

Review on Physic-Chemical & Ecological Elements on the Productivity of Fisheries

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Abstract – Water tests were gathered in five inspecting focuses as pursues: four examples inside the tidal pond and the fifth one in the channel that associate the tidal pond with the ocean. The physical-chemical parameters of water were resolved following the examples were taken to the research center. Conductivity, saltiness and TDS were resolved with a direct meter (Model DDSJ 308A). pH and temperature, were estimated with a pH meter (Model pHs-3BW). TSS (all out suspended mater) was controlled by pouring one liter volume of water through a pre-gauged channel of 0.42 µm pore size, at that point gauging the channel again in the wake of drying it at 105o C for 2 hours to expel all water. The centralization of broke down oxygen (DO) was resolved utilizing Winkler strategy. Supplements (nitrites, nitrates, ammonium and phosphates) substances were dictated by spectrophotometric techniques.

Key Words: Narta Lagoon, Physico-Chemical Parameters, Nutrients, Fish Growth, Food Chain.

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INTRODUCTION

The physic-chemical parameters of a lake aquaculture framework play a incredible job in the accomplishment of the aquaculture ven-ture. Based on accessible data, very little has been done in the evaluation of the physic-chemical properties of different ponds in Ado-Ekiti. The shortage of such data shapes the premise of this present examination. It has likewise been seen that most fish ranchers are insensible of the hugeness of these physic-chemical properties to the achievement of their activity or don't have the foggiest idea how and when to do these evaluations. Consequently, the goals of this examination are: to evaluate the physico-chemical parameters of the lakes and contrast and the set standard prescribed for ideal fish generation, to explore the effects of the physic-chemical parameter on fish survival and level of fish creation and to prompt where essential on the impact and how to improve these parameters in fish lakes.

Inland fresh water habitats are special fields of Endeavour and are very important for human beings, although their area is relatively small in comparison to marine and other terrestrial habitats. Inland waters make up about one fiftieth of the earth's surface. They are ephemeral bodies measured by the standards of geological time. The lakes are inland depressions containing standing enclosed bodies of water, which are strongly influenced by the local climates. Hydro biological studies of this system are progressively increasing due to certain important reasons. They provide the most convenient and the cheapest, (a) water disposal system (b) source of water for domestic

and industrial use, (c) from a "bottle-neck" component in the water cycle, and (d) being small, they can be easily controlled and utilized towards our own welfare for recreation, fish and other water products. Ever since the turn of this century progress in lake microbiology, limnology and fish production in particular has seen a rapid rise and it has become an integrated and coherent branch of science. Because of its great economic implications, investigation on aquatic organisms and aquatic communities for the production of water supplies and for the estimation of the quality of water (pollution and self purification of water), are today some of the most important fields of the applied sciences. Now-a-days information on the conservation of water, the reclamation of used water and control of pollution of fresh water is being applied in various ways. It is stated that "since water is both an essential and the most abundant substance in protoplasm, it might be said that all life is aquatic". Hydrosphere consists of 70.08 percent of the total earth planet area. Thus it is evident that a vast portion of the earth is covered with water yet the portion of fresh water is relatively very small. A major threat to our existing fresh water source is in the form of eutrophication and it is very important to monitor the health of water resources closely. A significant step taken in this direction falls within the preview of limnology.

The other important role fishes are-

- Fish as food for cattle

- Fish manure
- Fish oil
- Fish leather, fish fin, fish sports, games and for biological control

To increase the production of fish and fish growth are beneficial to human beings. For increasing the fish growth we are able to obtain the pure seeds of cultivable fishes (rohu, catla and mrigal) the growth of fish is being increased by maintaining the various physico-chemical factors in fish farming. In present research work under the Prof/Head "Effect of water quality parameters on fish growth in Rajghat Dam, Sagar (M.P.)" was under taken. Rajghat Dam is located in the west of Sagar district in Madhya Pradesh at a longitude 24° 20' 25" and latitude 81° 15' 20" at distance of 13 km from Sagar. The study was started by dividing the selected sampling sites into A, B, C and D. Detail of the biomass levels, fish feeding preferences, related growth rate of the fish populations and fisheries management of the Dam cannot be undertaken on a scientific basis. In the present investigation an attempt has been made to study the physico- chemical and biological aspects of the Rajghat Dam. The brief points of the study are as follows:

