* 68(2): 450-453.
- Baldrige A. 1972. Killer whales attack and eat a gray whale. *J. Mammal.* 53(4): 898-900.
- Barr, N. and L. Barr 1972. An observation of killer whale predation on a Dall porpoise. *Can. Field Nat.* 86(2): 170-171.
- Dolphin, W. F. 1987. Observations of Humpback whale, *Megaptera novaeangliae* - killer whale, *Orcinus orca* interactions in Alaska: Comparison with terrestrial predator-prey relationships. *Can. Field Nat.* 101(1): 70-75.
- Hancock, D. 1965. Killer whales kill and eat a minke whale. *J. Mammal.* 46(2): 341-342.
- Leatherwood, J. S. and M. E. Dahlheim 1978. Worldwide distribution of pilot whales and killer whales. San Diego, Naval Oceans System Center (NOSC) Tech. Rep. 295: 39 pp.
- Lien, J., S. Johnson and B. Merdson 1979. Whale distribution in Newfoundland during 1979. *Osprey* 11(2): 21-32.
- Martinez, D. R. and E. Klinghammer 1970. The behaviour of the whale, *Orcinus orca*: a review of the literature. *Z. Tierpsychol.* 27: 828-839.
- Mitchell, E. and R. Reeves 1988. Records of killer whales in the western North Atlantic, with emphasis on eastern Canadian waters. *Rit Fiskideildar* 11: 161-193.
- Morejohn, G. V. 1968. A killer whale-gray whale encounter. *J. Mammal.* 49(2): 327-328.
- Perrin, W. F. (Ed.) 1982. Report of the workshop on identity, structure and vital rates of killer whale populations, June 1981. *Rep int. Whal. Commn* 32: 617-632.
- Sears, R. 1982. Cetaceans of the Gulf of St. Lawrence, distribution and relative abundance. Mingan Island Cetacean Study Inç. Soquip project No. 1712-0005-0010, 25 pp. (unpubl.).
- and J. M. Williamson 1982. A preliminary aerial survey of marine mammals for the Gulf of St. Lawrence to determine their distribution and relative abundance. Final Report on Parks Canada Contract 81-1272, 73 pp.
- Sergeant, D. E. and H. D. Fisher 1957. The smaller cetacea of eastern Canadian waters. *J. Fish Res. Bd. Canada* 14(1): 83-115.
- , A. W. Mansfield and B. Beck 1970. Inshore records of cetacea for eastern Canada, 1949-68. *J. Fish. Res. Bd. Canada* 27: 1903-1915.
- Shevchenko, V. I. 1975. The correlation between killer whales and other cetaceans. *In Marine Mammals, Part 2. Report presented to the 6th All Union Scientific Research Institute of Sea Fisheries and Oceanography, Naukova Dumka, Kiev, USSR, pp. 173-175.*
- Steltner, H. S. Steltner and D. E. Sergeant 1984. Killer Whales, *Orcinus orca*, prey on narwhals, *Monodon monoceros*: an eyewitness account. *Can. Field Nat.* 98(4): 458-462.
- Tarpy, C. 1979. Killer whale attack! *Nat. Geogr.* 155(4): 542-545.
- Vladykov, V. D. 1944. Chasse, Biologie et valeur économique du marsouin blanc ou beluga (*Delphinapterus leucas*) du fleuve et du golfe Saint-Laurent. Dept. Pêcheries, Prov. de Quebec: 194 pp.
- Whitehead, H. and C. Glass 1985. Orcas (killer whales) attack humpback whales. *J. Mammal.* 66(1): 183-185.
- Yukov, V. L., E. K. Vinoreagova and L. P. Medvedev 1975. The diet of killer whales (*Orcinus orca* L.) in the Antarctic and adjacent waters. *In Marine Mammals, Part 2. Report presented to the 6th All Union Scientific Research Institute of Sea Fisheries and Oceanography, Naukova Dumka, Kiev, USSR, pp. 183-185.*

INTRO:

This information (Orcinus orca) North Atlantic Fundy (to longi 1884; F Mead 1976; C heim 1979; K Atlantic pack sc of Mex Jersey