

DETERMINANTS OF FISH SPECIES COMPOSITION IN ABASHIRI RIVER

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Abashiri-River is one of the longest rivers in Eastern Hokkaido and flows into Okhotsk Sea. Rainbow trout is the alien species introduced for game fishing and fishery, there. At this moment, it is believed that rainbow trout do not negatively affect indigenous organisms but some studies demonstrated that their impact may not be small. It is important to clarify the difference of environmental requirements between alien and indigenous species, because it will help controlling non-indigenous species.

The species compositions and environmental factors (water temperature, water depth and pH) were observed monthly between June and November, 2007 in Abashiri River and analyzed by generalized linear model. Months, observed areas and observed environmental factors are used as explaining variables for initial model to figure out fish species composition. The multi-nominal distribution is used as the error distribution. The stepwise method with BIC was used to select the explaining variables and provide optimal model. The optimal model contained only area and water temperature as explaining variables. Especially the estimated model indicated that rainbow trout distributed in habitat with warmer temperature than other salmonid. However there is only one year data set so it is difficult to distinguish which factors, i.e. area and water temperature, more affect species composition. Future research is required.