# SEASONAL REPRODUCTIVE PHYSIOLOGICAL CHANGE OF LARGEHEAD HAIRTAIL

Jin NAMGUNG *, Hye-na MOON, Seungjun KIM and In-kyu YEO

Department of Major of Aquatic Life Medicine, Jeju National University, Jeju 63243, Republic of Korea
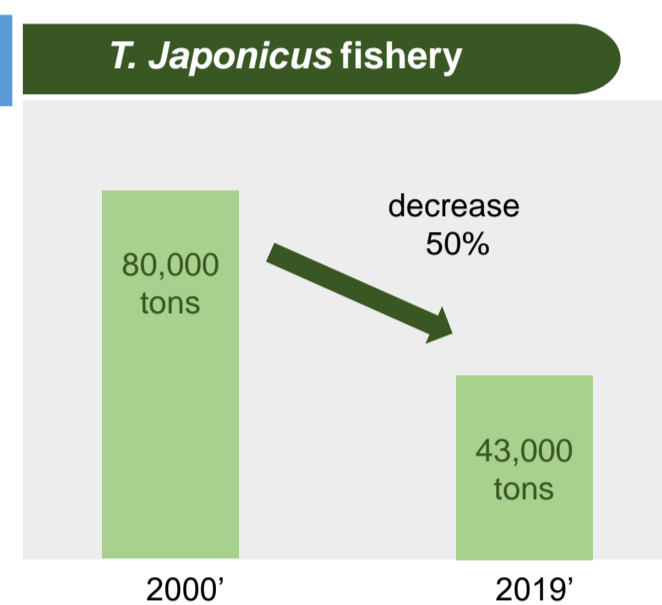
Introduction

