



### Short Communication

## A Preliminary Study on Fishing Craft and Gears in Dhaura Reservoir, Uttarakhand, India

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### Abstract

The present investigation deals with the various fishing craft and gears adopted for fishery purpose in Dhaura reservoir. The study of fishing craft and gears of Dhaura reservoir was conducted for one year from February 2012 to January 2013. During the present investigation one craft and four different kinds of gears were observed in the reservoir. The Craft was a wooden boat while the gears were Gill net, Cast net, Scoop net and Hook and Line. The detailed investigation is documented in the current research paper.

**Keywords:** Fishing craft, fishing gears, gillnet, Dhaura reservoir, Uttarakhand.

### Introduction

Dhaura reservoir is a manmade impoundment constructed in the year 1961. The reservoir is situated adjacent to the Kichha town of Kumaon division of Uttarakhand state. The reservoir is located at 28<sup>0</sup>53'N latitude and 79<sup>0</sup>34'E longitude. The river Dhaura is the main river for impound the reservoir especially for the purpose of irrigate the agriculture fields as well as for the pisciculture. The Dhaura reservoir harbours a variety of fish species especially Indian major carps, Minor carps, Catfishes, Murrels, Snakeheads, Exotic fishes and many more variety of species and contributes over a great extent upon the Uttarakhand state inland fish production. Fishing craft and gears adopted in the Dhaura reservoir were simple tools used by local fishermen for commercial catches of fish production. The craft and gears were mostly old-fashioned, indigenous and locally manufactured. Several researchers work upon the fishing craft and gears used over freshwaters of India and abroad<sup>1-5</sup>. There are number of workers work upon the fishing methods of Indian reservoirs<sup>6-10</sup>. Unfortunately, the fishing methods used in the Dhaura reservoir were not documented ever in the inland fisheries sector of Uttarakhand as well as of Uttar Pradesh. The present paper is an attempt to document the fishing craft and gears used in Dhaura reservoir.

### Material and Methods

The present investigation of fishing craft and gears in Dhaura reservoir was conducted for a period of one year from February 2012 to January 2013. During the field work the information regarding the various fishing craft and gears and their working procedure were collected by the personal interviews and questionnaires of local fishermen's community and of local fish contractor as well as by personal observation during the fishing operations were conducted by local fishermen's of Dhaura reservoir.

### Results and Discussion

Dhaura reservoir is one of the important sources of fresh water for plains of Uttarakhand. It is also a main water body for commercial fish production which is managed by fisheries department of Uttarakhand. It shows a variety of Ichthyofauna. *Labeo rohita*, *Catla-catla*, *Cirrhinus mringla*, *Notopterus-notopterus*, *Wallago attu*, *Channa gaucha*, *Clarius batrachus*, *Heteropneustes fossilis*, *Ompok pabo*, *Ompok bimaculatus*, *Mystus tengara* are the chief species found in the Dhaura reservoir. The satellite image of Dhaura reservoir is shown in figure-1. During the present investigation one craft and four gears were observed in Dhaura reservoir. The single craft was a wooden, non-mechanized boat while crafts were Gill net, Cast net, Hook and lines and Scoop net. All the five craft and gears used in Dhaura reservoir are described below. The different fishing gears along with the fish species caught by them are listed in table-1.

**Table- 1**  
**Fishing gears used in Dhaura reservoir (Uttarakhand)**

Gear	Mesh size	Species caught
Gill net	10-30cm	Mostly Indian major carps and large catfishes
	20-30cm	Indian major carps
Cast net	1-3cm	Fingerlings of major carps, minnows, small carps and small catfishes
Scoop net	5-8cm	Major carps
	1-3cm	Minor carps and occasionally catfishes
Hook and line	-	Murrels and catfishes

**Fishing Craft:** The one of the most important fishing equipment is Plank boat. It is one and only fishing craft. A Plank boat is a wooden, non-mechanized, manually operated boat. The wooden boat is locally manufactured. The length of boat is about 7-11 meters and width is about 1-2 meters. The boats were painted inside by synthetic paints while outside they are coated with dammar for protection against water. The average age of plank boat is nearly 10 years. Fishing gears such as cast net and scoop net may operated through the boat.

**Fishing Gears:** Gill net is most common fishing gear used by the fishermen. Maximum fish harvesting in the reservoir was performed by gillnet. For fish harvesting, Gillnet of different mesh size were used by the fishermen's community. The mesh size of net shows variations and depend upon the species and size of different targeted groups. Gillnet were weaved by the local fishermen's themselves as well as readymade gillnets also available in the local market from where the fishermen used to purchase them.

