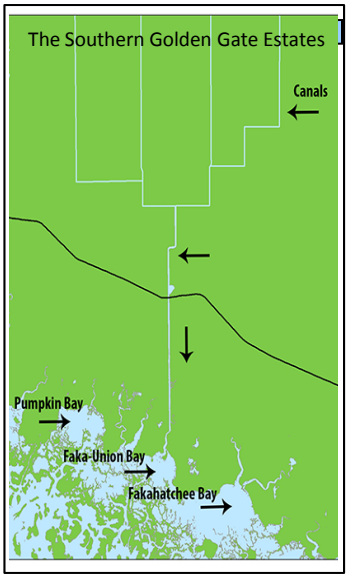
Rookery Bay Research Reserve
Finding Solutions

Shark Nurseries in the Ten Thousand Islands Estuaries

In the 1960's, a large residential neighborhood was created just north of the Ten Thousand Islands. A network of roads and 58 miles of canals were built, but the project was later abandoned. The failed development permanently altered the natural sheet-flow of fresh water to the bays of the Ten Thousand Islands. A canal system directed freshwater runoff down one central canal to the Faka Union Bay and out to sea. Studies indicate a distinct decrease in salinity values in this bay and a prolonged increase in salinity in two adjacent estuaries that provide an important nursery habitat for sharks and other marine life. In order to improve the distribution of fresh water throughout the Ten Thousand Islands estuaries, land purchased by the State of Florida is now being restored by the South Florida Water Management District. Upon completion, freshwater flow out of the Faka Union Canal is being reduced, creating a more even flow and fewer effects on marine life related to rapid salinity changes.



Project Leader:
Patrick O'Donnell

Funding:
The Shark Foundation, Guy Harvey Ocean Foundation, Friends of Rookery Bay

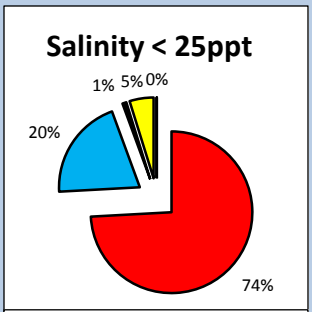
Project Dates:
May 2000-2020

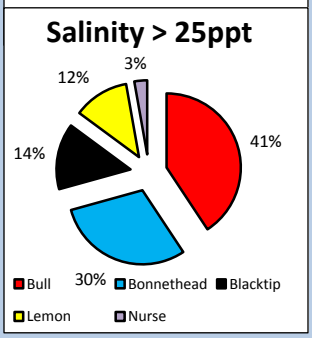
Shark Nursery Research

Sharks use shallow estuarine bays to give birth to their young. These back bays provide young sharks with plenty of food and protection from potential predators, such as larger sharks. In order to gain an understanding of shark nurseries and relative distributions before, during and after the restoration of the Ten Thousand Islands watershed, researchers began collecting shark demographic data on a monthly basis . This may be the first study ever to address the effects of restoration on shark populations.

Three bays downstream of the Faka Union canal are sampled each month with a monofilament gill net and baited long lines. Using a donated houseboat as home base, researchers monitor the nets and lines from two hours before until two hours after sunset. Captured sharks are carefully brought into the boat to be identified, tagged, measured, weighed and released. Water conditions, such as temperature and salinity, are also recorded.

Bull sharks (*Carcharhinus leucas)* are more tolerant of low salinities than other sharks, and freely move from marine to freshwater locations. Results to date indicate that bull sharks are by far the dominant species caught in the Faka Union Bay. Scientists hope to learn more about sharks by documenting the different types of sharks found in each location to determine how they react to changes in their environment.





Rookery Bay, located in southwest Florida, is recognized as one of the few remaining pristine, mangrove-forested estuaries in the U.S. As part of the National Estuarine Research Reserve System, it serves as an outdoor classroom and laboratory for students and scientists. For more information, visit www.rookerybay.org.