

## A preliminary assessment on the mass mortality of fish at Rameswaram

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A massive fish kill was reported at Agnitheertham that covers an area of around 200 metre long shoreline, near Rameswaram temple on 09.11.2015. Juveniles of fishes, crabs and shrimps were seen on the sand and in between the rocky crevices. Large shoals of juveniles of many fish species were swimming in a passive manner. The dead fish assemblage at the site included finfishes like *Gerres abbreviatus*, *Siganus javus*, *Terapon jarbua*, *Plicofolis tenuispinis*, *Sardinella albella*, *Sardinella gibbosa*, *Selaroides leptolepis*, *Platycephalus indicus*, *Scatophagus argus* and crustaceans like *Portunus pelagicus* (crab) and *Penaeus latisulcatus* (shrimp). Water samples were collected from the site and analysed for Dissolved Oxygen, pH, salinity, temperature, hardness, Ammonia, Nitrite and nitrate (Table 1). Microbiological analysis revealed the dominance of bacteria belonging to the genus *Streptococci* in all the four water samples.

It was observed that, Dissolved Oxygen (DO) level was very low in the water and coupled with the ammonia and nitrite levels could be the reason for the fish kill. A case of mass mortality of trigger fish, *Odonus niger* were observed in 2007 near Dhanushkodi (Bindu *et.al.*, 2008 *Mar.Fish. Infor. Serv. T&E Ser.* No.197). However, in the present case it was an assemblage of different species of

Table 1. Water quality parameters at the site

Parameter	Measured values (Range)
Temperature	28.5 - 29.1° C
Salinity	34 - 35 ppt
pH	7.56 - 7.82
Dissolved oxygen	0.75 - 0.98 ppm
Hardness	161.1 - 179 ppm
Ammonia	0.25 ppm
Nitrite	0.25 - 0.5 ppm
Nitrate	< 0.5 ppm

fishes. Most of the fishes killed in the present case were juveniles of the fishes normally seen in the near shore waters. The exact cause of this deteriorated water quality which led to the fish kill, could be traced only by a holistic investigation of all related activities of the region. The Rameswaram Fishing Harbour is located very near to the site of fish kill. The season of bumper landings of sardines locally known as *Peichalai* had commenced a week before the mortalities occurred. The heavy landings unloaded in the harbour area are taken by the trucks normally. It is inferred that heavy rains in the preceding two weeks might have affected the proper handling and transport of the bumper landings, leading to deterioration of the water quality in the nearby areas.