habitat destruction. All these factors have adversely affected the biocoenosis of the river and its related flora and fauna. This has obviously necessitated undertaking a study encompassing the ecological parameters so as to generate base line information and suggested suitable measures of remedial nature.

Objective of study-

The main objectives of the study are to determine-
Ecological status of river Beas especially of upper stretches
Enumeration, identification and population of existing fish fauna in this stretch
Factors responsible for depletion of fish catch in the particular stretches
Habitat restoration of selected stretches of river Beas
Revival of fisheries

CHAPTER- 2.0 HISTORICAL RESUME

World wide various workers have studied the general study of streams, fish assemblages, stream habitat and its health, loss of
habitat and management. The important ones are- Tennant 1976; Schmal and Sanders, 1978; Vannote et.al., 1980; Barila et.al., 1981; Bovee, 1982; Larsen et.al., 1986; Hill et.al., 1991; Chenn, 1992; Richards and Minshall, 1992; Schumm, 1993; Closs and Lake, 1994; 1994; Harrelson et.al., 1994; Ibbotson et.al., 1994; Smock, 1994;; Winston, 1995; Bisson and Montgomery, 1996; Branco and Neechi Jr., 1996; Coleman 1996; Evans et.al., 1996; Newcombe et al., 1996; Richards et.al., 1996; White, 1996; Dollof et.al., 1997; Berg et.al., 1998; Davidson Jr. et.al., 1998 Dietterich and Anderson 1998; 1998, Harvey and Lisle, 1998; Martin-Smith, 1998 a & b; Tanguchi et.al., 1998; Biggs et.al., 1999; Coelho et.al., 2001.

Fish communities vs. environmental factors both biotic & abiotic has been investigated extensively by various workers- Leach 1995; Beechie and Sibley, 1997; McKinsey and Chapman, 1998; Akopain, 1999; Bauner and Ralph, 2001 etc.

In India ecological studies on river and streams were initiated in Kerala, South-India by Bhimachar (1945); Kortmoulder (1987); Kortmoulder et.al., (1990); Arunachalam et.al., (1997a, 1997b, 1998); and in North India by Nautiyal (1990); Nautiyal et.al., (1996); Banyal (1998, 2001); Kumar et.al., (1998); Raina (1998).

Ecological status and fishery of many rivers like Ganga, Narmada, Godavari, Ghaghra, Brahmaputra, Yamuna, have been studied by various workers (Karamchandani, et al., 1967; Bilgrami and Dutta Munshi, 1985, 1999; Sinha et.al., 1998; Joshi, 1994; Kumar 1995; Sankaran Unni, 1996; Anon 1997, 1998; Pathak, 1999; Day 1999; Khan 1998; Gurumaynu et al., 2001 undertook ecological studies of river Subansiri in Arunachal Pradesh.


Plankton form the basic link in food chain of fishes in aquatic environment and hence the knowledge on their abundance, composition and seasonal variation is an essential pre-requisite for judiciary management. A great deal of work on the factors influencing the waxing and waning of plankton population in the different ecotopes with regards to their interaction with other organisms and their major role in food web has been undertaken abroad as well as in India. Allen, 1951; Roy, 1953; Lund, 1954; Chakrabarty et. al., 1959; Holden and Green, 1960; Green, 1963; Kumar and Bhagat, 1978; Nautiyal, 1984, 1986; Matthew, 1985; Khan et. al., 1998.

Benthic organisms play an important role in any fresh water ecosystem as a main determinant of hydro-biological production and community structure (Sprules and Munawar, 1991; Lindegard, 1994). Fishes are mostly dependent on benthic communities (Needham,
Srivastava (1903 a & b) reported the Ephemeroptera in aquatic ecosystem of high altitude. Moza and Kolekar (2002) has stated that benthos are the quality indicator of water in river Yamuna.

Besides serving as an important item of food, fish provides other byproducts also. Thus, its study becomes significant from commercial point of view. The distribution of fish fauna in the river and its hydrological condition determining the fish abundance is fundamental to scientific utilization of river fisheries. Extensive work has been carried out by many workers on the fish fauna of various river (Badola & Pant 1973; Menon, 1974; Badola, 1975; Jhingran, 1975; Badola & Singh, 1977, 1978; Sehgal, 1977, 1988; Jhingran & Sehgal, 1978; Joshi et.al., 1978; Badola & Singh 1978; Singh & Badola, 1980; Sharma & Singh 1981; Sen, 1982; Singh et. al., 1982, 1983, 1987; Singh and Dobriyal, 1983; Singh et al., 1987; Sharma, 1988; Singh 1988 a & 1988 b; Talwar & Jhingran, 1991; Singh & Kumar, 1991; Singh & Singh, 1991; Kamal, 1991; Dobriyal, 1991; Joshi, 1994; Matthew, 1998; Rawal, 1998; Khan & Sinha, 2000; Moza (2003) has reported inland fisheries resources of Himalayas.

The survey of fish fauna of Himachal Pradesh and Garhwal region has been studied in the past by many workers like Hora (1926, 1927, 1937). Menon (1951,1963), Tilak (1969), Sehgal (1973), Badola (1975), Kumar and Juneja (1976), Grover and Baloni (1977), Kumar and Prasad (1977), Tilak and Husain (1977), Baloni (1980),

Till date, very limited work has been done on the fish and fisheries of river Beas Khan and Tandon (1941) reported the reappearance of trout food in trout water in Kullu valley. Sehgal (1973) conducted survey of fisheries of Himachal Pradesh with special reference to trout, mahseer & allied species. Shah (1975) reported the food and feeding habits of brown trout in river Beas. Dhanze and Dhanze (1998) reported impact of habitat shrinkage of fish fauna of river Beas due to drainage system.

Ecological studies of hill streams of Himalayan region have never been subjected to ecological studies before 1998 because of different terrain and harsh climate. However, recently some reports have appeared on the ecology of hillstreams of Western Himalayas. The important ones are Banyal, 1998; Johal and Tandon, 1998; Rumana, 1998 & 2001; Tyor, 1998; Johal and Banyal 2001; Rumana et.al., 2001; Tayor, A. 1998; Johal et.al., 2000 & 2002.

The biodiversity conservation and restoration of hill streams has also been studied by Barila et.al., 1981; Maitland and Lyle, 1991, 1992; Joshi (1994) Gunn et.al., 1995; Rabeni and Sowa 1996; Halfield and Diamond, 1997; Shutter et.al., 1997; McKinsey and Chapman,1998; Pimm and Lawton, 1998; Pussy et.al., 1998; Rosenzweig, 1999; Bauner & Ralph, 2001.