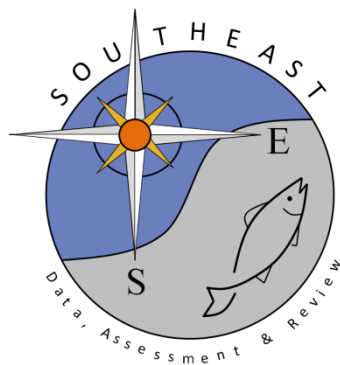


Reported commercial landings of parrotfish, snappers, groupers, and unclassified finfish in the United States Virgin Islands, 1974-2008

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## **Introduction**

In the US Virgin Islands, commercial landings are available from fisher logbook reports. Logbook landings data from the islands of St. Thomas and St. John have been compiled separately from St. Croix landings during prior stock assessments. Logbook reporting began in 1974 in the US Virgin Islands. Fin fish landings were reported by gear type (e.g., net fish, hook fish, pot fish, and spear fish) and as either snapper/grouper or as other fin fish during the period 1974-1995. Beginning in 1996 (St. Croix) and 1997 (St. Thomas/St. John) landings were reported by species group; (e.g., snappers, groupers, parrotfishes, surgeonfishes, etc.) and by gear (hook and line, gill net, SCUBA, trap, etc.). Conch, lobster and a number of pelagic species (wahoo, dolphin) were always recorded separately throughout the logbook records.

Landings from commercial fishing vessels have been underreported in the US Virgin Islands. Expansion factors have been used to calculate total commercial landings from partial landings statistics. The expansion factors have been used to adjust the reported landings for non-reporting fishers and for fishers who reported landings for only part of a year. Expansion factors were not available prior to the beginning of the SEDAR26 data workshop. No adjustment to the reported landings could be completed for this report. Procedures for calculating landings using expansion factors were provided in the SEDAR Procedures Workshop 3: Caribbean Fisheries Data Evaluation.

## **Methods**

Available data for summing commercial landings of red tail parrotfish, queen and silk snapper were the self-reported logbook data from commercial fishers. Landings for the islands of St. Thomas and St. John were summed separately from St. Croix landings. Landings for the period 1996-2008 could only be provided as parrotfish (all species combined) and snappers (all species combined) due to the non-species specific reporting by commercial fishers in the US Virgin Islands. Landings prior to 1996 are provided as snapper/grouper and not snapper/grouper. Data were complete through 2008, 2009 data include only data from January-June. No data from 2010 have been provided prior to the data workshop. Yearly landings data, as reported, were summed by species group and fishing gear.

## **Results and Discussion**

Commercial landings data in St. Croix began in 1975 and include logbook landings through June, 2009. For all tables and figures 2009 data were excluded. Yearly landings, as reported and not calculated using expansion factors for underreporting, by species group for St. Croix are provided in Table 1 and plotted in Figure 1. Prior to 1996, parrotfish were reported as 'fish not snapper grouper' and no effort was made to estimate the landings of parrotfish

for the period 1975-1995. During the period 1994-1998 new landings reporting forms were brought into use and both old and new forms were in use during this period, further complicating the calculation of landings.

In the years 1974-1994, snapper and grouper landings were reported separately from those of other finfish. In order to estimate the snapper landings in the combined snapper-grouper reports, the yearly proportion of snapper landings during the years 1995-2008 was calculated as:  $\text{yearly snapper landings} / \text{yearly snapper} + \text{grouper landings}$ . The mean proportion of snapper landings for the years 1995-2008, weighted by sample size, was applied to the combined snapper-grouper landings from the years 1974-1993 to estimate yearly snapper landings during those years (included as calculated snapper in the figure). No snapper-grouper landings were reported during 1994, all reported landings were classified as 'fish unclassified'.

Landings vary greatly prior to 1996, perhaps due to differential reporting among years. Beginning in 1996, reported landings show much less variability among years, although the level of non-reporting was not known. Parrotfish landings have increased during the period 1995 (when reporting by species group was beginning) through 2006, although reported landings decreased in 2007-08. Reported landings of snapper were lower than that of parrotfish and have fluctuated between 113,000 and 170,000 pounds during 2000-2008.

St. Croix gear-specific landings of parrotfish and snappers for the years 1996-2008 are shown in Figures 2 and 3. SCUBA, gillnet, free diving (the final two years of the time series), and traps accounted for most of the reported landings. Those gears may be confounded in the logbook reports due to the practice of using divers to drive fish into gillnets. It is unclear how fishers reported this method of fishing (as SCUBA, gillnet, or both) in their logbook reports. This fishing method was prohibited and gillnet landings were very low in 2008.

