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Stressor analysis

EU Finland

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Background

- Teno and Näätämöjoki rivers in the wilderness in the far north of Europe
 - Border rivers between Finland and Norway, estuaries in Norway
 - Wilderness area, almost pristine, very low human population with limited influence on the catchments
 - Some common stressors with negligible effects
 - Pollution, barriers, water regulation and stocking
 - Habitat degradation, slow processes
 - Stressors with a high potential risk, but under control at the moment
 - Diseases/Parasites: Strict control for *Gyrodactylus salaris*
 - Exploitation: Fishing ban in Teno, new regulation in progress for the Näätämöjoki



Climate change, Aquaculture, Predators, Invasives

- No easy tools to mitigate
 - Large uncertainty concerning the potential effect and knowledge base
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- Climate change
 - Strongly deteriorated smolt survival at sea, probably due to climate change and related factors
 - The effect of CC on all northern populations is considered large.
 - Some effects on growth and life history characteristics have been detected as well.
 - Aquaculture
 - All salmon populations in the Rivers Teno and Näätämöjoki are potentially affected by the salmon aquaculture on the Norwegian coast (and other facilities in the NE Atlantic area).
 - Some effects of aquaculture are known better (number of escapees in wild populations, introgression),
 - Some aspects and potential impacts are less known (diseases, parasites, ecosystem effects, long-term introgression effects..)
 - Compared to many other rivers the known effects are smaller in the Teno and Näätämöjoki rivers



- Predators

- Natural predation affects all salmon populations, but the real impacts on population status and dynamics are poorly understood.
- Some indications of increased predation pressure include climate change facilitating better recruitment of spring-spawning predators, like pike
- The overall low salmon population abundances tend to increase the effects of predation.
- Predator control not considered, would be very difficult and likely ineffective or harmful

- Invasives

- All salmon populations in the Rivers Teno and Näätämöjoki are subject to invasive species, especially the pink salmon.
- Currently, only small or negligible impacts of invasive species on native salmon are known
- A lots of unknowns and uncertainties, especially in relation to the recently increased pink salmon surge into the Barents Sea rivers.
- Some mitigation measures are possible, important to avoid harm to native species

