

**STATUS OF NEEDLE FISH LANDING AND
LENGTH SIZE RANGE OF *Tylosurus acus melanotous*
FROM ANDROTH ISLAND LAKSHADWEEP**

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ABSTRACT

The status of Belone fishery of Androth Island is discussed based on the data during the period of three years (June 2014 to May 2017). The annual needle fish landing of Androth Island was 120.102 tonnes (June 2014 - May 15), 131.294 tonnes (June 2015 - May 2016) and 114.352 tonnes (June 2016 - May 2017). The species landed in Androth is *Tylosurus acus melanotous* (88

%) *Tylosurus corcordilus* (11%), and *Ablennes hians* (1%). The month-wise gillnet effort varied from 50 to 384. The highest monthly CPUE (163) was recorded in the month of July, 2015 and lowest (11) in the month of September, 2014. The full beaks are mainly exploited in gill nets. Pablo boats of 5 to 8m overall length with inboard and outboard engines are engaged throughout the season for belone and hemiramphid fishery in Androth. The present study is the first estimate of species wise landing of needle fishes in Androth Island Lakshadweep.

Keywords: Fishery, Belone, CPUE, *T. corcordilus*, *T. acus melanotous*, *Ablennes hians*, Androth

INTRODUCTION

Lakshadweep Sea is rich in fishery resources like tuna, gar fishes, half beaks, sharks, bill fishes and reef fishes etc. and needle fishes are the very important domestic fishery. The major gear operation are pole and line, troll line, gillnets, and hook and line while the major crafts are Mechanized, Motorized and Non-mechanized country craft. Needlefishes are commonly known as full beaks and are considered to commercially important pelagic fishery resource in the view of good quality of meat. The gar fish is epipelagic and lives solitarily or small groups usually near surface. It feeds on small schooling fishes (Golani et al. 2006). Needlefishes are a small family of beloniform fishes (Rosen et al. 1981 and Collette et al. 1984). Most of the needle fishes are marine but 12 species are fresh water. In India annual catches of full beak and half beaks increases from about 4069 tonnes in 2012 to around 4305 tonnes in 2013 (CMFRI 2014). Most of the landings are reported from Tamil Nadu region followed by Kerala.

Studies related to the assessment of marine fishery resource of Lakshadweep waters is very scanty. Androth is the major fishing area contributing about 50-60% of the total Belone

catch. Needle fishes are plenty in Lakshadweep waters, however there is no detailed information available on species wise landing in Lakshadweep. Even though needlefish fishery is the second largest fishery in Lakshadweep (Shahul et al., 2018) their current exploitation is low compared to tuna fishery. Therefore, present study deals with the status of Belone fishery of Androth Island.

MATERIALS AND METHODS

The study was conducted during June 2014 – May 2017 in Androth. The Needle fish fishery conduct only half day fishing trip (6am – 12pm). We are followed the sampling design of CMFRI for estimating the fishery data. In this, observation of fish landing data, a month is divided into 3 groups, each of 10 days. From each group, a cluster of 6 consecutive days are selected systematically with a random start with a sampling interval of ten days. The first five days of a month, a day is selected randomly, which together with the next 5 consecutive days (6 days in all) form the first cluster. The next 6 days each from the other groups follow systematically. The average catch and species composition by weight for the observed units were multiplied by the number of units landed on the day to get the days catch. The total species-wise catch and effort on the observation days were raised to the month by multiplying it with the actual fishing days in the month. The total catch, catch per unit effort and seasonal distribution of the groups shall be studied. And also used questioners, Personal interviews for studying fishing methods.

RESULTS

Craft and gear

Wooden country crafts and some Pablo boats of 5 to 8m overall length with inboard and outboard engines are engaged throughout the season for belone and hemiramphid fishery in

Androth Islands. The gear operated is a type of encircling gill net called chuttuballa / Muralbala. The mesh size varies from 30 to 60mm with depth of the net varying from 4.5 to 10m depending upon head rope length. Plastic floats or rounded thermocoles are used at regular intervals and foot ropes are connected with sinkers. For identifying shoals of half beaks and full beaks, a traditional method using brown colored coconut leaves have been employed. Fishes were jumped above these small pieces of coconut leaves, if present.

