

RECONSTRUCTION OF TOTAL MARINE FISHERIES CATCHES FOR ANGUILLA (1950-2010)<sup>1</sup>

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## ABSTRACT

Accurately recording marine fisheries catches is difficult in both space and time and thus under-reporting of fisheries catches occurs worldwide. Inconsistencies in fisheries data collection in Anguilla mean that fisheries statistics are deficient for this British overseas territory in the Caribbean. Reconstructed total catches were estimated at approximately 49,000 t for the period 1950-2010, which is 2.75 times the official landings of 17,854 t reported by the FAO on behalf of Anguilla. The difference can be attributed to under-reporting from artisanal, subsistence and recreational sectors. Under-reported fisheries catches can lead to over estimations of available marine resources.

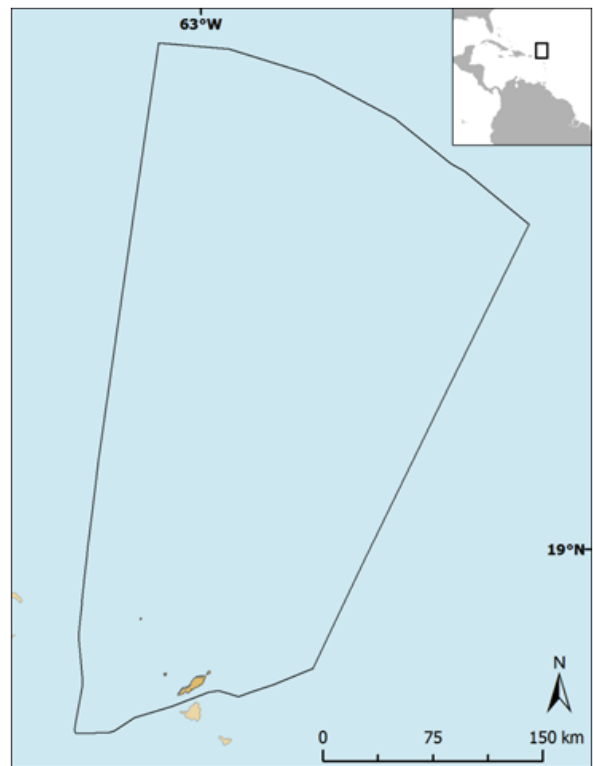
## INTRODUCTION

Anguilla is the most northerly of the Leeward Islands in the Eastern Caribbean, located between 18° N and 63° W. It is an arid, low lying coralline island, with a land area of 91 km<sup>2</sup>, which borders the Atlantic Ocean in the North and the Caribbean Sea in the South (Figure 1). Anguilla's submarine platform is shared with Saint Martin, Sint Maarten and Saint Barths. The island has a declared Exclusive Economic Zone of slightly over 92,000 km<sup>2</sup> ([www.seaaroundus.org](http://www.seaaroundus.org)).

The first known residents of Anguilla were the Arawak Indians, originating from South America. Rene Laudonniere, the French explorer, was probably the first European to formally recognise the island, calling it Anguille (French for 'eel') because of its elongated shape (Kozleski 2004). The British Government created a federation between Anguilla and St. Kitts in 1871, with Nevis joining soon after (Kozleski 2004). However, soon after the federation was formed, Anguillians became resentful about the way St. Kitts dominated the tri-island grouping. In 1967, Anguilla rebelled and police from St. Kitts were employed to defend the federation. Another rebellion ensued in 1969 (Ferguson 1997) and Britain had to intervene. In 1980, with support from Britain, Anguilla succeeded in separating from St. Kitts and Nevis. Today, Anguilla remains a British overseas territory in the Caribbean (Ferguson 1997).

Historically, salt production, lobster fishing and overseas employment were the main sources of income in Anguilla. In the early 1980s, the government began an aggressive marketing campaign to position Anguilla as a luxury tourist destination. With its white sand beaches and turquoise seas, Anguilla has a tourism industry that today contributes around 50% to national GDP, whilst fishing accounts for approximately 2% (Lum Kong 2007). The fisheries of Anguilla are multi-gear and multi-species. The majority of fishing in Anguilla is done with traditional Antillean arrowhead traps (Richardson 1984) which are used to target lobsters and finfish, such as parrotfish (Scaridae), goatfish (Mullidae) and squirrelfishes (Holocentridae). There is also a small fishery for queen conch, with most conch fishers using SCUBA gear (Wynne 2010) on trips organised to fill specific orders (Lum Kong 2007).

