

Electronic Supplemental Material

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Sr Isotope Ratios ($^{87}\text{Sr}/^{86}\text{Sr}$) in Water and Fish Otoliths as Estuarine Salinity Tracers: Case Studies from Three NW African Rivers

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Table S1 Literature compilation of strontium geochemical data of various river systems presented in Fig. 9 (in alphabetical order). Note that multiple measurements are given for some locations, where analyses were carried out by multiple workers and/or across different seasons/years. The compilation is limited to studies that explicitly present both Sr concentrations and isotopic values of river and estuarine systems

River / System	Sr (mg/L)	1/Sr (L/mg)	⁸⁷ Sr/ ⁸⁶ Sr	Reference	Comment
A la Baleine	0.014	71.33	0.72650	Wadleigh et al. 1985	
Adelaide River	0.004	250.00	0.73628	Crook et al. 2015	Site 10, 03 October 2012
Albany	0.028	35.67	0.71580	Wadleigh et al. 1985	
Amazon (Obidos)	0.028	35.67	0.71090	Palmer and Edmond 1989	
Aniak downstream Timber	0.126	7.93	0.70584	Brennan et al. 2014	
Aniak upstream Kip and Sal	0.100	10.01	0.70553	Brennan et al. 2014	
Arnaud	0.008	125.42	0.72640	Wadleigh et al. 1985	
Atigan	0.166	6.04	0.71634	Brennan et al. 2014	
Attawapiskat	0.026	38.43	0.71400	Wadleigh et al. 1985	
Aux Feuilles	0.010	100.11	0.73470	Wadleigh et al. 1985	
Aux Outardes	0.009	110.81	0.71860	Wadleigh et al. 1985	
Avon	2.940	0.34	0.73260	Goldstein and Jacobsen 1987	
Babbage River	0.109	9.17	0.70932	Loewen et al. 2015	Location 7
Back	0.008	125.42	0.72910	Wadleigh et al. 1985	
Blue Nile	0.136	7.36	0.70560	Palmer and Edmond 1989	
Brahmaputra	0.081	12.27	0.72100	Palmer and Edmond 1989	
Canning	0.308	3.24	0.71108	Brennan et al. 2014	
Chao Phraya	0.094	10.66	0.71380	Palmer and Edmond 1989	
Chatanika	0.110	9.06	0.74041	Brennan et al. 2014	
Chena	0.113	8.85	0.72520	Brennan et al. 2014	
Chitina	0.154	6.48	0.70723	Brennan et al. 2014	
Chulitna	0.142	7.05	0.70895	Brennan et al. 2014	
Churchill (N)	0.007	142.66	0.71760	Wadleigh et al. 1985	
Churchill M	0.023	43.40	0.72000	Wadleigh et al. 1985	
Colorado	1.161	0.86	0.71080	Goldstein and Jacobsen 1987	
Columbia	0.086	11.62	0.71210	Goldstein and Jacobsen 1987	
Connetquot River	0.280	3.57	0.71010	Beck et al. 2013	Sample GSB-11
Copper	0.127	7.88	0.70710	Palmer and Edmond 1989	
Copper downstream Chitina	0.144	6.96	0.70694	Brennan et al. 2014	
Copper upstream Chitina	0.138	7.27	0.70637	Brennan et al. 2014	
Daly-Katherine River	0.056	17.86	0.71612	Crook et al. 2016	Dry season 2012 at "Galloping Jacks"
Daly-Katherine River	0.011	90.91	0.73187	Crook et al. 2016	Wet season 2013 at "Galloping Jacks"
Danube	0.242	4.14	0.70890	Palmer and Edmond 1989	
Dietrich	0.570	1.76	0.71824	Brennan et al. 2014	
Dulbi	0.039	25.94	0.70763	Brennan et al. 2014	
Eastmain	0.006	167.84	0.72850	Wadleigh et al. 1985	
Elbe	0.572	1.75	0.70970	Palmer and Edmond 1989	
Etivluk	0.046	21.53	0.71533	Brennan et al. 2014	
Firth River	0.257	3.89	0.70835	Loewen et al. 2015	Location 5
Fish Creek	0.129	7.75	0.71291	Loewen et al. 2015	Location 23
Fish Hole Creek	0.080	12.50	0.71064	Loewen et al. 2015	Location 10
Fraser	0.080	12.50	0.71200	Wadleigh et al. 1985	
G.R. De la B.	0.009	110.81	0.73840	Wadleigh et al. 1985	
Gambia River	0.040	25.00	0.71209	This study	
Ganges	0.139	7.22	0.72570	Palmer and Edmond 1989	
Garonne	0.111	9.01	0.71060	Albrède and Michard 1987	
George	0.065	15.42	0.70812	Brennan et al. 2014	
Gulkana	0.093	10.77	0.70573	Brennan et al. 2014	
Hayes	0.036	27.77	0.71770	Wadleigh et al. 1985	
Hogatza	0.057	17.56	0.70816	Brennan et al. 2014	
Holitina upstream Kokcugluk wier	0.032	31.70	0.70868	Brennan et al. 2014	
Hudson	0.127	7.85	0.71180	Palmer and Edmond 1989	
Indus	0.292	3.43	0.71120	Goldstein and Jacobsen 1987	
Inigok	0.031	32.61	0.70966	Brennan et al. 2014	
Innoko	0.073	13.75	0.70869	Brennan et al. 2014	
Japan	0.055	18.12	0.70760	Goldstein and Jacobsen 1987	
Jim's	0.063	15.85	0.71002	Brennan et al. 2014	
Joe Creek	0.122	8.20	0.70950	Loewen et al. 2015	Location 1
Kazan	0.023	43.40	0.72580	Wadleigh et al. 1985	
Kenai	0.075	13.27	0.70652	Brennan et al. 2014	
Kennicott	0.144	6.96	0.70630	Brennan et al. 2014	
Kipchuk (Kip)	0.140	7.13	0.70558	Brennan et al. 2014	
Kisaralik	0.149	6.71	0.70752	Brennan et al. 2014	
Klutina	0.154	6.48	0.70540	Brennan et al. 2014	
Knik	0.167	5.98	0.70607	Brennan et al. 2014	
Koksoak	0.015	66.74	0.73010	Wadleigh et al. 1985	
Koyukuk mainstream	0.136	7.36	0.71365	Brennan et al. 2014	
Kuparuk	0.043	23.29	0.70780	Brennan et al. 2014	
Kuskokswim	0.140	7.12	0.70900	Palmer and Edmond 1989	
Kwethluk elbow	0.086	11.65	0.70498	Brennan et al. 2014	
Kwethluk old wier	0.085	11.77	0.70498	Brennan et al. 2014	