Fishery

Full beaks establish a very significant portion in the marine fish landings of Lakshadweep. The exact landing data of full beaks and half beaks are not available as many states of India have no separate landing data of belonids. This group might have been included under half beaks and full beaks together or under the miscellaneous category. The estimated half beaks and full beaks landings in India were 7316 tonnes in 2000, 4378 tonnes in 2001, 5922 tonnes in 2002 and 5649 tonnes in 2003, 4069 tonnes in 2012, 4305 tonnes in 2013 respectively (CMFRI 2002; 2013). Kasim et al. (1996) estimated that Tamil Nadu, Kerala and Lakshadweep contributed 42.6, 25.6 and 2.6 percent respectively of the total landings of full beaks and half beaks.

The annual needle fish landing of Androth Island was 120.102 tonnes (June 2014 - May 15),

131.294 tonnes (June 2015 - May 2016) and 114.352 tonnes (June 2016 - May 2017). During the first, second and third year the month wise landing of needle fish showed high landing in April (31.99T), June (30.99 T) and January (20.95 T) and the lowest in September (2.01 T), April (1.47T) and June (3.65 T) respectively (Fig: I).

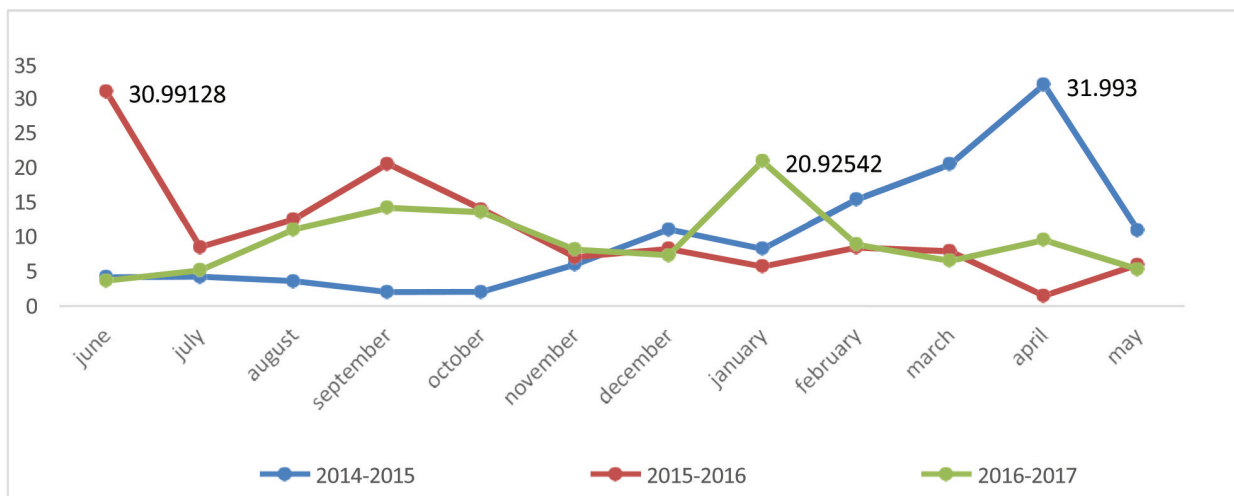


Fig. I. Total annual catch of belonids at Androth during the period of June 2014-May 2017 (Tonnes)
The month-wise gillnet effort varied from 50 to 384 units with an average of 170 units (FIG: II). The highest monthly CPUE (163) was recorded in the month of July, 2015 and lowest (11) in the month of September, 2014 (FIG: II). The catch indicate that the fishes were landed throughout the year.

