Available online at http://www.journalijdr.com

ISSN: 2230-9926

International Journal of Development Research
Vol. 4, Issue, 10, pp. 2048-2051, October, 2014

International Journal of
DEVELOPMENT RESEARCH

Full Length Research Article

FISHING GROUND OF *ELEUTHERONEMA TETRADACTYLUM* (INDIAN SALMON) IN PULICAT COAST

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ARTICLE INFO

Article History:
Received 19th July, 2014
Received in revised form
29th August, 2014
Accepted 06th September, 2014
Published online 25th October, 2014

Key words:
CPUE, GPS,
Pulicat Coast,
Fishing Ground.

ABSTRACT

The peak fishing season for the *E. tetradactylum* of the Pulicat Coasts from May to September. The maximum catch were recorded at station 2 and minimum catch were recorded at the station 6.The highest concentration of the fish is around the continental shelf .the fish are distributely continuously in waters of pulicat for their purpose of feeding, Nursery as well as breeding grounds. Pulicat Coast it acts as the best fishing ground of *E. tetradactylum*.

INTRODUCTION

Eleutheronema tetradactylum, also known as indian salmon or rawas, is a threadfin fish of the polynemidae family. There are a good number of literature are available on the fish biology (yousefian *et al*., 2012 and Hosasain *et al*., 2004). However, several studies on fish reproduction show that most polynemids species exhibits hermaphrodites protandry which their sex changing from male to female with fish growth (Motomura, 2004; Pember, 2006). As part of the polynemids fish, Its is one of very high commercial and important fisheries species for kuwait, india, thailand, vietnam, indonesia, singapore, bangladesh, cambodia, myanmar, northern australia and Malaysia (motomura, 2004). Appropriate scientific data on the distributions of marine resources, based on regular research vessel surveys, have only been collected for a few decades. To judge the degree of stability in productivity over multi-decadal time scales, it is necessary to resort to studies of the distribution, not of the fish themselves, but of the commercial fishing grounds. Where appropriate data are available, such as with the Scanian herring fishery, such studies have reached back for several centuries with considerable success (Cushing, 1982).

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The locations of commercial fishing grounds are controlled by many factors, but these can usefully be grouped into three classes: biological factors, the interactions between the fish and the fishing gear, and human/technical factors. Commercial fishing can only be carried out in places where fish of appropriate types and sizes are sufficiently concentrated. Hence, the locations of the grounds are partly determined by the distributions of the resources, which are themselves controlled by biological factors. It is not, however, sufficient for the fish to be present in an area. They must be available to the types of fishing gear used if that area is to be fished. The characteristics of the gear and their interactions with the behaviour of the fish will therefore partly determine the locations of the grounds, while the environment may influence these interactions (some gadoids will not take baited hooks set on a muddy bottom, for example: Kenchington and Halliday, 1994). Finally, some grounds which could be fished will not be because they are too distant from landing ports, too exposed to bad weather or subject to some other technical or human constraint that has no direct connection to resource biology.

MATERIALS AND METHODS

About 300-400 boats (FRP boat) operate daily from pulicat. Among them 100-120 boats were fishing the Indian salmon (*E. tetradactylum*,) using the gill nets (passive type of net) size

Fig .1. *Eleutheronema tetradactylum*
Distribution of threadfin (*Eleutheronema tetradactylum*)

