

STUDIES ON THE FISH AND FISHERY OF PALAIR RESERVOIR, TELANGANA, INDIA

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ABSTRACT

Reservoirs are the “Sleeping giants of Indian Fisheries”. The Palair reservoir is a tributary of river Krishna located at Palair village of Kusumanchi mandal, Khammam district, Telangana country, India. It is balancing reservoir of Nagarjuna Sagar left canal. Besides being the source of irrigation, electricity generation, it's also surviving as sole source of aquaculture hobby supplying nutritional protection, employment and livelihood to fishermen cooperative societies of Khammam and Nalgonda districts. Its aquaculture production is representing the whole Telangana area. A study turned into undertaken to accumulate baseline records on the ecological capabilities and fish and fisheries. The facts on fish community, plankton and physiological parameters were recorded at fortnightly periods. The fish fauna turned into comprised of important carps, individual carps, minor carps, cat fishes, freshwater prawns and big populations of trash fishes. This examine on Palair reservoir gained expertise on its production potentiality, Ichthyofauna and shell fisheries. This will stimulate and provoke movement towards conservation of threatened fish sources, really appropriate exploitation of economically important species and also for similarly enhancing the ranching of seed in Palair Reservoir and upgrade socio-economic popularity of fishermen community.

Keywords: Reservoir fisheries, Ichthyofauna, Palair reservoir , Fish way of life

INTRODUCTION

The fish fauna changed into made out of main carps, distinctive carps, minor carps, cat fishes, freshwater prawns and huge populations of trash fishes. This have a look at on Palair reservoir received know-how on its manufacturing potentiality, Ichthyofauna and shell fisherie, Reservoirs are regularly known as “snoozing giants of Indian Fisheries. Reservoir or artifical lakes, are created often for irrigation, power generation and other water useful resource improvement process. These water bodies have grow to be the top inland fisheries resource of India because of many motives: improvement of reservoir fisheries additionally brings with it many economic and social benefits; they shape an essential supply for increasing fish and prawn production. Along with irrigation, the reservoir fisheries play a widespread position in presenting the livelihood opportunities to many rural fishers. Although India has significant freshwater assets, they are no longer fully exploited besides in a constrained scale for carp way of life. These are the main opportunities for improving the livelihood and nutritional protection via aquaculture. Five reservoirs are placed within the district

Khammam, Telangana, out of which three are larger and the rest two are smaller. Kinnerasani reservoir is a crocodile sanctuary. Wyra and Palair reservoirs serve for Irrigation and Aqua manufacturing.

Freshwater prawn lifestyle and fish lifestyle technology have emerge as popular for use in large wide variety of tanks and ponds. However, maximum reservoirs are underutilized for this purpose inside the u . S .. Palair reservoir, a tributary of river Krishna, is a breath taking, stunning reservoir located in village of Palair Kusmanchi mandal of Khammam district of Telangana. It is set 30 km faraway from district head quarters of Khammam, 2 km from Palair village and is on Suryapet – Khammam street. It is the balancing reservoir of Nagarjuna Sagar left canal, with water spreading over a place of 1748 ha and with a storage potential of 2.5 TMC of water. The water here is free of pollutants and gives a pleasant vicinity for water based journey and enjoyment. For peace seekers, this area gives a nice spot to loosen up with its serene backdrop and an adventurous boating facility, this vicinity gives suitable water sports activities and activities (Fig. 1). Apart from feeding the ayacut under the Nagarjunasgar left canal system, this reservoir is the primary ingesting water source for close by villages. It is also water storage facility for a big number of villages and towns nearby Khammam. The water from this reservoir is diverted to nearly 17 canals, which includes Bonakal branch canal and Mangapuram department canal for irrigation. This reservoir is likewise serving as a sole source of livelihood for over 14,500 contributors enrolled in as many as 184 fishermen cooperative societies in district. Palair reservoir is 28-30 km from head sector of Khammam. The reason of this reservoir is irrigation, aquaculture activity, employment and energy era. Locationally it's far 17° – 12' – 12' N latitude and 79° – fifty four' – 10' E longitude. Ijhhght's water basin is river Krishna with a maximum water level of +444.310 mts. And Maximum dam maximum of 20.57 mts. The complete Reservoir stage is +439.310 meters with catchment area of 651.24 squaremts. The common rainfall is 790 mm. The Palair reservoir is a balancing reservoir and is a major hub of freshwater fish and prawn lifestyle. Its abundant water resources, earn a spot for itself in freshwater fish and prawn manufacturing, inside the entire area. The freshwater fish and prawn are "ought to-devour" here as appropriate excellent / sparkling variety of them are effortlessly available. The freshness of the lake water makes it a great location for rearing fish and prawn therefore enhancing the monetary growth. According to assets, the production of freshwater fish and prawn production is anticipated to be over 18,000 MT and 600 MT respectively.

