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Abstract

The intentional take of cetaceans has a long history in the Lesser Antilles. In the late 1800s hunts began in Castries, Saint Lucia and later expanded to Saint Vincent and the Grenadines, specifically to Barrouallie. Currently, an unregulated small cetacean hunt out of Barrouallie is the largest hunt of cetaceans in the Wider Caribbean. This paper reports landings of 603 small cetaceans in Barrouallie for the period January 2014 – December 2020 including 468 short-finned pilot whales (*Globicephala macrorhynchus*). The number of cetaceans landed and the lack of local regulation highlight the urgent need for: 1.) a coordinated national programme to systematically survey cetacean populations; 2.) national oversight, including monitoring of hunts and 3.) a review by the IWC of the status of small cetaceans in the Caribbean.

Keywords: hunting, small cetaceans, aquatic bushmeat, legal framework, Wider Caribbean

Introduction

Intentional takes of cetaceans have been conducted for almost two centuries in the Lesser Antilles (Caldwell and Caldwell, 1975; Price, 1985; Reeves, 1988; IWC, 2007; Fielding and Evans, 2014; Fielding, 2018). From the mid-1830s, American “Yankee” whaling vessels from lower New England made regular trips to Saint Vincent and the Grenadines (SVG), Saint Lucia, Grenada, Barbados and Trinidad and Tobago to hunt sperm whales (*Physeter macrocephalus*), humpback whales (*Megaptera novaeangliae*) and, to a lesser extent, short-finned pilot whales (*Globicephala macrorhynchus*) for their oil (Adams, 1971). They processed the whales at local land stations and recruited West Indians to their crews. Toward the end of the nineteenth century, as over-exploitation reduced the population of humpback whales in the Lesser Antilles, making the commercial operation unprofitable for the North Americans, a West Indian-led, shore-based operation replaced the Yankee whalers. They hunted whales for oil for export, and also meat for local consumption. Between 1876 and 1920 as many as 20 shore stations, each with three to five boats, operated in the south Windward Islands and Trinidad, including six in Bequia, an island in the Grenadines. Today, the only remaining hunt of large whales in the Caribbean occurs in Bequia and is regulated by the International Whaling Commission (IWC) under its provisions for “Aboriginal Subsistence Whaling”. Under current IWC rules, a maximum of 28 humpback whales may be taken “by the Bequians of St Vincent and The Grenadines” between 2019 and 2025 and meat and products must “be used exclusively for local consumption in St Vincent and The Grenadines” (IWC, 2018).

In 1910, a crew of fishermen in Barrouallie on the leeward coast of St Vincent began to hunt pilot whales and a variety of dolphin species at least seasonally, using a Yankee whaling harpoon from a Yankee whaling vessel. The original whaling operation was primarily opportunistic but in the early 1930s a Barrouallie fisherman bought two Bequian-built whaling boats (modeled after a Yankee whaling vessel) and commenced a hunt directed primarily at pilot whales (Fielding, 2010) and sperm whales (Price, 1985).

Nowadays, whalers in Barrouallie target only small cetaceans for local consumption, using a light harpoon gun (a locally modified 16 gauge shotgun) mounted on the foredeck of 6.1-7.3m boats equipped with an outboard gasoline engine (Price, 1985; Fielding, 2018).

Although opportunistic and unregulated hunts of small cetaceans for local consumption continue in St Lucia (Fielding, 2018), the Barrouallie hunt remains the largest hunt of small cetaceans in

the Caribbean. No data on small cetacean takes is gathered at the national level but estimates can be made from data collected by academics (Caldwell and Caldwell, 1975; Price, 1985; IWC, 2007; Fielding, 2013; Fielding and Evans, 2014; Fielding, 2018; McCormack *et al.*, 2020). The objective of this paper is to present data from a survey of small cetaceans landed at Barrouallie over a seven-year period between 2014 and 2020 (henceforth the 'current study'). The paper considers the composition of the species involved and compares it to earlier sources of catch data.

Materials & Methods

--Study area

St Vincent and the Grenadines is one of the Windward Island countries of the Eastern Caribbean and lies near the southern end of the Lesser Antilles chain. The current study was conducted in Barrouallie (13°13'59.99"N/ 61°16'0.01"W), a central leeward town located on the island of Saint Vincent (Fig 1).

--Data collection

The information on small cetaceans landed at Barrouallie was gathered by a local fisherman/tourist guide (henceforth "field observer") who monitored the landing site over a total of 2,557 days between 1st January 2014 and 31st December 2020 with a gap of 151 days between 1st November 2014 and 31st March 2015. He recorded the number of small cetaceans landed (n=603) and took 337 photographs of 363 individuals. Although the field observer was not requested to identify species, he volunteered an identity for 521 individuals, including 314 for which he also provided photographs.

The field observer's records and photographs were originally sent to one of the authors, Ms Louise Mitchell, who requested the collaboration of Fundación Cethus to review the photographs, verify the identification recorded by the field observer and collate all the information into a database. At least two of the authors or an independent expert attempted to identify all photographed individuals. Photographic evidence is archived at Saint Vincent and the Grenadines Environment Fund and Fundación Cethus.

Killer whales (*Orcinus orca*) were correctly identified by the field observer in all cases (n=31/5.14%)

Short-finned pilot whales, pygmy killer whales (*Feresa attenuata*), false killer whales (*Pseudorca crassidens*) and Risso's dolphins (*Grampus griseus*) are collectively referred to as "blackfish". However, the field observer only used the term "blackfish" as a synonym for the short finned pilot whale.