Snapper reported landings during 1995-2008 were primarily reported for line fishing. Snapper landings from traps and SCUBA combined accounted for less than half the landings from line fishing. All other gears accounted for less than 100,000 pounds of snapper landed from 1995-2008.

St. Thomas and St. John landings by species group during the period 1974-2008 are provided in Table 2 and Figure 4. Parrotfish reported landings were lower than snapper landings, unlike St. Croix. The large inter-year variability prior to 1998 was similar to that seen in St. Croix prior to the use of new logbook reporting forms in 1995-1998. Landings of snapper and grouper in St. Thomas and St. John have been fairly consistent from 1999-08. Snapper landings were calculated for the years prior to 1993 for St. Thomas and St. John following the method described above for St. Croix.

Parrotfish and snapper landings by gear (1997-2008) for St. Thomas and St. John are shown in Figures 5-6. Almost all parrotfish landings were reported from traps. Snapper landings were primarily reported from line fishing, traps, and seine nets.

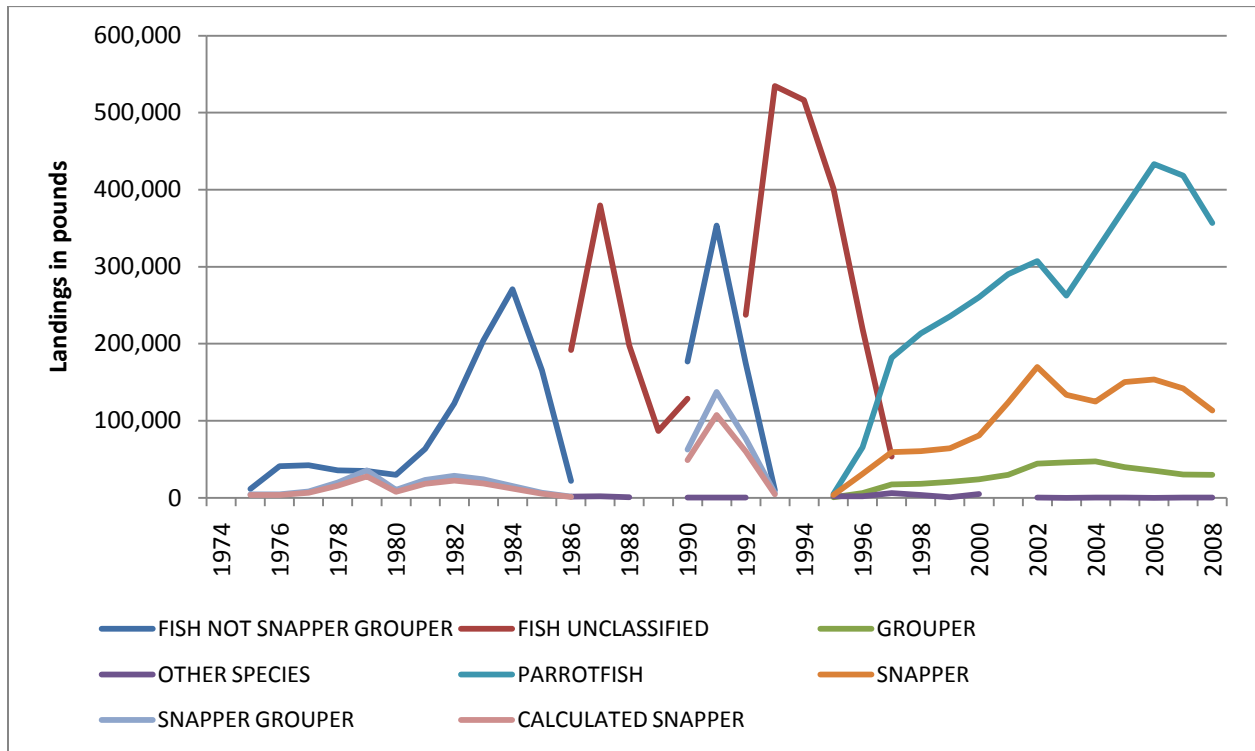
**Table 1.** St. Croix reported commercial landings (no expansion factors applied) by species group, 1975-2008. Data for 1974 and 2010 were not available. Data for 2009 included only January-June.

