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Conservation Needs of Freshwater Fin-Fish Genetic Resources

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ABSTRACT

The present communication deals with the general picture of fish and fisheries status of river Ghaghra and other wetlands of district Faizabad and adjoining regions and the status of fish production from river stock, and also with the problems of fish farmers that they face during fish culture on their fish farm. During observation it is noticed that fish production from river is continuously decreasing due to overfishing and lack of well planned programme and a continuous decrease in fish production causing loss of biodiversity. During present investigation some other reasons are also discussed which are responsible for decline of production.

Key words: Rohu, Bhakur, Nain, Ghaghra, , Quantitative estimation

INTRODUCTION

District Faizabad, the erstwhile capital of Awadh, lies at 26 47'N and 82 08'E, its height above the mean sea level is 113 meter. Faizabad is a part of the eastern Uttar Pradesh, border of the district is bounded by Gonda, Basti, Ambedkar Nagar, Sultanpur and Barabanki. River Ghaghra is the main wet source of the district and contributes as important tributaries of the river Ganga which enters the Faizabad district near Badagaon. The river Ghaghra flows from west to east and covers the entire length of district. It is one of the most important rivers for the capture fishery of the district. The two other rivers namely Madha and Bisuee are also flowing through Faizabad join at the border of the district and make one river known as Tons (Tamsa) in Ambedkar Nagar. The Ghaghra river flows on the northern border and

its main tributaries are Tirwa, Pikai and Torari. In addition to Ghaghra, Madha, Bisue river and their tributaries lakes, ponds and wetlands spreads through the district. There are some reports on the biodiversity of different part of Uttar Pradesh by Menon (1949), Sinha and Shiromany (1953), Chaudhary and Khandelwal (1960) Singh (1964) Srivastava (1967), Pandey (1977). To fill up this lacuna and to present a general picture of the existing fish and fisheries of the river and cultured water bodies of the district, an intensive survey was carried out from local market as well as some collecting center of the district. The present work is the result of two year field observation where present status and conservation needs are discussed.

MATERIAL AND METHODS

The climatic condition of this region is marked by mild cold during winters and intensive heat during summers. The monsoon season is July to September. The rainfall fluctuated year to year. Average rainfall is about 1200 mm. The collection of fish was made regularly from different localities at Ghaghra, Madha, Bisuee rivers and from culture ponds for species composition study. Collection of fishes were made with the assistance of local fishermen operating cast net, drag net, mahajal, gill net, hooks and line and fry collection nets. Few fishes were purchased from the local fish market for collection. For fisheries study the information were collected in the field during survey from district fisheries department and Agricultural University.

To study the fish production of various food fishes from river Ghaghra, regular survey was done on local fish market Niyanwa during year 2008 and other information about last year's from1980 to 2005 is based on the information of local fishermen and Rajkumar Manjhi was chief resource to collect these data.

OBSERVATION

The fishing activities last during March to June. The fresh water fisheries resources of Faizabad district consist of culture and capture fishery. In culture system mainly carp fishes are found in culture ponds.

The listed species are commercially important. All the major indigenous carp and common carp (*Cyprinus carpio*) are found throughout the water and few cat fishes and Eels are found in the river water. The highly specialized gear and crafts are not used for fishing; angling, trapping and netting are used in ponds and reservoir. The fishermen or contractor wants to catch maximum fish having the least or no consideration for catching the undersized fish, and uses dragnets and gill nets of various size and code number. Flat bottomed wooden boats of different dimensions are used for fishing. Sometimes iron sheet flat bottomed boats and dugout wooden cannons are also used but all these crafts are non-mechanized.

