Table S1 Model results for the effect of genotype and maturation status on body size from the extended freshwater regime. Different superscript letters within a row indicate significant (GLM, $p < 0.05$) group differences. * $p = <0.05$; ** $p < 0.01$; *** $p < 0.01$.

Family	Variable	Fixed effects	χ²	df	p	Marginal	Conditional	\	Group (maturity status and *vgll3* genotype)	\	\
								Immature	Mature	EE	EL
6	Weight	Genotype	0.13	1	0.718	0.02	0.12			637 (537-736)	633 (545-721)
		Mature	3.78	1	0.052			654 (546-761)	616 (538-694)		
		Genotype × Mature	0.23	1	0.630						
								Immature	Mature	EE	EL
	Length	Genotype	0.17	1	0.683	0.06	0.18			37.7 (35.3-40.1)	37.1 (35.0-39.3)
		Mature	13.72	1	<0.001 **			38.3 (35.7-40.9)	36.6 (34.6-38.5)		
		Genotype × Mature	3.44	1	0.064						
								EE immature	EL immature	EE mature	EL mature
	Condition	Genotype	5.98	1	0.014 *	0.11	0.64				
		Mature	53.89	1	<0.001 ***						
		Genotype × Mature	7.96	1	0.005 **			1.13 (0.96-1.31)^c	1.19 (1.02-1.36)^b	1.27 (1.11-1.43)^a	1.26 (1.10-1.42)^a
								Immature	Mature	EL	LL
8	Weight	Genotype	1.37	1	0.241	0.05	0.47			687 (464-910)	729 (509-948)
		Mature	4.97	1	0.026 *			729 (502-955)	687 (472-903)		
		Genotype × Mature	2.41	1	0.121						
								EL immature	LL immature	EL mature	LL mature
	Length	Genotype	6.50	1	0.011 *	0.13	0.33				
		Mature	0.01	1	0.930						
		Genotype × Mature	5.34	1	0.021 *			36.4 (31.6)	38.8 (35.3-42.3)	36.4 (33.3-39.6)	36.2 (32.5-40.0)
								EL immature	LL immature	EL mature	LL mature
	Condition	Genotype	3.5	1	0.061	0.06	0.77				
		Mature	2.4	1	0.125						
		Genotype × Mature	3.8	1	0.051			1.29 (0.99-1.69)^b	1.25 (0.96-1.62)^b	1.33 (1.03-1.72)^a	1.34 (1.03-1.74)^a

Table S2 Model results (GLM) for the effect of genotype and maturation status on body size in family 2 from the sea transfer regime. * p = <0.05; ** p < 0.01; *** p < 0.01.

Year	Variable	Fixed effects	Model χ^2	df	p	R^2	Group (maturity status and *vgll3* genotype) Immature	Mature	EE	EL
2017	Weight	Genotype	2.64	1	0.104	0.03			164 (158-170)	156 (150-163)
	Length	Genotype	1.95	1	0.163	0.02			23.7 (23.4-24.0)	23.4 (23.1-23.7)
	Condition	Genotype	0.18	1	0.675	<0.01			1.22 (1.21-1.24)	1.22 (1.20-1.23)
2018	Weight	Genotype	4.46	1	0.035 *	0.06			1224 (1180-1268)	1157 (1113-1202)
	Length	Genotype	4.74	1	0.029 *	0.06			46.4 (45.7-47.0)	45.4 (44.8-46.0)
	Condition	Genotype	0.20	1	0.655	<0.01			1.23 (1.21-1.24)	1.23 (1.22-1.25)
2019	Weight	Genotype	0.00	1	0.957	0.23			7515 (7250-7781)	7673 (7247-8100)
		Mature	19.16	1	<0.001 ***		8030 (7815-8245)	7158 (6704-7612)		
		Genotype × Mature	1.12	1	0.290					
	Length	Genotype	0.68	1	0.410	0.23			81.5 (80.4-82.6)	81.4 (79.7-83.2)
		Mature	21.85	1	<0.001 ***		83.4 (82.5-84.3)	79.5 (77.6-81.4)		
		Genotype × Mature	0.96	1	0.327					
	Condition	Genotype	2.81	1	0.094	0.05			1.38 (1.36-1.41)	1.42 (1.37-1.47)
		Mature	2.50	1	0.114		1.38 (1.36-1.41)	1.42 (1.37-1.47)		
		Genotype × Mature	0.00	1	0.973					
2020	Weight	Genotype	0.00	1	0.997	0.17			14899 (13523-16276)	14897 (13787-16007)
		Mature	11.49	1	0.001 ***		16678 (14667-18690)	13118 (12447-13789)		
	Length	Genotype	0.01	1	0.936	0.09			107 (104-110)	107 (105-109)
		Mature	5.41	1	0.020 *		110 (105-114)	105 (103-106)		
	Condition	Genotype	0.34	1	0.562	0.08			1.18 (1.11-1.26)	1.20 (1.14-1.26)
		Mature	4.16	1	0.041 *		1.25 (1.14-1.36)	1.14 (1.10-1.17)		

