TABLE S1 LIST OF THE POSSIBLE TRAITS TO INCLUDE

Table 1. List of diet and life history traits to include in clustering

Trait	References	Measurement type
Diet		
Primary diet category	Defined by authors	Categorical - Nominal
Food type/ properties	Sibbing & Nagelkerke 2000, Reecht et al., 2013	Categorical - Nominal
Life History		
Number of eggs	Bremner et al. 2006a, Clavel et al. 2013, Gravel et al. 2016	Numerical - Integer
Number of spawns per year	Clavel et al. 2013	Numerical - Integer
Reproductive season	NEW	Categorical - Nominal
Parental care	Franco et al. 2008, Gravel et al. 2016	Categorical - Nominal
Reproductive mode	Bremner et al. 2006a, Elliott et al. 2007, Franco et al. 2008	Categorical - Nominal
Sexual differentiation	Bremner et al. 2006a	Categorical - Nominal
Phylogenetic diversity	Froese & Pauly 2017	Numerical - Integer
Population doubling	Bremner et al. 2006a, Froese & Pauly 2017	Categorical - Nominal
Vulnerability	Froese & Pauly 2017	Numerical
Gregarious/ Schooling type	Bremner et al. 2006a, Stuart-Smith et al. 2013, Spitz et al. 2014	Categorical - Nominal
Seasonal migration	Bremner et al. 2006a, Spitz et al. 2014	Categorical - Nominal
Diel migration	Bremner et al. 2006a, Stuart-Smith et al. 2013, Spitz et al. 2014	Categorical - Nominal
Ontogenetic migration	Reum & Essington 2008	Categorical - Nominal
Maximum age	Bremner et al. 2006a, Clavel et al. 2013, Gravel et al. 2016	Numerical - Integer
Mortality	Froese & Pauly 2017	Numerical - Continuous
Age at maturity	Bremner et al. 2006a, Clavel et al. 2013	Numerical - Continuous
Length at maturity	Bremner et al. 2006a, Clavel et al. 2013	Numerical - Continuous

Table 2. List of morphological and habitat traits to include in clustering

Trait	References	Measurement type
Morphological traits		
Body length (max)	Winemiller & Rose 1992, Froese & Binohlan 2000, Sibbing & Nagelkerke 2000, Boyle & Horn 2006, Bremner et al. 2006b, Clavel et al. 2013, Spitz et al. 2014, Gravel et al. 2016, Mindel et al. 2016	Numerical - Continuous
Body mass (max)	Palomares & Pauly 1989, Dumay et al. 2004, Reecht et al. 2013, Spitz et al. 2014, Gravel et al. 2016	Numerical - Continuous
Growth rate	Bremner et al. 2006b	Numerical - Continuous
Swimming mode	Sfakiotakis et al. 1999	Categorical - Nominal
Dorsal fin shape	Standen & Lauder 2005	Categorical - Nominal
Caudal fin shape	Roberts 1987, Bridge et al. 2016, Gravel et al. 2016	Categorical - Nominal
Pelvic fin position	Lauder & Drucker 2004	Categorical - Nominal
Body shape/form	Webb 1984, Roberts 1987, Spitz et al. 2014, Gravel et al. 2016	Categorical - Nominal
Eye position	Clavel et al. 2013, Mindel et al. 2016	Categorical - Nominal
Barbel presence	Piet 1998, Reecht et al. 2013, Gravel et al. 2016	Categorical - Nominal
Oral gape position	Roberts 1987, Sibbing & Nagelkerke 2000, Ward-Campbell et al. 2005, Boyle & Horn 2006, Reecht et al. 2013, Gravel et al. 2016	Categorical - Nominal
Shape of teeth	Roberts 1987, Gravel et al. 2016	Categorical - Nominal
Number of gill rakers	Sibbing & Nagelkerke 2000, Boyle & Horn 2006	Numerical - Integer
Habitat		
Depth found	Spitz et al. 2014, Froese & Pauly 2017	Numerical - Continuous
Preferred temperature	Froese & Pauly 2017	Numerical - Integer
Temperature type	Froese & Pauly 2017	Categorical - Nominal
Horizontal habitat	Spitz et al. 2014	Categorical - Nominal
Vertical habitat	Sibbing & Nagelkerke 2000, Bremner et al. 2006a, Spitz et al. 2014	Categorical - Nominal
Estuarine use	Elliott et al. 2007, Franco et al. 2008	Categorical - Nominal

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