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Body size and maturity of shishamo *Spirinchus lanceolatus* going upstream into the Mukawa River, Hokkaido

The shishamo catch along the Pacific coast of southern Hokkaido has drastically decreased in recent years. This study investigated the migration ecology of shishamo, an anadromous fish, in the Mukawa River, its primary spawning ground in Hokkaido, from 2018 to 2022, during a period of substantial change in coastal catch. Upstream migration peaked in mid-November, with the migration period extending from October to December. Both male and female fish gradually decreased in body size and weight as the collection date progressed, indicating that individuals migrating earlier in the season were larger. The results also showed that fish tended to be larger when overall catch was lower, particularly during the peak migration period. These findings indicate that lower shishamo catch levels are associated with larger body size and increased gonadal weight, suggesting a compensatory effect.

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Molecular identification using the LAMP method reveals the distribution of the *Alexandrium tamarense* species complex and the presence of unidentified *Alexandrium* spp. in Hokkaido (Note)