

Scallop Monitoring Program

Reporting and Assessment of Monitoring Results

Since 2008, Sarasota County has been monitoring the scallop populations of our bays. The Scallop Program is part of a monitoring plan to help measure the effectiveness of the County's Stormwater Management Plan on our watersheds. The bay scallop (*Argopecten irradians*) is an indicator species that is particularly sensitive to freshwater influences and poor water quality. The county scallop monitoring program includes spat collection, adult surveys and survival rates of caged adults. These efforts are in partnership with the Florida Fish and Wildlife Research Institute (FWRI), Mote Marine Laboratory, and Sarasota Bay Watch.

Summary of Monitoring Data from 2018 Reporting Year

A. SPAT MONITORING

Figure 1: Monthly Scallop Spat Landings Per Bay

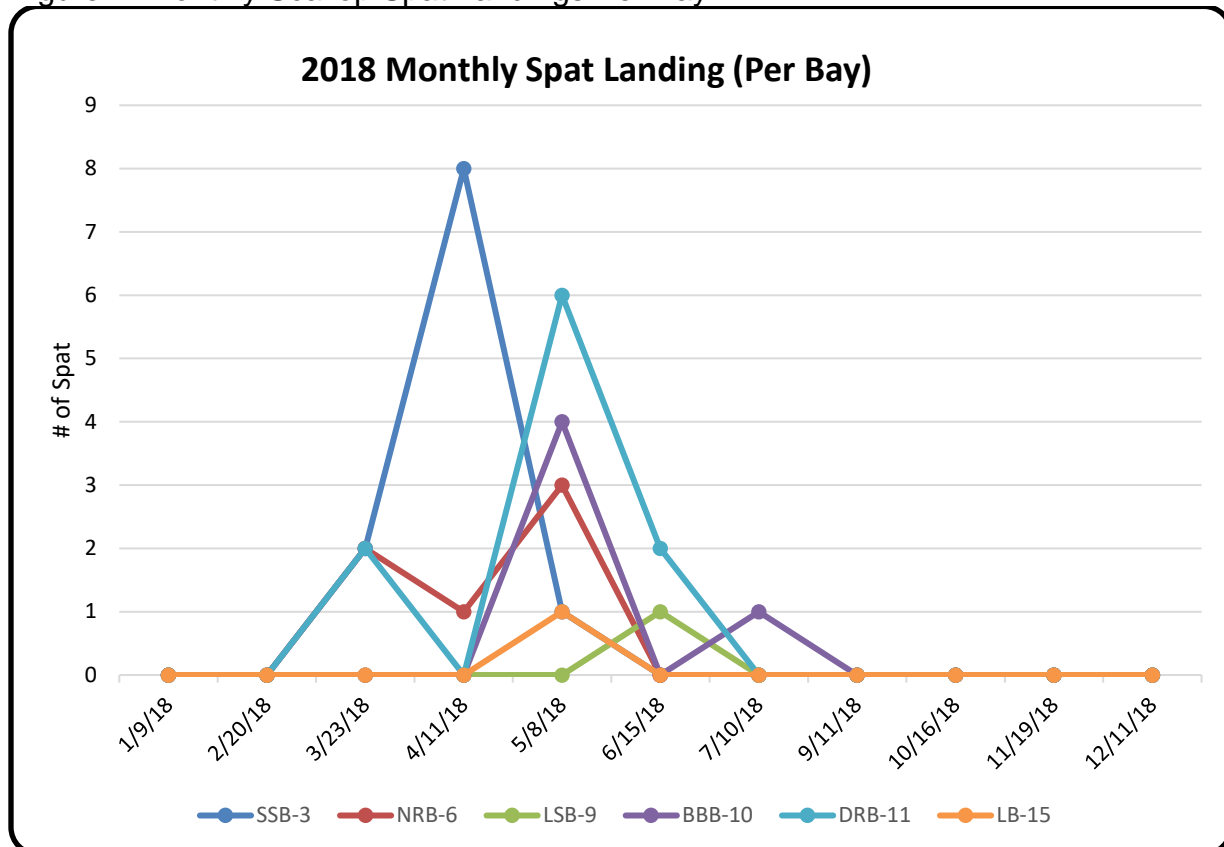
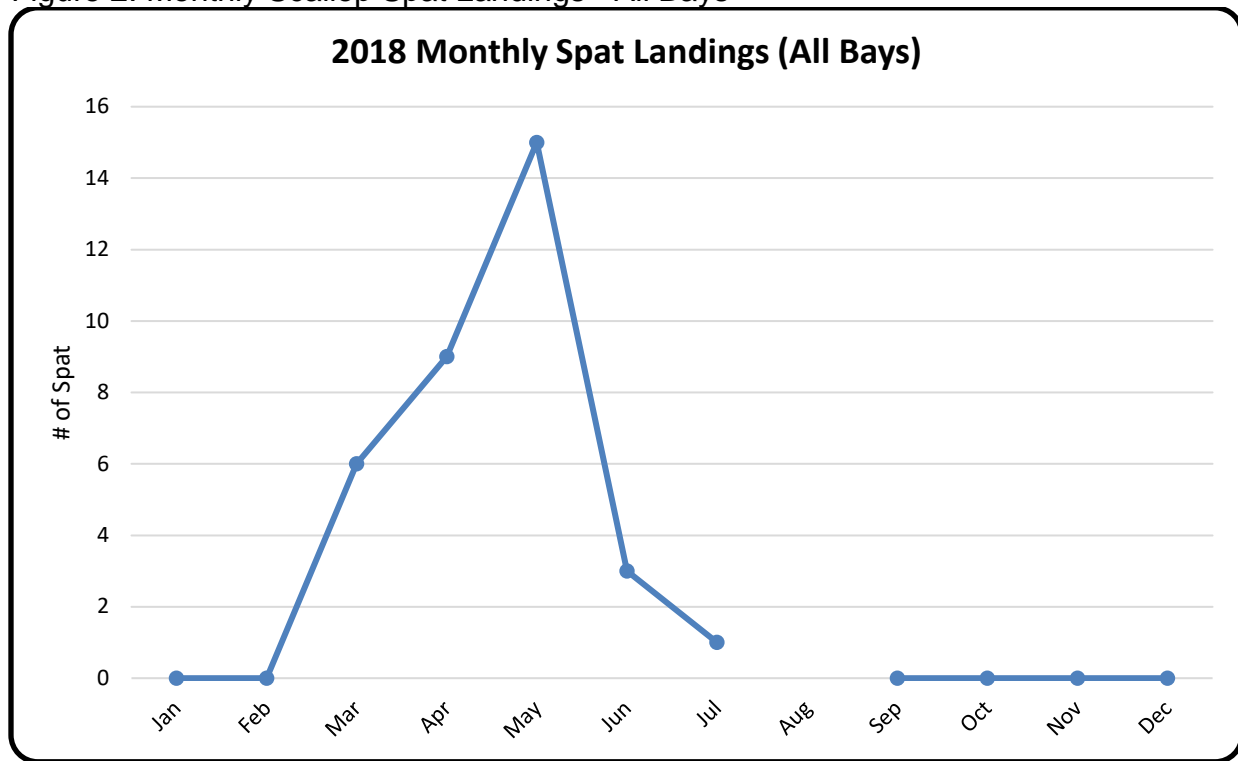