Morphological features of Palair Reservoir

1	Village	Palair
2	Mandal	Kusmanchi
3	Distance from	23 km
4	Purpose of reservoir	Irrigation, fish culture, electricity, generative
5	Latitudes	17^o – 12' – 12' N
6	Longitudes	79^o – 54' – 10' E
7	Water basin	Krishna
8	Full reservoir level	+ 439.310 mts
9	Maximum water level	+ 444.310 mts
10	Maximum height of Dam	20.57 mts.
11	Catchment area	651.24 sq.mts
12	Average rain fall	790 mm.

Materials and Methods

Culture trails of fin fish and shell fish have been done effectively in Palair reservoir of Khammam district. The worried fishermen community of reservoirs often inventory wild freshwater prawn juveniles and early fingerlings of fish from the Godavari River in Andhra Pradesh each year within the months of July to August. The fish and prawns are harvested for the duration of April – June. Study executed from August 2018 – May 2019. Monthly samplings have been completed often to pick out the species in the capture composition and morphotypes. The style of species and their abundance were recorded fortnightly. The hydrobiological, physico chemical parameters were recorded fortnightly. The seasonal variance of qualitative and quantitative evaluation of plankton are assessed.

Results and Discussion

The members of fisherman cooperative societies of each Khammam and Nalgonda districts, embark on fishing in Palair Reservoir. They initiate their fishing activity commonly in the month of April / May as in keeping with the permission of officials, kingdom branch of fisheries (1, 2,3,4). The average yield acquired became recorded as 300 tonnes of fish and 70 tonnes of prawns. The seize composition of fish fauna (Fig. 6), seasonal qualitative and quantitative variance of plankton (Fig. 7), water first-class parameters (Table 1) and various morphotypes in freshwater prawn (Fig. 3,4,5,) and nice production potentiality of Palair Reservoir, Telangana (Fig. 8) are recorded as underneath. Regarding the fin fisheries of the seize composition, the present investigation found out wealthy assemblage of both evidently happening and stocked fish species, indicating that the Palair Reservoir harbour a rich and type of Fish fauna. The fish composition mainly covered primary carps, cat fishes, minor carps and the huge quantum of trash fish, taxonomically about 60 sps belonging to forty families were found which especially include Clupodae, Notopteridae, Cyprinidae, Siluridae, Channidae and Bagride. The predominant indentified fish species from the fish fauna protected Labeo rohita, Catla catla, L.Calbasu, L.Gonius, Punticus sps. Cirrhinus mrigala, C. Reba, Mystus tengara, M. Seenghala, Nandus nandus, Gudusia chapra, Notopterus notopterus, Wallago attu, Mastacembus arnatus etc. The unique listing of fish composition from the reservoir is tabulated in Table 2, three. In seize composition the share of M. Malcolmsonii is found to be 80% whereas M. Rosebergii is 20% (Fig. 1e, 2, 3 and 4). The morphotypes like runt, orange clawed and blue clawed in adult males and in lady immature, mature, gravid, spent are determined in M. Rosenbergii (Fig. 4 and five). The monthly boom performance of freshwater prawn could be very encouraging with a mean weight of 60 gm. The blue inexperienced algae, green algae and diatoms are observed under phytoplankton whereas protozoa, rotifers, copepods and cladocerans are observed under zooplankton. Quantitatively phytoplankton is high in wet season whereas zooplankton in wintry weather season (Fig. 6). During the observe all the water fine parameters are noticed to be in beneficial variety (Table 1) (Fig. 7, 8, 9).

The bodily, chemical and hydro-organic water best parameters of Palair reservoir are very finest for the survival and increase of aquatic animals (fish and prawn). Qualitatively and quantitatively it's far rich in plankton production. The ichthyofauna harbour on a median 60 species of fishes, of which at least forty make a contribution to the industrial fisheries (Roy et al., 2015 and Valarmathi, 2017). Though the Indian main carps occupy a outstanding vicinity most of the industrial critical species, greater these days distinguished species, murels and freshwater prawns sps. Additionally make contributions substantially to commercial species.

