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The Comparative Studies on the Reproductive Strategies of *S. malma*,  
*B. lenok* and *H. iskiawai* in Yalu River

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**Abstract:** The reproductive strategies of *S. malma*, *B. lenok* and *H. iskiawai* in Yalu River were studied by means of biology methods. The result showed that the reproductive strategies including ages and size at sex mature, reproductive season, spawning types and absolute fecundity are different while that spawning ground conditions, way of reproduction and action are similar. It is showed that special features of different fishes were evolved to adapt to the ecological environment in the same water body, thus bring into full use of the potentiality of space, season and food organisms of water body in Yalu River by different fishes at the same time.

**Key words:** *S. malma*; *B. lenok*; *H. iskiawai*; reproductive strategies; Yalu river

Translating by Hong Sheng Bi

The Comparative Studies on the Reproductive Strategies of *S. malma*, *B. lenok* and *H. iskiawai* in Yalu River

**Summary:** In China, Korean taimen only distributed in the Yalu River, a river on the border between North Korea and China. The species is listed as a protected wildlife species.

**Reproduction:**

First reproduction: an anadromous fish, spawning generally occurs in upper stream of Yalu River. First time sexual mature occurs at age 5, body weight (4000 – 4500 g). Spawning generally occurs in May-June, spring spawning, and fecundity is 3500 – 5000 eggs. Spawning temperature is 9 – 10 °C and hatching time is 27 – 35 days. Spawning occurs in gravel sediment and eggs are buried under gravel.

The biology and conservation of *Hucho iskiawai*

## 1 Biology

Features based on 14 individuals

Body length: 33.5 – 36.5 cm; Body weight: 550 – 850g, dorsal fin (III – IV): 9 – 10, anal fin III: 8 – 9, lateral line scales: 141 – 148, gill rake: 14 -15, pyloric caeca: 98 – 119, spine: 65 – 67.

Head length is 26.1 – 28.0% of body length. Body width is 20 – 23.4 % of body length. Peduncle height is 8.1 – 9.0% of body length. Snout length is 27.2 – 30.1% of head length. Eye diameter is 12.6 – 13.3% of head length.

Body type is slightly cylindrical, long and thick, with flat head and tipped snout. Gape extends to the back of eye. Maxilla is more protruded than mandibular. Vomer has small, sharp teeth. Dorsal fin is slightly forward. Pectoral fin is relatively small. Pelvic fin starts from dorsal fin. Adipose fin exists. Tail fin is a shallow fork shape.

Dorsal fin is green-brown color and the abdomen and sides are white. Head and sides are covered by small black spots. Juveniles have 8 – 9 dark markings in transverse direction.

Distribution: In China, *H. iskiawai* only distributed in the upper stream of the Yalu River. General temperature ranges from 4 – 28 °C and the optimum temperature is 9 - 24°C.

Growth: From measurements from 14 individuals, *H. iskiawai* grows fast. The body weight of age 2 individual can reach to 1200g, age 3: 3000g, and age 4: 4500g. Based on studies from North Korean Freshwater Institute, body weights for age 1-7 are 100, 550, 2900, 4400, 5600, 6700, 7200 g respectively. Younger individuals tend to grow faster.

Feeding: *H. iskiawai* mostly feed on other juvenile fish. Feeding generally increase after the spring spawning and decrease in July.

Stock status: Historically, salmonids are the dominant fish species. The stock of *H. iskiawai* has been declined. In 1980 – 1984 surveys in entire Jilin area, only ~10 fish were caught.

Body type is slightly cylindrical, long and thick, with flat head and tipped snout. Gape extends to the back of eye.

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