Figure 2: Monthly Scallop Spat Landings - All Bays



Our historical pattern of spat landings have consistently shown elevated numbers from March through May with a peak occurring in April. This pattern remained intact in 2018, with total spat landings improving dramatically from 2017. The monitoring data showed a significant increase in spat landings from 5 in 2017 (figure 6) to 34 in 2018. Generally, our two most productive bays are Sarasota Bay and Blackburn Bay. While Sarasota Bay remains the most productive, the Venice Inlet station showed increased activity this year. The combined total for these two bays accounted for 21 of the total 34 spat counted which is almost 62% of annual landings. Lemon Bay's spat population continues to struggle despite the overall 2018 increase, with the last spat landing occurring in April of 2016.

B. ADULT SCALLOP TRANSECT SURVEY SITES

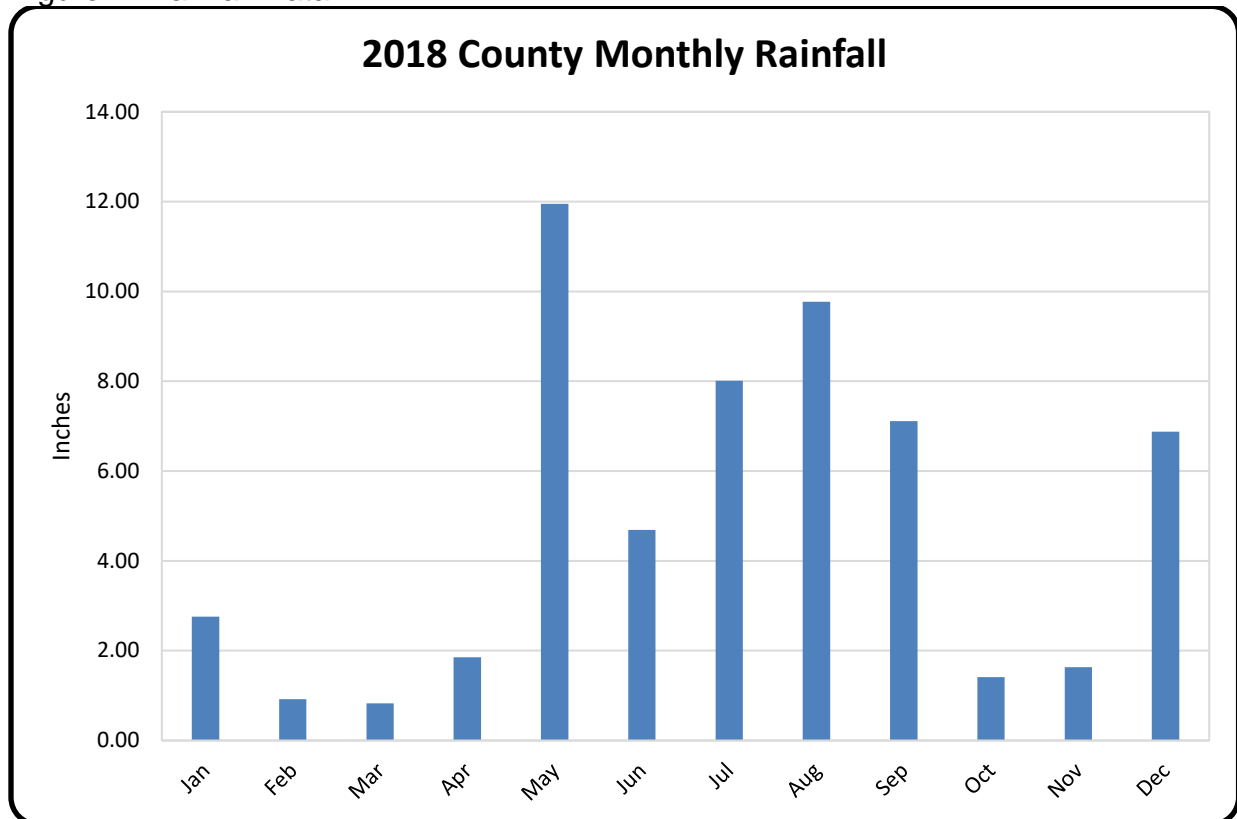
Adult scallop transect survey are traditionally conducted during August. A highly concentrated and persistent red tide bloom developed throughout Sarasota County in June and continued through the end of the year. For health and safety reasons, both staff and volunteer searches were cancelled for 2018.

C. CAGE PROGRAM

No adult scallops were available in 2018 to support the cage program.

