

Research Highlights

Mass mortality of stingrays at Uran, Maharashtra

Mass mortality of stingrays was observed at Mankeshwar Beach near Kharkhand village, Uran, District Raigad on 22-08-2010. About 100 – 150 fishes were reported to have stranded in rocky embankments of the intertidal zone. These 'bundh' like structures of stones are about 1 to 1.5 m in height, which are used by the local fishermen to fix nets to catch fishes during tidal movement. The species was identified as *Himantura uarnak*, (Forsskål 1775) commonly called as 'Honeycomb sting ray'. This seems to be the first incident of mass mortality of stingrays along Maharashtra coast in recent years.

Biological studies were carried out on the site. The Disc length (DL) of the rays ranged between 99 – 112 cm. The Disc width (DW) could not be measured as the local fishermen had chopped the discs laterally for consumption, however one individual was found intact and the DW was recorded as 112 cm. The species attains at least 200 cm disc width (DW). These are reef-associated species commonly found off sandy beaches, shallow estuaries and lagoons and may sometimes enter fresh water. They also occur in offshore to depths of at least 50 m. *H. uarnak* is widely distributed in the Indo-West Pacific from the Mediterranean Sea to northern Australia.

Maturity studies revealed that all the dead individuals were ripe females with one or two fully developed pups in their



Sting rays stranded at Uran

uterus. The species is Viviparous. Sexual maturity is attained at a disc width (DW) of 100 cm which corresponds to age of 4 to 5 years. Size of pups at birth is 21 – 28 cm DW. Fecundity is low with only 1 - 2 embryos. Embryos feed initially on yolk and then eventually receive additional nourishment from the mother by indirect absorption of uterine fluid enriched with mucus, fat or protein through specialised structures. According to the villagers just before dying they had released their pups. Gut content revealed that they fed mainly on crabs and fishes. Normally they feed on small fishes, bivalves, crabs, shrimps, worms and jellyfishes.

This incident took place immediately after the oil spill off Mumbai coast caused due to collision of MSC Chitra and MV Khalijia-3.

These stingrays may have been swimming toward shallow sandy beaches

for spawning purposes but due to the spilled oil and chemicals off Mumbai coast, they might be disoriented from their routine migration and drifted to Mankeshwar beach. Petroleum hydrocarbons produce serious consequences by interfering with chemoreception as chemical senses play a major role in mediating critical aspects in the behavior of marine organisms, including feeding, reproduction, habitat selection and predator recognition. During high tide they might have entered intertidal zone but when water started receding at low tide, they were trapped in rock crevices and 'bundhs'. Further studies are being carried out on the causative factors leading to this mass mortality.

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