

**Supplementary Table 1.** Supporting references for Table 1. Example interpretations of potential effects of altered traits of GH transgenic coho salmon compared to wild type on survival, reproduction, and ecosystem consequences, based on data available to date. Evidence for stability of phenotypes among environments are also indicated where known. Summed individual phenotypic effects within columns (Net Effect) indicated by a question mark simply reflect the difficulty in summarizing individual traits into a single overall influence. This summary table is intended to provide an example process towards determining potential effects of the pleiotropic influences of a transgene on phenotype that may result in ecological consequences. A formal risk assessment would require a fulsome analysis by an expert panel to reach consensus regarding effects and associated uncertainty for each altered trait.

Trait	Survival	Reproduction	Ecosystem Consequence	Stable among environments	References
<b>Life history effects</b>					
Early hatching	+/-	N	P	No	[9, 34, 55]
Early smolting	+/-	+	P	No	[4, 8, 9, 59]
Maturation age and season	+	+	P	No	[1, 5, 9, 32]
Diurnal effects	-	n/a	n/a	n/a	[25, 59]
Higher fecundity, smaller egg size	-	+/-	NE/P	No	[1]
Seasonally uncoupled growth.	+/-	N	P	No	[4, 9, 33, 38]
<b>Genetics/cell biology</b>					
Altered gene expression	n/a	n/a	n/a	No	[11, 14, 20, 22, 25, 36, 37, 40, 44, 47, 48]
Pituitary function/structure altered	+/-	+/-	P	No	[36]
Altered growth pathway	+/-	N	?	No	[8, 11, 15, 19, 23, 36, 44, 45]
endocrinology					
Transgene structure stability	+/-	+/-	NE/P	n/a	[35, 42, 46, 62]
<b>Physiology/morphology</b>					
Plastic growth rate	+	n/a	n/a	No	[10, 34, 51, 57-59]
Acromegaly and altered allometry	-	-	n/a	No	[5, 6, 13, 20, 22, 26, 31, 32, 34, 39, 49, 50]
Altered aerobic	+/-	n/a	P	n/a	[8, 27, 28, 61]
scope/osmoregulation					
Poorer swimming	-	-	P	n/a	[16, 27]
Reduced innate immune function	-	-	P	n/a	[21]
Acquired immune function normal	N	N	NE	n/a	[21, 24]
Altered stress response	+/-	n/a	n/a	n/a	[3, 21, 29, 51]
Sperm function	N	N	NE	n/a	[1, 17]
Effects of triploidy	-	-	NE/P	n/a	[9, 12, 14]
Enhanced feed-conversion efficiency	+	n/a	P	No	[9, 19, 38, 43]

Altered metabolic pathways	+/-	N	n/a	No	[2, 15, 29, 30, 41]
Altered response to nutrition/dietary carbohydrate	+/-	n/a	n/a	No	[18, 19, 38, 43]
Altered body colouration	-	-	n/a	No	[1, 6, 31]
<b>Behaviour</b>					
Enhanced feeding behaviour	+	n/a	P	No	[7, 10, 34, 35, 51, 52, 53, 58]
Predator susceptibility	N/-	n/a	P	No	[51, 52, 54, 55, 63]
Altered spawning behaviour	N	-	P	No	[1, 17, 32]
Increased juvenile aggression	+	n/a	P	No	[10]
Decreased mature adult aggression	N	-	NE	No	[1, 32]
Altered dispersal/migration	+	+	P	No	[51, 55, 56, 59]
Broader prey type selection	+	N	P	n/a	[53]
Reduced schooling/shoaling	-	-	NE/P	n/a	[56]
Enhanced cannibalistic behaviour	-	N	P	No	[10]
Invasion impacts	+	n/a	NE/P	n/a	[57, 58, 60]
<b>Net effect</b>	?	?	?	?	

Symbols: +, increased/higher survival or reproduction due to trait relative to wild type; -, reduced/lower survival or reproduction due to trait relative to wild type; N, neutral or no effect on survival, reproduction, or ecosystem consequences due to trait; n/a; unknown or no data available; P, probable ecological consequence; NE, not expected ecological consequence.

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