

A-544 NOBORU HOSHINO

---

Gill net selectivity and the effectiveness of resource management for Pacific herring (*Clupea pallasii*) in Ishikari Bay

Experimental gill net fishing was performed at the end of the fishing seasons in 2015-2017 to ascertain the characteristics of Pacific herring (*Clupea pallasii*) stocks in the coastal waters of Ishikari Bay. Samples collected using gill nets with different mesh sizes were mostly composed of 2- and 3-year-old mature fish. Gill net selectivity was estimated based on direct estimation and the SELECT method. Using Akaike information criterion, a log-normal model was selected as the best-fitted selectivity curve. The modes of the selectivity curves were estimated to be 243, 269, 296, and 323 mm fork lengths for the popular mesh sizes, 55, 61, 67, and 73 mm, respectively.

Catching efficiencies of gill nets with a 61 mm mesh size, which is the lower limit for mesh size as per recent fishing regulations, were estimated to be 5% and 65% for the 2- and 3-year-old fish, respectively. These results suggest that the recent fishing regulations have considerably enhanced the spawning biomass of Pacific herring.

A-545 ANAI IIJIMA

---

Stock assessment of masu salmon in the coastal area of southwestern Hokkaido in the Sea of Japan by standardized CPUE

In this study, I used yearly catch and effort data to standardize catch per unit effort (CPUE) of masu salmon by coastal fishery in southwestern Hokkaido in the Sea of Japan, from 2003-2014, using the generalized linear models (GLM) approach. By examining the validity of the best model selected by Akaike information criterion (AIC), good fit was observed and the error structure assumed in the GLM procedure appeared appropriate. Because the standardized model accurately predicts the catch, the method used in the present study appeared effective for the stock assessment of masu salmon, which have been caught with various fishing gears widely over a long period. When annual trend of the standardized CPUE was calculated by the least squares mean, the standardized CPUE did not show a decreasing trend,

suggesting that catch of masu salmon would have decreased because of decrease in the number of fishermen engaged in line fishing in this area.

A-546 AKIYUKI SATOU, SHIGEMASA SHIMIZU, MASANAO NARITA, KOJI TSUJI, AKIKO MIYAZAKI, KOJI EBITANI, TOMOHARU WATANABE, MAKOTO HATAKEYAMA and SHINGO ASOU

---

Effect of Different Salinities Used for Preservation on the Taste of *Corbicula japonica*

*Corbicula japonica* was preserved using different salinities to improve its taste. *C. japonica* caught at Lake Abashiri was preserved in artificial seawater of 10 practical salinity unit (psu) or 5 psu for 24 h. A decrease in the water content and increase in free amino acids (mainly glutamic acid, alanine, beta-alanine, and proline) in the soft tissue was observed. Therefore, these osmolytes could possibly be primarily responsible for osmoregulation. Similar to the soft tissue, preservation in a salinity of 10 psu for 24 h resulted in an increase in four free amino acids in the extract. The taste of *C. japonica* was enhanced by preservation in artificial seawater of 10 psu for 24 h, possibly because alanine and proline taste sweet and glutamic acid has an umami taste.

A-547 MAKOTO HATAKEYAMA, KAZUTAKA SHIMODA, SHINYA MIZUNO and HILOSHI KAWAMULA

---

The genetic population structure of the Sakhalin taimen *Parahucho perryi* in Lake Shumarinai, Hokkaido, Japan (Short paper)

The genetic population structure of the Sakhalin taimen *Parahucho perryi* in Lake Shumarinai Hokkaido, Japan, and in the rivers draining into the lake was investigated by nucleotide sequencing of a part of the mitochondrial cytochrome b gene (695 bp). Based on the data of 211 Sakhalin taimen specimens, three haplotypes (A, B2 and C) were observed from three permutation sites. The haplotype frequency of Sakhalin taimen collected from the lake was constantly consisted of haplotypes A, B2 and C. The haplotype frequency of Sakhalin taimen collected from each river had the unique characteristic fixed over years. Those results indicate that the population of Sakhalin taimen in the lake was constructed by the distinct breeding groups of the rivers.

A-548 NOBORU HOSHINO, NOBUYUKI TANAKA, TAKAYUKI HONMA and YUTARO SUZUKI

---

Age compositions of Pacific cod (*Gadus macrocephalus*) in the coastal waters of Hokkaido (Note)

A-549 SHINGO ITO

---

A comparison of the sensitivity of one- and two-step RT-PCR methods for the detection of the barfin flounder nervous necrosis virus gene (Note)

A-550 TATSUYA KOYAMA, KAZUTAKA SHIMODA, TOMOYA AOYAMA, ANAI IIJIMA, HIROKAZU URABE, MAKOTO FUJIWARA, AND YASUYUKI MIYAKOSHI

---

Age composition of chum salmon returning to rivers on the Sea of Japan side of Hokkaido from 2010 to 2016 (Note)

A-551 TOMOYA AOYAMA, YOSHIHITO SHINRIKI, HAJIME OHMORI and KATSUMI TAKEUCHI

---

Distribution and densities of wild masu salmon juveniles in the Assabu River system, southwestern Hokkaido, Japan (Note)

A-552 KAZUTAKA SHIMODA, TOMOYA AOYAMA, HIROYUKI SAKAMOTO, SHIN-ICHI OHKUBO, MAKOTO HATAKEYAMA and KATSUMI TAKEUCHI

---

Growth and sexual maturity of brown trout in ten rivers in Hokkaido, Japan (Note)