

Preliminary Evaluation of available length-frequency information in the US  
Caribbean Trip Interview Program (TIP) data

Matthew D Campbell, Todd Gedamke, Walter Ingram

SEDAR 26-DW-04

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Caribbean Trip Interview Program (TIP) data**

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SEDAR-26-DW-04

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## Introduction

Our approach for the SEDAR 26 data workshop was to summarize the available length frequency data from the Trip Interview Program (TIP) in tabular and visual formats. The intent is to present to the working group and reach decisions regarding the inclusion or exclusion of data prior to analyses. It should be noted that data auditing was done coarsely for this exercise and values should be taken as preliminary.

Some biostatistical data are available beginning in 1979 in the USVI when sporadic records, primarily on lobster, started to be recorded in St. Thomas and St. John. In 1983 the TIP program was established and interviews appear to have been performed regularly on St. Croix with a relatively high number of records. In the mid-1990's the number of record became variable in both St. Croix and St. Thomas/St. John. In Puerto Rico, data are also available starting in 1983 and have been performed relatively regularly. For each interview, basic information on catch and effort is collected in addition to some biological information from a sub-sample of the catch.

Potentially, the most valuable information from this data set will be the length frequencies that were collected. As such, and due to differences in catchability, data were excluded that could not be attributed to a single gear type or were suspect due to the relationship between length and recorded weight. Note that the bubble plots of mean lengths (and sample sizes) include all individuals of a single species regardless of gear type. No data are presented in summary plots that includes less than 3 trips to protect confidentiality. Discussions with fishers at the DW will allow the appropriate gear groupings to be developed and all data will be included in the analyses.

### Parrotfish Overview

Although redband parrotfish is the only species listed for this SEDAR 26 data evaluation workshop, SEFSC scientists have developed multi-species models particularly for use in data-poor situations so data from a number of parrotfish species are presented

Between 1983 and 2011, the TIP data set has 98,829 records for 9 species of parrotfish and one aggregated parrotfish category. Due to either being landed on multiple-gear trips or not meeting length-weight criteria (outliers) another 24,954 parrotfish records were removed from the analysis. Parrotfish observations from the USVI and Puerto Rico were dominated by redband parrotfish (44%), stoplight parrotfish (37%), redband parrotfish (7.5%), and princess parrotfish (4.1%). The bulk of the parrotfish landings were from St. Croix (65%), followed by Puerto Rico (31%), and St Thomas/ St. John (3.5%). Dominance of parrotfish varied by island sampled, but in general followed the overall trend in which observations were primarily redband and stoplight parrotfish. Of the four dominant species of parrotfish the vast majority of the individuals were captured using either a type of gill net or pots and traps.

Rainbow, blue and striped parrotfish have so little data that further evaluation is not feasible.

### Silk and Queen Snapper Overview

Between 1983 and 2011, the TIP data set has 35,095 records of silk and queen snapper. Due to either being landed on multiple-gear trip or not meeting length-weight criteria (outliers) another 3,497 snapper records were removed from the analysis. Observations of these snapper species from the USVI and Puerto Rico was dominated by silk snapper (74%) and followed by queen snapper (26%). Silk snapper was the most commonly encountered species in St. Thomas – St. John (2%). In St. Croix queen snapper comprised just over half (54%) of these two measured species.

## Summary of Observations

### Parrotfish

Parrotfish species total observations by island for the years 1983-2011.

	<b>All</b>	<b>Puerto Rico</b>	<b>St Croix</b>	<b>St Thomas/St John</b>
<b>Redtail parrotfish</b>	44184 (44%)	12105 (39%)	30411 (47%)	1599 (45%)
<b>Stoplight parrotfish</b>	36664 (37%)	14554 (46%)	20702 (32%)	1391(39%)
<b>Redband parrotfish</b>	7477 (7.5%)	845 (2.7%)	6406 (10%)	226 (6.4%)
<b>Princess parrotfish</b>	4054 (4.1%)	1275 (4.1%)	2680 (4.1%)	96 (2.7%)
<b>Parrotfish spp</b>	2728 (2.7%)	838 (2.7%)	1819 (2.8%)	71 (2%)
<b>Redfin parrotfish</b>	1804 (1.8 %)	174 (<1%)	1544 (2.4%)	86 (2%)
<b>Queen parrotfish</b>	1746 (1.7%)	1073 (3.4%)	659 (1%)	12 (<1%)
<b>Rainbow parrotfish</b>	77 (<1%)	61 (1.9%)	1 (<1%)	15 (<1%)
<b>Blue parrotfish</b>	72 (<1%)	58 (1.8%)	0	14 (<1%)
<b>Striped parrotfish</b>	23 (<1%)	0	19 (<1%)	4 (<1%)

\* percent of column total shown in parentheses

### Silk and Queen Snapper

Snapper species total observations by island for the years 1983-2011.

	<b>All</b>	<b>Puerto Rico</b>	<b>St Croix</b>	<b>St. Thomas / St John</b>
<b>SILK SNAPPER</b>	25980 (74%)	22052 (82%)	3216 (44%)	674 (78%)
<b>QUEEN SNAPPER</b>	9115 (26%)	4776 (18%)	4146 (56%)	193 (22%)

\* percent of column total shown in parentheses

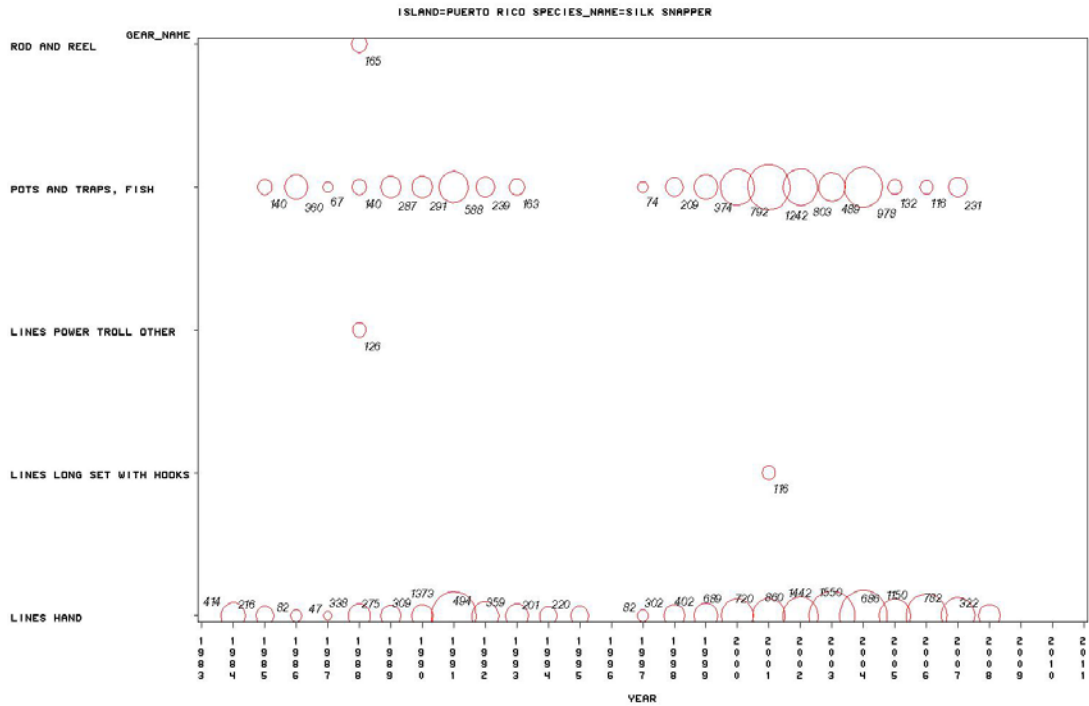
## **SILK SNAPPER**

Number of observations of silk snapper by general gear type and island for the years 1983-2011.

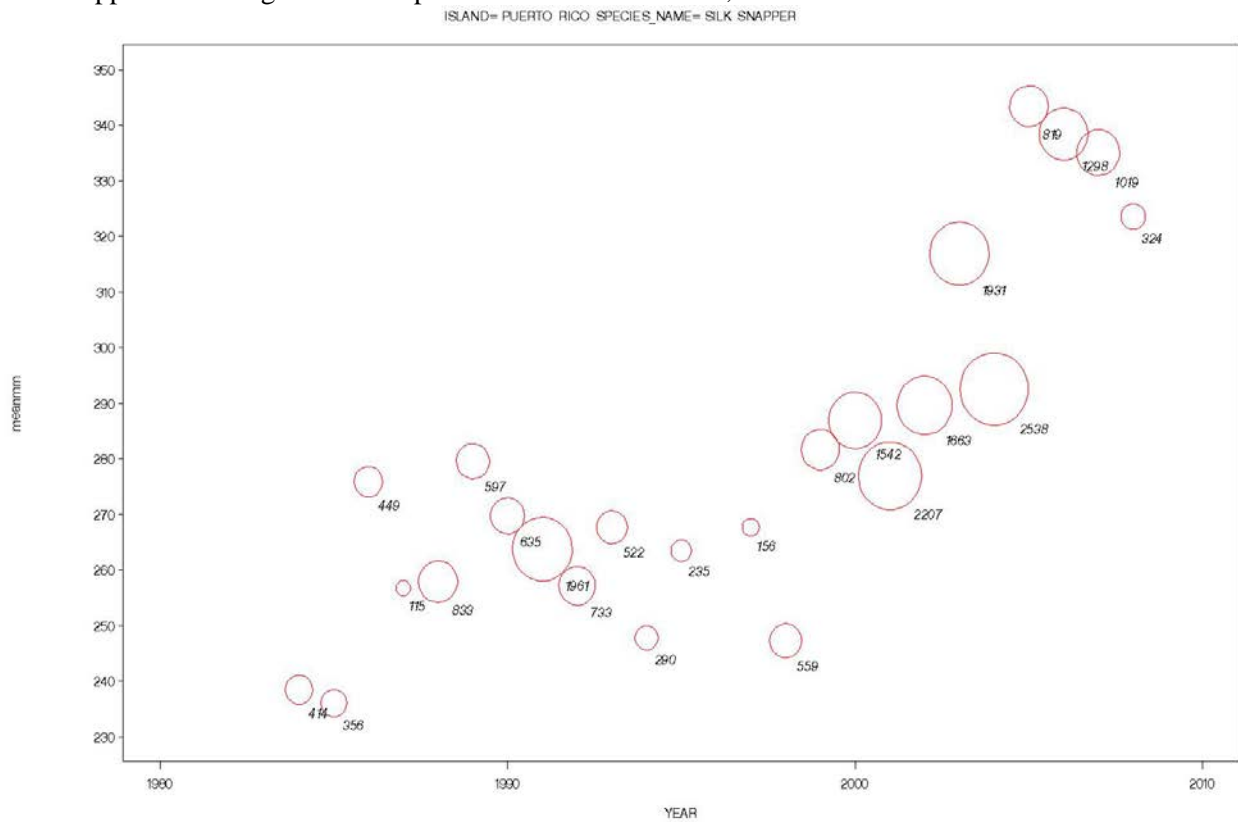
<b>Silk Snapper</b>		
<b>PUERTO RICO</b>	<b>HAND LINE</b>	13360
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	7956
<b>PUERTO RICO</b>	<b>HOOK AND LINE</b>	351
<b>PUERTO RICO</b>	<b>LONG LINES</b>	275
<b>PUERTO RICO</b>	<b>GILL NETS</b>	54
<b>PUERTO RICO</b>	<b>HAUL SEINES</b>	52
<b>PUERTO RICO</b>	<b>BY HAND</b>	4
<b>ST CROIX</b>	<b>HAND LINE</b>	1872
<b>ST CROIX</b>	<b>LONG LINES</b>	679
<b>ST CROIX</b>	<b>HOOK AND LINE</b>	510
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	153
<b>ST CROIX</b>	<b>NOT CODED</b>	2
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	263
<b>ST THOMAS/ST JOHN</b>	<b>HOOK AND LINE</b>	186
<b>ST THOMAS/ST JOHN</b>	<b>HAND LINE</b>	163
<b>ST THOMAS/ST JOHN</b>	<b>LONG LINES</b>	33
<b>ST THOMAS/ST JOHN</b>	<b>PURSE SEINES</b>	17
<b>ST THOMAS/ST JOHN</b>	<b>DIP NETS AND</b>	9
<b>ST THOMAS/ST JOHN</b>	<b>SPEARS AND GI</b>	3

## Puerto Rico– Silk Snapper

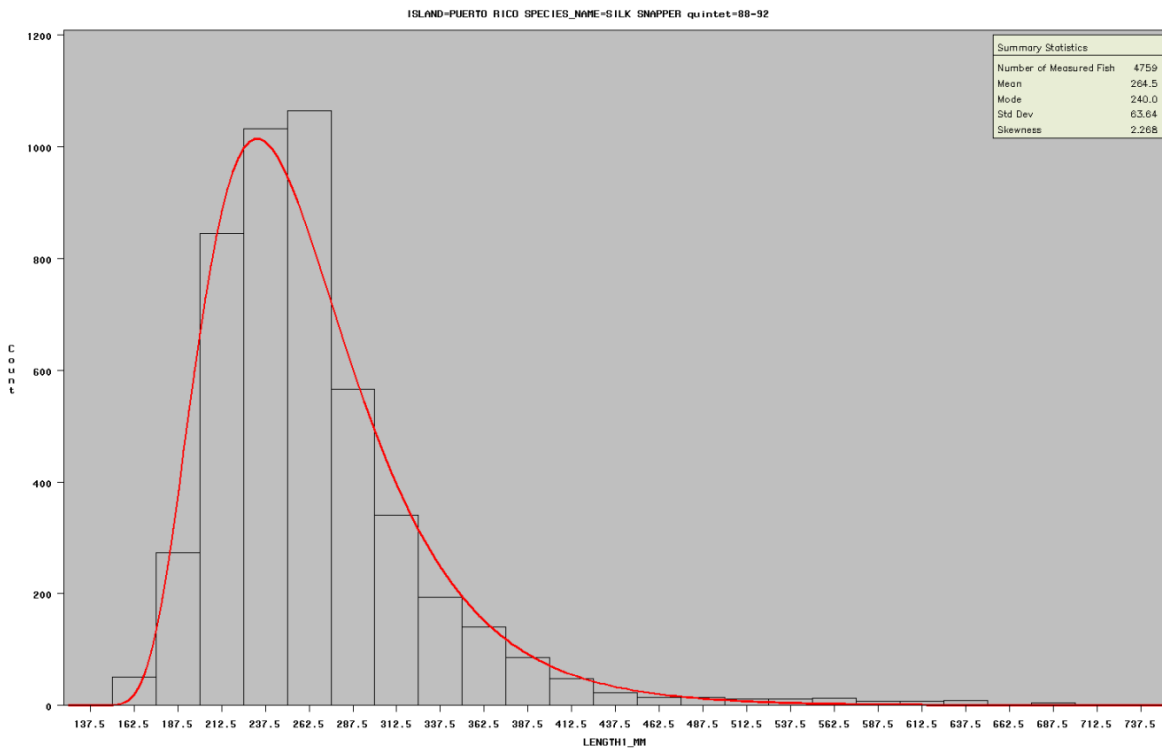
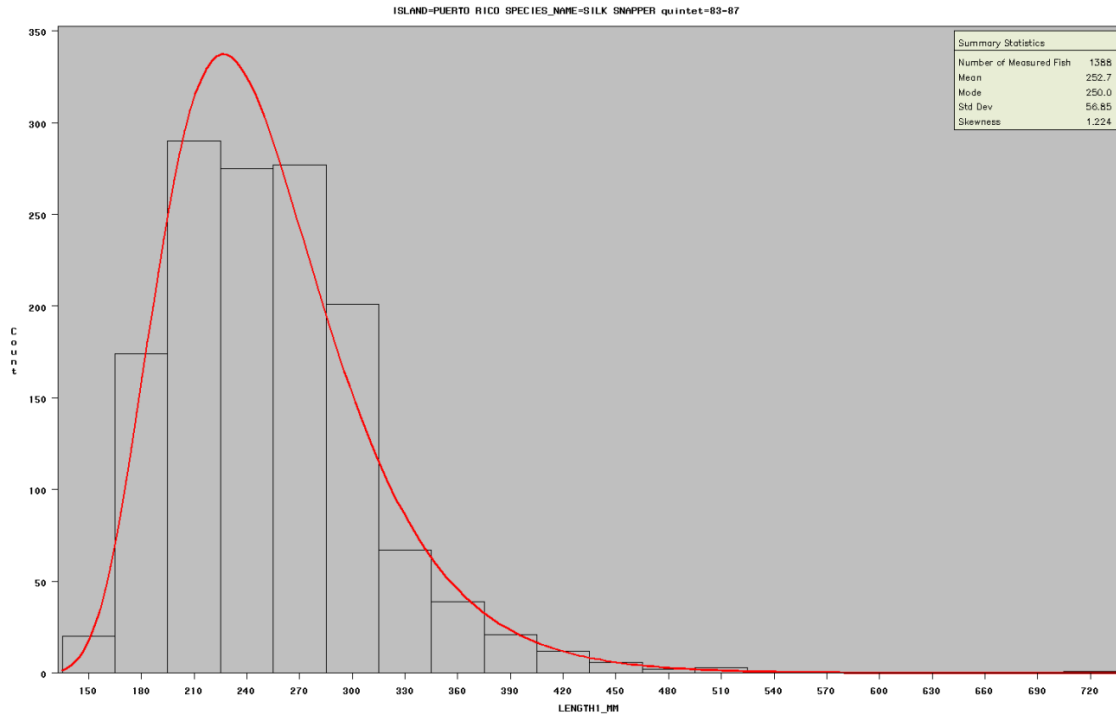
Silk snapper number of sampled fish by specific gear type from Puerto Rico, 1983-2011.

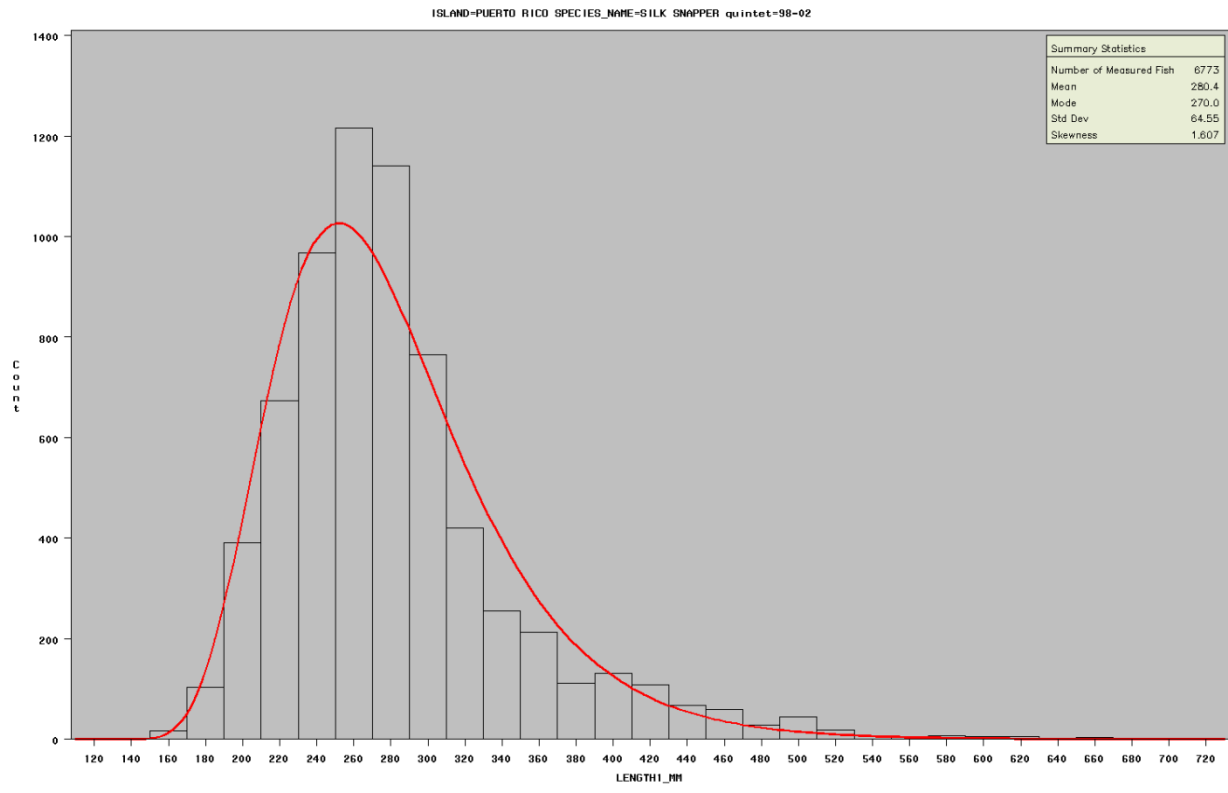
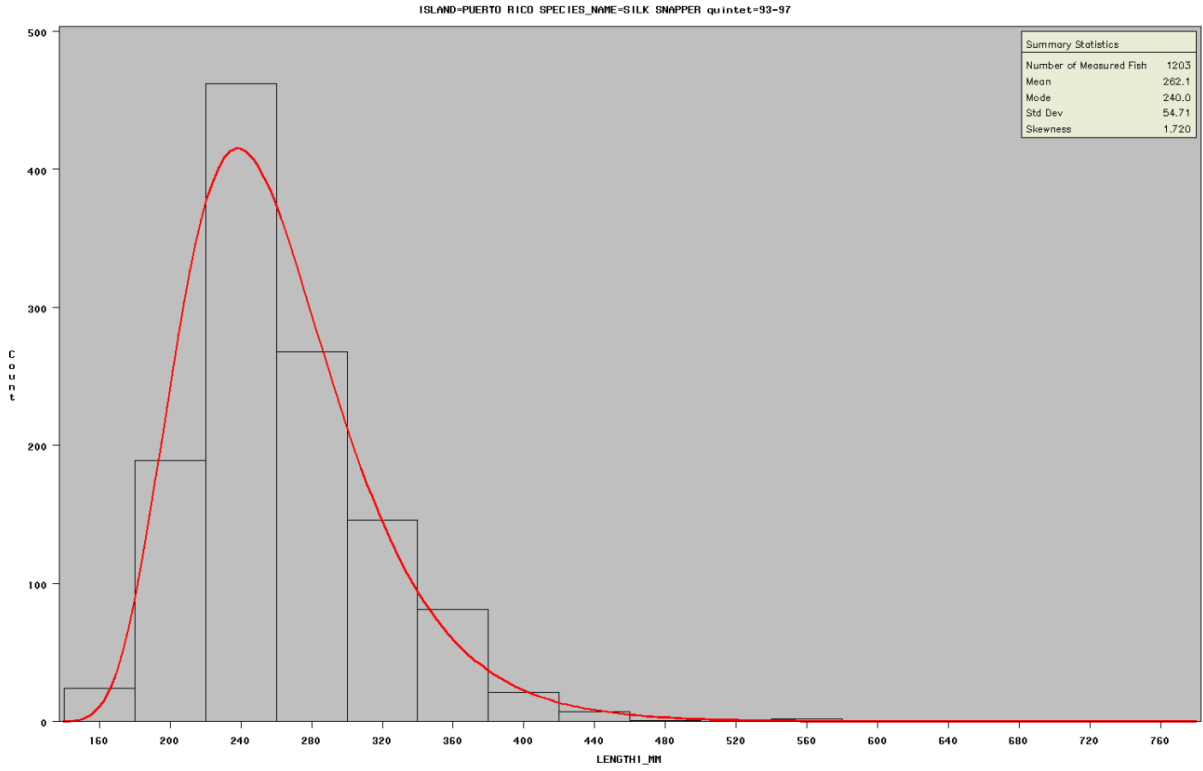


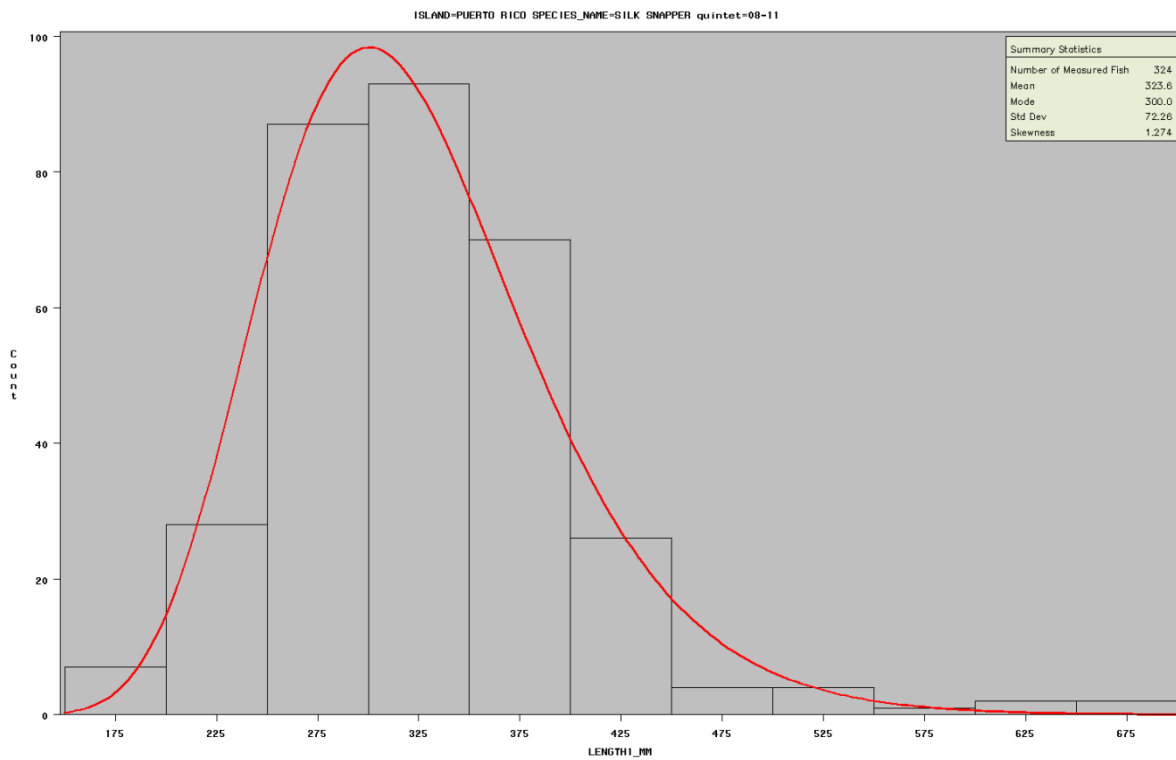
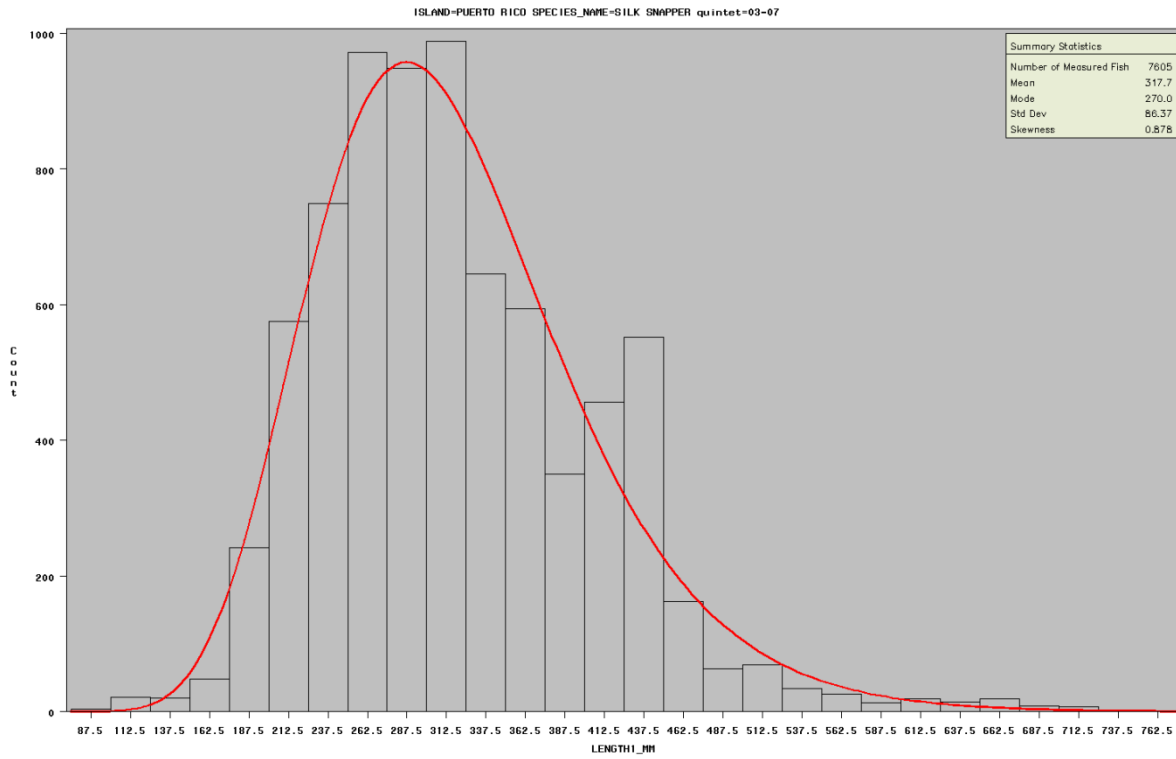
Silk snapper mean lengths and sample sizes from Puerto Rico, 1983-2011.



Silk snapper length frequency histograms from Puerto Rico, in five year bins from 1983-2011.



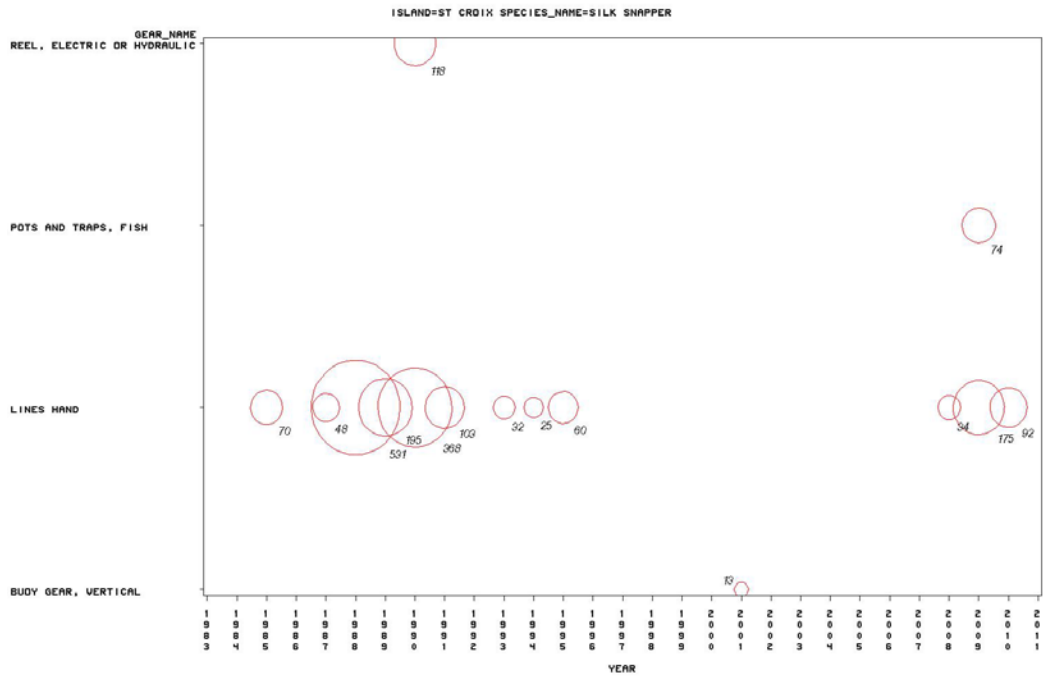




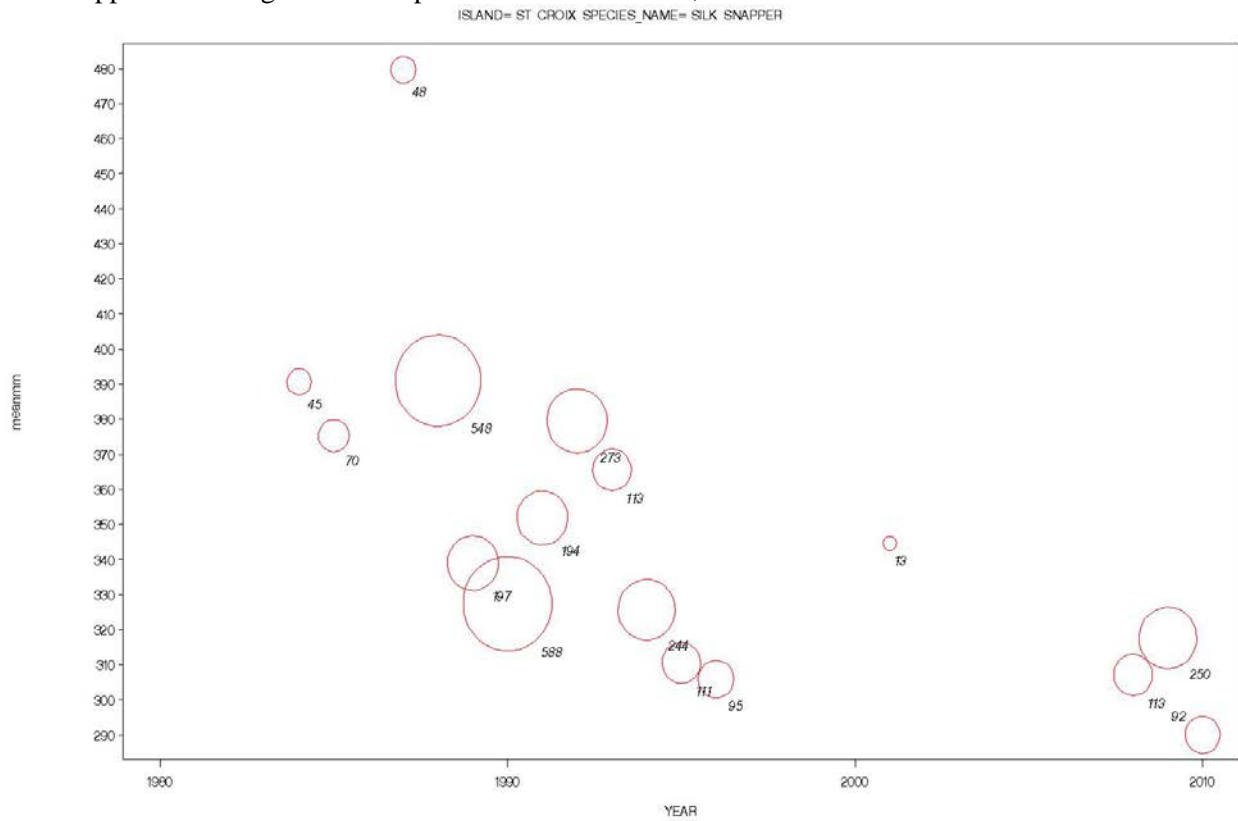


## St. Croix– Silk Snapper

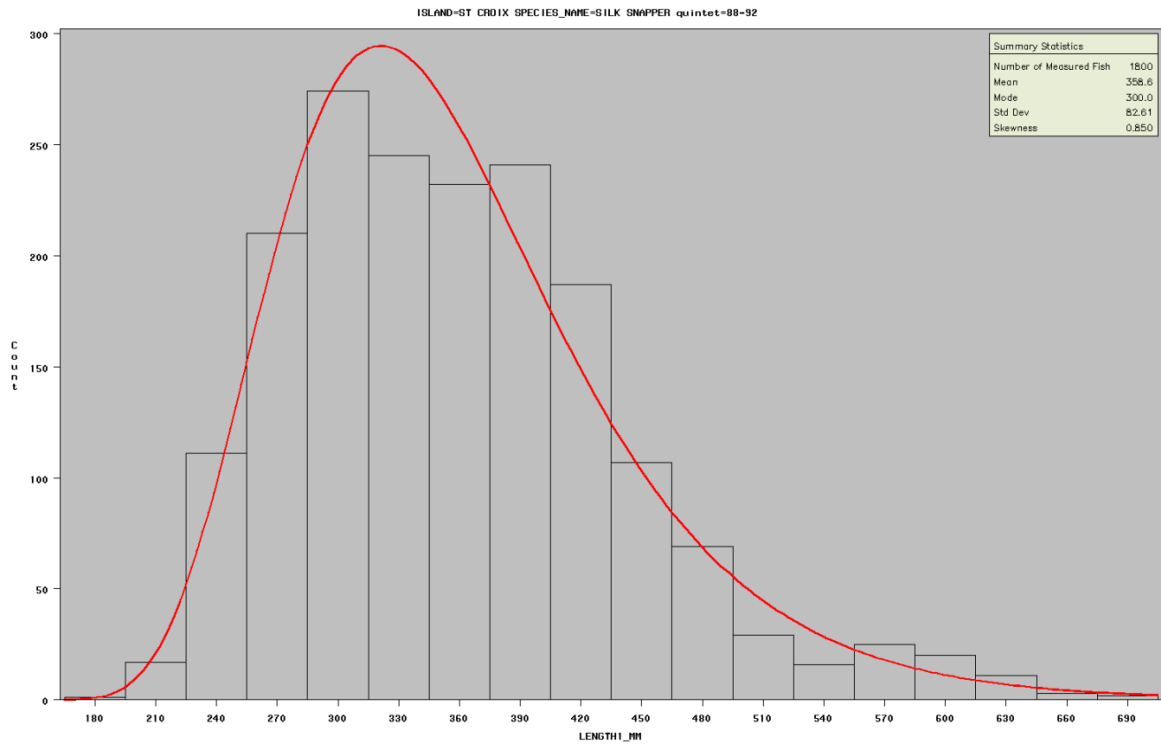
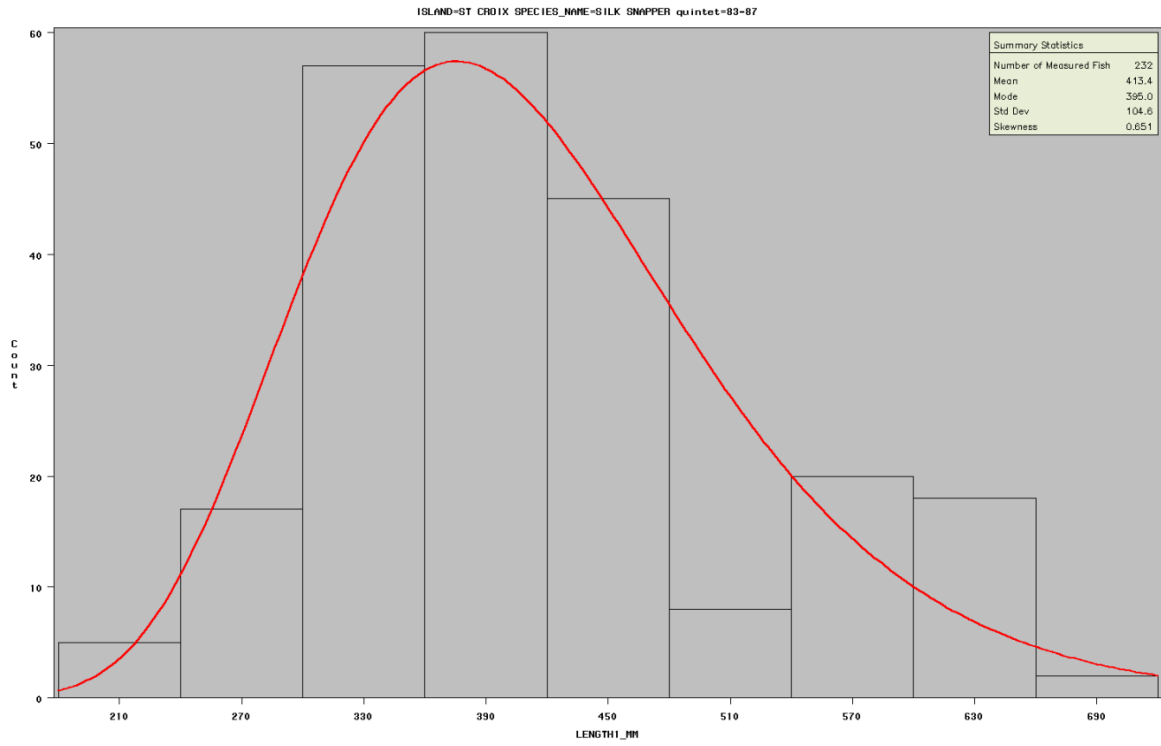
Silk snapper number of sampled fish by specific gear type from St. Croix, 1983-2011.

