

CNL(24)79

Overview of the monitoring and management of pink salmon (outside of Norway and the Russian Federation)

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Researcher

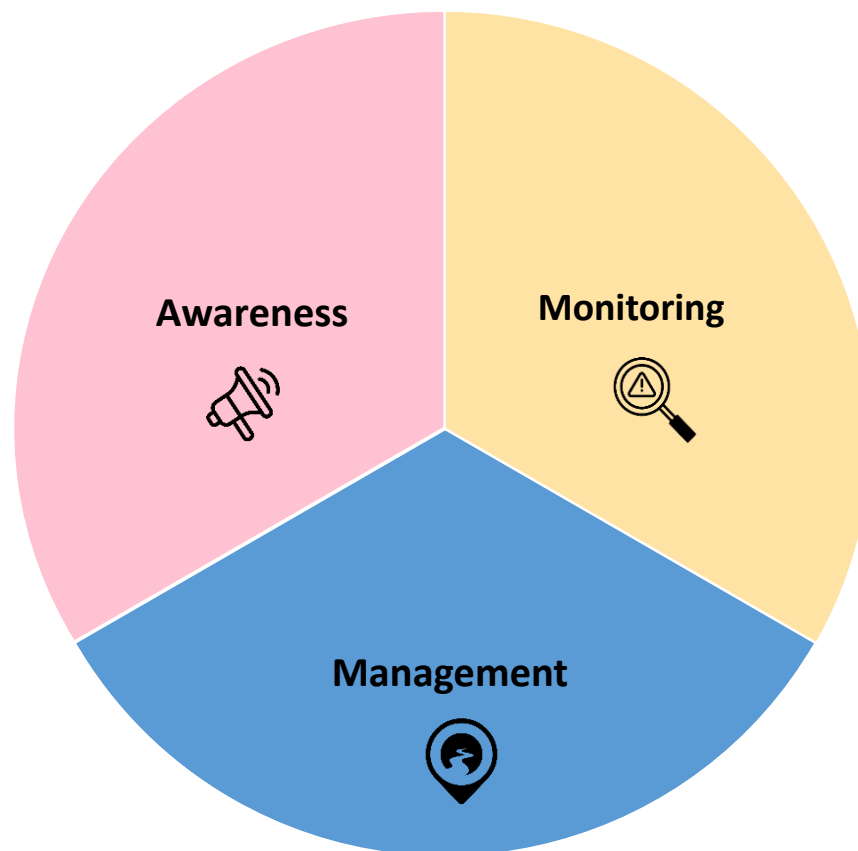
Department of Aquatic Resources (SLU Aqua)

Swedish University of Agricultural Sciences

Sweden







Questions asked to each country



Has any **monitoring** of pink salmon been conducted between 2017-2023?



Are there any **management** decisions for pink salmon?

Have any management actions been taken for pink salmon?

Are there any prevention strategies to stop further introductions?



Has there been any **awareness/ educational** work?

Responses

- ✦ Most had some sort of **monitoring**
- ✦ Roughly half had taken some type of **management action or decision**
- ✦ Few had implemented **prevention strategies** against further introductions
- ✦ Most had actions to create and **increase awareness**



