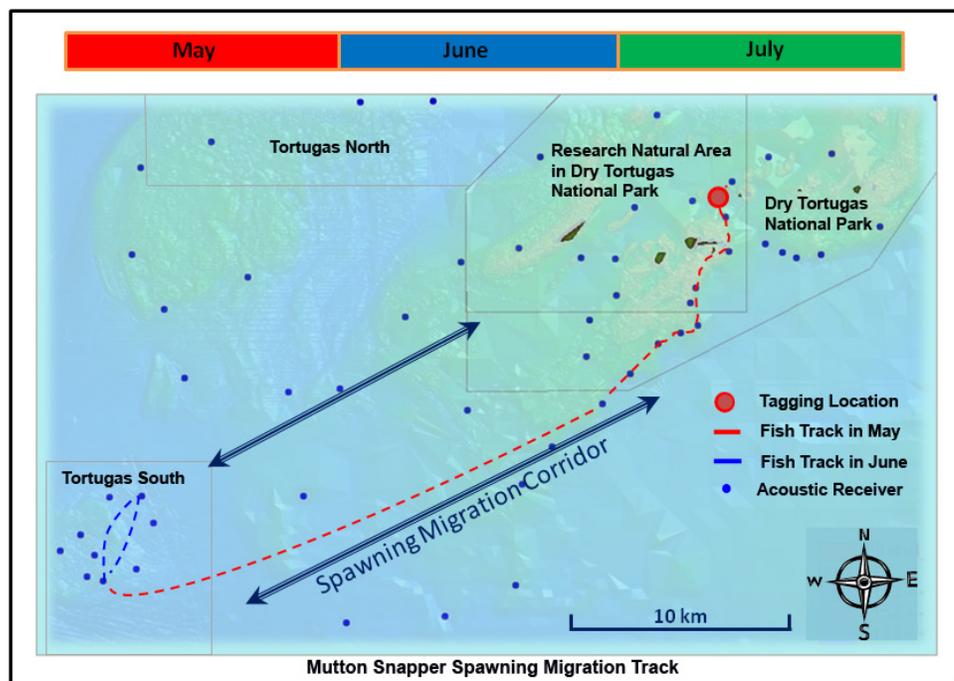


SPAWNING MUTTON SNAPPER USE CORRIDOR BETWEEN RESERVES

Research Project Description: Mutton snapper have been the target of a popular fishery in the Florida Keys since the early 1900s and have historically gathered for spawning at Riley’s Hump, a deepwater mount located in Tortugas South, one section of the Tortugas Ecological Reserve (TER). By the late 1990s, long-term fishery surveys suggested that such mass spawning aggregations in the Tortugas had all but ceased due to overfishing. Since the establishment of the TER in 2001, fishery scientists have been documenting the effects of habitat protection on reef fish and studying their home ranges and spawning behaviors. By tagging fish with acoustic tags and using an array of acoustic receivers placed throughout the TER and the nearby Research Natural Area (RNA) in Dry Tortugas National Park, scientists are able to determine patterns of habitat use and migration. The acoustic array also helped to detect times when large schools of spawning fish were aggregating offshore.

Research Results: In summer 2009, scientists observed thousands of mutton snapper spawning over two consecutive months. This was the first mutton snapper spawning event captured on record in US waters and followed several years of increases in abundance for this species inside TER according to fish surveys. Mutton snapper tracking data show that prior to spawning, fish swim from inshore shallow reefs in the park’s RNA to their deeper spawning grounds at Riley’s Hump in the TER. While migrating through part of this spawning corridor (shown on diagram), fish are outside of reserve protection. Data show that most snapper stay about 10 days around the full moon at this offshore spawning site before returning to home foraging grounds in the park. Seasonal migrations were repeated by individual fish during the summer spawning season (May through August).



Acoustic tracking shows an unprotected “corridor” for spawning mutton snapper between the Research Natural Area (RNA) and Tortugas South, one section of Tortugas Ecological Reserve. The large red dot identifies the tagging location of one mutton snapper and serves as the beginning point of its spawning migration. The red dashed line shows the track of the fish during May as it moves between the reserves and through the array of receivers (blue dots). The June track is shown with a blue dashed line.

Figure: Florida Fish and Wildlife Conservation Commission

Reference: M. Feeley, *et al.*, Florida Fish and Wildlife Conservation Commission. *Spawning Aggregations and Migration Patterns of Mutton Snapper in Dry Tortugas, Florida*. Linking Science to Management: A Conference and Workshop on the Florida Keys Marine Ecosystem. 2010.