

Dear Commissioner Vella,

dear Sir or Madam, as the responsible Minister of
Environment, Nature and Fisheries along the Rhine,

can Migratory Fish Species be saved?



"Can migratory fish species be saved"? This was the question we posed to the Dutch Environment minister, Sharon Dijksma in 2015. As you can see we have been trying to obtain an answer to the effects of the fisheries on the migratory fish programme. However, we have still not received a satisfactory answer.

At this year's annual meeting of the Atlantic Salmon Conservation Organisation (NASCO) in Bad Neuenahr-Ahrweiler the same question can again be raised. Not only the fisheries have had a negative influence on the migratory species and it is appalling that even though great strides have been made in improving water quality and accessibility, together with large restocking campaigns with their accompanying financial burdens and volunteer services that only 230 migratory salmon have been captured in the fish pass at Iffezheim and only 256 in the control station on the Sieg in November 2015.

These numbers support the only conclusion that we are far away from our ambitious goal of developing a stable and sustainable population of salmon within the river Rhine that can survive without restocking and intervention from the human hand [1].

What are the reasons for this?

A major cause is the failure of the signatories of the intergovernmental contract between Germany, the Netherlands and Switzerland of 1885 [2] to adhere to the rules laid down for the salmon fisheries:

- Thousands of fixed nets in the Nieder and Rhine Estuary
- Trawling in the North Sea directly in front of the weirs
- Not enough opening of the sluices of the Haringvliets
- No protection of salmon smolts during turbine passage in hydro-electric power stations
- Missing or inefficient fish ladders

A second major cause is the role of the non resident freshwater species of cormorants *Phalacrocorax carbo sinensis*. Since 1990 the increasing number of cormorants has developed into a potential threat to migrating salmon smolts. Although experts have warned of the dangers of this fish eating species [3, 4], this information has been ignored or not taken seriously. For over 20 years there has been adequate scientific proof that populations of cormorants can decimate a complete salmon stock in a river system [5].

Since the success of a self sustaining salmon population has been prevented, finally the "Cormorant problem" has been officially recognized and published in the German report to NASCO [6]: *"North Rhine-Westphalia: The number of registered adult salmon increased in the North Rhine-Westphalian salmon project rivers compared with previous years. The cormorant predation on downstream migrating smolts is increasing.*

Baden-Wuerttemberg: The number of recorded salmon in the upstream counting stations of the fish pass at the barrages Iffezheim and Gamsheim increased significantly in 2014. Whether this represents a turnaround due to the extensive conservation efforts is not known yet. Unfortunately, the high predation pressure by cormorants on downstream migrating smolts is increasing due to growing cormorant breeding grounds."

It is now time for questions from NASCO to the signatory states of the Rhine treaty, especially Germany as the host, concerning cormorant predation to be addressed and answered [7]:

"Questions for written response prior to the 2015 Annual Meeting:

1. Reference is made to cormorant predation on downstream migrating smolts in the Rhine. Have any mitigation measures been considered (Section 2.2)?"

Two examples show that a sustainable salmon fishery is possible when there is no external fishing pressure through consumption by cormorants.

- Located In North England, the River Tyne, despite previous industrial contamination and degradation, has shown a remarkable recovery since 2004 with over 40,000 salmon now present [8, 9]. In this river the freshwater cormorants species is absent.
- In Denmark the cormorant problem has been investigated already in 2002 [10]. With the

help of concerted action within the breeding colonies and removal of birds along the development and migratory river routes, the natural salmon populations have been protected [11, 12]. On the Skjern Å, today there are over 6,000 returning salmon from a much lower number of restocked smolts compared to the Rhine and over half of these come from natural spawning.

The influence of cormorant predation on the smolt migration has already been documented in the report of the IKSJ in 2013 [13]:

In the Rhine-Delta a large proportion of the mortalities for seawards migrating smolts can be attributed to predatory fish such as Pike-Perch or predatory birds especially cormorants. Telemetry data has shown that mortalities increase when the smolts approach areas with breeding populations of cormorants. In NRW, in the course of the Migratory Fish Program the predation of juvenile stages of salmon and the correlation with mortality are continuously monitored together with the RWS of the Netherlands by using transponders.

However, in the brochures on the Migratory Fish Program in NRW for the project phases 2011–2015 and the perspectives for 2016–2020 there is no in depth analysis of the catastrophic low return rates for salmon especially with respect to cormorant influences which are completely missing. There is only a general statement: For the maintenance of a stable salmon population a theoretical level of at least 3% of the smolts is required. A level which has so far not been achieved [14]. At the present time the numbers of sexually mature fish returning are less than 1%. This is significantly below the required biological quota of 3% for the maintenance of a sustainable salmon population [15].

Unfortunately, in the present brochure [14] none of the results from the IKSJ report [13] have been incorporated. The importance of these results are as follows:

- The results of the Ministry for Nature, Environment and Consumer Protection [16] for the years 2008 and 2009, for smolt migration to the sea, show catastrophic survival rates of only 22% in 2008 and 13% in 2009.
- Less than 3% of the tagged smolts introduced into the Rur/Mass river system in 2010/2011 reached the sea [17].

The NASCO has finally brought the problem of the cormorants for the salmon smolt migration to the attention of the public at large.

It is clear that all measures including reduced fishing pressure, opening of migration routes, restoration of spawning grounds and nursery areas will remain ineffective as long as the salmon smolts are exposed to massive predation by cormorants.

