Table S1. Input parameters used for the calibration of the mathematical model of $\dot{M}O_{2max}$ using reported data for rainbow trout at $10\pm1°C$

Parameters	Input	Units	Reference
Gill surface area	2.4	$cm^2\ g^{-1}$	(Hughes, 1972)
Gill thickness	4.92	μm	(Greco et al., 1996) average of control and softwater acclimated fish
beta epithelium	$1.77*10^{-3}$	$\mu mol\ cm^{-3}\ mmHg^{-1}$	(Boutilier et al., 1984; Jensen, 2017)
Diffusion coefficient (D_{O2})	$4.4*10^{-6}$	$cm^2\ s^{-1}$	Based on (Dejours, 1981; Hills and Hughes, 1970; Piiper and Baumgarten-Schumann, 1968) and adjusted to fit (Kiceniuk and Jones, 1977)
Gill diffusive conductance (G_d)	2.3	$\mu mol\ mmHg^{-1}\ min^{-1}\ kg^{-1}$	Calculated from above
Tissue diffusive conductance (G_{dt})	6.4	$\mu mol\ mmHg^{-1}\ min^{-1}\ kg^{-1}$	Based on (Wang and Malte, 2011) and adjusted to fit (Kiceniuk and Jones, 1977)
O_2 solubility coefficient (α) in water	2.24	$\mu mol\ L^{-1}\ mmHg^{-1}$	(Boutilier et al., 1984)
α in blood plasma	1.99	$\mu mol\ L^{-1}\ mmHg^{-1}$	(Boutilier et al., 1984)
Water PO_2	150	$mmHg$	(Wang and Malte, 2011)
Haemoglobin P_{50}	22.2	$mmHg$	(Vorger, 1985)
Hill coefficient	2.09		(Vorger, 1985)
Bohr coefficient	-0.82		(Vorger, 1985)
Max. arterial-venous pH shift	-0.12		(Kiceniuk and Jones, 1977)
Haemoglobin concentration	1.05	mM	Based on (Nikinmaa et al., 1981) and adjusted to fit (Kiceniuk and Jones, 1977)
Max. cardiac output ($\dot{Q}_{max}$)	53	$mL\ kg^{-1}\ min^{-1}$	(Kiceniuk and Jones, 1977)
Ventilation rate ($\dot{V}_w$)	1700	$mL\ kg^{-1}\ min^{-1}$	(Kiceniuk and Jones, 1977)

Table S2.

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