Table S3 Model results (GLM) for the effect of genotype and maturation status on body size in family 4 from the sea transfer regime. * p = <0.05; ** p < 0.01; *** p < 0.01.

Year	Variable	Fixed effects	χ^2	df	p	R^2	Immature	Mature	EL	LL
2017	Weight	Genotype	1.05	1	0.305	0.01			170 (158-181)	160 (144-175)
	Length	Genotype	1.88	1	0.171				23.8 (23.3-24.4)	23.2 (22.5-24.0)
	Condition	Genotype	1.49	1	0.222				1.23 (1.21-1.24)	1.24 (1.22-1.26)
2018	Weight	Genotype	3.24	1	0.072	0.09			1033 (951-1114)	944 (841-1046)
		Mature	4.45	1	0.035 *		1069 (1018-1120)	907 (761-1053)		
	Length	Genotype	5.42	1	0.020 *	0.11			44.0 (42.8-45.2)	42.3 (40.8-43.8)
		Mature	4.12	1	0.042 *		44.3 (43.6-45.1)	42.0 (39.9-44.2)		
	Condition	Genotype	7.25	1	0.007 **	0.09			1.20 (1.18-1.22)	1.23 (1.20-1.26)
		Mature	<0.01	1	0.999		1.21 (1.20-1.23)	1.21 (1.18-1.25)		
2019	Weight	Genotype	6.21	1	0.013 *	0.09			7166 (6537-7795)	6496 (5735-7258)
		Mature	1.13	1	0.288		7166 (6898-7434)	6496 (5252-7741)		
	Length	Genotype	12.71	1	<0.001 ***	0.16			81.1 (78.9-83.2)	77.8 (75.2-80.4)
		Mature	0.47	1	0.491		80.2 (79.3-81.1)	78.7 (74.4-82.9)		
	Condition	Genotype	0.00	1	0.952	0.01			1.34 (1.28-1.40)	1.34 (1.26-1.42)
		Mature	0.60	1	0.439		1.36 (1.34-1.39)	1.32 (1.19-1.44)		
2020	Weight	Genotype	0.81	1	0.369	0.01			14244 (13190-15298)	14915 (13920-15910)
		Mature	0.31	1	0.577		14373 (13246-15500)	14786 (13875-15698)		
		Genotype × Mature	0.05	1	0.825					
	Length	Genotype	0.49	1	0.482	0.09			104 (102-106)	103 (101-105)
		Mature	2.50	1	0.114		103 (100-105)	105 (103-107)		
		Genotype × Mature	0.02	1	0.884					
	Condition	Genotype	5.90	1	0.015 *	0.15			1.24 (1.18-1.30)	1.34 (1.28-1.40)
		Mature	0.15	1	0.700		1.30 (1.23-1.36)	1.28 (1.23-1.33)		
		Genotype × Mature	0.31	1	0.576					

Table S4 Model results (GLM) for the effect of genotype and maturation status on body size in family 6 from the sea transfer regime. * p = <0.05; ** p < 0.01; *** p < 0.01.