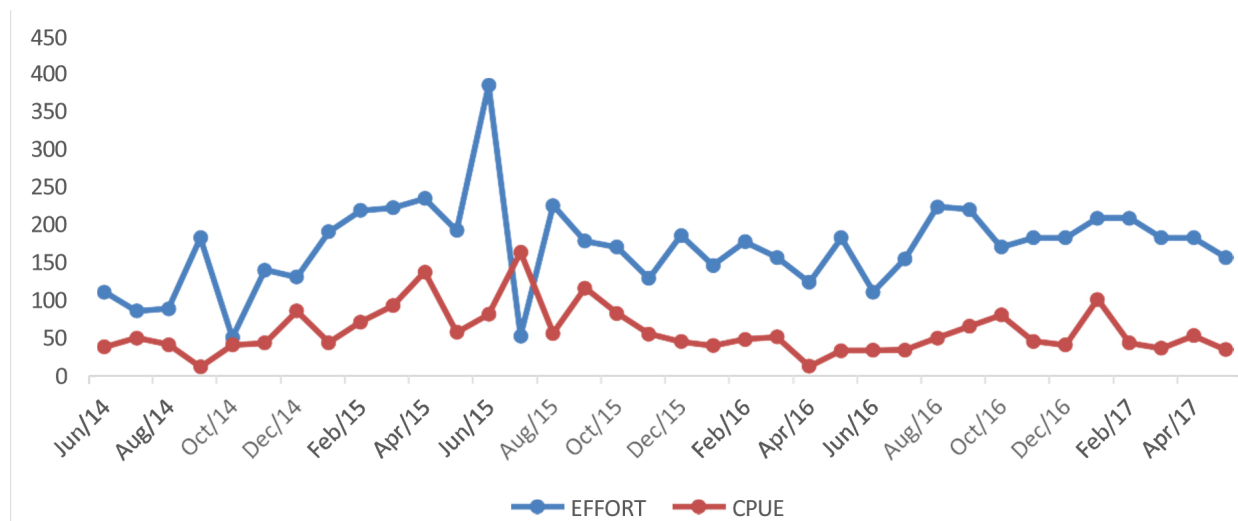


Fig. II. Effort and Catch per unit effort of belonids at Androth during the period June 2014- May 2017

Species composition

In Androth Island three Species of full beaks *T. corcodilus* (Peron & Le Sueur), *T. a. melanotous* (Bleeker), *A. hians* (Valenciennes) supported the

fishery. *T. a. melanotous* was the dominating species among the full beaks contributing 88% through the years followed by *T. corcodilus* (11%) and *A. hians* (1%) Fig: III.

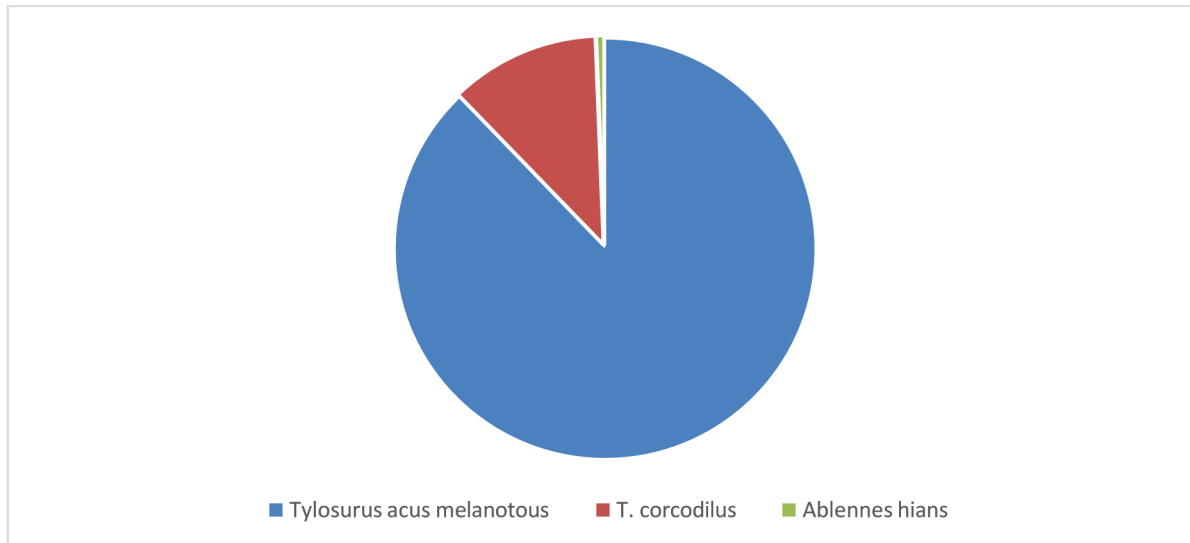


Fig:III. Species composition of belonids at Androth during the period of June 2014- May 2017T
The length range of *T. acus melanotus* varied form 22-84 cm (mean size 58.6cm). The highest landing size was 76-84 cm followed by 76-78cm. Length which 28% of this species was vulnerable to gear.

