Past and present utilisation of marine mammals in Grenada, West Indies

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ABSTRACT

The exploitation of marine mammals in Grenada dates back to pre-Columbian times. Whaling ships visited Grenadian waters in the 19th century and during the 1920s there was a short-lived attempt to develop a local, modern whaling industry. Since then no exploitative interactions between Grenadians and marine mammals had taken place, until the 1990s when two whalewatching operations were established.

KEYWORDS: EXPLOITATION; WHALING-HISTORICAL; WHALEWATCHING; HUMPBACK WHALE; ATLANIC OCEAN; NORTHERN HEMISPHERE

INTRODUCTION

The history of marine mammal exploitation for many parts of the eastern Caribbean is poorly known. Organised commercial whaling and dolphin fisheries have existed in the southern Caribbean for about two centuries (Caldwell and Caldwell, 1971; Mitchell, 1975; Gaskin and Smith, 1977; Perrin, 1985; Price, 1985; Reeves, 1988; Romero *et al.*, 1997). A recent review of published literature on marine mammals of the Caribbean (Romero *et al.*, 2001), reveals that Grenada has relatively low marine mammal diversity in its waters and little history of utilisation. Although a commercial whaling operation was established there in the 1920s, details are limited and no attempt has been made to comprehensively summarise or analyse the information from pre-Columbian times to the present.

This paper aims to document both exploitation practices and the conservation status of marine mammals in Grenada. It forms part of a long-term study on the distribution and conservation status of cetaceans in the Caribbean. A similar study for Venezuela has been completed and published (Romero *et al.*, 1997; 2001) and work in Trinidad and Tobago is underway. To the best of our knowledge, we review here all historical marine mammal records (cetaceans and sirenians) for Grenada and then analyse the information within its own historical context.

MATERIALS AND METHODS

Field and archival studies were carried out in Grenada between 19 July and 2 August 1999, with later archival studies conducted in the USA. In order to confirm statements made to us by local individuals about the nature and magnitude of the industrial whaling operation at Grenada in the 1920s, Glover Island off the southwest corner of Grenada was explored (Fig. 1), and evidence of whaling operations was documented. Any indication of whaling activity in the area was photographed and/or videotaped. We also visited the National Library, National Archives and the National Museum at St. George's. All available publications, records or remains related to marine mammals were examined and pertinent documentation was photocopied, photographed and/or videotaped. For the sake of precision, the original measurement system has been used when referring to historical measurements.

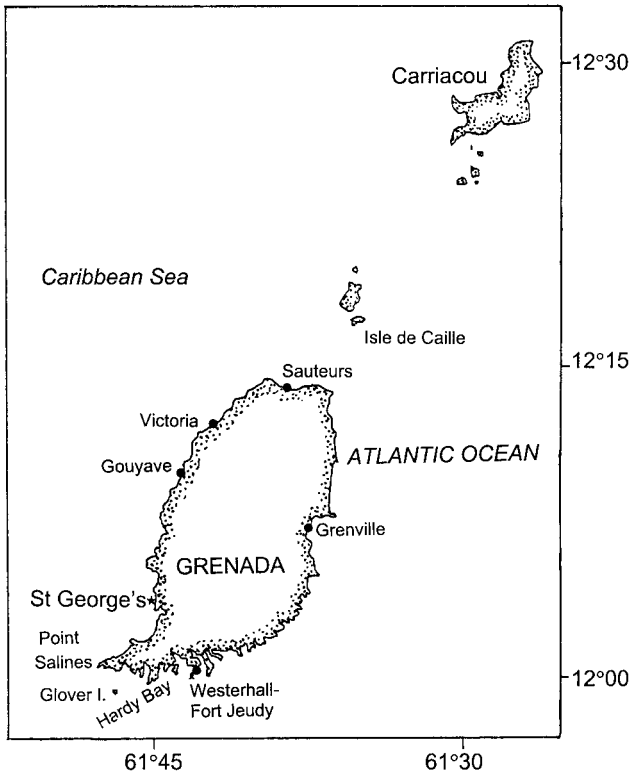

Fig. 1. Map of Grenada, West Indies.

We also visited the following fishing towns in Grenada: Grenville, Sauteurs, Duquesne, Victoria and Hardy Bay (Fig. 1). We interviewed the fishermen and questioned them about past and present practices of marine mammal utilisation using an abbreviated form of questionnaire similar to that used by Dolar *et al.* (1994). All interviews were videotaped.

