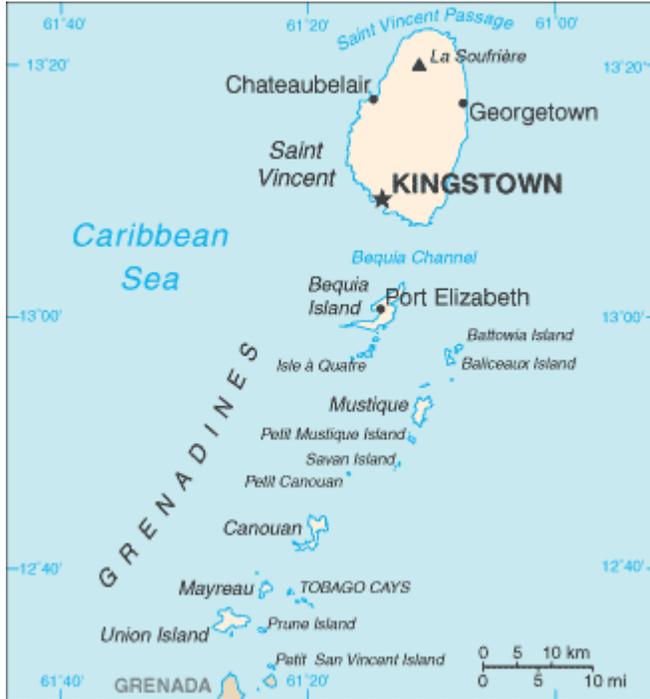


ST. VINCENT & THE GRENADINES (VC)



Map of St. Vincent and the Grenadines (CIA World Factbook)



Flag of St. Vincent and the Grenadines (CIA World Factbook)



Map of St. Vincent and the Grenadines' EEZ (Sea Around Us)

Geographic Coordinates: 13 15 N, 61 12 W

Terrestrial extent: 389 km² (Saint Vincent 344 km²) (CIA World Factbook)

Coastline: 84 km

Territorial Sea: 12 nm

EEZ Extent: 36,302 km²

Shelf Area: 1561 km²

Fisheries Landings (production in tons): 15,573 tons live weight

Other countries operating within this EEZ: St. Vincent and the Grenadines (SVG) shares bank and shelf areas with Grenada to the south, so joint management is indicated for many of the fisheries. SVG is among the top countries in the world which have the largest number of large-scale fishing vessels registered to fly their flag as a flag of convenience,¹ although it is unclear as to what extent they allow foreign vessels to fishing within their own waters.

Government agency for marine fisheries: Fisheries Division

Government agency for the protection of the marine environment: Fisheries Division

Population: 117, 848 (July 2006 est.) (CIA World Factbook)

Country Description: The Caribbean islands of St. Vincent and the Grenadines lie north of Grenada, south of St. Lucia, and west of Barbados. The Grenadines is a chain of almost 600 islets with a total area of 27 sq km which extend for 96 km over the Grenadines shelf between St. Vincent and Grenada. The jurisdiction over the Grenadines Islands is split between St. Vincent and Grenada. St. Vincent and the Grenadines is comprised of 32 islands and cays. Seven of these are relatively large and inhabited. They are: Bequia, Mustique, Canouan, Myreau, Union Island, Petit Saint Vincent, and Palm Island. The national capital is on the “mainland” island of St. Vincent, and is the most prominent fishing community in the state.

The Fisheries of St. Vincent and the Grenadines

Overview

The fishing industry is predominantly small scale and artisanal, employing traditional gears, methods and vessels (FAO 2002), but the dominating small fishery enterprises have a relatively low efficiency (Culzac-Wilson 2003). Most fishing vessels are open and powered by outboard engines, the most common being the two-stroke outboard engine ranging from 25-100 Hp (with higher Hp engines being more favorable) (Culzac-Wilson 2003). These vessels exploit both oceanic and inshore pelagics as well as the shelf and deep-slope demersals. Most fishers operate every day, and go out early morning and return in the late afternoon or evening (Johnson 2002). In spite of current artisanal nature, there is an increasing trend for the fisheries as demand of locals and tourists increases. Additionally, the government has provided concessions and incentives for the expansion of the fishery by providing fishers with the opportunity to invest in bigger and more efficient boats (fiberglass pirogues with outboard or inboard diesel engines) and to improve gear technology (FAO 2002). The small, but growing number of diesel-powered, decked vessels with insulated fish holds, allow for longer periods of operation (Culzac-Wilson 2003). Also, infrastructure development in the Grenadines by the end of the 1990s, the improvement and establishment of facilities and the increased harvesting of off-shore fisheries are all contributing to the increasing development of the fisheries sector (Mohammed et al. 2003). Activities for enhancing capacity of organizations for environmental management include operationalizing fishery centers and strengthening fisheries cooperatives and organizations (Homer and Shim 2004).