Photo: Duncan Philpott



Photo: Duncan Philpott



Photo: Iwan Jones



Monitoring

Catch reports



Angler catch – river
Göta Älv, Sweden



Photo:
Marko Freese

Pink salmon catch – River Weser, Germany



Photo: Kirstin Eliassen

Location of first pink salmon report in the Faroe Islands
2019, Kaldbaksfjørður



Photo: Julien April

A counting fence - Saint Fond River, Quebec, Canada

Fish counters - camera systems



River Ätran, Sweden



River Langá, Iceland

Use of nets to catch smolts



Photo: Håvard Vistnes

Pink salmon smolts



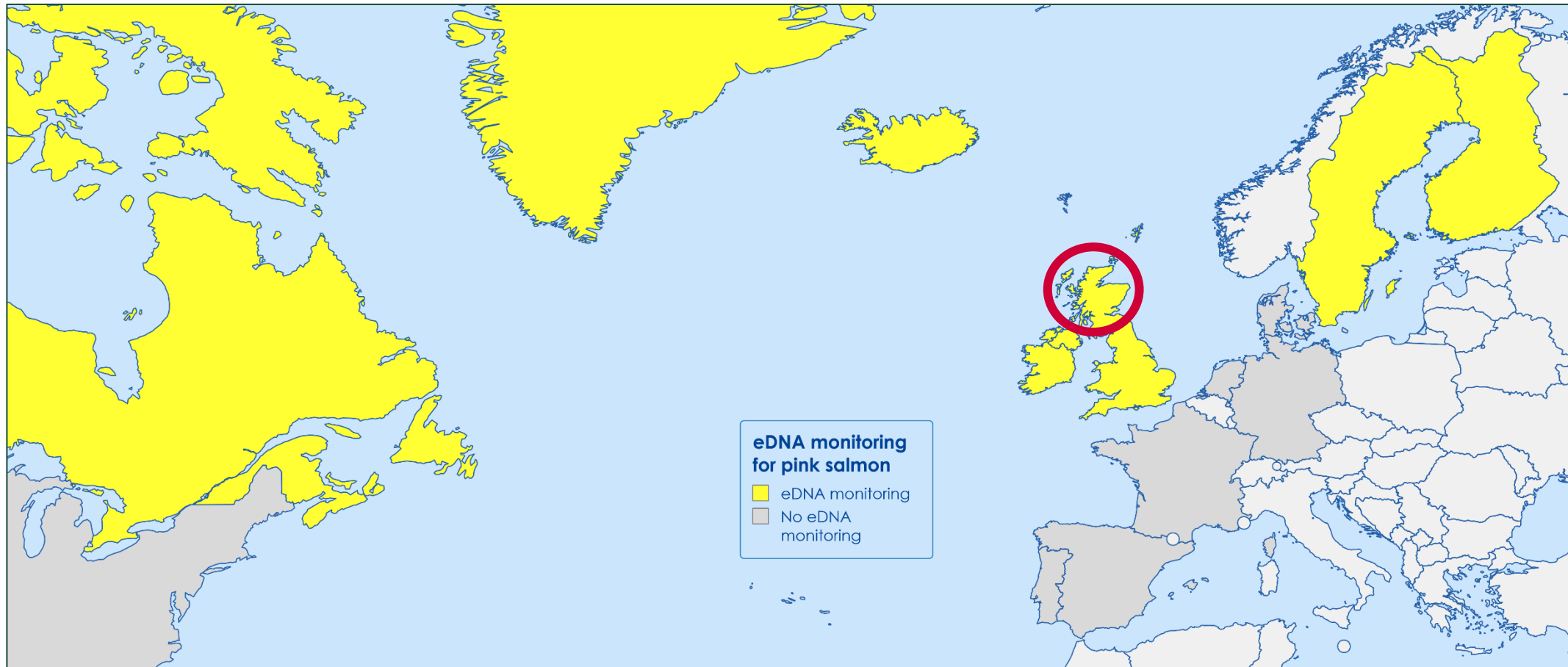
Photo: Guðni Guðbergsson

Nets in the River Botnsá, Iceland