We went aboard the two whalewatching operations in Grenada: the *Starwind III* off St. George's and the Kido Project off Carriacou and interviewed the crews in charge of the operations. We also explored the coast of Grenada accessible by four-wheel drive vehicle in search of potential places for land-based whalewatching.

RESULTS

Historical account

Pre-Columbian era and Colonial times

Archaeological remains indicate that the West Indian manatee (*Trichechus manatus manatus*) was distributed along the Lesser Antilles and was used by the indigenous people inhabiting those islands (Ray, 1960; Wing *et al.*, 1968; Watters *et al.*, 1984; Lefebvre *et al.*, 1989; Wing and Wing, 1995). A piece of manatee rib was examined from the National Museum.

Historical accounts also support the contention that manatees were hunted, using harpoons, by the local inhabitants of Grenada and neighbouring islands up to Colonial times (Du Tertre, 1667; Dapper, 1673; Labat, 1742; Knight, 1946; Steward, 1948; Bullen, 1964; Wing and Wing, 1995; for additional citations of pre- and post-Columbian uses of manatees in the Caribbean see McKillop, 1985). It has not been possible to determine the exact date at which manatees became extinct in Grenada. However, the available references indicate that they could be found until at least the 17th century.

Commercial whaling era

The first documentation of commercial whaling in Grenadian waters dates back to 1857. Knight (1946) reports that in the early months of that year, as many as eight American whalers were seen anchored off St. George's, Grenada's capital, with their boats fully employed. The formation of a local whaling company was discussed, but nothing developed. At the beginning of the 20th century, a few whales were harpooned every winter by local (artisanal) fishermen in the south of Grenada (Jacobsen, 1981).

During the heyday of New England whaling, whalers visited Caribbean waters for humpback whales (*Megaptera novaeangliae*) and occasional sperm whales (*Physeter macrocephalus*), and at the same time recruited a few extra men from among the seamen/fishermen in the Grenadines. A Scotsman named Wallace settled at Bequia, the nearest of the Grenadines to St. Vincent, and after losing his savings in sugar started a small whaling operation using the New England methods of that date. His activities spread to Grenada (Isle de Caille and St. George's), St. Lucia, Barbados and Trinidad (Monos Island) (Brown, 1945; Adams, 1970).

The first attempt to develop large-scale whaling took place around 1920, when C.V.C. Horne, Manager of the Colonial Bank in Grenada, bought Glover Island after observing a great number of whales in its waters. He invested considerable capital in an effort to establish a small whaling station on the island and obtained a whaling licence from the government. Catches were made from rudimentary sail boats. It is unclear whether these whalers were Grenadian residents or rather from the nearby Grenadine Islands. Fishers from Bequia were known to whale in Grenadian waters (Adams, 1970). In 1920, an undetermined number of humpback whales (probably between eight and twelve), were captured, yielding 1,620 gallons of oil, worth £461. During 1921, a single humpback was taken, yielding 160 gallons of oil (value £50) which were exported to Trinidad to make soap. While there are no whaling records for 1922, at least five humpbacks were caught in 1923, yielding 2,110 gallons worth £295. A total of 1,760 gallons of oil (value £233) was exported to the United Kingdom and 350 gallons (value £162) to Barbados (Grenada Blue Book, 1923; Fenger, 1958; Mitchell and Reeves, 1983).

Apparently, Horne thought that the operation could be expanded but he needed technical (and probably financial) support in order to fully industrialise his operations. Correspondence between Minister Vogt of the Colonial Office and the Norwegian Whaling Association shows that he may have contacted people in Norway as early as 1921 (a year after his first successful whaling campaign) with the aim of establishing a modern whaling operation in Grenada, although nothing came of it at the time (Tønnessen, 1969). There is a reference to Horne visiting Oslo and forming the Grenada Whaling Co., Ltd., with a capital of £25,000 (Anon., 1928). However, we have been unable to trace his involvement in Grenadian whaling after that.