Largehead Hairtail (*Trichiurus japonicus*) is a very important commercial fish species in East Asia. In Korea, *T. japonicus* is a highly valuable commercial fish species. However, their reproductive ecology has been not much research yet. In this study, we investigated the reproductive physiology of *T. japonicus* targeting cutlassfish with a preanal length of 25-35cm, which are the most used commercially, from April to December.
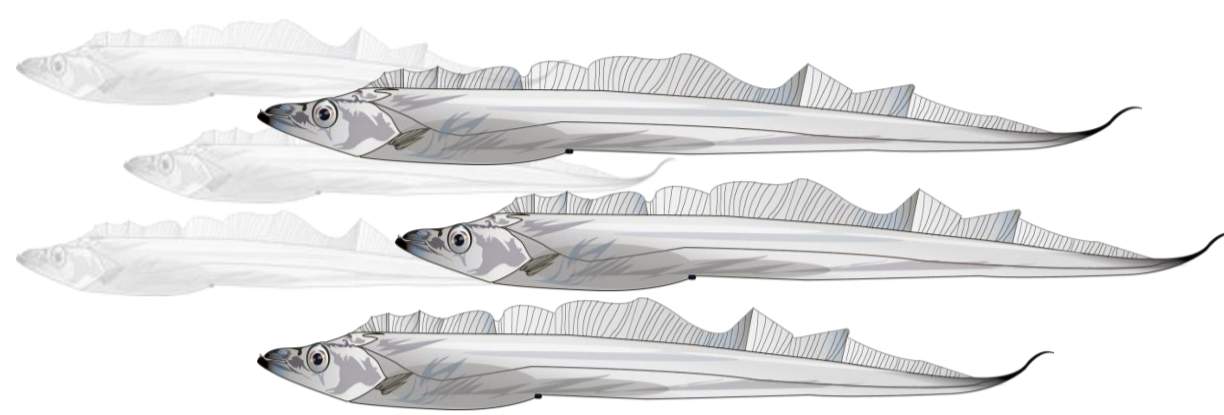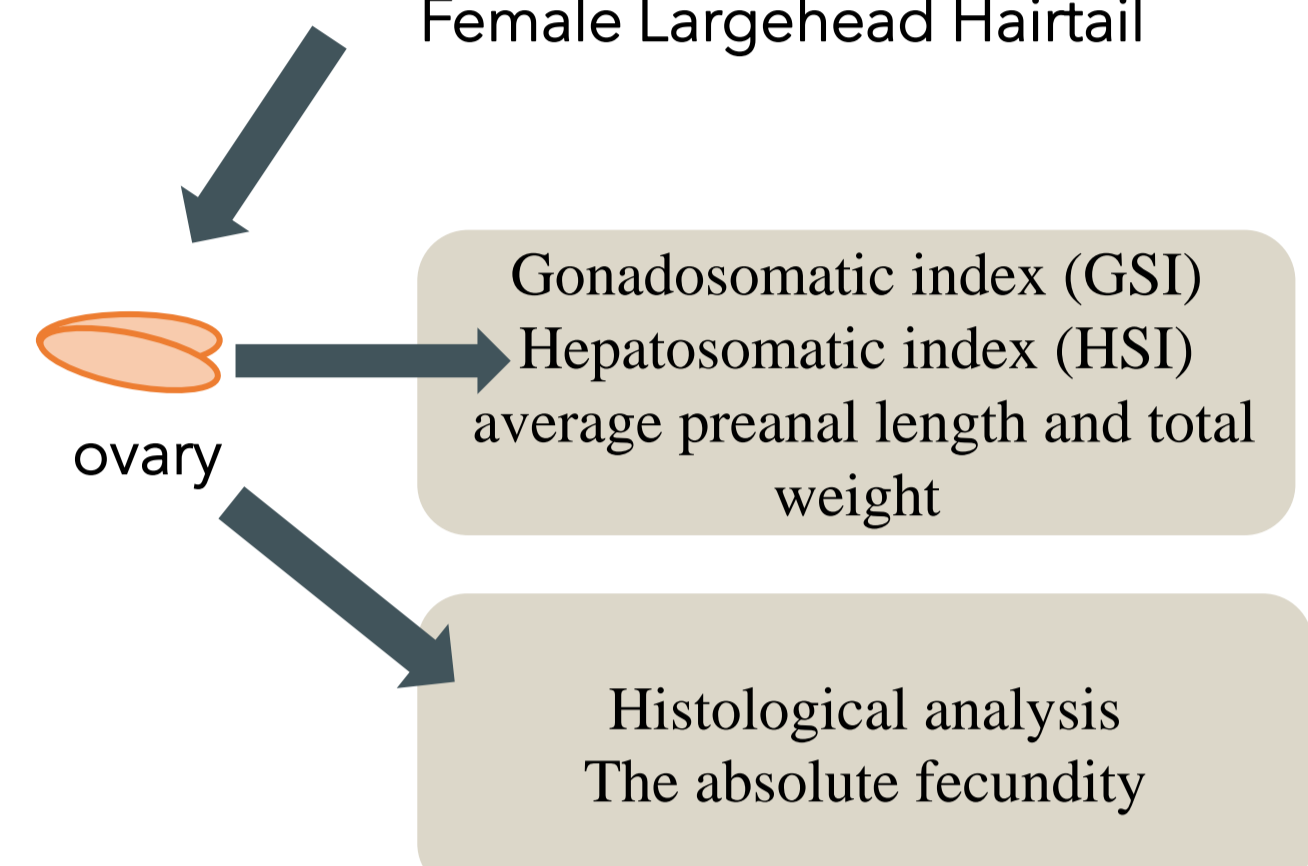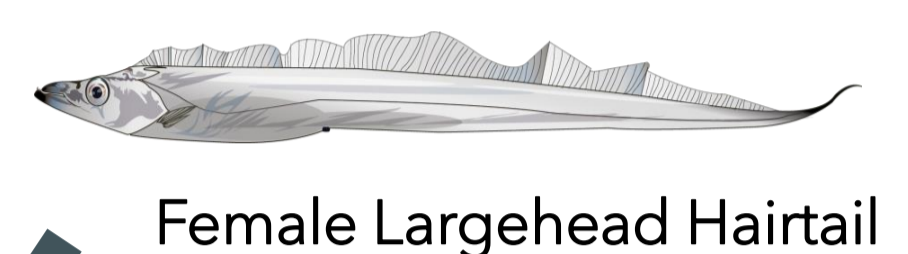
Rapid population recovery

T. Japonicus fishery

- **Subtropical fish**
- **Long spawning period**
- **High female proportion**
- **Multiple spawning species**

80,000 tons → decrease 50% → 43,000 tons

2000' 2019'