Of the 468 pilot whales reported, 245 were recorded by the field observer as pilot whale and confirmed from photographs to be pilot whale, 26 were recorded by the field observer as blackfish and confirmed from photographs to be pilot whale and 197 were recorded by the field observer as pilot whale and, in the absence of a photograph, the record was accepted. In the case of a report of landings in which more individuals were reported than photographed, all individuals of the group were assumed to be from that species.

Of ten false killer whales photographed, the field observer mis-identified six as pilot whales and recorded four as unknown. He also reported one pygmy killer whale as a pilot whale. Although he was generally accurate at distinguishing between blackfish species, there could be other errors in the 197 unphotographed whales that he recorded as pilot whale and the authors accepted. This would result in an over-representation of short finned pilot whales and an under-representation of other blackfish species in the dataset.

Sixty-one (10.12%) individuals from six dolphin species were identified. For individuals not recorded as blackfish, killer whale or a specific dolphin species by the field observer, if the identification of the species was not possible from a photograph, or no photograph was provided, the individual was reported as "unidentified dolphin" (n= 24/3.98%).

There are no publicly available official records of small cetacean catches in St Vincent and the Grenadines but some published data from non-official sources exist (Caldwell and Caldwell

(1975), Price (1985) and Fielding (2018). The authors compared annual landings during the current study period (2014-2020) with these previous data.

Fielding (2018) extrapolated from the capture records of the most active Vincentian hunter, multiplying them by 1.5 in order to approximate total landings by all whalers. For this paper, Fielding's landing data for the period 2007-2012 was used without this extrapolation factor. This paper offers an analysis of the small cetaceans reported landed at Barrouallie. Numbers therefore reflect minimum values for actual removals.

Results

--Cetaceans landed

603 individuals of small cetaceans were landed in Barrouallie over 2,406 days between 2014 and 2020 (Table 1). This represented a mean daily landing rate of 0.25 cetaceans per diem. 60.20% of specimens (N = 363) were photographed. Eight cetacean genera and eleven species were documented from the field observer's reports and photographs during the seven year study period (Table 1). Short-finned pilot whales represented 77.61% of the total landings, followed by spinner dolphins (*Stenella longirostris*) (7.79%) and killer whales (*Orcinus orca*) (5.14%). False killer whales, Pygmy killer whales, Rough-toothed dolphins (*Steno bredanensis*), Atlantic spotted dolphins (*Stenella frontalis*), Pantropical spotted dolphins (*Stenella attenuata*), Clymene dolphins (*Stenella clymene*), Risso's dolphins and Fraser's dolphins (*Lagenodelphis hosei*) constituted 5.47% of the total landings. 3.98% were unidentified species of dolphins (Table 1).

Animals were landed year-round. The year with the most landings reported was 2016 (n=123 animals, including 99 pilot whales). This represented a total mean landing rate for the year of 0.34 cetaceans per diem (Table 1). Short-finned pilot whales and killer whales were landed every year. Fig 2 shows cetaceans landed during 2014-2020 by month and also displays peaks of landings in March, April and September over the total study period.

Fig 3 summarizes the number of short-finned pilot whales landed during 2014-2020. The highest one-day catch was 24 short-finned pilot whales on 22nd September 2020. Fig 4 shows 31 killer whales landed during 2014-2020. Fig 5 shows 92 killer whales landed from 1968 to 2020.

Spinner dolphins were the second most hunted species in Barrouallie during the study period (n=47 individuals, 7.79% of the total). This species was reported taken in the months of April, July, August, September and October (Fig 6).

--Classification of cetacean species landed

Table 2 shows how the eleven small cetaceans species landed in Barrouallie are classified by the International Union for the Conservation of Nature (IUCN), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species (CMS), and the Protocol Concerning Specially Protected Areas and Wildlife (SPA) in the Wider Caribbean Region. St Vincent and the Grenadines is a party to CITES, CMS and SPA.

All species landed in Barrouallie are listed on Appendix II of CITES which permits international trade for primarily commercial purposes provided that the State of export has determined that (1) the export will not be detrimental to the survival of the species, (2) the specimen was legally obtained, and (3) a living specimen will be prepared and shipped so as to minimize the risk of injury, damage to health or cruel treatment, and has issued an export permit.

Five of the 11 species are listed on Appendix II of CMS which includes list migratory species which "have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement". Range State Parties must endeavour to conclude agreements to benefit Appendix II species. There is no regional agreement under CMS for cetaceans in the Wider Caribbean.

All species landed are included in Appendix II of SPAW which requires Parties to adopt cooperative measures to ensure their total protection and recovery by prohibiting the taking, possession or killing (including, to the extent possible, the incidental taking, possession or

killing) or commercial trade in such species, their eggs, parts or products and, to the extent possible, their disturbance.

--Fetuses

Four full-term fetuses were identified but not included in the reported landing data: killer whales (n=2) in August and September; pilot whales (n=1) in October and spinner dolphins (n=1) in August.

Discussion

Hunting of all small cetaceans is unregulated in SVG and no data on takes are publicly available at a national level. However, estimates of historical takes can be made from data collected by academics (Caldwell and Caldwell, 1975; Price, 1985; IWC, 2007; Fielding, 2013; Fielding and Evans, 2014; Fielding, 2018; McCormack et al., 2020). No abundance estimates or status classifications exist for regional populations of any of the small cetacean species targeted in the Wider Caribbean.