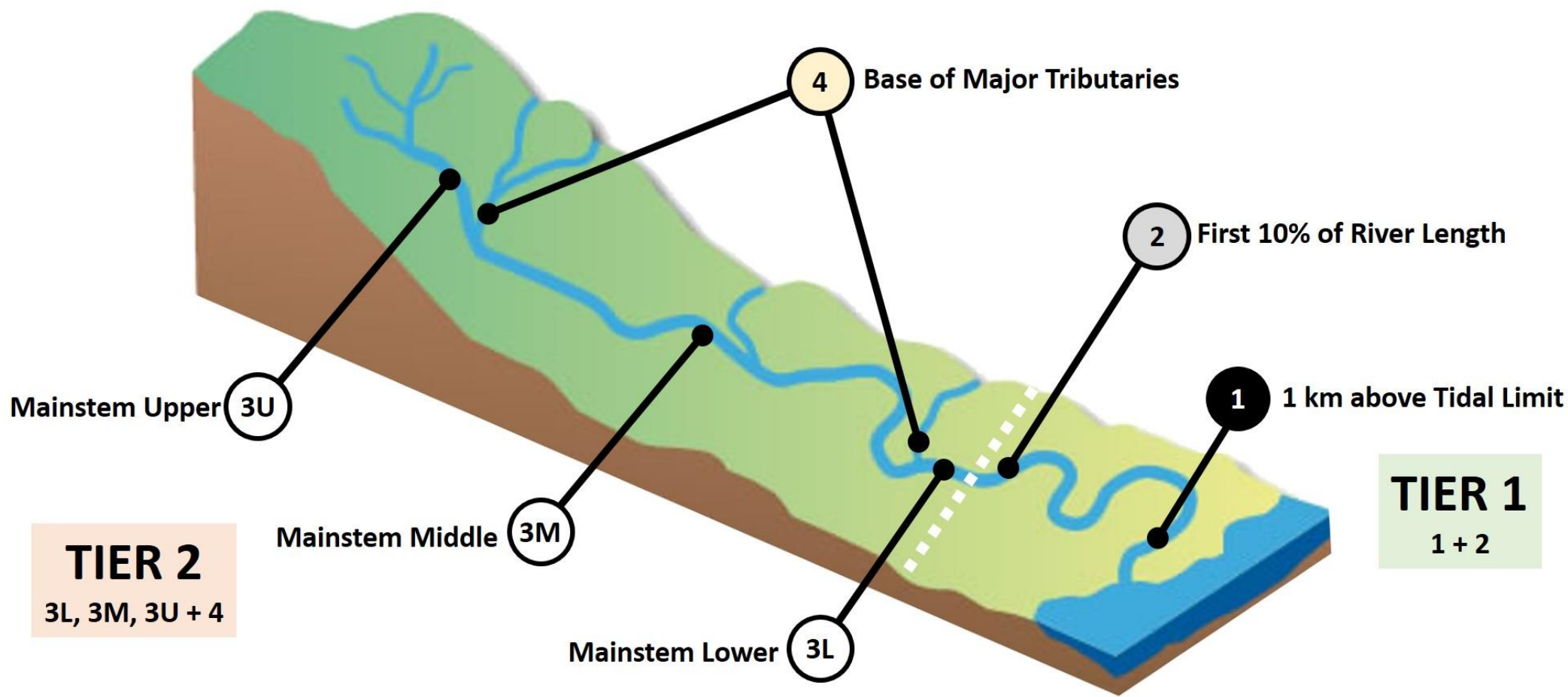
Environmental DNA (eDNA)



Collecting and filtering river water



eDNA example: UK (Scotland)



eDNA example: UK (Scotland)



SPATIAL SAMPLING

- **Tier 1:** At least one river from each Atlantic salmon Reporting District included to ensure national scale coverage (31 sites)
- **Tier 2:** A smaller number of catchments sampled more intensively (upper, middle and lower catchments plus the confluence with major tributaries) (16 sites across the country)



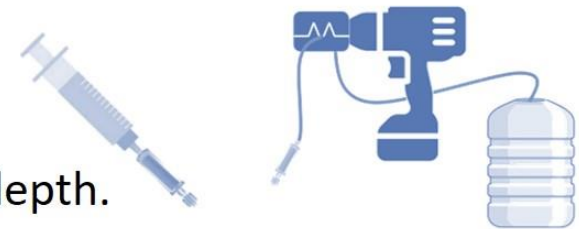
SAMPLING PERIOD

- Mid-June to Mid/Late-August
- 2x per year
 - Mid-June (to determine time of entry)
 - Mid-Late August (to detect spawning)