<b>Year</b>	<b>Fish not snapper-grouper</b>	<b>Snapper-grouper</b>	<b>Grouper</b>	<b>Snapper</b>	<b>Calculated snapper</b>	<b>Parrotfish</b>
1975	11,618	4,351			3,402	
1976	41,100	4,601			3,598	
1977	42,274	8,335			6,518	
1978	35,602	19,975			15,620	
1979	34,733	35,630			27,863	
1980	29,797	10,054			7,862	
1981	63,543	23,040			18,017	
1982	122,410	28,378			22,192	
1983	204,219	23,908			18,696	
1984	270,614	15,369			12,018	
1985	165,799	6,578			5,144	
1986	21,725	1,472			1,151	
1987						
1988						
1989						
1990	176,958	62,406			48,801	
1991	353,217	137,480			107,510	
1992	174,332	76,888			60,127	
1993	10,008	5,890			4,606	
1994						
1995			488	3,743		4,717
1996			6,012	30,836		65,678
1997			17,294	59,150		181,670
1998			18,204	60,654		213,459
1999			20,561	64,099		235,343
2000			23,807	80,817		260,474
2001			29,757	123,697		290,408
2002			44,485	169,723		307,477
2003			45,908	133,620		262,473
2004			47,291	125,080		319,196
2005			39,725	150,278		376,384
2006			35,235	153,771		433,345
2007			30,301	142,127		418,097
2008			29,754	113,193		356,563
<b>Total</b>	<b>1,757,947</b>	<b>464,354</b>	<b>405,152</b>	<b>1,464,847</b>	<b>363,125</b>	<b>3,913,936</b>

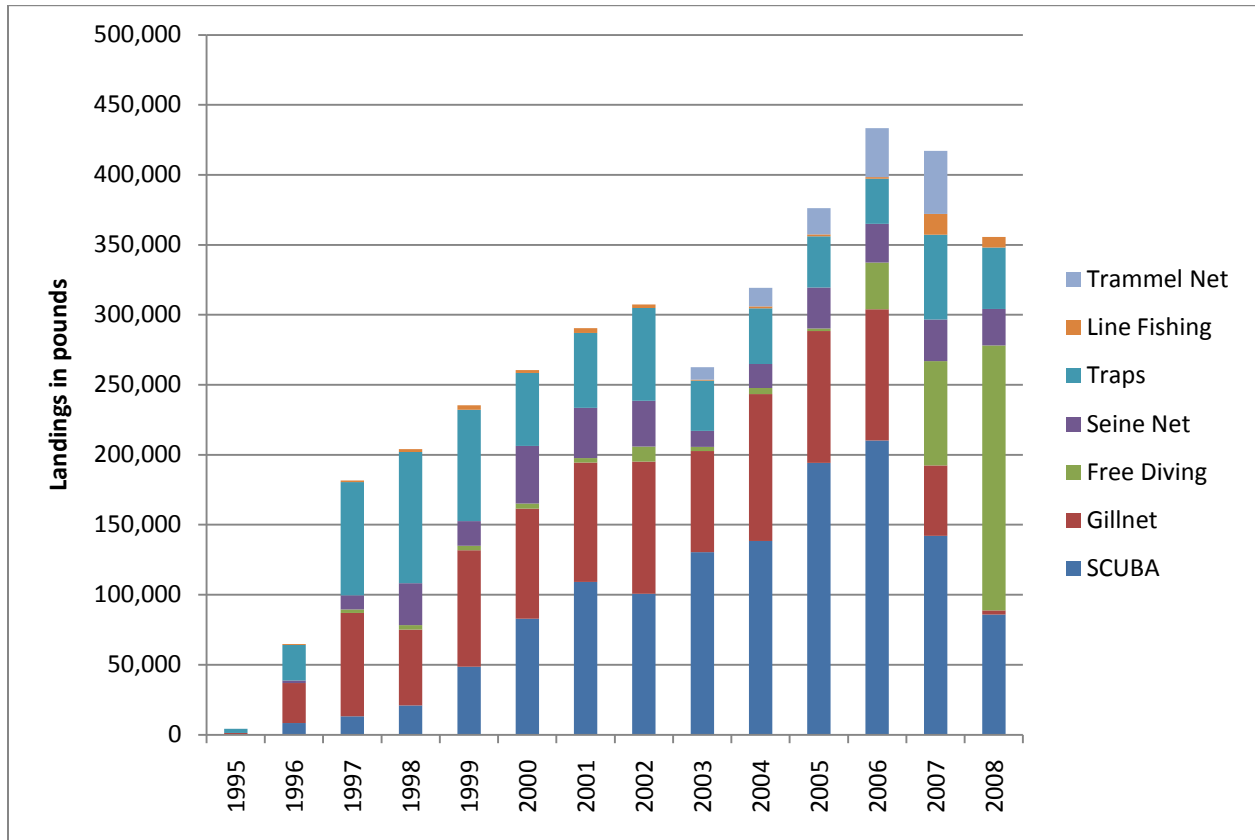
**Table 2.** St. Thomas and St. John reported commercial landings (no expansion factors applied) by species group, 1974-2008. Data for 2010 were not available. Data for 2009 included only January-June.