During market survey of some important food fishes in the year (2008) it is noticed that the highest production of the common carp fishes yield was during May i.e. 300, 200, 240 kg per day for Rohu, Bhakur, Nain respectively and production of Mangur, Padhin, Tengara is also highest during May, which is 150, 50, 50 kg per day respectively and for common, silver and grass carp it is 50,

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TABLE-1

Average production of common carp during 2008 (Kg/day)

	Rohu	Bhakur	Nain
January	150	75	50
February	150	75	50
March	250	100	100
April	250	80	150
May	300	240	200
June	200	200	200
July	100	70	60
August	100	70	60
September	100	70	65
October	150	72	63
November	150	80	70
December	150	80	70

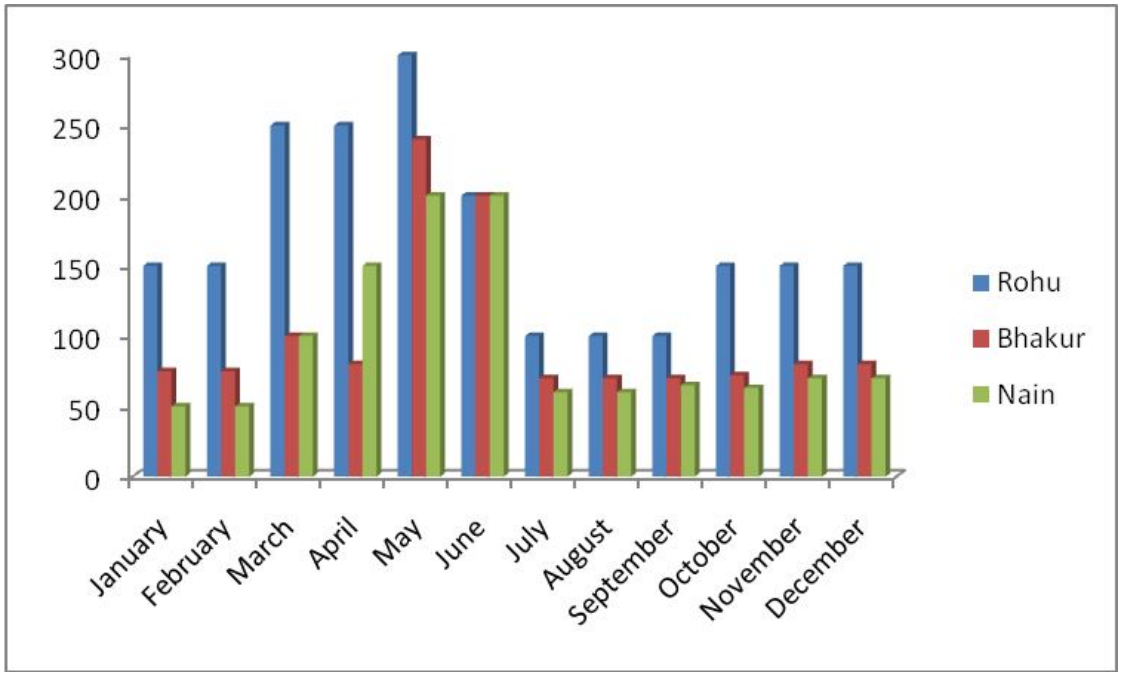


TABLE-2

Average production of exotic carp during 2008 (Kg/day)

	Common Carp	Grass carp	Silver carp
January	40	100	80
February	40	100	80
March	50	250	150
April	60	250	150
May	50	300	200
June	50	200	200
July	40	100	60
August	40	100	60
September	45	100	60
October	50	125	70
November	50	125	70
December	50	140	75