Table.1 Range of water quality parameters in Palair reservoir

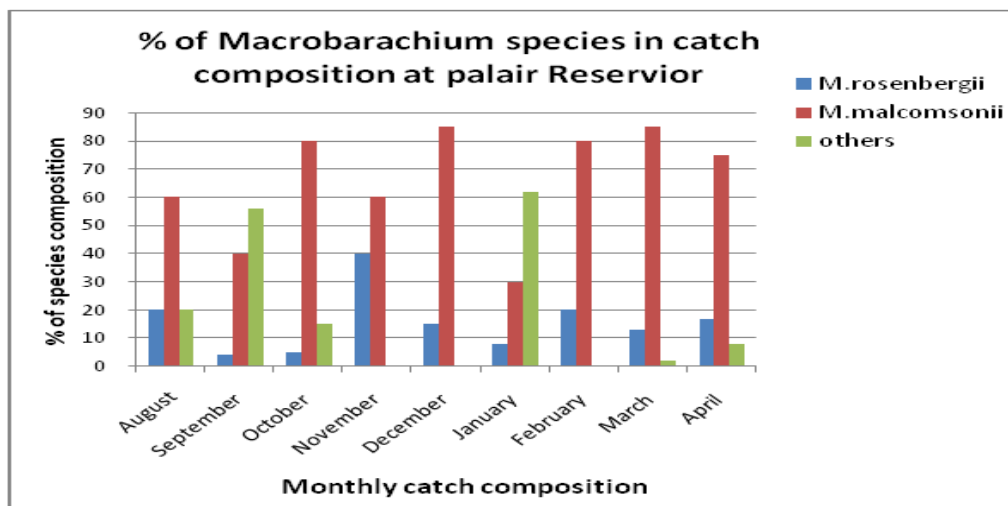
Month of samplings	Temperature		pH	D.O(mg/l)	Depth(lt)	Alkalinity(mg/l)
	Air	Water				
July – May 2	27.50	24 - 40	6.4 – 8.5	4.5 – 8.2	10 - 23	80 - 200

Table.3 Status of exotic fin fisheries in Palair reservoir

S.No	Common name	Scientific name	Status
1	Common carp	Cyprinus carpio	Limited
2	Grass carp	Ctenopharyn godon idella	Limited
3	African catfish	Clarius gariepinus	Limited
4	Pangus	Pangasianodon hypophthalmus	Rare
5	Red bellied pacu	Piaractus brachipomus	Rare
6	Nile tilapia	Oreochromis niloticus	Abundant
7	Mosambique tilapia	Oreochromis niloticus	Abundant
8	Mosquite fish	Gambusia affinis	Common
9	Guppy	Lebistes reticulates	Limited
10	Giant gouramy	Osphronemus goray	Rare
11	Sail fin catfish	Pterygoplichthys pardalis	Limited

Fig.1.Palair reservoir**Fig.2** Stocking of seed**Fig. 3.** Harvesting**Fig.4.** Haul of shell fish (*M.malcolmsonii*)

Fig.2 Catch composition of freshwater prawn (shell fish)



Morph types in catch composition of shell fish (prawn)



Fig. 5, Morphotypes of *M.malcolmsonii* Fig. 6. *M.rosenbergii*, Fig.7.Morphotypes of *M.rosenbergii*



Fig.8. Grass carp



Fig.9. *Channa striatus*

The general fish and prawn production from Palair reservoir is 60 metric / annum (2004- 05) and the production of prawn touches 130 – one hundred forty five tonnes as against the 170 – 210 tonnes of fish (2010-13). The aquaculture production of this reservoir is representing the complete Telangana aqua production. In end the palair reservoir is a perennial reservoir with no water shortage. This favours the fishes to develop until the marketable size spherical the 12 months and not using a effect of seasonal fluctuations of water level. Local demand for Palair reservoir fish (Indian important carps, unusual and air respiration) could be very high for their particular taste. All those benefit the Palair reservoir for the improvement of culture primarily based reservoir. This reservoir is arbitrarily stocked with fries and fingerlings of principal carps of variable length and numbers. Hence it is important to stock the reservoir with CIFRI advocated top-rated size of 10 cm fingerlings (Selvaraj et al., 1995). The worldwide marketplace for scampi is increasing with

appealing prices and for that reason there may be scope for a diffusion of aqua production and export. About 4-five million ha of impounded freshwater our bodies in the numerous states of India, provide the capability for culture.

The present of carnivorous fishes may be very much less in this reservoir helping the decreased predation (11): 1450-1457 1457 to stocked fishes. The records base on biotic and abiotic parameters, fish and fisheries fauna will help for a significant management of the reservoir. Still there are huge opportunities to boom productiveness from the reservoirs. Timely and excellent fish and prawn seed stocking is required to enhance production tiers. Moreover a valid advertising gadget can even fetch better earning which will similarly improve the socio-economic popularity of fishermen community. Palair Reservoir is an extra source of profits apart from the everyday reservoir fishery in the kingdom. The cooperative fishermen society of this place is the most important of all with 1500 society participants. This reservoir is livelihood for eight villages (Thanda) round. To meet the call for, production from this underutilized reservoir is until trying. By software of scientific control tools the judicious exploitation of economically important sps., conservation of threatened fish sources, production and productiveness ranges may be still more suitable and the socio-financial requirements of the cooperative societies of the fishermen network can be upgraded.

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