Table S1 continued

River / System	Sr (mg/L)	1/Sr (L/mg)	⁸⁷ Sr/ ⁸⁶ Sr	Reference	Comment
La Grande	0.012	83.31	0.73460	Wadleigh et al. 1985	
Lake Aleknagik	0.032	30.85	0.70463	Brennan et al. 2014	
Lake Amanka	0.027	36.82	0.70422	Brennan et al. 2014	
Lake Clark mouth	0.043	23.29	0.70466	Brennan et al. 2014	
Little Tonsina (LT)	0.169	5.91	0.70558	Brennan et al. 2014	
Maas	0.220	4.55	0.70850	Palmer and Edmond 1989	
Mackenzie	0.175	5.71	0.71100	Wadleigh et al. 1985	
Mae Klong	0.066	15.22	0.71640	Palmer and Edmond 1989	
Manicougan	0.012	83.31	0.71690	Wadleigh et al. 1985	
Manning	0.089	11.19	0.70630	Goldstein and Jacobsen 1987	
Marrakai Creek	0.002	500.00	0.77785	Crook et al. 2015	Site 13, 24 July 2013
Matanuska	0.243	4.12	0.70571	Brennan et al. 2014	
Mekong	0.297	3.36	0.71020	Palmer and Edmond 1989	
Mekong mainstream	0.073	13.61	0.71075	Tran et al. 2021	Upstream location of mainstream, "MO3"
Middle Fork Koyukuk	0.558	1.79	0.71457	Brennan et al. 2014	
Mississippi	0.150	6.67	0.71020	Stordal and Wasserburg 1986	
Moisie	0.012	83.31	0.71630	Wadleigh et al. 1985	
Moose	0.042	23.83	0.71320	Wadleigh et al. 1985	
Mulchatna	0.050	20.02	0.70572	Brennan et al. 2014	
Murchison	1.080	0.93	0.72800	Goldstein and Jacobsen 1987	
Murray River	0.215	4.65	0.71080	Goldstein and Jacobsen 1987	
Murray River	0.130	7.69	0.71212	Shao et al. 2018	Sample MR1
Narmada River	0.166	6.01	0.71006	Rahaman and Singh 2012	Pre-monsoon season
Narmada River	0.140	7.13	0.71053	Rahaman and Singh 2012	Monsoon season
Nass	0.097	10.31	0.70540	Wadleigh et al. 1985	
Natashquan	0.012	83.31	0.71310	Wadleigh et al. 1985	
Nelson	0.075	13.33	0.71460	Wadleigh et al. 1985	
Nenana	0.313	3.20	0.71317	Brennan et al. 2014	
Newhalen	0.039	25.94	0.70471	Brennan et al. 2014	
Niger	0.022	45.65	0.71400	Palmer and Edmond 1989	
Nizina	0.196	5.10	0.70618	Brennan et al. 2014	
Nottaway	0.011	90.58	0.71860	Wadleigh et al. 1985	
Nueces River	0.680	1.47	0.70794	Walther and Niems 2015	Site 10
Nushagak downstream	0.046	21.53	0.70653	Brennan et al. 2014	
Mulchatna	0.044	22.83	0.70693	Brennan et al. 2014	
Nushagak upstream	0.042	23.78	0.70778	Brennan et al. 2014	
Mulchatna	0.267	3.75	0.71057	Zieliński et al. 2018	Station O1 Spring
Oder	0.329	3.04	0.71047	Zieliński et al. 2018	Station O1 Summer