D. RAINFALL

Figure 4: Rainfall Data

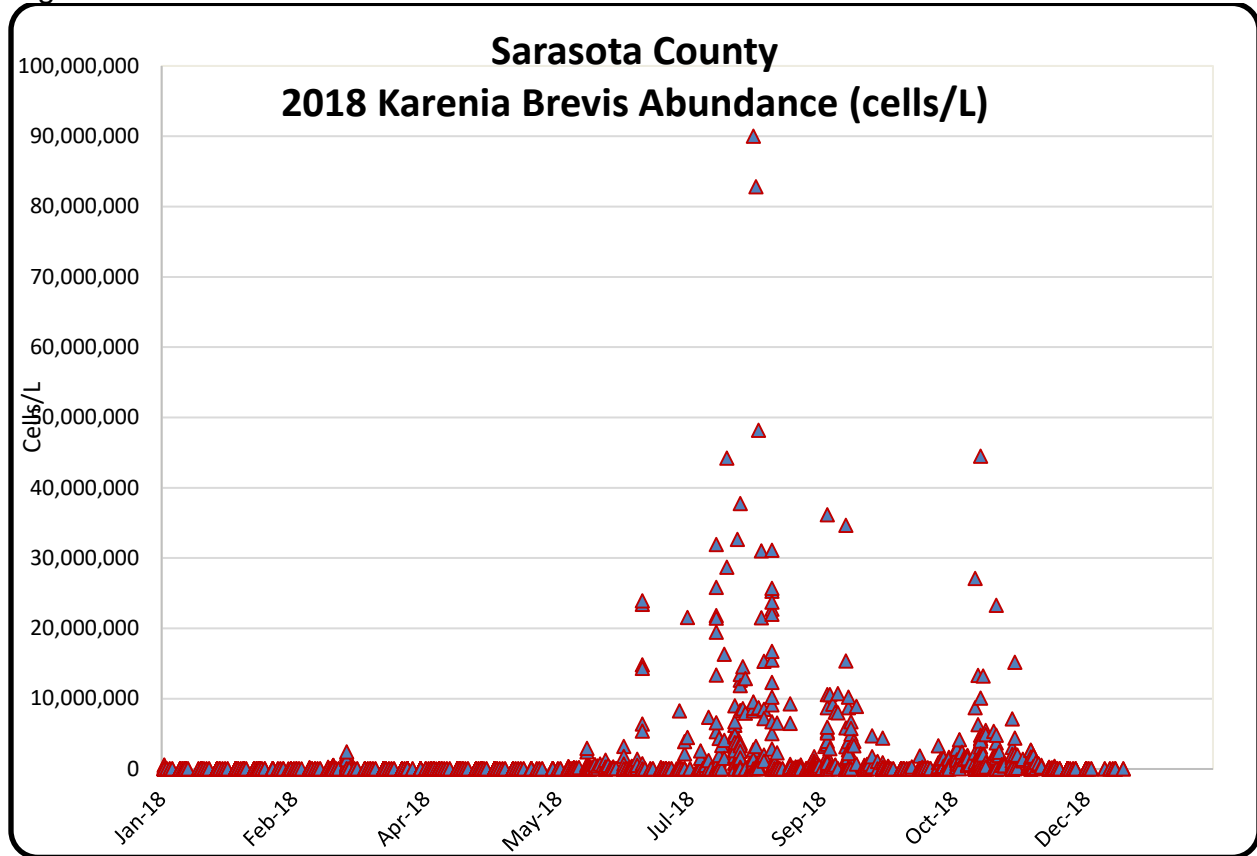


Data provided by the Southwest Florida Water Management District

As in previous years, the data shows a correlation between the typical peak of spat landings (figure 2) and the decrease of rainfall leading into April. In contrast, there is a notable drop in spat landing from May to June as rainfall significantly increases. The monthly rainfall for April was 1.85 inches, increasing to 11.95 inches in May, an 84.6% monthly increase.