Year	Fish not snapper-grouper	Snapper-grouper	Grouper	Snapper	Calculated snapper	Parrotfish
1974	36,280	18,585			13,511	
1975	190,817	65,738			47,792	
1976	163,898	53,847			39,147	
1977	175,745	57,063			41,484	
1978	315,821	82,127			59,706	
1979	353,030	88,628			64,432	
1980	359,457	131,472			95,580	
1981	330,134	147,455			107,200	
1982	311,087	125,643			91,342	
1983	491,134	35,264			25,637	
1984	546,567	18,454			13,416	
1985	569,823	14,328			10,416	
1986	265,709	6,956			5,057	
1987	263,710	3,340				
1988	251,184	3,161				
1989						
1990	141,907	85,779			62,361	
1991	381,737	150,740			109,588	
1992	203,210	56,668			41,198	
1993						
1994						
1995						
1996						
1997			1,260	12,722		3,308
1998			25,150	66,480		20,961
1999			46,608	127,551		38,188
2000			49,118	150,226		35,078
2001			54,416	176,242		50,328
2002			55,298	167,496		45,998
2003			65,444	160,736		53,315
2004			75,749	141,197		58,679
2005			66,343	153,337		50,305
2006			60,281	174,709		44,237
2007			52,683	156,472		40,372
2008			56,607	144,407		39,411
<b>Total</b>	<b>5,351,249</b>	<b>1,145,247</b>	<b>640,861</b>	<b>1,706,408</b>	<b>827,869</b>	<b>497,261</b>

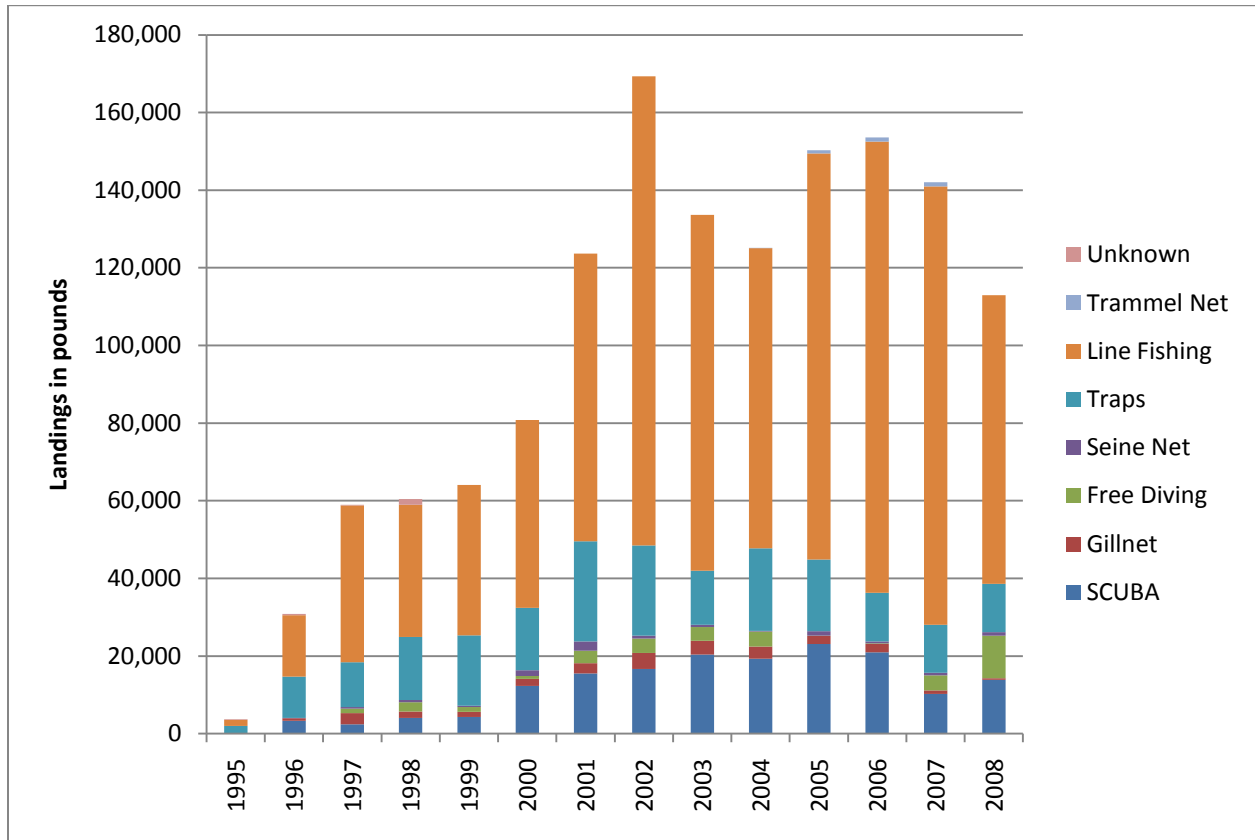
**Figure 1.** Yearly commercial landings by species group as reported (no expansion factors applied) on fisher logbooks from St. Croix.