Material and Method

Female Largehead Hairtail

ovary

Gonadosomatic index (GSI)
Hepatosomatic index (HSI)
average preanal length and total weight

Histological analysis
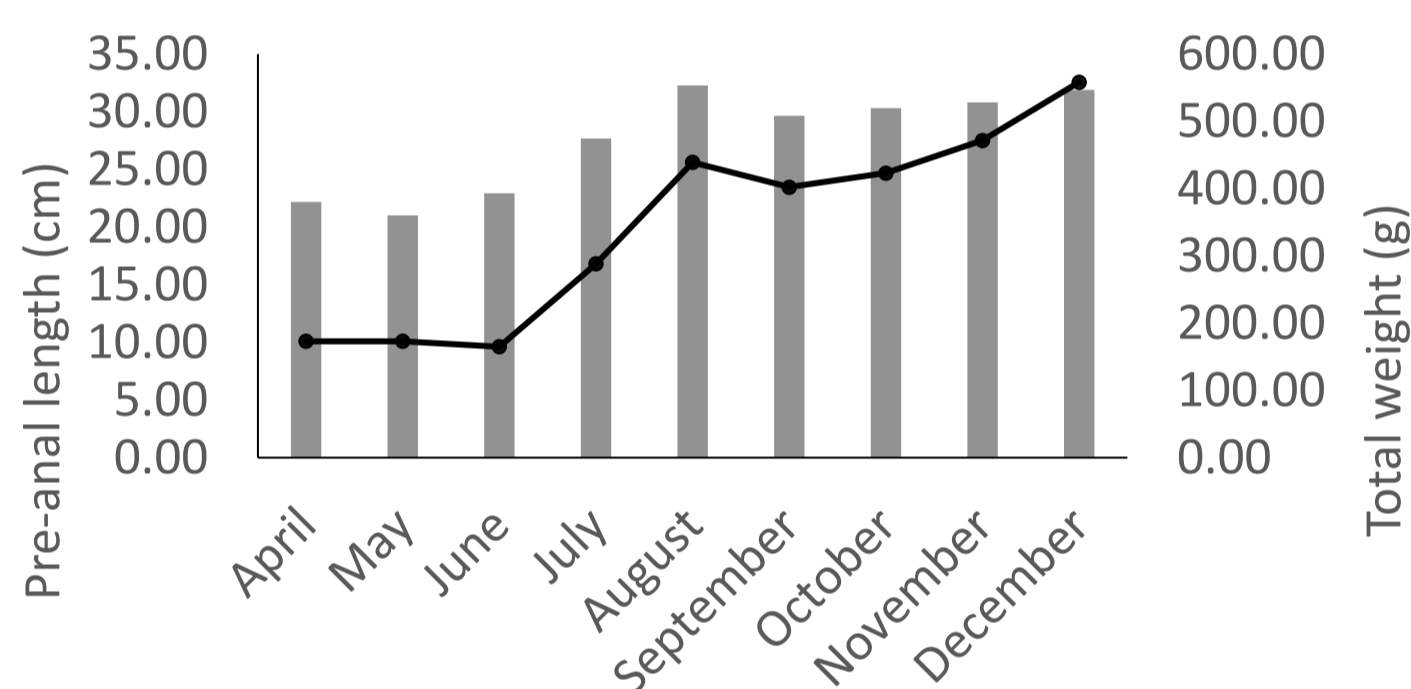The absolute fecundity