The lobster fishery is the most prosperous fishery in Anguilla (Olsen and Ogden 1981; Lum Kong 2007). Spiny lobsters, *Panulirus argus* and *P. guttatus*, known locally as 'crayfish', are caught using traps baited with cow hide. A small but growing hand-capture fishery also exists, where fishers snorkel at night to capture foraging individuals (Wynne 2010). Hook and line techniques are commonly used by fishers targeting deep slope species such as groupers and hinds (Serranidae), as well as snappers (Lutjanidae), while seine nets are used on occasion to land small schooling pelagics, such as jacks (Carangidae) and herrings (Clupeidae). There is an emerging offshore FAD (fish aggregating



**Figure 1.** Map showing position of Anguilla with line demarcating EEZ.

<sup>1</sup> Cite as: Ramdeen, R., Zyllich, K. and Zeller, D. (2014) Reconstruction of total marine fisheries catches for Anguilla (1950-2010). pp. 1-8. In: Zyllich, K., Zeller, D., Ang, M. and Pauly, D. (eds.) Fisheries catch reconstructions: Islands, Part IV. Fisheries Centre Research Reports 22(2). Fisheries Centre, University of British Columbia [ISSN 1198-6727].

device) fishery targeting dolphin fish (*Coryphaena hippurus*), wahoo (*Acanthocybium solandri*), tuna, marlin and swordfish on a request basis. These large pelagics are also targeted by a small recreational sector made up of locals and hotel operated vessels, as well as foreign vessels from St. Martin (Lum Kong 2007). Spearfishing for subsistence purposes is done on occasion by locals (Murray *et al.* 1999), whereas this activity is strictly prohibited for tourists visiting the island.

The population of fishers operating in Anguilla has increased substantially since 1975. Olsen and Ogden (1981) noted that there were 89 active fishers in 1974 (Table 1). This number has increased over the years, with the most recent estimate being 500 active fishers in 2007 (Gumbs and Rawlins 2007). The open access nature of the fishing industry has contributed to over-fished inshore resources (Gumbs 2003). Fishing is usually done twice weekly and catches are landed at several sites, including Island Harbour, Cove Bay, Sandy Ground, Sandy Hill Bay, Forest Bay, Little Harbour, Blowing Point and Crocus Bay (Lum Kong 2007). Additionally, fishers on the west will land catches on neighbouring St. Martin biweekly. Fish is mainly marketed unprocessed to hotels, restaurants and central markets, with lobsters mainly sold to hotels and restaurants.

There are no trade data in the FAO database for Anguilla. However, colonial records for the islands of St. Kitts, Nevis and Anguilla show seafood imports of, on average, 450 t·year<sup>-1</sup> from 1955-1962 for the tri-island federation. Thus, it can be assumed that some portion of this seafood was supplied to Anguilla. Since the early 1960s, Anguilla's lobster trap fishery has supported a lucrative lobster trade of around 2.5 t·month<sup>-1</sup> (FAO 1969) to neighbouring islands such as St. Martin, which is the largest export market for Anguillan seafood products (Jones 1985). Before the 1990s, it was estimated that about 40% of all finfish and 75% of all lobster caught in Anguilla were exported to St. Martin, St. Thomas and Puerto Rico. However, since the growth of the tourist industry on Anguilla, it is now estimated that export figures are below 10% (Gumbs 2003).

Sampling for catch and effort data was initiated in 1986, however data collection was carried out opportunistically depending on the availability of a vehicle for transport (Gumbs 2003). In 1991, the Department of Fisheries and Marine Resources was established, although regular fisheries data collection began only in 2008 (J. Gumbs, pers. comm., Fisheries Department). Presently, data on fisheries landings are collected in three categories: finfish, lobster and conch. Data collection takes place during weekdays at 5 sites: Island Harbour, Crocus Bay, Road Bay, Cove Bay and Blowing Point. Meanwhile, boats also land catches at three other well known sites: Forest Bay, Little Harbour and Meads Bay (Ken Rawlins, pers. comm., Department of Fisheries and Marine Resources) as well as Sandy Hill Bay. Although it is known that fish are landed at these other sites, only recorded landings are included in the statistics and no estimates are made to account for landings made at unmonitored sites. Further, due to the direct exporting of fish to St. Martin, analysis of landings by local fishers becomes difficult, as no customs records are available for these exports (Jones 1985).