¹ http://www.panda.org/about_wwf/where_we_work/europe/what_we_do/epo/index.cfm?uNewsID=24356

1. What fisheries exist in this territory and what are the target species? Are they fished by artisanal or industrial fishers? Are industrial fishers national or foreign?

Shallow shelf and reef fisheries target hinds, groupers, and seabasses (Serranidae), parrotfishes (Scaridae), squirrelfishes (Holocentridae), grunts (Pomadouridae), surgeonfishes (Acanthuridae), and triggerfish (Balistidae) (FAO 2002; Mohammed et al. 2003). About 80 percent of these species are directly delivered to trading vessels for export (FAO 2002). These stocks are considered overexploited, so exploration of other fisheries is attempted to divert effort away from the shallow shelf fisheries (FAO 2002).

Caribbean spiny lobster (*Panulirus argus*) and conch are also harvested (FAO 2002; Mohammed et al. 2003), as well as sea urchins (*Tripneustes ventricosus*) (Mohammed et al. 2003).

Deep slope fisheries target snappers (Lutjanidae) and groupers (Serranidae), and a large proportion of these fish are also delivered to trading vessels for export (FAO 2002).

Coastal pelagic fisheries target jacks (Carangidae), herring (Clupeidae), silverside (Atherinidae), anchovy (Engraulidae), ballyhoo (*Hemiramphus* spp.), robins/scad (*Decapterus* spp.), and small tunas (FAO 2002; Mohammed et al. 2003). This is the most important fishery in St. Vincent and the Grenadines and accounts for about 45-60% of total estimated landings. These fisheries are considered moderately exploited (FAO 2002).

Larger offshore pelagics (fast-swimming, migratory species inhabiting the deep sea) include tunas (Scombroidei), billfishes (Stiophoridae), dolphinfish (*Coryphaena hippurus*), wahoo (*Acanthocybium solandri*), sharks, swordfish (*Xiphus gladius*), whales and porpoises, including humpback whales and blackfish (pilot whales). Large pelagic harvest is not regulated in the Eastern Caribbean, and the E.C. is considered the minimum management unit for regional large pelagics. While targeted east of the Grenadines bank, in the Grenadines these large pelagics are mainly caught incidentally in fisheries for shallow shelf, shallow reef and deep slope species (FAO 2002).

The **cetacean fishery** is included in the large pelagic fishery. There is a direct fishery for humpback whales in St Vincent. Bequia (of St. Vincent and the Grenadines) has a whaling operation authorized as aboriginal by the IWC (Adams 1994; Reeves 2002). Thus, the IWC has set a limit subsistence whaling of humpbacks by Bequians at no more than 20 animals for the period of 2003-2007 (Borobia 2005). Fishermen also harvest pilot whales (blackfish) and other small whales and porpoises. According to Mohammed et al (2003), these species comprise most of the catches.

Sea turtles are targeted by net or harpoon (Mohammed et al. 2003).

Please see Appendix 1 for a summary table of fisheries and target species.

2. What are the specific vessel and gear types used in each fishery?

The shallow shelf and reef fish are caught mainly by arrowhead traps, or occasionally z-traps, and by handline (FAO 2002).

Deep slope fisheries are mainly taken by handlines, but bottom-set longlines with about 100 hooks are also used (FAO 2002).

Schooling species of coastal pelagics are caught by seines, which are set from small rowboats or set offshore from a large double-ended rowboat assisted by two or three

smaller boats (some are powered by outboard engines) and a team of SCUBA divers to tend the foot rope. Gill nets (fixed or drifting) are used primarily for catching ballyhoo (FAO 2002). Mesh gear has a size restriction.

Trammel (tangle nets) are reported as prohibited by FAO 2002, but Mohammed et al. (2003) report that they are still used, along with spearguns, handlines, and bottom-set longlines to target reef, slope and shelf fisheries.