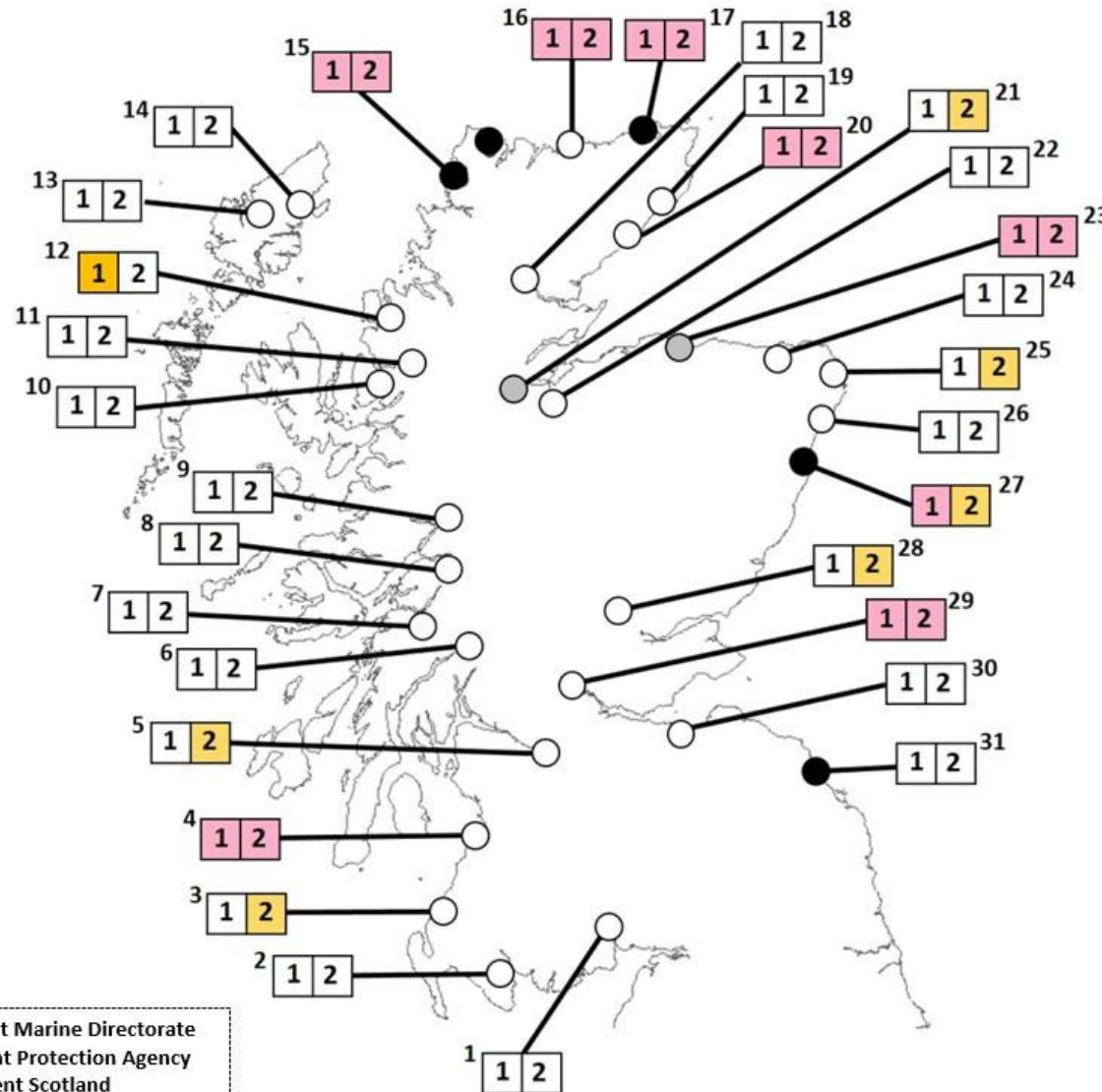


SAMPLING PROTOCOL

- 3 samples per sampling point collected at 30-50 cm depth.
- Sample blank collected at each site.
- Filtration: a 50 ml syringe or Vampire pump filter 3L of water through 0.45 μ m Sterivex or Sylphium filter cartridge before fixing.
- qPCR.



eDNA example: UK (Scotland)



Physical Sighting

- Confirmed Physical Record/Sighting
- Unconfirmed Physical Record/Sighting
- No Physical Record/Sighting

eDNA Surveillance

- Positive eDNA Detection
- Suspected eDNA Detection
- Inconclusive eDNA Detection
- No eDNA Detection




1 River Nith	16 River Naver
2 River Bladnoch	17 River Thurso
3 River Stinchar	18 River Oykel
4 River Ayr	19 Berriedale River
5 River Clyde	20 River Helmsdale
6 River Fyne	21 River Beaully
7 River Awe	22 River Ness
8 River Leven (Lochaber)	23 River Spey
9 River Lochy (Lochaber)	24 River Deveron
10 River Balgie	25 River Ugie
11 River Torridon	26 River Ythan
12 River Ewe	27 River Dee
13 Abhainn Ghriomarstaidh	28 River Tay
14 Abhainn Ghrioda	29 River Forth
15 River Laxford	30 River Esk
	31 River Tweed

