

ISBN: 978-620-2-67120-0

Chapter 4

Comparative Analysis of Age and Growth of Fresh Water Fishes

Pradip Kumar Prusty, Sunita Panda, Gagan Kumar Panigrahi

School of Applied Sciences, Centurion University of Technology and Management, Odisha, India.

Abstract

Age and growth study provide detail information on the life history, ecology of fish and habitat which is important to manage the water body for fish production and optimize of harvestable size. Scale based age and growth of Indian major carp (*Labeo rohita*, *Cirrhinus mrigala* and *Puntius ticto*) was studied. There is no significance occurs in between the species. Such studies are helpful in describing the present status of fish population along with the future course of the fishery.

Keywords: Scale, age determination, *Labeo rohita*, *Cirrhinus mrigala*, *Puntius ticto*.

Introduction

Age and growth are closely linked. Determination of age is an age old practice. It is a rational part of the work direct to the exploitation of fish stock. (Begenal,1974; Mills and Beamish,1980 and Panfili. *et al.*,2002). Knowing the age of the fish provides clue to its longevity, age of first maturity, age recruitment and growth. (Summerfelt and Hall,1987). Age and growth studies are important for the problem associated with management of fisheries. Age determination of fish from scale, otolith, vertebrate fins, spines, fin rays and other structure are usually performed. Monitoring of fish population of known age and require for long time and is quite expensive method. Hence the best appropriate method for age determination is to study of annulus formation of fish (Secor et al., 1996). The age of fish can be estimated indirectly the length frequency distribution. From which it can obtain the mean length of each age group or directly by counting and analysis of the annual growth marks in calcified structure such as scale, otolith, opercular bone and fin rays of each specimen(Bhatt and Jahan, 2015). Age determination in fish can be carried out using anatomical method, length frequency analysis or direct measurement. The study of weight length has the great value in fisheries and . Significantly is to