

Project application Baltic Sea 2020

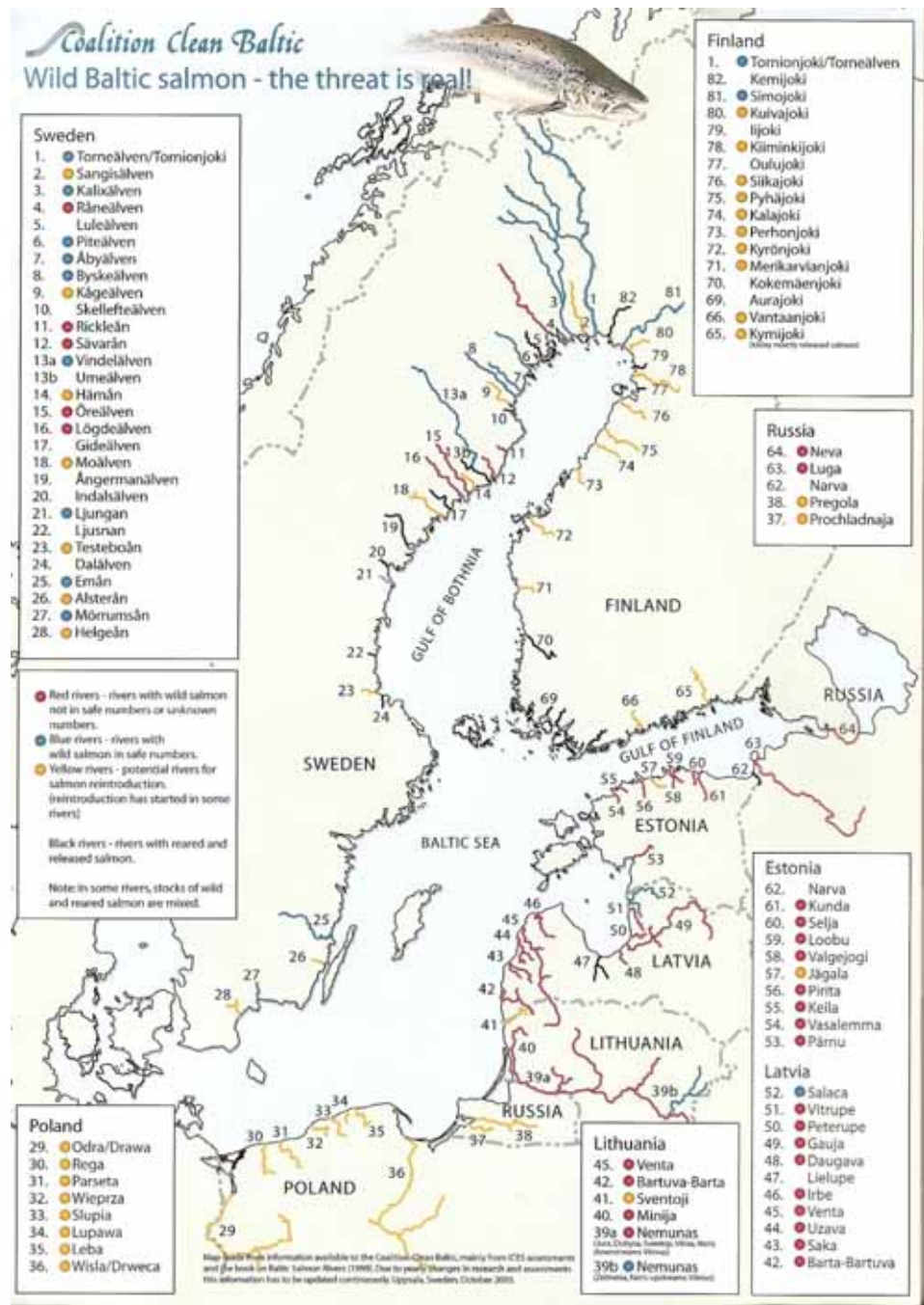
*Conservation of the Wild Baltic Salmon
(Salmo salar): Salmon River
Management Plans*
(by Lennart Nyman, CCB Consultant)

