

# Assessing Arctic Grayling Relative Abundance and Distribution Through Environmental DNA Analysis

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## Preliminary Analysis

Tested assay specificity with tissue samples from Arctic Grayling and closely related/unrelated species (Table 1).  
High DNA concentrations of most salmonids indicate amplification during PCR (Image 5) and qPCR (Figure 1 & Table 2).  
qPCR indicates DNA concentrations of Chena River samples too low to amplify (Figure 2).

## Discussion

Latest qPCR analysis indicates eDNA sample concentrations are too low to amplify.  
Next Steps:  
Further testing assay (Rodgers, et al) with known DNA concentrations to develop level of detection for Arctic Grayling.  
Data configured in relation to Chum and Chinook salmon eDNA spawning periods  
qPCR method may become a complementary technique in the field of assessing relative quantities of species over time and space.

## Sources

Rodgers, T.W., Olson, J.R., Kloubucar, S.L. et al. Conservation Genet Resour (2018) 10: 859. <https://doi.org/10.1007/s12686-017-0883-1>

Schoen, E. R., Sellmer, K. W., Wipfli, M. S., López, J. A., Ivanoff, R., & Meyer, B. E. (2022). Piscine predation on juvenile salmon in sub-arctic Alaskan rivers: Associations with season, habitat, predator size and streamflow. *Ökologische Zeitschrift*, 31, 243–259.