Data: - Scottish Government Marine Directorate
 - Scottish Environment Protection Agency
 - Fisheries Management Scotland
 - NatureScot



Management

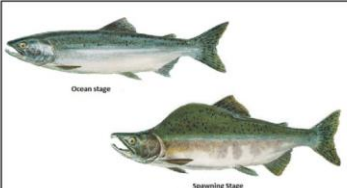


RISK ASSESSMENT SUMMARY SHEET

Updated March 2019

Pink salmon (*Oncorhynchus gorbuscha*)

- Native to the northern Pacific ocean and coastal rivers of North America and Asia.
- Migrated to the UK from fishery stocks imported into Russia.
- Reported frequently in GB and successfully spawned in Scotland.
- Not yet thought to have established in GB, though potential for future establishment, particularly in Scotland.
- Carcasses may affect spawning native salmonids or disturb nests of sea lamprey; possible vector of sea lice.
- Appears only in odd-numbered years due to spawning patterns.




History in GB

First recorded in 1960 in Scotland. In 2017, pink salmon were in at least 20 rivers in Scotland and Northern England and spawning activity was reported on at least two rivers with 'hundreds of redds' (spawning nests) being cut in the Dee.


Native distribution

Pacific Ocean, Arctic Sea coast, and coastal rivers of North America and Asia



Distribution in GB

Extensive sightings in Scotland; multiple sightings in England



Aqua reports 2018:17

Översikt, riskbedömning och förslag på åtgärder för puckellax (*Oncorhynchus gorbuscha*)

Erik Petersson, Erik Degerman, Charlotte Axén



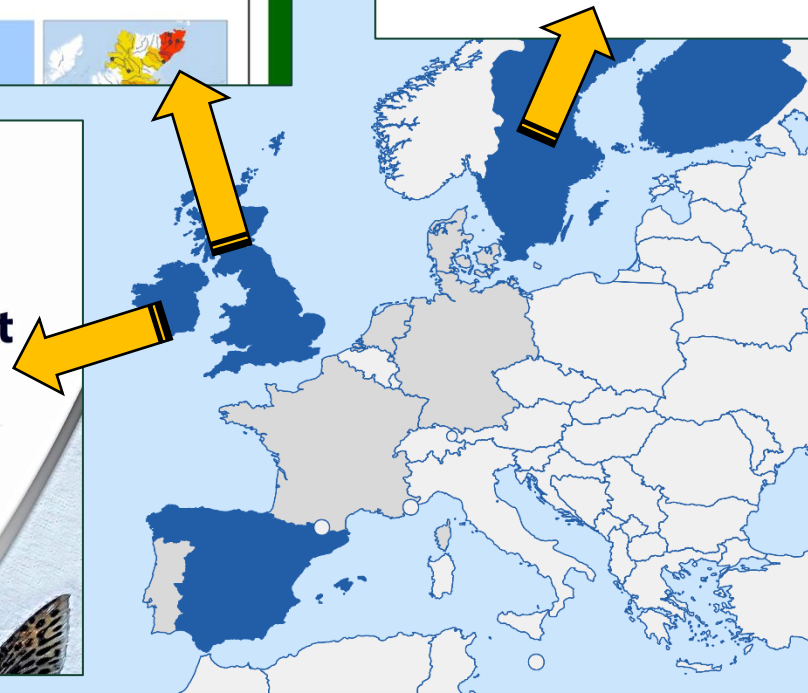
Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Department of Aquatic Resources

Assessment of potential ecological impacts of pink salmon and their capacity for establishment in Ireland

June 2019

IFI/2019/1-4485



Management

Example from Finland



Removal pink salmon fishery in the river Teno/Tana, Finland

Ban on Atlantic salmon fishing in 2021-2023, fishing for other species allowed

Finnish side of the River Teno 2023: projects for targeted pink salmon fishing based on:

1. R&D project Natural Resources Institute Finland: developing specific fishing methods (seine and drift net) based on traditional knowledge of Sámi
2. Special permit from the regional fishery authority - 13 fishers/groups applied



Photos: H. Blom, M. Kytökorpi, JP. Pohjola

Courtesy of Tapio Hakaste

Removal pink salmon fishery in the river Teno/Tana, Finland

Local removal projects should benefit the community

- Revival of Sámi fishing culture, transfer of know-how
- Catch for human consumption? Are fish still in good condition?
- Commercial use? First local tentative marketing efforts in 2023
- Norwegian plans to continue barrier operation in the lower river:
are there fishing opportunities for pink salmon in Finland in the future?