By 1923, Winge & Co., a Norwegian whaling company from Oslo had started to participate in this venture. By February of that year, Norwegian whaler Morten Andreas Ingebrigtsen, with ties to that company, applied for a licence through the Ministry of Foreign Affairs to whale in the Lesser Antilles, writing in the application that 'I had been in the whaling business all my life.' [English in the original]. To study the feasibility of this operation, the famous Norwegian Arctic explorer Captain Otto Sverdrup and the Director of Winge & Co., Halfdan Bugge, visited Grenada in the winter of 1923-1924. Sverdrup observed the whales (he counted 26), studied the sea currents and recommended that a modern post be set up on the south of the island (Tønnessen, 1969). Winge & Co., through its subsidiary, the Grenada Whaling Co., acquired Glover Island as a base for whaling factory operations.

Construction of the modern whaling station apparently began in October 1924. Examination of the only known picture of the building together with our own exploration of its remains on Glover Island indicate that this was a large, two-storey building, comparable in size to similar whaling establishments of the time and designed to carry out a large whale oil operation. The first whaling season commenced on 15 January 1925 with two modern steam-driven whaling vessels from Norway. Each vessel was fully equipped and capable of towing five whales. A harpoon gun was mounted on a platform at the bow of each vessel, with a killing range of 50ft. These ships could cruise at speeds of up to 11 knots, used the latest explosive harpoons and employed three harpoonists (Marsland, 1925; Jacobsen, 1981).

After being pumped with air to prevent them from sinking, the whales were drawn alongside the ships. Upon arriving back on the island, the dead whales were drawn up a large concrete chute onto the 'plain', which consisted of a flat wooden platform sufficiently large to accommodate several whales. Here the flensing took place; the blubber being the most valuable part, was kept separate, cut up into slices and conveyed by means of an elevator into the blubber extracting plant (Marsland, 1925).

The Colonial Government of Grenada took a number of legal steps to regulate and tax the whale industry. Thus, on 2 February 1925, it published Ordinance Number 15, called the Whale Fisheries Ordinance, which had been approved by the Governors in Council on 26 January 1925. The regulations were quite elaborate. The first five articles were set out to define the activities and permits. Article 5(2) established a whaling license fee of £25. Section (3) stipulated that the holder of the whaling license was entitled to operate one whale catcher and one land station or one floating factory. They were also very specific about the handling of the different parts of the whales. Article 9, for example, read that 'Floating factories or land stations shall

utilise the following parts of all whales taken under license namely: (a) head; (b) jawbones; (c) tongue; (d) tail (from vent to the flukes); and (e) inside fat'. Article 10 established that the number of flensed whale carcasses waiting to be dealt with at one time, either at a land station, or attached to any vessel or mooring, should not exceed twelve. Article 11 specified that 'the whaling officer may prohibit the use of any licensed whale catcher for taking whales when, in his opinion, the further taking of whales would lead to an accumulation of whale matter that could not be utilised without undue waste'. Finally, Article 13 read that 'No person shall kill, hunt, or take or attempt to kill, hunt, or take any sperm whale of the length less than 25ft or any whale calf or female whale accompanied by a calf' (Grenada Gazette, 1925).

Apparently, local authorities were concerned with carcass handlings as on 8 April 1925, shortly before the end of the first major whaling operation for that year, they amended Article 9 by establishing that 'Land stations shall utilise the whole carcass of all whales taken including bones without waste' (Grenada Gazette, 1925). This may have been due to the well known foul smell produced by oil blubber extraction and the rotten carcasses of whales. During our visit to Glover Island we could not find any remains of any kind from whales or any other marine mammal. Locals told us that the few left behind were taken by visitors after the whaling operation ceased.

The first whaling season took place between 15 January and 4 April 1925 where 105 whales were taken; 102 humpbacks and two Bryde's whales (*Balaenoptera edeni*), one of which contained a foetus which was counted as an additional animal. This resulted in 112,963 gallons of whale oil, valued at £16,890, which was exported to Norway (109,399 gallons = £16,200), the United Kingdom (3,435 gallons = £650), Barbados (80 gallons = £12) and Demerara, in today's Guyana (49 gallons = £8).

Once the oil factory was completed towards the end of 1925, the station was equipped for the manufacture of 'whale manure (guano)' in the following year (Knight, 1946), probably in response to the amendment mentioned previously. Part of the whale meat was sold for human consumption and the rest was boiled down to extract the last ounce of oil (Marsland, 1925).