Without reliable island-wide catch data as well as trade data, it is difficult to make informed fisheries management decisions. A complete review of all available fisheries reports was undertaken to reconstruct Anguilla's total fisheries catches for the period 1950-2010.

## METHODS

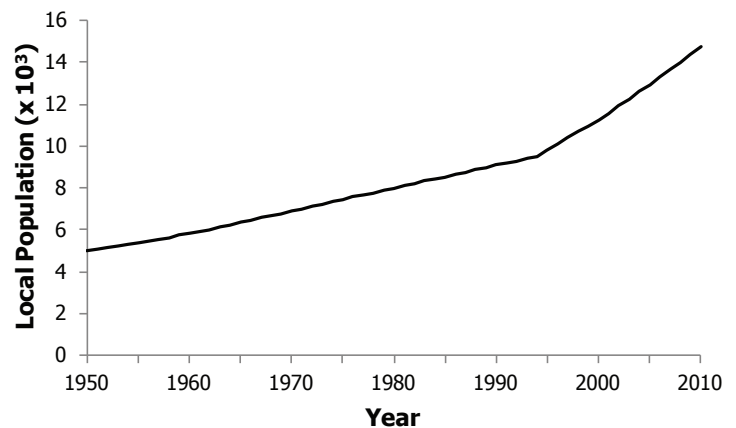
Studies on fisheries catches in Anguilla have been presented by FAO (1969), Olsen and Ogden (1981), Richardson (1984), Jones (1985), Gumbs (2003), Lum Kong (2007), and Gumbs and Rawlins (2007). The most comprehensive description of Anguilla's fishing industry is that of Jones (1985). Using information on household and non-household seafood consumption from Jones (1985), together with local and tourist population data for Anguilla, we reconstructed the seafood demand in Anguilla from 1950-2010. To estimate seafood exports from Anguilla, we utilised trade proportions presented by Gumbs (2003) along with reconstructed domestically-consumed catches to deduce catches being exported from the island. Finally, we apply a minimal recreational catch per tourist to estimate catches made by the recreational sector.

### Domestic and tourist population

Data on Anguilla's local population were available for 1960, 1994 and 2001 from the national statistics website ([gov.ai/statistics/statistics.htm](http://gov.ai/statistics/statistics.htm)). Using linear interpolation between anchor points, and carrying this trend backward to 1950 and forward to 2010 we reconstructed the human population of Anguilla 1950-2010. Over a 40 year period, Anguilla's population has doubled from 5,810 in 1960 to over 11,550 in 2001 (Figure 2).

**Table 1.** Data sources on number of fishers in Anguilla.

Year	No. active fishers	Source
1974	89	Olsen & Ogden (1981)
1978	320	Olsen & Ogden (1981)
1984	332	Jones (1985)
2007	500	Gumbs (2007)



**Figure 2.** Total local population data for Anguilla during the period 1950-2010.

Data on the number of stop-over tourists (travelers who stay on the island for more than one day) were available from the Statistics Department of Anguilla<sup>2</sup> for 1981-1998 and from the Caribbean Tourism Organisation<sup>3</sup> for 2000-2010. We assumed tourism started in 1950, so a direct linear interpolation was done to estimate the tourist population in years with missing data. The population of stop-over tourists has increased by an order of magnitude from around 6,500 in 1980 to over 60,000 in 2010 (Figure 3).