Targeted species

Short finned pilot whale

Until as recently as the 1980s, *G. macrorhynchus* was the main target of directed hunting of small cetaceans in several Caribbean islands (St Vincent and the Grenadines, St Lucia, Dominica and Martinique) (Caldwell and Caldwell, 1975, Price, 1985, Reeves, 1988, Fielding, 2013 and 2018). While some opportunistic hunting still occurs in St Lucia (Fielding, 2018), St Vincent and the Grenadines remains the center of hunts of this species in the region. A total of 2,912 landings were recorded in Barrouallie between 1962 and 1974 (Caldwell & Caldwell, 1975), while a further 2,220 were taken in the six years from 1978 to 1983 (Price, 1985). This represents an average of 242 animals/year and 444 animals/year respectively. 468 pilot whales (66.86 individuals/year) were reported landed during the seven years analysed in this paper. No research has been conducted to determine if this species is a year-round resident, but the landings reported in the current study show that *G. macrorhynchus* were caught in all months with the highest peak in March followed by April, May, September, August, July and January. Caldwell and Caldwell (1975) reported the largest catches in May–June and then September, while Price (1985), citing the whalers, reported that the “blackfish season” lasted from approximately July to November.

The global population of short-finned pilot whales is classified as Least Concern (LC) by the IUCN (Minton *et al.*, 2018) and the species is listed on Appendix II of SPAW and Appendix II of CITES (Table 2). It is not listed on the appendices of the CMS although it is hunted in Japan, Indonesia (Minton *et al.* 2018) and St Vincent and the Grenadines (Fielding, 2013 and 2018).

Spinner dolphins

Spinner dolphins are the second most targeted species in SVG, representing 7.79% (n=47) of the total reported landings during the current study. However, Fielding (2018), analyzing a cumulative 17 months during 1994, 2009, 2015 and 2016, reported 113 individuals landed, corresponding to 36% of total take, making this the main species landed over that period. Small dolphins such as spinners supplement the catch to make hunting profitable year-round in SVG (Price, 1985). Nigel Scott in 1995 reported that the *S. longirostris* is the major contributor to the hunts (in Fielding, 2018).

The spinner dolphin is the most common small cetacean in tropical pelagic waters (Perrin, 2018), and is classified as LC by the IUCN. It is listed in Appendix II of CITES, CMS and SPAW (Table 2). It is one of the most common species of bycatch in fishing gear (including purse-seine, gillnet and trawl fisheries) as well as a hunting target for bait in shark fisheries, and harassment by tourist boats (Braulik and Reeves, 2018). The species comprises several subspecies and numerous regional populations, and available estimates of abundance and removals suggest that some populations may qualify as Threatened (Braulik and Reeves, 2018).

Killer whales

This paper adds 31 new records of individuals landed, raising the total number of killer whales taken between 1968 and 2020 to 92 (Caldwell and Caldwell, 1975, Price, 1985, Fielding, 2010, Bolaños-Jimenez et al., 2014, Fielding, 2018, this paper). Comparing all records for this species, takes increased by 42.11% for the period 2007-2020 (n=54) compared to the previous

39 years (1968-2006) (n=38). The increasing significance of *O. orca* in the catch data could be explained by preference (its yield of oil, meat and blubber is higher than other small cetacean species) or availability. It is notable that the main whaler of Barrouallie claims that the presence of killer whales scares away other species (Fielding, 2018) suggesting that this species is targeted to increase availability of other target species.

The current study documents hunting of killer whales in eight months of the year (n=31) except January, February, June and October. However it is important to highlight that landings in December occurred for the first time in the study period in 2020. Data from 1968-2013 show catches occurring in all months except February, March and October and an increased frequency between May and July. Caldwell and Caldwell (1975) recorded catches of killer whales in January, May, June and July and reported that their data showed a trend towards seasonality of hunting. The current study may reflect a shift in the occurrence for this species in Vincentian waters to earlier in the year (April and May) and to July, August and September, with a highest peak in the last month. However, there is insufficient information on the occurrence of *O. orca* off St Vincent and the Grenadines to reach conclusions about seasonality. Furthermore, Bolaños-Jiménez *et al* (2014) concluded that it is unclear whether there are one or more resident populations in the Caribbean, or perhaps multiple populations that visit the Caribbean at different times of the year.

Killer whale hunting in SVG is not regulated. Killer whales, like all cetacean species, are listed on Annex II of the SPAW Protocol of the Cartagena Convention, to which Saint Vincent and the Grenadines is a signatory. However, in reaction to an incident in 2017 when two killer whales were harpooned in sight of a whale watching group, who were visiting SVG on a cruise liner, causing national and international attention (i.e. Times Caribbean, April 5, 2017; The Washington Post, April 6, 2017), Prime Minister Gonsalves announced in Parliament that a law banning hunting on killer whales would be passed. However, to date no such law has been passed.