E. RED TIDE

Figure 5: Red Tide Abundance



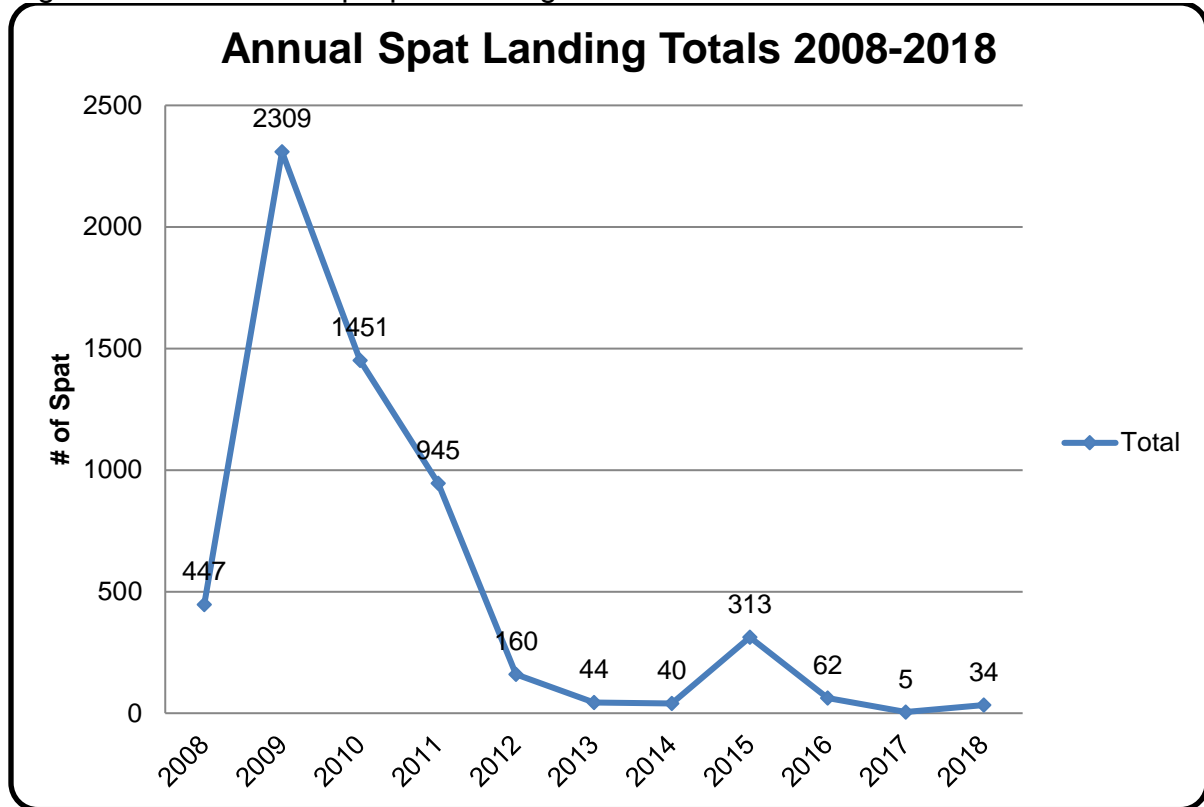
Data provided by FWRI

The 2018 Florida Fish & Wildlife Commission (FWC) red tide cell count data shows the bloom started in June. The persistent and concentrated bloom continued through the end of 2018. Red tide cell counts more than 1 million cells per liter (cells/L) are in the high range according the FWRI concentration scale. During this period there were roughly 242 samples that exceeded the 1 million cells/L threshold. A single sample contained as much as 90 million cells/L.

In County bays significant rainfall events can negatively affect scallop populations, as shown in historic data. In addition, scallops are susceptible to red tide which can exacerbate this negative trend. We typically do not see spat landing late in the year and did not conduct adult transect surveys to corroborate the data.

