Fragmentation-Dams Arctic Grayling

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Function Updated by jclabarcena on Fri, 10/23/2026 - 15:08.

Species Information

Common Name: Artic Grayling
Genus: Thymallus arcticus

Stressor Details

Stressor Name: Fragmentation-Dams
Metric: Reservoir Distance to Nearest Core Area
Scale: linear
Function Type: continuous
Vital Rate/Process: Capacity

Life Stage & Context

Life Stages: All life stages
Geography: Upper Peace Basin
Activity: Migration

Descriptions

Overview

> The S-R curve for isolation by the reservoir reflects considerable uncertainty about how flooding affects demographic connections among remnant metapopulations and about the importance of demographic exchange to system capacity. Asymptotic maximum 50% impact on surviving metapopulations, which assumes asymmetric gene flow downstream from locally adapted subpopulations continues to promote resilience.

Function Derivation

> Expert opinion

Transferability of Function

> It is not considered a factor that should be targeted with current recovery actions, but may be included in future analyses (e.g., of dam footprint impacts), or as mitigation techniques are identified and approved.

Source of Stressor Data

> Distance from reservoir to population core area

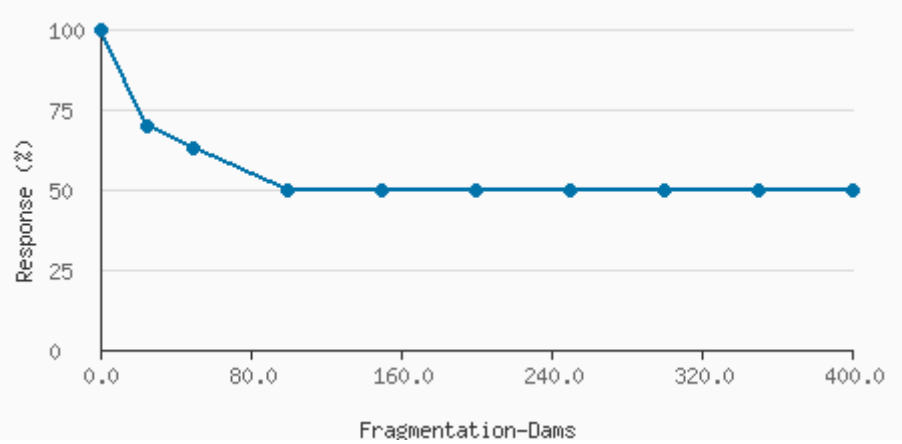
Stressor Magnitude Data

> Expert input

Pathways of Effect

> isolation by reservoir

Stressor Response Data



Reservoir Distance to Nearest Core Area	% System Capacity	SD	low.limit	up.limit
0	100	0	0	100
25	70	0	0	100
50	63	0	0	100
100	50	0	0	100
150	50	0	0	100
200	50	0	0	100
250	50	0	0	100
300	50	0	0	100
350	50	0	0	100
400	50	0	0	100

Citations

Hagen, J., Stamford, M., Bottoms, J., & O'Connor, B. (2026). The past and future of Arctic Grayling in the Upper Peace Basin: A synthesis of long-term learning for recovery planning. Prepared for the Fish and Wildlife Compensation Program – Peace. B.C. Data Catalogue / ACAT Report 65150.