O. orca is classified as Data Deficient (DD) by the IUCN (Reeves *et al.*, 2017). It is well recognized that regional subpopulations of killer whales can be small and highly specialized, and therefore vulnerable to habitat degradation and overexploitation (Taylor *et al.*, 2008). The IWC Scientific Committee has highlighted the need for additional research on tropical killer whales (IWC, 2015): In 2019, in respect to catches in St Vincent and the Grenadines, it stated that “available information (Fielding, 2018) raises concern that current takes are unsustainable and underscores an urgent need for research into the status of these species in national and adjacent waters”. The Committee “reiterated its concern and over-arching recommendation that no small cetacean removals (live capture or directed harvest) should be authorised until a full assessment of status has been made. In addition, given the paucity of information on tropical killer whales, it reiterated that additional research is required, particularly as takes of these species are regularly occurring” (IWC, 2019).

The species is listed in Appendix II of CITES and CMS and Annex II of SPAW (Table 2).

Other species

Dwarf sperm whale (*Kogia breviceps*), Cuvier's beaked whale (*Ziphius cavirostris*) and common bottlenose dolphin (*Tursiops truncatus*) were reported hunted in previous years (Caldwell and Caldwell, 1975 and Price, 1985) but not during the current study. (Table 1) No individuals of these three species were identified from the photographs received, although their representation as “unidentified dolphin” cannot be eliminated.

The false killer whale is considered Near Threatened (NT) by IUCN and listed in Appendix II of CITES and Annex II of SPAW, but is not included in the CMS appendices. Similarly, the Pygmy killer whale, Atlantic spotted dolphin and rough-toothed dolphin are classified as LC by the IUCN Red List and are only listed by CITES (Appendix II) and SPAW (Annex II).

--Research

All cetacean species are listed on SPAW Annex II. Presently, this includes thirty-one species from the Caribbean region (SPAW, 2019a). Of these, 24 are small cetaceans (3 Physteridae, 5 Ziphiidae and 16 Delphinidae). However, abundance estimates and population structure studies of cetacean species in the region are scarce and predominantly conducted by non-local scientists (i.e. Lucke *et al.*, 2014; Debrot *et al.*, 2013; Debrot *et al.*, 2011; Boisseau *et al.* 2006). Only one line-transect survey for cetaceans in the Eastern Caribbean has been published; for 28 days in April and May 2004 (Yoshida *et al.* 2010). Twelve species were recorded, with the

pan-tropical spotted dolphin most frequently identified. The study recorded the presence of *Mesoplodon* spp., short-finned pilot whale, common bottlenose dolphin, striped dolphin and pan-tropical spotted dolphin in the waters of St Vincent and the Grenadines. Considering that during the current study, eleven species are reported in catch records for St Vincent and the Grenadines, it is clear that research is needed on species targeted in hunts to determine abundance and population structure as well as the impact of threats upon them. This conclusion is consistent with the recent advice of both the IWC and SPAW (IWC, 2019b and SPAW-RAC, 2020).

--Fetuses

The presence of fetuses during the study was reported for three species (killer whales, short-finned pilot whales and spinner dolphins), two in August, one in September and one in October. The presence of calves was reported for *G. macrorhynchus*, *T. truncatus*, *S. attenuata* and *S. frontalis* by Yoshida et al. (2010) in April and May surveyed in the Eastern Caribbean.

Conclusions and recommendations

Official data on catches of small cetaceans in Barrouallie, St Vincent and the Grenadines are not publicly available but catch reports have been compiled by various authors since 1962 including from official sources for some earlier periods. Short-finned pilot whales represent the vast majority of animals landed. The largest reported take was 422 "blackfish" landings in 1963. Since then, catches have declined from a few hundred to tens of animals per year although previous studies show some variations in this regard. Fielding (2018) stated that "between 1975 and 1995, the role of blackfish in the operation shifted from the actual mainstay to more of a symbolic portion of the take". Fielding also highlighted that, since 2007, Vincentian whalers have taken about five dolphins for every two pilot whales, with the spinner dolphin being the main hunted species. Our data does not support his conclusion showing *G. macrorhynchus* as the species most often landed. Before Fielding (2018), Caldwell and Caldwell (1975) reported a gradual decline in the catches of blackfish probably associated with the loss of export market for oil (particularly once the United States' Marine Mammal Protection Act was promulgated in 1972 prohibiting imports), increased costs of operation and a decline in interest from potential new fishermen.

Caldwell and Caldwell postulated that since it was a multispecies catch, the pressure on pilot whales was not significant. In contrast, Fielding (2018) suggests that the shift from short-finned pilot whales to other dolphins could be due to a population decline in the former, especially considering that captures have been ongoing for almost 60 years. Unfortunately, as no cetacean population estimates exist and no estimates of total removals (beyond hunting) are available, the potential impact of hunting on this and other species off St Vincent and the Grenadines is unknown.

Given the declining trend in pilot whale catches since 1962, it is notable that higher catches are reported for *G. macrorhynchus* than any other species in the current period. This and a significant increase in the number of orcas landed compared to previous years, could be evidence of unsustainable catches.

Caution should be applied to catch statistics as the collective term 'blackfish' is used in St Vincent and the Grenadines to refer to several species of small cetaceans; pygmy killer whale, false killer whale, Risso's dolphin, killer whale and short-finned pilot whale. Consequently, catches of individual species may be underestimated.

Although the information from the current study may not reflect all catches in Barrouallie during the study period, it provides minimum values for actual removals and a useful view of the situation in the absence of systematic monitoring by the authorities.