### Small-scale catches

#### Domestically-consumed catches

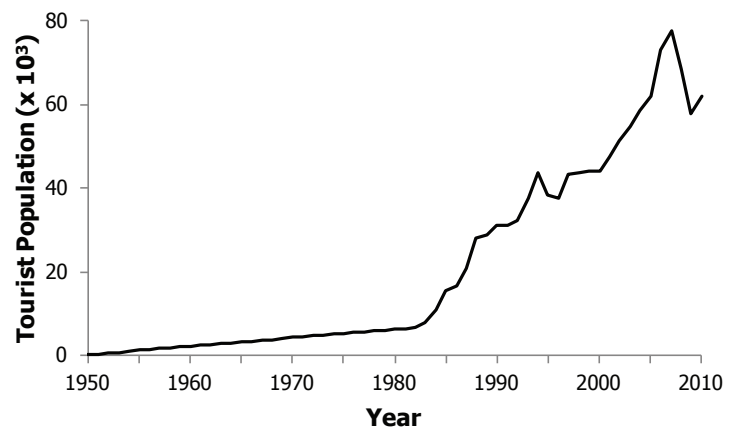
Seafood consumption by locals and tourists in Anguilla in 1984 was assessed by Jones (1985). Per capita consumption of fresh finfish, lobster and conch were surveyed in households as well as hotels, restaurants and guesthouses (Table 2).

Using seafood consumption rates for households and non-households, together with population data for local Anguillans and stop-over tourists on the island, we reconstructed the domestically-consumed seafood demand. In order to avoid over-estimation, we assumed the seafood consumption rates presented by Jones (1985) are in whole (wet) weights, although they likely represent product weights. FAO applies conversion rates from product to wet weight for conch and lobster. Thus, in certain instances FAO values were slightly higher than our reconstructed catches. Thus, we accepted FAO values for queen conch from 1974-1989, 1992 and 2009-2010 and for lobster from 1977-1983.

#### Exported catches

Based on Gumbs (2003), we attributed 40% of finfish and 75% of lobster catches in 1950 to exports. Thus, reconstructed domestically-consumed catches of finfish and lobster which were not exported accounted for 60% and 25% of total finfish and lobster catches in 1950, respectively. The rapid rise in tourism created increased demand for seafood on the island, and thus less than 10% of finfish and lobster was exported from Anguilla from 2000 onwards (Gumbs 2003). Thus, reconstructed domestically-consumed catches of finfish and lobster, only accounted for 90% of total catches by the 2010. Using direct linear interpolation, we scaled the export proportions from 40% finfish and 75% lobster exports in 1981 to 10% each in 2010. In this way, we were able to reconstruct the catches exported from Anguilla for the period 1950-2010.

Since it is known that fishers engage in subsistence fishing (Mukhida and Gumbs 2007), we assumed some proportion of our domestically-consumed catches to comprise not only artisanal catches but subsistence catches as well (Lum Kong 2007). To assign small-scale catches to artisanal and subsistence sectors, it was assumed that in 1950, 80% of near-shore catches were for subsistence purposes and 20% were for sale (artisanal). In 2010, 60% of near-shore catches were attributed to the subsistence sector and 40% to the artisanal sector. A linear interpolation was done between these two years to derive an assumed assignment by sector for the entire 1950-2010 time-period.



**Figure 3.** Stop-over tourists population for Anguilla during the period 1950-2010.

**Table 2.** Fresh seafood consumption rates in Anguilla (Jones 1985).

	Consumption (kg/person/year)		
	Fish	Lobster	Conch
Households	23.6	0.8	1.8
Hotels & restaurants	7.7	5.3	2.5

**Table 3.** Taxonomic breakdown applied to reconstructed catches from Anguilla, based on FAO data for St. Kitts and Nevis as well as Lum Kong (2007).

Taxon	Proportion	
	1950	2010
<i>Acanthocybium solandri</i>	0.005	0.003
Acanthuridae	0.050	0.010
Atherinidae	0.000	0.010
Balistidae	0.000	0.005
Belonidae	0.000	0.013
Carangidae	0.050	0.008
Carangidae	0.050	0.275
Decapterus	0.050	0.126
Clupeidae	0.050	0.172
Corryphaenidae	0.005	0.008
Dasyatidae	0.000	0.010
Engraulidae	0.050	0.126
Exocotidae	0.050	0.011
Haemulidae	0.100	0.006
Holocentridae	0.050	0.003
Lutjanidae	0.150	0.022
<i>Meluccius</i> spp.	0.000	<0.001
Mullidae	0.050	0.015
Myliobatidae	0.000	0.010
Pomacanthidae	0.000	0.010
Scaridae	0.000	0.012
Scombridae	0.010	0.091
Sardinella	0.010	0.037
Serranidae	0.200	0.009
Sparidae	0.050	0.001
Trichiuridae	0.000	0.002
Misc. marine fishes	0.020	0.008

