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A report on mass landings of economically important fish along the South East Coast of India

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ABSTRACT

Mass landings were observed in certain species in the month of March and September along the South East coast of India. The mass landings indicate the seasonal abundance of certain species of fish, which are economically important. These fishes seem to be available at a specific season. Thus the following data may help fishery processing units to be aware of the resource available and thus help in the productive usage of fish stock that are caught during the month of March.

Keywords: Mass landing, oil sardine, Elasmobranches, Anchovies, Tune, Grouper, Fish

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INTRODUCTION

Fish are at present in high demand in food markets, they are widely consumed in many parts of the world because they posses high protein content, low saturated fat and also contain omega fatty acids known to support good health (Ikem and Egiebor, 2005). There are about 240 species that contribute to the fishery resources of India, of which 5 species seem to turn up in mass quantity in landings across Cuddalore landing center.Fisheries are one of the most important renewable resources. With increasing fishing pressure, the only option left for the sustainability of fisheries is their rational management. Proper management can be possible only with a thorough knowledge regarding the dynamics of the fish stocks. For a meaningful study of the dynamics, knowledge of natural history of the species is necessary and this in turn can be acquired by the correct identification of fish species.

Tamil Nadu is situated between 8” 5’ and 13” 35’ north and 76’ 15’ and 80’ 20’ along the South East coast of India bordering the Bay of Bengal. Andhra Pradesh borders the state in the north, the Bay of Bengal and the Palk Bay in the east, the Gulf of Mannar along the southeast, the Indian Ocean in the South, the Arabian Sea in the southwest, the State Kerala state in the west and Karnataka state in the northeast. Tamil Nadu is one of the states in India blessed with marine and inland fishery resources. It is also one of the states to have first started a department for fisheries in 1907 with the mandate to develop fisheries along the Tamil Nadu coast. Tamil Nadu has a coastal length of 1076 Km and a continentalshelf of 41, 412sq.km, has rich potential of fish resources, which constitutes about 15 per cent of India's coastal line. Thus the marine area of Tamil Nadu is about 9 per cent of total Indian marine area (ShyamSalim and GogulaRamanan, 2008).

MATERIALS AND METHODS

The data was collected by observations made at local landing sites along the South East coast of Tamil Nadu across three stations namely Mudasalodai, Annankovil, and Cuddalore: The weight of the fish species that landed was obtained from the fishermen and verified using integration of unit weight and approximate population estimation.

RESULT AND CONCLUSION

Indian Anchovies

Anchovy is a small pelagic fish ranging from 2 to 10 cm total length. Anchovy belongs to the Family Engraulidae' genera *Encrasicholina* and *Stolephorus*. Previously, the genus *Encrasicholina* was included in the *Stolephorus* genus, but these genera were clearly separated by Nelson (1983). When looking at the body shape of anchovy, it can be simply divided into two types namely, the rounded shape of *Encrasicholina* and the compressed shape of *Stolephorus* (Whitehead, Nelson and Wongratana, 1988). In a certain season, it forms huge schools, which can be lured by light at night time. The main distribution is in shallow to fairly deep waters from 5 to 60 mts (Wongratana, 1980). Most species of anchovies are estuarine or brackish water fishes (Wongratana, 1985). *Stolephorus* are small and moderately compressed anchovies; the eggs are oval, with or without a knob at the end. These are marine, pelagic and schooling species, mostly inshore, some perhaps entering river mouths. Recently, there were 19 species identified of which 6 species are distributed throughout the Indo-Pacific region, the rest are distributed in more limited areas, e.g. Western Indian Ocean, Western Pacific.

Plate: 1

Plate: 2

There are 28 species of Anchovies of which *Stolephorus indicus* (vernacular Name (Tamil) Nethili) is a very abundant species, otherwise known as the Indian Anchovy. It is a commercially important fish that has shown mass landings at Mudasalodai with a weight of approximate 1 metric tonnes. It costs approximately 70Rs/kg in the local market at Mudasalodai. The fish are dried and preserved in salt for later use and also eaten fresh .It is a delicacy by South Indians living along the coast of Andhra Pradesh, Tamilnadu and Kerala. Its fragile and harmless bones and small size make it easy for consumption (Plate 1&2).

Grouper

Anumber of species belonging to the family Serranidae are highly esteemed marine food fish particularly in the South East Asian and the Caribbean countries. More than 4 species of Serranidae (Grouper) Landed at Annankovil landing center in the month of March namely, *Epinephelus chlorostigma, ,Epinephelus coeruleopunctatus ,Epinephelus coioides ,Epinephelus bleekeri* . They measure from 30 to 45 cm to nearly 70cm in length and are vernacularly called "PanniSaathan"(180Rs/kg)with a weight of 4 to 5 metric tons.They are fleshy fish with large bones making it a perfect fish for fillet and the export potential is high for the particular species(Plate 3).

Plate:3

Oil Sardines

Pelagic fish like Clupeid fishes particularly sardines, herrings and shads although comparatively smaller in size, occur in large shoals contributing to important fisheries of the world, such as species like the British herrings, pilchards and Peruvian anchovies. Pacific sardines, lesser sardines and Indian oil sardine contribute highly to Indian fisheries large landings annually. In India the clupeoid fishes including the lesser sardines and oil sardine *Sardinella longiceps*, more specifically known as the Indian Oil Sardine contribute much to Indian pelagic fisheries.