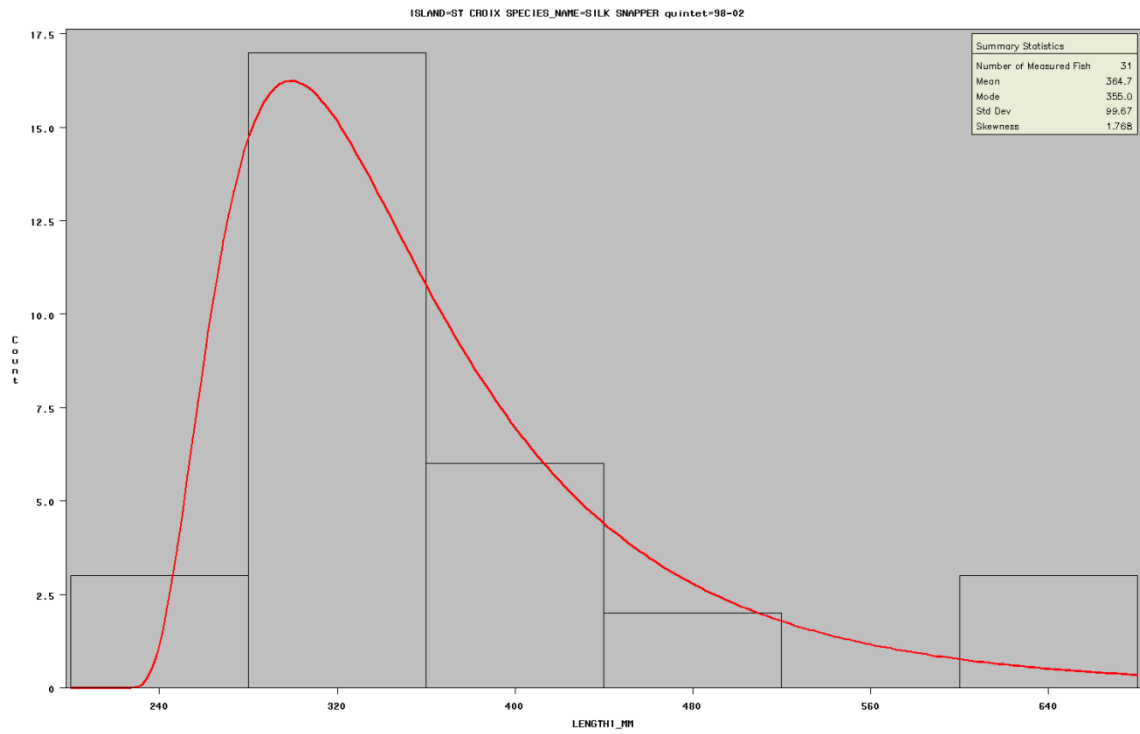
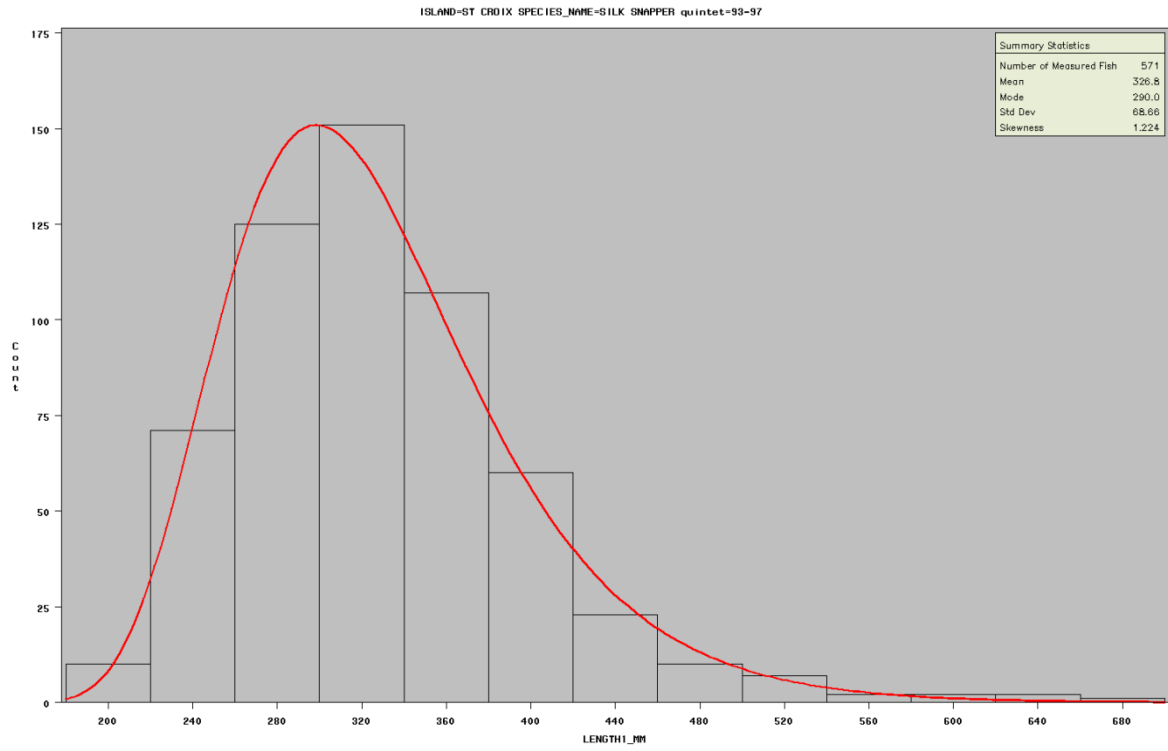


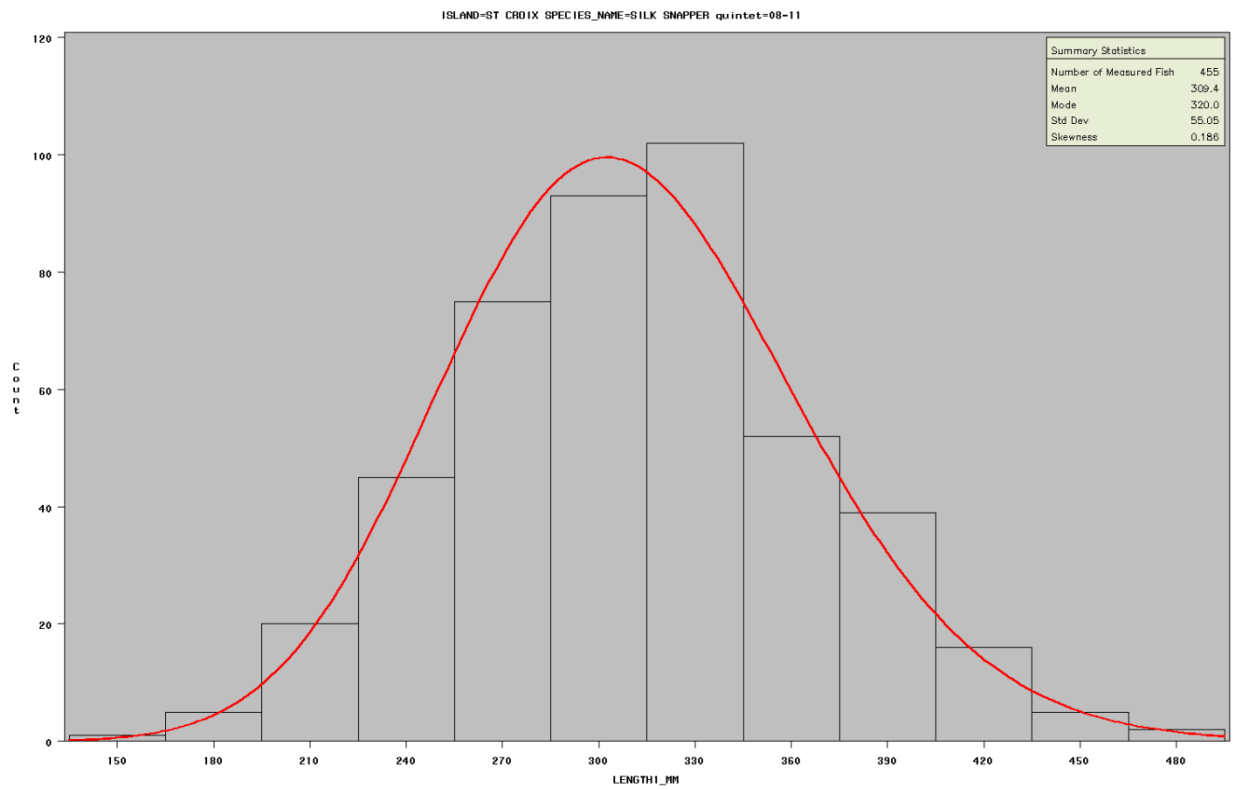
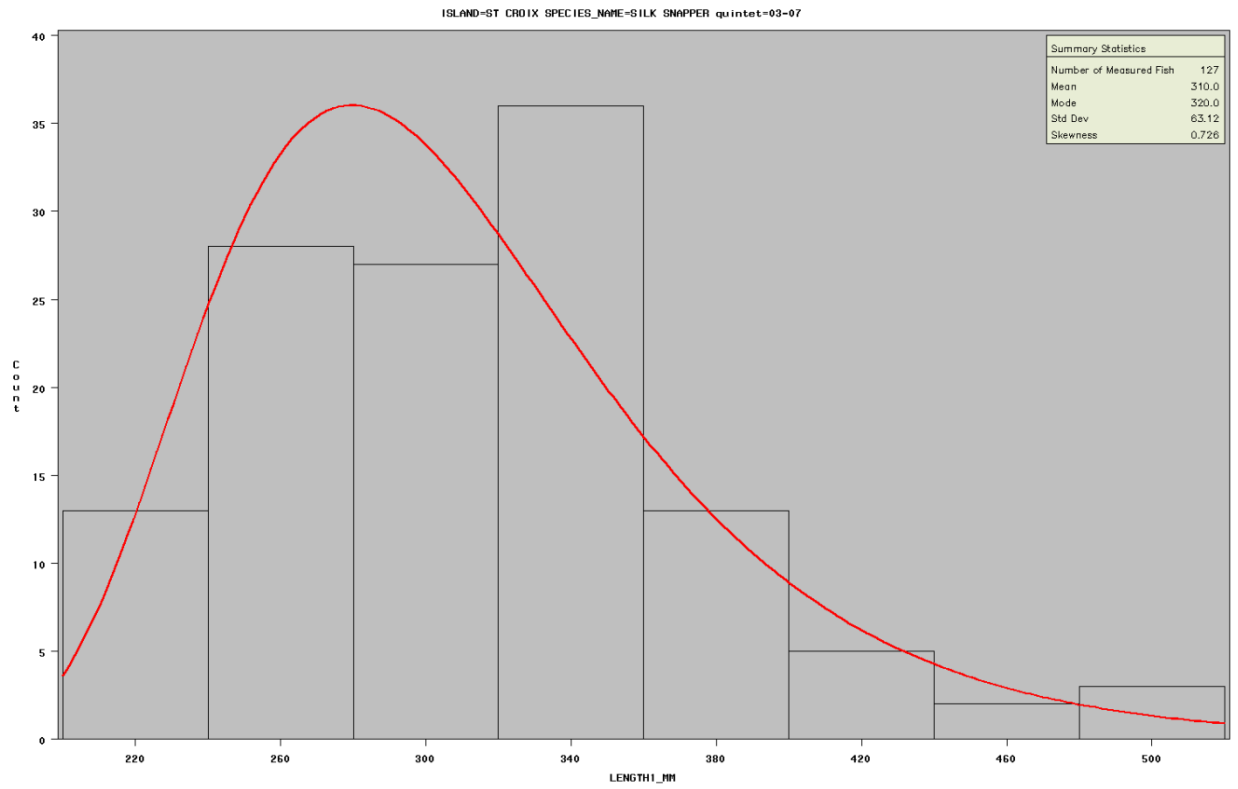
Silk snapper mean lengths and sample sizes from St. Croix, 1983-2011.



Silk snapper length frequency histograms from St. Croix, in five year bins from 1983-2011.

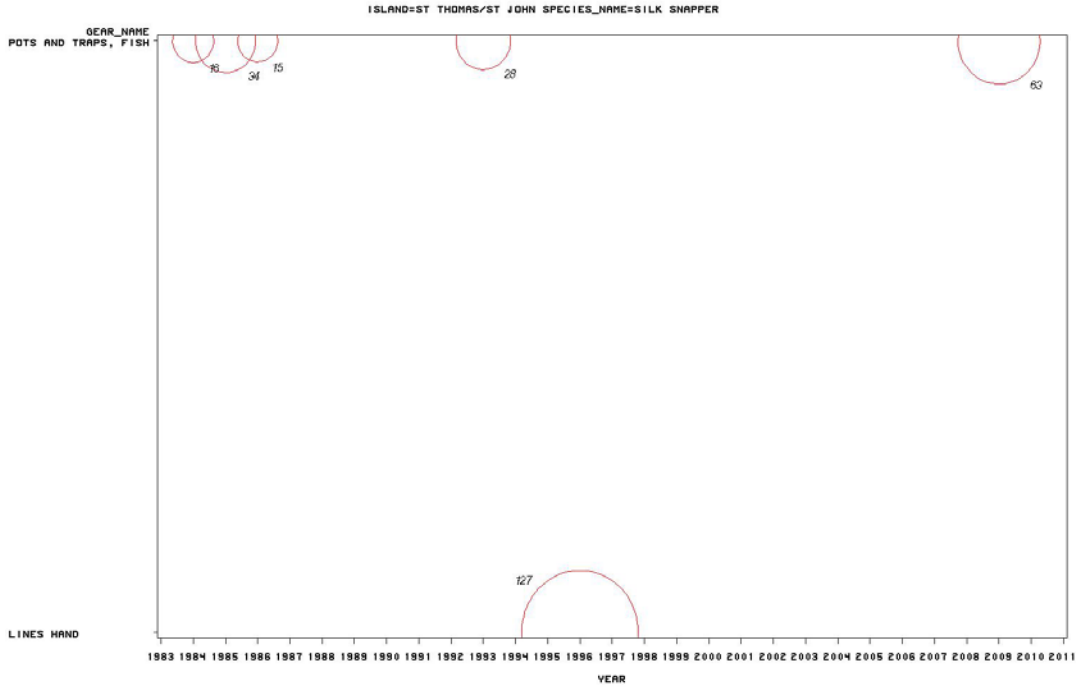




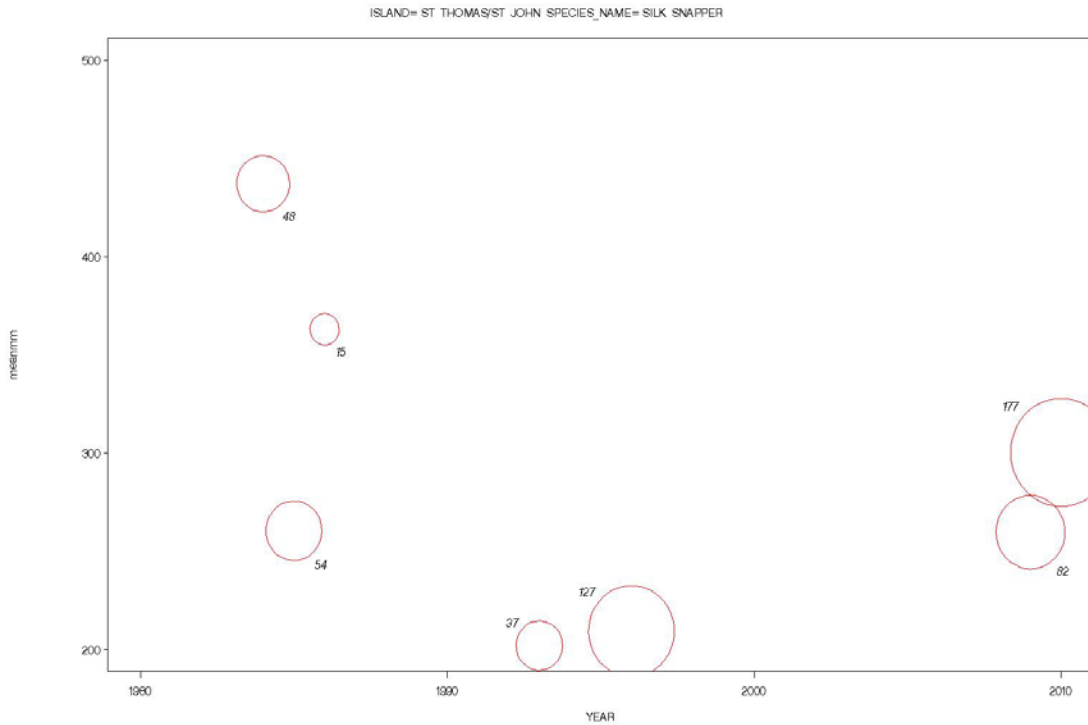


## St Thomas/St. John – Silk Snapper

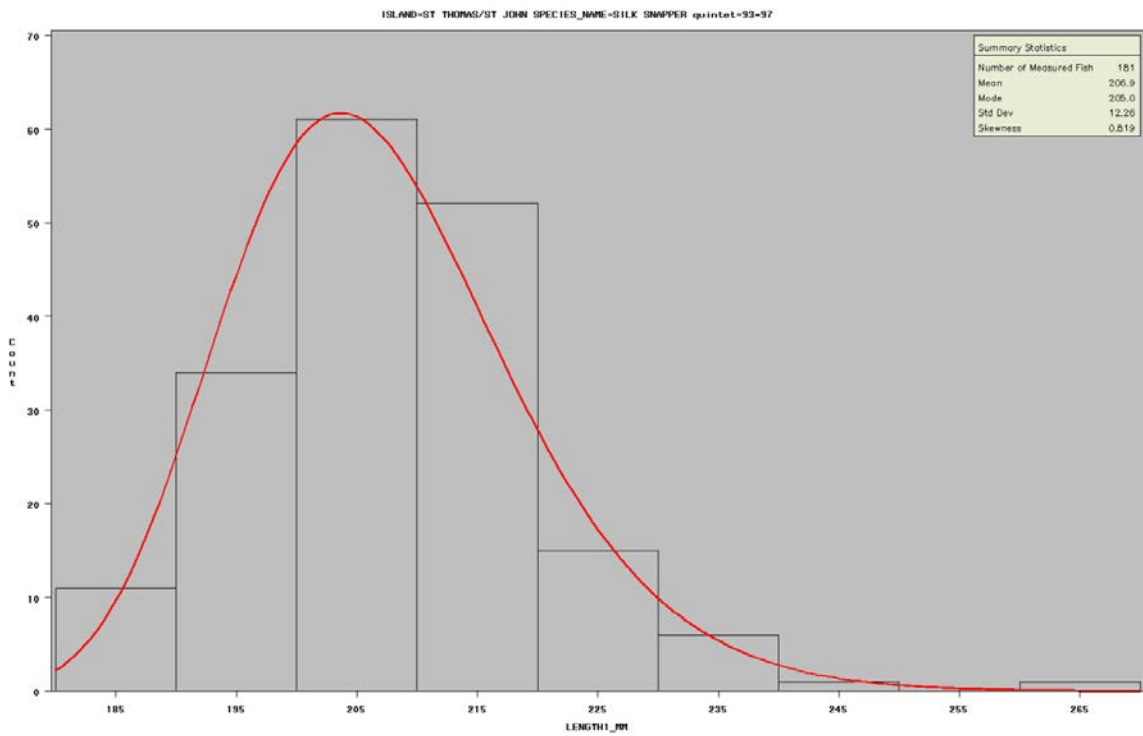
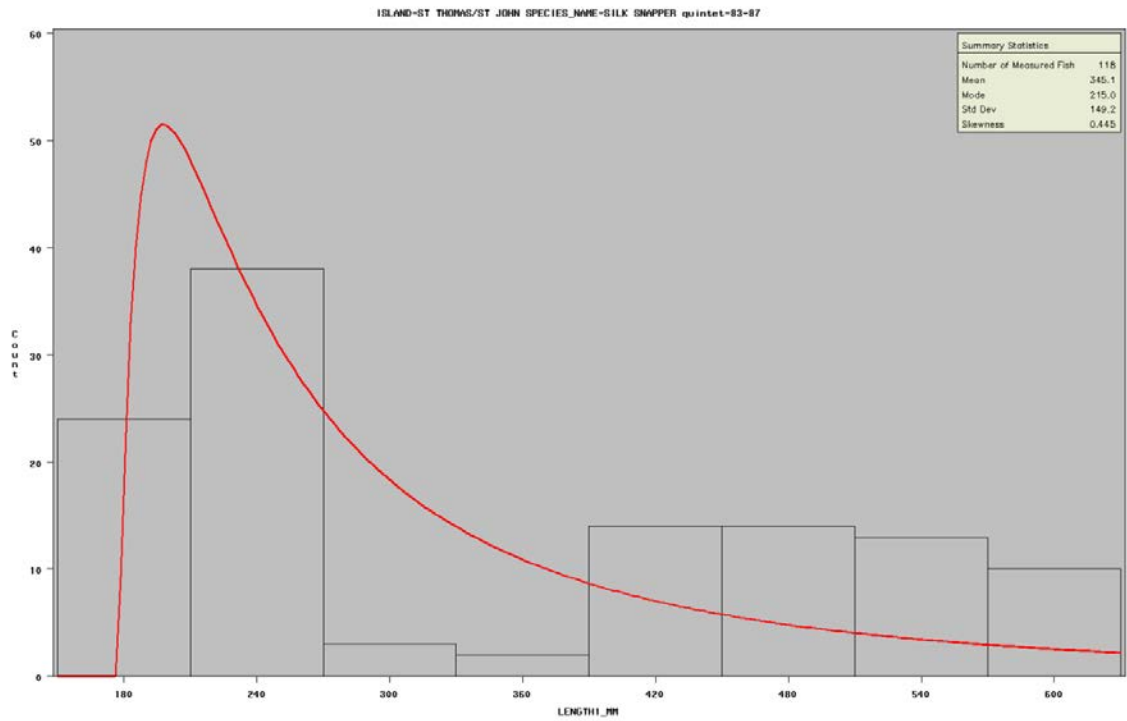
Silk snapper number of sampled fish by specific gear type from St. Thomas – St. John, 1983-2011.

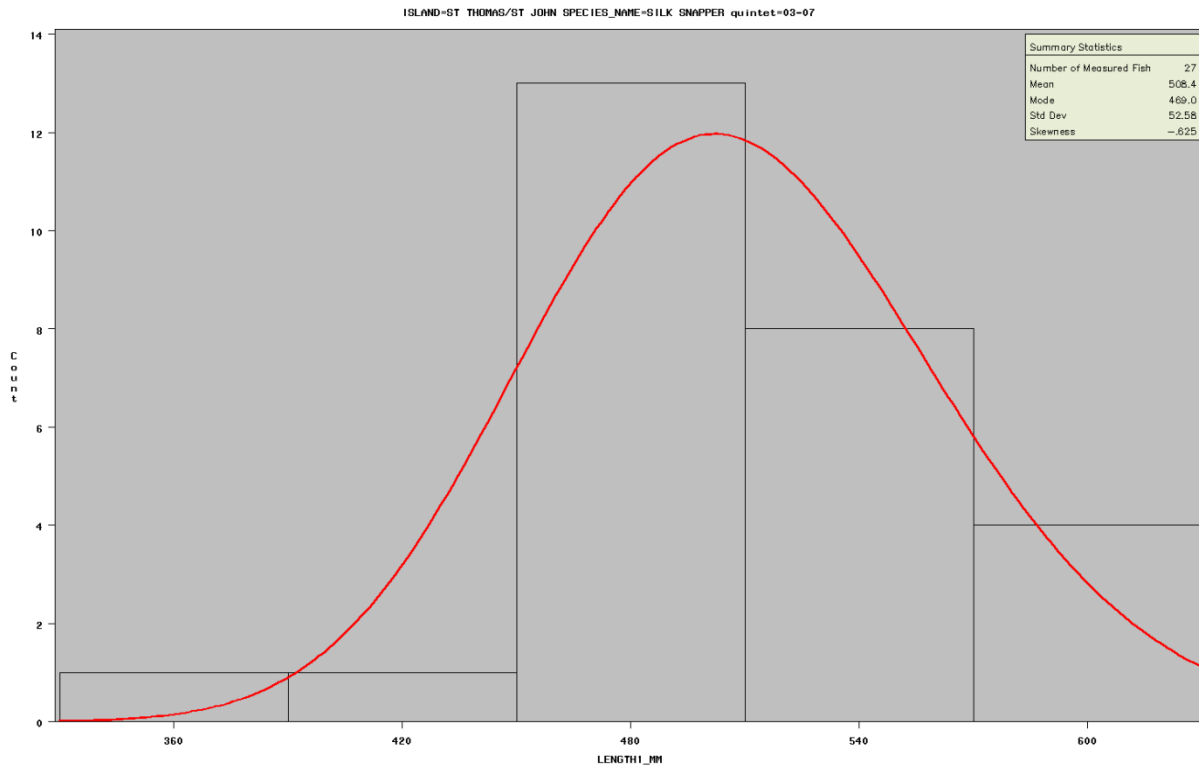
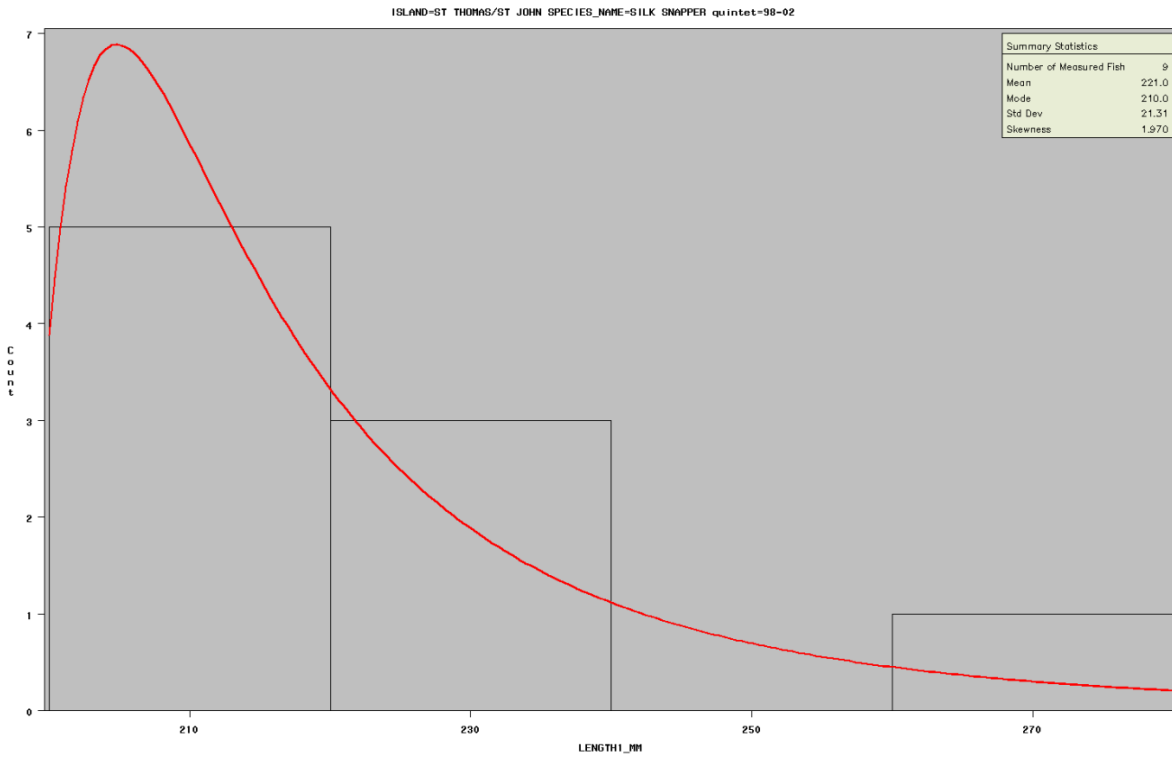


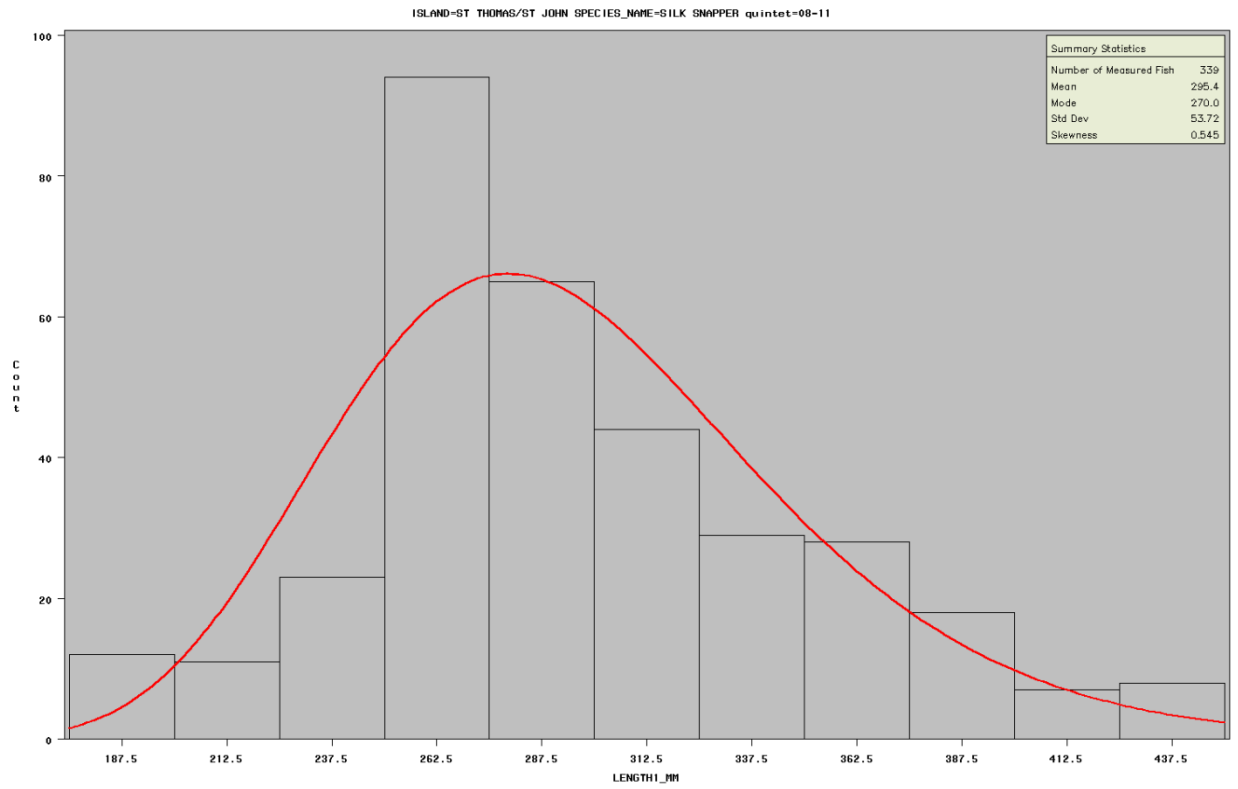
Silk snapper mean lengths and sample sizes from St. Thomas – St. John, 1983-2011.



Silk snapper length frequency histograms from St. Thomas – St. John, in five year bins from 1983-2011.









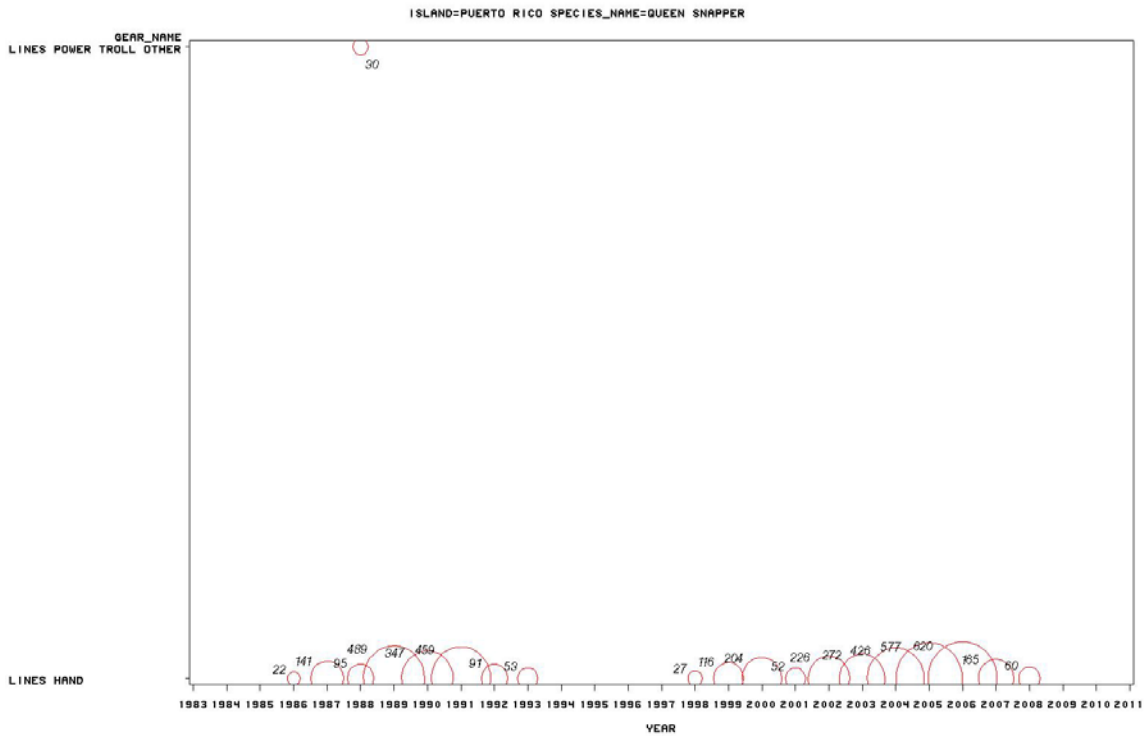
## QUEEN SNAPPER

Number of observations of queen snapper by general gear type and island for the years 1983-2011.

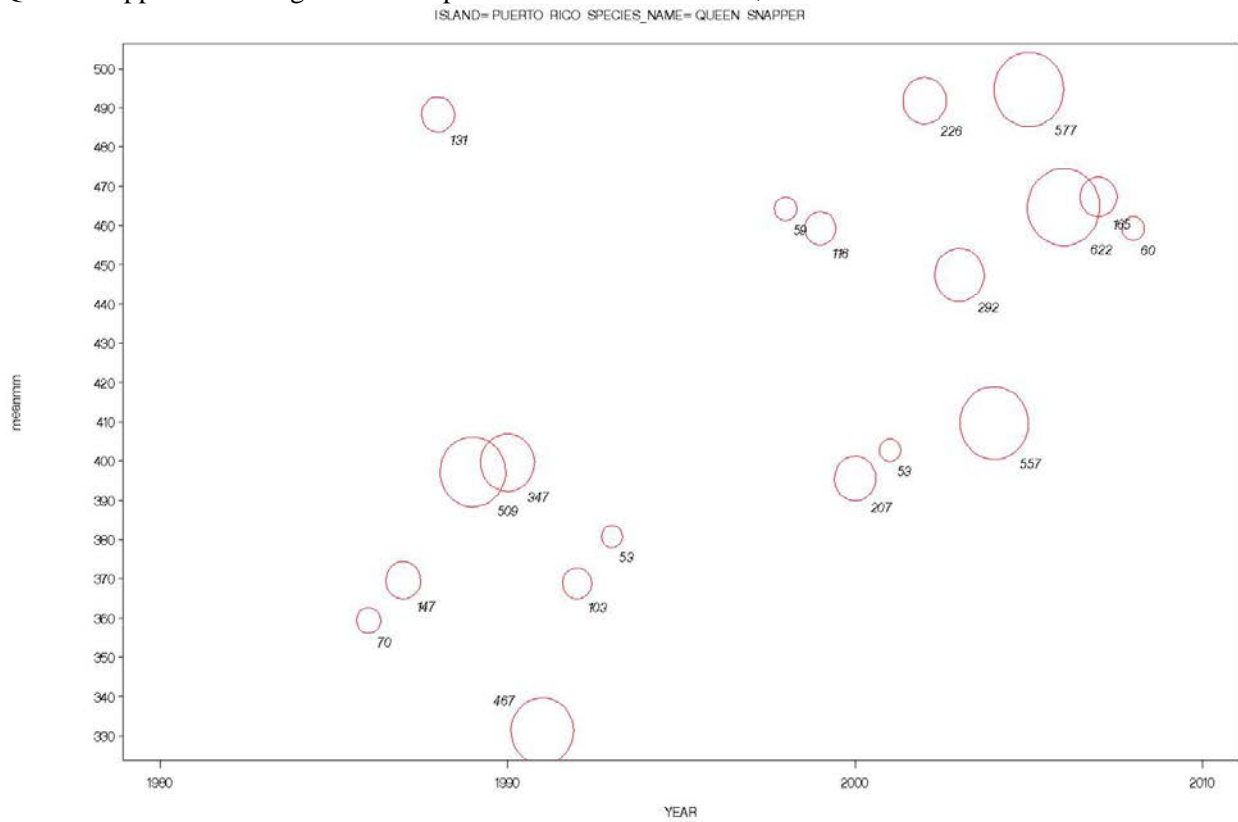
<b>Queen Snapper</b>		
<b>PUERTO RICO</b>	<b>HAND LINE</b>	4456
<b>PUERTO RICO</b>	<b>LONG LINES</b>	164
<b>PUERTO RICO</b>	<b>GILL NETS</b>	61
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	49
<b>PUERTO RICO</b>	<b>HOOK AND LINE</b>	40
<b>PUERTO RICO</b>	<b>NOT CODED</b>	6
<b>ST CROIX</b>	<b>HAND LINE</b>	1876
<b>ST CROIX</b>	<b>LONG LINES</b>	1153
<b>ST CROIX</b>	<b>HOOK AND LINE</b>	1082
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	32
<b>ST CROIX</b>	<b>GILL NETS</b>	2
<b>ST CROIX</b>	<b>FIXED NETS</b>	1
<b>ST THOMAS/ST JOHN</b>	<b>LONG LINES</b>	130
<b>ST THOMAS/ST JOHN</b>	<b>HOOK AND LINE</b>	34
<b>ST THOMAS/ST JOHN</b>	<b>SPEARS AND GI</b>	16
<b>ST THOMAS/ST JOHN</b>	<b>DIP NETS AND</b>	7
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	6

## Puerto Rico–Queen Snapper

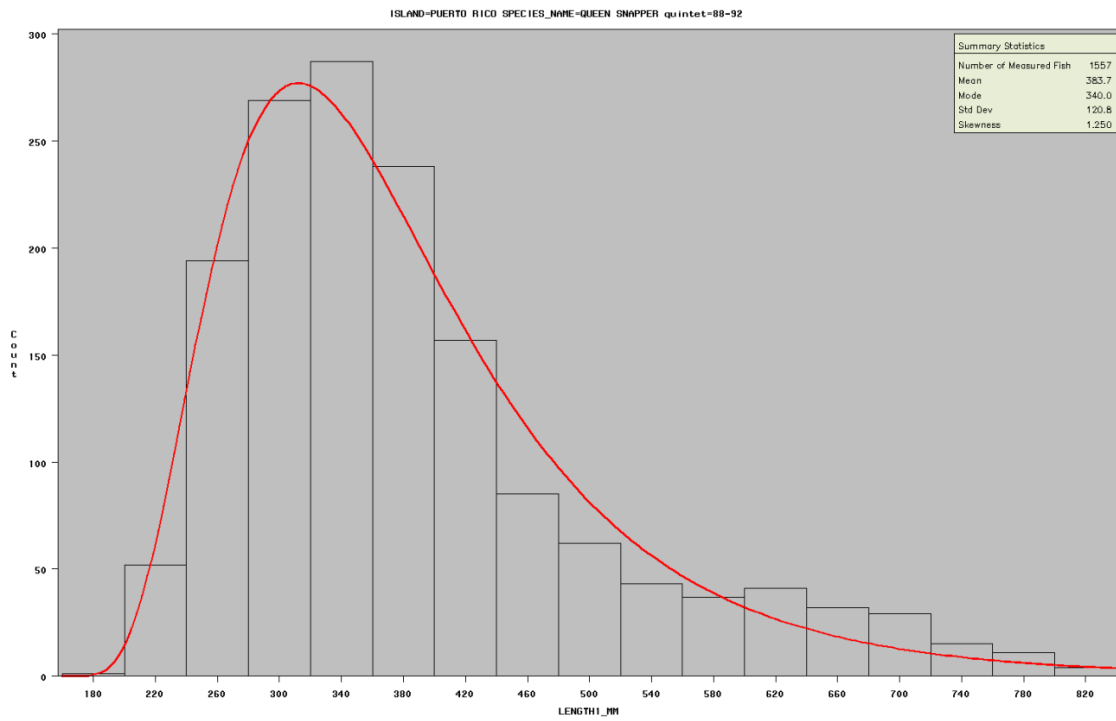
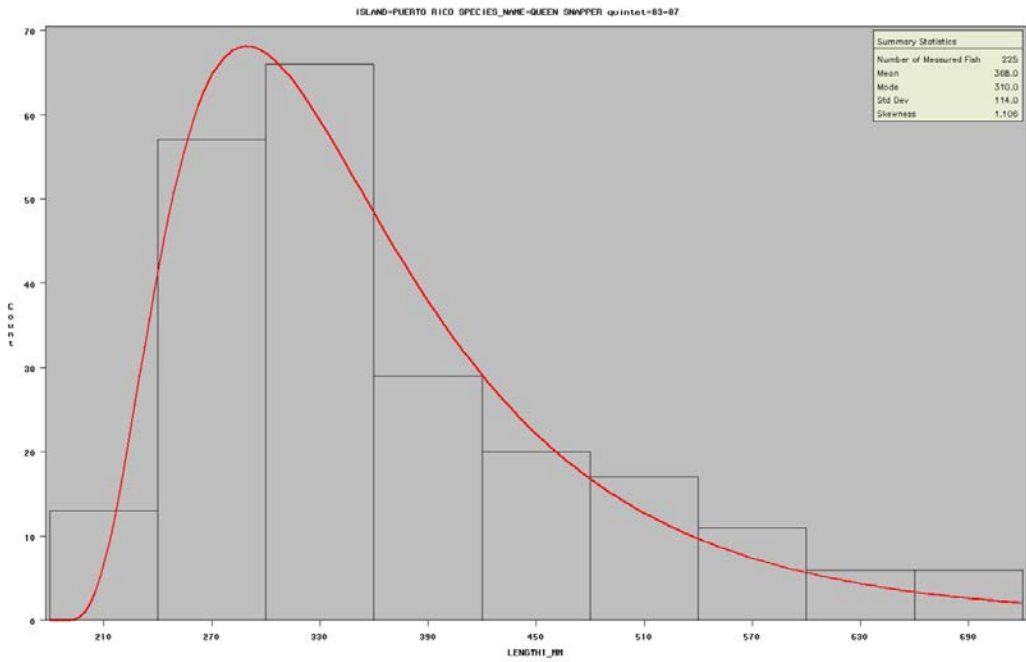
Queen snapper number of sampled fish by specific gear type from Puerto Rico, 1983-2011.