Regional large pelagics such as dolphinfish and kingfish are caught by trolling from open pirogues and canoes east of the Grenadines bank, and ocean-wide pelagics (yellowfin tuna, billfish and swordfish) are targeted primarily by multipurpose vessels (FAO 2002). Surface longlines are also used to target large pelagics (Mohammed et al. 2003).

Johnson (2002) reports on the different types of vessels that are used in St. Vincent and the Grenadines to target large pelagics, although they are not necessarily discussed with reference to the fishing gear method they employ or the specific species they target. This information is as follows:

Flat transom boats, 'bow and stern' boats, or dories, are open boats 11-27 feet long with beams 3-7 feet long. These wooden boats are often covered by epoxy or fiberglass. They are powered by 1-2 outboard gasoline engines ranging from 14-115 Hp, and are mostly operated by a crew of three.

Pirogues are similar to the flat transom boats, but have a higher bow and are larger (19-30 feet long with a beam of 4-10 feet). They are made of fiberglass and powered by 1-2 gasoline outboard engines ranging from 40-75 Hp. Pirogues are mostly used to target offshore pelagics and carry a crew of three.

Canoes are hallowed out tree trunks with planks added to the sides. They are usually 22-25 feet long with beams of 5-6 feet, and are used to target demersals and small, inshore pelagics. They are powered by outboard gasoline engines ranging from 25-65 Hp.

Longliners are powered by inboard, marine, diesel engines ranging from 90-475 Hp. They are 34.7-48.5 feet long with beams 9.7-15.9 feet long. The main type of longliner is the Yanmar, which is powered by inboard diesel engines ranging from 90-190 Hp, and ranges from 34.7-42 feet long. They are designed to operate up to 150 nautical miles from shore for periods of 3-5 days. They are used primarily for tuna longline fishing, but are also used for trolling or bottom longline fishing. They usually carry a crew of 4-5 people.

Launches are fiberglass vessels 16-34 feet long, and include cabin cruisers and boston whalers. They are powered by outboard engines ranging from 55-500 Hp or inboard engines up to 600 Hp. While they are mostly used for recreational fishing, they are often converted and used for commercial purposes.

Adams (1994) discusses the gear used to catch blackfish in the 1960s and 1970s. The gear included forty fathoms of shooting line, 120 fathoms of heavy manila rope, standing line, four harpoons, three lances, and a box of 12 gauge shotgun shells, from which the pellets had been removed. The shells were fired from the barrel of a modified shotgun mounted on a swivel and carriage seated on the bow deck. The gun harpoon had been introduced from Saint Lucia in 1958, displacing the traditional hand harpoon in striking whales. The gun harpoon had a range of about forty yards, with a normal charge consisting of the amount of powder contained in one 12 gauge shell, plus a quarter

measure of powder extracted from a second shell. Fishers went out in a small fleet of eight boats, but each boat hunted independently and kept at some distance from the others.

The fishery all but collapsed with the passage of the MMPA, eliminating the ability of fishers to export the melon oil to the U.S. In the 1990s, the blackfish fishery persisted with 2 boats with 35-hp outboard engines. Increased dolphin catches support the fishery.

Lobster fishermen work in teams of about a dozen men. Five to six SCUBA divers carry multiple stainless steel wire nooses to catch the lobster. Each team deploys 4-5 open boats or quarter-decked speedboats about 4.6-5.5 m long, mainly constructed of wood with a 35-45 horsepower outboard motor (FAO 2002).

Conch fishermen use double-enders of less than 20 feet, powered by sails, oars, or small outboard engines. There are about three people per team – 1 diver and 2 people who remain in the boat to keep it positioned and retrieve the diver. Teams dive for 2-3 hours per day. Approximately 500 fishermen and 160 vessels are involved in the conch fishery (FAO 2002).

Sea urchins are also harvested by scuba divers.

Although estimates from the Licensing and Registration System (LRS) indicate that there are 1550 fishers in St. Vincent and the Grenadines, there are approximately 2500 full- and part-time fishers (Johnson 2002; Culzac-Wilson 2003). Fishermen and an additional 500 processors, vendors and handlers account for about 5% of the labor force. The LRS also indicates over 600 vessels operating at various landing sites in St. Vincent and the Grenadines, and an estimated 90% of those vessels are registered. Pirogues, bow & stern and double-enders dominate the fishing fleet. Most of these vessels are below 32 feet in length and are constructed mainly from wood and fiberglass (Johnson 2002; Culzac-Wilson 2003). There are 22 landing sites on St. Vincent and 16 on the Grenadines.

