

Florida Bay Scallop 2012 Annual Report
Executive Summary
March 2013

SUMMARY

- Mean summer scallop abundance in 2012 was classified **stable** (25 - 50 scallops per 600 m²) and the distribution was classified as **sparse** (<25% of stations had a sustainable abundance of ≥50 scallops). This was the lowest observed summer abundance since 2006.
- Summer abundances declined at 4 of the 5 sites open to recreational harvest in 2012, with total counts at 3 of those sites significantly less than 2011 summer totals.
- Mean fall scallop abundance in 2012 was classified as **vulnerable** (5 - 25 scallops per 600 m²) and the distribution was classified as **sparse**.
- Two major environmental events that occurred in 2012, Tropical Storm Debby in June and an ongoing red tide bloom in southwest Florida, might negatively impact 2013 bay scallop populations.
- Recreational fishing surveys conducted by the FWC are currently not funded to record data for bay scallop harvest even though a large percentage of the fishing activity conducted during July through September is from recreational scallop harvest.
- FWRI biologists initiated a small-scale survey in 2012 that targeted harvest effort during the recreational season. Results suggested that the average harvest rate was 0.8 pints per day, which is slightly below the maximum allowable harvest of 1 pint per person per day.
- Large numbers of juvenile scallops were observed on collectors retrieved in January, May, and June (offspring of the 2011 year-class) and November and December (offspring of the 2012 year-class), indicating that the majority of spawning occurs in months after the close of the recreational season.
- Panhandle sites (St. Andrew Bay and St. Joseph Bay) accounted for almost half of the total juvenile scallops observed on collectors statewide in 2012.
- The high annual and peak recruitment rates observed at the Anclote study site coupled with continuous recruitment to collectors throughout the year at that site indicate the importance of the Anclote sub-population, and any changes in management of this site may have cascading and /or cataclysmal consequences.
- Recruitment rates continued to be classified as **low** (0-5 scallops day⁻¹ km²) at the southwest sites, Tampa Bay, Sarasota Bay, Charlotte Harbor, and Pine Island Sound, in 2012 and peak rates did not exceed the threshold (50 scallops day⁻¹ km²) for successful recruitment.

ABUNDANCE: Bay scallop surveys were conducted before and after the recreational harvest season (July 1 to September 24, 2012). Ten sites were assessed pre-season (summer), and 6 of those were re-evaluated post-season (fall). The abundance and distribution for each site were classified using the indices below.

Abundance	Mean Number of Scallops per Station
Collapsed	0 - 5
Vulnerable	5 - 25
Stable	25 - 50
Sustainable	> 50

Distribution	Percent of Stations at Sustainable Abundance
Sparse	< 25%
Patchy	25 - 50%
Dense	> 50%

Summer

- Abundance declined by 73% from summer 2011. Abundances declined significantly in 3 of the 5 sites open to recreational harvest: St. Joseph Bay (↓ 93%), Steinhatchee (↓ 79%), and Hernando (↓ 68%) and in 3 of the 5 sites closed to recreational harvest: Anclote (↓ 87%), St. Andrew Bay (↓ 79%), and Pine Island Sound (↓ 71%).

Study Site	Abundance	Distribution
St. Andrew Bay	Vulnerable	Sparse
St. Joseph Bay	Vulnerable	Sparse
St. Marks	Sustainable	Patchy
Steinhatchee	Stable	Sparse
Homosassa	Stable	Patchy
Hernando	Stable	Sparse
Anclote	Stable	Patchy
Tampa Bay	Collapsed	Sparse
Sarasota Bay	Collapsed	Sparse
Pine Island Sound	Stable	Patchy

Fall

- Abundance declined by 50% from the summer to a mean of 13.8 scallops per 600 m².
- That fall abundance was 62% less than the fall 2011 mean, which was a substantial reduction in the number of adults available for spawning.
- Reports of reduced fishing effort in St. Joseph Bay may explain why low pre-season abundances persisted until fall, and the local population did not decline further.

Study Site	Abundance	Distribution
St. Andrew Bay	Vulnerable	Sparse
St. Joseph Bay	Vulnerable	Patchy
Steinhatchee	Vulnerable	Sparse
Homosassa	Stable	Patchy
Hernando	Vulnerable	Sparse
Anclote	Vulnerable	Sparse

RECRUITMENT: Bay scallop recruitment monitoring was conducted monthly during 2012 at 10 sites: St. Andrew Bay, St. Joseph Bay, Homosassa, Hernando, Anclote, Tampa Bay, Sarasota Bay North, Sarasota Bay South, Charlotte Harbor and Pine Island Sound. Based on 15-year recruitment monitoring data, it has been determined that the majority of spawning occurs from September through November and that peak recruitment rates are recorded in November, December or January.

In order to standardize the data, the number of scallops found on a collector was divided by the number of days the collector was deployed. For reporting purposes those standardized data were averaged for each deployment period and then multiplied by the estimated area of seagrass for each site. Those area-adjusted recruitment rates (# scallops per day over a 1-km² area) were then classified using the index below. Successful generation of the next year class within a site most likely relies on the annual rate of recruitment as well as the winter peak values being above an area-adjusted recruitment rate of 50 scallops day⁻¹ km².

Annual Area-Adjusted Recruitment Rate	Mean Number of Scallops per Day observed in a 1-km ²
Low	0 – 5
Moderate	5 - 25
High	> 25

- At most of the study sites, spawning started as early as mid-September. This coincided with the end of the recreational season and, as a result, any scallops removed late in the season were most likely fully-conditioned adults.
- Statewide recruitment rates were greatest in November and December.
- The 2012 annual recruitment rate (10.7 scallops day⁻¹ km²) marked the 7th year in a row of level recruitment observed statewide, and was classified as a **moderate** rate.
- Within each site winter peak (November and December retrievals) recruitment rates exceeded the successful threshold value of ≥ 50 scallops day⁻¹ km² in St. Joseph Bay, Homosassa, Hernando, and Anclote, and we anticipate that 2013 summer abundances at these sites will be similar to the summer of 2012.
- Even though the St. Andrew Bay peak rate was below the successful threshold, the **moderate** annual rate may help sustain the population, and so both rates must be evaluated when predicting the increase or decrease in abundance of the next year class.

Study Site	Annual Recruitment	Peak Recruitment (scallops day ⁻¹ km ²)
St. Andrew Bay	Moderate	33.6
St. Joseph Bay	Moderate	133.6
Homosassa	Moderate	58.5
Hernando	Moderate	63.9
Anclote	High	130.6
Tampa Bay	Low	7.4
Sarasota Bay North	Low	2.3
Sarasota Bay South	Low	0
Charlotte Harbor	Low	1.1
Pine Island Sound	Low	0