

Table 3 Diffusive flux of silicic acid across the sediment-water interface [$F_{D(\text{benthic})}$]

	Area (millions of km ²)	Average annual flux		Region	Reference
		Mol Si m ⁻²	Tmol Si year ⁻¹		
Coastal zone (30–200 m)					
Option 1 (minimum)	30	0.47	14.2	Amazon	Berelson et al. 2003
Option 2 (maximum)	30	2.28	68.4	Monterey Bay	Berelson et al. 2003
Continental slope (200–1,000 m)					
Option 1 (minimum)	13.3	0.10	1.3	South Atlantic	Hensen et al. 1998
Option 2 (maximum)	13.3	1.39	18.5	Northwest Atlantic	Jahnke & Jahnke 2000
Open ocean					
Option 1 (minimum)	162.8	0.06	9.9	South Atlantic	Hensen et al. 1998
Option 2 (maximum)	162.8	0.22	35.0	Northwest Atlantic	Jahnke & Jahnke 2000
Southern Ocean					
Option 1 (minimum)					
Coastal continental shelf zone	0.9	0.42	0.38	Inner Ross Sea	Tréguer et al. 1995
Polar frontal zone	3	0.55	1.7	Indian sector	Tréguer et al. 1995
Permanently open ocean zone	14	0.22	3.1	Indian sector	Tréguer et al. 1995
Seasonal ice zone	16	0.16	2.6	Outer Ross Sea	Nelson et al. 2002
<i>Southern Ocean subtotal, option 1</i>	<i>33.9</i>		<i>7.7</i>		
Option 2 (maximum)					
Coastal continental shelf zone	0.9	0.89	0.8	Inner Ross Sea	Ragueneau et al. 2009
Polar frontal zone	3	0.73	2.2	Indian sector	Ragueneau et al. 2009
Permanently open ocean zone	14	2.03	28.4	Indian sector	Ragueneau et al. 2009
Seasonal ice zone	16	0.37	5.9	Outer Ross Sea	Ragueneau et al. 2009
<i>Southern Ocean subtotal, option 2</i>	<i>33.9</i>		<i>37.3</i>		
<i>Total, option 1</i>	<i>240</i>		<i>33</i>		
<i>Total, option 2</i>	<i>240</i>		<i>159</i>		

World ocean surface: 240 million km² = 360 million km² – 120 million km² (sediments devoid of biogenic opal).

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