Results

Fig. 1. The change of pre-anal length (cm) and Total weight (g) for Female Largehead Hairtail from April to December.
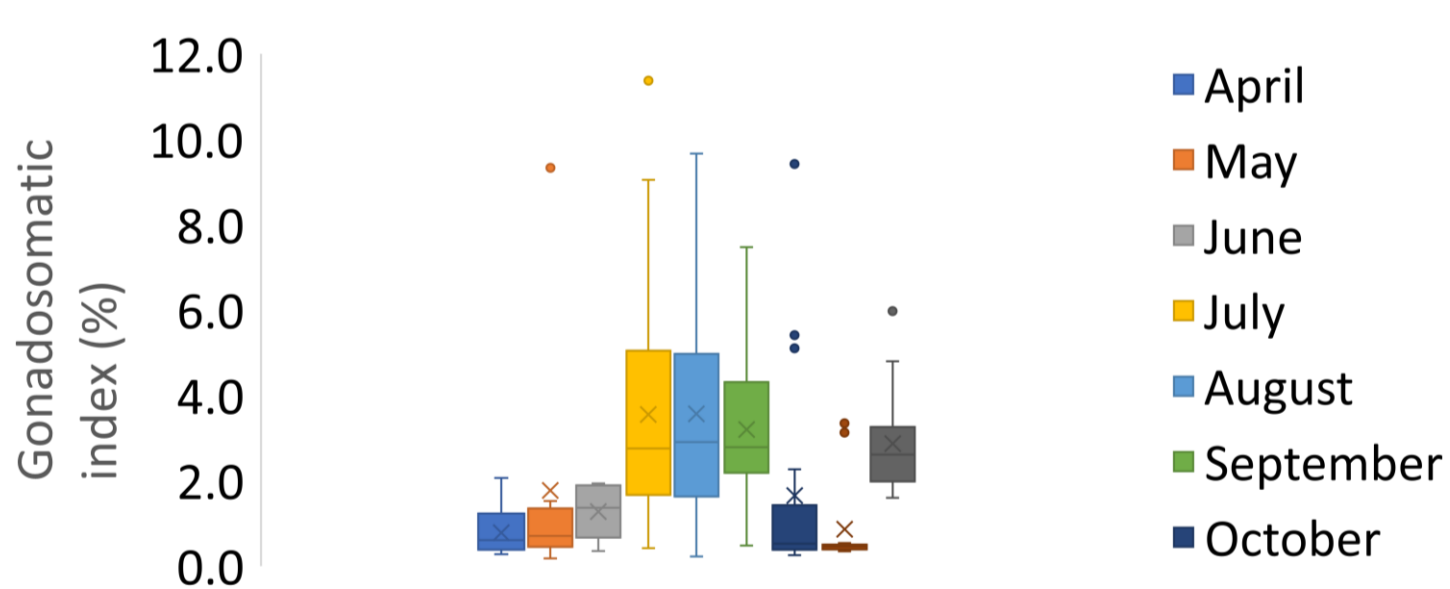

Fig. 2. The change of Gonadosomatic index (%) for Female Largehead Hairtail from April to December.
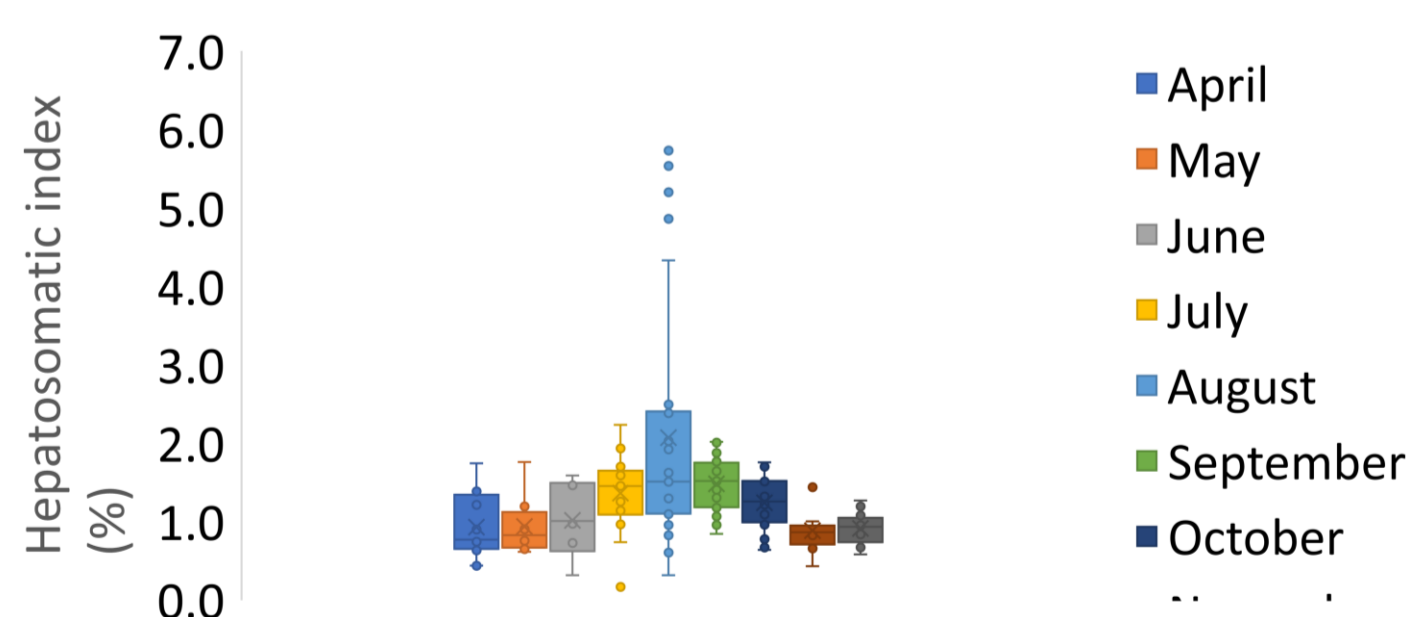