Photos: V. Lämsmä, S. Lukkar

Courtesy of Tapio Hakaste




Awareness & educational work



[WANTED]

Be on the lookout when you are fishing

PINK SALMON




If you believe that you have caught a pink salmon, promptly contact customer service in the Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs.

Email: services.clientele@mffp.gouv.qc.ca
Telephone: 1 877 346-6763

Votre gouvernement Québec

**Isaacach Intire Éireann
Inland Fisheries Ireland**

Pink salmon
Oncorhynchus gorbuscha
Non-native Fish Species Alert!



Labels: Oia agallaid, hana; 11-19 rays on anal fin; Atlantic salmon have 7-11 rays; Very small scales, much smaller than a similar-sized Atlantic salmon; No visible dark spots on gill cover; Scales for hypodermis; Scales beyond eye.

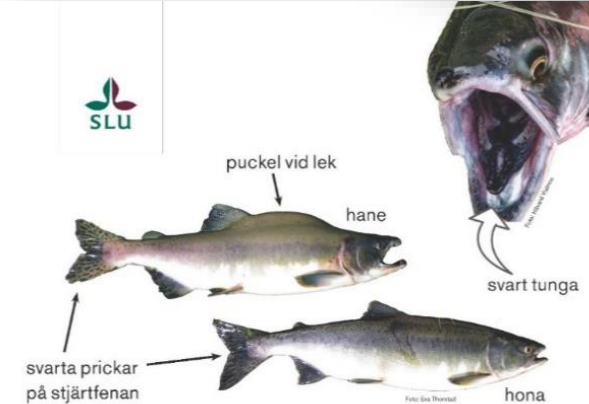
Anglers who encounter pink salmon in Irish river systems are requested to contact us immediately and record:

- date and location of capture,
- length and weight of the fish,
- and take a photograph.

Such fish should be tagged & retained for Inland Fisheries Ireland. Used tags will be replaced.

info@fisheriesireland.ie 01 8842600
To report any sightings of pink salmon please contact 1890 34 74 24

Puckellax?



Labels: puckel vid lek; hane; svart tunga; svarta prickar på stjärtfenan; hona.

Puckellaxen (*Oncorhynchus gorbuscha*) är en främmande art i Sverige och har påträffats på västkusten. Den har en 2-årig livscykel och vandrar upp i vattendragen för att leka vartannat år. Efter lek dör puckellaxen i vattendraget.

Har du fångat en puckellax? Avliv fiskens direkt och kasta inte tillbaka den i vattnet. Rapportera gärna fångsten på www.slu.se/puckellax

Pink salmon? If you catch or sight this alien species, please report at www.slu.se/pink-salmon

Awareness & educational work



FISKUR.FO



Innanlands

Ársins fyrsti kúlulaksur fingin í Trongisvágssósanum

Táð var 18 ára gamli Marius Falkenstrøm, sum er í Føroyum og vitjar familju, ið var so beinasamur at boða frá og lata kúlulaksin til Fiskaaling. Kúlulaksurin var á 1298 g og 53 cm til longdar



2021-05-02 11:07

Fiskaaling: Marius Falkenstrøm fekk herfyri ein príðan kúlulaks, tá hann var túr við tráduni í Trongisvágssósanum. Fiskaaling vil fegin frætta frá øllum laksa- og silafiskarum ella øðrum, sum hava fingið kúlulaks.

Kúlulaksurin verður kynsbúgvinn sum tvey ára gamal, og doyrt stutt eftir gýting. Stuttu tvey ára lívsringrásin







Lyfta Maskinflutningar
 Við flyta maskínur um ølt landið. Max 19 tons. Vitja lyfta.fo ella ringja á tlf 350 550

RTE RTE

Anglers asked to watch out for Pacific pink salmon

Anglers have been asked to report any sighting of Pacific pink salmon in Irish rivers and waterways over the coming months.

19 May 2023

Irish Examiner

Public urged to report sightings of invasive pacific pink salmon in Irish waters

The presence of large numbers of this non-native species could pose a threat to native species such as Atlantic salmon and sea trout,...