Please see Appendix 2 for a summary table of fleet characteristics and fishing effort.

3. Where and when are the specific gear types deployed for each of these fisheries (seasonality, trip duration, etc)?

Shallow shelf and reef fish are extensively harvested in the Grenadines. On mainland St. Vincent, they are most heavily fished during the off-season for large pelagics.

Deep slope fishes are targeted year-round, but fishing is more intense during the off season for large pelagics (FAO 2002).

Coastal pelagics are found in mid-water or surface waters in beach areas. There is a size restriction on mesh gear, with the use of trammel (tangle nets) prohibited and restriction on the use of ballahoo nets.

Regional large pelagics (dolphinfish, kingfish, etc) are mainly caught east of the Grenadines bank. Trolling lines (with artificial lines or baited hooks) are deployed at 100 m or more while the vessel is steaming, or at the surface with outriggers while underway.

Two humpback whale species are taken in the Grenadines, usually in the vicinity of Bequia between January and May. Barrouallie is the main site from which marine mammals are targeted in St. Vincent (Mohammed et al. 2003).

Blackfish are seen and hunted throughout the year, but concentrations are greatest from February-June (Adams 1994). Boats targeting blackfish rarely range beyond 9-10 miles offshore.

The lobster fishery is closed from May 1 – August 31.

Conch is primarily harvested by lobster fishermen during the closed lobster season. Other free diving conch teams operating from Union Island harvest conch year-round.

4. What species of marine mammals, sea turtles and seabirds occur and are caught as bycatch or may be at risk for capture or interaction with fisheries? Please describe the extent of these interactions, and whether they are considered to be conservation concerns.

Sea Turtles

Loggerheads are not very common, and the distribution of leatherbacks around St. Vincent and the Grenadines has not been determined. Green turtles and hawksbills are more common and are regularly fished (Mohammed et al. 2003), with about 65-70 % of the total catch coming from Bequia (Scott and Horrocks 1993). However, Bequians are fishing further south as turtles around Bequia become less common. Turtle meat and shells are sold to islanders or sent to Martinique as export products. Other species of turtle are rarely caught, and taking of turtles and eggs is prohibited during the closed season (May-August) (Scott and Horrocks 1993).

Scott and Horrocks report that the incidental capture of turtles in St. Vincent and the Grenadines has not been quantified, but is not expected to be large. Incidental catch is expected to result from longlining, since there are no trawling operations, trammel nets are illegal, and gillnets are only used occasionally. One leatherback was caught on a longline and brought back to Kingstown for sale in 1992.

Marine Mammals

Table 1 lists marine mammal species recorded by the Sea Around Us project as present in the waters of St. Vincent and the Grenadines, as well as species listed as captured in fisheries in the Small Cetaceans Report (IWC 2006). No information was found regarding marine mammal bycatch, as expected given the history of targeted cetacean fisheries in St. Vincent and the Grenadines.

Table 1: Summary list of marine mammals present in or with ranges that include St. Vincent and the Grenadines, as given by Sea Around Us and the IWC’s 2006 report on small cetaceans.

Sea Around Us		Small Cetaceans Report	
Scientific Name	Common Name	Scientific Name	Common Name
Balaenoptera acutorostrata	Dwarf minke whale	Globicephala macrorhynchus	Short-finned pilot whale
Balaenoptera borealis	Sei whale	Killer Whale	Orcinus orca
Balaenoptera brydei	Brydes whale	Kogia breviceps	Pygmy sperm whale
Balaenoptera musculus	Blue whale	Kogia simus	Dwarf sperm whale
Balaenoptera physalus	Fin whale	Lagenodelphis hosei	Frasers dolphin
Delphinus delphis	Short beaked common dolphin	Tursiops truncatus	Bottlenose dolphin
Eubalaena glacialis	North Atlantic right whale	Ziphius cavirostris	Cuviers beaked whale
Feresa attenuata	Pygmy killer whale		