Orange	0.162	6.17	0.71460	Palmer and Edmond 1989	
Orinoco	0.018	54.35	0.71830	Palmer and Edmond 1989	
Pamet River	0.011	95.11	0.70918	Beck et al. 2013	Sample PR586
Parana	0.045	22.03	0.71390	Palmer and Edmond 1989	
Pearl	0.067	14.88	0.71190	Palmer and Edmond 1989	
Petit Mecatina	0.013	77.11	0.71050	Wadleigh et al. 1985	
Philippines	0.124	8.09	0.70560	Goldstein and Jacobsen 1987	
Red	0.131	7.61	0.71140	Palmer and Edmond 1989	
Resurrection	0.101	9.92	0.70601	Brennan et al. 2014	
Rhine	0.546	1.83	0.70920	Palmer and Edmond 1989	
Rhone	0.520	1.92	0.70870	Albrède and Michard 1987	
Rio Grande	0.285	3.51	0.70920	Palmer and Edmond 1989	
Rupert	0.007	142.66	0.72830	Wadleigh et al. 1985	
Sacramento River	95.000	0.01	0.70576	Hobbs et al. 2019	Station 711
Sagavanirktok	0.202	4.94	0.71219	Brennan et al. 2014	
Saguenay	0.023	43.40	0.71310	Wadleigh et al. 1985	
Salcha	0.111	8.99	0.72282	Brennan et al. 2014	
Salmon (Sal)	0.137	7.32	0.70684	Brennan et al. 2014	
San Francisco Estuary	0.093	10.75	0.70627	Phillis et al. 2011	
San Joaquin River	209.000	0.00	0.70714	Hobbs et al. 2019	Station 912
Schelde	0.444	2.25	0.70880	Palmer and Edmond 1989	
Seine	0.401	2.50	0.70810	Palmer and Edmond 1989	
Severn	0.034	29.41	0.71820	Wadleigh et al. 1985	
Shabazpur	0.082	12.14	0.72211	Beck et al. 2013	Sample BG148
Silone Channel, Venice Lagoon	0.342	2.93	0.70829	Beck et al. 2013	Sample A2
Sine-Saloum	22.190	0.05	0.70915	This study	High salinity, not a freshwater end-member
Skeena	0.071	14.07	0.70460	Wadleigh et al. 1985	
Snake Lake	0.036	27.84	0.70435	Brennan et al. 2014	
South Fork Koyukuk	0.124	8.09	0.71263	Brennan et al. 2014	
South Fork Kuskokwim	0.532	1.88	0.70932	Brennan et al. 2014	
St. John	0.059	16.93	0.70980	Wadleigh et al. 1985	
St. Lawrence	0.137	7.30	0.70950	Wadleigh et al. 1985	
St. Maurice	0.011	90.58	0.71120	Wadleigh et al. 1985	
Stikine	0.058	17.24	0.70540	Wadleigh et al. 1985	
Susitna	0.118	8.45	0.70813	Brennan et al. 2014	
Susquehanna	0.110	9.09	0.71420	Fisher and Stueber 1976	
Takotna	0.065	15.42	0.70825	Brennan et al. 2014	
Tamar	0.081	12.30	0.70980	Palmer and Edmond 1989	
Tanalian	0.041	24.28	0.70519	Brennan et al. 2014	
Tanana	0.182	5.49	0.71854	Brennan et al. 2014	
Tapajos	0.009	114.13	0.73220	Palmer and Edmond 1989	

