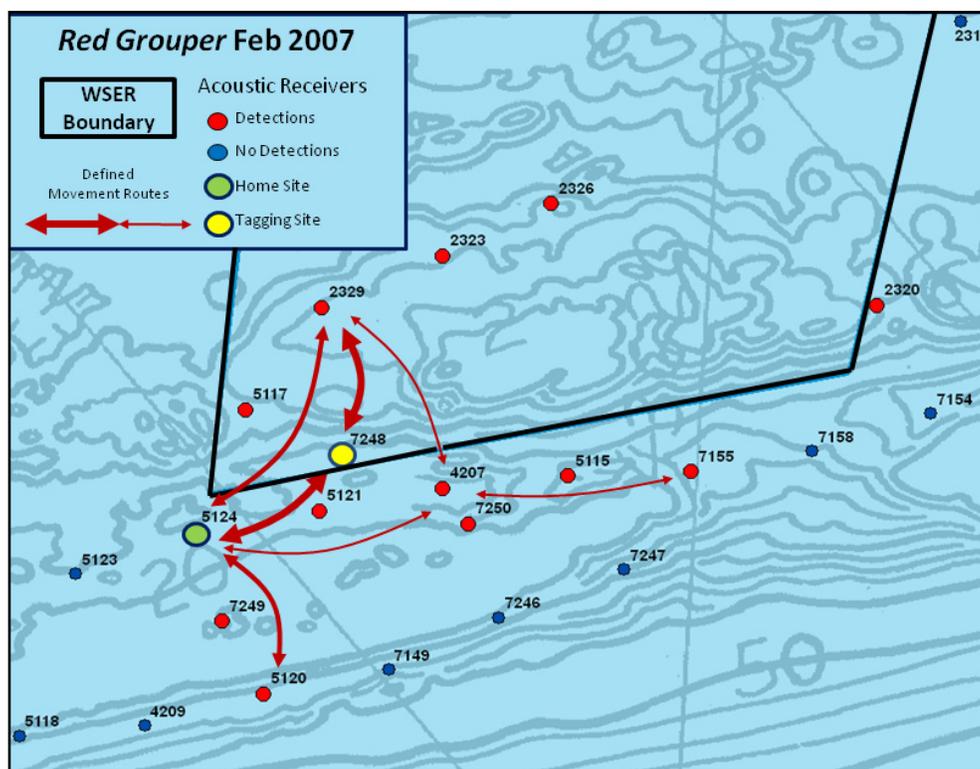


## FORE REEF GROUPEr UTILIZE DEEP REEF OUTSIDE RESERVE

**Research Project Description:** Grouper are an important recreational and commercial fish species. Scientists tracked several species of grouper (red, Nassau, black, gag, goliath and rock hind) using acoustic tags to determine their habitat use within Western Sambo Ecological Reserve (WSER). WSER, a nine square nautical mile no-take reserve established in 1997, protects a range of habitats that help sustain both juvenile and adult grouper, including shallow grass beds, hard-bottom, patch reefs, and spur and groove reefs in deeper waters.

**Research Results:** Tracking studies showed that grouper captured on patch reefs remained on patch reefs and were protected for the most part within WSER. In contrast, grouper captured in the fore reef zone or deeper outlier reef (outside the reserve) showed substantial movement between reefs within WSER and those deeper reefs. WSER is effective in providing protection for patch reef habitat groupers, but is inadequate in protecting grouper using the fore reef zone and outlier reef, as these fish often crossed the reserve boundary. A related study for WSER spiny lobsters shows that this same outlier reef is visited by female lobsters releasing their eggs into the currents, confirming the importance of these deeper, low profile outlier reefs to fish and lobster reproduction.



Tracking of red grouper shows movement between reefs within Western Sambo Ecological Reserve and those reefs outside the reserve. The thicker red lines indicate pathways most often utilized and the thin lines represent paths traveled less frequently by this fish.

Figure: Florida Fish and Wildlife Conservation Commission

**Reference:** M.W. Feeley, *et al.*, Florida Fish and Wildlife Conservation Commission. *Finfish Movement Patterns and Habitat Use within a Marine Protected Area in the Florida Keys National Marine Sanctuary*. Linking Science to Management: A Conference and Workshop on the Florida Keys Marine Ecosystem. 2010.