<i>Globicephala macrorhynchus</i>	Short-finned pilot whale
<i>Grampus griseus</i>	Rissos dolphin
<i>Kogia breviceps</i>	Pygmy sperm whale
<i>Kogia simus</i>	Dwarf sperm whale
<i>Lagenodelphis hosei</i>	Frasers dolphin
<i>Megaptera novaeangliae</i>	Humpback whale
<i>Mesoplodon densirostris</i>	Blainvilles beaked whale
<i>Mesoplodon europaeus</i>	Gervais beaked whale
<i>Mesoplodon mirus</i>	Trues beaked whale
<i>Peponocephala electra</i>	Melon-headed whale
<i>Physeter macrocephalus</i>	Sperm whale
<i>Pseudorca crassidens</i>	False killer whale
<i>Stenella attenuata</i>	Pantropical spotted dolphin
<i>Stenella clymene</i>	Clymene dolphin
<i>Stenella coeruleoalba</i>	Striped dolphin
<i>Stenella frontalis</i>	Atlantic spotted dolphin
<i>Stenella longirostris</i>	Spinner dolphin
<i>Steno bredanensis</i>	Rough-toothed dolphin
<i>Tursiops truncatus</i>	Bottlenose dolphin
<i>Ziphius cavirostris</i>	Cuviers beaked whale

The following species are caught in St. Vincent fisheries, as discussed in the 2006 IWC Small Cetacean Report:

At least one Fraser's dolphin is recorded among the catches at St. Vincent (IWC 2001). Price (1985) reported around six per year in the early 1980s.

Local exploited populations of bottlenose dolphins in St. Vincent have been severely depleted or extirpated.

The short-finned pilot whale ('blackfish') has been exploited by ship-based whalers for centuries, and more recently by shore-based whaling operations in places like St. Vincent and the Grenadines and St. Lucia. While recent catches have not been reported to the IWC, 2,220 pilot whales were reported for St. Vincent and the Grenadines between 1978 and 1983. The Barouallie fishery for blackfish essentially began in 1932, following the development of a market for the melon oil (Adams 1994).

Killer whales (*Orcinus orca*) have been hunted at least opportunistically in St. Vincent. Adams (1994) documented the take of killer whales (known locally as 'white fish' for their white underbelly) during a visit in the 1960s. Between 1960-1970, blackfish catch in Barouallie ranged from 200 to over 400, with an average of 250 (Adams 1994).

Pygmy (*Kogia breviceps*) and dwarf (*Kogia sima*) sperm whales have been included in direct catches from St. Vincent.

Cuvier's beaked whale (*Ziphius cavirostris*) have been reported as taken in direct hunts.

Data from St. Vincent whale fisheries are dated, and it is unclear to what extent, if any, these fisheries continue. Adams (1994) had noted that by the early 1990s the two remaining boats in St. Vincent were increasingly targeting small cetaceans. The sub-committee had no recent information on species or catch levels in this fishery.

Seabirds

No information found.

5. *What collection methods (observer programs, etc.) exist for gathering fishing effort and bycatch data for each fishery?*

Mohammed et al. (2003) provide the following summary of the history and status of fishery data collection in St. Vincent and the Grenadines:

Prior to 1992 data collection was confined to landings at the major market at Kingstown and exports from the Grenadines to Martinique. The Barrouallie Fisherman's Cooperative Society had historically recorded captures of whales and porpoises (Adams, 1973). In the 1960s fish landings at the market represented 60% of total landings throughout St. Vincent and the Grenadines (Vidaeus, 1969). In 1988 plans were formulated under the Organization of Eastern Caribbean States (OECS) for a revised data collection system (Morris *et al.*, 1988). This revised data collection system was implemented in 1992 under the CARICOM Fisheries Resource Assessment and Management Program (SFRAMP) and is still in effect. A system of random stratified cluster sampling was implemented at seven zones, with catch and effort data recorded at representative sites within each zone. Landing sites are categorized into primary, secondary and tertiary sites based on the number of fishing boats landing regularly at the site, the amount of fish landed and the level of infra-structure development (Straker et al., 2001). At Kingstown and Barrouallie there are two primary sites, 14 secondary sites and 20 tertiary sites. Data are also collected from trading vessels operating in the Grenadine/Martinique fish trade. Total landings are estimated by applying a raising factor to account for days when data are not recorded. A licensing and registration program is in effect and an inventory of distant water fishing vessels registered with St. Vincent and the Grenadines is maintained. The Trip Interview Program (TIP), a data management program introduced under the CFRAMP, is presently being used for data entry, management and analysis.

