

ICES Request Form

Request from	Ministry of Food, Agriculture and Fisheries, Iceland
Committee making the request	
Contact within organisation	
Content contact person	
Request announced	21 November 2024
Request received	13 January 2025
Outcome of request required by client	Advice scheduled to be published 14 March 2025
Request code (client)	MAR24120001
Request code (ICES)	[completed by ICES]
Details of request	1. ICES to review and provide advice on the following aspects of the Genetic Intrusion Risk Assessment Framework for salmon aquaculture (GIRAF), including the following: a. How data are collected to estimate genetic intrusion and introgression b. How the data are processed c. The adequacy of current monitoring programmes d. Are the data fit for purpose as used in GIRAF? e. Are mitigation measures adequately accounted for in the model? f. In the absence of data, how does the model account for uncertainty? g. Are the assumptions and the parameterization of GIRAF scientifically robust? h. Does the framework align with the precautionary approach in relation to: i. its estimation of genetic intrusion risk ii. its estimation of the amount salmon predicted to be safely reared in pens?

Other supplementary information to assist the interpretation of the request:

[briefly describe the background to the request, e.g. previous work, relevant documents, policy processes, dates, etc.]

The government of Iceland requests that ICES conduct a review of data collection, data processing, and the underlying assumptions regarding the Genetic Intrusion Risk Assessment Framework (GIRAF) used for advice on the impact of aquaculture in net pens on wild salmon stocks.

GIRAF estimates the amount of fertile salmon that is considered precautionary to raise in the sea at any given time in regard to the risk of genetic introgression into wild salmon populations. GIRAF is based on two main factors, the intrusion of farmed salmon, i.e. the likelihood that farmed salmon that has escaped from sea pens will enter river systems in a given year, and the risk that it will be able to mix with wild salmon so that genetic mixing/introgression takes place. The above-mentioned framework is part of the formal advice from the Marine and Freshwater Research Institution (MFRI) to the Ministry regarding management of cage-based salmon aquaculture in Iceland.

GIRAF was first published in 2017 and was developed in collaboration with two foreign experts in the field of population genetics. GIRAF became a legal requirement by amendments to law no. 101/2019 which amended the law on aquaculture no. 81/2008. In the initial legal draft, it is stated that one of the arguments for the legalization of the GIRAF is that the government's policy is to exercise a precautionary approach in the development of fish farming and that decisions will be based on the estimates of GIRAF.

The 2019 law amendment also introduced provisional clause no. VII, that states that the Minister shall appoint a committee of three impartial scientists in the fields of fisheries, population genetics and/or ecology to review the methodology used by the MFRI in the assessment of carrying capacity and in the preparation of risk assessments. The scientific committee submitted a report in June 2021. In the report, it was stated that the model behind GIRAF stood up to a scientific scrutiny, but on the other hand, it remained to be seen how the framework responded to data collected from Icelandic rivers. This was one of main conclusion of the report, as most of the model's assumptions were based on data from Norway.

Intended use of the request output	GIRAF is part of the management of Atlantic salmon aquaculture in Iceland. As such its outcome is used for deciding if pens can be in a certain area and also the amount of salmon reared in a given area.
Planning ICES	[completed by ICES]
WG(s) involved	WKGIRAF 17-21 February 2025 (tbc)
Preparation timing	
Review group	

Advice drafting group	ADGGIRAF 3-5 March 2025
ACOM Web-conference	WCGIRAF 12 March 2025
Release date	14 March 2025