Fig. 3. The change of Hepatosomatic index (%) for Female Largehead Hairtail from April to December.
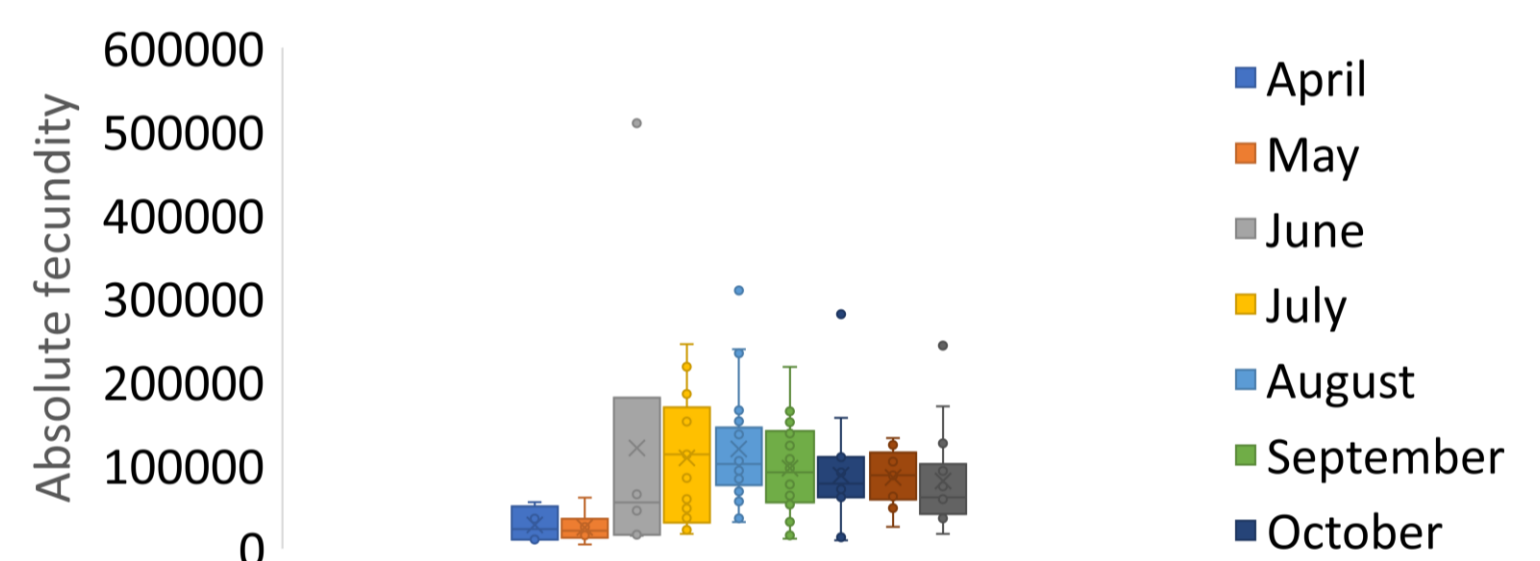