**Figure 2.** Yearly commercial landings of parrotfish by gear fished as reported (no expansion factors applied) on fisher logbooks from St. Croix.

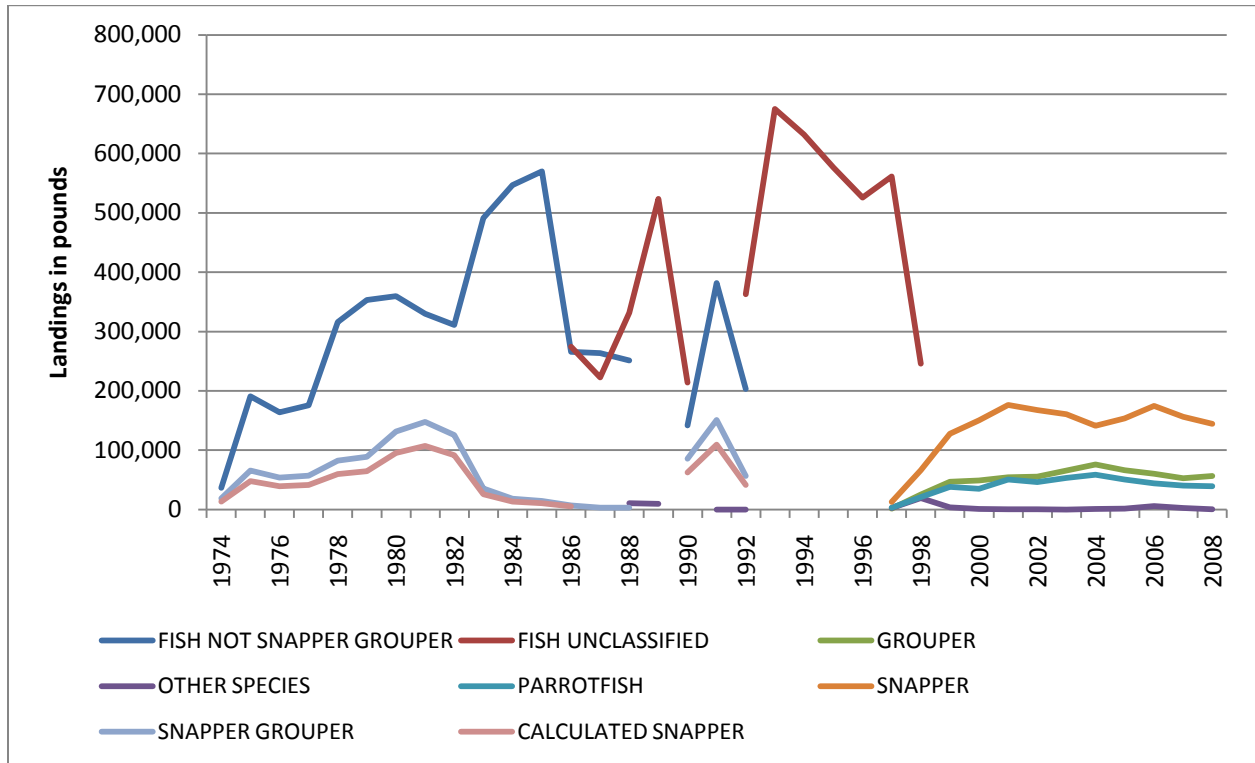


**Figure 3.** Yearly commercial landings of snappers by gear fished as reported (no expansion factors applied) on fisher logbooks from St. Croix.