The impact of the Barrouallie hunt on cetacean populations is unknown but raises concern. A series of measures, to be implemented or supported by the government of St Vincent and the Grenadines, are suggested to address these concerns:

- 1.) A coordinated national programme to systematically survey cetacean populations in and around St Vincent and the Grenadines to estimate abundance.
- 2.) Systematic monitoring of small cetacean hunts, including formal reporting of all catches and sampling (collection, analysis and archiving) of each cetacean landed or stranded. Catch reporting and sampling data would help to confirm species identification and determine the potential impact of the hunts on cetacean populations. Verification of the tissue sampling should be provided through independent observers or photographic documentation.

These recommendations are consistent with their conservation status under CITES, CMS and SPAW but also with recent recommendations of the IWC (IWC, 2019). The Scientific Committee of the IWC reviewed the status of small cetaceans in the Caribbean (excluding the Gulf of Mexico) and the western tropical Atlantic in 2006 (IWC, 2007). A review of the status of these species by the Scientific Committee is timely because substantial new information has been produced since the last review.

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	Short finned pilot whale	Spinner dolphin	Orca	False killer whale	Pantropical spotted dolphin	Pygmy killer whale	Risso's dolphin	Clymene	Fraser's dolphin	Rough-toothed dolphin	Atlantic spotted dolphin	Unidentified dolphin	TOTAL
2014 ⁽¹⁾	67	24	3	4	4	0	0	0	0	2	0	8	112
2015 ⁽²⁾	33	0	8	0	0	0	2	3	0	0	1	11	58
2016	99	15	4	0	0	0	2	0	0	0	0	3	123
2017	49	5	7	0	1	0	0	0	0	0	0	1	63
2018	47	1	5	1	0	0	0	0	1	0	0	0	55
2019	76	2	3	1	0	2	0	0	1	0	0	0	85
2020	97	0	1	4	1	3	0	0	0	0	0	1	107
Total	468	47	31	10	6	5	4	3	2	2	1	24	603
%	77,61	7,79	5,14	1,66	1,00	0,83	0,66	0,50	0,33	0,33	0,17	3,98	100

(1) No data available for Nov, Dec

(2) No data available for Jan, Feb, Mar

Table 1: number of small cetaceans landed in Barrouallie from January 2014 to December 2020

Common name	Scientific name	IUCN	CMS	CITES	SPA
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>	LC	---	Appendix II	Annex II
Killer whale	<i>Orcinus orca</i>	DD	Appendix II	Appendix II	Annex II
Pygmy killer whale	<i>Feresa attenuata</i>	LC	---	Appendix II	Annex II
False killer whale	<i>Pseudorca crassidens</i>	NT	---	Appendix II	Annex II
Risso's dolphin	<i>Grampus griseus</i>	LC	Appendix II	Appendix II	Annex II
Spinner dolphin	<i>Stenella longirostris</i>	LC	Appendix II	Appendix II	Annex II
Pantropical spotted dolphin	<i>Stenella attenuata</i>	LC	Appendix II	Appendix II	Annex II
Atlantic spotted dolphin	<i>Stenella frontalis</i>	LC	---	Appendix II	Annex II
Clymene dolphin	<i>Stenella clymene</i>	LC	Appendix II	Appendix II	Annex II
Fraser's dolphin	<i>Lagenodelphis hosei</i>	LC	Appendix II*	Appendix II	Annex II
Rough-toothed dolphin	<i>Steno bredanensis</i>	LC	---	Appendix II	Annex II

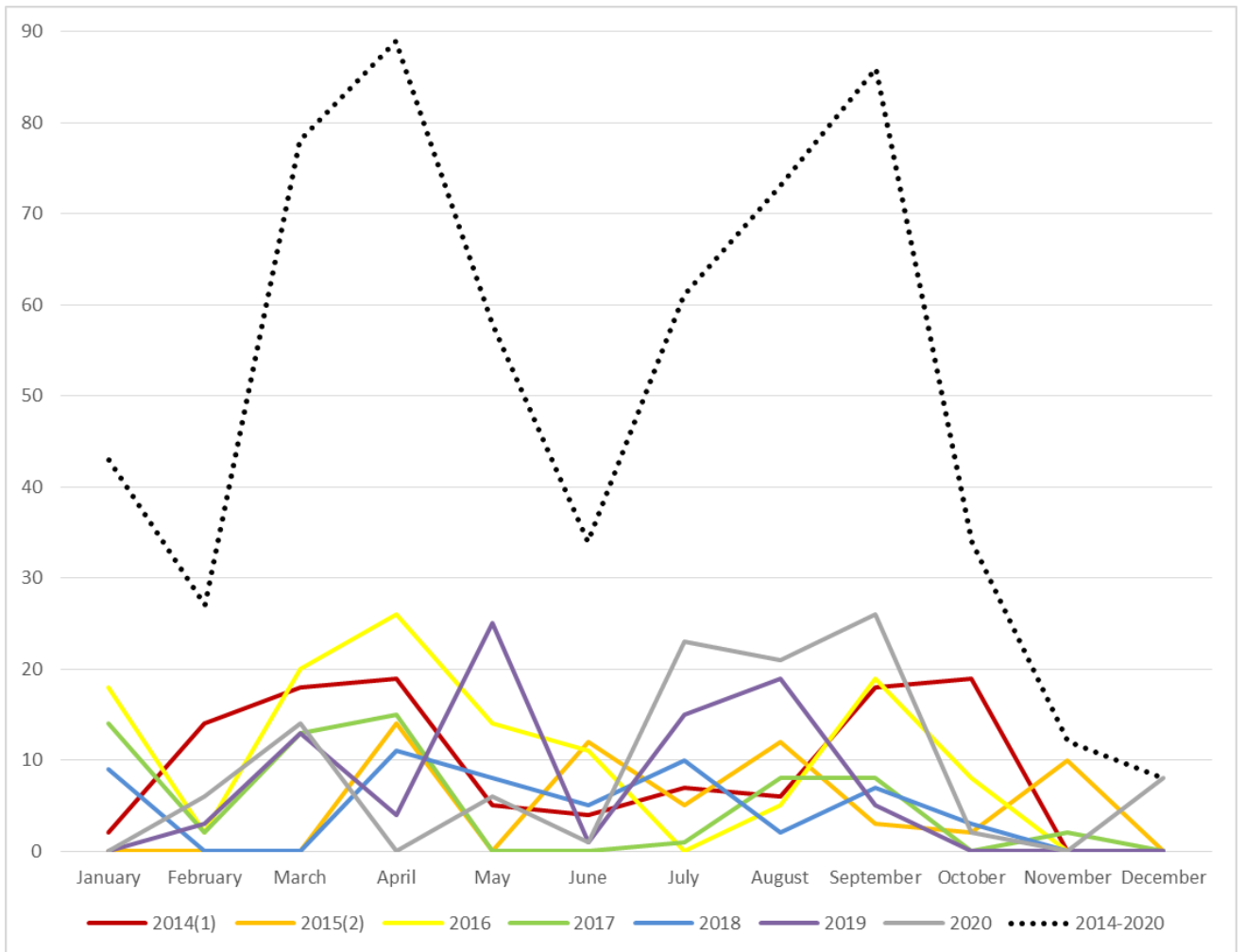
Table 2: small cetaceans landed in Barrouallie classified by IUCN, CMS, CITES and SPAW. Abbreviations: Least Concern (LC), Data Deficient (DD), Near Threatened (NT).