The second season took place from 10 January to 30 April 1926. Despite the addition of a third vessel and a fourth harpoonist, only 72 whales (all humpbacks) were captured. The decline in catches was attributed by some to bad weather and other 'unfavourable conditions' (Anon., 1928), although the most prevalent opinion was that the fishery was abandoned due to scarcity of whales (Anon., 1928; Jacobsen, 1981; Mitchell and Reeves, 1983). According to information from the government records, we believe that the figures of 70 and 71 whales killed, given by Mitchell and Reeves (1983) and Tønnessen (1969), respectively, may be erroneous. In any case, the reduced number of whales captured made the operation uneconomical. Apparently this was due to the fact that the whales were so 'shy' that it was difficult to get within shooting range. Experienced harpooners said that they would need 37mm cannons to accurately shoot the whales (Tønnessen, 1969).

Catches in 1926 yielded 108,055 gallons of whale oil, valued at £14,258. The oil was exported to Holland (107,815gallons = £14,230) and Trinidad (240 gallons = £28). Some 418 bags (200 tons) of 'manure' or 'guano' to be used as fertiliser, valued at £418, were exported to Trinidad (Grenada Blue Book, 1926).

The whaling operation at Glover Island was directed from Oslo by Halfdan Bugge while J.A. Hojem was the manager on site. Seventy men were employed, in addition to the crews of the vessels, each of which carried 11 men. According to our interviews with local fishermen, as many as 600 boilers were installed and up to 100 people were employed, including women. Among the foremen there were ten Norwegians and six Americans living in the Main House. Our visit to Glover Island confirmed the plausibility of the great magnitude of this operation.

By 1925, whaling in the nearby Grenadines had also come to a halt. The two whaling establishments at Canouan, and those located at Prune Island and Frigate Rock had suspended operations. Only a handful of boats based at Friendship Bay, Bequia, continued to hunt humpbacks, albeit rather unsuccessfully, in the ensuing decade (Adams, 1970). No operations were carried out in Grenada during the 1927 season. All attempts to re-finance the company failed (Tønnessen, 1969). This coincided with a more general depletion of whale stocks in the Northern Hemisphere (McHugh, 1977). By 1928, the whaling industry at Glover Island was finally abandoned and the factory was dismantled in 1929 (Knight, 1946).

Not only was there a strong decline in whale populations, as evidenced by contemporary reports cited earlier, but major changes were also affecting the whaling industry at that time. In 1925, the installation of a ramp on factory ships allowed the catch to be processed on board, making land stations like the one at Glover Island unnecessary.

Current utilisation

According to local fishermen, humpback whales are occasionally seen in local waters during the winter. However, we found no evidence of any marine mammal captured either intentionally or accidentally by Grenadian fishermen. In Duquesne, we were told that a dolphin had stranded in 1993 and that its meat had been consumed by the locals. We could find no other report, written or oral, of cetacean strandings in Grenada. Pictures of an artisanal whaling operation displayed at the National Museum must have been taken elsewhere, since the landscape in the background was flat and arid, unlike any coastal areas of Grenada and its smaller islands.

Many of the interviewed fishermen had difficulty identifying whales and dolphins from posters and books. With the exception of the 'blackfish' (short-finned pilot whale, *Globicephala macrorhynchus*), no common names were familiar to the interviewees. Only on two occasions were we told that dolphins were called 'papas', a phonetic derivative of 'porpoise'. One fisherman referred to dolphins as 'Flipper', which is obviously due to a foreign cultural influence.

The only current utilisation of marine mammals is in the form of whalewatching. At the time of our visit, there were only two organised operations, one off Grenada and the other off Carriacou. Both operations, which take place year-round, seem to be successful since they have been in business for several years. In both cases they seem to be opportunistic, targeting local and apparently resident populations of sperm whales and dolphins. Each employ no more than four people as boat crews.

Whalewatching has become an increasingly popular and profitable enterprise worldwide (Papastavrou, 1996). Although whalewatching has the potential to harass marine mammals, proper procedures can drastically reduce the impact of this activity on cetaceans (Evans, 1996).

There is also the potential for 'non-harassing', whalewatching from land in southwestern Grenada. We found that at least two locations, Westerhall-Fort Jeudy and Blow Hole at Point Salines, have cliffs from which humpbacks can be observed during the winter season (Lesley Sutty, pers. comm.), which is at the peak of the tourist season in that country.

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