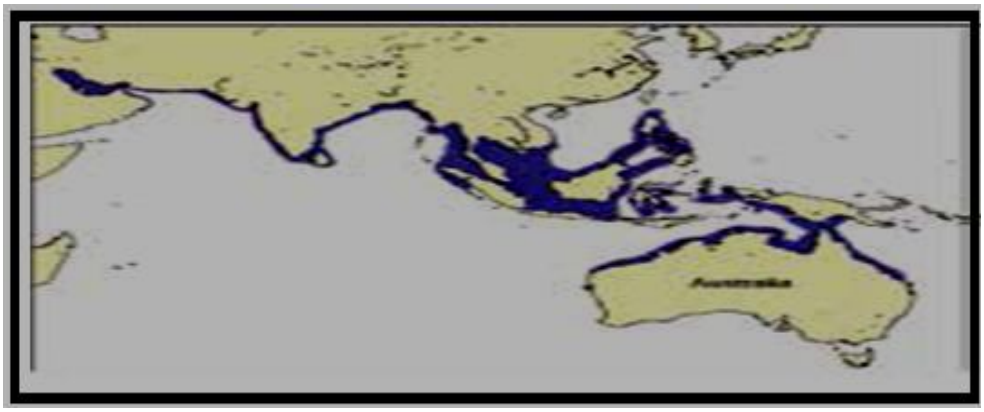


Fig.2. Source: Government of western Australia, department of fisheries

Table 1. Shows the different station (GPS) and its position

STATION NAME	STATION CODE NO	LATITUDE	LONGITUDE	DEPTH
OLD PULINCHERI	1	13 37.067	080 24.038	14 METER
ELLAIKALLU	2	13 36.615	080 23.246	12 METER
ELLAIKALLU	3	13 36.119	080 23.105	12 METER
PALAYA ARANGAM	4	13 22.797	080 23.352	12 METER
ELLAIKALLU	5	13 32.849	080 24.262	12 METER
NADUKUPPAM	6	13 25.734	080 22.342	10 METER
VAIRAVANKUPPAM	7	13 28.534	080 18.332	10 METER

about (45-50mm).The boats leave to pulicat to fishing ground at two different timing (session) evening and early morning. In evening they went 4pm -6.30 pm and the morning fishing they went 2am to 4.30am respectively and they return to the landing center with *E.tetradactylum*, catch between 9.30pm to 2pm in evening session, 6am to 9.30am in morning session landing. Their place and mode of operation were monitored by joining one of the fishing boats from 2013-2014.the catch is landed at about two landing sites namely pazhaverkadu fish landing centre at pulicat and royapuram (kasimedu) fish landing centre at chennai. Only 8-20 fishing boats (fishermen) went to royapuram fish landing centre for market demand for high prices. The catch in each boat is emptied into small fibre coated ice box (capacity of 70kg), the number of icebox of fish in about 70% boats was counted at the time of unloading in order to estimate the total catch (TC) and the catch per unit (CPUE). Each icebox contained 200-250 fish or about 65 kg. Based on the above, the catch per unit effort of this study was calculated as the number of kgs boat -1 day. Exploratory fishing was carried out at seven sites, namely at the edge of the continental shelf at gps points, about 3-8kms north of Pulicat Village and gps points were shown in Table 1

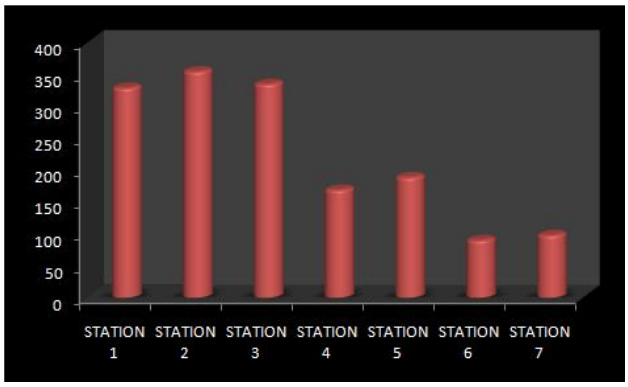
RESULTS

The graph 1 shows and indicated that the heavy commercial fishing were recorded at the position of 13 N 36.615 E 080 23.246 that means station 2 is the highest catch and the lowest catch were recorded in the station 6 (Nadukuppam) at the position of 13 N 25.734 E080 22.342 respectively and the graph 2 shows the distribution of *E.tetradactylum* at different season at different stations. The highest capture was recorded during the month of July 2013 and the lowest capture was recorded at the month of October 2013. Table 3 represent the different species were caught by the gill n*et al*ong with the target species (*E.tetradactylum*).