The fisheries division has a comprehensive data collection programme which includes biological sampling and the collection of catch and effort data. The division has also embarked on a survey of coral reefs on the west coast of St. Vincent and in the Grenadines.

6. *Are there databases or datasets (including geospatial databases) on fisheries, fishing effort or bycatch of mammals, birds, or turtles? Please describe.*

Licensing and Registration System (LRS) and Trip Interview Program (TIP) databases exist for SVG.

The Environmental Services Unit is currently seeking funding for a project to establish an integrated natural resources database, which would be accessible to appropriate agencies. Other databases mentioned are Fishbase, but supposedly local efforts to collect additional taxonomic data are minimal (Anon 2004).

7. *What bycatch studies or bycatch mitigation projects exist for sea turtles, sea birds and marine mammals?*

The Sea Turtle Recovery and Action Plan supports promotion of TEDs, but since there is no trawl fishery in St. Vincent and the Grenadines, promotion efforts are not being made here. However, the plan recommends that bycatch of leatherbacks in longlines be addressed.

The Fisheries Development Programme is a national project that includes an objective, among its many, to “promote the development and use of selective fishing gear and practices that minimize waste in the catch of target species and bycatch as well as habitat destruction” (Culzac-Wilson 2003; FAO 2002). Thus, the government is at least aware of bycatch enough to include it as a fisheries management objective.

8. *Are there bycatch research and mitigation projects for other taxa, such as non-target fish or shark species?*

While not specifically referencing St. Vincent and the Grenadines, the OECS Fisheries Management and Development Strategy and Implementation Plan (OECS Natural Resources Management Unit 1999) calls for the identification of opportunities for increased use of bycatch and reduced discards, as well as quantifying and qualifying bycatch and/or discards in order to add value to fishery products. However, there is no mention of provisions for reducing bycatch.

9. *Policy/Regulatory Framework*

The Fisheries Division is responsible for management and development of the fisheries sector. However, little information has been found about the fisheries division. While they have a website (<http://www.vincy.com/fisheries>), it is inaccessible.

Marine resources are conserved and managed in St. Vincent through several pieces of legislation. The Maritime Areas Act of 1983 declared the maritime areas of St. Vincent and establishes St. Vincent and the Grenadines as an archipelago. It also establishes the territorial sea, the contiguous zone and exclusive economic zone, and defines internal water and archipelagic waters.

The Fisheries Act No. 1 of 1986 gives mandate to the Fisheries Division for the management and development of the fisheries sector of St. Vincent. The Fisheries Regulations No. 8 of 1987, established under Section 45 of the Fisheries Act, make provisions for the registration and licensing of fishing vessels, the establishment of a fisheries advisory committee, the management and conservation of fisheries resources, the establishment of marine protected areas, distribution of fish and fish products, management of aquaculture and enforcement (Culzac-Wilson 2003). This legislation also makes provisions for conservation measures such as prohibiting the use of any explosive, poison or other noxious substance for the purpose of killing, stunning, disabling, or catching fish, and provisions for closed seasons, gear restrictions, and creation of marine reserves (Johnson 2002; FAO 2002). Additionally, it gives authority to those responsible for fisheries to create new fisheries management regulations when necessary.

Fish Processing Regulations of 2001 make provisions for the control of processing and handling of fish destined for export. It gives the mandate to a named competent authority to ensure that the fish and fish products meet appropriate export standards through inspections and other mechanisms. This could possibly have implication if imports into other countries were controlled based on product sustainability, such as the impact of the product bycatch species.

The High Seas Fishing Act of 2001 makes provisions for the regulations of Vincentian vessels fishing on the high seas. It specifically provides for the licensing of

high seas fishing vessels, international cooperation, conservation and management of marine resources and enforcement.

Table 2 provides a summary list of marine-relevant treaties and conventions.

Table 2: Treaties and Conventions to which St. Vincent and the Grenadines is a member (from Sea Around Us).