1. The general survey of the Rajghat Dam was made in regard to history, geology, geographical situation and local climatic condition.
2. Monthly periodical studies were carried out at four zones from the Rajghat Dam for twelve months. The depth wise data were also collected for physico- chemical and biological characteristics.

OBJECTIVES:

1. To understand the physico-chemical conditions of the traditional fishing grounds.
2. Study the hydro biological characteristics on the biological productivity of the coastal ecosystem.

REVIEW OF LITERATURE

The reported fishes (2008) of the India; being a natural history in the fishes known to inhabit in seas, in fresh waters of India. After that many researches with many points of view carried out of their work with reference to fish and fisheries. Rahimullah (2013) made fish survey of then Hyderabad state. In (2008) Chacko and Kuriyan surveyed the fisheries of Tungabhadra River. Hora study fish fauna of Rihand River in (2009). Pankajam (2006) and Dorairaj (2013) made limnological study of Bhavani Sagar reservoir. Two irrigation reservoirs were paid attention by Ganapati (2005) for their limnological study purpose. Dorairaj

and Pankajam (2006) were the first persons who performed limnological and fisheries study of the reservoir in India. Dubey and Mehra (2009) explored fish and fisheries of Chambal River. In (2016) Pankajam, Sreenivasan published his work on limnological studies in relation to fish yield in three lakes of Madras. A man-made lake Sayaji sarovar in Baroda was surveyed for its primary productivity by Ganpat and Pathak (2009).

In the same year Govind compared the planktological parameters in Tungabhadra reservoir with other storage reservoir in India. In the similar way Sreenivasan (2008) and (2010) compared the various parameters of water quality including phyto-zooplankton of various reservoir of Tamil Nadu. The fish and fisheries of Rahani reservoir was reported by Motwani (2010). In relationship of limnology and fish productivity of Loni reservoir was reported by Sunderraj et al. (2011). Sinha (2012) gave the detail observations on the biology of Puntius sarana of Loni reservoir. He also correlated food, environmental factors and length-weight of fish. Mathew (2015) studied limnology, water quality including dissolved oxygen, carbon dioxide and productivity of Govind Sagar Lake. Studies were related to the fish community, growth in relation to plankton communities.

Govind (2013) reported the planktons of Tungabhadra reservoir. Dubey and Chatterji concentrated their observations on foods, water quality and fish fauna of Gandhi Sagar reservoir of Madhya Pradesh. The fisheries of Jaisamund lake was studied by Dubey (2006). Sreenivasan (2006) studied fish production and fish population changes in some reservoir in South India. In Madhya Pradesh, Bhatnagar et al. (2017) published their observations on the spawning of major carps in Govindgarh reservoir. George et al. (2017) studied productivity and seasonal abundance of commercially important fishes of Govind Sagar reservoir. Sarkar et al. (2007) listed some limnological feature of the reservoir. Jhingran and Ghosh (2008) studied the fisheries of Ganga River system in the context of India aquaculture. Soil and water quality as indices of biological productivity were studied by Ray (2009) in Tungabhadra reservoir. Jha (2009) found a correlation between qualitative composition and seasonal abundance of plankton and some aquatic animal in Getalsud reservoir. Pathak (2009) evaluated the productivity as function of hydro biological and limnological parameter.

