

## NXT22-006 - Implementing novel feeding strategies to improve animal welfare and the release success of commercial fish farms

### Abstract

Aquaculture is essential for feeding a growing population, but it must balance production efficiency with animal welfare. Our project explored how nutrition affects fish behaviour and stress resilience, especially for farms releasing fish into the wild. We conducted an experiment with rainbow trout, showing that overfeeding reduces cognitive abilities and stress resilience. Optimizing feeding strategies can improve welfare, reduce costs, and enhance post-release survival, making aquaculture more sustainable and cost-effective.

In addition to research, we engaged with stakeholders through visits to fish farms in Austria and a collaboration with Vattenfall AB in Sweden. We also organized a workshop with Austrian fish farmers to discuss how our findings could improve practices. These interactions highlighted a key gap: the lack of non-invasive methods to measure fish stress on farms. Developing such a tool could improve welfare management and productivity. Further research is needed, and pursuing a new grant could support this innovation, driving more sustainable aquaculture practices.

### Keywords:

overfeeding; stress responses; cognition; Atlantic salmon

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Further links to the persons involved and to the project can be found under

<https://www.gmbh.wwtf.at/funding/programmes/ei/NXT22-006/>