<sup>2</sup> <http://www.gov.ai/statistics/> [Accessed August 2012]

<sup>3</sup> <http://www.onecaribbean.org/> [Accessed: August 2012]

## Recreational fishery

Klausning (1978) conservatively estimated catches from the recreational sector of the Anguilla, which averaged to a rate of about 1.0 kg·tourist<sup>-1</sup>·year<sup>-1</sup>. Assuming participation of tourists in recreational fishing in Anguilla was 10% in 1950 and 20% in 2010, we calculated the number of recreational fishing tourists. Applying the modest rate from Klausning (1978), we conservatively estimated catches from Anguilla's recreational sector for the time period 1950-2010. These may be substantial underestimates.

## Taxonomic composition

Lum Kong (2007) presented a list of marine species targeted by fisheries, but without quantitative information. To further disaggregate finfish catches into more informative taxonomic components, we used the 2000-2010 FAO landings composition breakdown for St. Kitts and Nevis, both neighbouring islands. This was the time period when the most disaggregated species breakdown was available. Conch and lobster data were removed since these were reconstructed separately. Taking the 2000-2010 average species composition from St. Kitts and Nevis, together with some additions from Lum Kong (2007), we derived an assumed taxonomic breakdown for Anguilla reconstructed catches in 2010. For the 1950 anchor point, we re-allotted proportions to each species based on our knowledge of changes in reef species over time (Table 3). We interpolated between these anchor points to derive a taxonomic breakdown for Anguillan finfish catches for the period 1950-2010.

Catches of conch were designated to queen conch, *Strombus gigas*, based on the predominance of this strombid species in Caribbean catches. The Caribbean spiny lobster fishery for *Panulirus argus* was established since the early 1960s (Olsen and Ogden 1981; Lum Kong 2007), but over the past 20 years fishers have also increasingly targeted *Panulirus guttatus* as well (Lum Kong 2007). Since this smaller lobster species averages 2-3 lbs (0.91-1.36 kg), it is preferred by restaurants because of its simpler and more profitable portion control (Hodge 1993; Gumbs 2003a). To disaggregate lobster catches by species, we assumed in 1950 that 95% of lobster catches comprised *P. argus*, while 5% comprised *P. guttatus*. From 2000-2010, we assumed a 50:50 split between these two species. Interpolating between the 1950 anchor point and the 2000 anchor point, we disaggregated catches of lobster for the period 1950-2010.