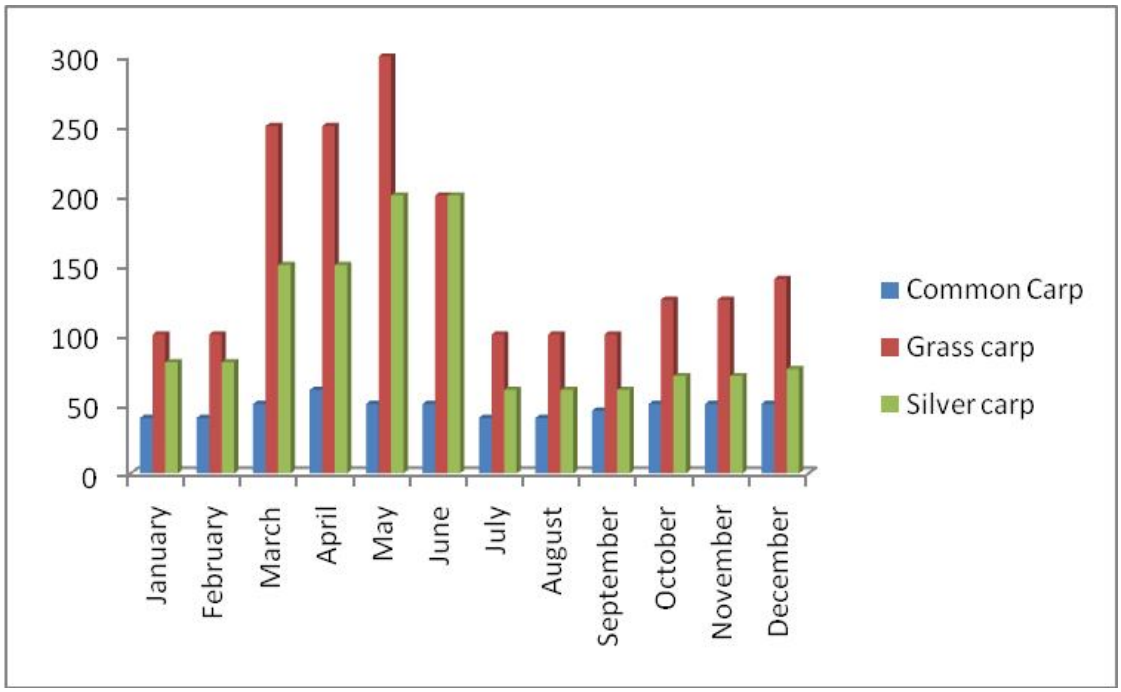


TABLE-3

Average production of some fishes during 2008 (Kg/day)

	Mangur	Padhin	Tengara
January	120	40	40
February	130	42	40
March	130	50	48
April	150	60	50
May	150	50	50
June	100	50	50
July	120	40	45
August	100	40	40
September	125	45	40
October	130	50	42
November	135	50	40
December	132	45	40