* Only certain populations of these species are listed in App II of CMS; Caribbean populations are not listed.

Saint Vincent and the Grenadines



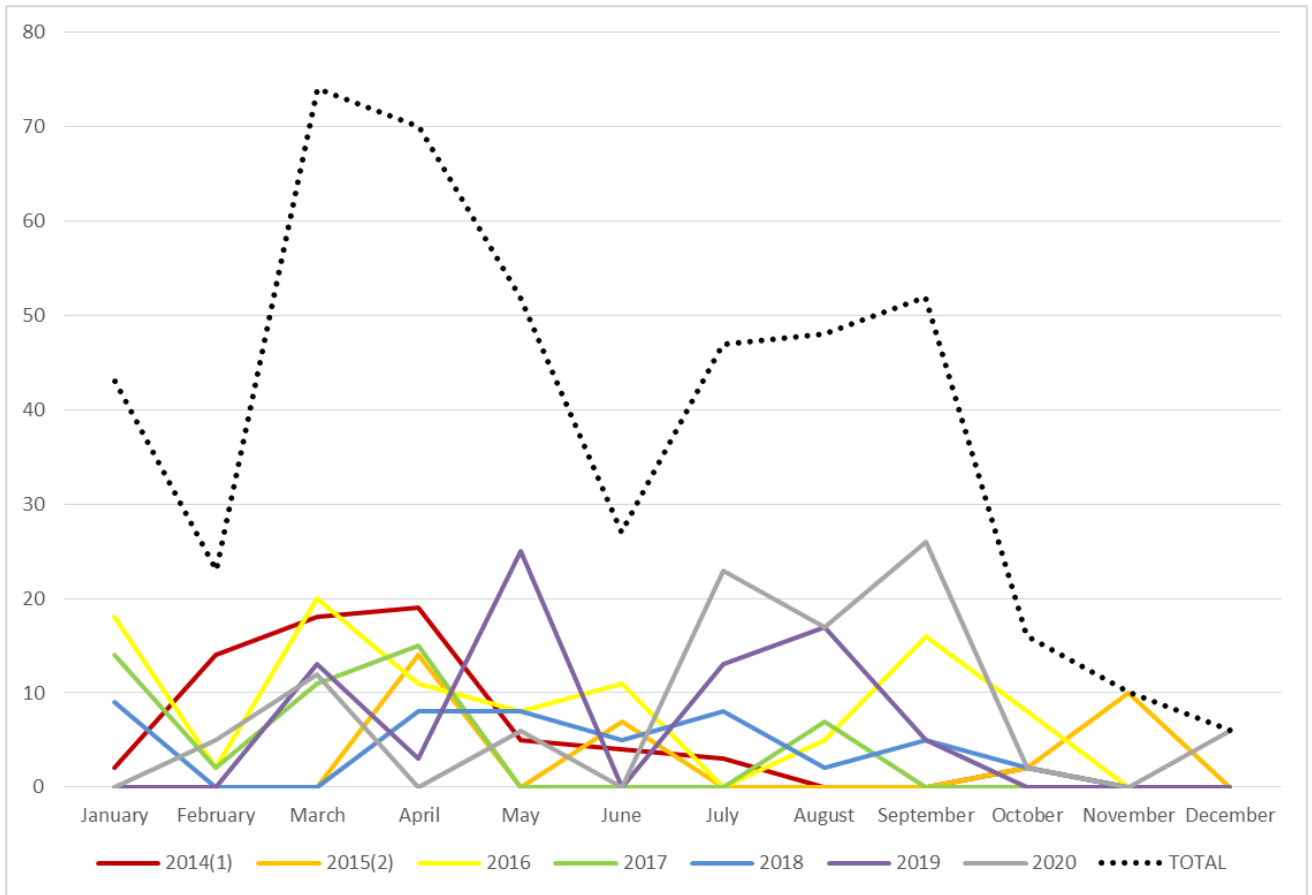
Fig 1. Map of Saint Vincent and the Grenadines showing Barrouallie location.