Wahav et al. (2012) studied the bottom feeder carps and common carp's their inter relationship and effect on polyculture. Pawar et al. (2002) studied ichthyofauna of Shiror reservoir and Yadav (2004) studied fish diversity in Panch National Park. Sarkar and Pathak (2006) reported richness of seasonal fish species, diversity and habitat etc. in Ganga river. Proosti et al. (2007) gave some new addition

to fish fauna to Kavala Dew National Park, a world heritage site in India. Sindey (2009), Bibyet al. (2009); Rai (2009) and Jagpath (2009) studied the fish diversity of Ravra river, Viyamkayal Undmannikovar and Beed district, respectively. Vyas et al. (2012) reported the fish biodiversity of Betva river. Choudhary in the same year presented the assessment of fish culture in some fresh water pond of Dhan. Likewise Goor river of Jabalpur was studied with reference to its fish Biodiversity by Ponical et al. (2012); Adholiya (2009) studied the hydrobiology of river Betwa and fisheries resources. Jain et al. (2005-06) measured physico-chemical parameters of Dubala pond Rahatgarh and hydro biological characteristics of Sonar river of Sagar. In (2007) they also reported physico-chemical characteristics of Babus river in Beena.

Recent studies in limnology using advanced space technology and laser fluorescence system have been done by a few workers in American and Canada. Strong et al. (2004), have described 'Chemical Whitening due to calcium carbonate precipitation in lake Michigan by utilizing the data from the NoAA-2 and EPTS-1 Satellites. Strong (2008) has studied the 'Chemical whitening' and chlorophyll distribution in the Gnat lake as viewed by Landsat. Reid (2018) used 'Geostationary operational environmental satellite (GOES) system to collect hydrometric, hydro meteorological and water quality data like water temperature, pH, dissolved oxygen, conductivity and turbidity.

Our knowledge about the limnological and hydro biological study of tropical rivers reservoirs ponds and lakes is still very scanty. Limnological studies started with the work of Forel (2015) who is regarded as the father of modern limnology. He determined the oxygen in the deep water of lakes Genewa and showed that there was a little difference between the surface and bottom values. In the early studies of phytoplankton production. Brandt (2009) suggest the "Diatom" growth must be regularized by nutrient substances, which they utilized in the lighted water of sea.

The first attempt to estimate production was made by Loman (2008) from the changing of standing crop of phytoplankton by considering their rate of reproduction and grazing by zooplankton. Later on consideration was given to the concentration of nutrient which influenced production. Graham (2009) investigated the reasons of Tilapia fishery dwindlement in the Victoria Nyanza were temperature and pH measurement of different depth in the lake. Worthington (2030-04) has made observation on temperature hydrogen ion concentration and Alkalinity in two types of environment shallow gulfs and open eater in Victoria and Albert Nyanzas.

CONCLUSION

If the species-wise prohibition period recommended would be considered for introduction, I would recommend that results of this work are taken into account when calculating the protection period for the species studied here. The currently valid specific prohibition period for the barbel is May 2nd – June 15th. Due to the reproductive characteristics of the species (its spawning starts in the middle of April) its specific protection period should be modified accordingly. According to the joint regulation 88/2009 FVM-KvVM, as of 2010, ide, nase and vimba bream cannot be captured between May 2nd and June 15th. This regulation offers limited protection to the vimba bream, which is the latest spawning species of the three in Hungary. My experiments, however, prove that the spawning periods of both the ide (March-April) and the nase (March-April) fall beyond the period mentioned in the regulation. Thus, a revision of the regulation is recommended. I also recommend the further and in-depth study of the ovarian cycle of these species, a more detailed investigation of changes in sex steroid concentrations which would provide a more sophisticated view of the reproductive characteristics of the fish species in our habitats. Until recently, concern about the sustainable exploration of marine resources focused mainly on proper management of the fish stocks targeted by directed fisheries During the last two decades, however growing concerns have been raised about the impacts on the ecosystem m general Questions about how towed fishing gears as trawls may affect benthic communities have attracted a great deal of attention, and consequently a large number of investigations have been addressed on this issue and conducted over the last decade.

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