

The following supplement accompanies the article

## Resolving natal tags using otolith geochemistry in an estuarine fish, rainbow smelt *Osmerus mordax*

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Table S1. Coefficient of determination and p-value (in parentheses) of population-specific ANOVAs examining geochemical differences in juvenile rainbow smelt otoliths. Each population is compared with total dataset, excluding itself. Analysis uses combined elemental and isotopic data from 180 individuals.

SMB: St. Mary's Bay; PB: Placentia Bay

Location	Element or Isotope						
	Mg:Ca	Mn:Ca	Sr:Ca	Ba:Ca	<sup>87</sup> 86Sr	δ <sup>18</sup> O	δ <sup>13</sup> C
1. Biscay Bay	9.70 (<0.001)	0.03 (0.467)	5.30 (0.002)	0.51 (0.342)	0.07 (0.731)	3.16 (0.017)	0.014 (0.622)
2. Holyrood Pond	4.63 (0.004)	0.05 (0.764)	0.06 (0.743)	1.12 (0.159)	1.00 (0.183)	4.93 (0.003)	7.01 (<0.001)
3. Salmonier River	1.21 (0.146)	0.44 (0.384)	2.50 (0.035)	1.45 (0.108)	0.30 (0.463)	0.27 (0.491)	5.49 (0.002)
4. Colinet River	0.11 (<0.001)	0.347 (0.445)	0.42 (0.387)	1.62 (0.089)	0.07 (0.718)	1.48 (0.114)	7.28 (<0.001)
5. North Harbour SMB	1.28 (0.148)	4.02 (0.008)	10.2 (<0.001)	1.42 (0.112)	0.00 (0.931)	19.0 (<0.001)	4.59 (0.004)
6. Southeast Placentia	4.16 (0.007)	3.69 (0.011)	1.19 (0.147)	1.55 (0.096)	0.00 (0.704)	0.89 (0.209)	2.70 (0.028)
7. North Harbour PB	4.34 (0.006)	0.01 (0.884)	5.76 (<0.001)	1.25 (0.135)	0.03 (0.831)	6.39 (<0.001)	3.38 (0.014)
8. Salt Pond	0.72 (0.262)	6.52 (<0.001)	1.88 (0.068)	0.370 (0.418)	40.3 (<0.001)	5.23 (0.002)	0.06 (0.749)
9. Garnish River	3.60 (<0.001)	3.70 (<0.001)	55.6 (<0.001)	71.1 (<0.001)	46.6 (<0.001)	23.0 (<0.001)	75.5 (<0.001)

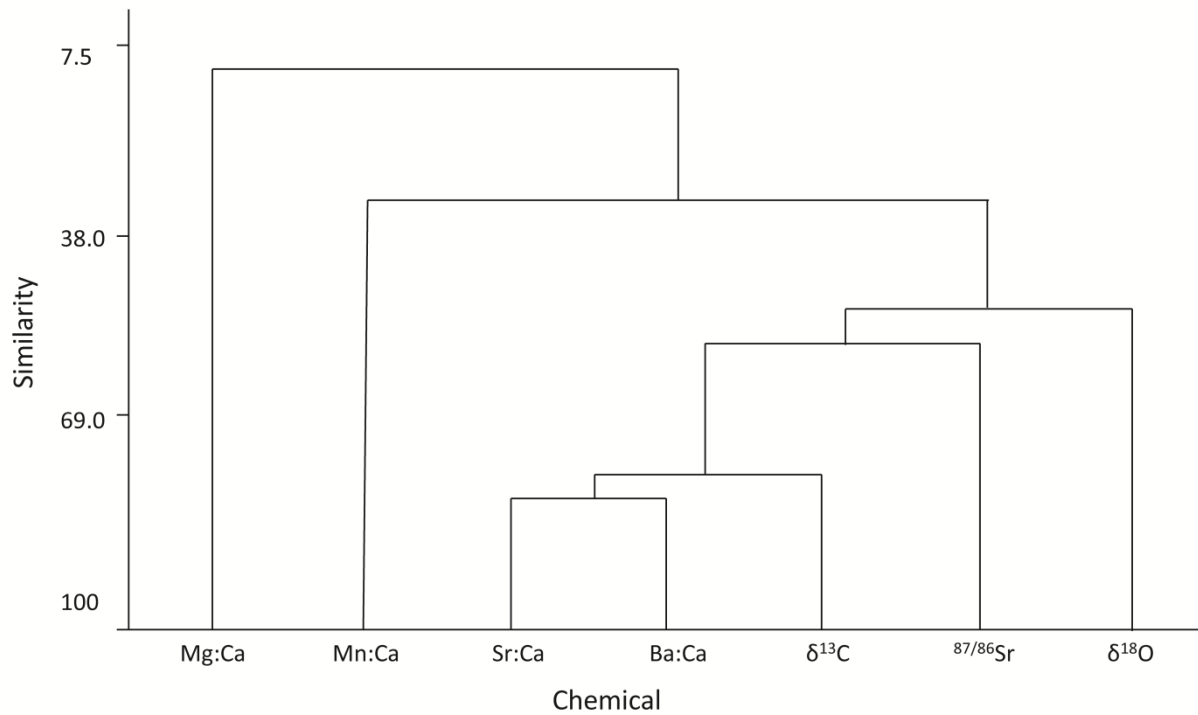


Fig. S1. Hierarchical clustering among elements and isotopes using absolute correlation examined in rainbow smelt otoliths from coastal Newfoundland. See Table 3 for correlation test results