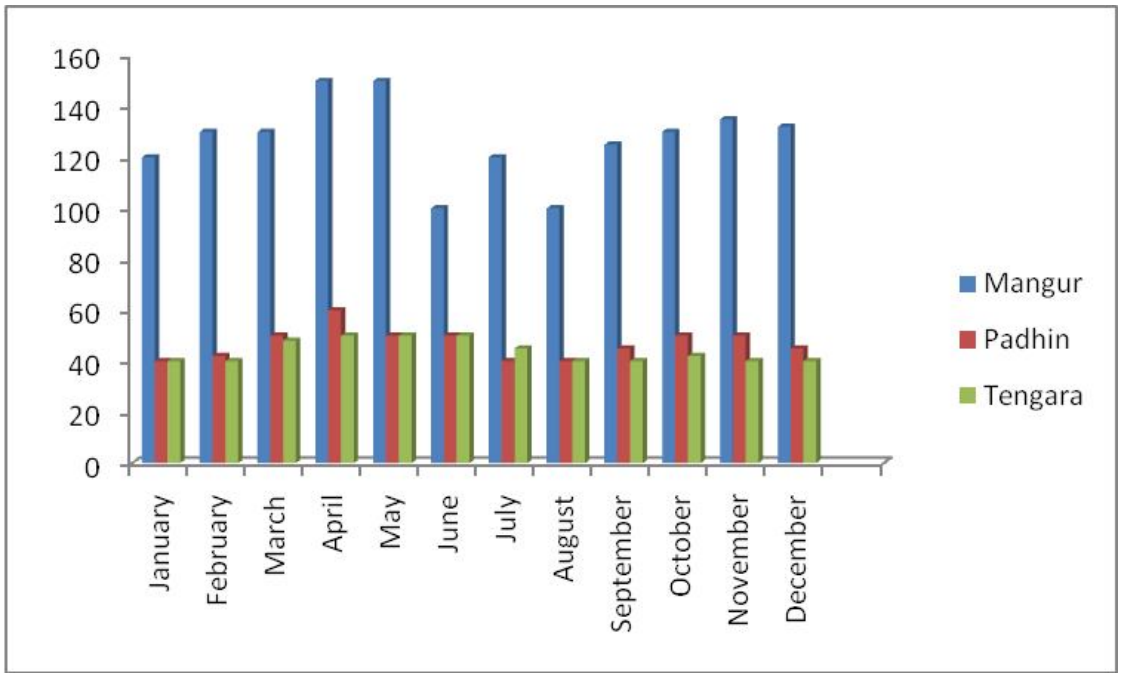
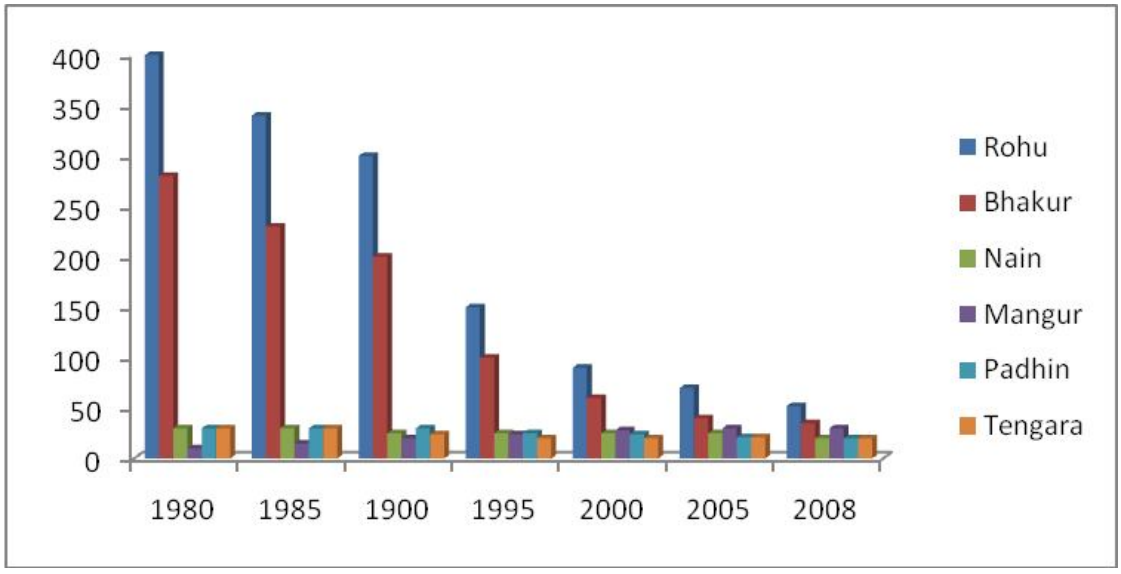


TABLE-4

Average production of some fishes during different year (Quintal/month)

Year	Rohu	Bhakur	Nain	Mangur	Padhin	Tengara
1980	400	280	30	10	30	30
1985	340	230	30	15	30	30
1900	300	200	25	20	30	24
1995	150	100	25	24	25	20
2000	90	60	25	28	24	20
2005	70	40	25	30	21	21
2008	52	35	20	30	20	20



200, 300 kg per day respectively. The average production of these fishes during various months of year 2008 is shown in Table-2, 3, 4.

According to Rajkumar Manjhi (a 55 year old, traditional fisherman) the production of the carp fishes from river Ghaghra is 52, 35, 25 quintal per month at this time instead of 400, 280, 30 quintal per month for Rohu, Bhakur, Nain respectively. These observations indicate a marked decline in the availability of the fishes over the year. Some fishes are endangered or near to threatened, the conservation strategies need to be developed to protect these fishes before it is too late.

DISCUSSION

India is very rich in fishery resources. The aim of fish culture is mainly the production of fish for human food. Culture of Rohu, Bhakur and Nain with Grass carp, Common carp and Silver carp is popular in this region. Though Pandey (1977) had suggested the culture of smaller live fishes like *Channa striatus, A. testudineus and H. fossilis* but not much success has been achieved in this direction. But facing the increased demand of fish there is an urgent need to explore the possibilities to adapt other cultivable species in the aquaculture system. Now a days when there is excessive pressure on scientist to introduce new species in list of cultivable fish species. We also favor and recommend mono or mixed culture of few nutritive and economic important fishes.

