

## From genotypes to demography: eco-evolutionary dynamics in Atlantic salmon

Ecological and evolutionary processes can occur on the same timescale and influence each other. Yet, few models have been developed to quantify feedback between ecological and evolutionary processes in wild populations. Such models often require data from long-term populations monitoring and a good understanding of the genetic basis of life history traits. In Atlantic salmon, large effect genes are associated with age at maturity. Interestingly, one of these genes, in the *vgl3* region, displays a sex-specific effect with reversal dominance, potentially reflecting sexually antagonistic selection. Here, we developed an eco-evolutionary dynamics model, combining 40 years of genetic and demographic data, to quantify sex-specific selection at these large effect genes, their allele frequency dynamics and influence on population growth. We discuss results obtained from the Imsa population (Norway), and compared them with assumptions based on the genetic architecture.