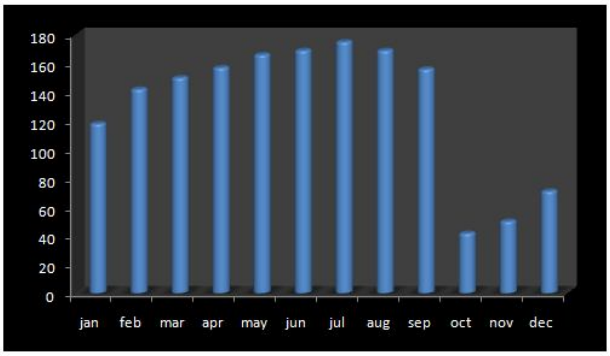
DISCUSSION

Coastal habitats such as estuaries and semi-enclosed bays have historically been considered essential nursery and Feeding

habitat for many economically and ecologically important fish and crustacean species (Peterson, 1896). Roughly 75% of the united states commercial landings are made up of estuarine-dependent species (chambers, 1992). For many of these species to be most dependent on near shore habitats for use for as nurseries, feeding ground as well as breeding ground. The lure and structure made out of vegetation have attracted only *Eleutheronema tetradactylum*, because in order to facilitate spawning they seem to require objects to creep through. This has been demonstrated previously by Jinadasa (1972) who observed the spawning females lay eggs on lures as much as 5-7kg /day and while doing so they also creep in large numbers into the lures.



Graph 1. Shows the distribution of *Eleutheronema tetradactylum* in Different station at Pulicat coast



Graph 2. Shows the distribution of *Eleutheronema tetradactylum* in Different season in pulicat coast

Table 2. Other species were also caught along with *E.tetradactylum*

S.NO	SPECIES NAME
1	Polynemus indicus
2	Carangoides malabaricus
3	Seriolina nigrofasciata
4	Atule mate
5	Gazza minuta
6	Saurida sp
7	Polynemus heptadactylus
8	*Lutjanus sp*

Our survey results indicate that all stations types demonstrate the potential to contribute significantly. Although 65% of the potential fishery habitat at station 1, 2 and station 3.The highest catch per unit effort was realized at the near of the continental shelf, because the density of fish there is higher than that of the east coast and west of it. This is probably due to the fact that mature fish migrate from the oceanic waters towards coastal waters in search of a suitable substrate for spawning, during which process fish encounter seaweeds at the edge of the continental shelf. Therefore, they aggregate there more than to the east of the west of it. As a result the catch per unit was highest there in station 2, station 3 and station 1 respectively. The fact that juveniles do not shift their distributions within the habitat year after year may simply demonstrate the environmental tolerances. Juvenile habitats were generally concentrated in shallow, warm-water, un-vegetated, high salinity habitats. These are areas where food resources are relatively high (Haaker, 1975) and predation pressure is low (allen and Herbinson, 1990). The graph 2 shows highest were recorded in the month of July, June, August and September respectively and the lowest catch were recorded in the month of October, November and December. This might be due to monsoon seasons of east coast of India. And the other species were also caught along with *E.tetradactylum* are shown in Table 2.Reliable information based on field and experimental studies will allow funding institutions to better target their conservations efforts and make better regulatory decisions for Fisheries management, habitat restoration and climate mitigation. I consider that studies such has the one presented here, are necessary first-steps sorting out the fishing ground in Pulicat and behind of the habitat restoration that may be just around the all the stations.

Acknowledgements

I would like to express my sincere gratitude to a man of such superior qualities that he seems like a deity to other people, Dr. R. Moses Inbaraj, Associate Prof. Department of Zoology, Madras Christian College and Mr. Ramachandra Prabu for the continous support of my study and Research.

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