Preface

The processes and functions of decision making in animals are highly discussed and fast growing areas of contemporary scientific research. This subject has attracted the attention of scientist working in various disciplines, like psychology, neuroscience, ecology, conservation, cognitive science, zoology and thus an interdisciplinary approach has been followed all over the world to understand the basis of this phenomena. A detailed knowledge of decision making ability of animals is essential for understanding the evolution of decision making, and has several applications in the field of conservation biology. Fishes are excellent model system to study various aspects of decision making and many scientists consider them equivalent to primates in handling complex decision making situations. In India studies dealing with animal decision making are scanty and studies on decision making in fish are totally absent in Indian science literature.

The present thesis deals with various aspects of fish decision making, using climbing perch (*Anabas testudineus* Bloch) model system. In section I, the influence of familiarity (with conspecifics as well as with heterospecifics), the key factor of social cohesion, on decision making in various sociobiologically significant contexts are discussed. Here, binary choice was the assays used for the evaluation of decision making.

Section II of the thesis deals with the propensity of climbing perch to take risky decisions (boldness), using the latency to initiate the exploration of a novel area as the assay. Here, the influence of biologically significant factors like, presence of conspecific and/or predator, and habitat quality on the ability of climbing perch, in taking a risky
decision is analyzed. Additionally, the development of boldness in fish reared in homogenous habitat is compared with the fish collected from natural habitat.

Following the conventions of fish biologists the term fish is used for denoting the focal species climbing perch, no matter whether it is singular or plural, through out the thesis. Similarly the term fishes refer to different species of fishes or the class Pisces in general.

The investigations started in December 2001 and completed in December 2008. The studies were carried out in Animal Behaviour and Wetlands Research Laboratory, Department of Zoology, a recognized research centre of the University of Calicut under the supervision of Dr. John Thomas K.