Year	Variable	Fixed effects	Model			R^2	Group (maturity status and *vgll3* genotype)			
			χ^2	df	p		Immature	Mature	EE	EL
2017	Weight	Genotype	0.03	1	0.872	<0.01			161 (152-170)	162 (52-172)
	Length	Genotype	0.16	1	0.686	<0.01			23.4 (22.9-23.8)	23.5 (23.0-24.0)
	Condition	Genotype	0.18	1	0.667	<0.01			1.24 (1.23-1.26)	1.24 (1.22-1.25)
2018	Weight	Genotype	0.09	1	0.764	<0.01			1140 (1081-1200)	1127 (1062-1192)
	Length	Genotype	0.31	1	0.580	<0.01			45.5 (44.7-46.3)	45.2 (44.3-46.1)
	Condition	Genotype	2.09	1	0.148	0.03			1.20 (1.18-1.21)	1.21 (1.20-1.23)
2019	Weight	Genotype	0.04	1	0.848	<0.01			6957 (6537-7378)	6904 (6355-7453)
		Mature	0.42	1	0.518		7061 (6773-7348)	6801 (6051-7550)		
	Length	Genotype	0.03	1	0.853	0.01			79.4 (77.6-81.1)	79.1 (76.9-81.4)
		Mature	1.04	1	0.308		80.1 (78.9-81.3)	78.4 (75.3-81.5)		
	Condition	Genotype	1.57	1	0.211	0.07			1.37 (1.34-1.40)	1.40 (1.36-1.43)
		Mature	5.12	1	0.024		1.35 (1.33-1.37)	1.42 (1.36-1.47)		
2020	Weight	Genotype	1.88	1	0.171	0.03			11796 (103-13244)	12693 (11418-13969)
		Mature	0.27	1	0.601		11930 (9627-14234)	12559 (11886-13232)		
	Length	Genotype	1.26	1	0.263	0.10			98.6 (95.2-102.0)	100.3 (97.3-103.0)
		Mature	6.32	1	0.012 *		95.9 (90.5-101.0)	103.0 (101.4-105.0)		
	Condition	Genotype	1.19	1	0.276	0.13			1.20 (1.13-1.28)	1.24 (1.17-1.30)
		Mature	6.87	1	0.009		1.30 (1.18-1.42)	1.14 (1.11-1.17)		

Table S5 Model results (GLM) for the effect of genotype and maturation status on body size in family 8 from the sea transfer regime. * p = <0.05; ** p < 0.01; *** p < 0.01.

Year	Variable	Fixed effects	Model χ^2	df	p	R^2	Group (maturity status and *vgll3* genotype) Immature	Mature	EL	LL
2017	Weight	Genotype	0.66	1	0.417	0.13			1.20 (1.13-1.28)	1.24 (1.17-1.30)
	Length	Genotype	0.51	1	0.476	0.01			22.9 (22.5-23.3)	23.1 (22.7-23.6)
	Condition	Genotype	0.30	1	0.581	<0.01			1.24 (1.22-1.25)	1.23 (1.22-1.24)
2018	Weight	Genotype	0.06	1	0.810	<0.01			1170 (1123-1216)	1162 (1112-1211)
	Length	Genotype	0.05	1	0.825	<0.01			45.9 (45.3-46.5)	45.8 (45.1-46.5)
	Condition	Genotype	<0.01	1	0.993	<0.01			1.21 (1.19-1.22)	1.21 (1.19-1.22)
2019	Weight	Genotype	0.79	1	0.374	0.01			8000 (7683-8316)	7794 (7457-8130)
	Length	Genotype	0.01	1	0.919	0.00			82.8 (81.8-83.8)	82.9 (81.8-84.0)
	Condition	Genotype	6.06	1	0.014 *	0.07			1.40 (1.38-1.43)	1.36 (1.34-1.39)
2020	Weight	Genotype	0.32	1	0.573	0.21			15498 (14523-16474)	15874 (15154-16594)
		Mature	8.78	1	0.003 *		16759 (15670-17848)	14614 (13950-15278)		
	Length	Genotype	0.12	1	0.729	0.01			107 (105-109)	107 (106-109)
		Mature	0.09	1	0.765		107 (105-109)	107 (106-108)		
	Condition	Genotype	0.27	1	0.607	0.29			1.26 (1.21-1.31)	1.28 (1.24-1.32)
		Mature	14.16	1	<0.001 ***		1.34 (1.28-1.40)	1.19 (1.16-1.23)		