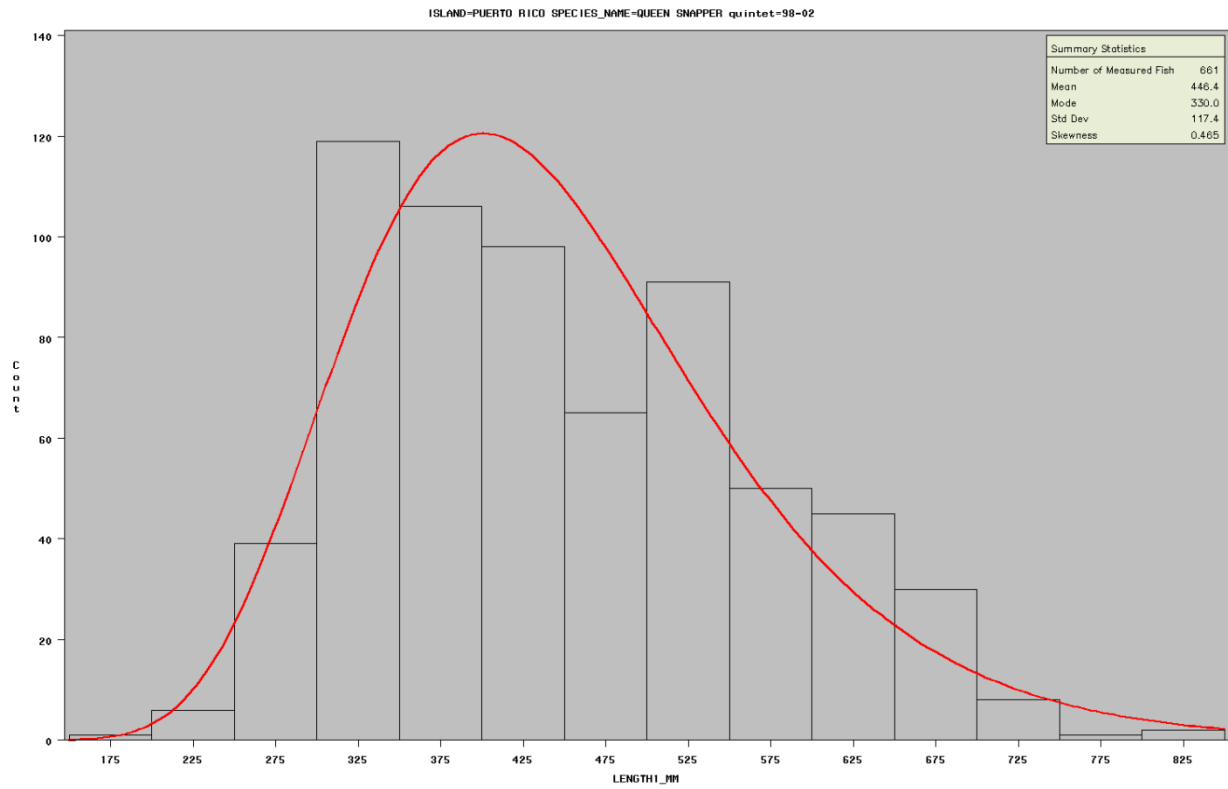
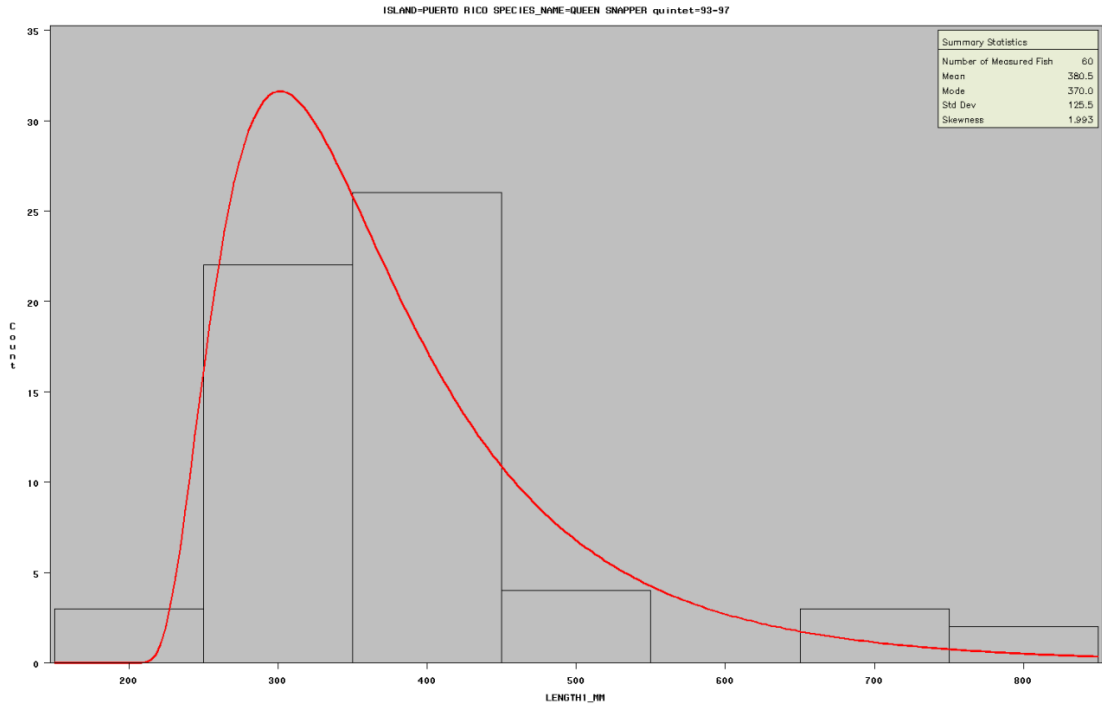


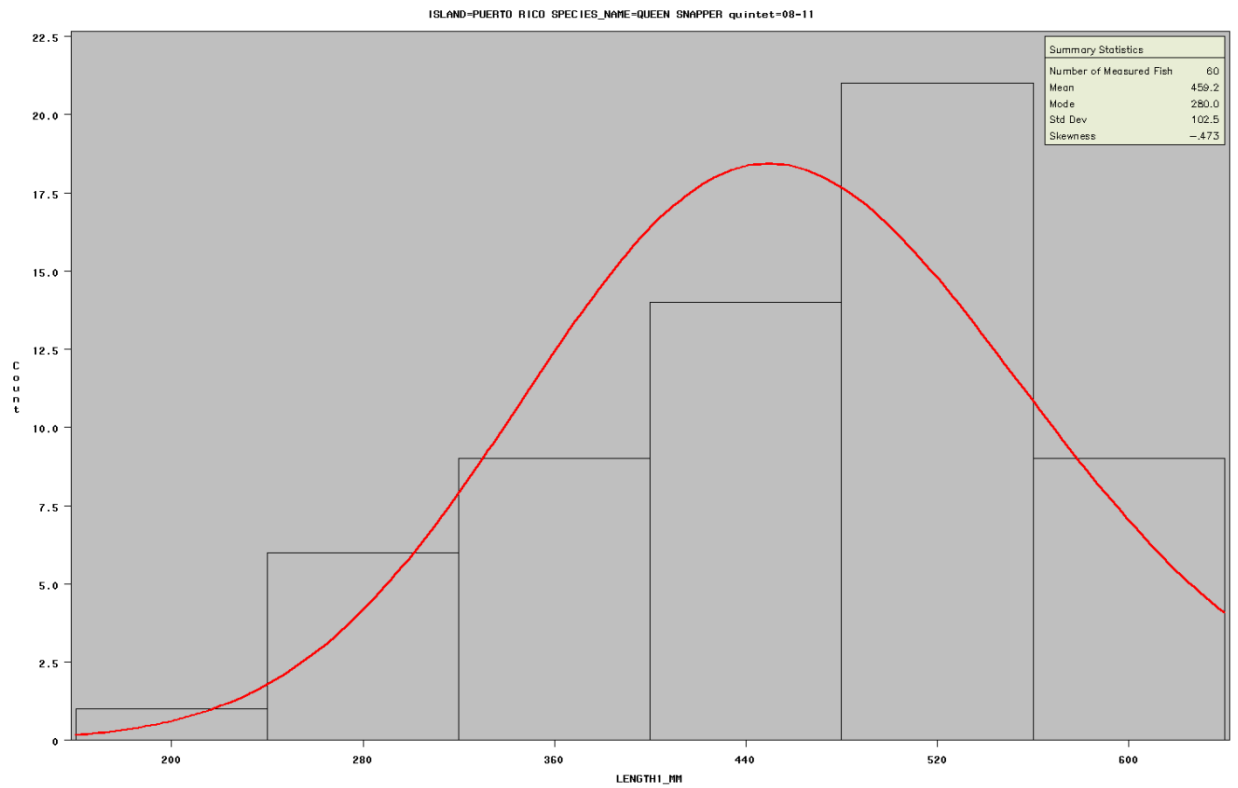
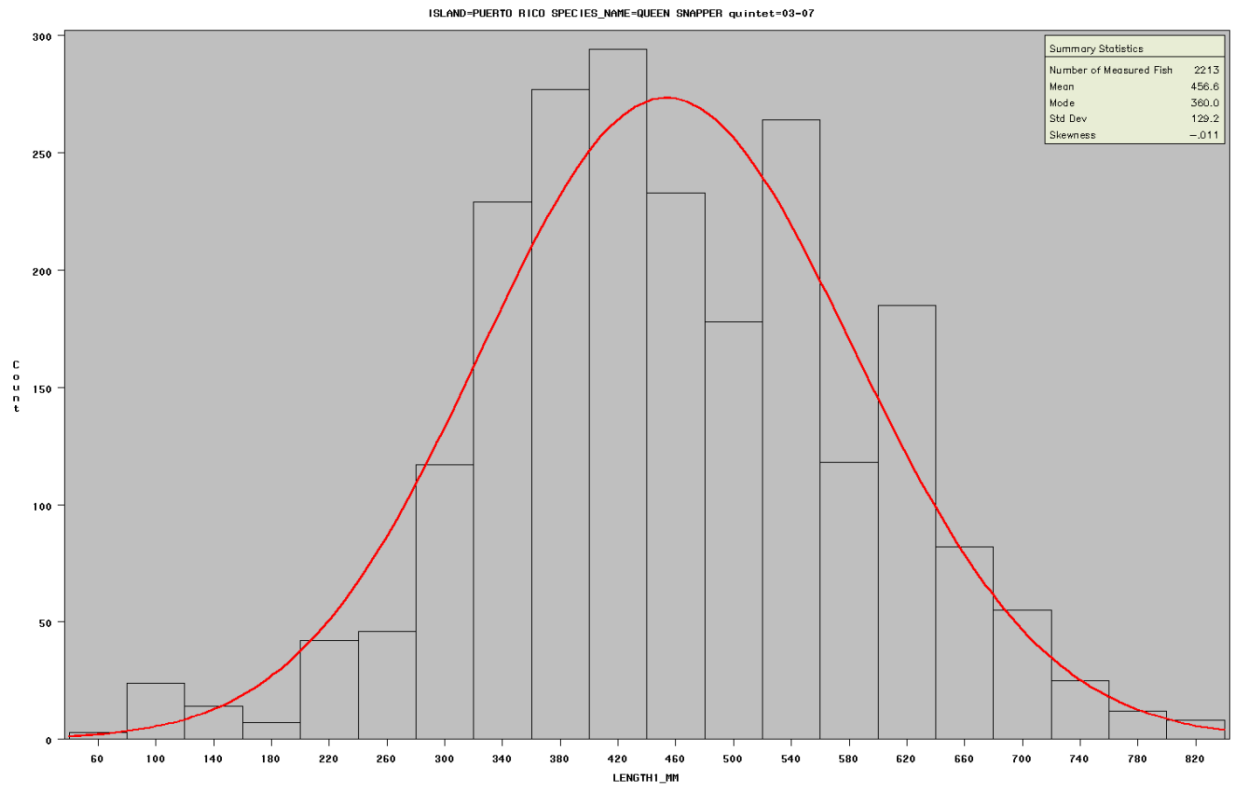
Queen snapper mean lengths and sample sizes from Puerto Rico, 1983-2011.



Queen snapper length frequency histograms from Puerto Rico, by five year bins from 1983-2011.

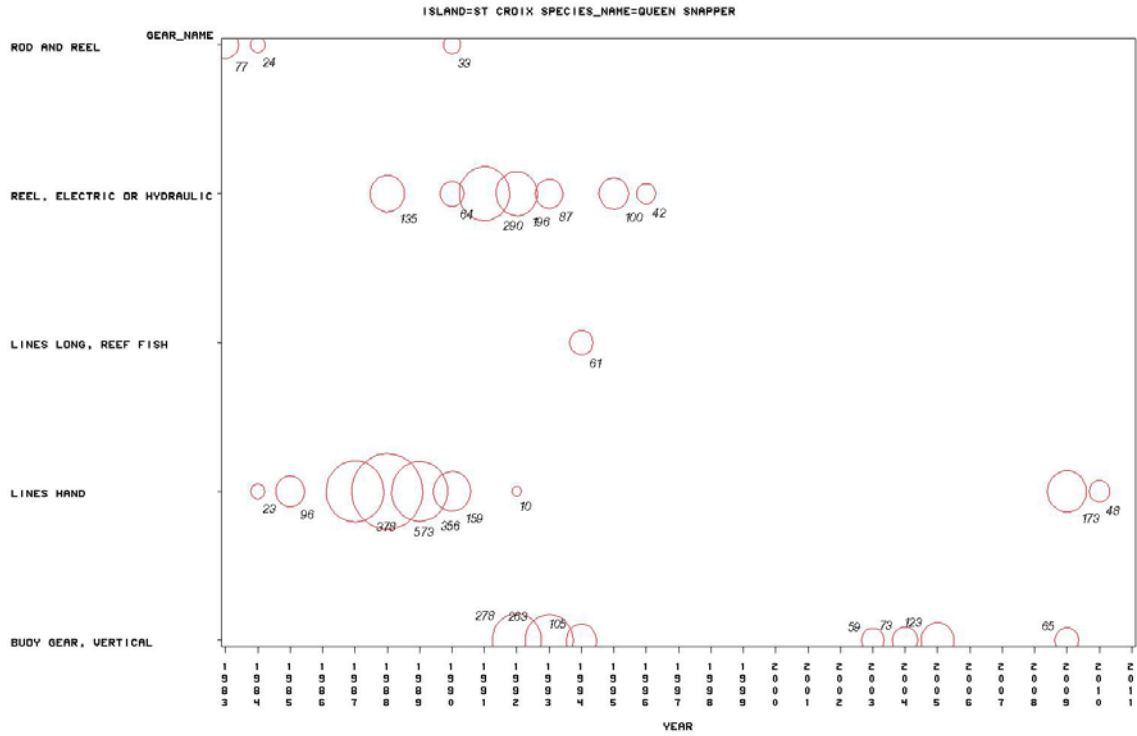




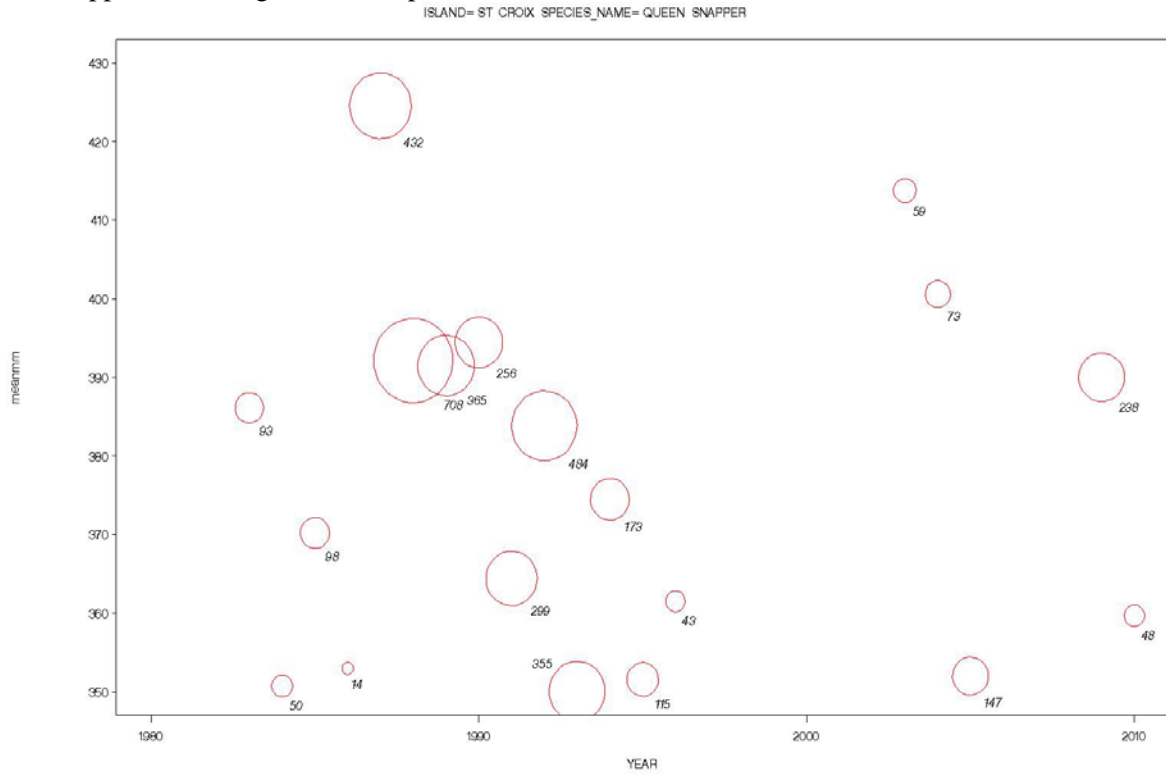


## St. Croix - Queen Snapper

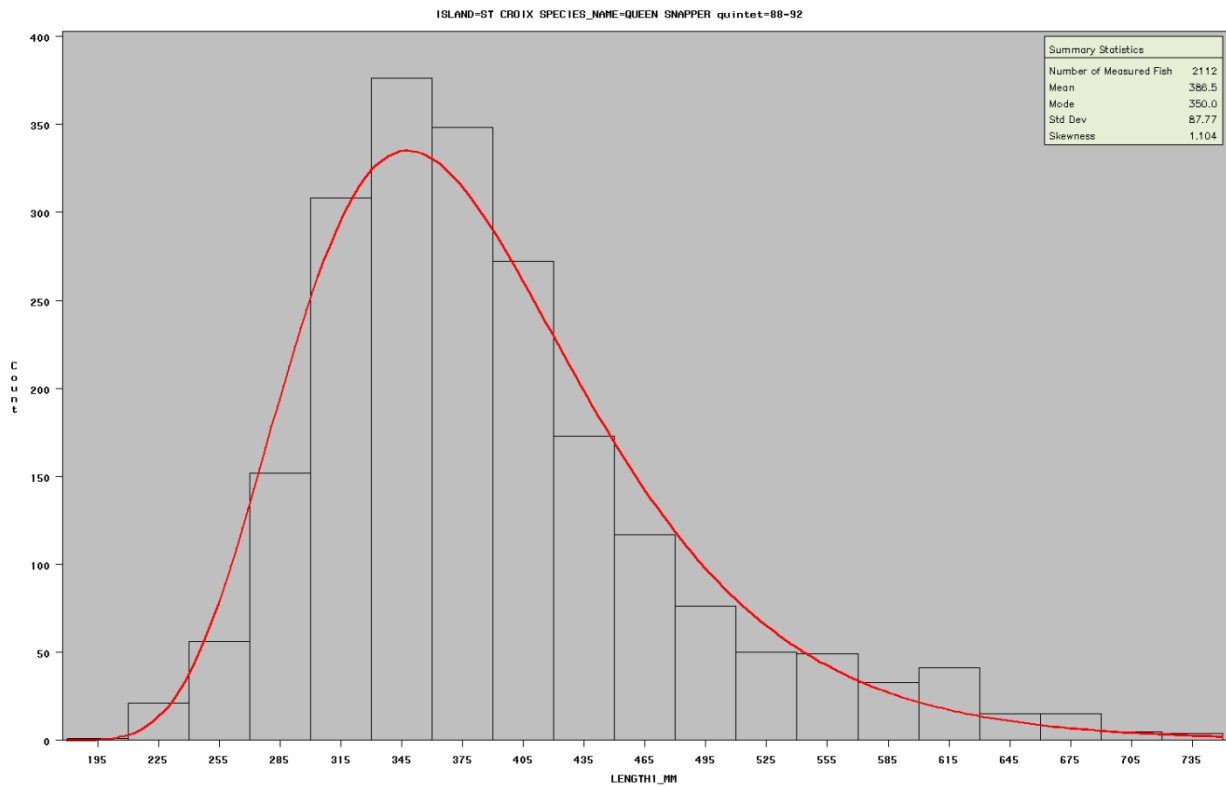
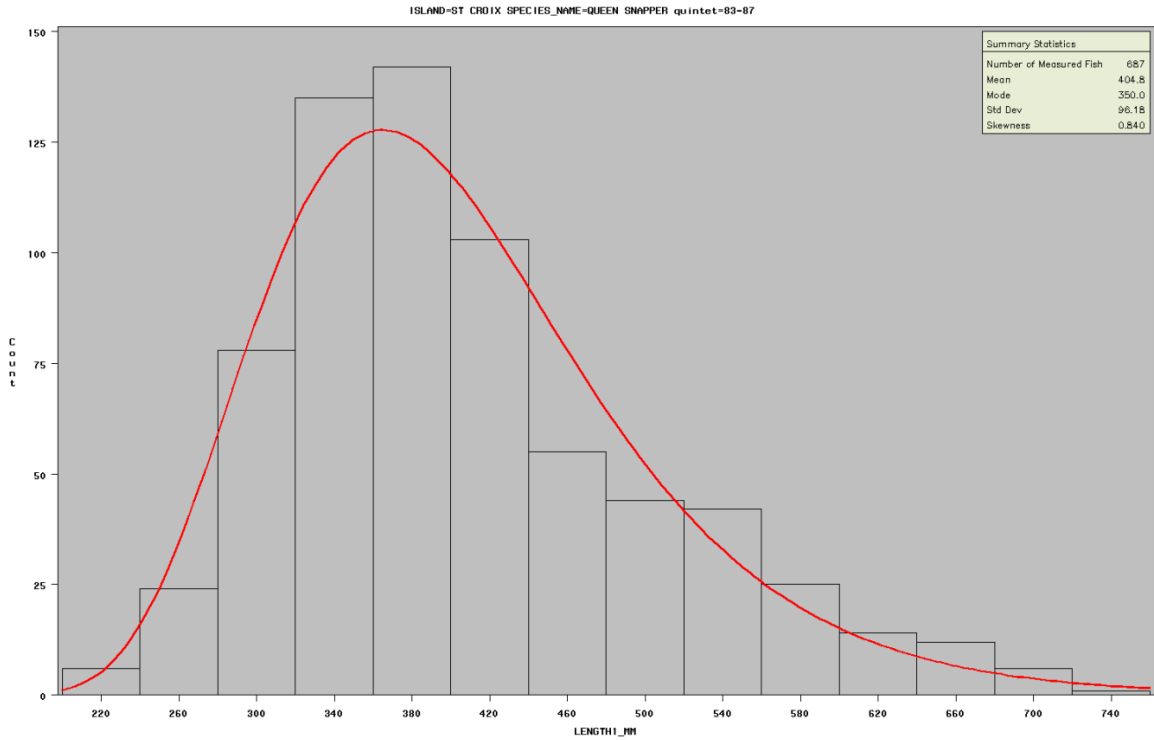
Queen snapper number of sampled fish by specific gear type from St. Croix, 1983-2011.

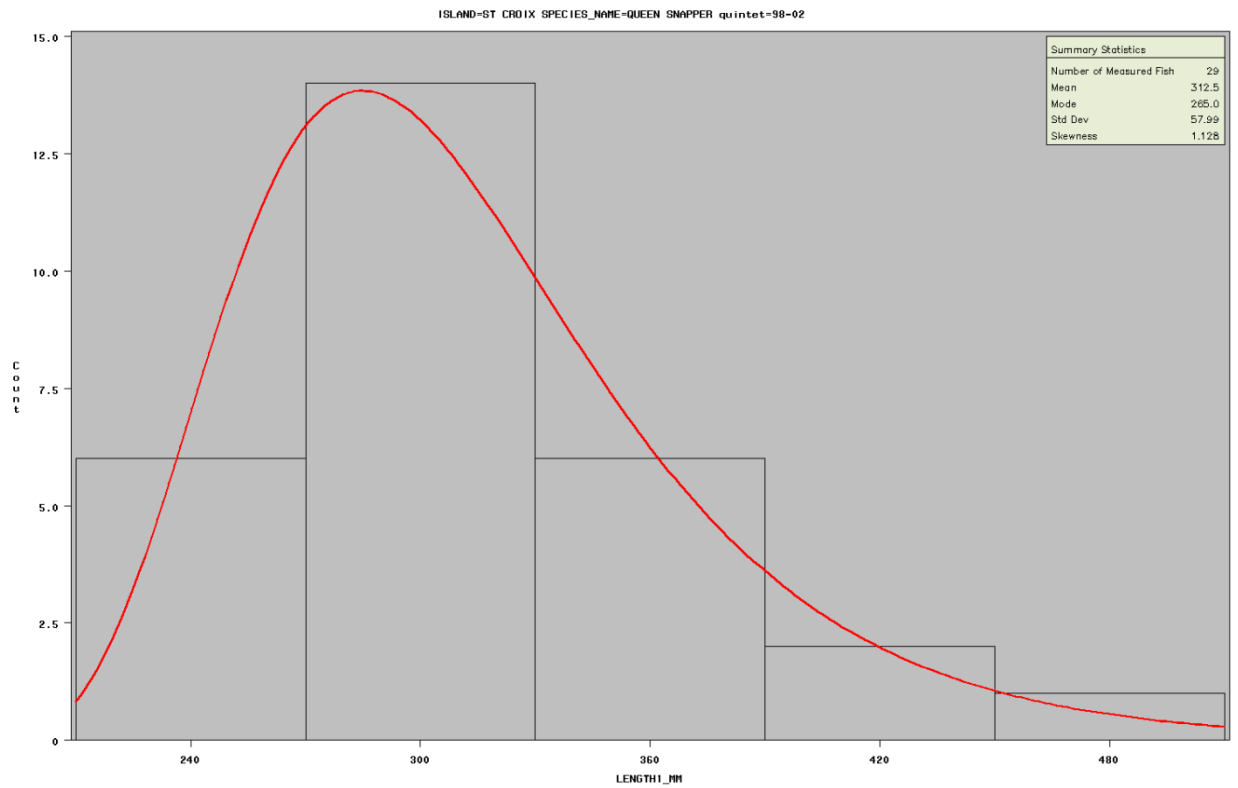
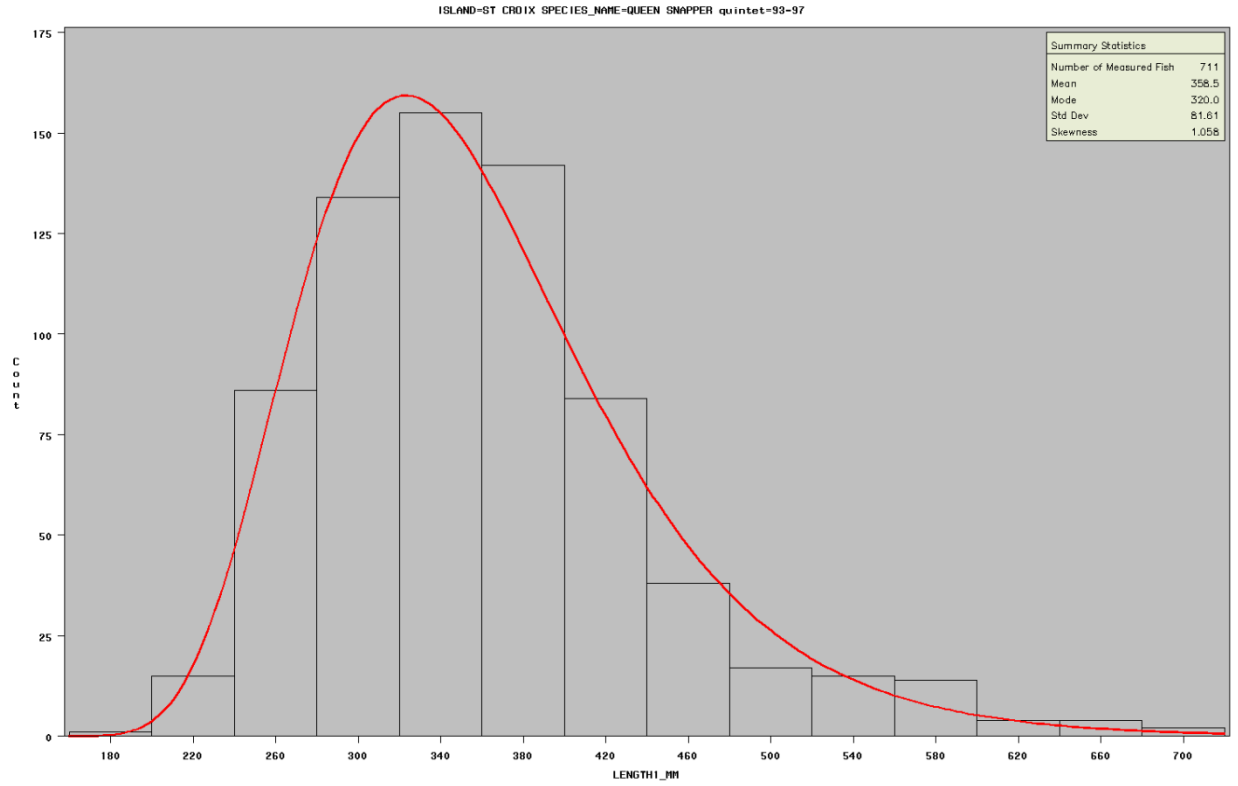


Queen snapper mean lengths and sample sizes from St. Croix, 1983-2011.

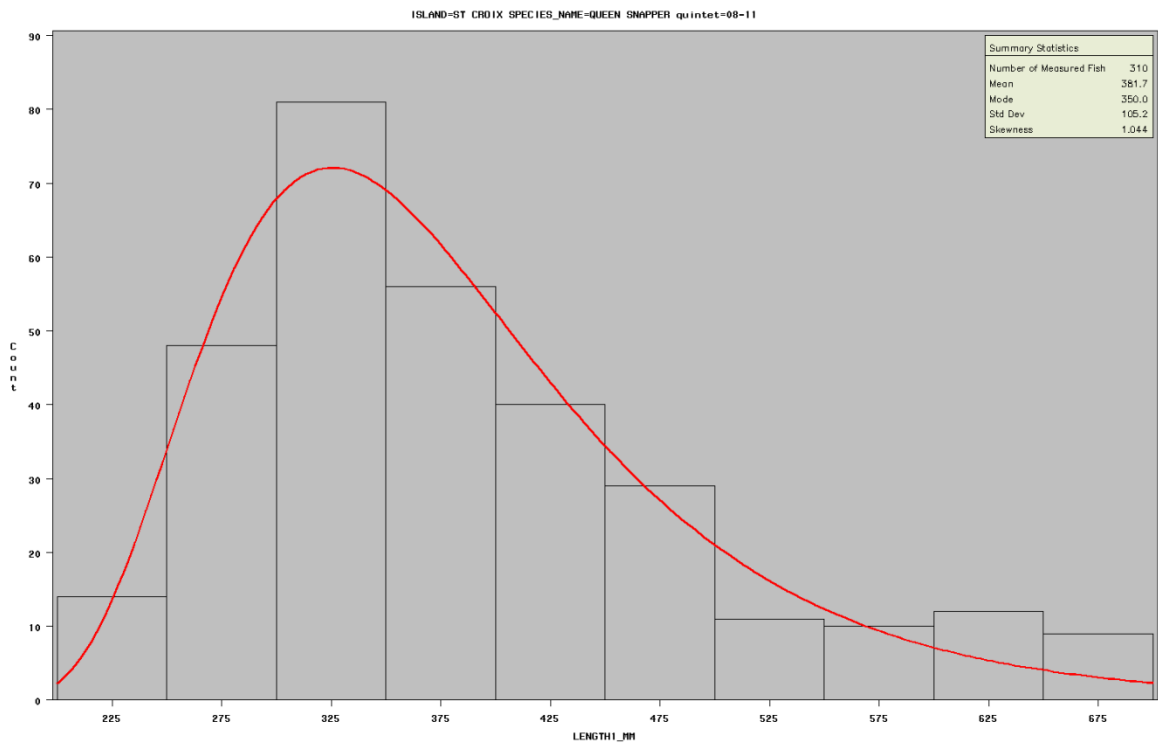
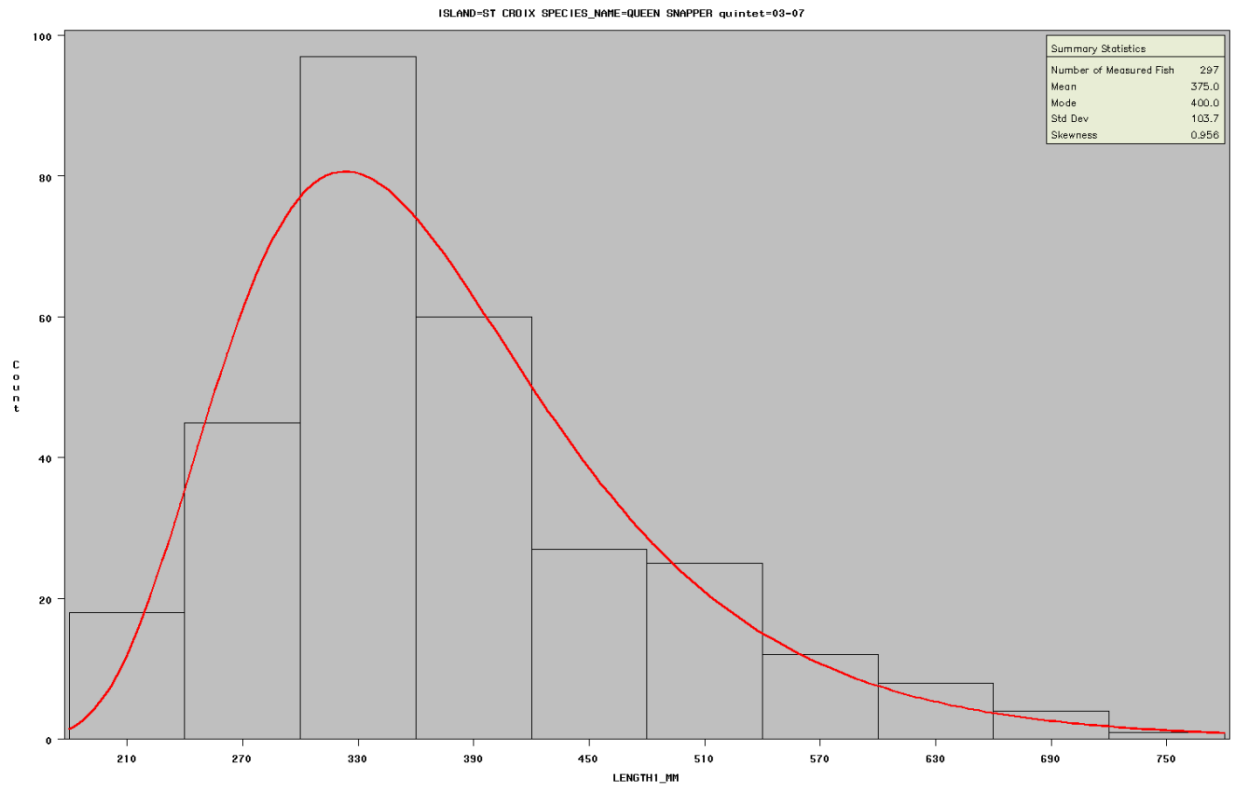


Queen snapper length frequency histograms from St. Croix, in five year bins from 1983-2011.









## Parrotfish - Summary by Species

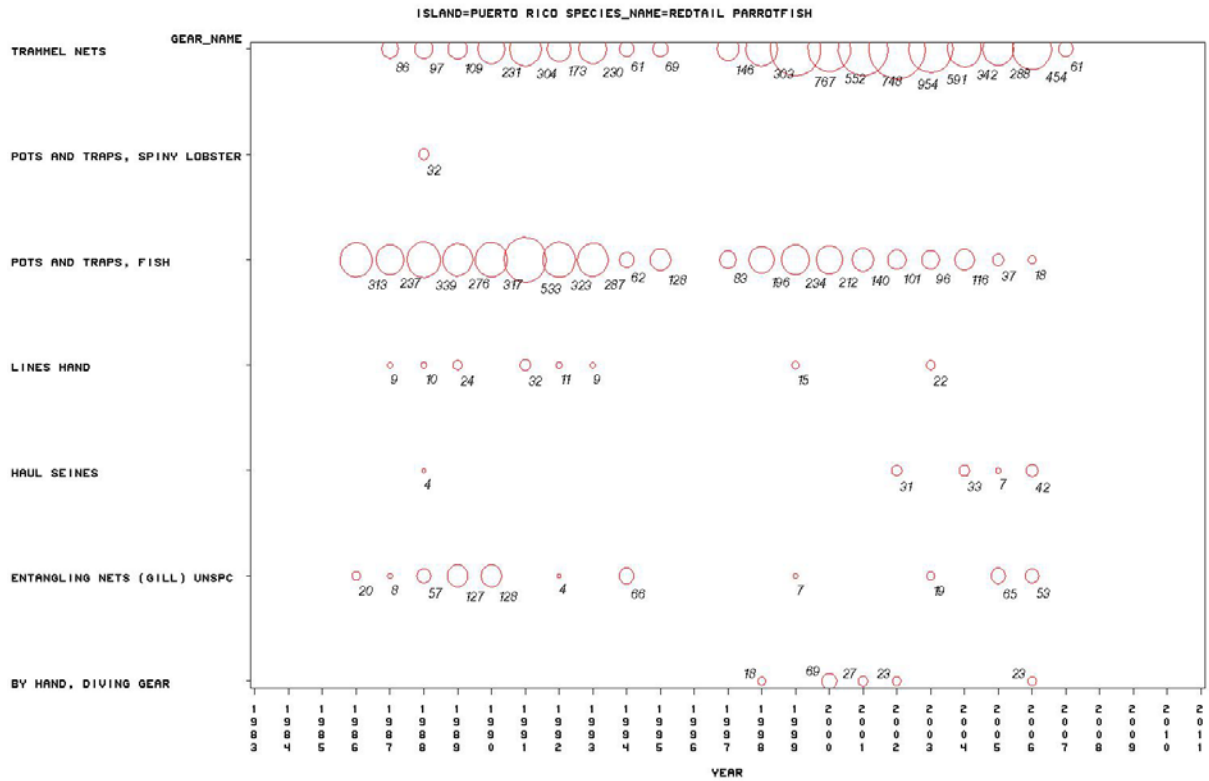
### Redtail Parrotfish

Number of observations of redbill parrotfish by gear type and island for the years 1983-2011.