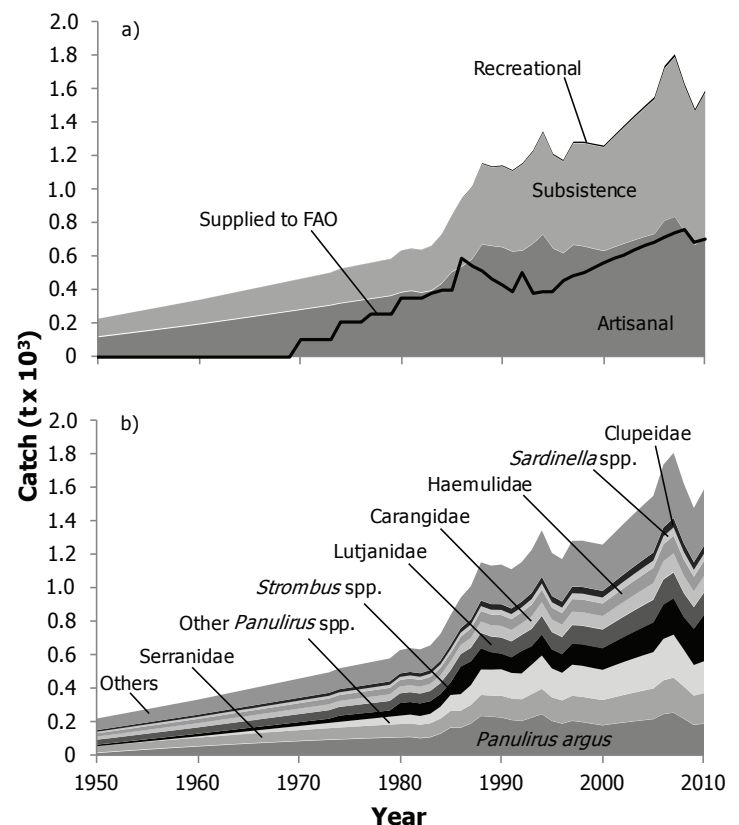
## RESULTS

Domestically-consumed catches were estimated at slightly over 34,100 t, while exported catches amounted to nearly 15,000 t. Examining reconstructed catches by sector, subsistence catches dominated with nearly 22,500 t, while artisanal and recreational catches comprised around 26,400 t and 230 t, respectively for the time period 1950-2010 (Figure 4a). Thus, total reconstructed catches were approximately 49,000 t for the period 1950-2010, which is 2.75 times the official landings of 17,854 t reported by the FAO on behalf of Anguilla (Figure 4a). Total unreported catches from 1950-2010 were around 31,300 t, being on average nearly 510 t·year<sup>-1</sup> for the time period 1950-2010.

Catches of lobster were dominant, with *Panulirus argus* comprising 16% and *P. guttatus* 11% of total catches (Figure 4b). Groupers (Serranidae; 12%), queen conch (10%), snappers (Lutjanidae; 9%) and grunts (Haemulidae; 6%) were also dominant in catches. Small, schooling pelagic species such as jacks (Carangidae; 6%), clupeids (3%) and sardines (*Sardinella*; 3%) were common as well. The remaining 22% comprised 17 families and a pooled 'marine fishes' category (Figure 4b).

## DISCUSSION

In 1984, seafood products worth an estimated US\$2.2 million were caught by Anguillan fishers (Jones 1985). This included some US\$1.3 million worth of exports, making the fishing industry the most valuable foreign currency earner after tourism (Jones 1985). A census in the same year indicated that 7% of the working population were full-time fishers.



**Figure 4.** Reconstructed total catch for Anguilla a) by fishing sector, with data reported by FAO on behalf of Anguilla overlaid as line graph; and b) by major taxa, with 'others' representing contributions from 17 minor families plus 'marine fishes nei'.

However, despite the evident socio-economic importance of Anguilla's small-scale fisheries, government spending for the effective management of fisheries is severely lacking in Anguilla. Several limitations in the Department of Marine and Fisheries Resources have been reported and include inadequate staffing and additional workloads (Gumbs 2003). Consequently, comprehensive data-collection, analysis and reporting is poor in Anguilla. When fisheries managers use poor catch data as a basis for management measures, it is likely that under-reported catches will lead to over-estimates of resource availability. Total catches for Anguilla as reconstructed here were more than twice the landings reported to the FAO by national agencies. The difference can be attributed to under-reporting of small-scale fisheries, from artisanal, subsistence and recreational sectors. Without reliable island-wide catch data, it is difficult to make informed fisheries management decisions.

Already, fishers are fishing at increasingly further distances from the traditional inshore reef area, due to declining catches near-shore (Mukhida and Gumbs 2007). With the trend of stop-over tourists increasing, the impact of tourists on the island's marine resources should not be overlooked. The estimate of recreational catches taken by tourists totalled over 200 tonnes and is rather conservative but highlights that the sector exists and proper monitoring and accounting is needed.

Our reconstruction did not estimate catches made by foreign fishers in Anguilla's EEZ. Historically, the presence of St. Martin fishers has been documented, but data on their effort and catches were not available (Jones 1985). This needs addressing by Anguillan authorities. Thus, total removals in Anguillan waters are likely higher than our reconstructed estimates. Our reconstruction of Anguilla's historic fisheries catches should be viewed as a first-order improvement of the historic catch data, which should lead to improved monitoring and estimation of actual total annual catches in Anguilla.

#### ACKNOWLEDGEMENTS

This work was completed as part of *Sea Around Us*, a scientific collaboration between The University of British Columbia and The Pew Charitable Trusts. We are grateful to Mr. James Gumbs and Mr. Kenroy Rawlins of the Department of Fisheries and Marine Resources in Anguilla for their assistance in understanding the fisheries sector of Anguilla.

