

Selection of riverine fish spawn collection sites, gear used and methods of collection



Introduction

- The diverse geographical and climatic conditions of India greatly influence riverine resources of the country
- The most important carp seed resources are: eggs, spawn, and fry and fingerlings
- The Central Inland Fisheries Research Institute (CIFRI) (Barrackpore, Kolkata) conducted a pioneering programme of seed prospecting investigations on various river system

Egg collection:

- Large scale egg collection is possible only where locations of the breeding grounds are known and are easily accessible
- Eggs are collected from one or two feet deep water by disturbing the bottom and scooping them with a '*gamcha*', a rectangular spawn collecting net
- Generally, large scale egg collection is not practiced in rivers



Figure : Collection of riverine fish seed using a *gamcha*, a rectangular mosquito netting cloth

Spawn collection

- Collection of spawn (up to 8 mm) on a commercial scale is prevalent mainly in Bihar, West Bengal and Uttar Pradesh

Fry and fingerling collection

- The collection of fry (8-40 mm) and fingerlings (40-150 mm) is usually made by cast and drag nets.
- Fry and fingerling collection a source of fish seed is prevalent in the Indus river system in Punjab State



Figure : A haul of fish fingerlings from a riverine stretch
(Photo courtesy : Dr Utpal Bhowmick)



Figure: Fish seed being collected along the bank of a river
(Photo courtesy : Dr Utpal Bhowmick)

a) Selection of spawn collection site

A pre-monsoon survey is conducted to ascertain :

- Topography of the terrain and bank features at the vicinity of the site
- Topography of dry bed and bank features
- The distribution and composition of fish fauna
- The location of tributaries, rivulets and 'nallahs' and their confluence with the main river.
- The identity and accessibility of the site.

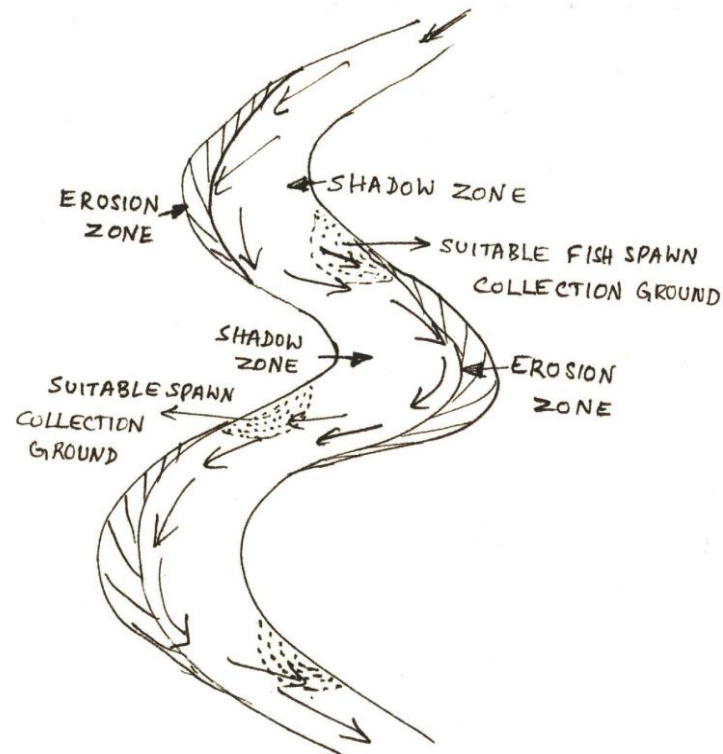


Figure : A river course showing suitable fish spawn collection sites

b) Gears used for spawn collection

- The most used net is 'Shooting net' which is a funnel shaped net of finely woven netting

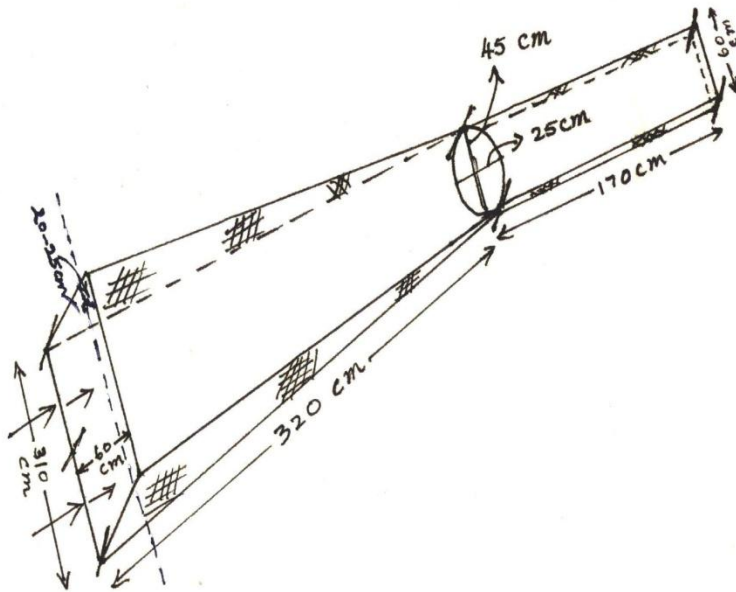


Figure : A typical shooting net (Midnapore type) used to collect riverine fish spawn



Figure : A battery of shooting nets ready to be commissioned for riverine/brackishwater fish seed collection (Photo courtesy : Dr Utpal Bhowmick)

d) Indices of spawn quantity and quality

- **Spawn quantity index:** The desirable spawn taken by one standard net during a season is defined as the index of spawn quantity or yield of a centre
- **Spawn quality index:** Total percentage of major carp spawn available in a site
- **Spawn categories :** (i) major carps, (ii) minor carps and (iii) others

e) Spawn behaviour in relation to hydrological and hydrobiological characters

- Flood level: Flood is the most important character showing a positive correlation with spawn availability
- Current velocity and water depth : velocity ranging between 0.5-3 km per hour is conducive to spawn collection
- Current direction: A constant direction of current is ideal for spawn collection
- Weather : Overcast sky, with or without drizzle, coupled with gentle breeze, is generally ideal for spawn collection. Windy weather is unfavourable. Night collections are higher than day collections.

Fry (14-25mm):

The carp fry can be distinguished from that of catfishes and murrels by the number of dorsal fin rays.

a) Major carps: number of undivided dorsal fin rays >11 .

b) Minor carps: number of undivided dorsal fin rays 11 or <11 .

c) Catfishes and murrels : Pigmented (either blackish, brownish or orange).

Advantages

1. Traditional and only source of carp seed prior to advent of bundhs and hatcheries
2. Collection is cheap and convenient
3. Presently it forms a supplementary source of fish seed
4. Only source for selective breeding programmes

Disadvantages

1. Seed consists of both desirable and undesirable species
2. Undependable source
3. Valuable nursery space is wasted by rearing spawn up to fingerlings
4. Mortality of seed during collection and transportation

