

Feasibility of controlling the accidentally introduced invasive species *Chitala ornata* in Sri Lanka

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Introduction

Clown knife fish, *Chitala ornata* were accidentally introduced to Sri Lankan water bodies through the ornamental fish industry. The species was well established in one major river basin in Sri Lanka by 2003 and now threatens to spread. Impacts of the introduction of *Chitala ornata* have not been properly assessed so far; however, fishermen complain that the catches of local species have declined in water bodies inhabited by the knife fish.

Due to its carnivorous habits, the knife fish is a potential threat to freshwater fisheries, and action is needed to control the population in Sri Lanka. Fish species endemic to Sri Lanka could also be affected by knife fish due to competition, predation and habitat alteration, resulting in loss of biodiversity.

Knowledge of the biology of invasive species is needed to develop a strategy to control them (HOWARD 2000). Studies on the reproductive biology of *Chitala ornata* in the Bolgoda River system were carried out to determine strategies to control its populations in Sri Lanka.

Key words: invasive species, accidental introduction, fish

Methods and materials

From January 2001–December 2002, the fecundity, sex ratio, mean size at maturity, breeding season and the frequency of spawning were studied in the Bolgoda River. The rate of spreading from initially recorded locations was also noted.

Results and discussion

Fecundity varied from 2132–3412 in fish ranging in total length from 57–56.6 cm. The sex ratio was found to be 1:1. The mean size at maturity for males and females were 50 cm and

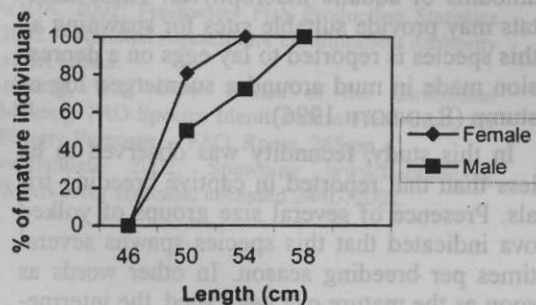


Fig 1. Variation of mature individuals in each size class.

48.5 cm respectively (Fig. 1). The main breeding season was from June to August. The egg diameter distribution pattern indicated that this fish spawns 2–3 times during a spawning period (Fig. 2.)

In the Bolgoda Lake system the fish was initially recorded in August 1999 in Panape ela at Bandaragama. However, the species has spread south around the Kalu River and established it-

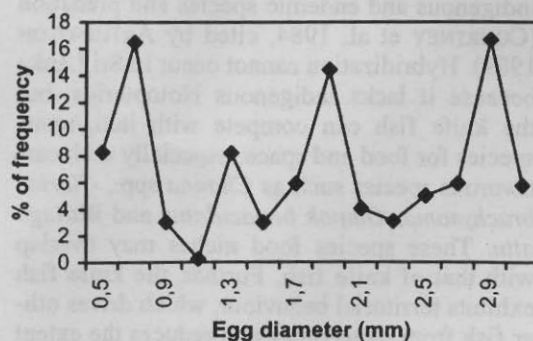


Fig. 2. Egg diameter distribution of mature *Chitala ornata*.