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**Appendix Table A1.** List of marine fish taxa targeted in Anguilla (Lum Kong 2007).**The finfish (reef fish) trap fishery**

Shallow reef and grass areas	Red hind ( <i>Epinephelus guttatus</i> )	
	Butterfish ( <i>Epinephelus fulvus</i> )	
	Spotted eagle ray ( <i>Aetobatus narinari</i> )	
	Stingray ( <i>Dasyatis</i> spp.)	
	Blue Tang ( <i>Acanthurus coeruleus</i> ) <sup>a</sup>	
	Yellow tail snapper ( <i>Ocyurus chrysurus</i> ) <sup>a</sup>	
	Grunts (Haemulidae)	
	Doctorfish (Acanthuridae)	
	Parrotfish (Scaridae)	
	Porgy (Sparidae)	
	Goatfish (Mullidae)	
	Squirrelfish (Holocentridae)	
	Triggerfish (Balistidae)	
	Angelfish (Pomacanthidae)	
	Deep reef areas	Deepwater red snapper (Lutjanidae)
		Blackfin snapper ( <i>Lutjanus buccanella</i> )
Silk snapper ( <i>Lutjanus vivanus</i> )		
Queen snapper ( <i>Etelis oculatus</i> )		
	Groupers (Serranidae)	

**The line fishery**

Shallow reef	Snappers (Lutjanidae)
	Groupers and Hinds (Serranidae)
Deep reef	Snappers (Lutjanidae)
	Groupers (Serranidae)

**The seine net fishery**

Horse eye jack (*Caranx latus*)  
 Crevalle jack (*C. hippos*)  
 Bar jack (*C. ruber*)  
 Bonito (*Euthynnus alleteratus*)  
 Ballyhoo (*Hemiramphus* spp.)  
 Scads (*Decapterus* spp.)  
 Herrings (Clupeidae)  
 Silversides (Atherinidae)

**The lobster trap fishery**

Spiny lobster (*Panulirus argus*)  
 Spotted spiny lobster (*Panulirus guttatus*)

**The conch fishery**

Queen conch (*Strombus gigas*)

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<sup>a</sup>(Abernethy, 2005)

**Appendix Table A2.** FAO landings vs. reconstructed total catch (in tonnes), and catch by sector for Anguilla, 1950-2010.

Year	FAO landings	Reconstructed total catch	Artisanal	Subsistence	Recreational
1950	-	222	117	105	-
1951	-	233	124	109	-
1952	-	244	132	112	-
1953	-	256	139	116	-
1954	-	267	147	120	-
1955	-	278	154	124	-
1956	-	290	162	127	-
1957	-	301	170	131	-
1958	-	312	177	135	-
1959	-	323	185	138	-
1960	-	335	193	142	-
1961	-	347	201	146	-
1962	-	360	210	150	-
1963	-	372	218	154	-
1964	-	385	227	158	-
1965	-	398	236	162	-
1966	-	410	244	165	-
1967	-	423	253	169	-
1968	-	435	262	173	1
1969	-	448	271	177	1
1970	101	460	279	180	1
1971	101	473	288	184	1
1972	101	486	297	188	1
1973	101	498	306	191	1
1974	207	522	318	203	1
1975	207	534	327	206	1
1976	207	546	336	209	1
1977	257	558	345	212	1
1978	257	569	354	214	1
1979	257	581	363	217	1
1980	345	631	384	247	1
1981	345	643	393	249	1
1982	345	635	382	252	1
1983	375	659	394	264	1
1984	395	727	436	290	2
1985	395	840	506	331	2
1986	585	944	537	404	3
1987	542	1,012	582	426	3
1988	507	1,154	670	479	5
1989	465	1,134	661	469	5
1990	421	1,141	653	482	5
1991	383	1,113	627	480	5
1992	503	1,155	634	515	6
1993	382	1,228	674	547	7
1994	391	1,344	729	607	8
1995	390	1,210	646	557	7
1996	455	1,173	618	548	7
1997	480	1,283	667	607	8
1998	505	1,283	659	616	8
1999	530	1,271	644	618	8
2000	560	1,259	631	620	8
2001	585	1,319	653	657	9
2002	610	1,380	675	695	10
2003	635	1,438	696	732	11
2004	660	1,495	715	769	11
2005	685	1,550	733	805	12
2006	710	1,737	812	910	14
2007	735	1,807	835	956	15
2008	759	1,625	744	868	14
2009	681	1,478	667	799	12
2010	701	1,589	708	868	13

**Appendix Table A3.** Reconstructed total catch (in tonnes) by major taxa for Anguilla, 1950-2010. 'Others' contain 22 additional taxonomic categories.