Fish biologist always try to introduce exotic species into different environments. Now a days it has become easier to move a species from its natural habitats to another environment. But a study by an international team (University Paul Sabatier of Toulse, IRD in Paris, CNRS) showed that the human influence involved establishing a non native species into new environment had not been fully recognized (Leprier et. al 2008), they investigated 1,000 rivers with more than 10.000 fresh water fish species and reported the population was largely down to human interference. It shows that a particular environments are not always adapted for hosting new arrivals, they tested three hypothesis- " the biotic resistance", "the biotic acceptance" and human activity and suggest that high diversity of fresh water fish in the host ecosystem acts as barrier to establishment of non-native species population and for given ecosystem non-native diversity follows that a native species because favorable ecological conditions for the latter are also suitable for the newly arrived species. Thus the study should be useful in introducing the exotic species in other environments. Some fishes viz. *Mystus vittatus* is very important fish with high nutritive and ornamental value, by introducing it in aquaculture we provide an opportunity to fish former because it fetches higher price in urban and rural market. Quality fish seed is a basic input for the success of the fish culture programme Sultan (2004). There are only one Government fish seed hatchery (Saryu hatchery) situated at Faizabad- Sultanpur road another is situated at Faizabad-Lucknow road namely Anas fish seed center. Some vendors come from other state to provide Indian and exotic carp's seed, some seeds are collected by fishermen from the rivers. These entire centers produce the seeds of carps because of great demand of such seed by formers, but these centers unable to provide sufficient quality and quantity of fish seed in comparison to need of

the area and due to lack of good quality of seed the fish farmer faces different kinds of problem in their farm. They receive 600-700 seeds on packing of on thousand seed from Government seed centre. So they spend more money for seed.

During survey various reasons are noticed for low production. Local fishermen told that Ghaghra become a great source of fisheries in 1960-70. Their parents captured 7-8 quintals fishes per day, but 7-8 quintal fish is the capacity of market at present time. Some fishes came into the boat without netting only by striking the bamboo in river water; this thing explains how many fishes were found in the river. There are two main reasons to decrease the quantity of fishes in Ghaghra, first the construction of Bandha on the river, the fishes falls down through the flow of water and do not come back to this region and the second reason is outside fishermen, they continuously do the fishing of all size fishes so the fishes die before the development. Due to above reason the population of fishes continuously decreases in this region. The fishermen tell that the fishes have decreased 1/50 times during last 25 years.

The water bodies are shrinking very fast, the average atmospheric temperature reaching up to 45 ^{0}c in this region, thus lakes and ponds dry-up by March-April every year, with a result the aquatic fauna get killed or fall prey to carnivores animals and human beings as it can easily be removed using small sized nets. The natural habitat of the fishes are under threat, so there is a need to protect the water bodies and to conserve the fishery resources. The Government ponds are in critical stage, its rent increases every year and area decreases every day. During observation it seems that the number of ponds is decreasing and ponds are converting into meaningless pits. Poisoning and fishing by the villagers is regular problem for fish farmers. Some fishermen take away all the fishes from ponds in few hours during winter night. Moderate and heavy fishing have detectable effect on the stock. In case of over fishing, the fishing pressure is too great and it may result harmful effects. Heavy fishing reduces greatly the relative abundance of the adult individuals in the stock which destroys the reproductive capacity of the stock which leads to considerable decline of the commercially more desirable species and causes increase in turn of commercially less desirable species.

Limning, manuring and fertilization of ponds are not done by the scientific methods. Stocking of fingerling of carp is done @ 6000-10000/ha/Year or more in comparison to @5000-6000/ha/year. The fish formers have no idea about modern technique and they try old methods, which directly affect the fish production, so there is a need to establish some fish culture help centre in these areas which provide necessary information to fish farmer to increase the fish production.

During present investigation it seems that few years ago Ghaghra was a great source of fishes in this region, but continuous fishing and lack of well planed programme to conserve the fish resources a continuous decrease in the fish production is noticed. At present time the culture fishery is great source of fishes but unable to fulfill the requirement and fish farmer faces different kinds of problem during cultivation. Loss of fish biodiversity directly affected the food resources of human beings and socio economic condition of fishermen and fish farmer. The climatic changes and condition of wet sources also play major role, so to save the fish biodiversity there is urgent need to develop some Government programme.

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