Plate: 4

Plate: 5

Mass landings of *Sardinellla longiceps* and *Sardinella albella* measuring between 10 to 13 centimeters were observed along the south east coast weighing approximately 12 tonnes and costing 20 Rs per Kilogram. The harvest was utilized by both local and large-scale fisheries and yet result in large quantities being wasted due to lack of preservation facilities and instead used to make poultry and cattle feed due to spoilage .This species could be called "Poor- rich" fish as they are priced at 4 dollars in the United States of America yet in India they are so abundant and common in distribution that they are made into cattle and poultry feed (Plate 4&5).

Tuna

Skipjack tuna, *Katsuwonus pelamis*,and yellowfin tuna,*Thunnusal bacares* together comprise the most important component of Indian Ocean tuna catches. Catches of these species by Indian Ocean fisheries have been increasing over the last decade and the average annual production of tunas during 1985-1994 was 38,286 t. The production reached 51,846 t in 1990 and declined to 36,846 t in 1994 (Pillai*et al*1994). Skipjack tuna contributed to 32 percent of the total tuna catch in 1986; yellowfin tuna was the second most important at 25percent. Skipjack tuna are found throughout the Indian Ocean from the Gulf of Arabia in the north to lat. 40°S , Yellowfin tuna are also distributed

throughoutthe ocean to aboutlatitude: 50^{0} S. Tuna-fishing in Indian waters is carried out by (i) Small-scale motorised/mechanised/unmechanised craft up to a depth of 10 to 80 m along the coastline of the mainland of India, (ii) artisanal pole-and-line and troll-line operations in the vicinity of the oceanic islands of Lakshadweep, and (iii) oceanic exploratory survey/training vessels and commercial longline vessels fishing in the Indian EEZ under joint-venture schemes.

Plate: 6

Plate: 7

March 2012 witnessed large Tuna landings especially *Katsuwonu pelamis* (Skipjack Tuna) .Boats filled with skipjack tuna of an average length of two feet with an daily landing of 10 metric tonnes costing at 70Rs/kg.The demand for tuna has risen and most of the tuna caught at Cuddalore Old Town are soon packed in ice and transported to fishery processing industries (Plate 6&7).

In the month of September large landings of striped bonito, scientifically known as *Sarda orintalis* weighing nine metric tonnes this mass landing recoding is still extending into the month of October across Cuddalore, Mudasalodai and Annankovil. Though the value for the month of October is yet to be obtained.

Plate: 8

Plate: 9

Elasmobranches

Catches of Elasmobranches in India showed an increasing trend from 27.4 thousand tons in 1961 to 49 thousand tons in 2006. During 2006, among the total Elasmobranches caught throughout India, Tamil Nadu contributed substantially with 10.8 thousand metric tonnes. The Elasmobranches contributed approximately 4% of the India and 3% of the Tamil Nadu catches (Raje et al. 2002).

Manta and sting rays seem to visit the coast of Cuddalore in large numbers in the early summer months starting in the month of February and increasing progressively in the months of March (80Rs/kg) showing .5 to .7 metric tons. With Cuddalore landing sites of OT and Annankovil individually showing an increase in landing the rays taste like shark meat and can be an easy alternative, with the shark population dwindling in numbers across the world (Plate 8&9).

The month of September showed catches of *Scoliodon laticus* which is a rather small shark with a distinctive spade like nose with a prominent grey pigmentation and travels in schools in shallow water (Murugan and Namboothri 2012) .It is commonly known as the Spade Nose Shark and also known as Pal sura in Tamil due the white pigmentation present on the ventral side of the sharks viscera. The monthly weight was seven metric tonnes and newly matured *Sphyrna zyganea* were sighted in Cuddalore and Annankovil though the weight per unit was too negligible to be of economic value (Fig:1).

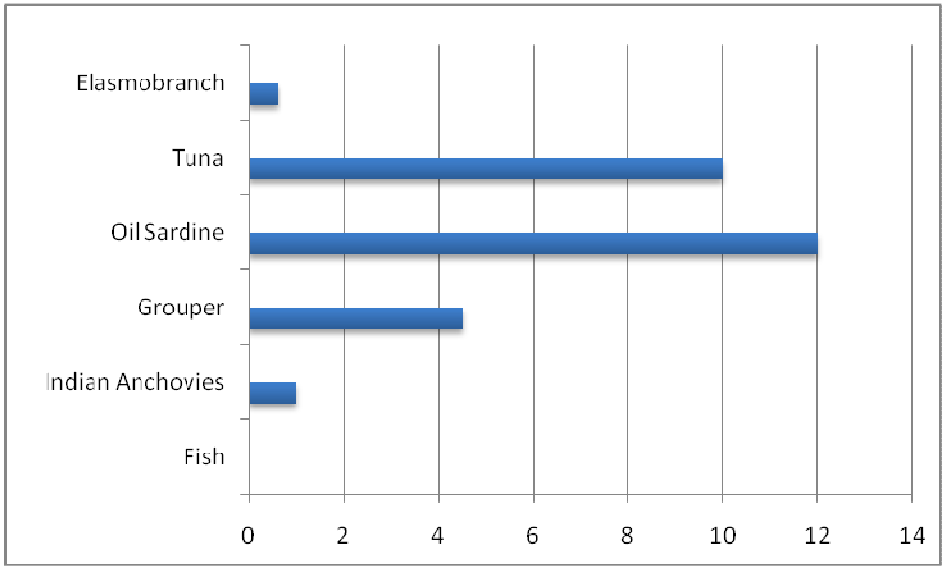

Fig : 1 Distribution of species the showed mass landings in the month of March (in terms of Metric tonnes)

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