F. ANNUAL SPAT LANDINGS TREND DATA

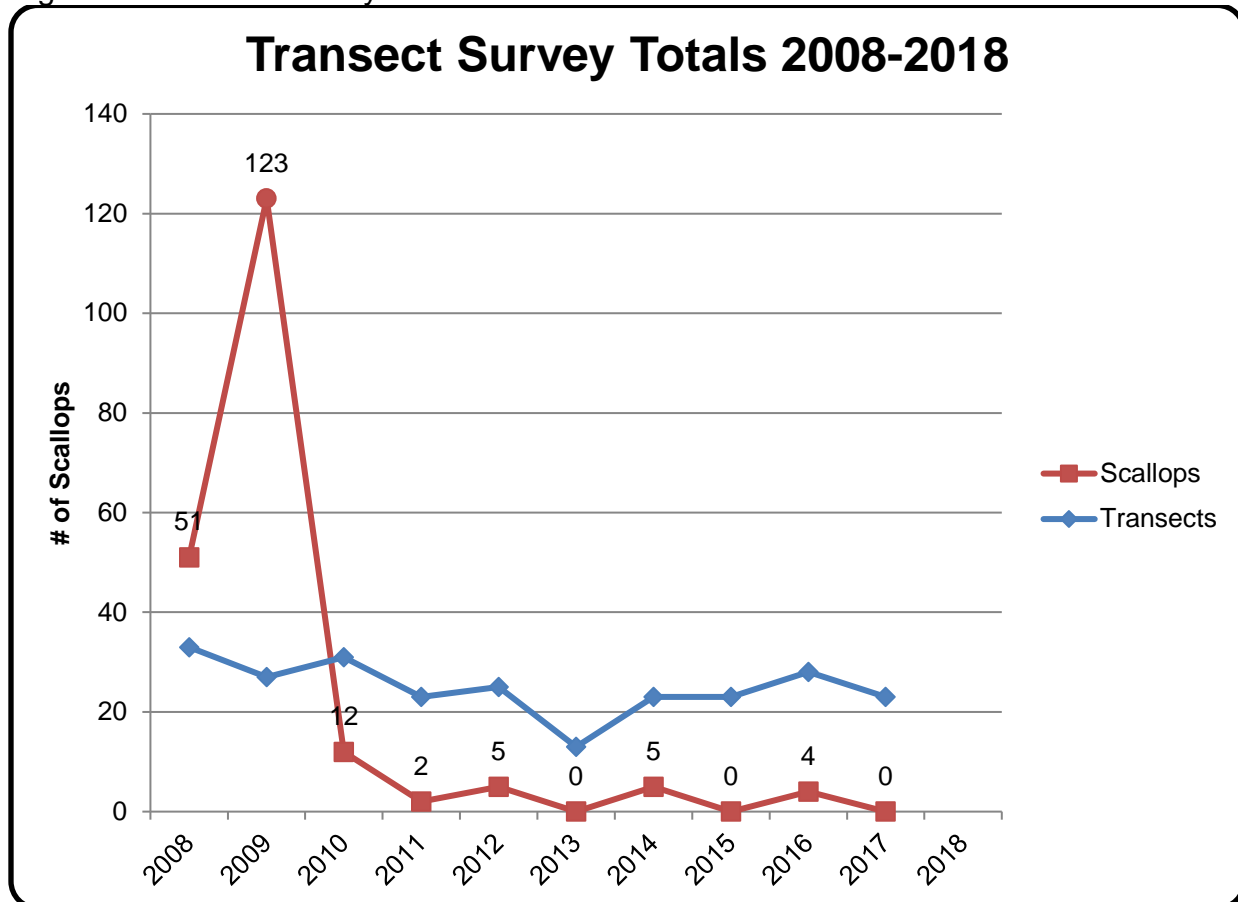
Figure 6: Annual Scallop Spat Landings



The spat monitoring program started with 15 monitoring sites throughout the county bays. In 2012, Mote Marine Laboratory collaborated with county and the monitoring sites were reduced to 10, then further reduced to 6 in 2013. Figure 7 shows spat landings increased 85.3%, from 5 in 2017 to 34 in 2018.

G. TRANSECT SURVEY TREND DATA

Figure 7: Transect Survey Totals



No transect surveys were conducted in 2018 due to a significant red tide bloom. For the 2019 survey, the search method will change to a rapid assessment method. This method, currently used in our Seagrass Monitoring Program, will allow us to search significantly more locations and a larger overall area.

Relationship of Data to Stormwater Management Plan (SWMP)

The 2018 spat monitoring data shows a modest increase in landings county-wide during our peak period around April. However, significant rainfall events combined with persistent red tide blooms may have hampered this resurgence at the end of the year. The lack of adult scallop transects further complicates this year's overall assessment.

Sarasota County continues to support watershed management projects that have a positive impact on the conditions of our bays. These structural controls remove pollutants before they reach the bay, thereby protecting water quality. County bays continue to experience increasing seagrass acreage throughout our bays. Increased habitat for scallops is one part of complex environmental factors needed to support sustainable scallop populations.