EFFECTIVENESS OF ANCHORED FISH AGGREGATING DEVICE (FAD) ON FISH AGGREGATION BEHAVIOR

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ABSTRACT

As many pelagic fish tend to aggregate around floating objects, the Fish Aggregating Devices (FADs) were introduced to Sri Lanka, as a technical improvement, in gaining high fish catches. There are several hypotheses explain the aggregating behavior of pelagic fish. Widely accepted theory on aggregation behavior is the possibility of safeguard the survival of eggs, larvae and juvenile stages, and protect themselves from predators. Additionally FADs are used as feeding places while most adult migratory fish species use FADs as resting places, geographical references and school formation due to presence of bait fish.

Present study is an attempt to further understand the effect of FADs on aggregation of fouling and fish species around the FADs. Species compositions were determined by visual census. Under water video recordings were obtained by divers from the flotsam, nets, ropes and anchorages of the two FADs deployed off Trincomalee at 28m and 30m depths from March to October 2013.

During this period pH, water temperature and salinity did not show a marked difference from reference point. Mean pH at FAD 1 was 8.17±0.08 while the mean pH value at FAD 2 was 8.19± 0.05 and the reference point was 8.16±0.09. Mean

water temperature at FAD 1 was 30.37± 1.61 C^0 and the FAD 2 was 30.87± 1.29 C^0 while the reference point was 29.97± 1.51 C^0. Mean Salinity of the FAD 1 was 32.29±4.98 ppt and the FAD 2 was 32.56±5.07 ppt while reference point was 32.29±4.35 ppt. Mean Conductivity at FAD 1 was 49±7.91 µs while 48±6.09 µs at FAD 2 and the 48.79±6.92 µs at the reference point.

After the study period deployment the fouling community was composed of algae and invertebrates. Most prominent algae species were *Ulva lactuca*, *U. prolifera* , *Cladophora vagabunda* , *Chlorodesmis caespitosa* , *Codium arabicum* and *Colpomenia sp.* Invertebrates were dominated by Cirripeds and Hydrozoans. And total of 19 species representing ten fish families were observed. Haemulidae(*Plectorhinchus pictus*, *P. ceylonensis*, *P. lineatus*), Nemipteridae and Pomacentridae were commonly occurring families followed by Lutjanidae and Tetraodontidae. Family Antenaridae, Chaetodontidae, Labridae, Pomacanthidae and Serranidae represented the lowest value of species during the survey

Number of species associated with FADs was significantly increased with the immersion time. Further studies are needed to make conclusions on potential changes in fish species composition around FAD.

Key words: FADs, Fish Aggregating Behavior, immersion time