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Occurrence of dominant zooplankton in a brackish lake, Lake Abashiri, eastern Hokkaido in 2017

Zooplankton investigations were conducted in a brackish lake, Lake Abashiri from May to November 2017. Two stations were established at the shore (St. 8) and central (St. 9) area. Total abundances of zooplankton fluctuated from 0.6 to  $4.1 \times 10^5$  inds./m<sup>3</sup> at St. 8 and, from 0.7 to  $8.3 \times 10^5$  inds./m<sup>3</sup> at St. 9. The abundance of zooplankton communities such as Rotifera, Cladocera, and Copepoda reached maximum in June at both the stations and Rotifera being the dominant taxon. Cladocera dominated only in summer. The dominant species throughout the investigations were fresh-water *Brachionus* spp., *Keratella quadrata*, *Filinia longiseta*, and brackish water *K. cruciformis* in Rotifera; fresh-water *Bosmina longirostris* and *Diaphanosoma brachyurum* in Cladocera; and brackish water *Sinocalanus tenellus* in Copepoda. In particular, the dominance of *Brachionus* spp. and *B. longirostris* was characteristic of previous reports prepared in the middle of 1990s. These results might be due to the low-salinity environments in 2017.

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Vertical distributions of three dominant crustacean plankton in a brackish lake, Lake Abashiri, eastern Hokkaido, in 2017

The vertical distributions of crustacean plankton, namely, two cladocerans of *Bosmina longirostris* and *Diaphanosoma brachyurum*, and one copepod, *Sinocalanus tenellus*, were investigated at a central station in a brackish lake, Lake Abashiri, from June to November 2017. Zooplankton samples were spaced 2 m apart from 0 to 6 m distance, and another at 7 m using Van Dorn bottle. The boundary layers between fresh and salt-water were observed at 6 – 8 m depth from the salinity profiles throughout the investigations. In addition, the dissolved oxygen decreased sharply in these boundary layers. The individual densities of *B. longirostris* and *D. brachyurum* increased from mid-July to early August, and dense distributions of these species were observed in the boundary layer. At

the same time, large number of *S. tene//us* adults was simultaneously concentrated at this boundary. The factors of this vertical distribution in relation to the boundary layer in summer were thought to be the light environment and avoidance of feeding by smelt juveniles.

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Seasonal changes in lipid content of arabesque greenling (*Pleurogrammus azonus*) captured in Shiribeshi area and their relationship with the body length and condition factors

Seasonal changes in the lipid content of arabesque greenling (*Pleurogrammus azonus*) captured in Shiribeshi area were examined. Lipid content was higher in males than in females in all months. And lipid content was low in winter, increased in spring, peaked in summer, and then rapidly decreased in females, but remained high in males until October. In addition, lipid content was correlated with the condition factor, and it was thought that the lipid decreased as maturation progressed. Lipid content of large fish (body length more than 320 mm) that thought to be more than 3 years old tend to be lower than that of smaller ones. Therefore, to catch high-lipid fish, it is important to target aged-one or -two fish from May to July for females and from May to October for males.