**Cast net** Cast net is another important fishing gear used in the Dhaura reservoir. The cast net is used throughout the reservoir. The advantage of cast net is it can be used single handed. The fishermen can operate it mainly from the boat or from the bank of reservoir. While using the cast net after a number of attempts the fishermen became successful to catch the fishes from the reservoir. Generally small fishes such as minor carps, catfishes and other small species were caught through cast net.

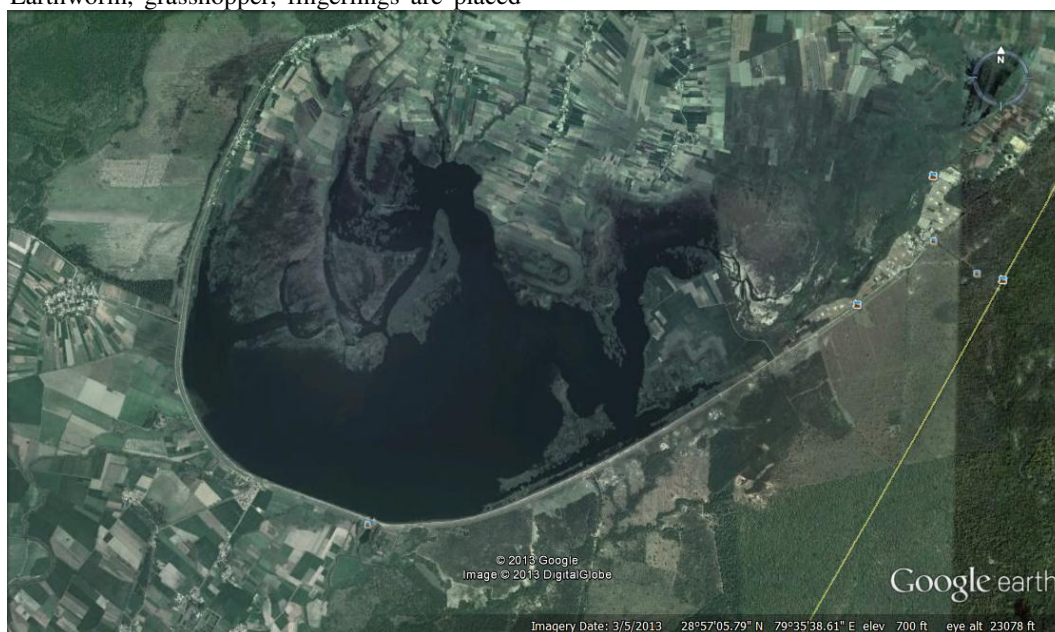
**Hook and line** This might be the one of the oldest and famous fishing method all over the world. A metal hook is tied with one end of nylon tread and the other end of nylon tread is tied with a bamboo stick. Earthworm, grasshopper, fingerlings are placed

into the hook as bait. The nylon rope with hook is placed into reservoir water for 2-6 hours. Generally, the fishermen placed the nylon rope along with metal hook in water for whole night and collect the fish in another morning. This is not a commercial fishing method and mostly the fish caught is consumed by the fishermen itself. Mostly, the Murrels, catfishes and other shallow water species are caught by this gear.

**Scoop net** The Scoop net is very useful fishing equipment in shallow areas of reservoir. This is a circular net having a long handle. This is mainly used from the boat or from bank of reservoir especially near outgoing canal of reservoir to catch mainly carps and catfishes.

## Conclusion

Dhaura reservoir shows numerous indigenous as well as exotic fish species and in terms of commercial fisheries it is one of the important water body of Uttarakhand state as well as of northern part of India. However, the reservoir having a lot of problems regarding fish harvesting. Most of the fishing methods adopted in the reservoir were old fashioned and unscientific. The reservoir management should aware the local contractor for the use of modern equipments of fishing. Fishing of fish size lesser than 4 inches should be banned. Unauthorized poaching of fish species should be totally banned in reservoir. Boats should be regularly inspected and repaired and over age boats should be retired. Nets of mesh size less than 2 centimeters should be restricted for fishing in reservoir. Proper training of modern fishing methods should be provided to the fishermen's community by reservoir authorities for commercial yield of fish production.



**Figure -1**  
Satellite image of Dhaura reservoir

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