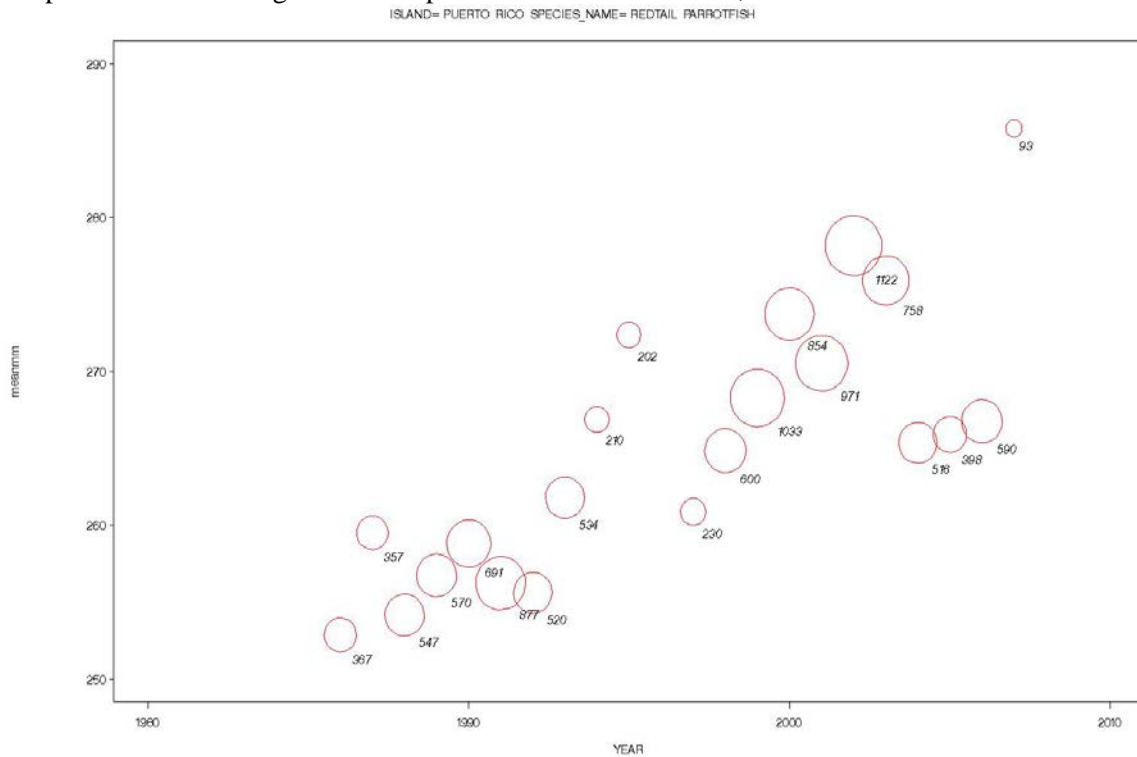
<u>Redtail Parrotfish</u>		
<b>PUERTO RICO</b>	<b>GILL NETS</b>	7242
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	4180
<b>PUERTO RICO</b>	<b>BY HAND</b>	235
<b>PUERTO RICO</b>	<b>HAUL SEINES</b>	210
<b>PUERTO RICO</b>	<b>HAND LINE</b>	190
<b>PUERTO RICO</b>		32
<b>PUERTO RICO</b>	<b>HOOK AND LINE</b>	9
<b>PUERTO RICO</b>	<b>OTHER GEARS</b>	5
<b>PUERTO RICO</b>	<b>SPEARS AND GI</b>	1
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	23439
<b>ST CROIX</b>	<b>GILL NETS</b>	5530
<b>ST CROIX</b>	<b>SPEARS AND GI</b>	730
<b>ST CROIX</b>	<b>BY HAND</b>	462
<b>ST CROIX</b>	<b>LONG LINES</b>	222
<b>ST CROIX</b>	<b>HAND LINE</b>	17
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	1565
<b>ST THOMAS/ST JOHN</b>	<b>HAUL SEINES</b>	18
<b>ST THOMAS/ST JOHN</b>		15
<b>ST THOMAS/ST JOHN</b>	<b>HAND LINE</b>	1

## Redtail Parrotfish - Puerto Rico

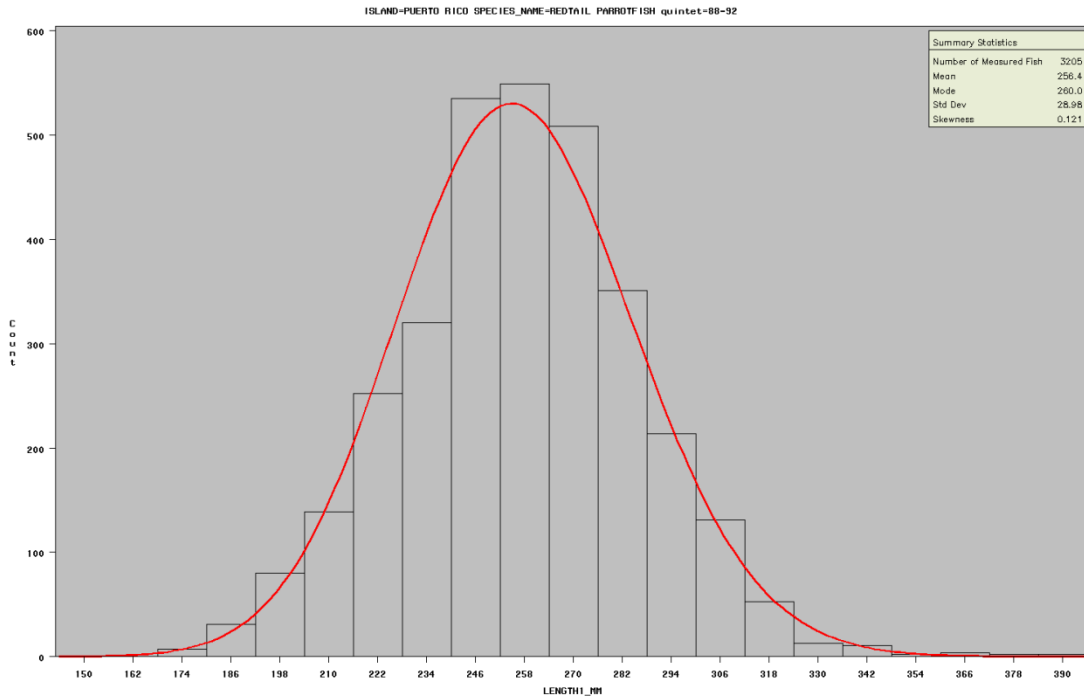
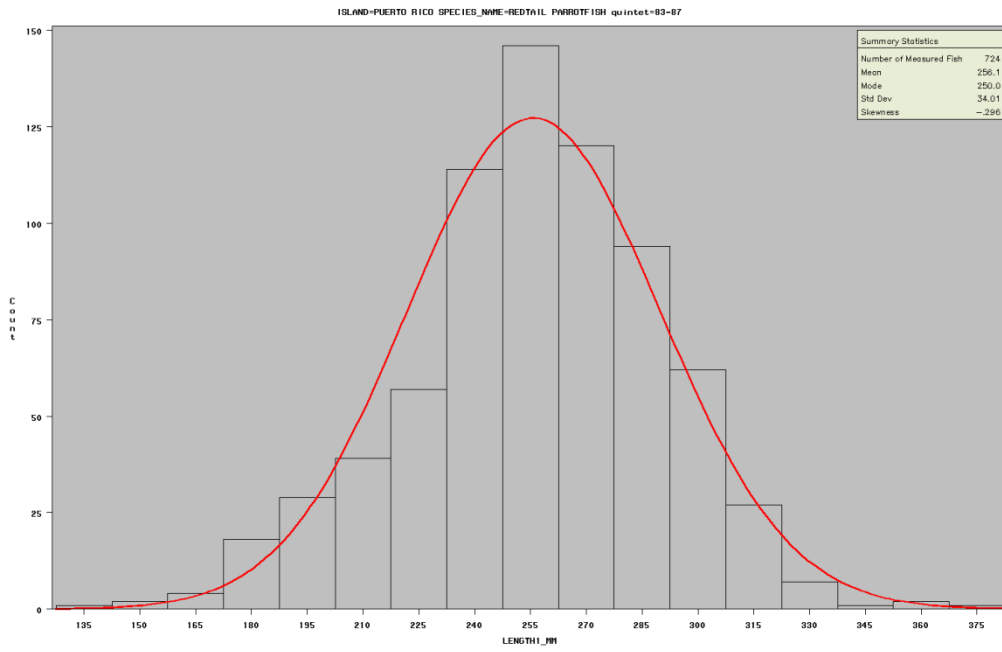
Redtail Parrotfish number of sampled fish by specific gear type from Puerto Rico, 1983-2011.

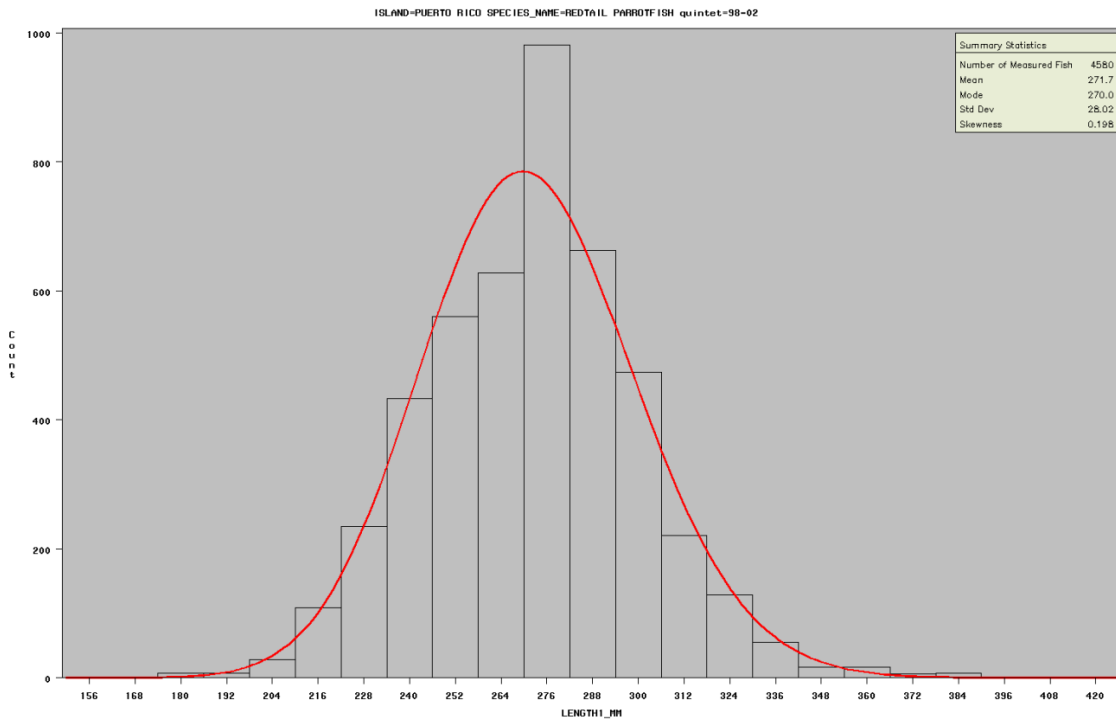
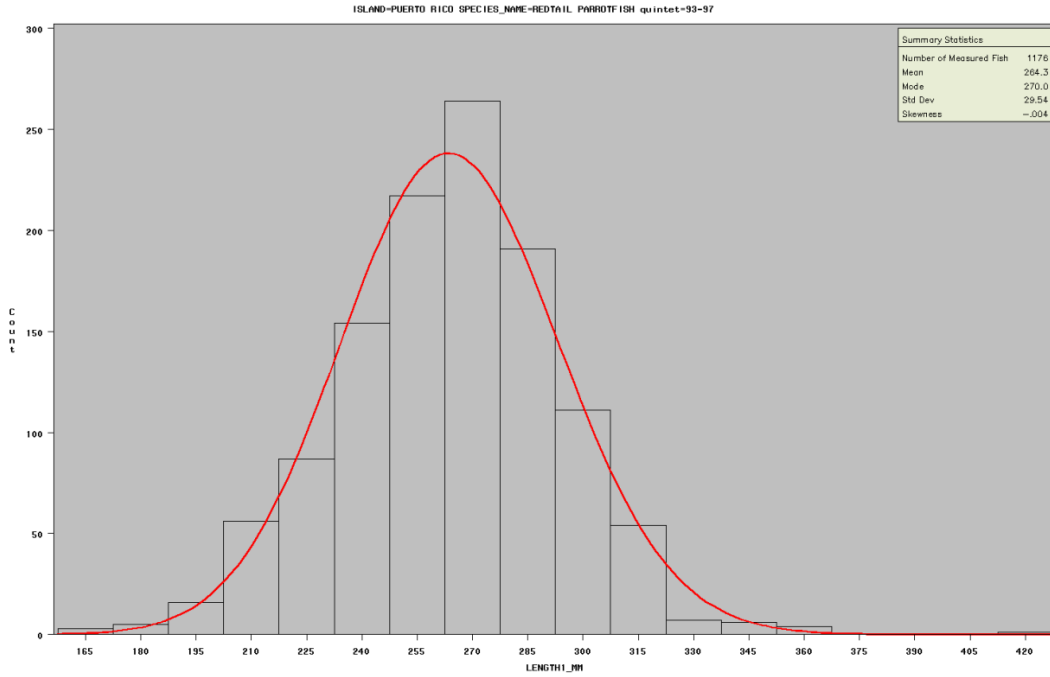


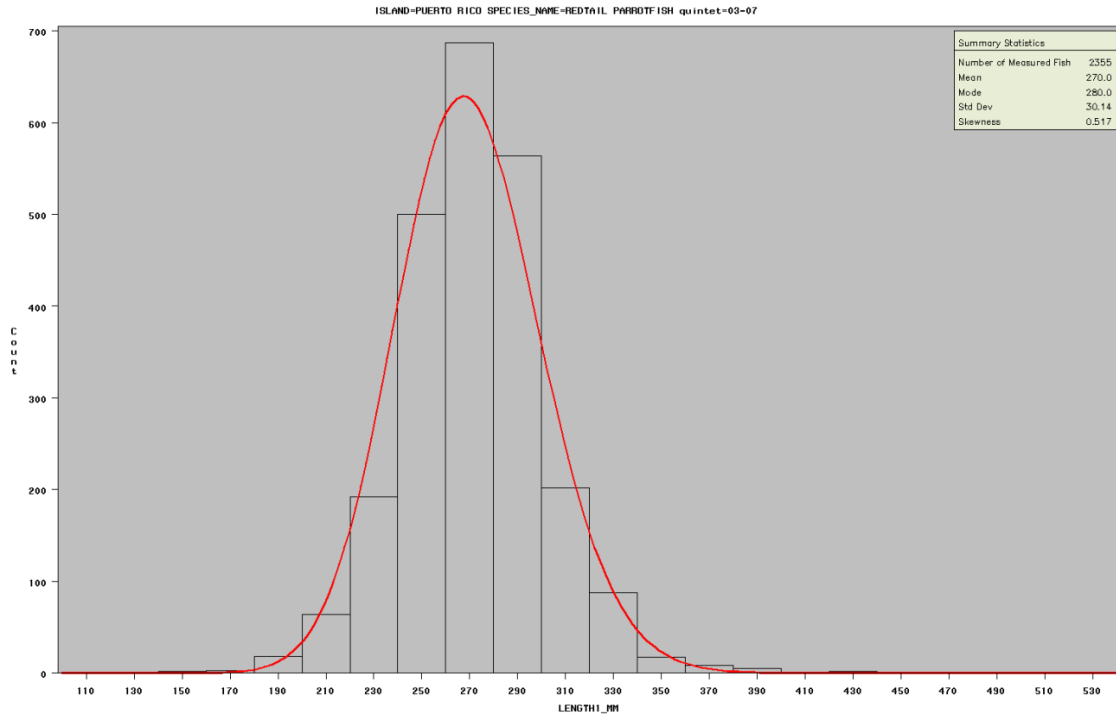
Redtail parrotfish mean lengths and sample sizes from Puerto Rico, 1983-2011.



Redtail parrotfish length frequency histograms from Puerto Rico, in five year bins from 1983-2011.

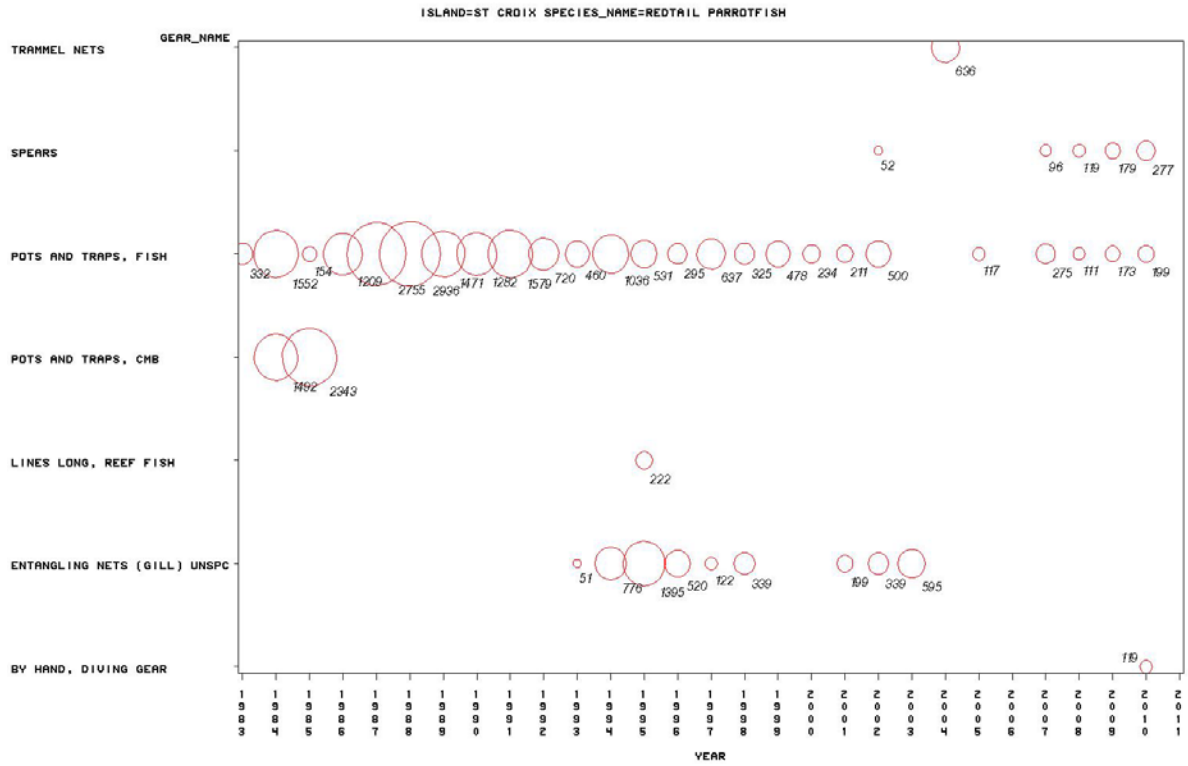




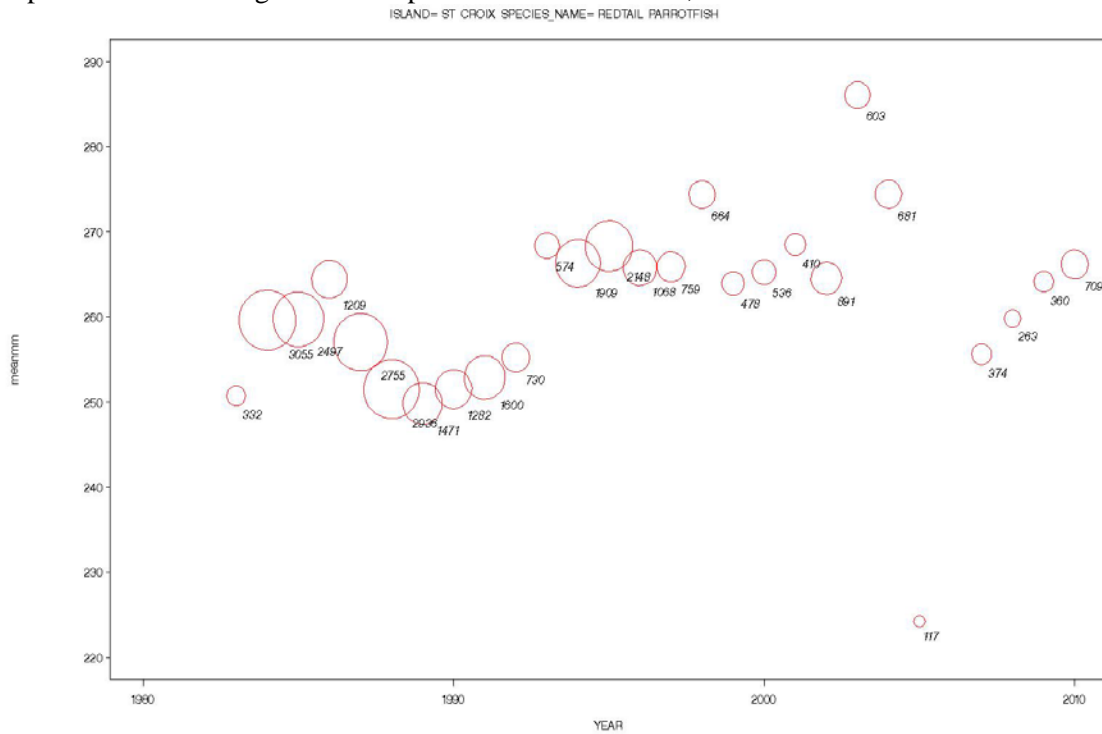


## Redtail Parrotfish – St. Croix

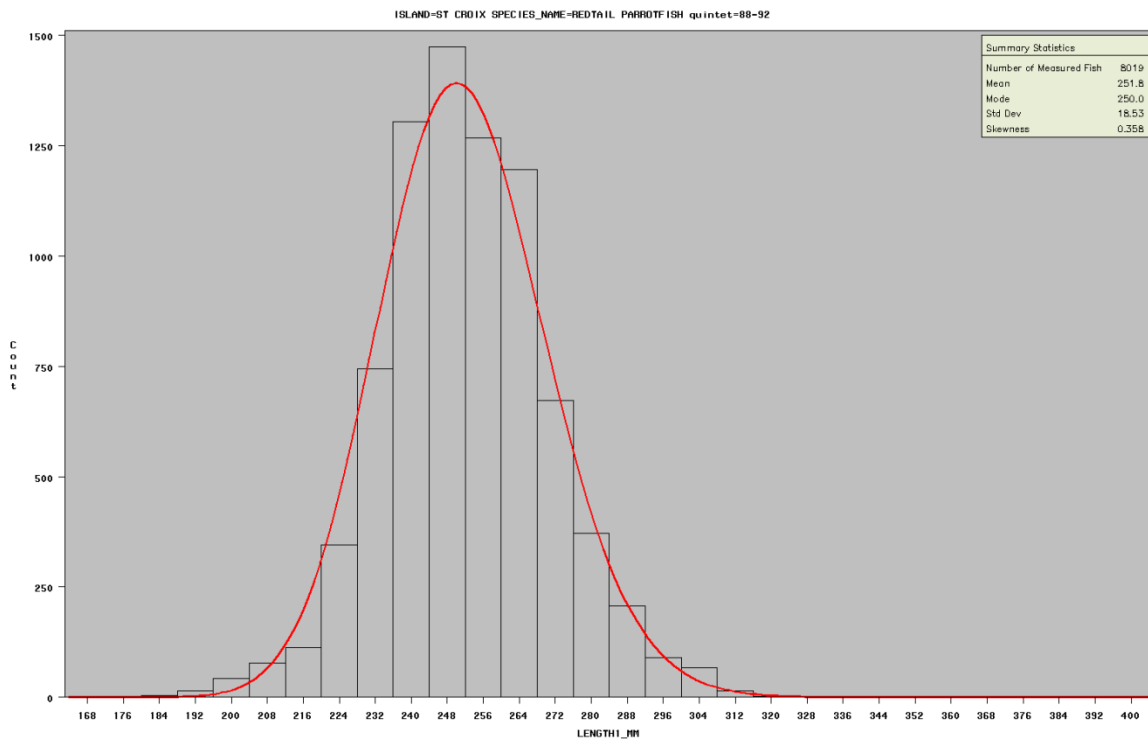
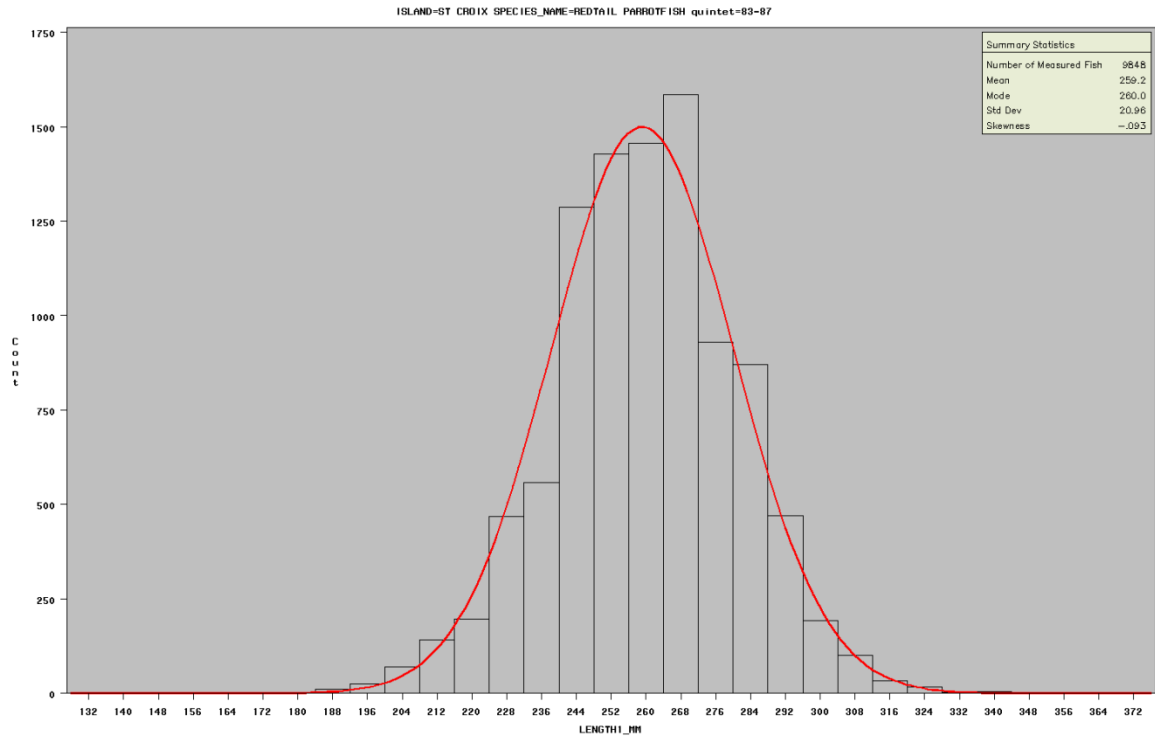
Redtail Parrotfish number of sampled fish by specific gear type from St. Croix, 1983-2011.



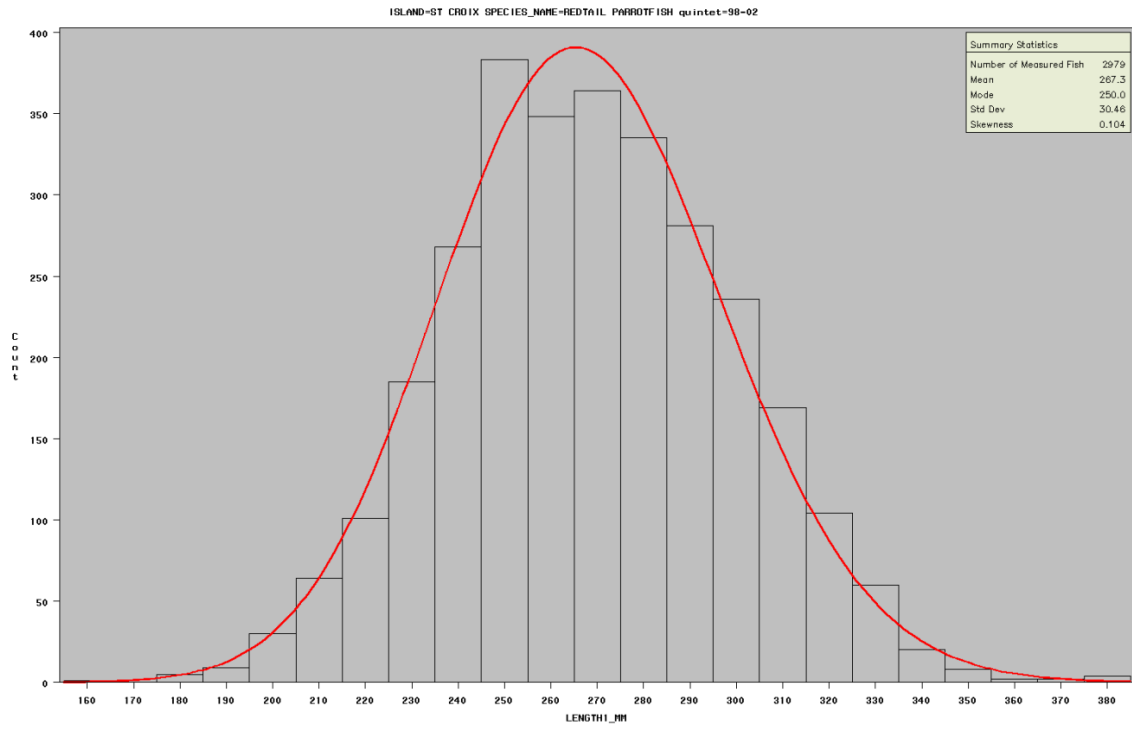
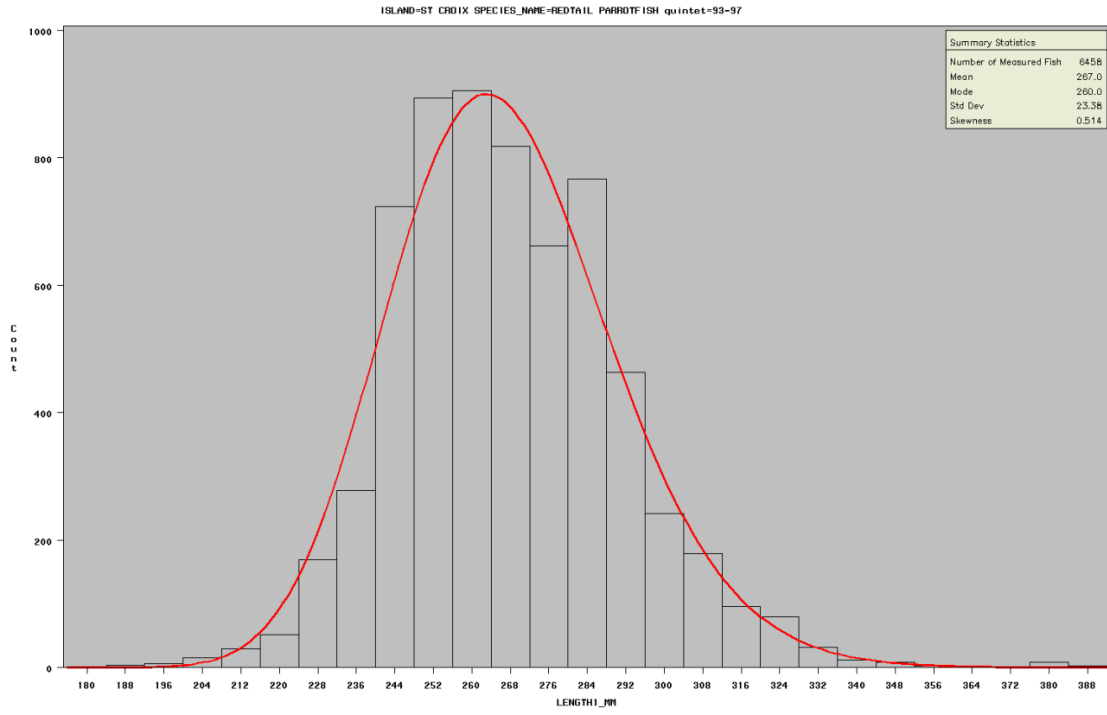
Redtail parrotfish mean lengths and sample sizes from St. Croix, 1983-2011.

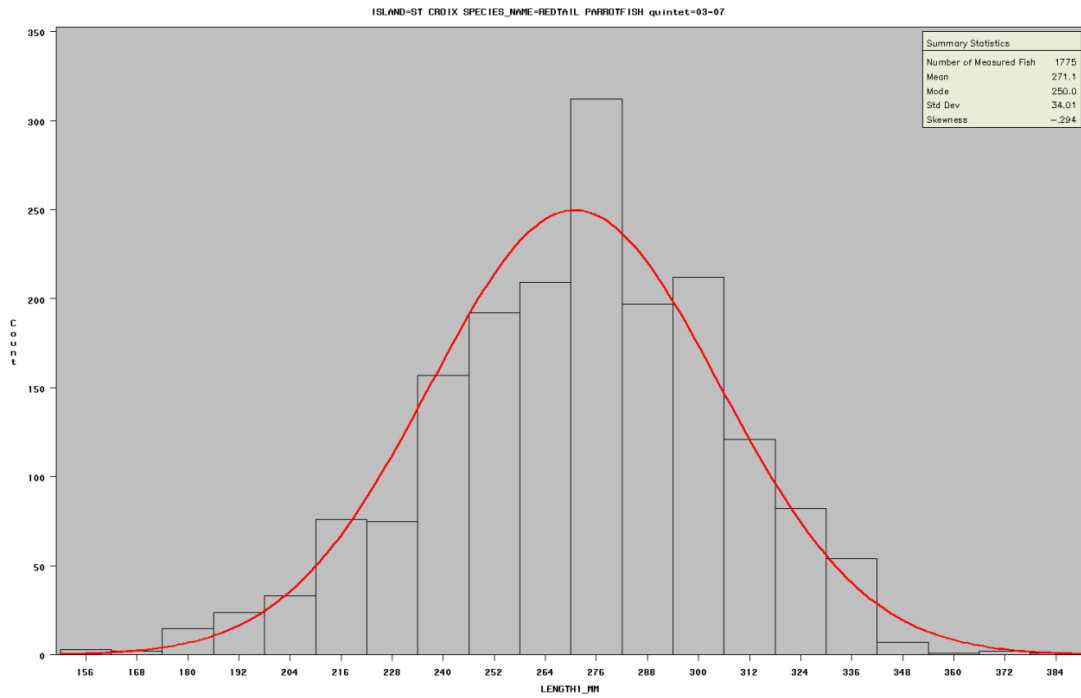


Redtail parrotfish length frequency histograms from St. Croix, in five year bins from 1983-2011.



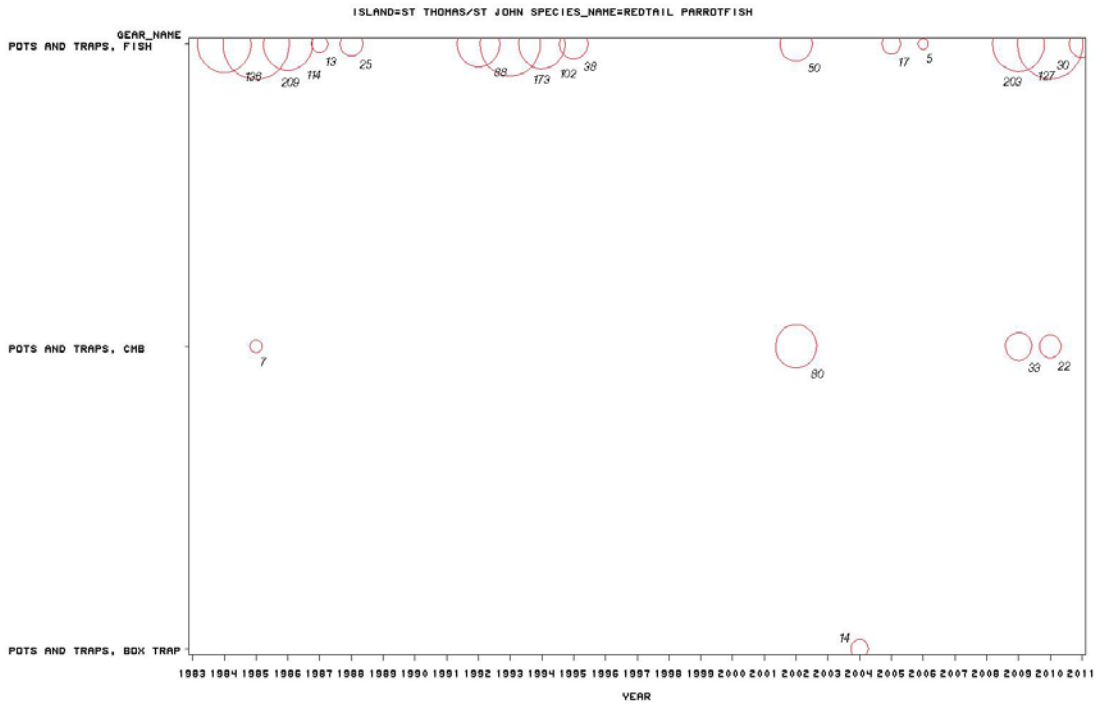




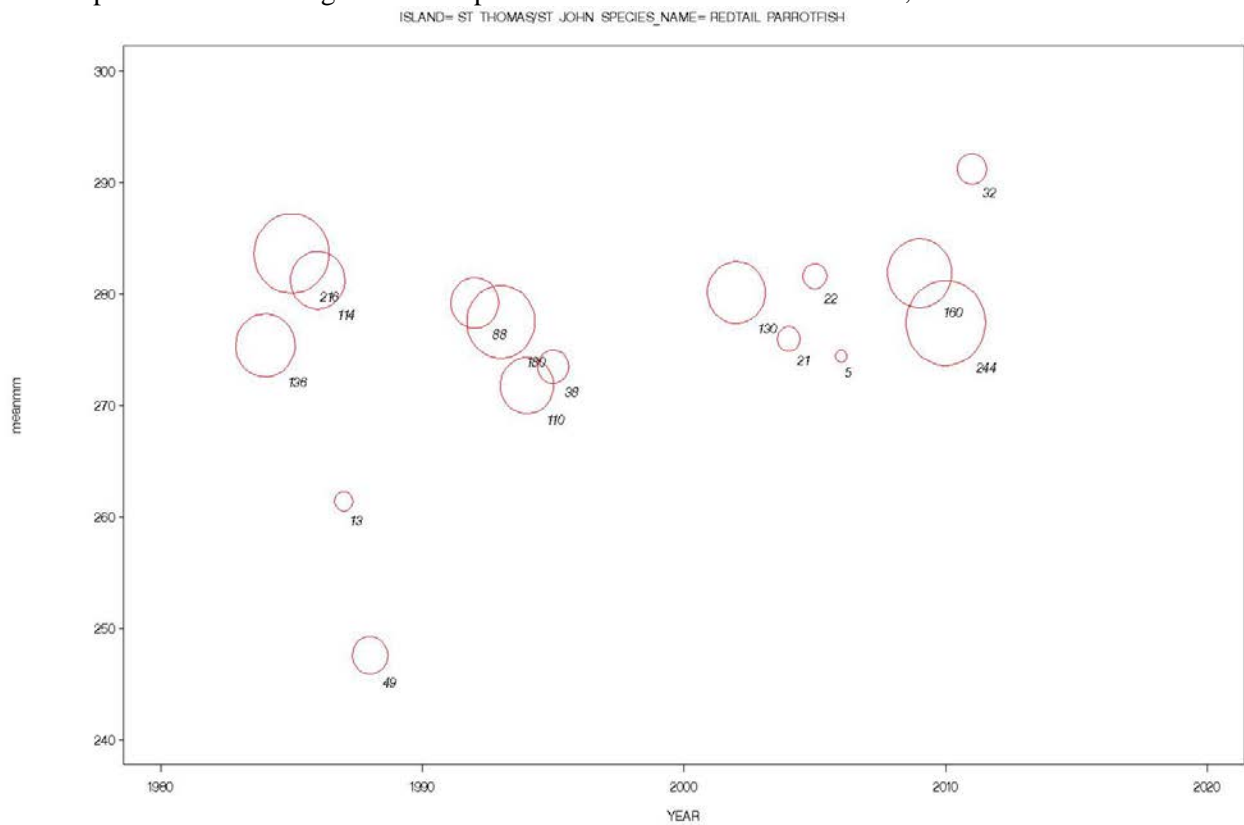


## Redtail Parrotfish – St. Thomas/St. John

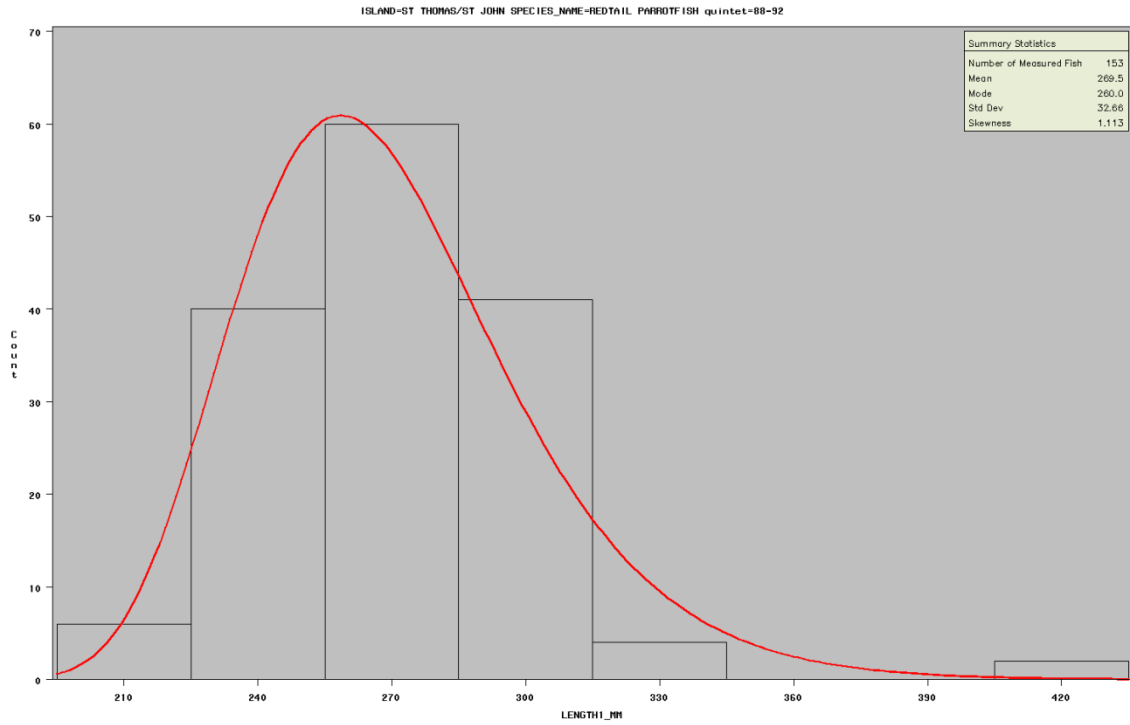
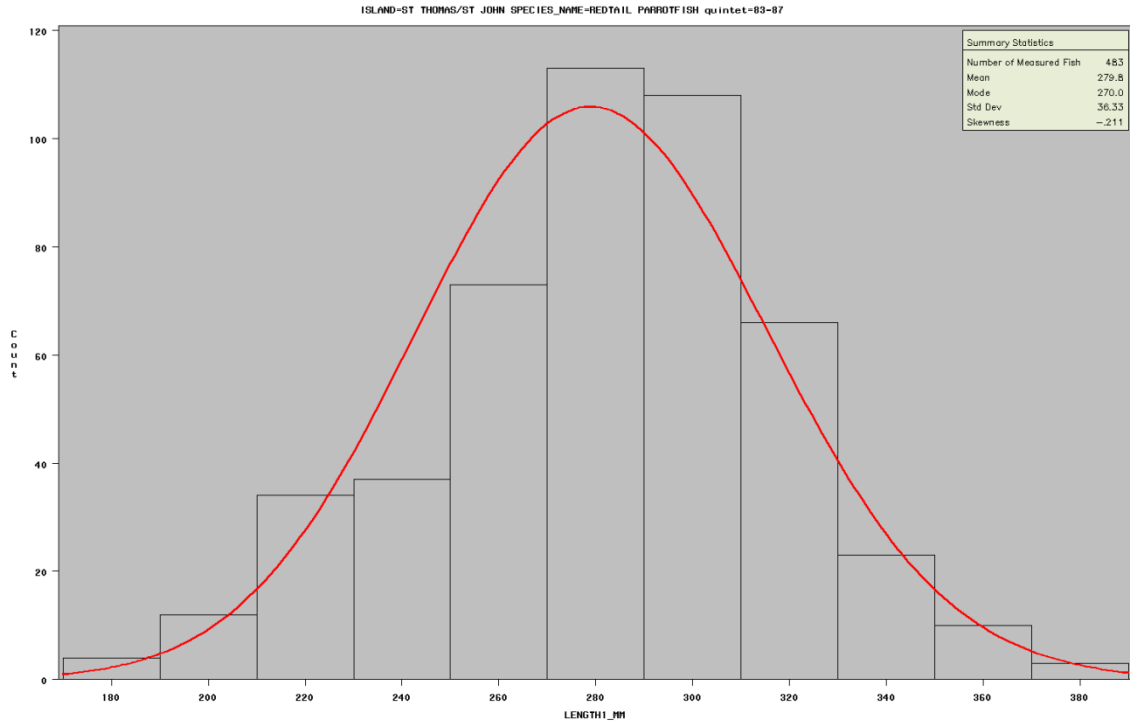
Redtail Parrotfish number of sampled fish by specific gear type from St. Thomas/St. John, 1983-2011.

