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Presentation of the Stressor Analyses Conducted by the Parties / jurisdictions

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Analysis of impact factors adversely affecting Atlantic salmon stocks in the Russian Federation

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Federal Agency for Fisheries
RUSSIAN FEDERAL RESEARCH INSTITUTE OF FISHERIES AND OCEANOGRAPHY «VNIRO»
Polar branch of VNIRO («PINRO» named after N.M.Knipovich)

- The northeastern part of the Atlantic salmon range is in the European North of Russia and extends from the Scandinavian Peninsula to the Ural Mountains, the border with Asia.
- The catchment area of salmon rivers in the region is larger than the area of the United Kingdom, Ireland, Iceland and Norway combined.
- The length of the rivers varies from a few kilometers in the west to 1,800 km in the east.

The three most significant stressors to wild Atlantic salmon that have been identified for Russian stocks

- **The interceptory Atlantic salmon mixed-stock fishery**

The interceptory Atlantic salmon MSF in northern Norway, in particular in the Varanger Fjord, has a strong impact on salmon stocks in Russian rivers, especially, in the rivers of Western Murman and the Kola Bay. Although, regulatory measures taken by Norway in the 2010s–2020s have led to a decline in the proportion of salmon of Russian origin in Norwegian catches (Ozerov et al., 2023), the harvest still remains at high level. MSF is also in operation in the White Sea and affects salmon populations originated from three regions of the Russian Federation. The interceptory Atlantic salmon MSF is a significant stressor to wild Atlantic salmon stocks in Russia.

The three most significant stressors to wild Atlantic salmon that have been identified for Russian stocks

- **Illegal, unreported and unregulated (IUU) fishing**

Many populations of Atlantic salmon in the European North of Russia are in a depressed state due to anthropogenic transformation of the environment. The healthiest populations are mainly located at the northern boundaries of the species range where aquatic ecosystems are less affected by anthropogenic factors, though among them illegal fisheries represent an exception having a strong impact on Atlantic salmon in all regions. Therefore, it could be concluded that illegal, unreported and unregulated (IUU) fishing is one of the main impact factors adversely affecting Atlantic salmon stocks in the Russian Federation at regional and national level.

The three most significant stressors to wild Atlantic salmon that have been identified for Russian stocks

- **The risk of an accidental spread of *Gyrodactylus salaris***

In Russia, *Gyrodactylus salaris* was first recorded as a pathogen for Atlantic salmon in the Keret River (Karelia) in 1992. In the Murmansk region, the parasite was first found in the Tuloma river basin in 2015. The parasite is common amongst farmed rainbow trout without causing any clinical signs (Hansen et al., 2022). Live fish transport represents a significant risk in terms of the spread of G. salaris. Taking into account the further development of trout farming in all regions in the North-West of Russia and associated need for live fish transport, the risk of an accidental parasite spread is considered high and the stressor remains on the list of the most significant ones.

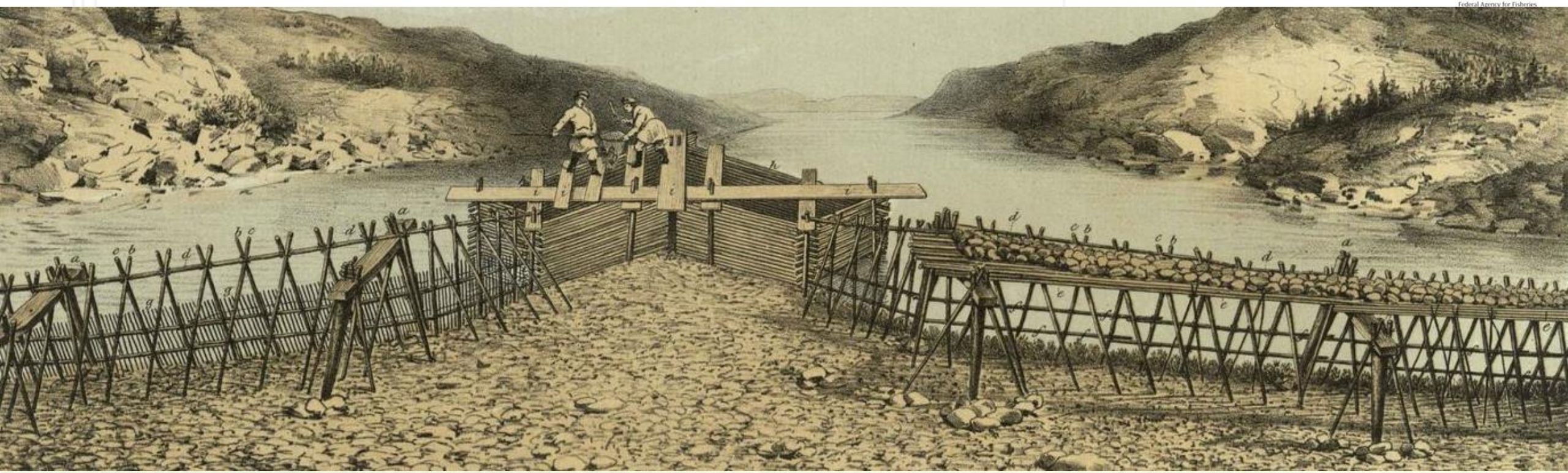
What are the biggest challenges in addressing these significant stressors to wild Atlantic salmon?

- Mixed-stock fishery regulation is a complex decision-making process because, among other elements, socio-economic factors must be taken into account.
- IUU fishing is a challenge because of the size of the region and efforts needed to control it.
- Regulation of live fish transport does not take into account the fact that the transported "healthy" fish may be carriers of the parasite *Gyrodactylus salaris.*

What are the big take-home messages from the stressor analysis?

- Some Atlantic salmon populations in the European North of Russia are depleted as a result of human activities. The healthiest populations are mainly located at the northern edge of the species' range, where aquatic ecosystems are less susceptible to anthropogenic influence.

- A declining biodiversity as a result of decreasing abundance hinders wild salmon adaptation to the altered habitats and reduces the chances of population recovery.



Семожій заборъ въ р. Поной. Lachswehre im Flusse Ponoï.

Bordigue pour la pêche du saumon sur la rivière Ponoï.

Thank you for attention!