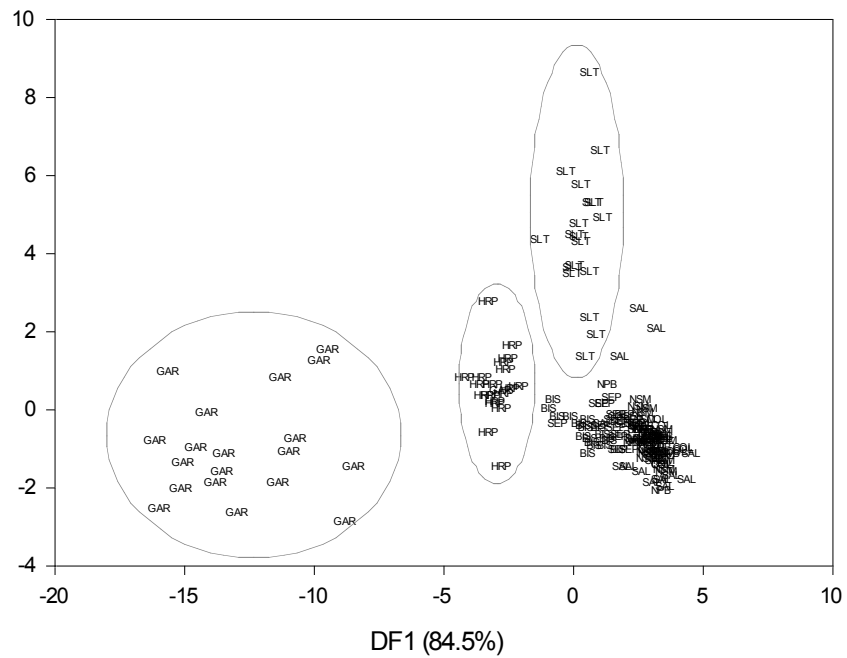


Fig. S2. Discriminant function plot of first two functions based on rainbow smelt otolith geochemistry (elemental and isotopic) and a quadratic discriminant function. See Table 1 for sample key

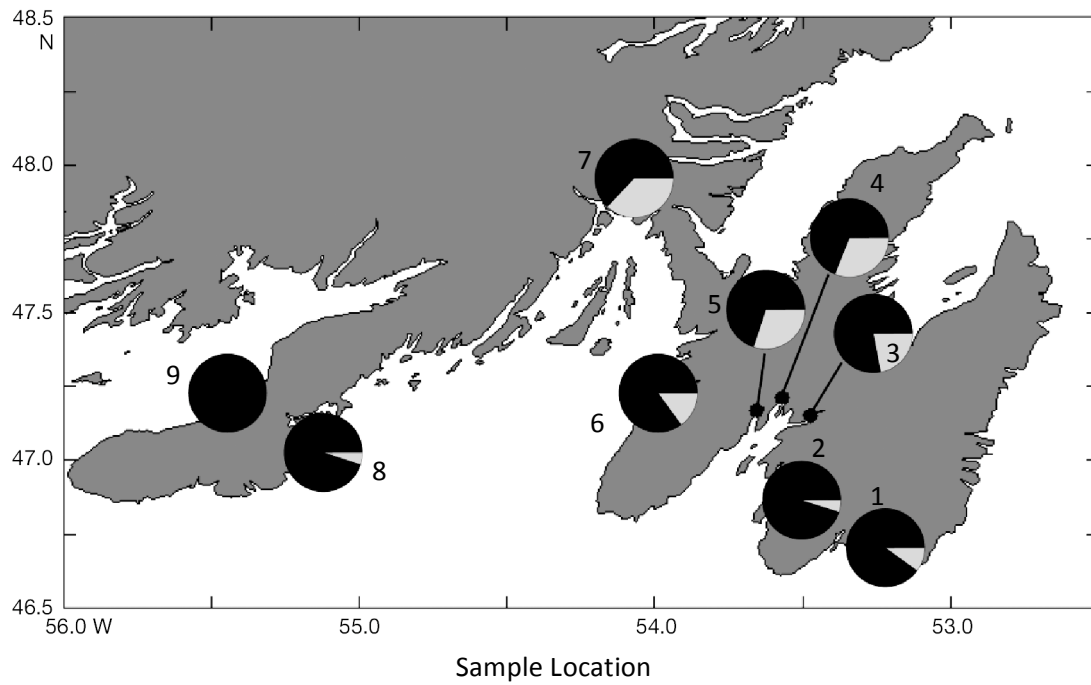


Fig. S3. Map of correct assignment success to sample location of juvenile rainbow smelt based on otolith geochemistry (elemental and isotopic) and a quadratic discriminant function with cross-validation. Black in circles: correct assignment; grey in circles: assignments to other locations combined. Numbers correspond to samples identified in Table 1