Table S1 continued

River / System	Sr (mg/L)	1/Sr (L/mg)	⁸⁷ Sr/ ⁸⁶ Sr	Reference	Comment
Tazlina	0.117	8.58	0.70561	Brennan et al. 2014	
Thelon	0.014	71.33	0.71880	Wadleigh et al. 1985	
Tisza	0.179	5.59	0.70960	Palmer and Edmond 1989	
Tocantins	0.022	45.11	0.71700	Palmer and Edmond 1989	
Tonsina downstream LT	0.131	7.66	0.70568	Brennan et al. 2014	
Tonsina upstream LT	0.104	9.59	0.70566	Brennan et al. 2014	
Tulusak	0.069	14.45	0.70649	Brennan et al. 2014	
Upper Talarik Cr.	0.067	15.02	0.70432	Brennan et al. 2014	
Victoria Nile	0.097	10.36	0.71140	Palmer and Edmond 1989	
Vistula	0.433	2.31	0.70940	Palmer and Edmond 1989	
Vittrekwa River	0.167	5.99	0.71283	Loewen et al. 2015	Location 24
Volta River	0.060	16.67	0.71392	This study	
Volta River	0.110	9.09	0.71392	Jørgensen and Banoeng-Yakubo 2001	Location A4 Sogakope
Wesser	0.721	1.39	0.70890	Palmer and Edmond 1989	
Winisk	0.022	45.47	0.71770	Wadleigh et al. 1985	
Xingu	0.014	73.16	0.72920	Palmer and Edmond 1989	
Yangtze	0.180	5.56	0.71090	Palmer and Edmond 1989	
Yellow	0.653	1.53	0.71110	Palmer and Edmond 1989	
Yukon	0.139	7.18	0.71370	Palmer and Edmond 1989	
Yukon	0.143	7.00	0.71329	Brennan et al. 2014	
Zaire	0.027	36.46	0.71550	Palmer and Edmond 1989	

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