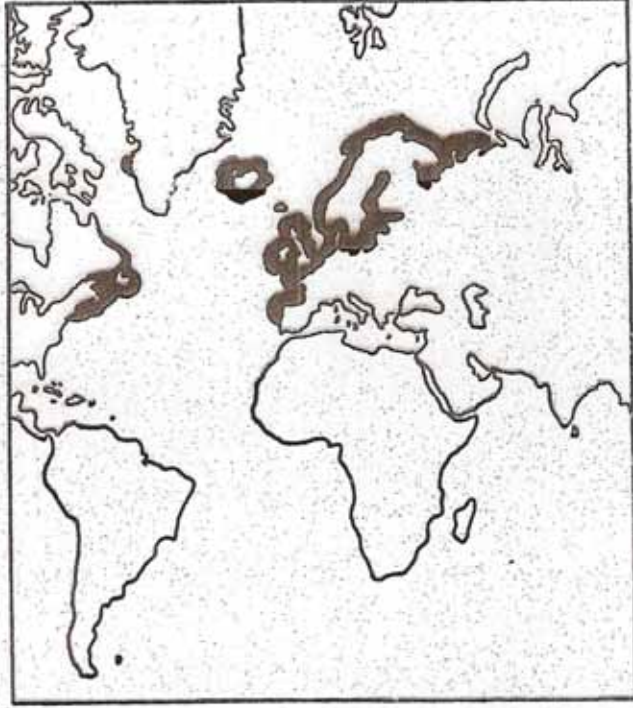
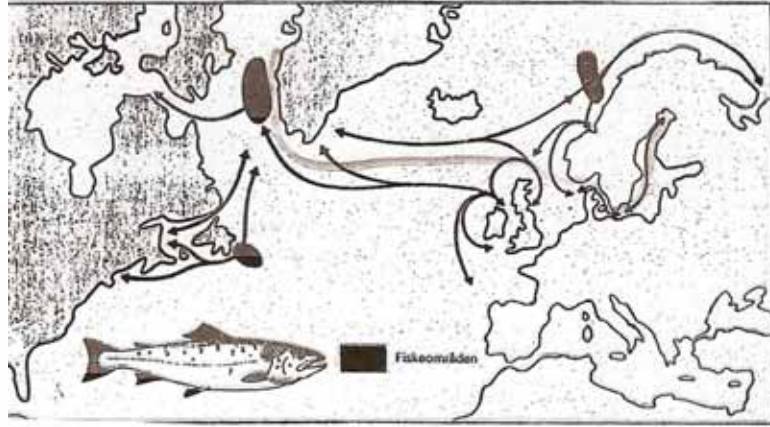


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Coalition Clean Baltic
Wild Baltic salmon - the threat is real!