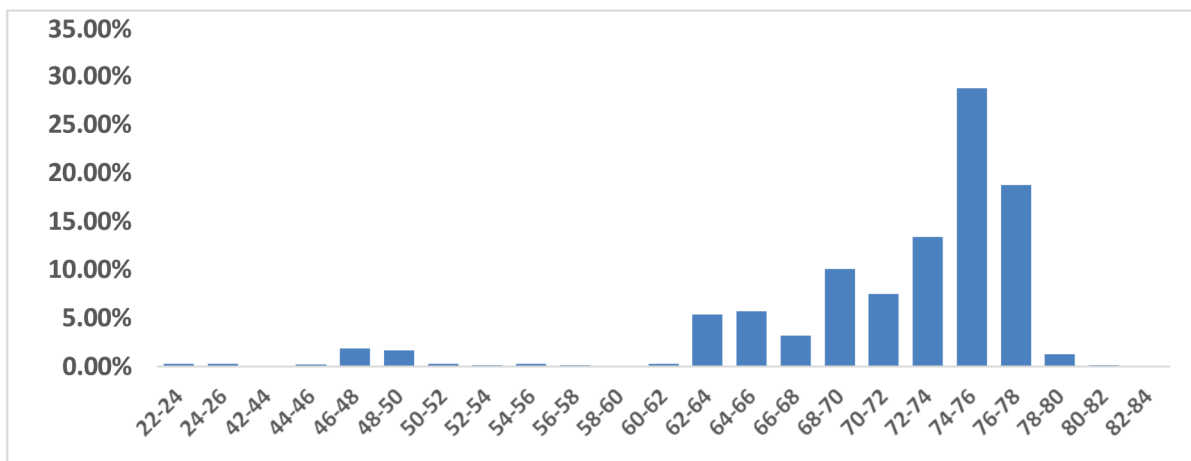


Fig:IV . Length frequency of belonids at Androth during the period of June 2014- May 2017

DISCUSSION

The gar fish is epipelagic and lives solitarily or small groups usually near surface it is feed on small schooling fishes (Golani et al 2006). Needle fishes are small family of beloniforms fishes (Rosen et al .1981 and Collette et al. 1984) and most of the needle fishes are marine. Jones and Kumaran (1980) reported six species of needlefish from Lakshadweep and only three species ie.,

A. hians, *T. a. melanotus* and *T. crocodilus*

constitute the regular fishery of the region (Shahul Hameed et al. 2018).The largest contributing species is *T. a. melanotus* and mainly exploited using gill nets. Kasim, et al., (1996) reported that in Tuticorion region *A.hians* was the major sharing, but in no data in *T. a. melanotus*. Liao and Chang (2011) reported that size at first maturity of *T. a. melanotus* was 50.6 and 46.4 cm total length for female and male respectively, ie 74-76 cm (mean size – 58.6cm TL) indicating the majority of the fish might mature and spawn at list once before being caught.

We conclude that the needle fish species of Androth Island have healthy stock as reported in earlier study (Shahul Hameed et al. 2018). Mainly gillnet, drift gillnets and purse - seiners are used for exploitation of full beaks (Liao and Chang, 2011; Kasim et al. 1996; Tulin Cokeret et al. 2013; Chaari, 2016) and very small quantities in Troll line and Hook and line in Lakshadweep. The Present study is the first estimate of species wise landing of needle fishes in Androth Island Lakshadweep. For better understanding for fish stocks and their sustainable utilization, additional studies on population dynamics and reproductive biology of individual stocks is highly recommended. This will help in better understanding and management of fish stocks.

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