

## **The Impact of Establishing No Take Zones in Maintaining Sustainable Artisanal Fisheries in Nabq Managed Resource Protected Area, South Sinai, EGYPT.**

**Ayman M. Mabrouk, William W. Taylor, Salah G. El-Etreby, Mohamed A. Faisal**

The artisanal fisheries in the Red Sea is a traditional Bedouin activity in South Sinai, Egypt. The catch is mainly subsistence but the surplus can be a considerable source of income. Nabq Managed Resource Protected Area (MRPA) is the biggest Protected Area on the Egyptian Coast of the Gulf of Aqaba and has the northern most Mangrove stand in the Red Sea and pristine and highly diverse Coral Reef communities. In 1995, alternation of Take Zones (TZs) and No Take Zones (NTZs) were established to sustain artisanal fisheries for the Bedouin Community on Nabq (MRPA) Coast at Ghargana Village while protecting the fragile reef community fisheries.

In order to evaluate the composition and productivity of this small scale artisanal fisheries and the effectiveness of the No Take Zones (NTZs), we conducted underwater visual census surveys of 50 species of fishes representing 9 families from 2000-2002 in both the take and no take zones of the reef complex. Additionally, we conducted surveys on the catch from Ghargana fishermen from 1999-2003 and 2007-2008 to collect information on the catch success of different type of fisheries operations. From this, we determined the catch composition ,size, abundance, and landing on daily basis to calculate a Catch Per Unit Effort (CPUE) estimate for each fishing gear and fishing location.

The total fish abundance in the NTZs was significantly higher than in the TZs, with no significant difference in the species richness between the two zones. The catch from the Ghargana fishing grounds showed a decrease over the years from 50% to 25% of the total catch from 1999 to 2008, respectively. As a result of the decrease, the fishermen shifted their effort to other nearby areas where the fish populations were still healthy. Overall, we found that CPUE decreased significantly over years, the catch composition changed dramatically, and the size at harvest was significantly reduced.

We conclude that local Ghargana fish stocks are declining and the establishment of the NTZs was not enough to ensure a sustainable artisanal fisheries for the resident Bedouin communities. We recommend that other fishing regulations should be considered to attain fisheries sustainability and to secure the livelihoods of this important cultural community.