Dear Sir or Madam, as the responsible Minister of Environment, Nature and Fisheries along the Rhine!

It lies within your hands to agree on a joint policy as soon as possible for a transnational cormorant management system for the Rhine as a whole. Give the representatives of NASCO the encouragement to renew their efforts for the protection of salmon in the Rhine and not to capitulate to the wishes of a minority bird lobby whose population increase already threatens the ecological balance of salmon smolt migratory systems. Denmark has shown in Skjern Å that through careful and judicious biological steps this can be achieved.

We are looking forward to your response as soon as possible.

Yours faithfully,

Dr. Rainer Hagemeyer
(Chairman)

Hagen, 9 March 2016

Literature:

- [1] IKSR 2004: Rheinlachs 2020, <http://www.iksr.org/de/dokumentearchiv/broschueren/rhein-lachs-2020/index.html?pdfPage=6>
- [2] Vertrag zwischen Deutschland, den Niederlanden und der Schweiz, betreffend die Regelung der Lachsfischerei im Stromgebiet des Rheins. Vom 30. Juni 1885
- [3] Fischschutz contra Kormoran e.V. 2014, Schreiben an die Lenkungsgruppe Wanderfischprogramm MKULNV Nordrhein-Westfalen, http://contra-kormoran.de/wp-content/uploads/2012/12/FcK2MKULNV_22Jan20141.pdf
- [4] Guthörl, V. 2006, Zum Einfluss des Kormorans (*Phalacrocorax carbo*) auf Fischbestände und aquatische Ökosysteme – Fakten, Konflikte und Perspektiven für kulturlandschaftsgerechte Wildhaltung, 255 Seiten, Les éditions – Wildland Weltweit – Verlag, <http://wildlandweltweit.de/downloads/>
- [5] Van Eerden, M.R., van Rijn, S. and Keller V. (eds) 2011. Proceedings 7th International Conference on Cormorants, Villeneuve, Switzerland 23-26 Nov. 2005, Wetlands International-IUCN Cormorant Research Group, Lelystad, S.183-184
- [6] NASCO 2015, Annual Progress Report on Actions Taken Under Implementation Plans for the Calendar Year 2014, EU-Germany S. 2, http://www.nasco.int/pdf/2015%20papers/CNL_15_21.pdf
- [7] NASCO 2015, Report of the Meeting of the Implementation Plan/Annual Progress Report Review Group S. 22, http://www.nasco.int/pdf/2015%20papers/CNL_15_12.pdf
- [8] Milner, N.J., Russell, I.C., Aprahamian, M., Inverarity, R., Shelley, J., Rippon, P. 2004, Fisheries Technical Report No. 2004/1 Environment Agency, <http://www.wyeuskfoundation.org/problems/downloads/Tyne%20Hatchery%20Report.pdf>
- [9] DailyMail Mail Online 2013, <http://www.dailymail.co.uk/news/article-2509423/Fish-Tyne-River-Englands-polluted-named-BEST-salmon-fishing.html>
- [10] Skov- og Naturstyrelsen 2005, http://naturstyrelsen.dk/media/nst/Attachments/Skarver_smolt.pdf
- [11] Skov- og Naturstyrelsen 2009, Forvaltningsplan for skarv i Danmark, <http://naturstyrelsen.dk/media/nst/Attachments/Forvaltningsplanforskarvseptember2010.pdf>
- [12] Jepsen, N., Skov, C., Pederson S., Bregnhalle T. 2014, Betydningen af praedation på danske ferskvands fiskebestande – en oversigt med fokus på skarv, DTU Aqua-rapport nr. 283-2014, <http://orbit.dtu.dk/en/publications/betydningen-af-praedation-paa-danske-ferskvandsfiskebestande-en-oversigt-med-fokus-paa-skarv%28d113d447-44a8-4d92-94f0-716957a060de%29.html>
- [13] IKSR 2013, Fortschritte bei der Umsetzung des Masterplans Wanderfische in den Jahren Rhein-anliegerstaaten in den Jahren 2010 – 2012, http://www.iksr.org/fileadmin/user_upload/Dokumente_de/Berichte/206_d.pdf
- [14] MKULNV 2015: Wanderfischprogramm Nordrhein-Westfalen, Phase 2016 – 2020, https://www.umwelt.nrw.de/fileadmin/redaktion/Broschueren/wanderfischprogramm_nrw_phase_2016_2020.pdf
- [15] MKULNV 2011: Wanderfischprogramm Nordrhein-Westfalen, Phase 2011 – 2015, S.8, http://www.bezreg-koeln.nrw.de/brk_internet/leistungen/abteilung05/54/gewaesserunterhaltung/broschuere_wanderfisch.pdf
- [16] Landesamt für Natur, Umwelt und Verbraucherschutz Nordrhein-Westfalen 2010, Untersuchung der Smoltabwanderung im Rhein mit Hilfe der Transpondertechnik, <http://www.lanuv.nrw.de/fileadmin/lanuv/natur/fischerei/Smoltabwanderung.pdf>
- [17] Vis. H & I.L.Y. Spierts, 2011. Research on downstream migration of salmon smolts (tagging/tracking), from tributary Roer into the river Meuse and the North Sea. VisAdvies BV, Nieuwegein. Project number VA2011_01, 33 pag. <http://www.lms-online.de/resources/Smoltmigration.pdf>