(1) No data available for Nov, Dec

(2) No data available for Jan, Feb, Mar

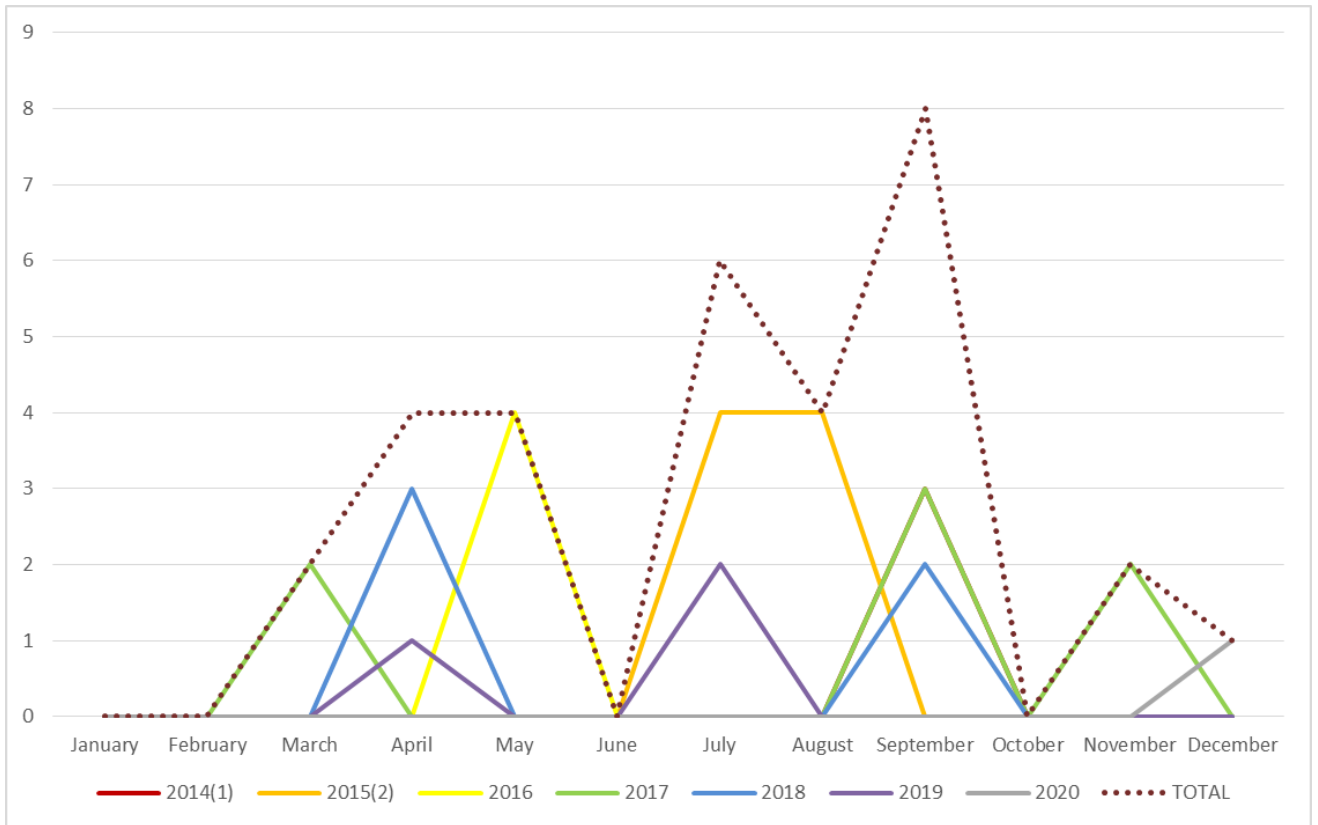
Figure 2: number of small cetaceans landed from January 2014 to December 2020 by month