Short Title	Long Title
CARICOM	Caribbean Community
Cartagena de Indias	Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region
CBD*	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
Basel Convention	Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
IMO Convention	Convention on the International Maritime Organization
Lome IV	Fourth ACP - EEC Convention
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
IWC	International Whaling Commission
MP	Montreal Protocol for the Protection of the Ozone Layer
OECS	Organization of Eastern Caribbean States
UNCLOS**	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
WECAFC	Western Central Atlantic Fishery Commission

* CBD was acceded on June 3, 1996.

** UNCLOS was signed on December 10, 1982, and ratified on October 1, 1993.

10. Have research and management needs, priorities, or constraints been identified or recommended? (include gear/technological developments or prohibitions that might impact fisheries).

The following constraints in coastal and marine resource management are taken from Culzac-Wilson (2003), which addresses the implementation of the Barbados Programme of Action for Small Island Developing States. Constraints include:

- Inadequate financial and human resources
- Inadequate (weak or non-existent) enforcement capability, particularly in isolated geographical areas such as the Tobago Cays Marine Park
- Management measures target the high exploitation on coastal and marine resources; yet there is limited scope for alternative livelihood for dislocated stakeholders that would result from the implementation of these measures
- Inadequate information and data on the ecosystems being managed

Additional challenges documented are:

- Strong individualism among fisher folk and lack of common focus
- Distrust of government-sponsored activities (fear of taxation, etc)

- Weak individual and collective management capabilities of fisher folk
- Relatively low *per capita* consumption of fish and fish products as well as inadequate distribution of such products in relation to other meats (which are usually imported)
- Conflict among resource users (e.g. tourism, fisheries, industry and agriculture)

Inadequate resources, particularly relating to enforcement and personnel, are important because of the multi-island nature of the country which makes management of the smaller Grenadine islands important (Anon 2004).

11. Contact: *If there are other individuals in relevant government agencies or non-governmental organizations that may be able to assist us with information on bycatch of sea turtles, sea birds and marine mammals, please provide their names and contact details below*

R. Ryan and F. Hester
Fisheries Division
Ministry of Agriculture and Labour
St. Vincent and the Grenadines
Kingstown, SVG, West Indies

12. Contact: *If there are other individuals in relevant government agencies or non-governmental organizations that may be able to assist us with information on fisheries, please provide their names and contact details below*

Cambridge Khanda – Fishery Library Worker
Culzac-Wilson, Lистра(Lystra) – Independent Environmental Consultant
Sophia Punnet – Fisheries Biological/Research Officer
Raymond Ryan – Chief Fisheries Officer (Ag), Ministry of Agriculture & Fisheries
Leslie Straker – Fisheries Data Officer

13. Documents: *What documents (journal articles, grey literature, agency reports) describe fisheries and bycatch in this area?*

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Appendix 2: Summary table of fleet characteristics and fishing effort for longlines and gillnets, the gear types of major concern for bycatch. Very little information is given for St. Vincent and the Grenadines. Trawling is not discussed in the literature for St. Vincent and the Grenadines.

	Gear type →	Longline¹	Gillnet	Trawl
	Artisanal/Industrial/Undetermined	Undetermined		
Fleet Characteristics	Target species	Deep slope species; pelagic species (tuna)		
	Vessel type	Yanmar		
	Vessel Classification (country specific)			
	Vessel length (m)	34.7-48.5 ft		
	Number of vessels			
	Engine type	Inboard diesel		
	Avg Horsepower	90-190		
	Gear Used (materials)			
	How gear deployed (demersal/pelagic, set/drift)	Demersal and pelagic		
	Effort	Crew Size	4-5	
Where gear deployed/ area fished		Up to 150 nautical miles from islands		
Fishing seasons (months)				
Avg. trip duration (days)		3-5 days		
Total days fished per month/year				
Number of fishing trips per year				
Gear/vessel effort (gear & trip information)		Hook size/type: Number of hooks: Main line length:	Net mesh size(s): Twine gauge: Weight²: Mesh length: Net length & width: Net Depth:	Net mesh size(s): Foot rope length & diameter: Head rope length (min/max/avg) Horizontal opening width (m): Tow (trawl) or haul (seine) speed:

	Number of sets/hauls/soaks/tows per trip			
	Number of hours per set/soak/tow			
	= Total number of hours towed per trip			

¹The description of longlines is based only on the Yanmar, which is the most common type of longliner. Other longline vessels are used, such as pirogues and canoes, but little to no gear or vessel information is given for anything other than the Yanmar.