Year	<i>Panulirus argus</i>	Serranidae	<i>Panulirus</i> spp.	<i>Strombus</i> spp.	Lutjanidae	Carangidae	Haemulidae	<i>Sardinella</i> spp.	Clupeidae	Others
1950	15	39	1	9	30	20	20	10	10	69
1951	20	40	1	10	30	21	20	11	10	71
1952	24	41	2	10	31	21	21	11	11	73
1953	28	42	2	11	32	22	21	11	11	75
1954	32	43	3	12	33	23	22	11	11	77
1955	36	45	4	12	33	23	22	12	12	79
1956	40	46	5	13	34	24	23	12	12	81
1957	44	47	6	14	35	25	23	12	12	84
1958	47	48	7	14	36	25	24	13	12	86
1959	51	49	8	15	37	26	25	13	13	88
1960	54	50	9	16	38	26	25	13	13	90
1961	58	52	10	16	39	27	26	14	13	92
1962	61	53	12	17	40	28	27	14	14	95
1963	65	54	13	18	41	28	27	14	14	97
1964	68	56	15	19	42	29	28	15	15	100
1965	71	57	16	19	43	30	29	15	15	102
1966	74	59	18	20	44	31	29	15	15	105
1967	77	60	20	21	45	31	30	16	16	107
1968	80	61	22	21	46	32	31	16	16	110
1969	83	63	24	22	47	33	31	17	16	112
1970	86	64	26	23	48	34	32	17	17	115
1971	88	65	28	24	49	34	33	17	17	117
1972	91	67	30	24	50	35	33	18	17	120
1973	94	68	32	25	51	36	34	18	18	122
1974	96	70	35	37	52	36	35	18	18	125
1975	98	71	37	37	53	37	35	19	18	127
1976	101	72	40	37	54	38	36	19	19	130
1977	103	74	43	37	55	39	37	19	19	132
1978	105	75	45	37	56	39	38	20	20	135
1979	107	76	48	37	57	40	38	20	20	137
1980	109	78	51	75	58	41	39	21	20	140
1981	110	79	54	75	60	41	40	21	21	142
1982	103	79	53	75	60	42	40	21	21	142
1983	109	82	58	75	61	43	41	22	21	147
1984	131	88	72	75	66	46	44	23	23	159
1985	166	98	96	75	74	52	49	26	26	178
1986	166	101	99	165	76	53	50	27	26	182
1987	191	110	118	142	82	57	55	29	29	199
1988	235	125	152	127	94	65	63	33	33	227
1989	231	126	155	105	94	66	63	33	33	229
1990	227	129	157	94	97	68	65	34	34	236
1991	211	128	153	94	96	67	64	34	33	233
1992	206	129	154	135	97	68	64	34	34	235
1993	226	140	175	111	105	73	70	37	36	255
1994	246	151	198	126	113	79	75	40	39	276
1995	206	140	172	114	105	73	70	37	36	256
1996	190	138	165	112	103	72	69	36	36	252
1997	206	149	185	127	112	78	74	39	39	273
1998	199	150	185	129	113	79	75	40	39	275
1999	189	150	183	130	113	78	75	40	39	275
2000	180	150	180	130	112	78	75	40	39	275
2001	188	156	188	140	117	82	78	41	41	287
2002	196	163	196	150	122	85	82	43	42	300
2003	203	170	203	159	127	89	85	45	44	313
2004	210	176	210	169	132	92	88	47	46	325
2005	217	182	217	179	137	95	91	48	47	337
2006	247	201	247	206	151	105	101	53	52	373
2007	255	209	255	219	157	109	105	55	54	388
2008	219	192	219	196	144	101	96	51	50	356
2009	182	174	182	217	131	91	87	46	45	322
2010	190	181	190	277	136	95	90	48	47	335