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Stranding of a Pygmy Sperm Whale, *Kogia breviceps,* in the Northern Gulf of St. Lawrence, Canada

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A Pygmy Sperm Whale, *Kogia breviceps*, stranded alive and later died in the Northern Gulf of St. Lawrence, Quebec, Canada on 28 August 2001. This is the northern-most stranding of this species in the western Atlantic. The whale was estimated to be approximately 3 m long and a longitudinal section from one tooth (3l mm long and 5.0 mm in diameter) revealed 3.5 growth layer groups.

Key Words: Pygmy Sperm Whale, *Kogia breviceps,* Gulf of St. Lawrence, Quebec, Canada.

A Pygmy Sperm Whale (*Kogia breviceps*) was found dead 28 August 2001 on the north shore of the Gulf of St. Lawrence. It was observed alive on 27 August by a local resident, Mme Rose-Annette Blais, northwest of St. Charles Island in the Mingan Archipelago National Park Reserve. The whale was observed making slow, undulating movements in shallow water close to shore in Trilobites Bay (50º14'07"N; 63º21' 18"W) and was found dead the next morning on a sandy beach in the bay. Personnel from Parks Canada were alerted and arrived on site to examine the carcass. The whale was estimated to be approximately 3 m long (Figure 1). There were various wounds and lacerations on the rostrum, flanks and abdomen (Figure 2). Two teeth (one broken near the root) collected by Jacques A. Thériault and his father, were later submitted for analysis. Fisheries and Oceans Canada and the Mingan Island Cetacean Study, Inc. were informed of the stranding but before the carcass could be collected for necropsy it had been carried off by a rising tide and was not seen again. Both teeth were deposited in the Maurice Lamontagne Institute collection, Accession Number 11629.

The whale was identified as a Pygmy Sperm Whale based on photographs, approximate length (3 m), the low, falcate dorsal fin located posterior to the center of the dorsum (Figures 1, 2) and size of one intact tooth. The tooth was 31 mm long and 5.0 mm in diameter at its widest point. In the dentine and cementum layers there were 3.5 growth layer groups (GLG) observed in a longitudinal section of the tooth. It is unknown how many GLGs are laid down per year in Pygmy Sperm Whales. If similar to the Sperm Whale *Physeter macrocephalus* [1 GLG = 1 year of age (C. Lockyer, personal communication; Perrin and Myrick 1980)], then this animal is almost 4 years old and likely an adult (Handley 1966). Ross (1984) reported 3.5 GLGs in a sexually mature female that stranded with a calf.

The Pygmy Sperm Whale can be confused with the Dwarf Sperm Whale (*Kogia simus*). The latter is smaller (2.7 m maximum length) with a taller dolphin-like dorsal fin and teeth are less than 30 mm long and less than 4.5 mm in diameter (Handley 1966; Leatherwood and Reeves 1983).

Pygmy Sperm Whales are rarely observed in eastern Canadian waters and have no COSEWIC (Committee on the Status of Endangered Wildlife in Canada) status (Baird et al. 1996). Seven, probably eight, Pygmy Sperm Whale strandings have been reported prior to the present report (Piers 1923; Sergeant et al. 1970; Nelson et al. 1991; McAlpine et al. 1997; Lucas and Hooker 2000) in Canada over the last century, specifically in Halifax and on Sable Island in Nova Scotia, in Blacks Harbour and Saint-John's, New Brunswick and on the French island of Miquelon near the south-

FIGURE 1. Pygmy Sperm Whale beach-cast in Trilobites Bay on 27 August 2001. Length is approximately 3 m.

west coast of Newfoundland. The present report is the northern-most stranding of this species in the western Atlantic and the first within the Gulf of St. Lawrence.

The Pygmy Sperm Whale is a small pelagic, mainly deep-water odontocete (occasionally seen motionless in surface waters) found widely offshore on continental slopes throughout tropical and warm temperate waters in the world. Most information on this species has been obtained from beach-cast carcasses and recently from live-stranded and rehabilitated animals including mother-calf pairs or pregnant females (Hückstädt and Antezana 2001; Scott et al. 2001; Manire et al. 2002). Stomach analyses indicate that the Pygmy Sperm Whale feeds primarily on cephalopods, crustaceans (shrimp, crab) and fish (Reeves et al. 2002). In the western Atlantic most strandings have been reported off the southeastern coast of the United States (Caldwell and Caldwell 1989; Odell 1991) and live individuals have been observed beyond the continental shelf and in the Gulf Stream.

Recently, a rehabilitated Pygmy Sperm Whale equipped with a time-depth recorder was released in the Gulf Stream off the eastern coast of the United States. It was observed for 5 days and remained east of the continental shelf break (200 m isobath) but west of the eastern edge of the Gulf Stream where sea-surface temperatures were 27.8 – 30.0ºC (Scott et al. 2001). Unfortunately, dive depth information was not obtained and it is unclear whether the behaviour of this individual reflects that of the species in general.

Odell et al. (1985 as cited in Caldwell and Caldwell 1989) noted that more strandings of *Kogia (K. breviceps* and *K. simus*) occur in Florida when the Gulf Stream shifts farther offshore. They suggested that individuals following prey caught in Gulf Stream eddies or rings that suddenly dissipate may become disoriented and, subsequently, strand. Gulf Stream rings can occur to the north or south of the Gulf Stream but anticyclonic or warm-core rings which are about 1000 m deep and exist on average 4.5 months, drift southwestward to rejoin the Gulf Stream near Cape Hatteras (Richardson 1976; Wiebe 1976). Gulf stream rings have unique physical, chemical and biological characteristics (Wiebe 1976; Joyce and Wiebe 1983; Craddock et al.1992). Although warm-core rings do not ride onto shallow continental shelves, they can push slope water onto the shelf or entrain shelf water into slope waters. Such shelf water entrainment was suggested as providing suitable cephalopod habitat which attracted Sperm Whales in the vicinity of a warm-core ring off Georges Bank (Griffin 1999).

The occurrence of a Pygmy Sperm Whale in the Gulf of St. Lawrence, especially in the northern Gulf, seems unusual as water temperatures are relatively cold [sea-surface temperatures are generally 12 – 18°C in August (Vigeant 1987*)]. The minimum temperature

FIGURE 2. Pygmy Sperm Whale in shallow water in Trilobites Bay (same specimen as in Figure 1). Note relative position of dorsal fin on trunk.

tolerated by Pygmy Sperm Whales is unknown. Annual mean air temperatures in most of the northwest Atlantic, especially in the southern Gulf of St. Lawrence, and sea-surface water temperatures throughout eastern Canadian waters in 2001 were generally warmer than normal (Drinkwater et al. 2002a*). In some areas, the upper 30 m in the central and southern Gulf of St. Lawrence show monthly anomalies of 3 - 4°C (Drinkwater et al. 2002b*; Gilbert 2002*). The Pygmy Sperm Whale may have swam and drifted northeast following prey in the Gulf Stream as suggested by Fraser (1974), perhaps using warm-core rings as "stepping-stones" (Peter Wiebe, personal communication) or thermal fronts associated with warm-core rings as observed by Griffin (1999). It may have entered the Gulf of St. Lawrence in warm surface waters on the Cape Breton side of the Cabot Strait when the Cape Breton Current slows in summer (El-Sabh 1977). During a DFO research cruise in the Gulf of St. Lawrence in August 2001 squid (*Illex illecebrosus*) were collected but numbers of specimens collected were not considered exceptional (D. Archambault, DFO, unpublished data).

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