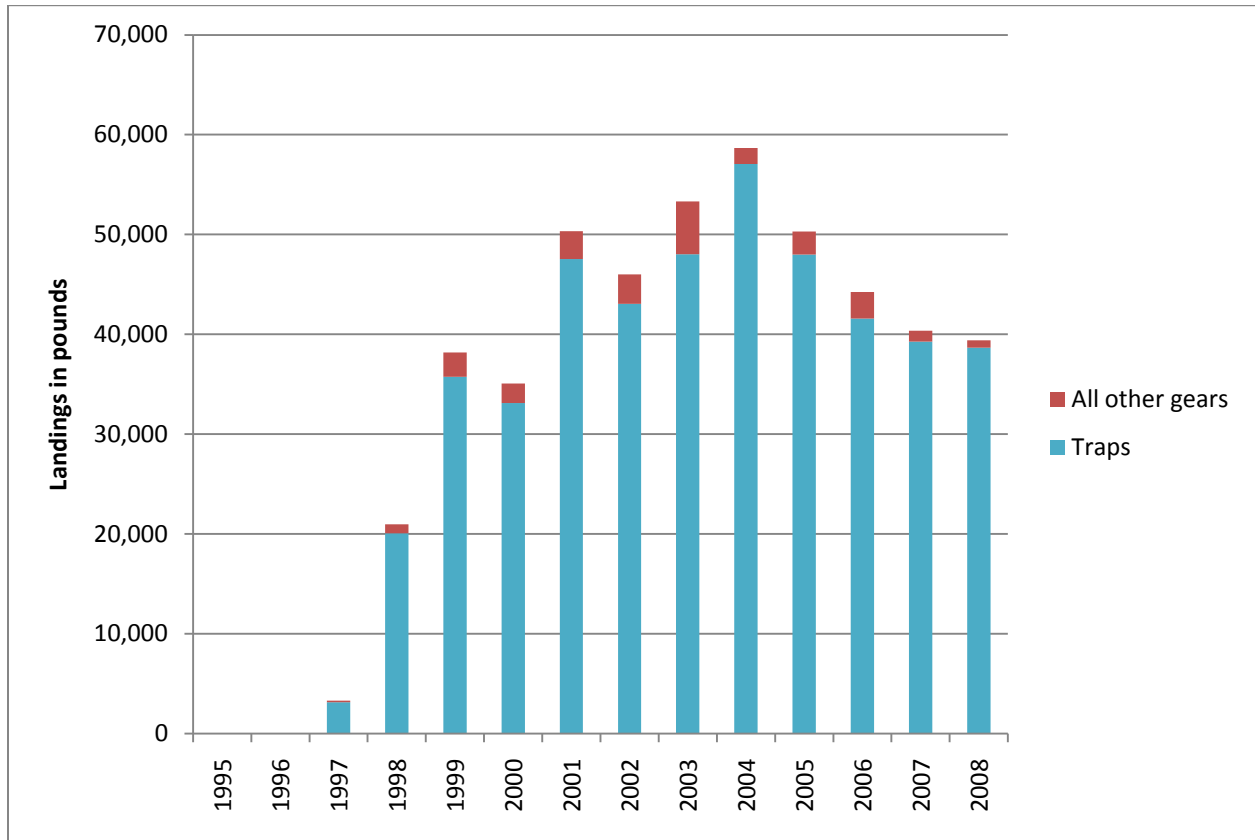




**Figure 4.** Yearly commercial landings by species group as reported (no expansion factors applied) on fisher logbooks from St. Thomas and St. John.



**Figure 5.** Yearly commercial landings of parrotfish by gear fished as reported (no expansion factors applied) on fisher logbooks from St. Thomas and St. John.



**Figure 6.** Yearly commercial landings of snappers by gear fished as reported (no expansion factors applied) on fisher logbooks from St. Thomas and St. John.

