Coral Spawning

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Each summer, following maximum seawater temperatures, the reef explodes in an orgy of reproduction. At least 10 species of invertebrates, including corals, worms, sea stars and sponges, and many fish species, participate in this reproductive period that culminates in the week following full moon.

Most of the invertebrate species spawn together on a single night in what are known as multi-specific or mass spawning events, while fish spawning is more spread out and occurs before dusk. We have monitored this annual event since 1991 (first observations in 1990), characterizing the species involved, and their individual timing and behavior. We have also experimented with fertilization, hybridization and development with several coral species. In addition, we have had limited success in recruiting and growing out brain corals from larvae generated during our fertilization trials. These corals continue to thrive on both the East and West Banks.

More recent emphasis has shifted to determining the ultimate sources of larval input for the Flower Gardens. Since nearly all reef organisms have some form of larval planktonic stage, they have the potential for dispersal over vast distances (thousands of kilometers). More importantly, the Flower Gardens are isolated from other similar reef systems by more than 600 km of open water, with their nearest neighbors located north of Veracruz, Mexico to the southwest and the Yucatan peninsula to the southeast.

We know that the Flower Gardens are reproductively active. However, we do not know if this annual reproductive effort helps maintain the existing populations at the Flower Gardens, or if they rely on input from other more distant reefs. We have been investigating this dilemma by examining mitochondrial genes in the fish and coral populations at the Flower Gardens, and other potential source points in Mexico.

Editor's Note: The sanctuary research team continues to monitor the spawning annually.