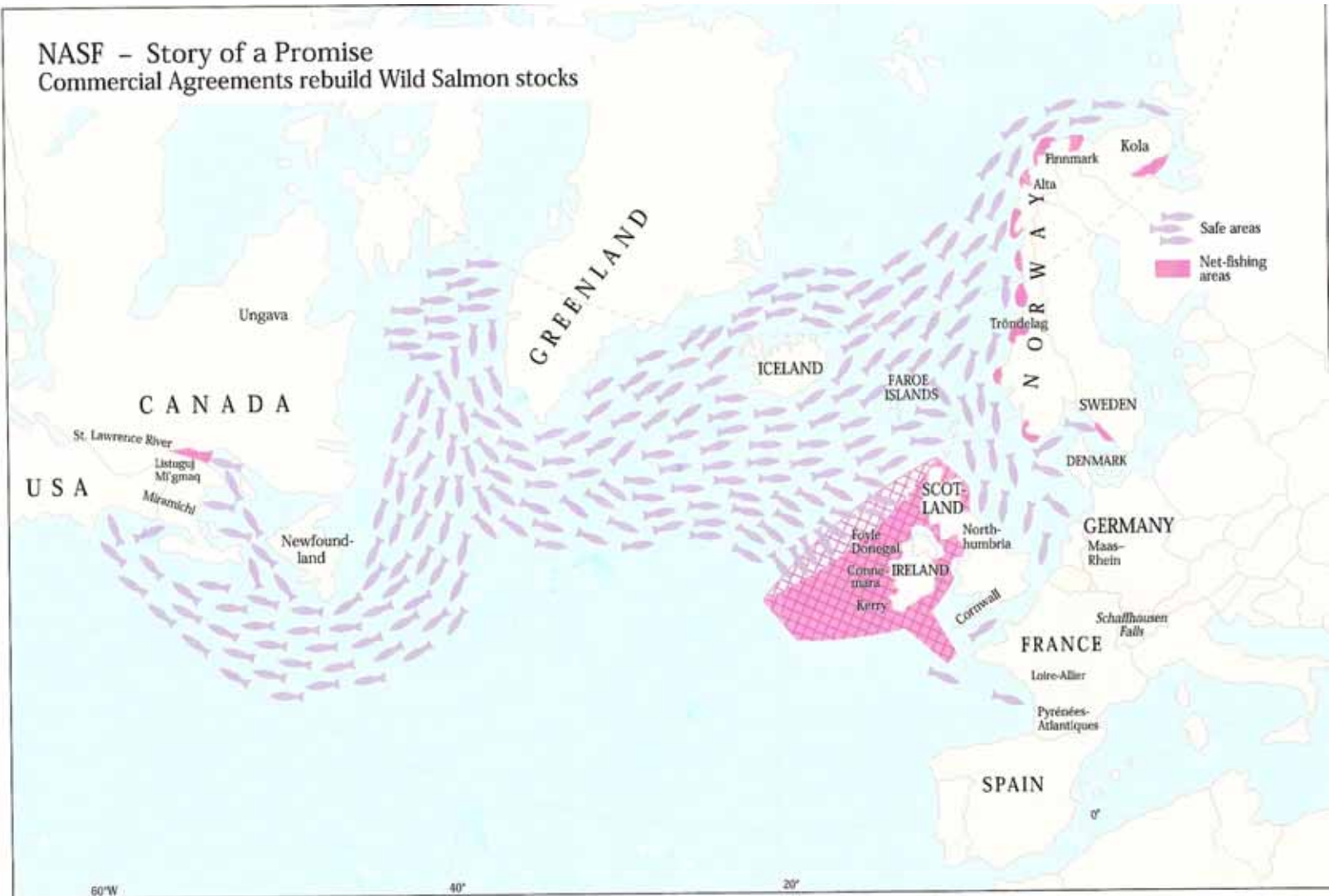




Man & Water AB
International Network



NASF - Story of a Promise
Commercial Agreements rebuild Wild Salmon stocks



WHY SAVE THE BALTIC SALMON?

- 1) Salmon is already a symbol of a healthy aquatic environment
- 2) Salmon are almost independent of other predators and of the enormous problem with the cod/herring/sprat interactions
- 3) Salmon are good indicators of environmental conditions in the Baltic and in their native streams
- 4) Salmon occur in all countries surrounding the Baltic, either on the coast only or both in coastal waters and in streams
- 5) The eradication of natural salmon populations has greatly diminished genetic variation in the species, and thus reduced the long-term viability of the stock



- 6) Main management concern should be on restoring salmon populations in small but potentially good salmon rivers - to restore also genetic variability
- 7) Salmon are not greatly influenced by global warming, decreased salinity and poor oxygen conditions in the deeper layers of the Baltic Sea
- 8) Salmon may, therefore, continue to function as a good environmental indicator also in future



Ten threats to salmon survival

- 1) Hydroelectric development of rivers (inbreeding, extinction)
- 2) Pollution, eutrophication, sedimentation, river-bed destruction (extinction)
- 3) Acidification (inbreeding, extinction)
- 4) Selective fishing gear that catch the largest and the most fast-growing salmon (negative selection)
- 5) Over fishing leaving too few spawners (inbreeding)



- 6) Non-scientific hatchery strategies (negative selection, inbreeding)
- 7) Dilution of natural gene pool by spawners from aquaculture units and hatchery fish with atypical genes (destruction of natural gene pool)
- 8) Spreading diseases and parasites when transporting and stocking fish (inbreeding, extinction)
- 9) Deliberate mixing of stocks (worst case scenario in Lule River, 1972, when seven stocks were used as brood fish)(destruction of local gene pool)
- 10) The environmental catastrophe called M74, which in some stocks wiped out 905 of fry in hatcheries (extinction).