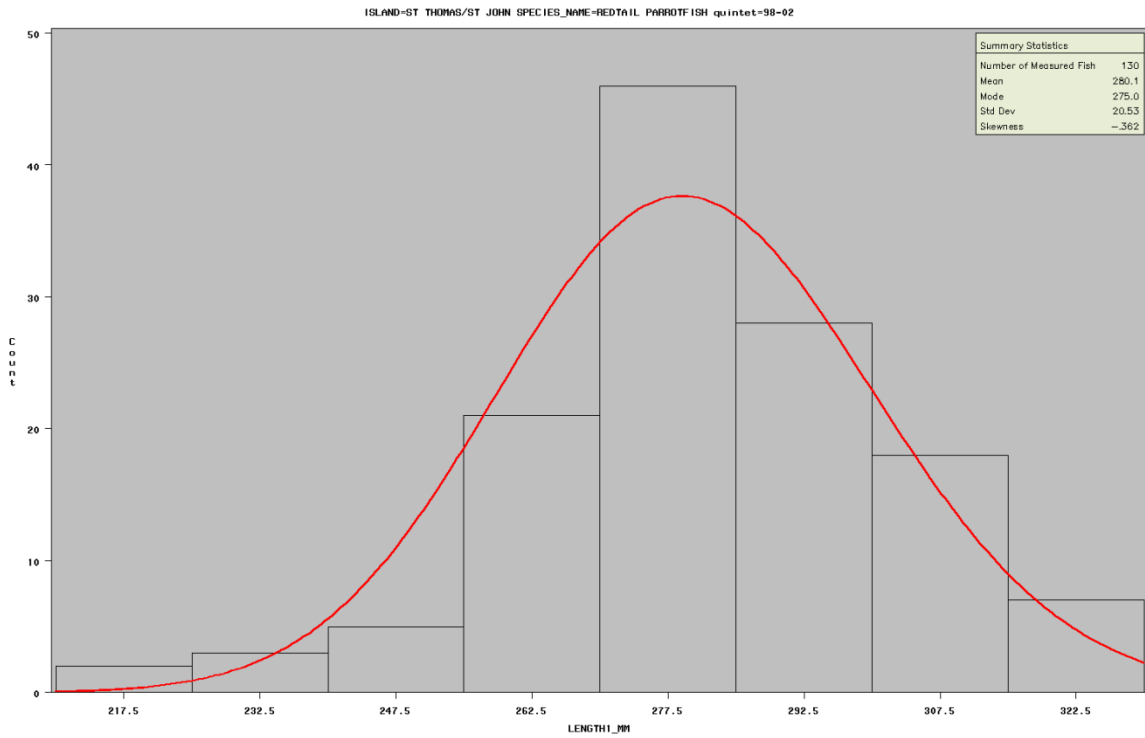
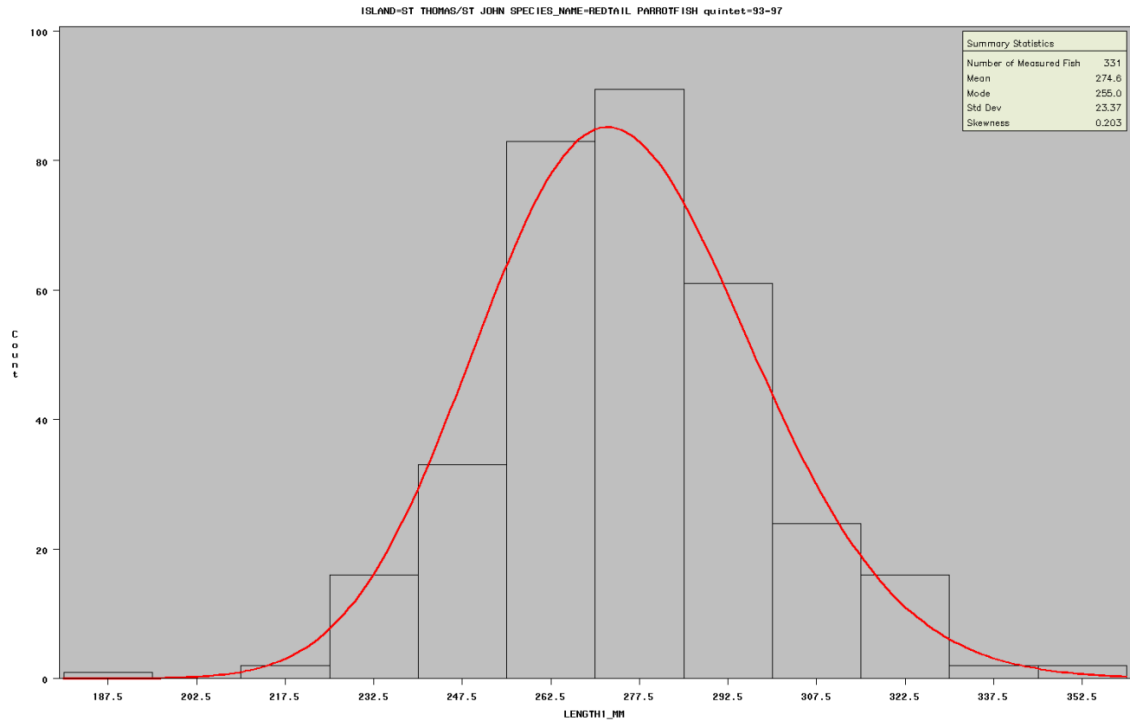


Redtail parrotfish mean lengths and sample sizes from St. Thomas – St. John, 1983-2011.

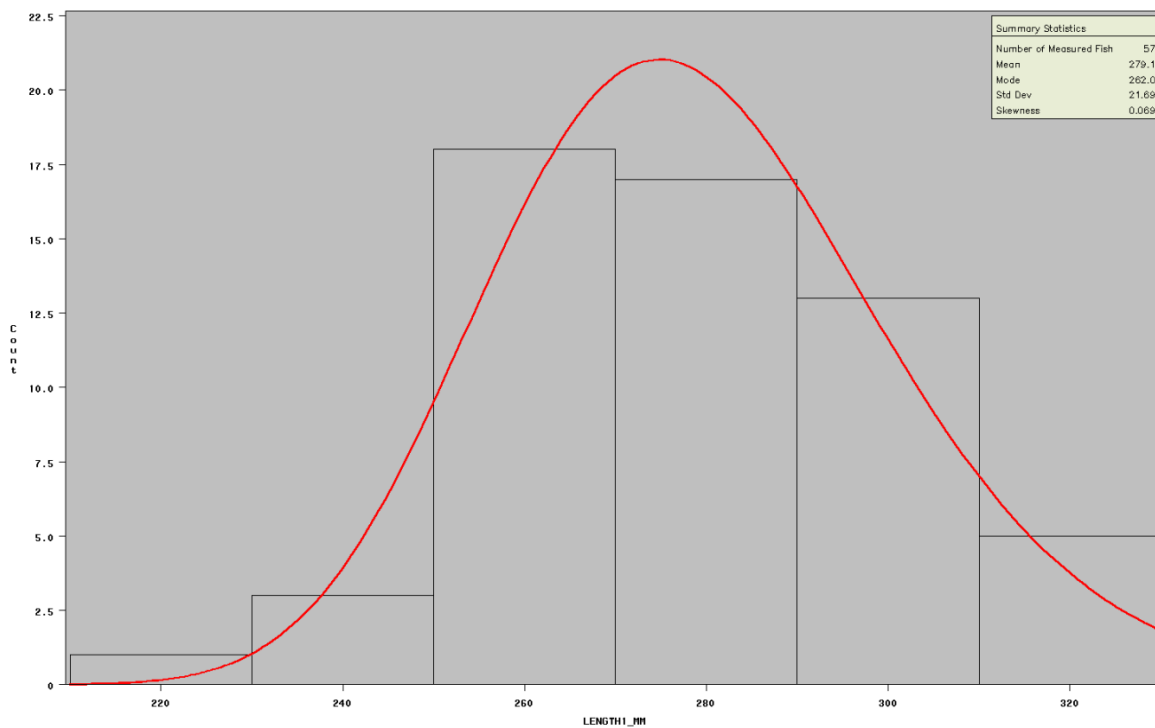


Redtail parrotfish length frequency histograms from St. Thomas/St. John, in five year bins from 1983-2011.





ISLAND-ST THOMAS-ST JOHN SPECIES\_NAME=REDTAIL PARROT FISH quintet=03-07



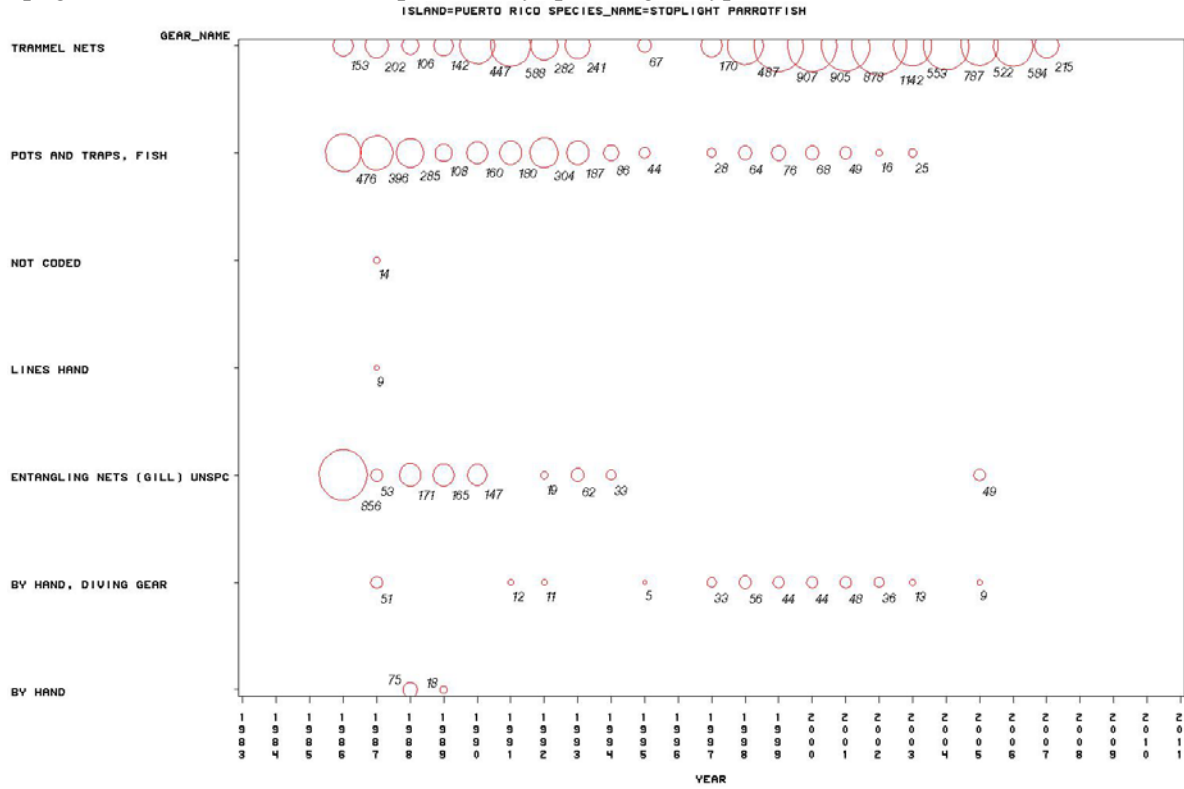
## **Stoplight Parrotfish**

Number of observations of stoplight parrotfish by gear type and island for the years 1983-2011.

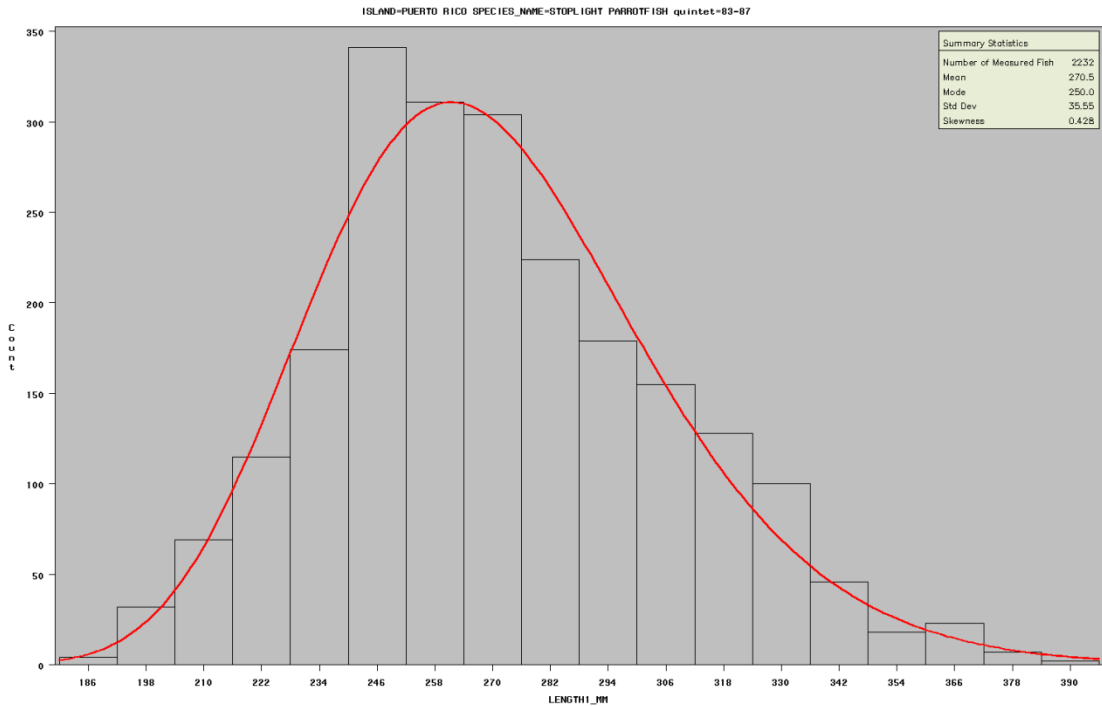
<b>Stoplight Parrotfish</b>		
<b>PUERTO RICO</b>	<b>GILL NETS</b>	11122
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	2614
<b>PUERTO RICO</b>	<b>BY HAND</b>	560
<b>PUERTO RICO</b>	<b>HAND LINE</b>	124
<b>PUERTO RICO</b>	<b>HAUL SEINES</b>	68
<b>PUERTO RICO</b>		25
<b>PUERTO RICO</b>	<b>HOOK AND LINE</b>	25
<b>PUERTO RICO</b>	<b>NOT CODED</b>	14
<b>PUERTO RICO</b>	<b>SPEARS AND GI</b>	2
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	16974
<b>ST CROIX</b>	<b>GILL NETS</b>	2307
<b>ST CROIX</b>	<b>SPEARS AND GI</b>	1015
<b>ST CROIX</b>	<b>BY HAND</b>	341
<b>ST CROIX</b>	<b>HAND LINE</b>	51
<b>ST CROIX</b>	<b>LONG LINES</b>	11
<b>ST CROIX</b>	<b>NOT CODED</b>	3
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	1339
<b>ST THOMAS/ST JOHN</b>	<b>HAUL SEINES</b>	33
<b>ST THOMAS/ST JOHN</b>		12
<b>ST THOMAS/ST JOHN</b>	<b>HAND LINE</b>	4
<b>ST THOMAS/ST JOHN</b>	<b>PURSE SEINES</b>	2
<b>ST THOMAS/ST JOHN</b>	<b>HOOK AND LINE</b>	1

# Stoplight Parrotfish – Puerto Rico

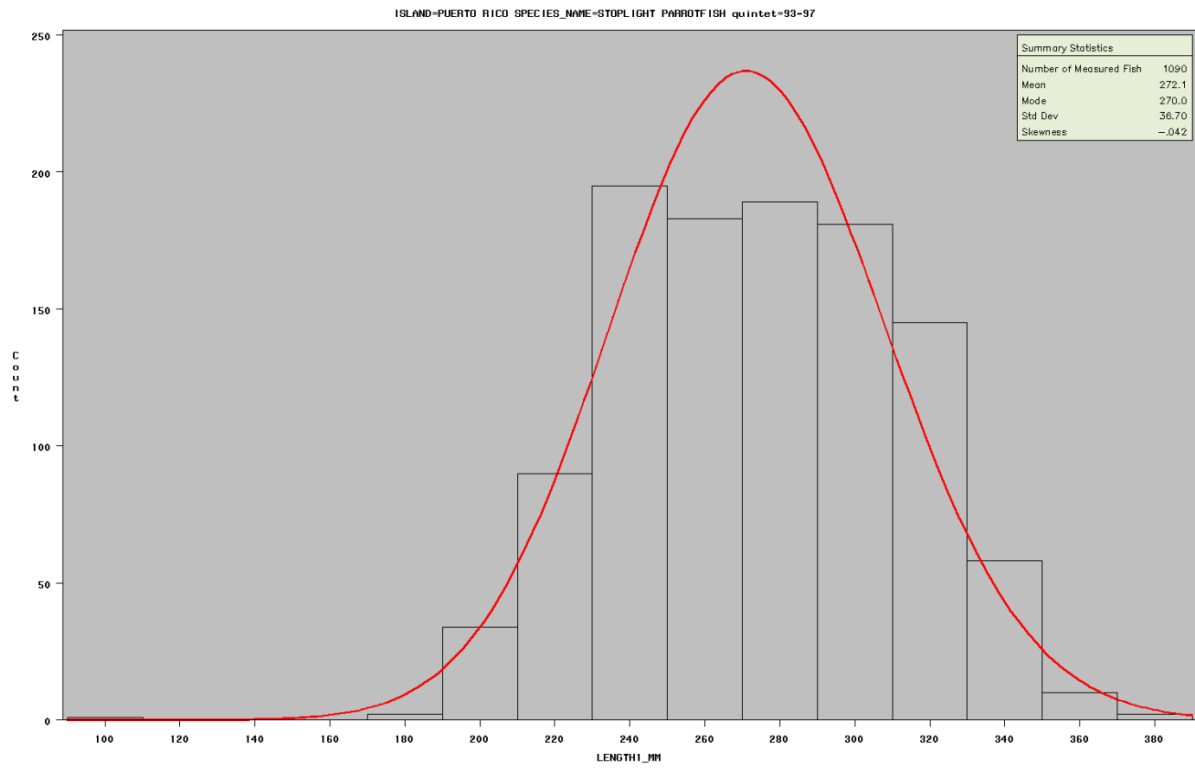
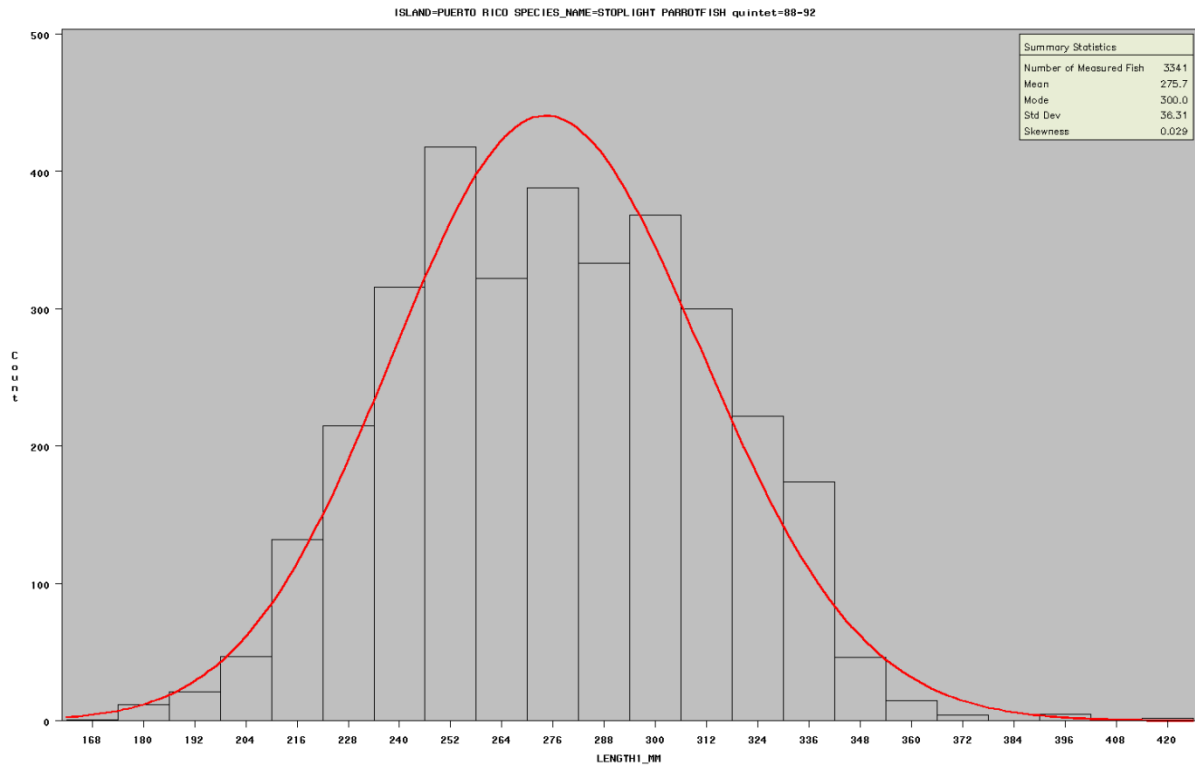
Stoplight Parrotfish number of sampled fish by specific gear type from Puerto Rico, 1983-2011.

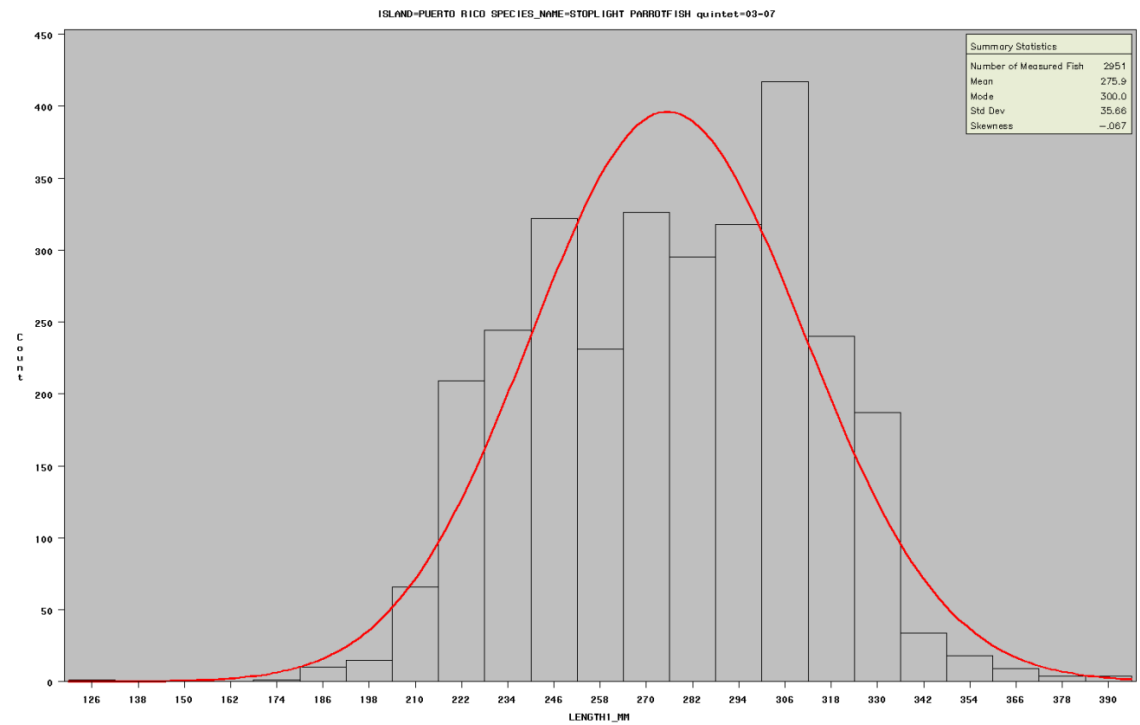
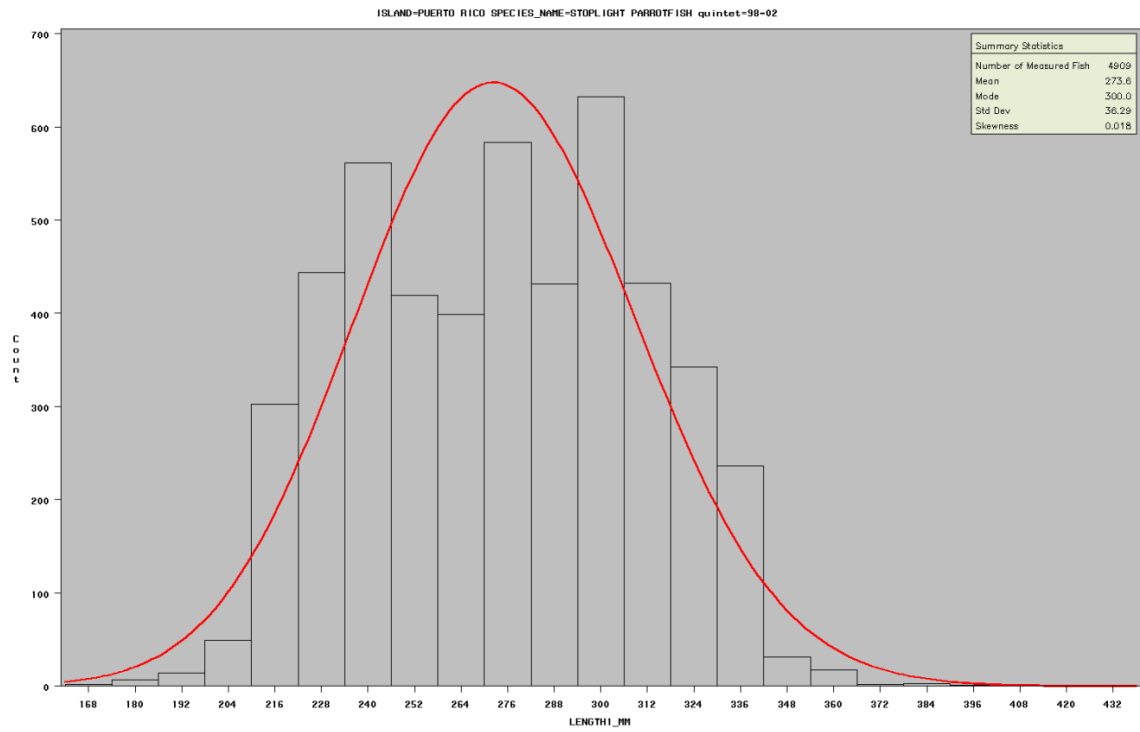


Stoplight parrotfish length frequency histograms from Puerto Rico, in five year bins from 1983-2011.



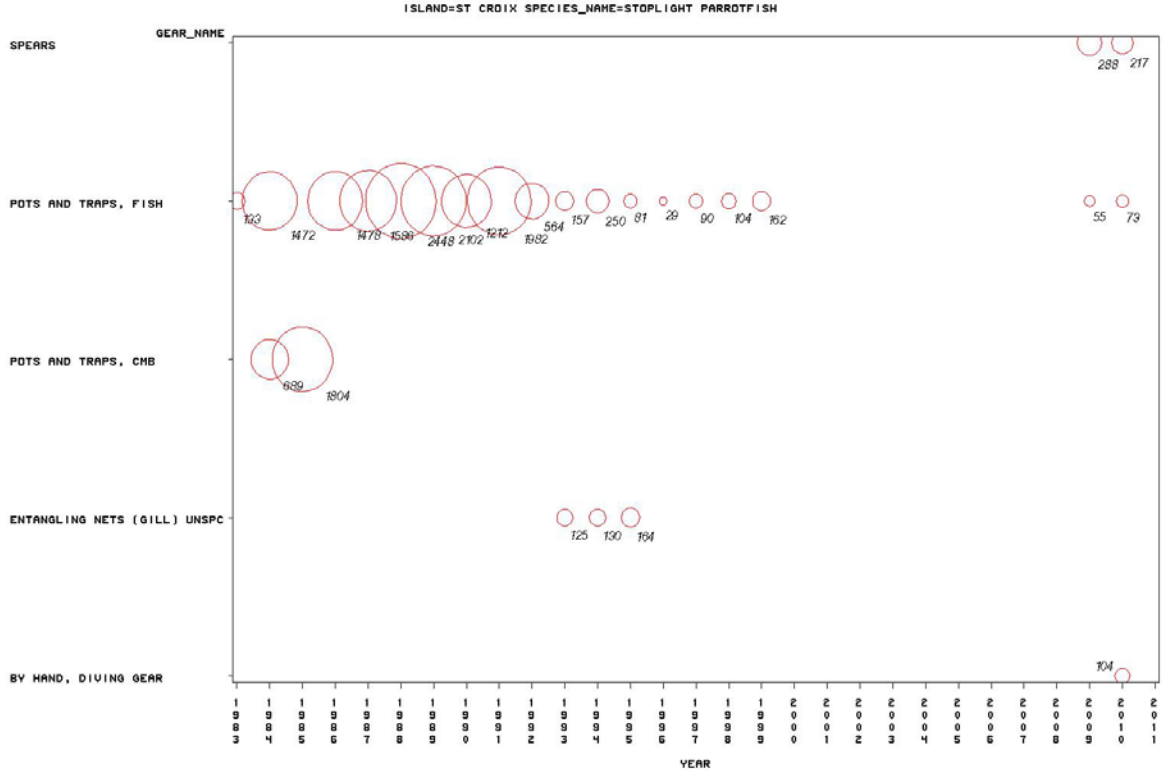




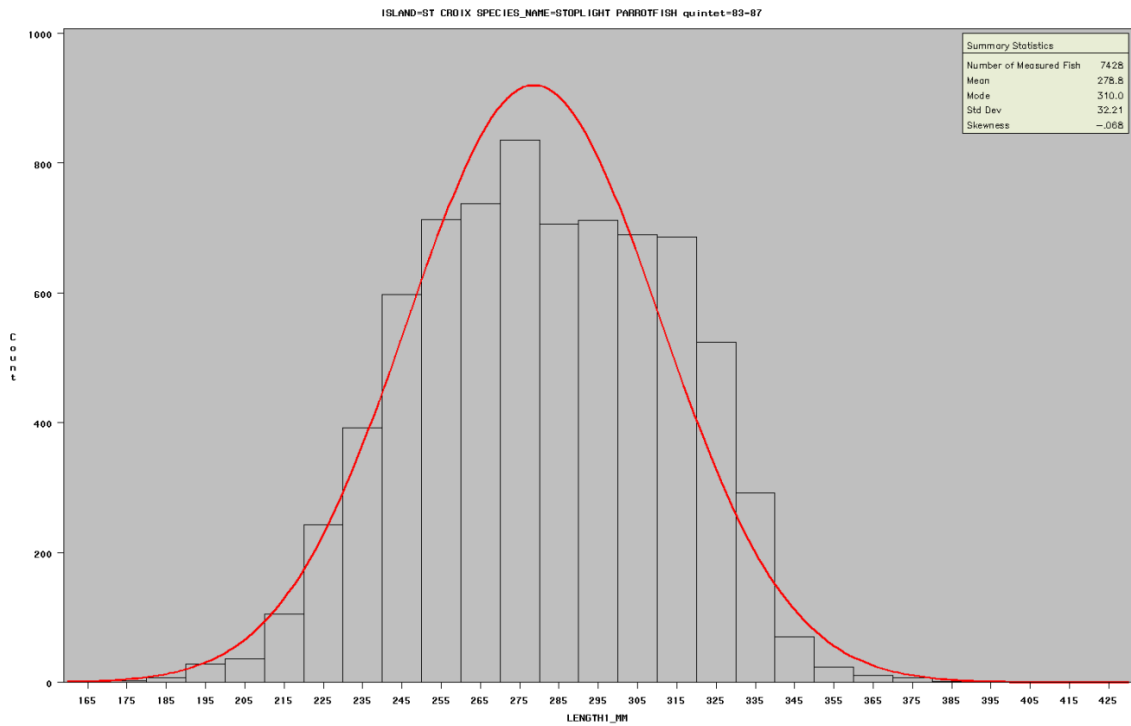


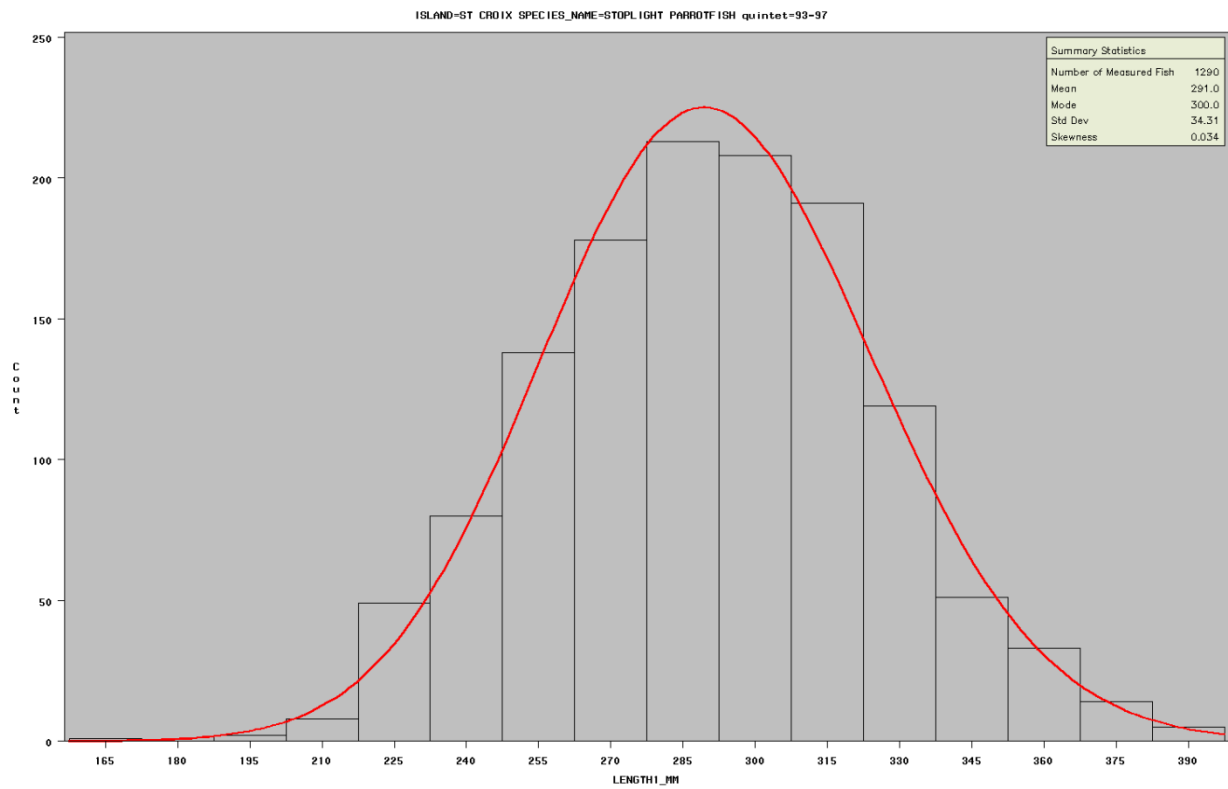
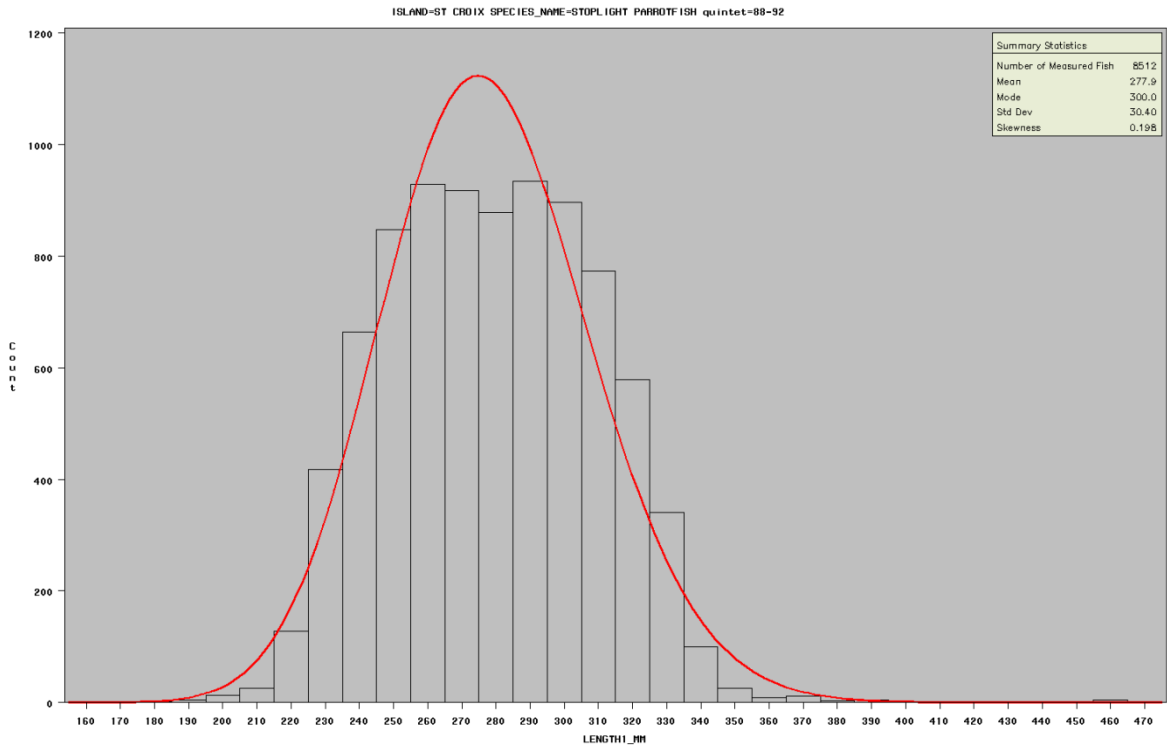
# Stoplight Parrotfish – St. Croix

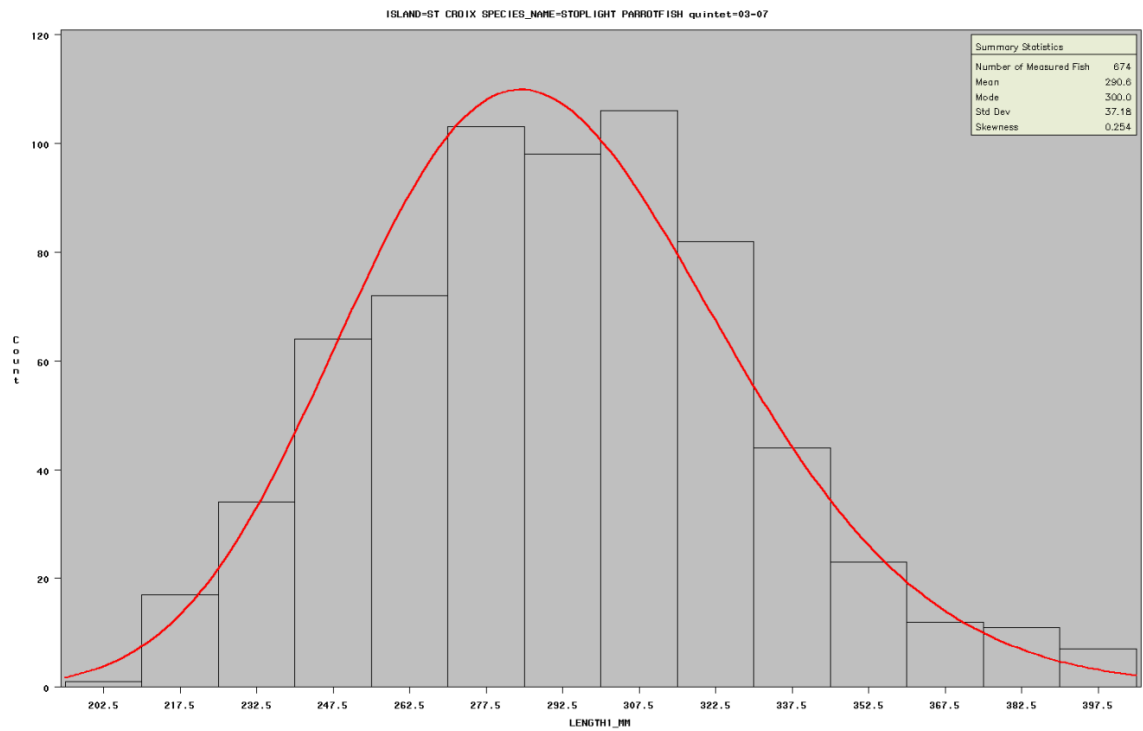
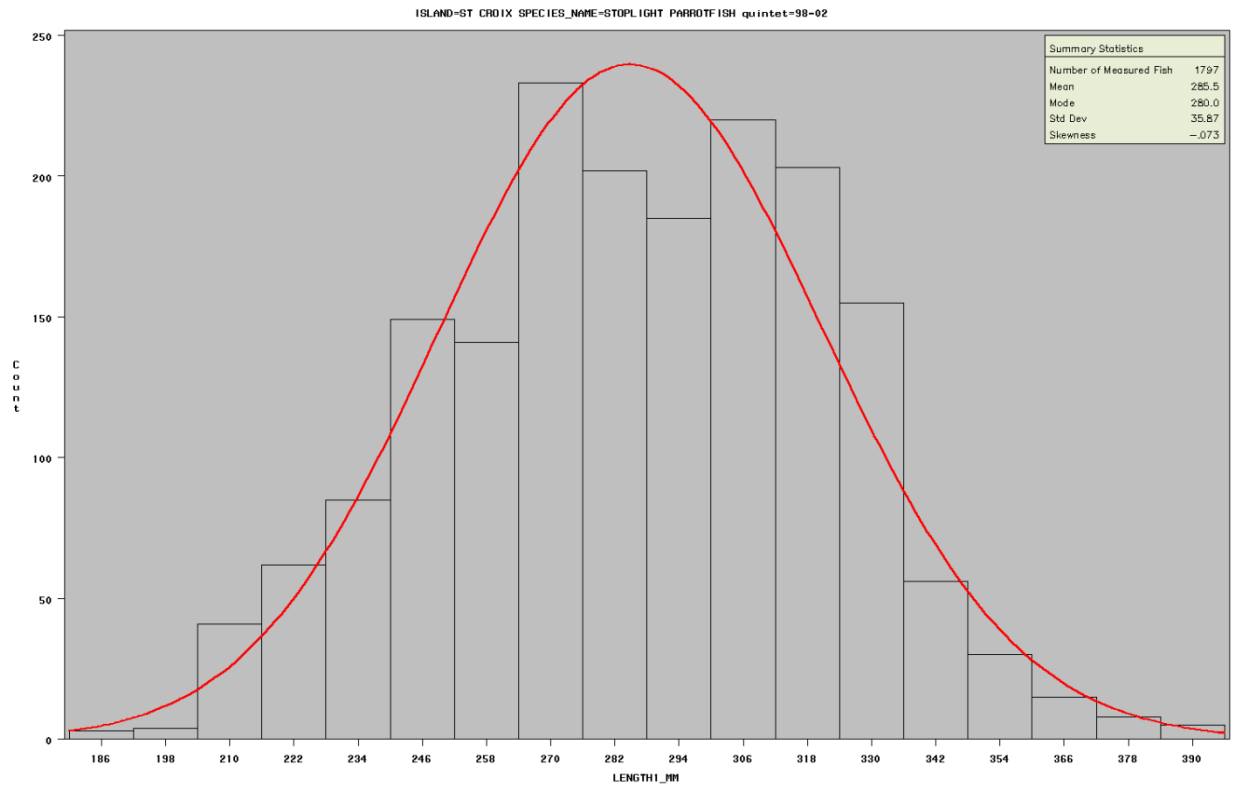
Stoplight Parrotfish number of sampled fish by specific gear type from St. Croix, 1983-2011.