Fig. 4. The change of Absolute fecundity for Female Largehead Hairtail from April to December.
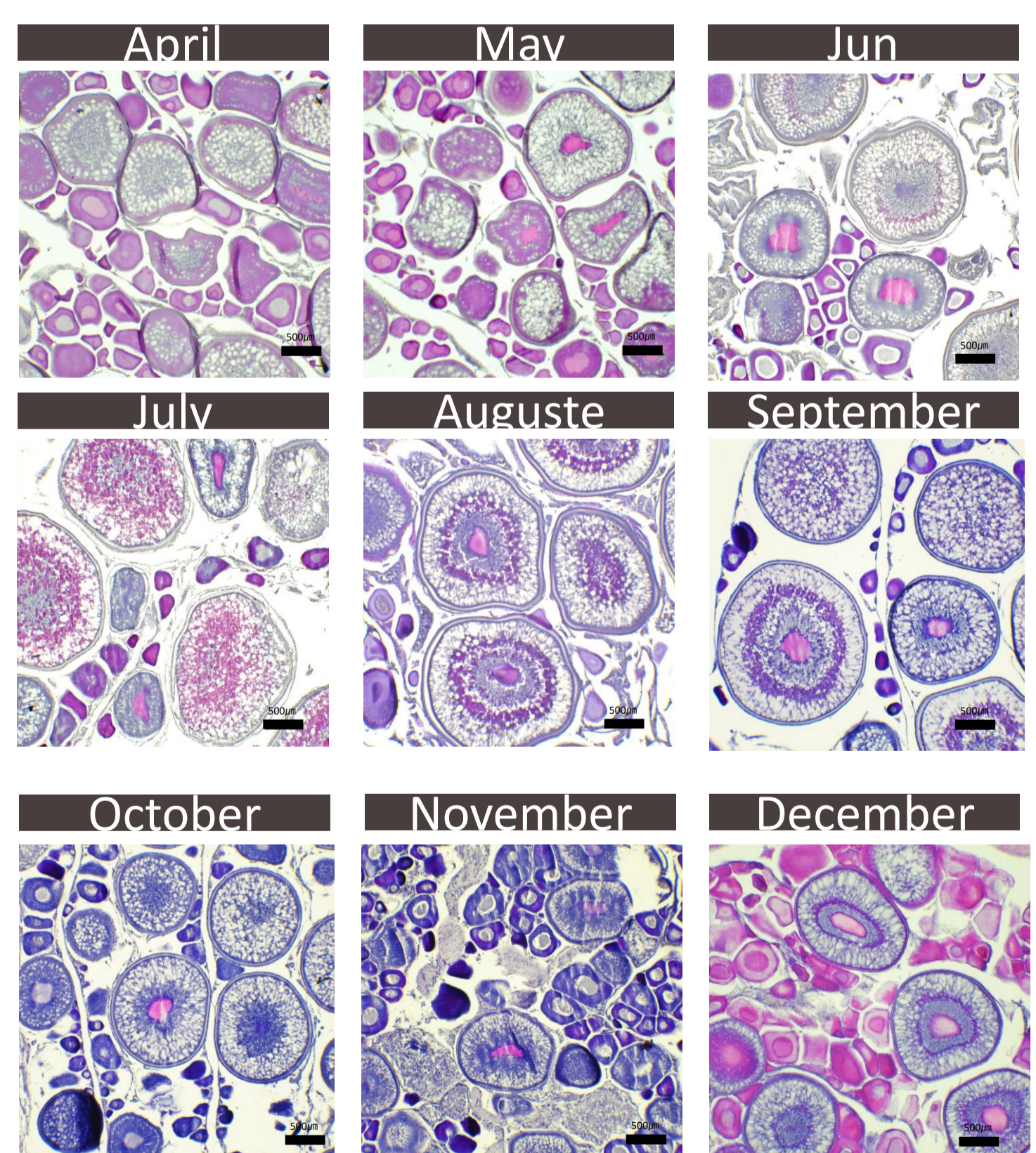

Fig. 5. The various oocyte developmental stages for Female Largehead Hairtail from April to December.

Summary

As a result, the average preanal length and total weight significantly increased from July to December. GSI, HSI and absolute fecundity were significantly higher from July to September. Histological results also showed that the proportion of maturity oocytes was higher from July to September than in other months. Therefore, *T. japonicus* with a preanal length of 25-35cm grow rapidly from summer to fall and are considered to have a high possibility of spawning between July and September. Based on these results, we hope that our understanding of the reproductive physiology of *T. japonicus* will increase and that it will be helpful in recovering the resources.