(1) No data available for Nov, Dec

(2) No data available for Jan, Feb, Mar

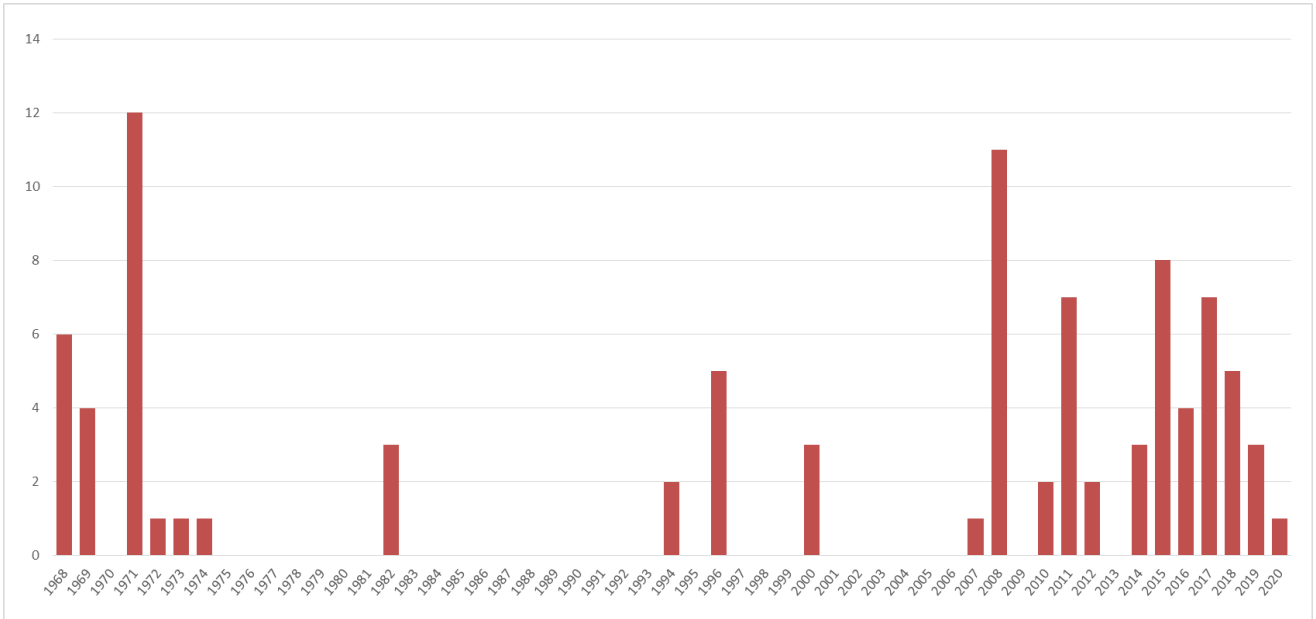
Figure 3: number of short-finned pilot whales landed from January 2014 to December 2020 by month



(1) No data available for Nov, Dec

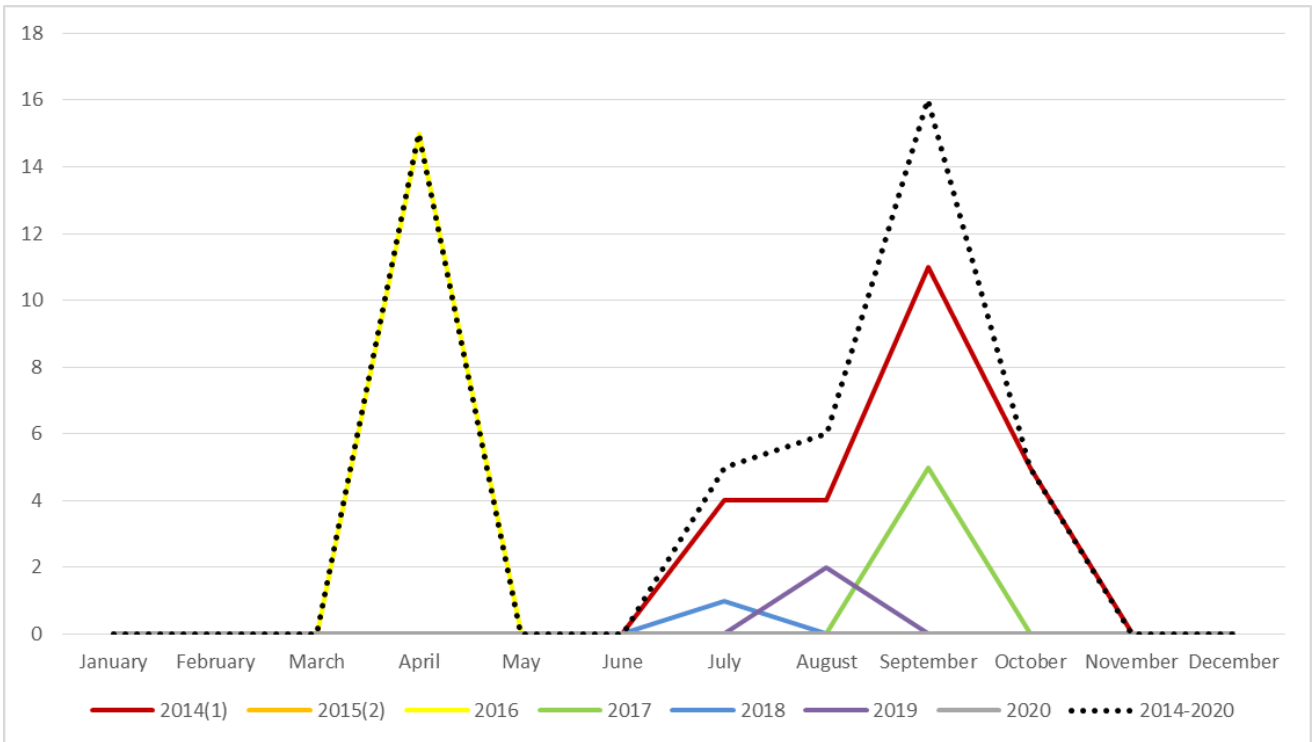
(2) No data available for Jan, Feb, Mar

Figure 4: number of killer whales landed from January 2014 to December 2020 by month



- (1) No data available for Nov, Dec
- (2) No data available for Jan, Feb, Mar

Figure 5: number of killer whales landed from 1968 to 2020



- (1) No data available for Nov, Dec
- (2) No data available for Jan, Feb, Mar

Figure 6: number of spinner dolphins landed from January 2014 to December 2020 by month.