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**ABSTRACTS**



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## GIS based resource mapping of fishery resources to reduce CO<sub>2</sub> emission by multiday trawlers

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Multiday trawlers operating in Indian waters are now equipped with fish finding devices and GPS. In association with progressive fishers, a study was conducted on fishery resource mapping off the west coast of India. Data on fishery, species composition and GPS coordinates of fishing was collected from 1045 trawling days off west coast of India during 2008-2012. The results enabled the researchers to carry out GIS assisted mapping of distribution and abundance of 237 species/groups of marine fauna and also understand seasons of juvenile abundant grounds of about 50 commercial species. The study reveal that major resources such as *Nempiterus* sp., *Trichiurus* sp. *Sepia* sp., and *Lagocephalus* sp. occurring in the trawling grounds shows repeatability over the years and seasonal pattern occurs in their abundance. In the multiday trawlers operating off Mangalore Karnataka, it is observed that, about 25% of the total time spent for trawling is used for scouting of the fish. The CO<sub>2</sub> emission was estimated at 0.28 t per ton of fish caught by the multiday trawlers. The estimated CO<sub>2</sub> could further be reduced by the GIS mapping of fishery resources. The mapping of the resources aids in locating the area of occurrence of the resources which would help in reducing the scouting time. Moreover the resources mapping also helps in identifying areas of spawning and juvenile abundance and helps in restricting the fishing in certain season. This enables the policy makers to suggest seasonal and spatial fishing restrictions and

declaration of marine protected areas or critical fishing zone. The paper discusses the database creation and illustrative mapping of fishery resource distribution which would reduce the  $CO_2$  emission and help in green fishing.

**Keywords:** Resource mapping, GIS, fishery management,