Stoplight parrotfish length frequency histograms from St. Croix, in five year bins from 1983-2011.

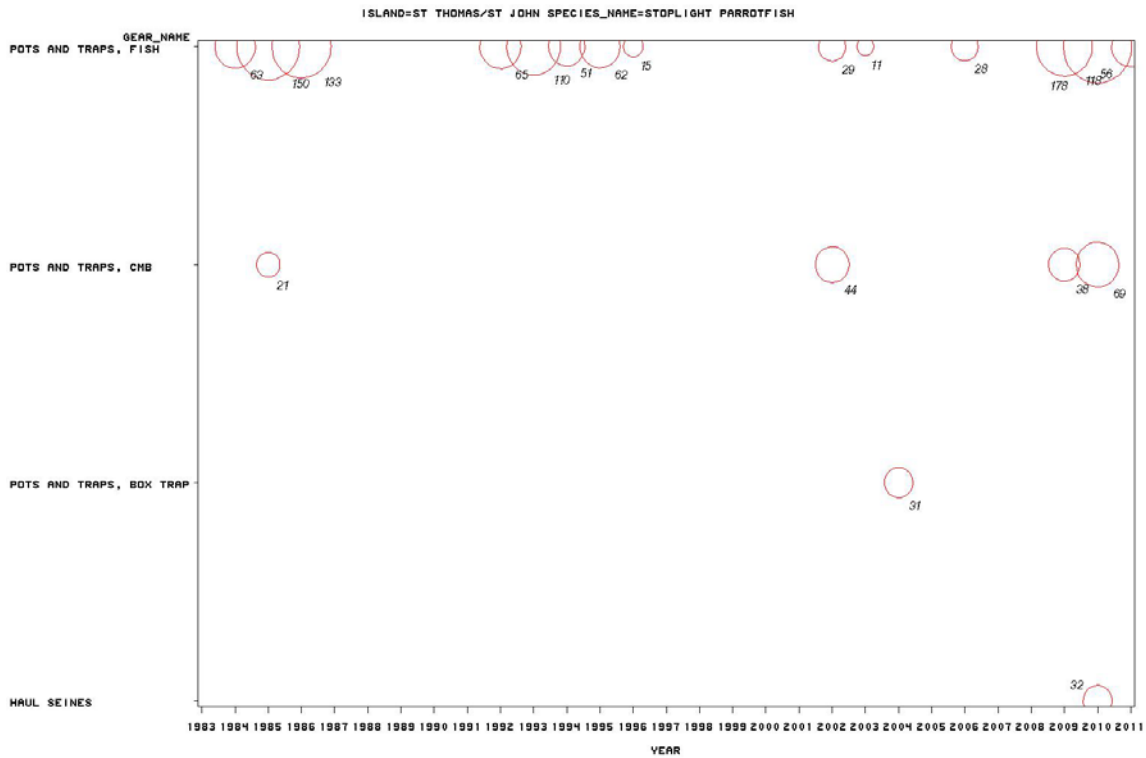




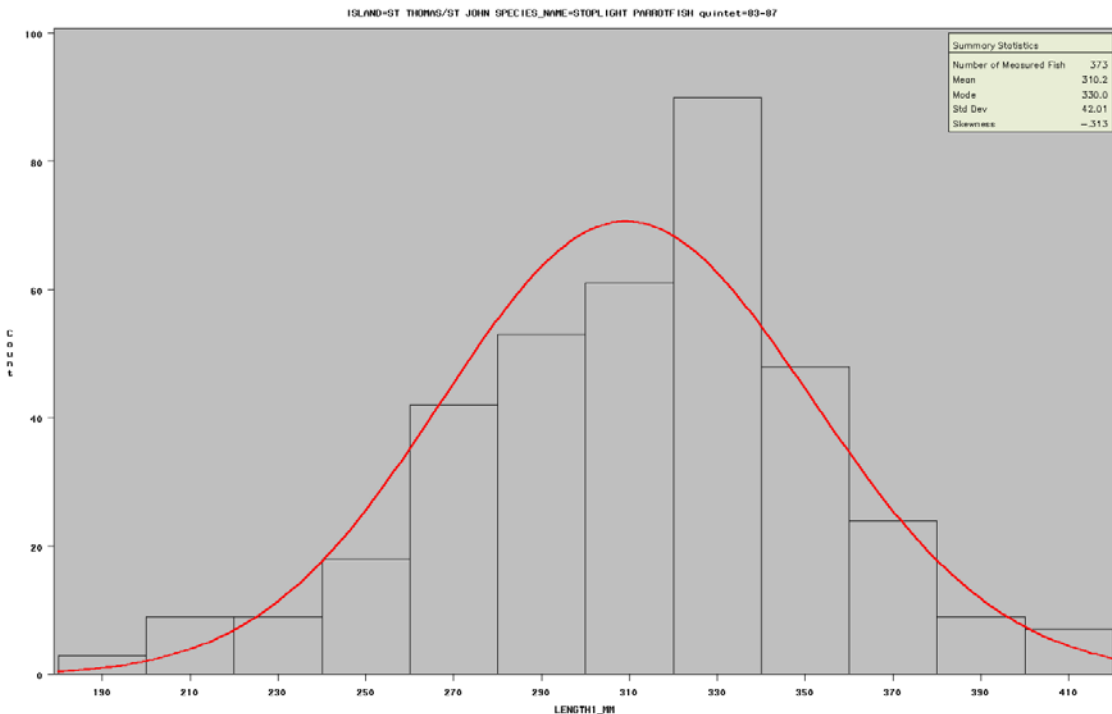


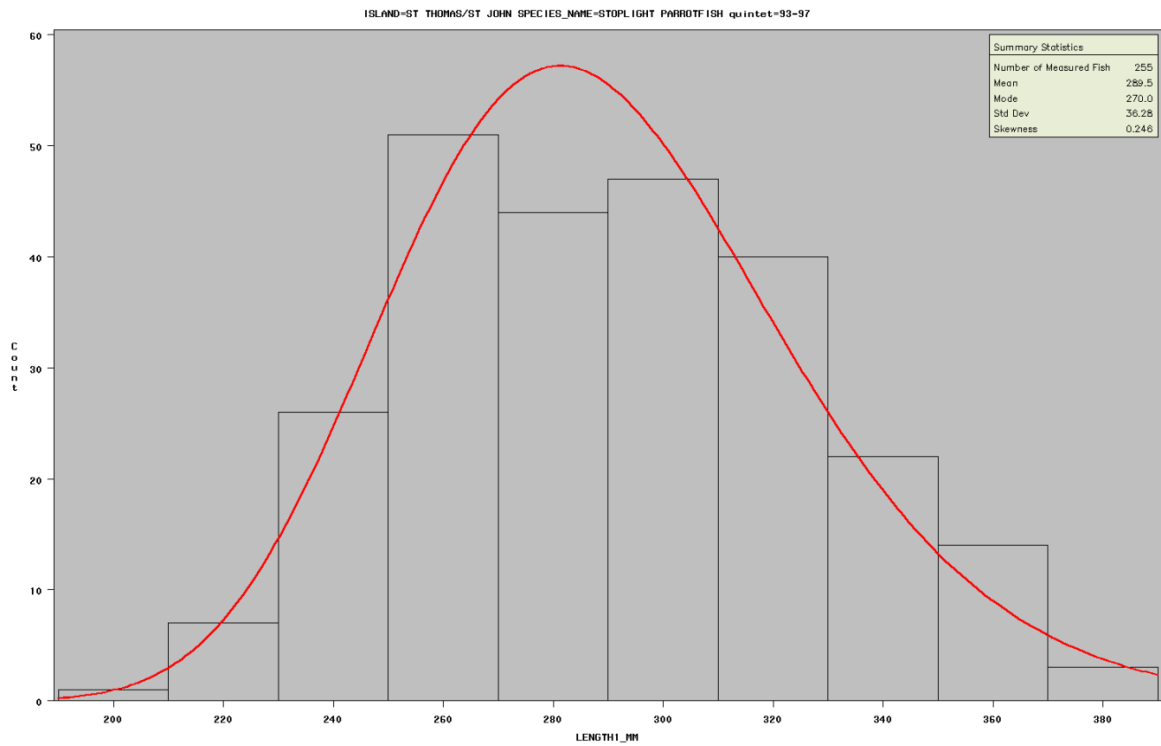
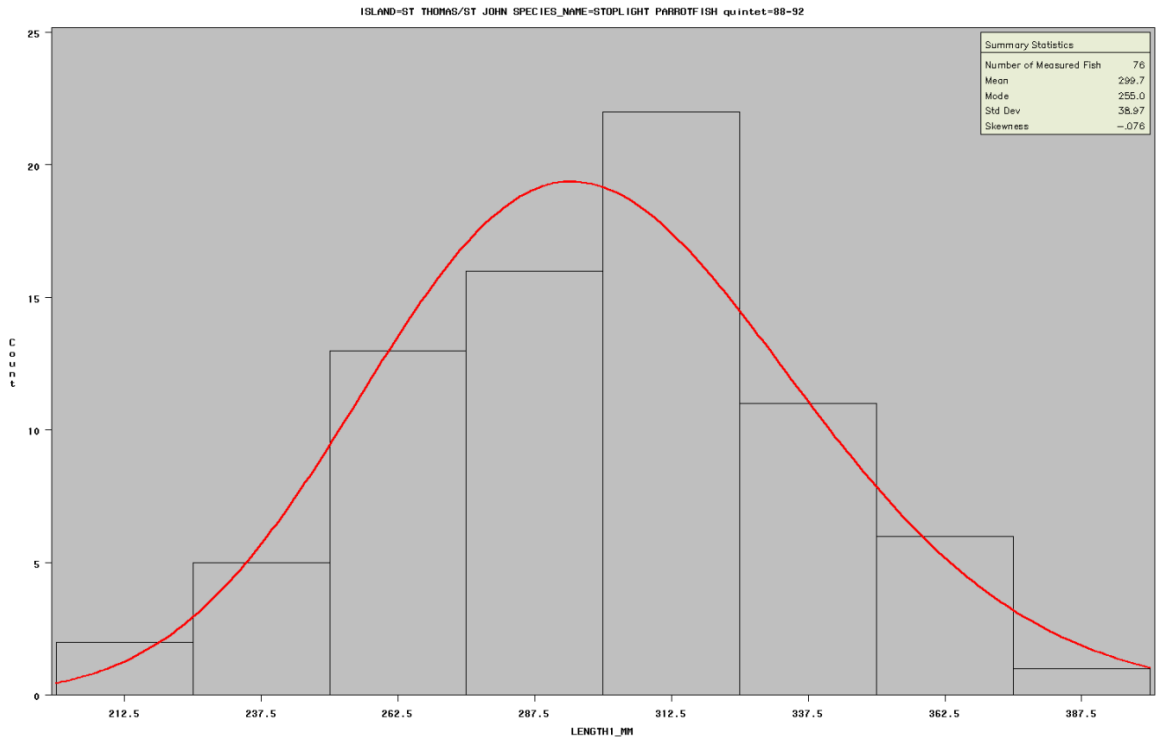
## Stoplight Parrotfish – St. Thomas/St. John

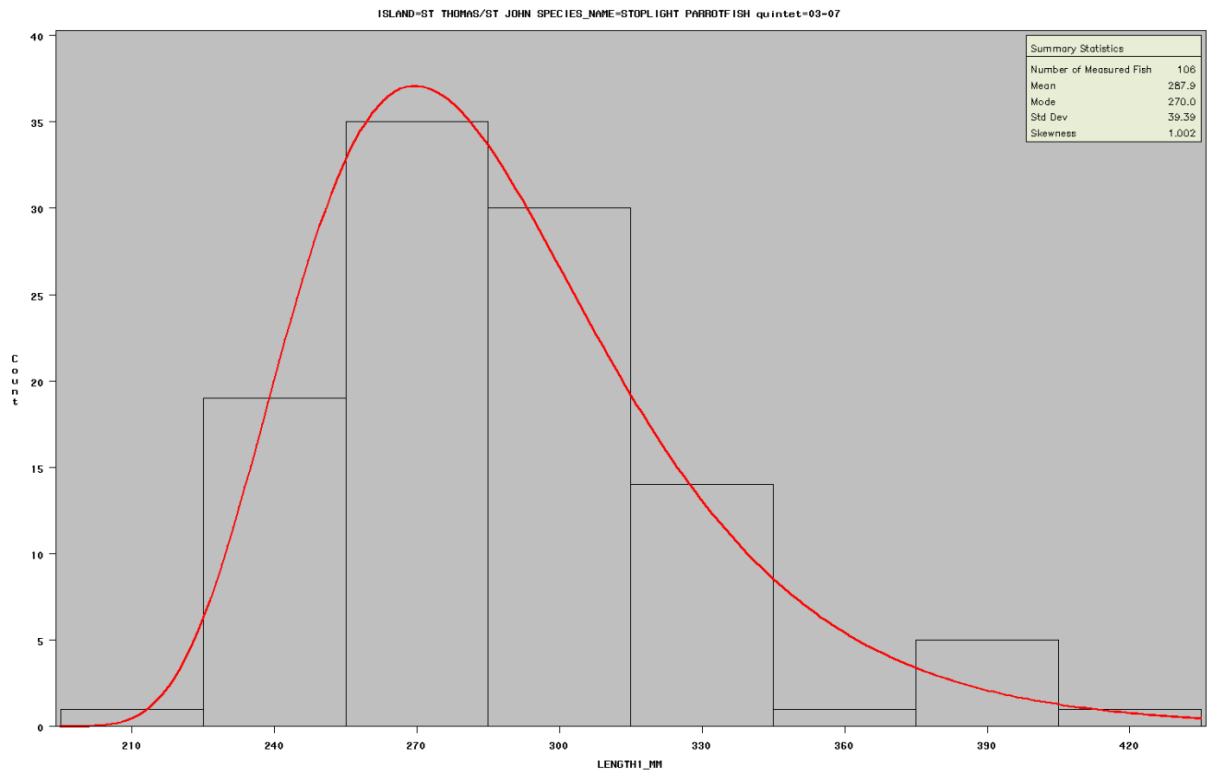
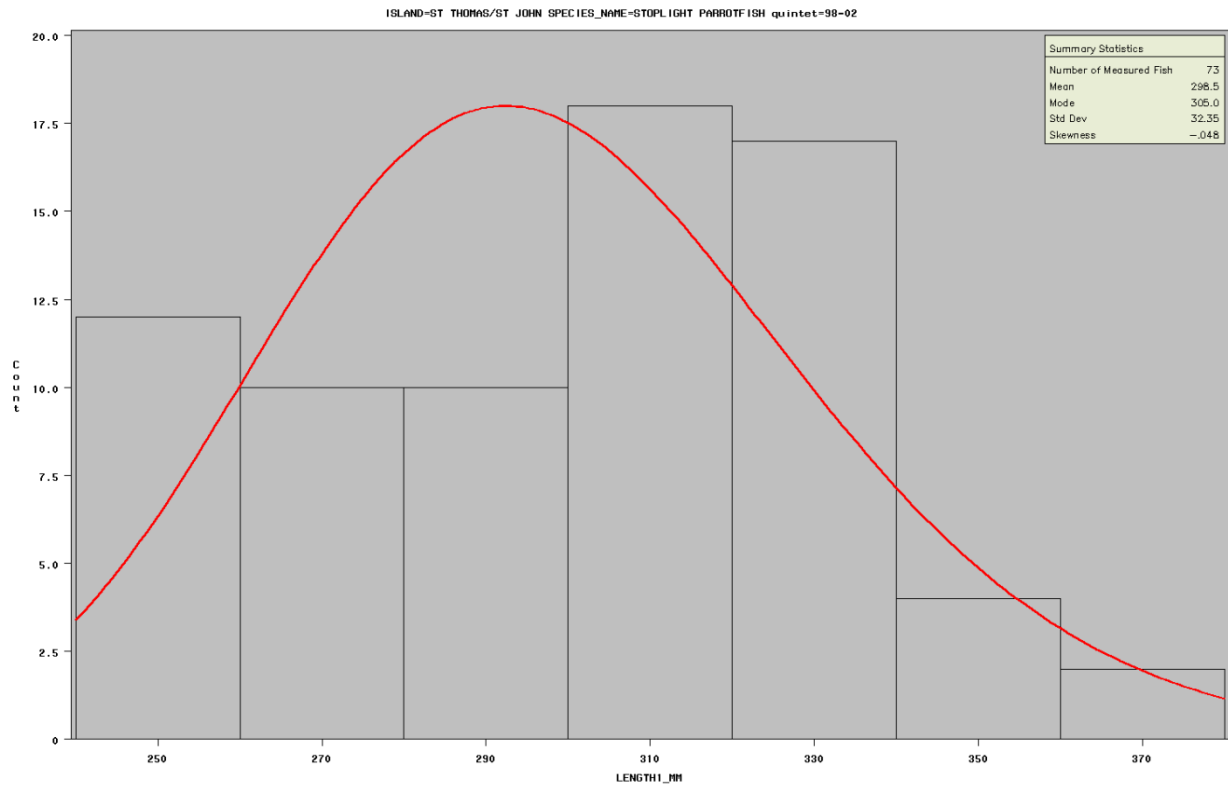
Stoplight Parrotfish number of sampled fish by specific gear type from St. Thomas/St. John, 1983-2011.



Stoplight parrotfish length frequency histograms from St. Thomas – St. John, in five year bins from 1983-2011.









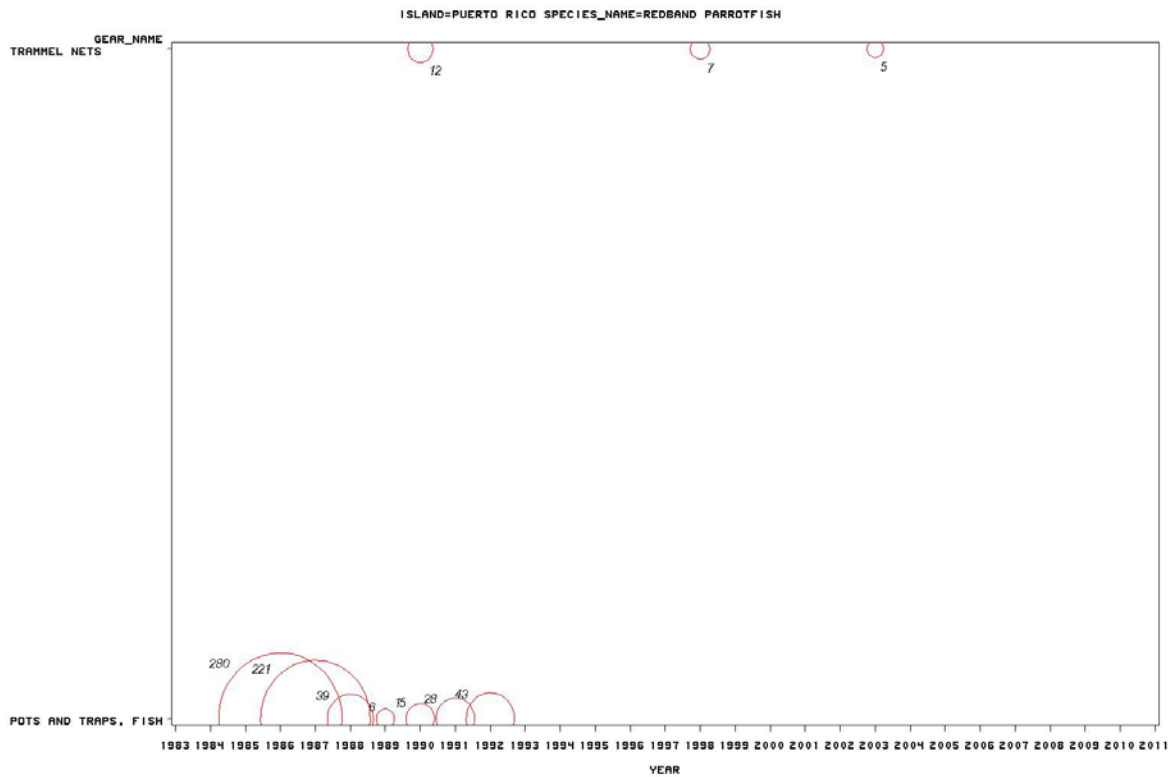
## **Redband Parrotfish**

Number of observations of redband parrotfish by gear type and island for the years 1983-2011.

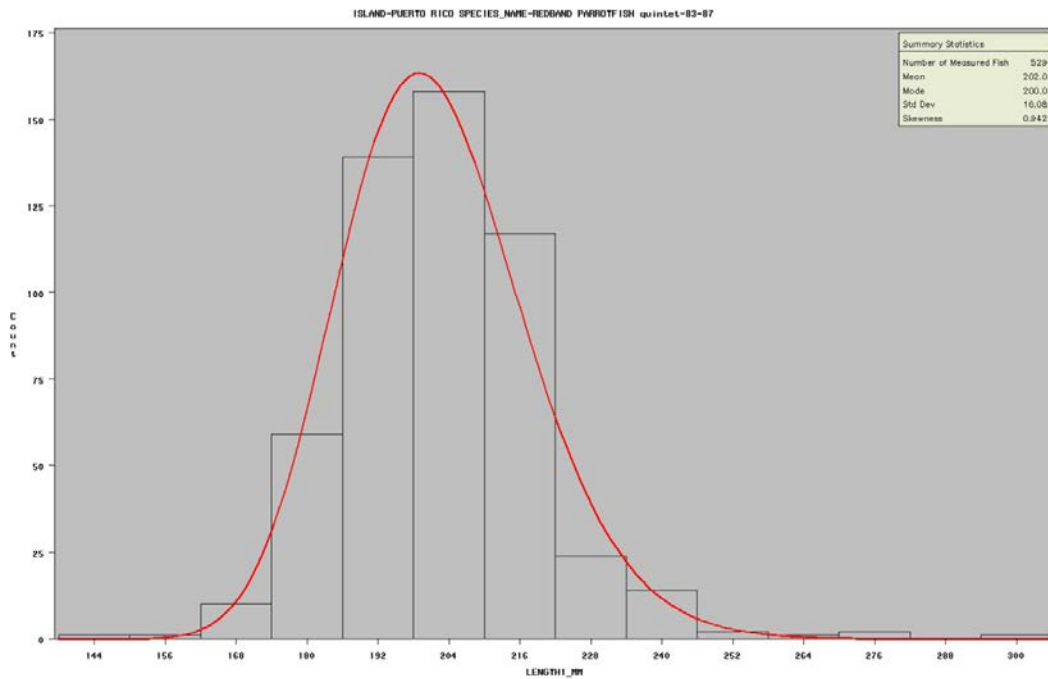
<b>Redband Parrotfish</b>		
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	653
<b>PUERTO RICO</b>	<b>GILL NETS</b>	179
<b>PUERTO RICO</b>	<b>HAND LINE</b>	7
<b>PUERTO RICO</b>	<b>HAUL SEINES</b>	6
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	5451
<b>ST CROIX</b>	<b>GILL NETS</b>	686
<b>ST CROIX</b>	<b>BY HAND</b>	177
<b>ST CROIX</b>	<b>SPEARS AND GI</b>	92
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	200
<b>ST THOMAS/ST JOHN</b>		26

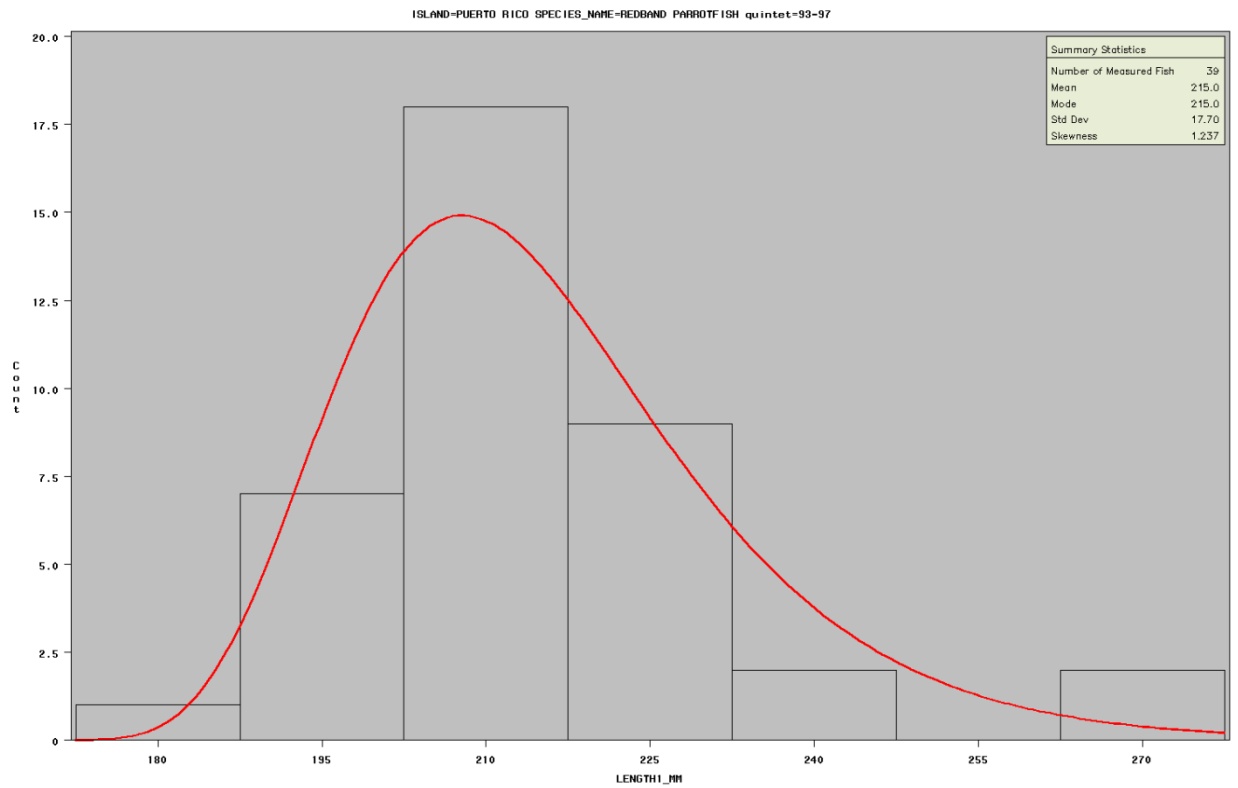
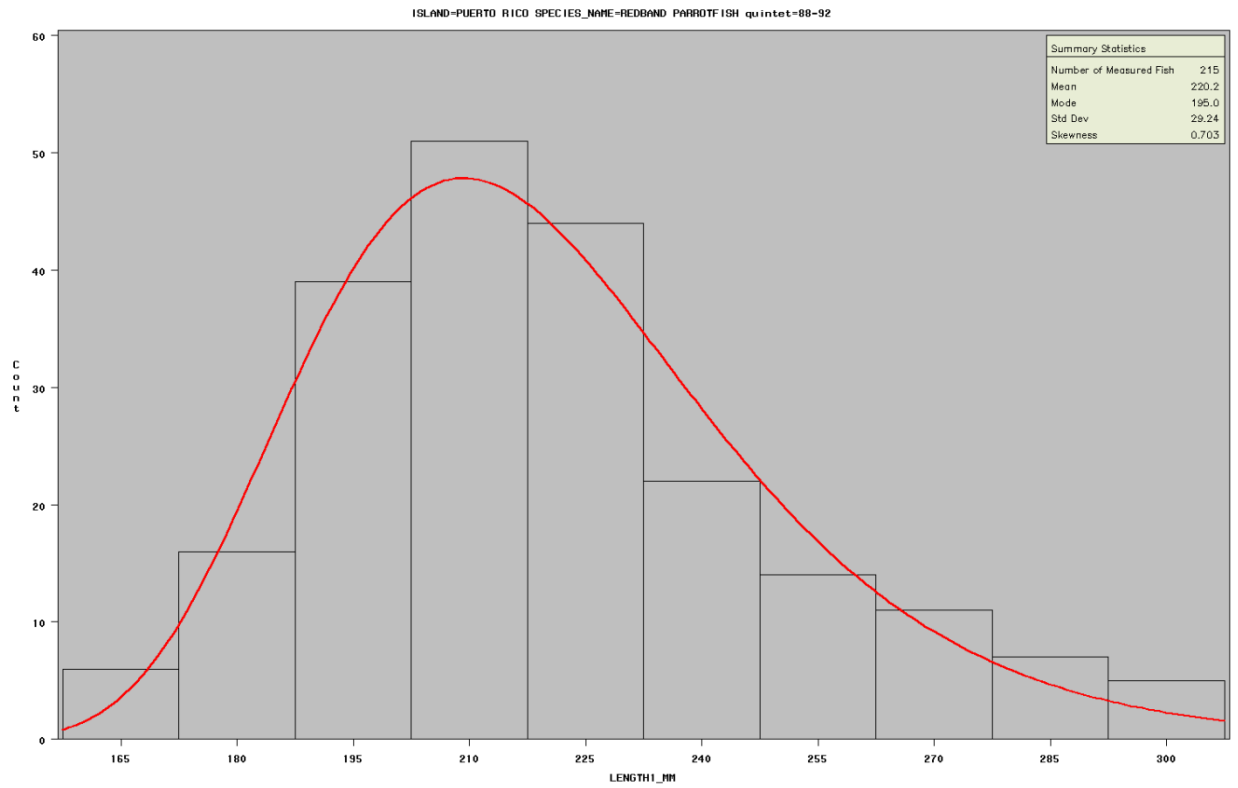
## Redband Parrotfish – Puerto Rico

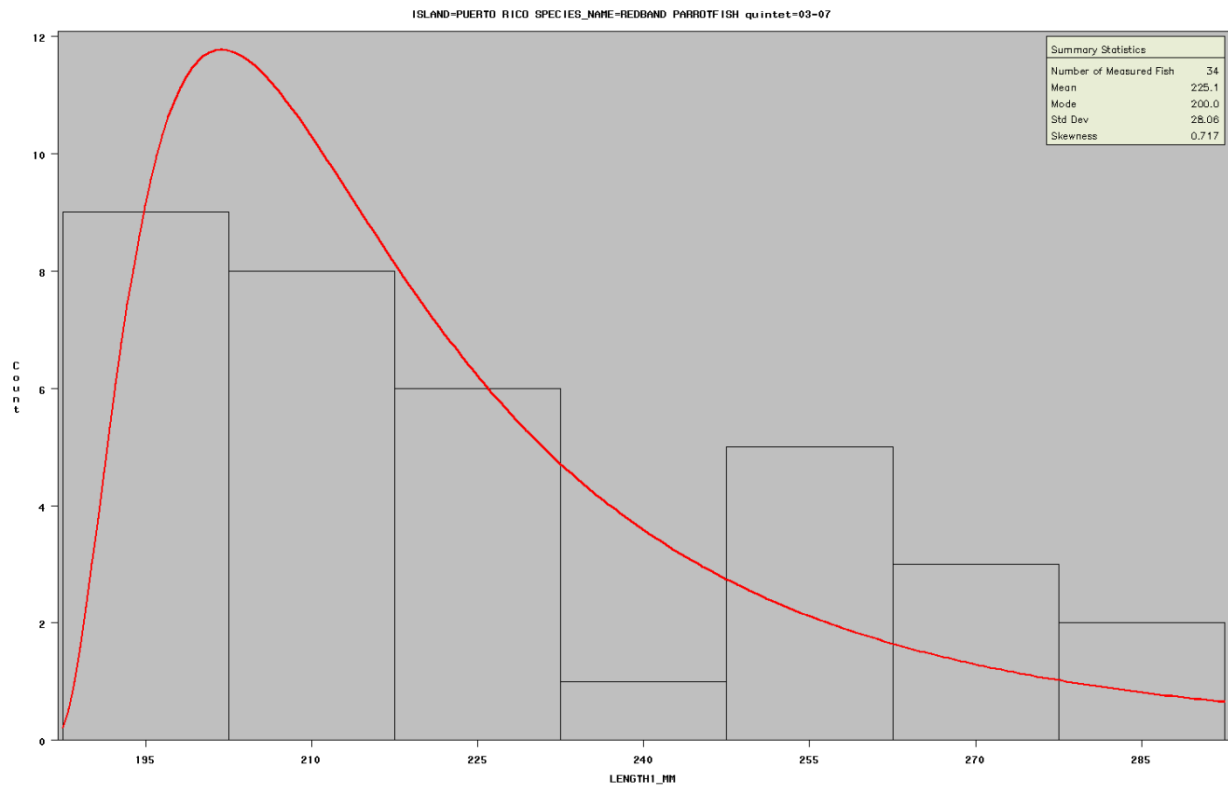
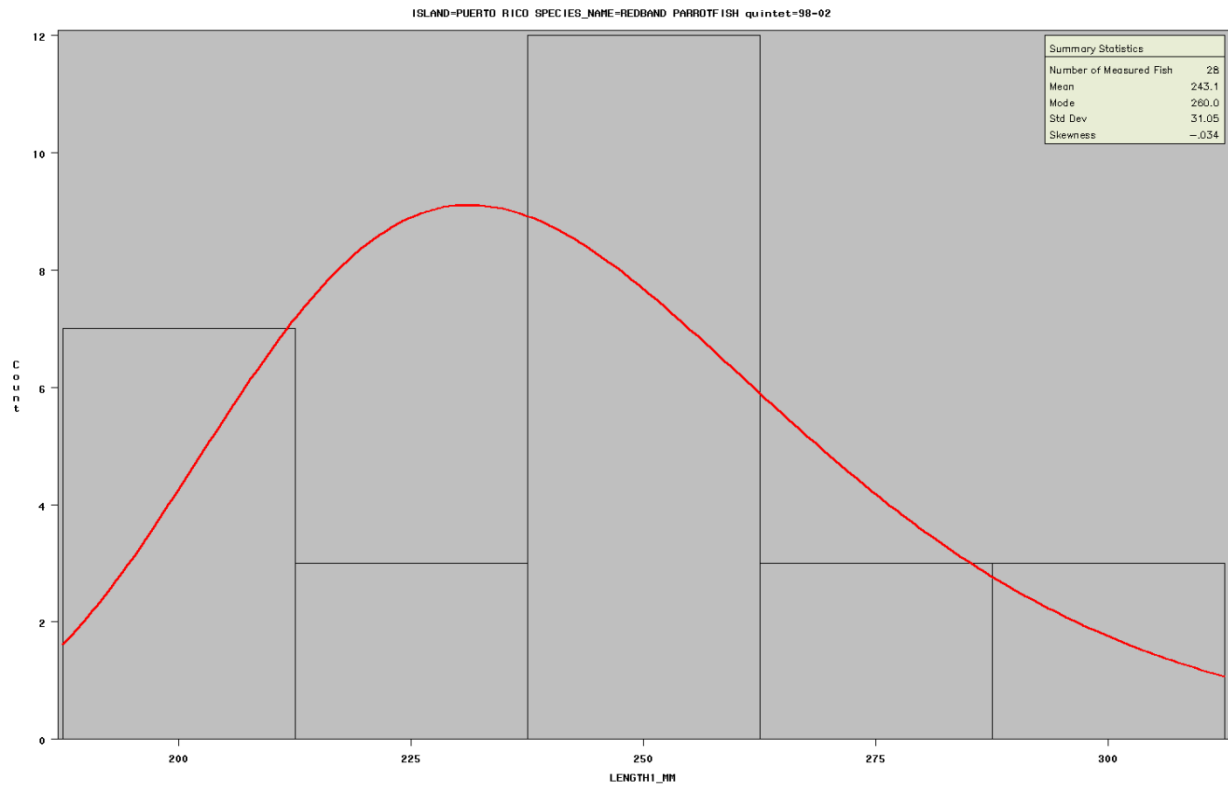
Redband Parrotfish number of sampled fish by specific gear type from Puerto Rico, 1983-2011.



Redband parrotfish length frequency histograms from Puerto Rico, in five year bins from 1983-2011.