18 May 2023

Buzz.ie

Inland Fisheries Ireland calls on anglers to look out for Pacific pink salmon in Ireland's waterways

The non-native species pose a competitive threat to Ireland's native species such as Atlantic salmon and sea trout.

19 May 2023

Connaught Telegraph

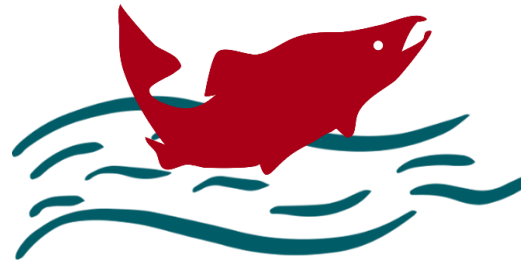
Inland Fisheries Ireland alert over Pacific pink salmon in Irish rivers

INLAND Fisheries Ireland is urging anglers, and the general public, to report sightings of Pacific pink salmon in Irish rivers over the...

19 May 2023

[illegible]

Research projects & International collaborations



The invasive pink salmon: distribution, reproductive potential and biodiversity threats in Sweden

Main aims:

1. Undercover the distribution in Sweden
2. Determine reproductive success
3. Increase public awareness



Photo: Eva Thorstad



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

A Swedish Research Council FORMAS funded project 2023-24

PI: Tom Staveley & Ida A Bergendahl, SLU Aqua



LÄNSSTYRELSEN
VÄSTRA GÖTALANDS LÄN



LÄNSSTYRELSEN
HALLANDS LÄN



LÄNSSTYRELSEN
I SKÅNE LÄN



MIX Research
Sweden

Establishing the extent of the pink salmon invasion of the Arctic

John Iwan Jones¹, Jaakko Erkinaro², Karl Øystein Gjelland³, Guðni Guðbergsson⁴, Rasmus Lauridsen⁵, Rasmus Nygaard⁶, Michał Edward Skóra¹

Funded by British Antarctic Survey Arctic Council Engagement Scheme
Working with the Conservation of Arctic Flora and Fauna Working Group



Objectives

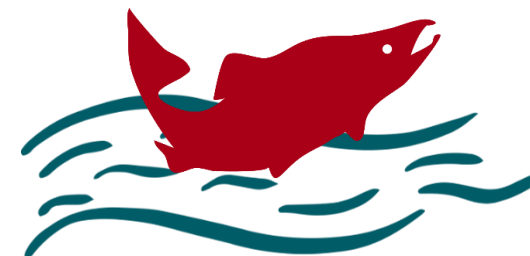
1. To determine the extent of successful recruitment of non-native pink salmon in the Arctic region (including new locations in Svalbard, Northeast Iceland and Greenland).
2. To determine the extent of freshwater feeding of pink salmon juveniles using stable isotope analysis.



¹Queen Mary University of London, UK. ²Natural Resources Institute Finland. ³Norwegian Institute for Nature Research. ⁴Marine and Freshwater Research Institute, Hafnarfjordur, Iceland. ⁵Six Rivers Foundation, Iceland. ⁶Greenland Institute of Natural Resources.

Research projects & International collaborations

- ✦ Establishing the extent of the pink salmon invasion of the Arctic (UK led)
- ✦ Pink salmon in Sweden (Sweden led)
- ✦ EU NASCO PINKTrack (Ireland led)
- ✦ PinkSIES - Pink Salmon Invasion of the North Atlantic: Evaluation of Stable Isotopes as a method to detect potential impacts (UK led)
- ✦ Nordic pink salmon strategies and management (Sweden led)
- ✦ NASCO pink salmon working group
- ✦ Others...



Many thanks to:

Tim Sheehan (USA), Julien April (Canada), Rasmus Nygaard (Greenland), Hlynur Bárðarson (Iceland), Kirstin Eliassen & Jan Arge Jacobsen (Faroe Islands) Michael Millane (Ireland), Colin Bean & Iwan Jones (UK), Niels Jepsen (Denmark), Jaakko Erkinaro & Tapio Hakaste (Finland), Marko Freese (Germany), Laurent Beaulaton (France), Jacco van Rijssel (Netherlands), Pedro R. Almeida, Carlos M. Alexandre & Sara Silva (Portugal)



River Suseån, Sweden (photo: Duncan Philpott)

Thank you for your attention

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www.slu.se/pink-salmon



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