

Table S1: Global list of ^{228}Ra data sources. Sources not previously used are in bold

Location	Reference
Atlantic Ocean	<i>Broecker et al.</i> [1973]
	<i>Moore</i> [1981]
	<i>Reid and Sackett</i> [1982]
	<i>Key et al.</i> [1985]
	<i>Moore</i> [1987]
	<i>Moore and Todd</i> [1993]
	<i>Moore and Shaw</i> [1998]
	<i>Cai et al.</i> [2002]
	<i>Rasmussen</i> [2003]
	<i>Moore</i> [2006]
	<i>Charette et al.</i> [2007]
	<i>Moore</i> [2007]
	<i>Van-beek et al.</i> [2007]
	<i>Moore and Oliveira</i> [2008]
	<i>Moore et al.</i> [2008]
	<i>Van-beek et al.</i> [2009]
	<i>Schmidt et al.</i> [2011]
	<i>Smoak et al.</i> [2012]
	<i>Rodellas et al.</i> [2015]
	<i>Charette et al.</i> [2015] (GA03)
TTO [1981-1989]	
North Pacific	<i>Moore</i> [1969]
	<i>Broecker et al.</i> [1973]
	<i>Kaufman et al.</i> [1973]
	<i>Knauss et al.</i> [1978]
	<i>Okubo</i> [1980]
	<i>Yamada and Nozaki</i> [1986]
	<i>Nozaki et al.</i> [1990]
	<i>Ku et al.</i> [1995]
	<i>Luo et al.</i> [1995]
	<i>Yeh and Chung</i> [1997]
	<i>Huh and Ku</i> [1998]
	<i>Nozaki et al.</i> [1998]
	<i>Nozaki et al.</i> [2001]
	<i>Cai et al.</i> [2002]
	<i>Kim et al.</i> [2005]
	<i>Kawakami and Kusakabe</i> [2008]
	<i>Chen et al.</i> [2010]
	<i>Liu et al.</i> [2012]
	<i>Su et al.</i> [2013]
	<i>Lee et al.</i> [2014]
<i>Moore et al.</i> [unpublished]	
<i>Van-beek et al.</i> [unpublished]	
South Pacific	<i>Moore</i> [1969]
	<i>Broecker et al.</i> [1973]
	<i>Kaufman et al.</i> [1973]
	<i>Knauss et al.</i> [1978]
	<i>Ku et al.</i> [1995]
	<i>Luo et al.</i> [1995]
	<i>Charette et al.</i> [unpublished]
	<i>Moore et al.</i> [unpublished]
	GEOTRACES GP16 [unpublished]
Indian Ocean	<i>Moore</i> [1969]
	<i>Broecker et al.</i> [1973]
	<i>Kaufman et al.</i> [1973]
	<i>Moore</i> [1997]
	<i>Nozaki et al.</i> [1998]

Nozaki and Yamamoto [2001]
Rengarajan et al. [2002]
Loveless et al. [2008]
***Koch-Larrouy et al.* [2015]**
Moore et al. [unpublished]

Arctic Ocean

Broecker et al. [1973]
Kaufman et al. [1973]
***Rutgers van der Loeff et al.* [1993]**
Rutgers van der Loeff et al. [2003]
***Smith et al.* [2003]**
***Kadko and Muench* [2005]**
***Rutgers van der Loeff et al.* [2013]**

Southern Ocean

Kaufman et al. [1973]
***Hanfland* [2002]**
***Charrette et al.* [2007]**
***Van-beek et al.* [2008]**
Dulaiova et al. [2009]
***Annett et al.* [2013]**
***Sanial et al.* [2014]**
***Sanial et al.* [2015]**
Charette et al. [unpublished]