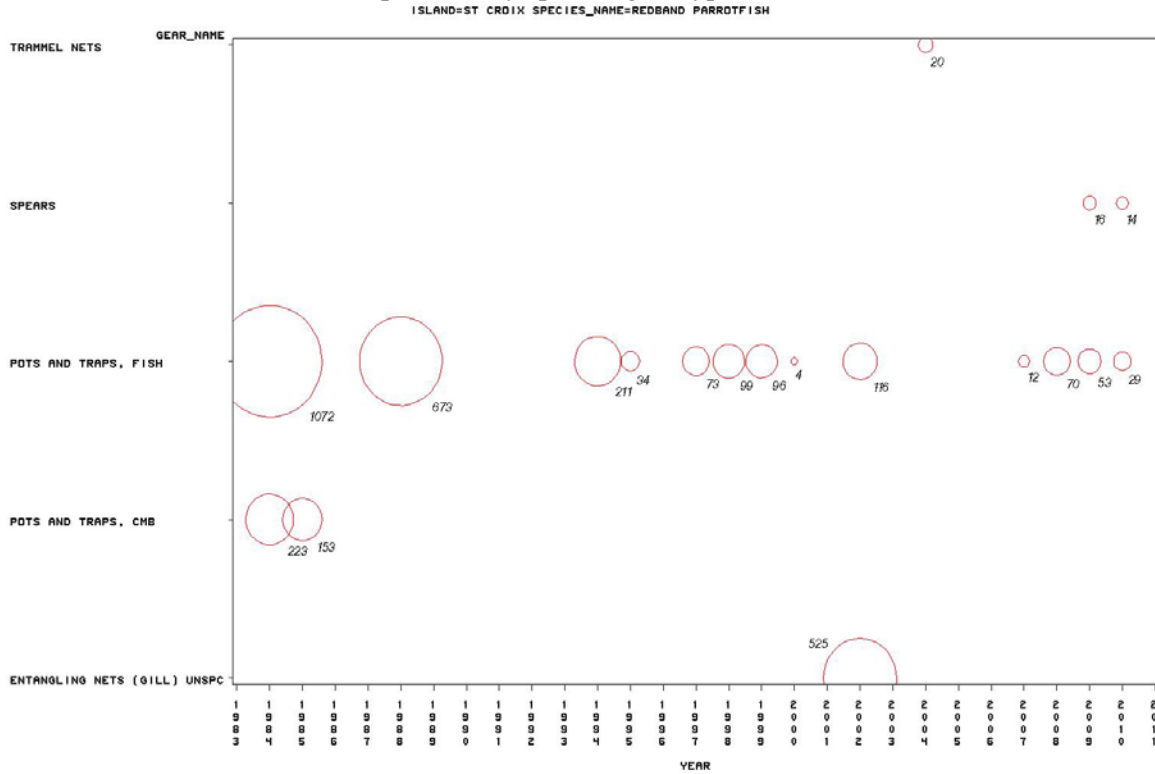




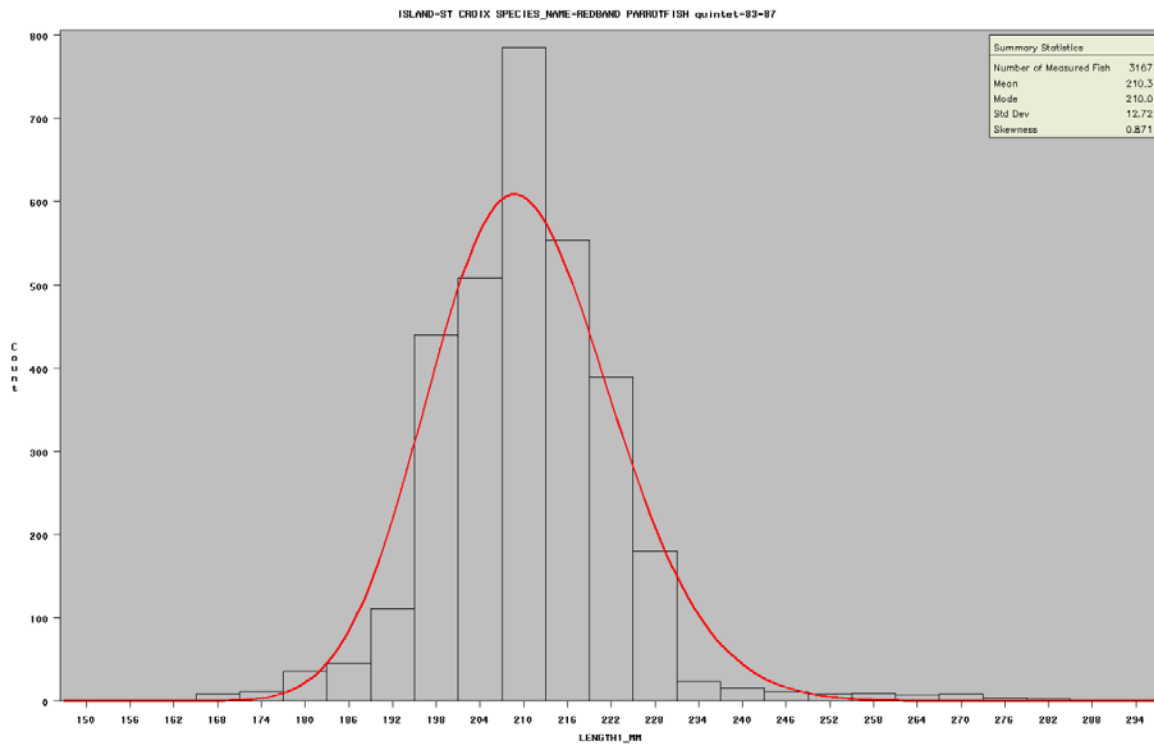


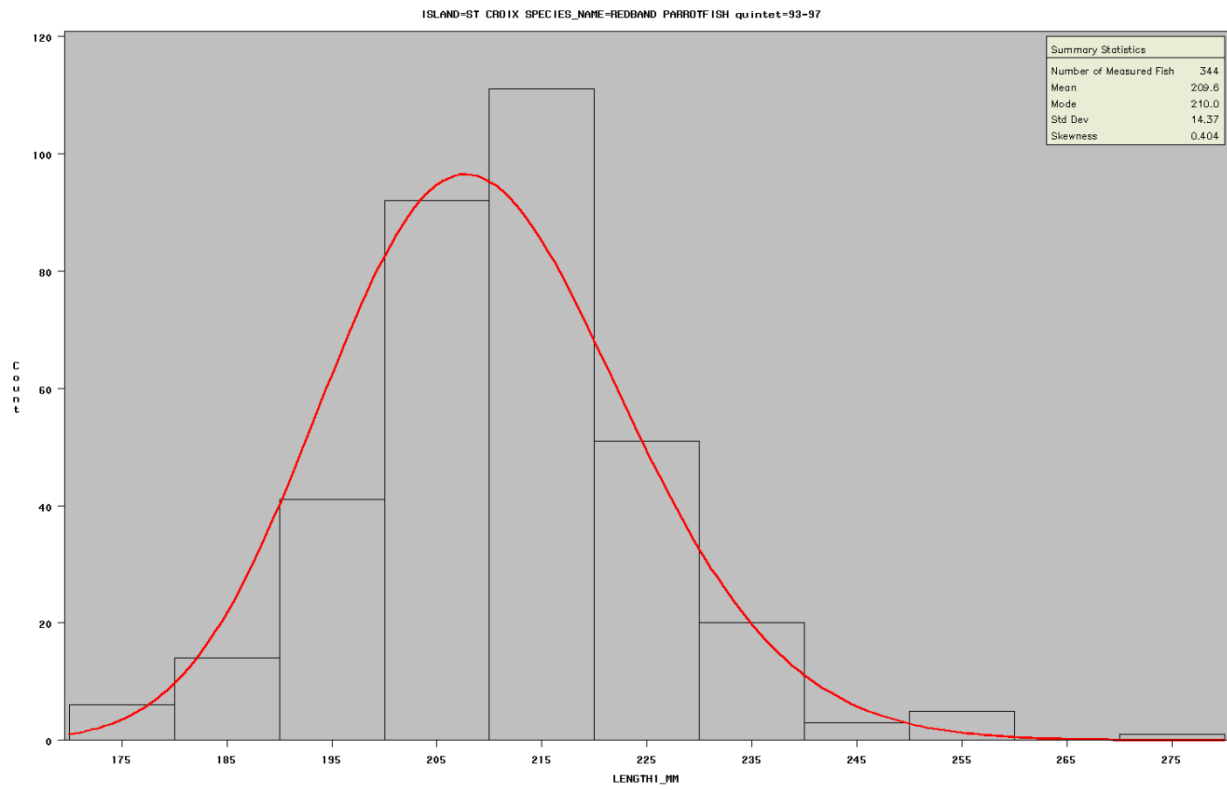
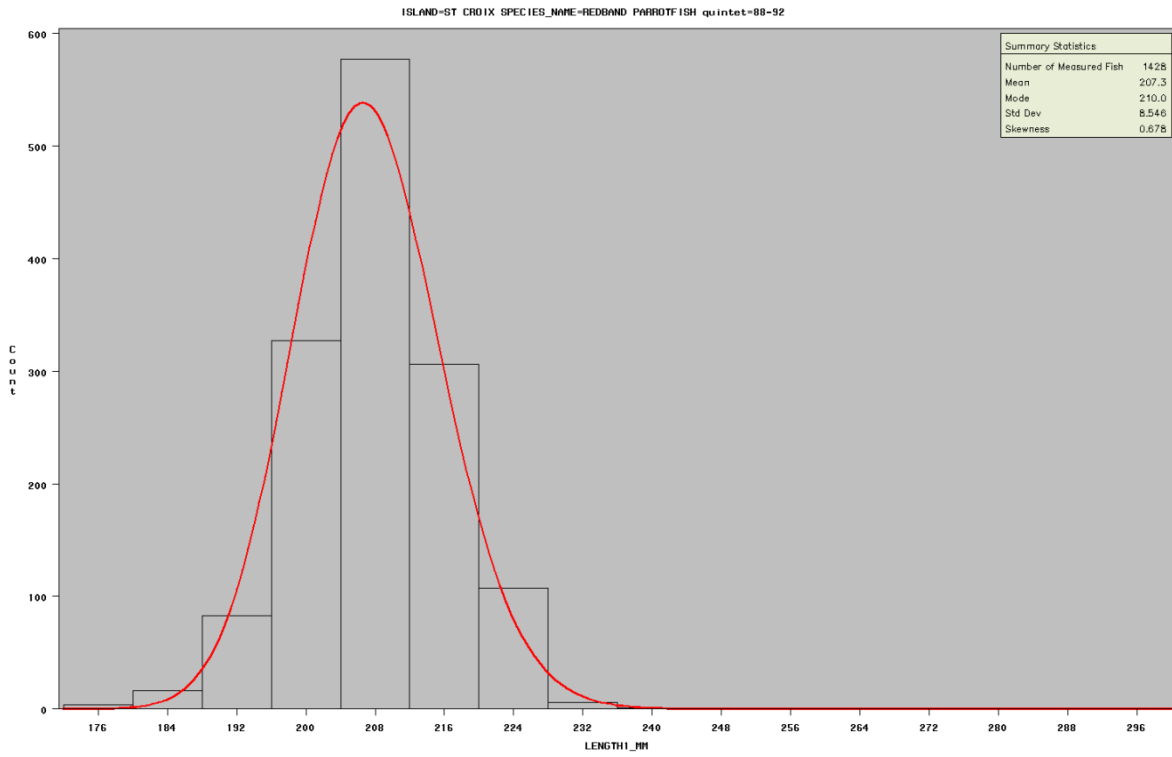
## Redband Parrotfish – St. Croix

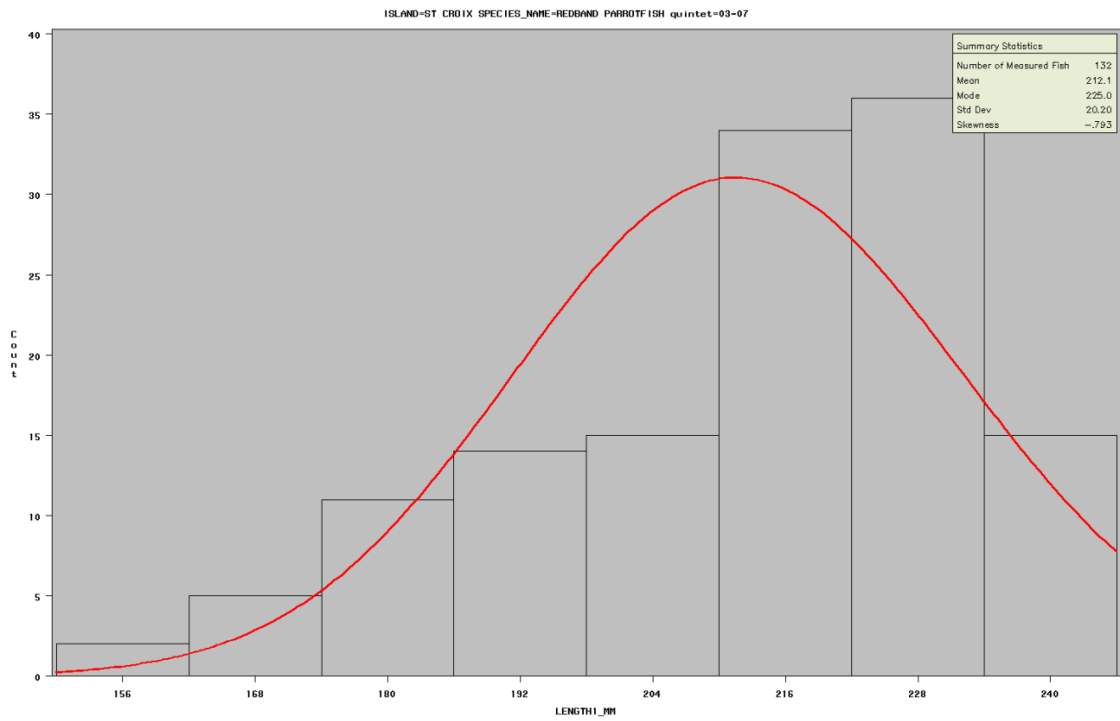
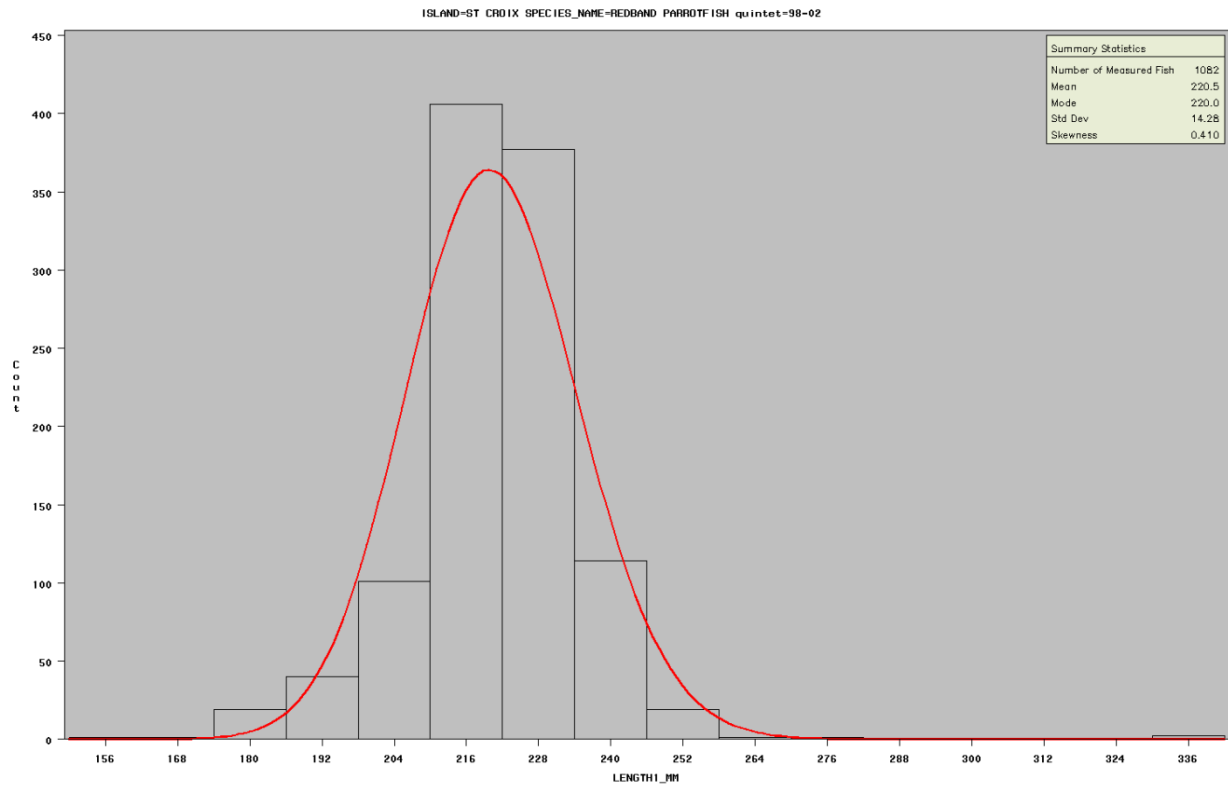
Redband Parrotfish number of sampled fish by specific gear type from St. Croix, 1983-2011.



Redband parrotfish length frequency histograms from St. Croix, in five year bins from 1983-2011.

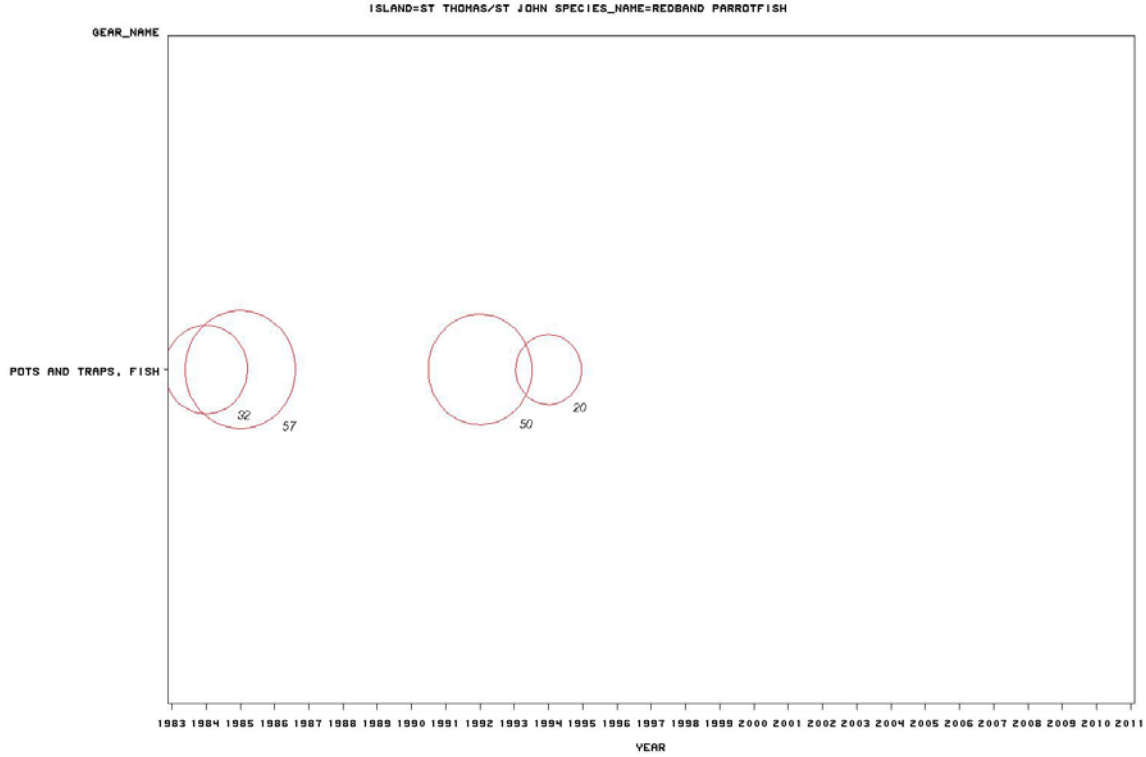




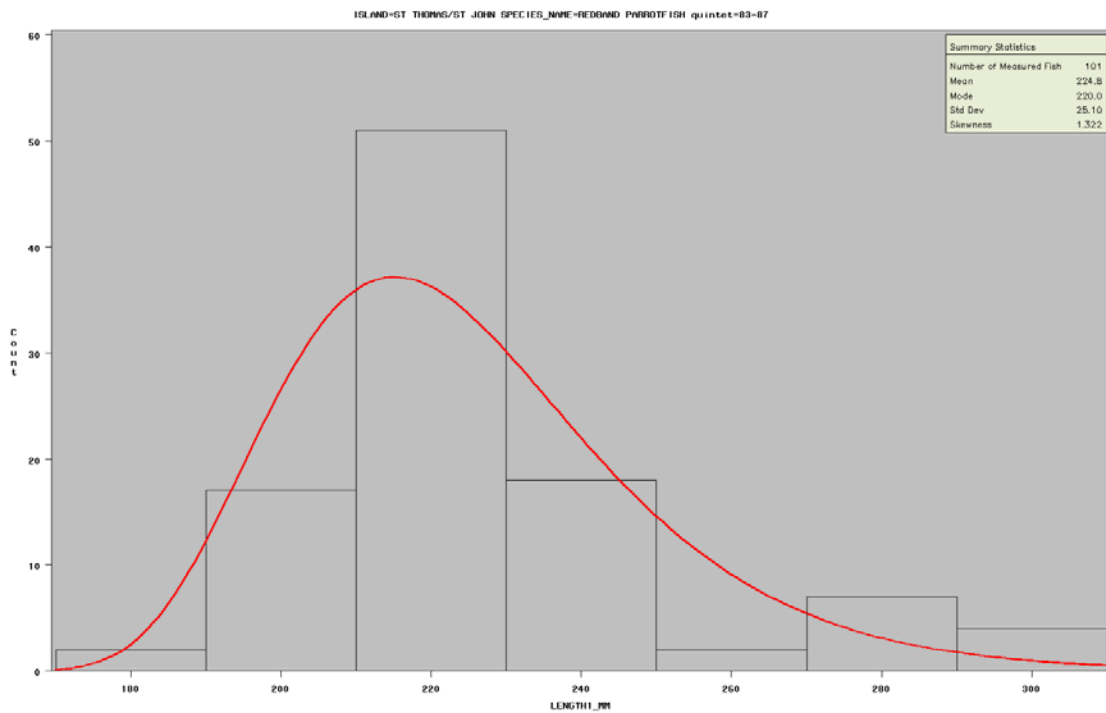


## Redband Parrotfish – St. Thomas/St. John

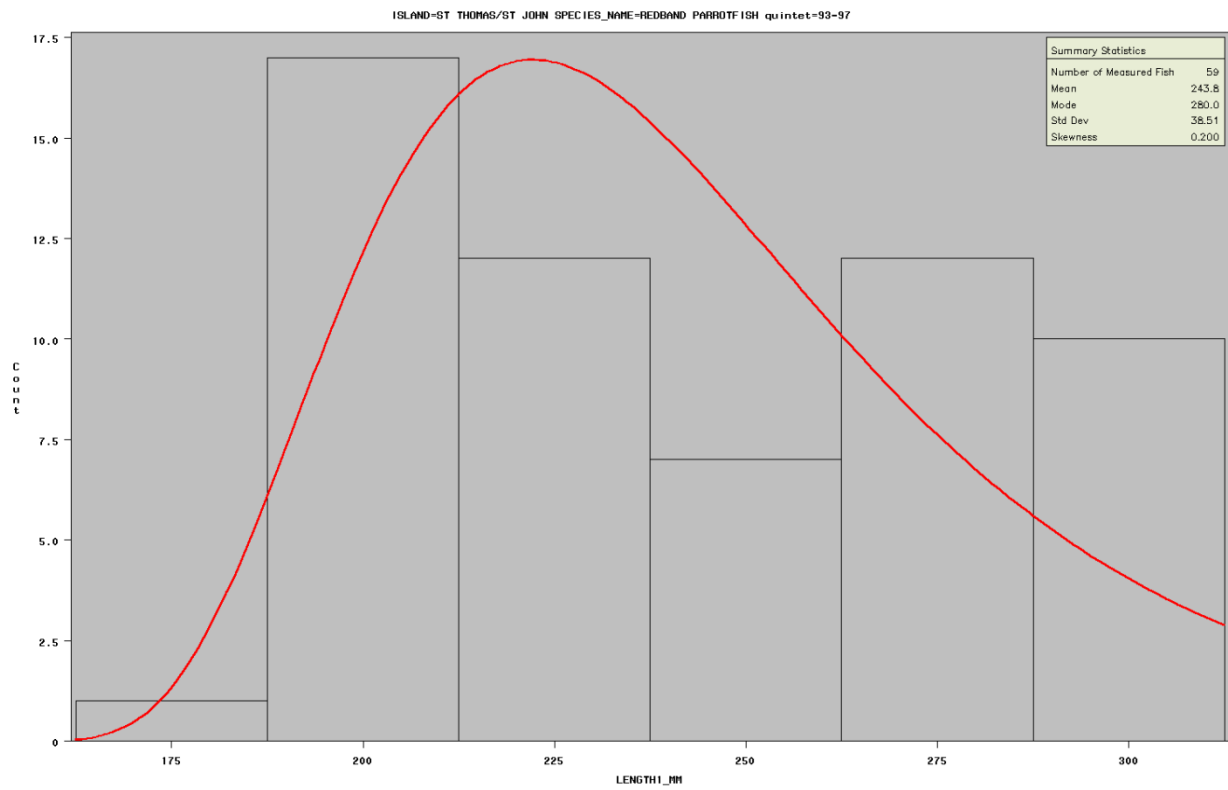
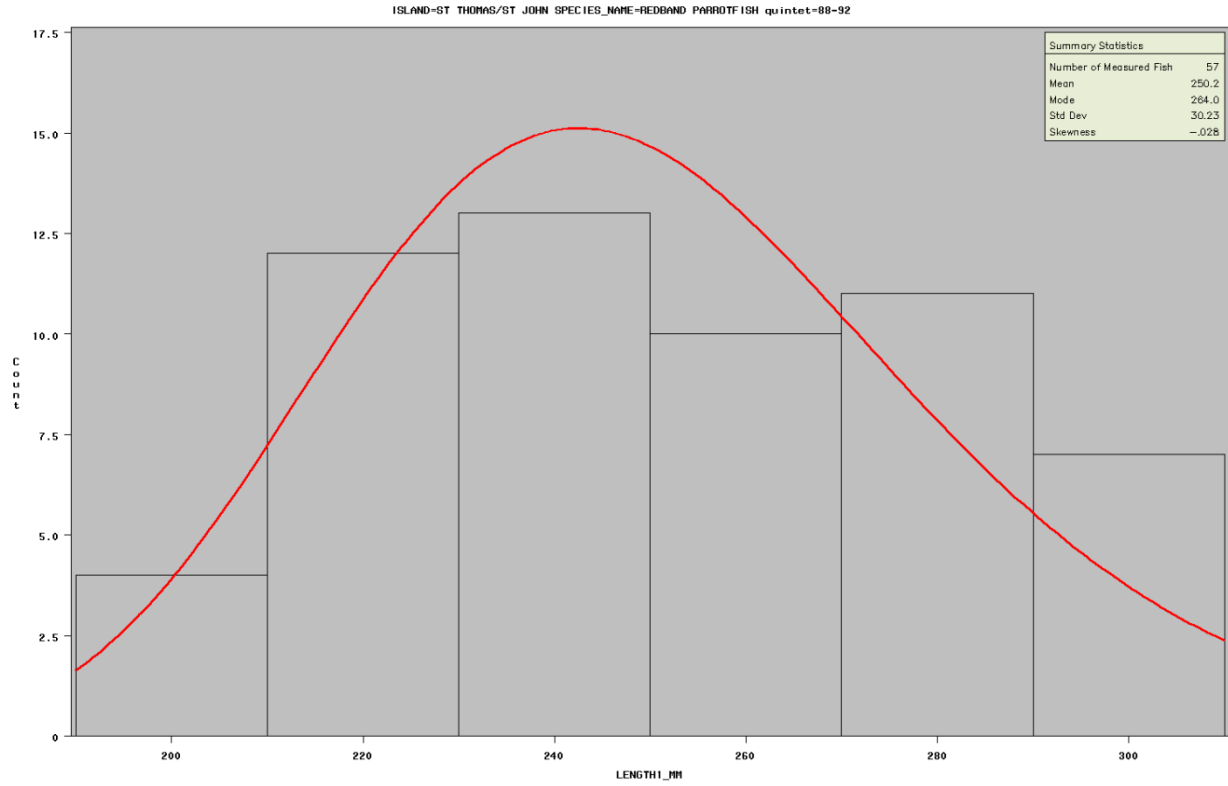
Redband Parrotfish number of sampled fish by specific gear type from St. Thomas/St. John, 1983-2011.



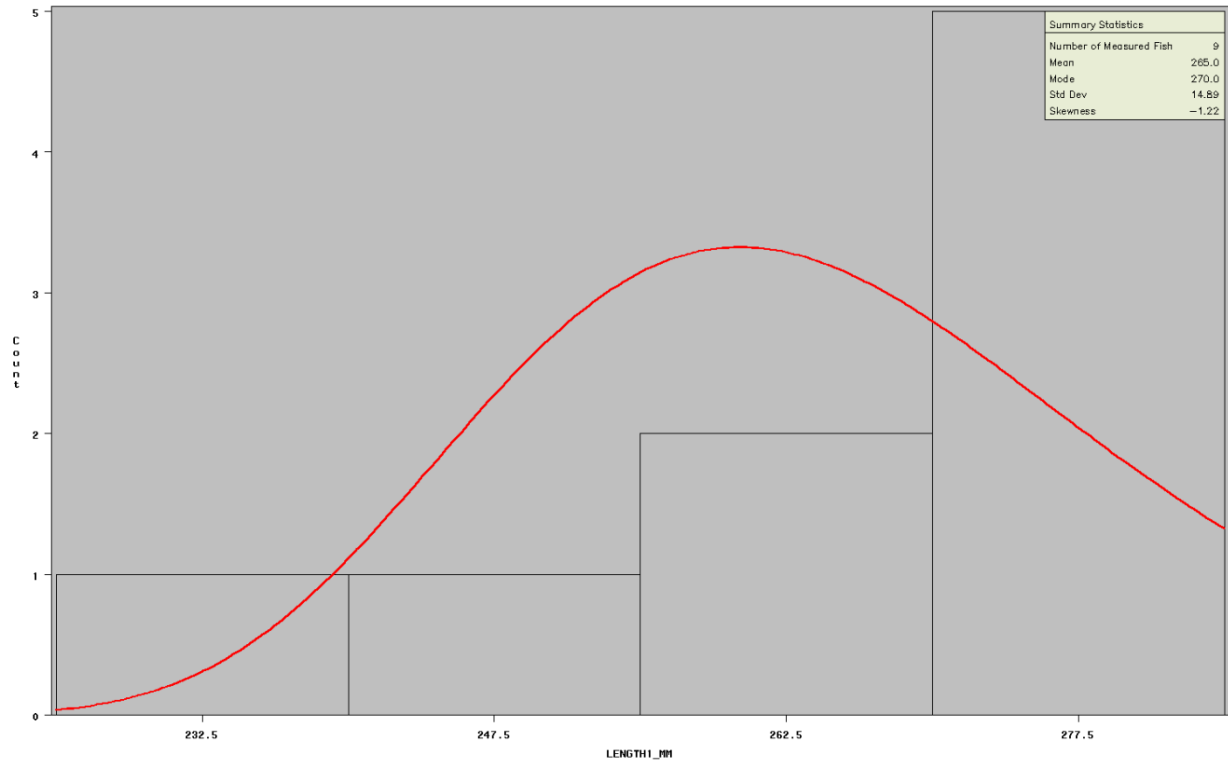
Redband parrotfish length frequency histograms from St. Thomas/ St. John, in five year bins from 1983-2011.







ISLAND-ST THOMAS/ST JOHN SPECIES\_NAME=REDBAND PARROTFISH quintet-03-07



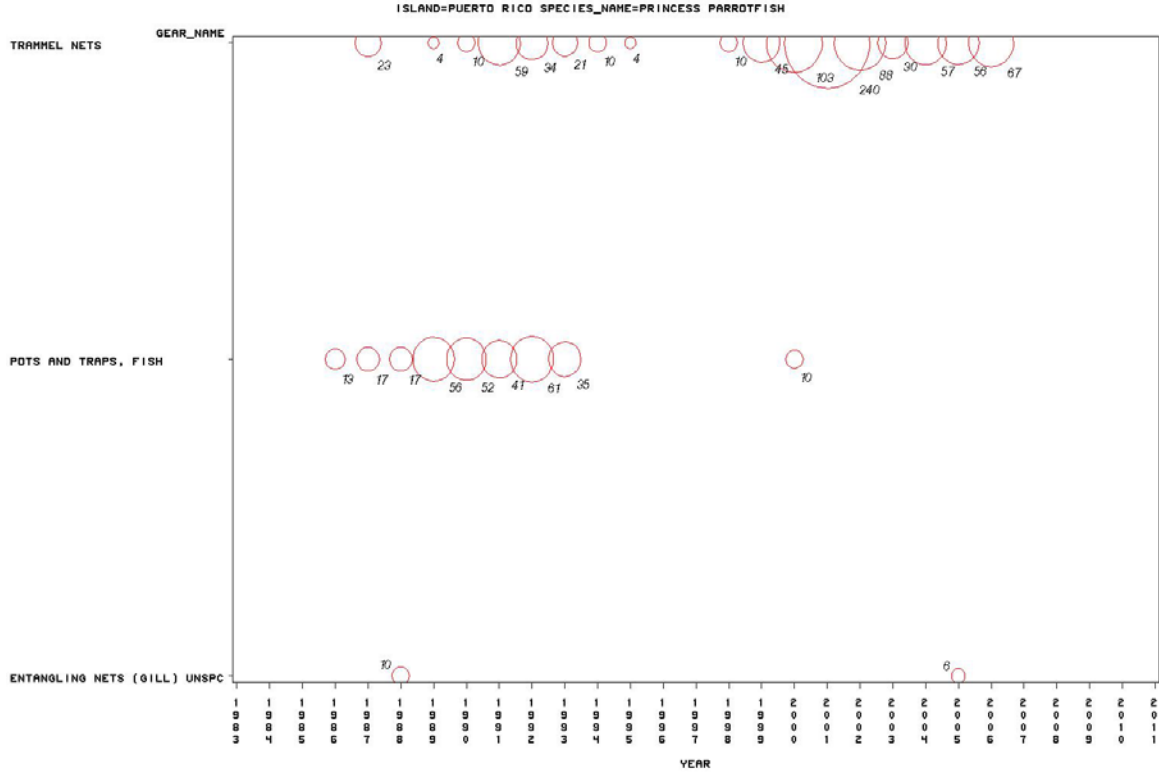
## Princess Parrotfish

Number of observations of princess parrotfish by gear type and island for the years 1983-2011.

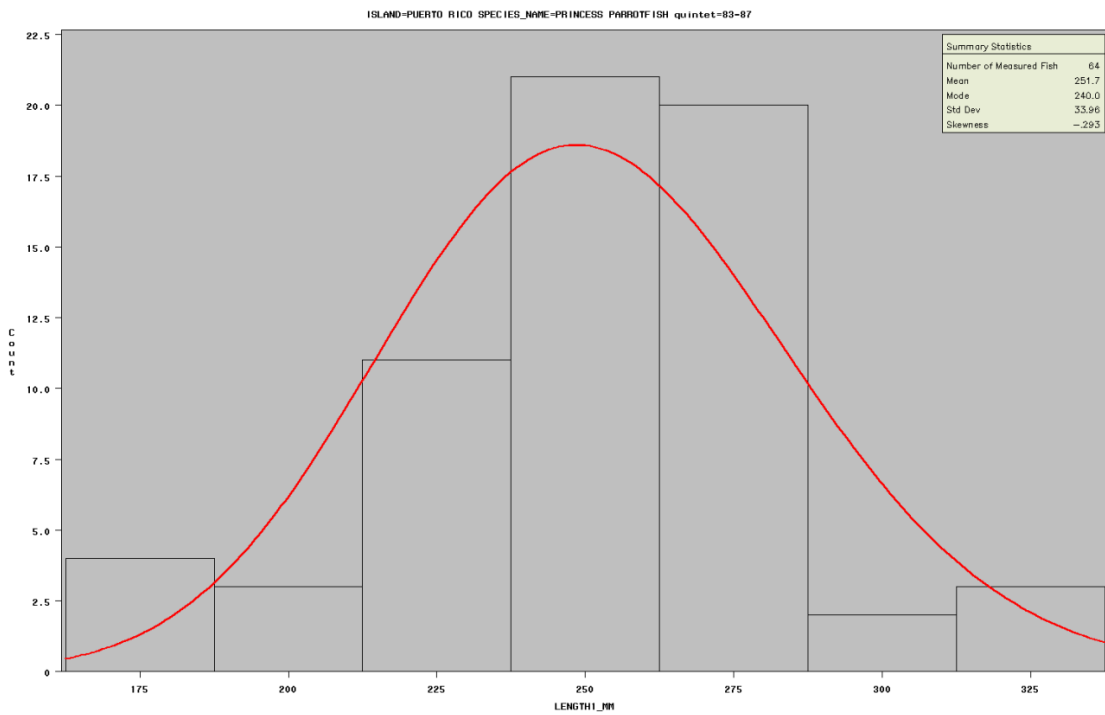
<b>Princess Parrotfish</b>		
<b>PUERTO RICO</b>	<b>GILL NETS</b>	918
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	318
<b>PUERTO RICO</b>	<b>BY HAND</b>	28
<b>PUERTO RICO</b>	<b>HAND LINE</b>	7
<b>PUERTO RICO</b>	<b>HOOK AND LINE</b>	4
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	2437
<b>ST CROIX</b>	<b>GILL NETS</b>	99
<b>ST CROIX</b>	<b>BY HAND</b>	92
<b>ST CROIX</b>	<b>SPEARS AND GI</b>	49
<b>ST CROIX</b>	<b>HAND LINE</b>	3
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	96

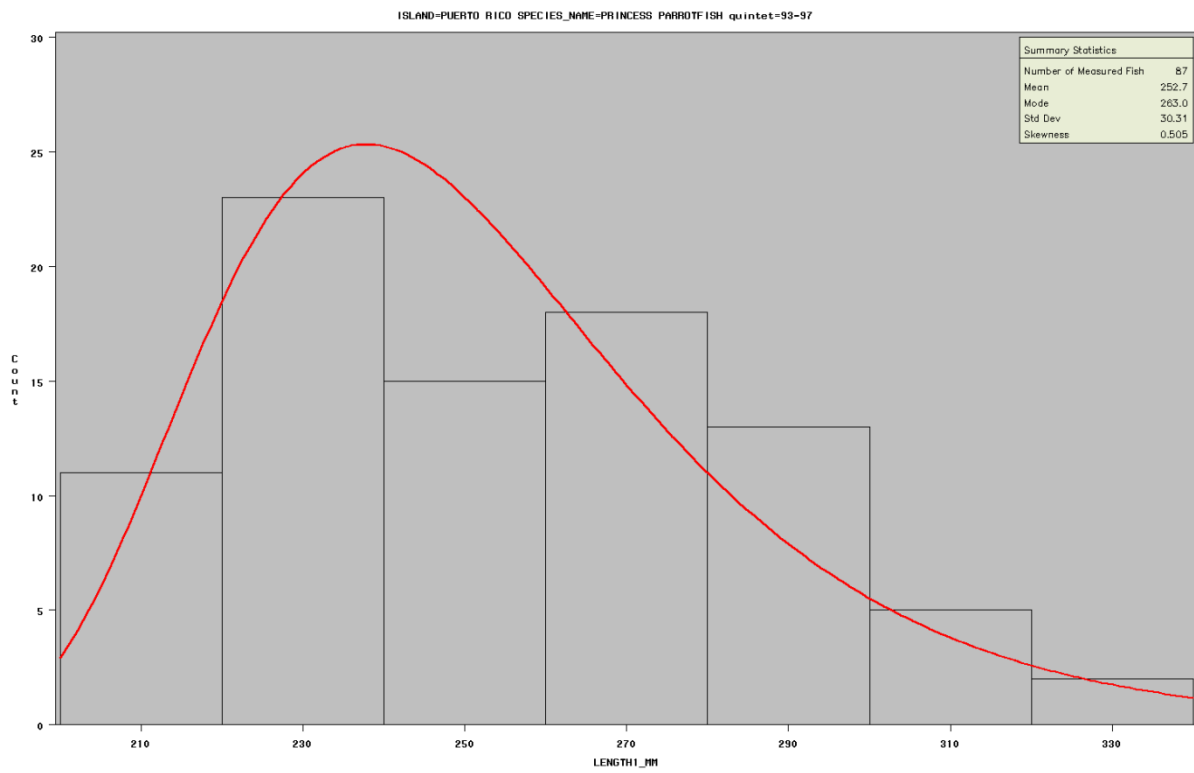
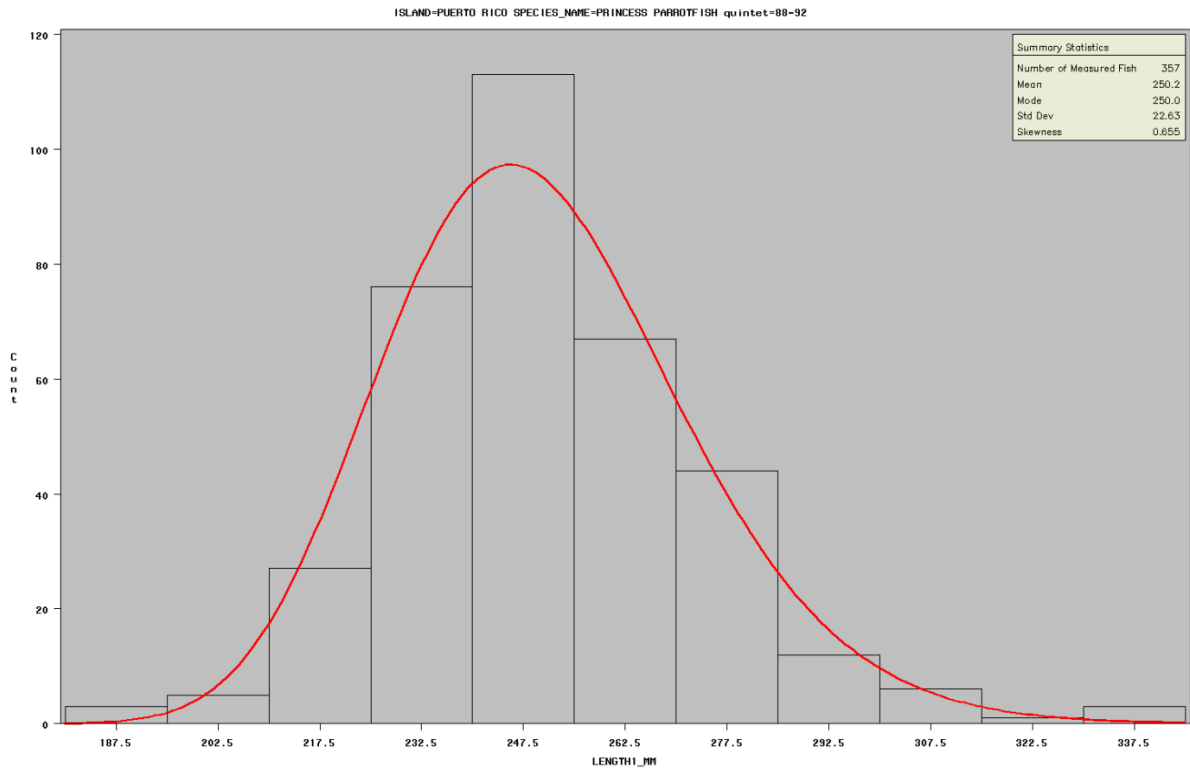
# Princess Parrotfish – Puerto Rico