Project objectives

This project proposal encompasses production of *salmon river management plans* for endangered/threatened salmon populations in the Baltic drainage from Poland, the Baltic states and including the Russian area draining into the Baltic Sea. *This proposal covers 2 rivers in Poland, 3 rivers in Latvia, 3 rivers in Estonia and 1 river in Russia.*

The primary objective, though, is to develop good national examples of salmon management in at least one river in each country (Russia, Estonia, Latvia and Poland). The very core of the management plans is to develop standard techniques for monitoring of salmon populations and to improve natural salmon production.



Implementation of project activities

This overview of the top two priorities for all rivers (see also below - Appendix) shows that the most pressing needs are to initiate standard monitoring of spawners, smolt and parr. Habitat improvement is also important, and finally there are specific needs in certain rivers that are not necessarily of top priority in most of the others.



The rationale of this overview is to start implementation of the salmon river management plans by introducing a standard program for monitoring of the salmon populations in all rivers regardless of the origin of the stock – reared and/or natural. Not only is this a prerequisite of evaluating impact of other measures to enhance natural salmon production, but it also facilitates comparison of results among the various rivers.

Depending on the amount of funds available to initiate this project other priorities may be chosen, e.g. concentration on fewer rivers where both monitoring and various types of habitat improvement can be implemented simultaneously. The latter choice must be agreed on by the national partners in the project.



Budget rationale

All costing below presupposes that the partner organizations will be able to fund participation in the implementation of the management plans, both the planning and the practical handling of the equipment used during the entire monitoring season. In addition, the partner organizations will also be responsible for implementation of all activities decided as priorities in the rivers chosen to be part of the management plans. The introductory seminar and the theoretical and practical lectures in monitoring techniques, and a small annual remuneration to national expert coordinators are, however, covered by this project proposal.



Three standard types of equipment are needed to monitor present status of the salmon population and to evaluate level of success of management measures.

1) *Upstream migration of spawners*: The Riverwatcher fish counter (Vaki Aquaculture Systems Ltd, Kopavogur, Iceland). The basic unit costs Euro 20,023, with the additional necessary equipment to make it an independent field unit, and including freight, import fees, installation and introductory handling course the price is **Euro 30,544**

2) *Smolt trap*: 5' Smolt Trap (Fishtrack Ltd., Killaloe, Co. Clare, Ireland): Euro 14,500 + shipping 2,700 = **Euro 17,200**

3) *Electro-fishing unit for parr (and smolt)*: (Lugab, Luleå, Sweden): Basic unit SEK 20,500 + back pack carrier SEK 1,800 + power unit (Honda EU 10) SEK 10,000 = SEK 32,300 (**Euro 3,436**)

The total cost of a complete monitoring unit for salmon populations thus amounts to: Euro 51,180



Riverwatcher fish counter

These traps are intended to count the number of salmon migrating upstream to spawn. Their purpose is to monitor the size of the spawning population, which is an important indicator of success of management activities implemented.

This equipment is expensive, but it is state of the art world wide. It not only makes possible identification of salmon and their size, but also most other fish that swim through the counter can readily be identified to species level. In addition, this fish counter has been in use many years in numerous countries, and actually also in Poland.



National Distribution of Equipment

The traps for migrating spawners and smolt must be set at a fixed location in each salmon river, whereas the electro-fishing equipment is portable and can be utilized for several rivers during the summer season.

In this proposal no more than 3 rivers are selected within each country, so one electro-fishing unit per country will suffice.