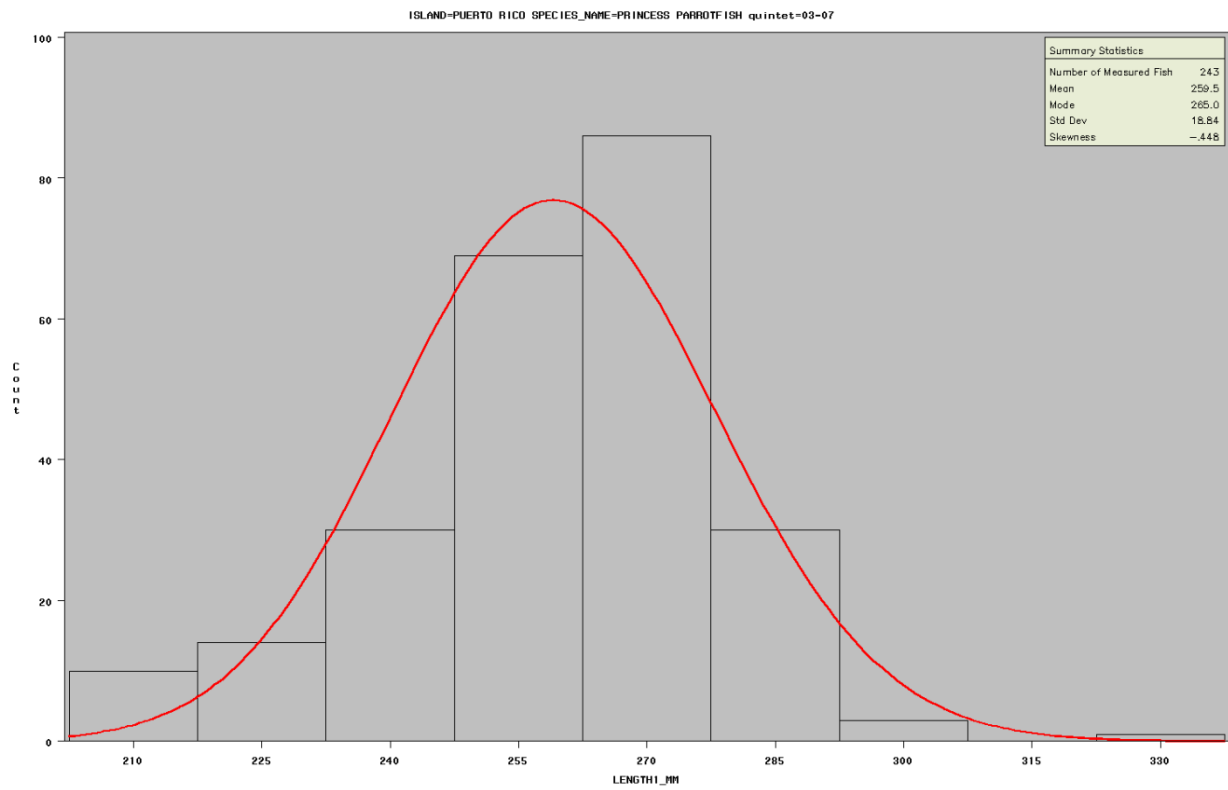
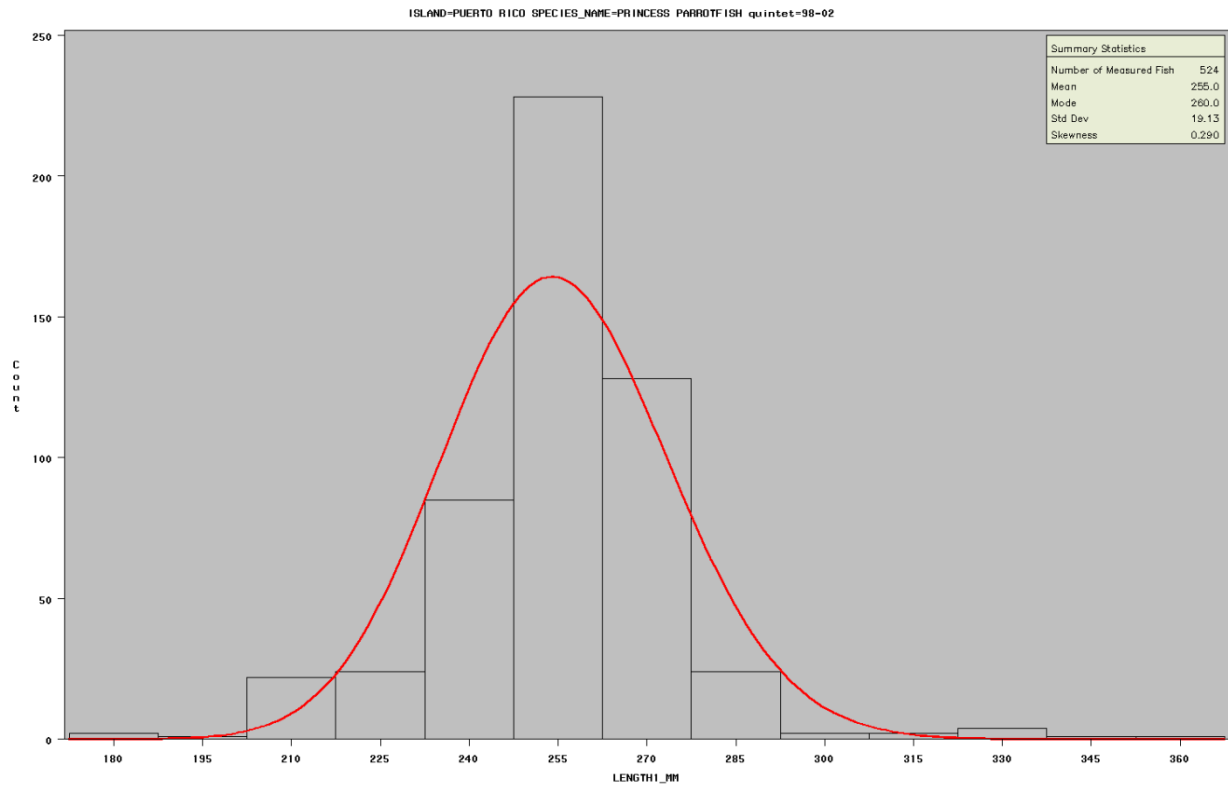
Princess Parrotfish number of sampled fish by specific gear type from Puerto Rico, 1983-2011.



Princess parrotfish length frequency histograms from Puerto Rico, in five year bins from 1983-2011.

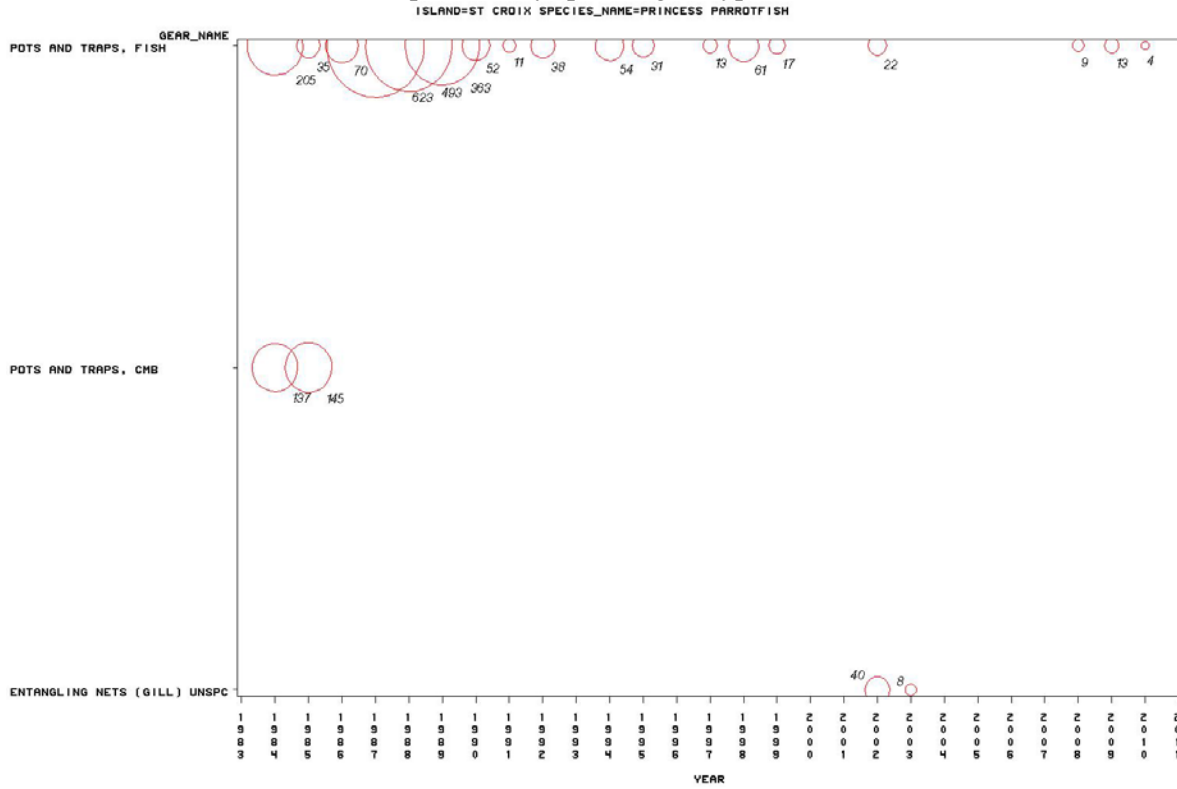




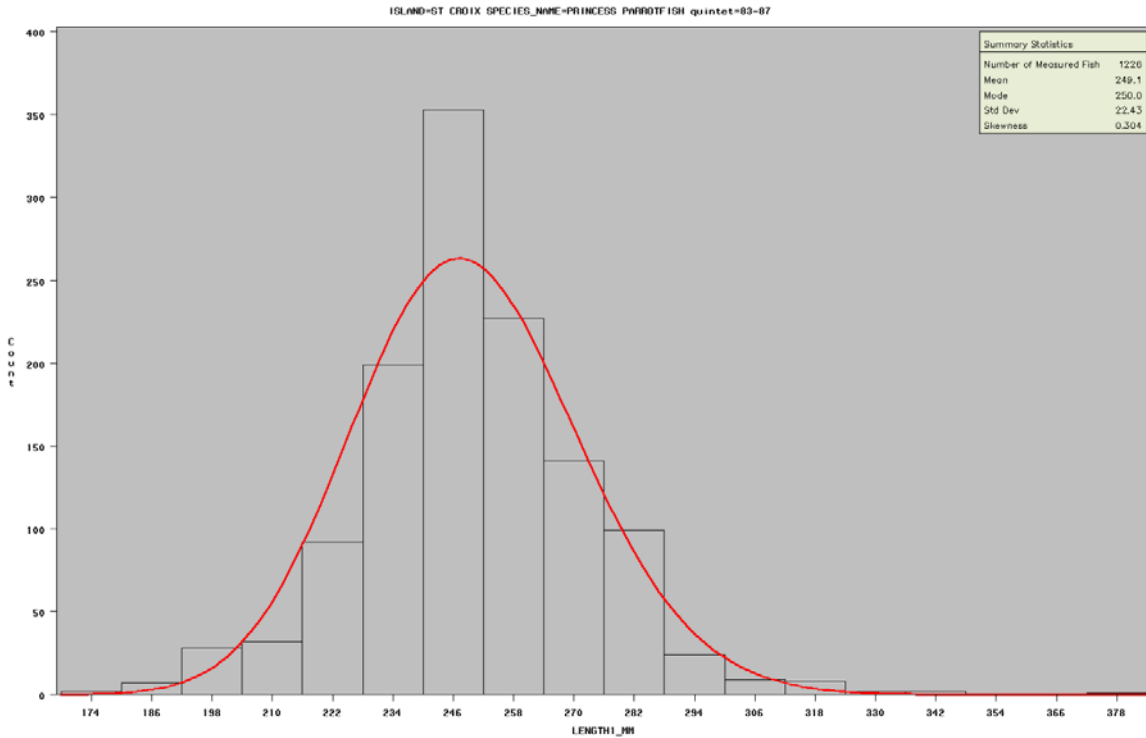


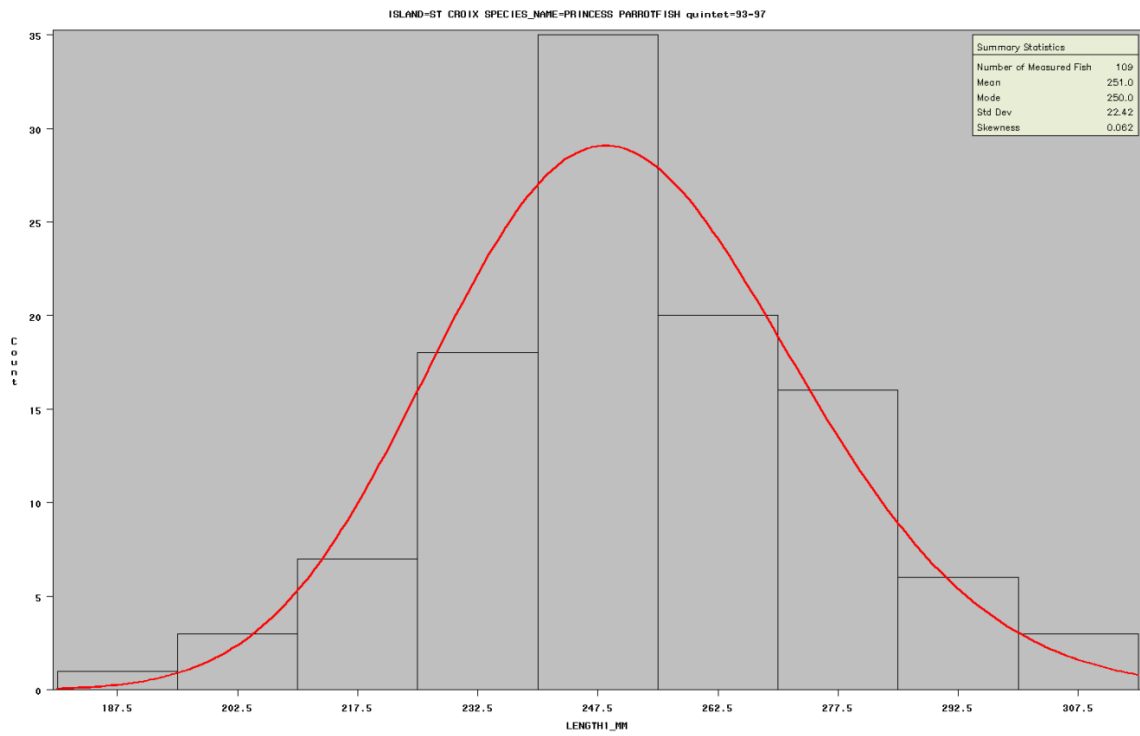
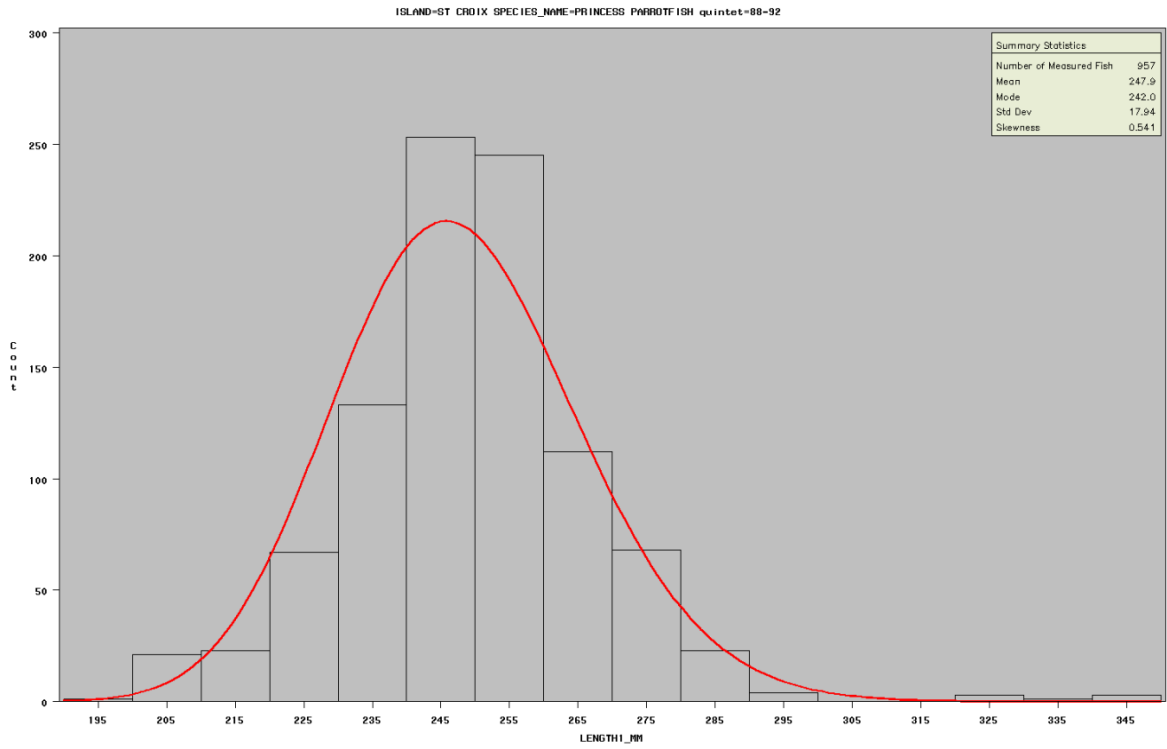
# Princess Parrotfish – St. Croix

Princess Parrotfish number of sampled fish by specific gear type from St. Croix, 1983-2011.

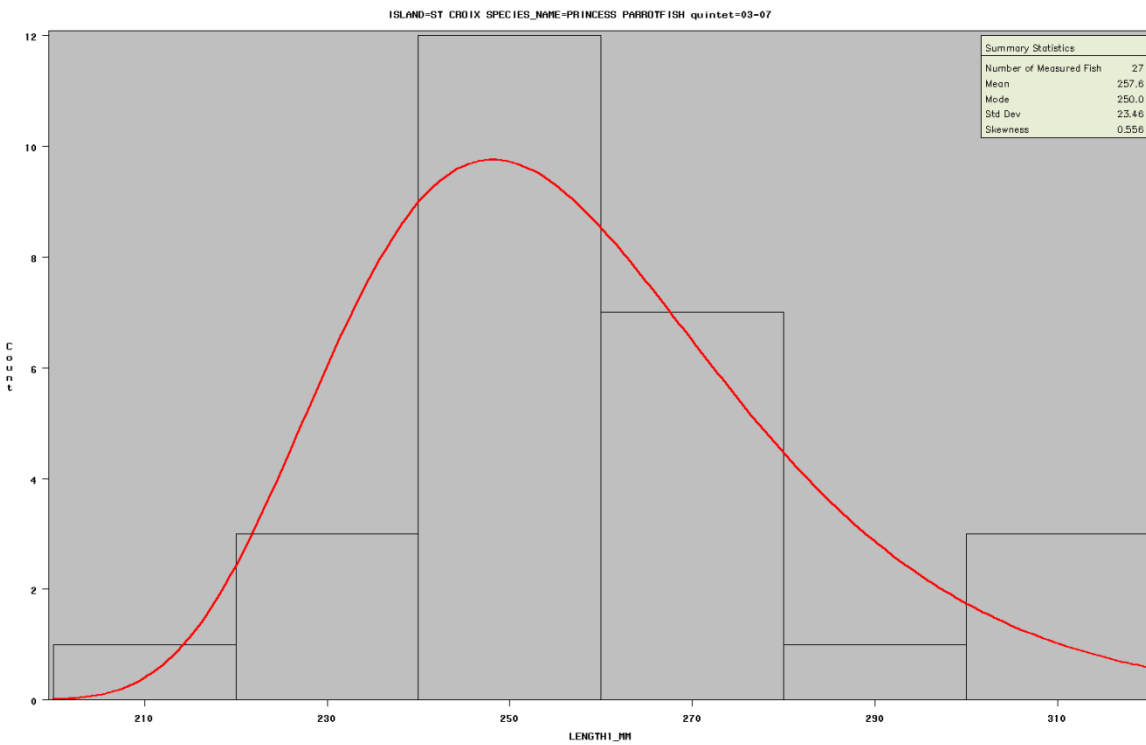
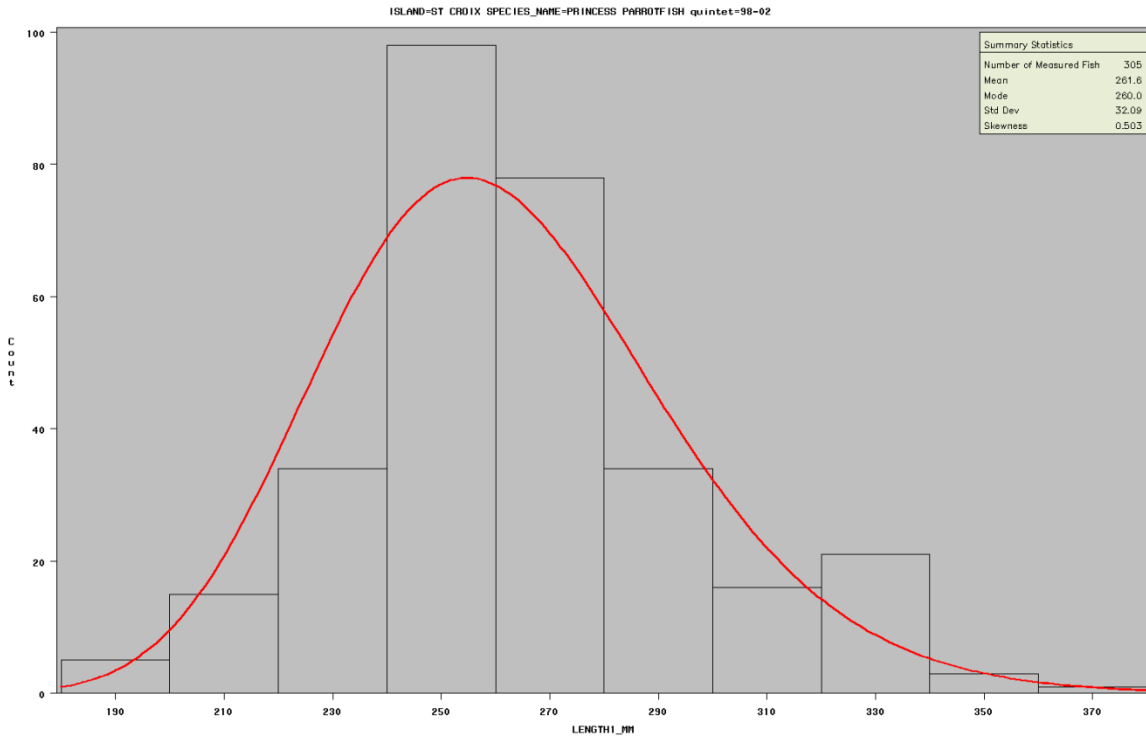


Princess parrotfish length frequency histograms from St. Croix, in five year bins from 1983-2011.









**Princess Parrotfish – St. Thomas/St. John**

Princess parrotfish St. Thomas/St. John Sample not included due to low sample sizes

## **Redfin Parrotfish**

Number of observations of redfin parrotfish by gear type and island for the years 1983-2011.

<b>Redfin parrotfish</b>		
<b>PUERTO RICO</b>	<b>GILL NETS</b>	81
<b>PUERTO RICO</b>	<b>POTS AND TRAP</b>	41
<b>PUERTO RICO</b>	<b>HAUL SEINES</b>	38
<b>PUERTO RICO</b>	<b>HAND LINE</b>	13
<b>PUERTO RICO</b>	<b>BY HAND</b>	1
<b>ST CROIX</b>	<b>GILL NETS</b>	1077
<b>ST CROIX</b>	<b>POTS AND TRAP</b>	239
<b>ST CROIX</b>	<b>SPEARS AND GI</b>	112
<b>ST CROIX</b>	<b>BY HAND</b>	109
<b>ST CROIX</b>	<b>LONG LINES</b>	7
<b>ST THOMAS/ST JOHN</b>	<b>POTS AND TRAP</b>	65
<b>ST THOMAS/ST JOHN</b>	<b>HAUL SEINES</b>	21

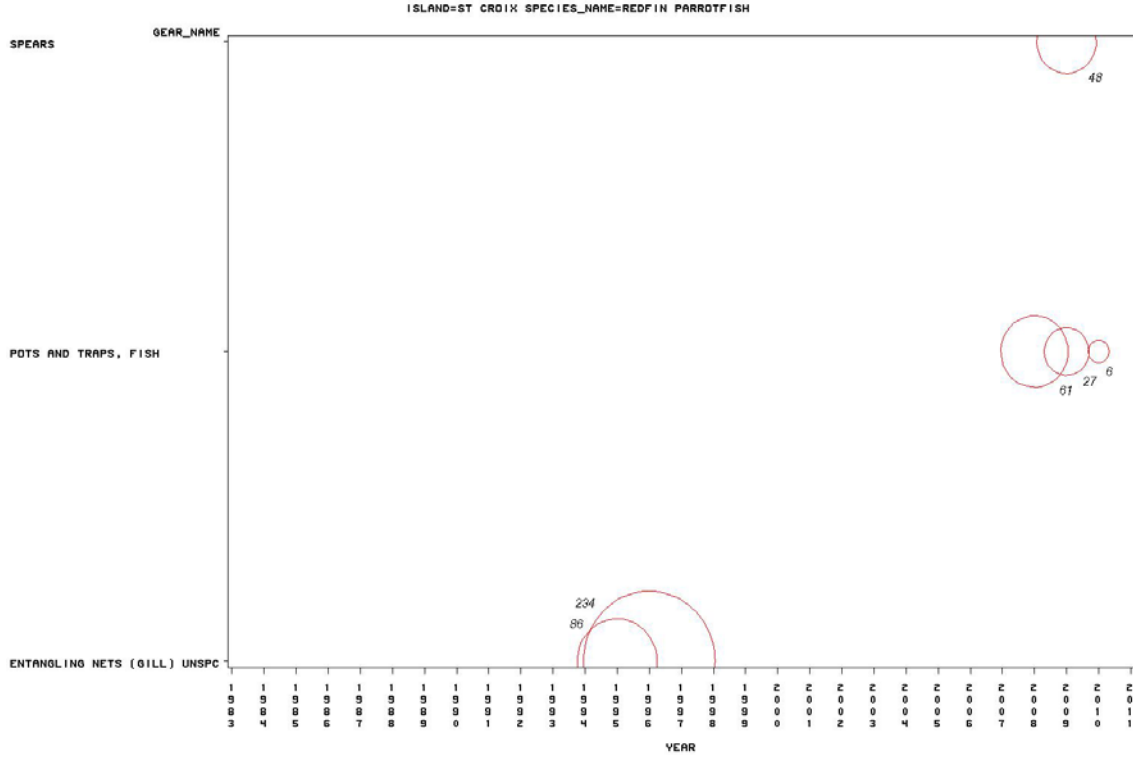
### **Redfin Parrotfish – Puerto Rico**

Redfin parrotfish mean lengths and sample sizes from Puerto Rico, 1983-2011.

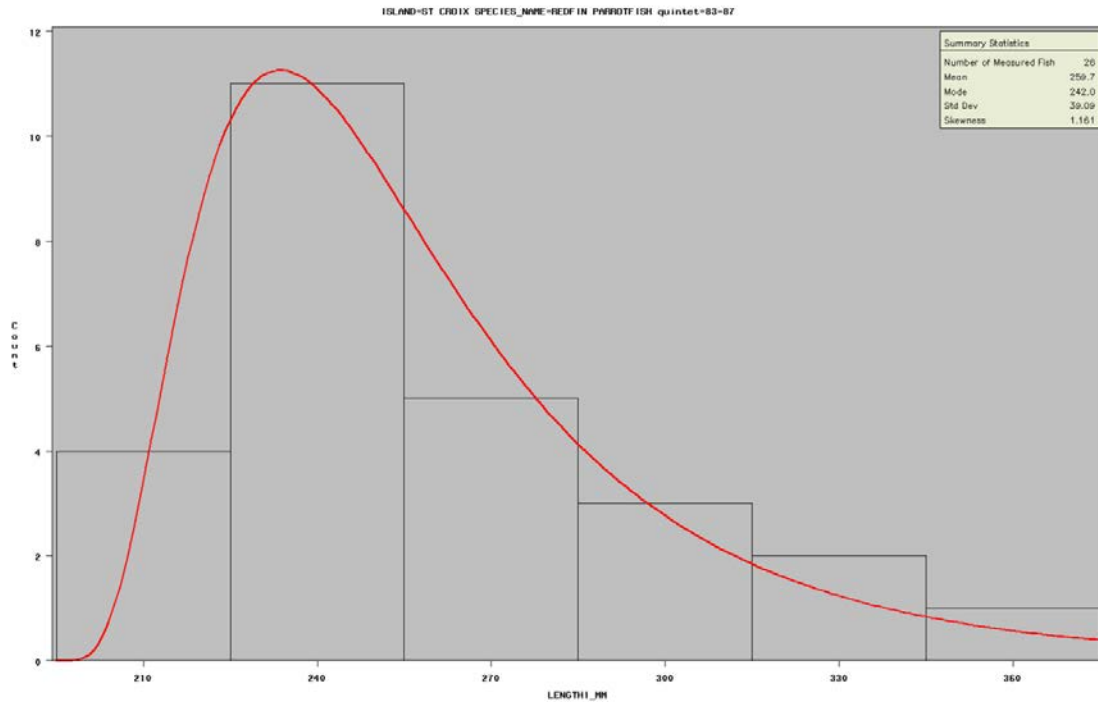
Not included due to low sample sizes.

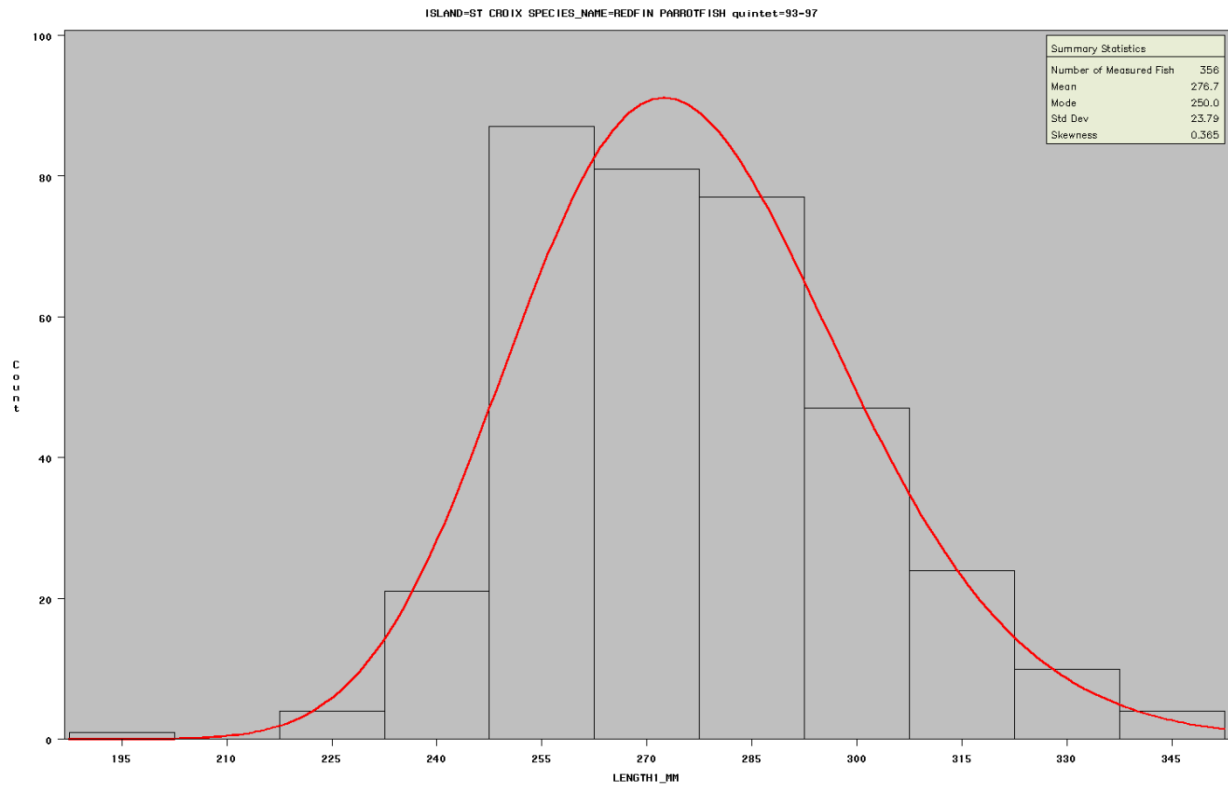
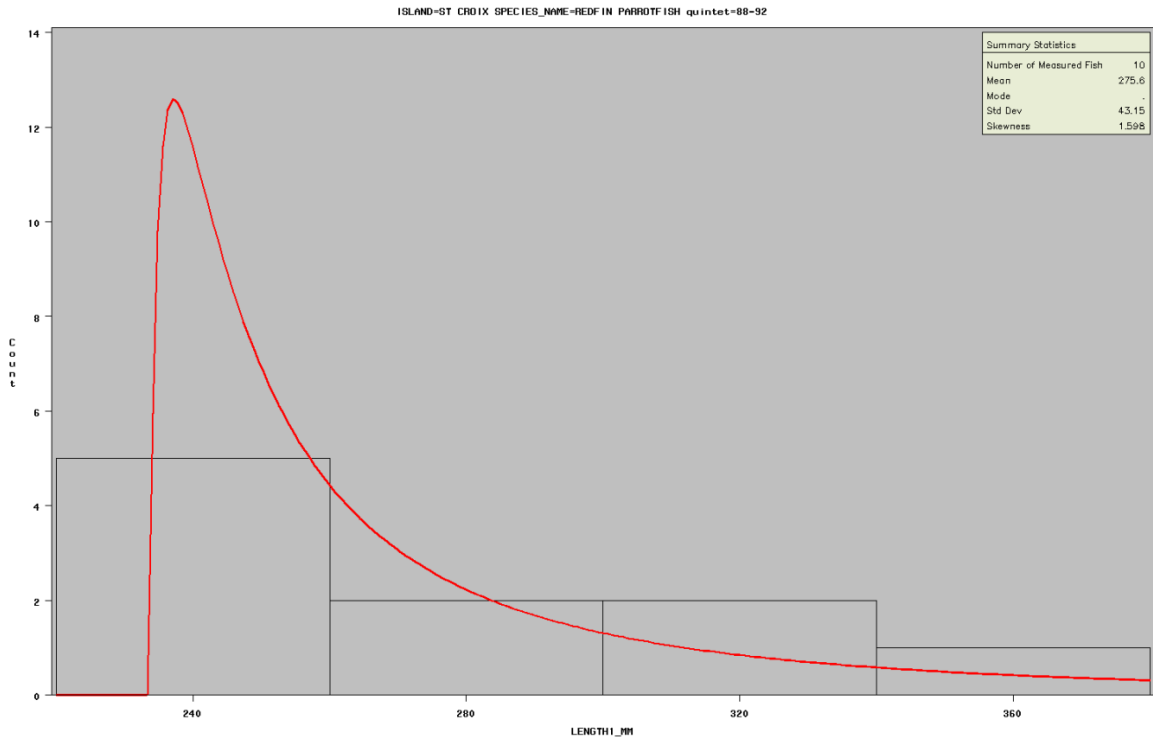
# Princess Parrotfish – St. Croix

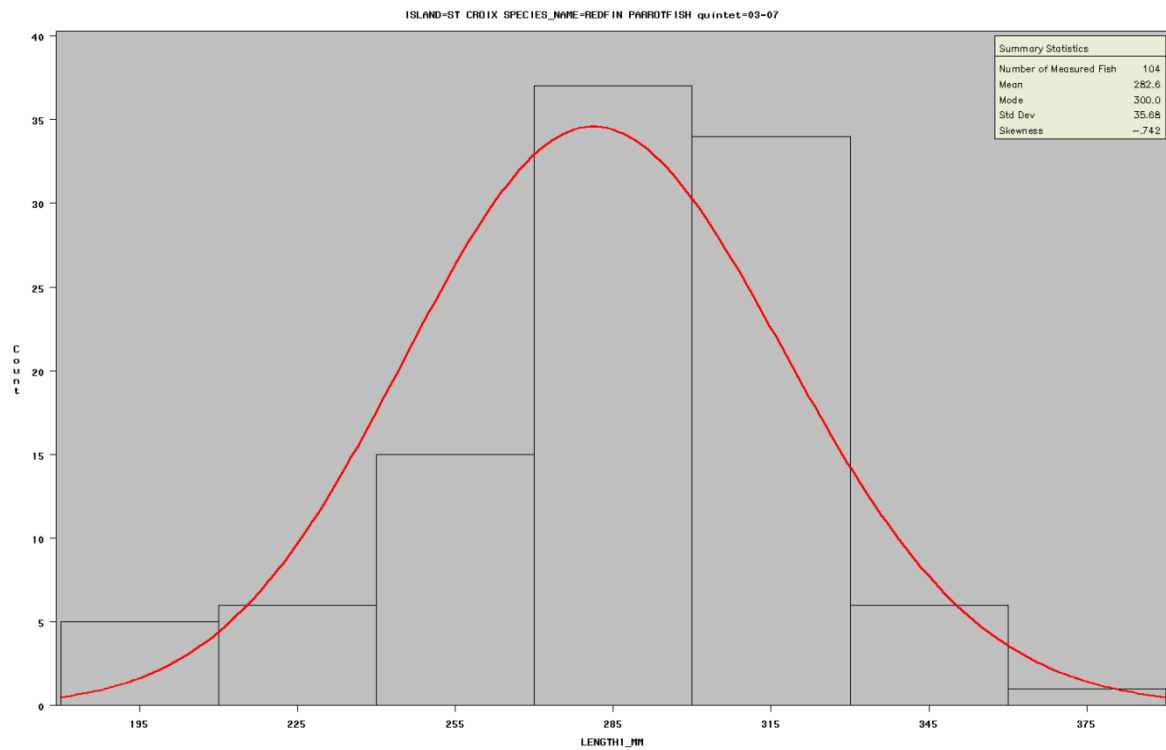
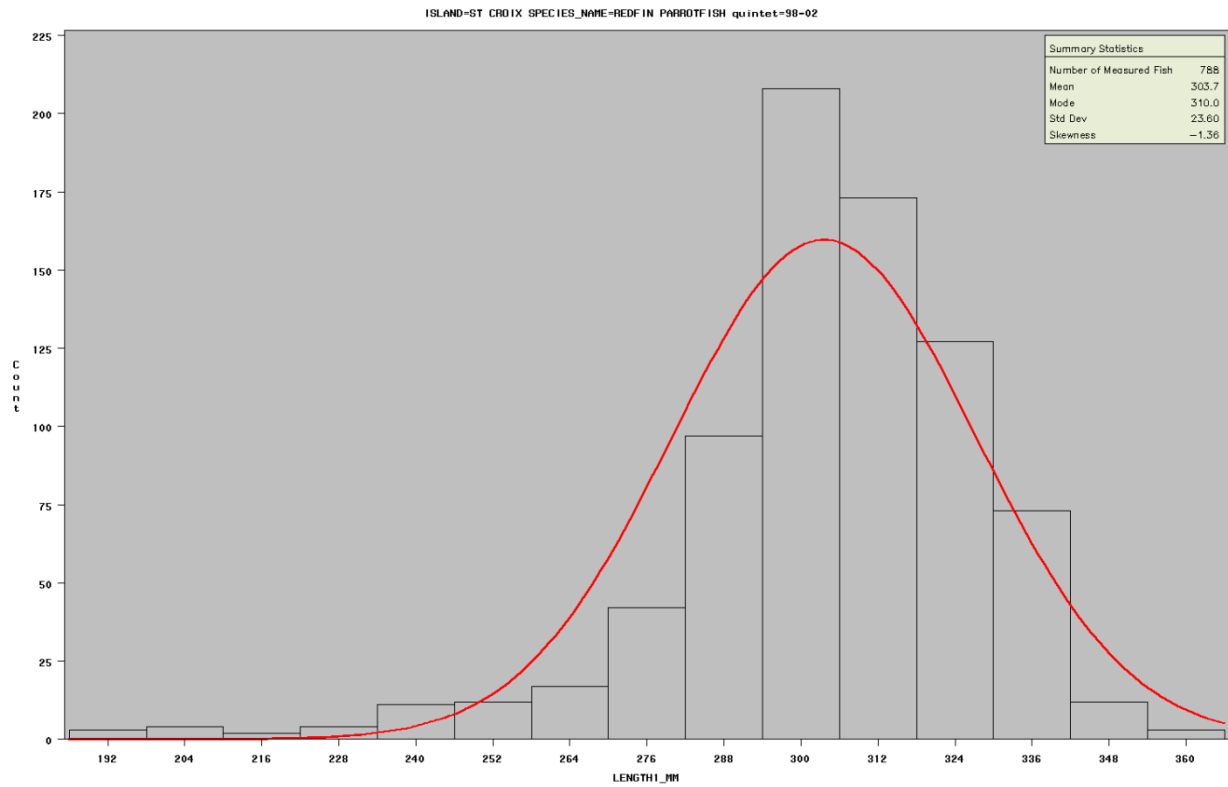
Princess Parrotfish number of sampled fish by specific gear type from St. Croix, 1983-2011.



Redfin parrotfish length frequency histograms from St. Croix, in five year bins from 1983-2011.







**Redfin Parrotfish – St. Thomas/St. John**

St. Thomas/St. John – Redfin Parrotfish – Not included due to low sample sizes