

Supplementary Table S1: Names and coordinates of the major study sites in the Southern Ocean and on the Antarctic Continent where tracking devices were deployed on the selected species (indicated by their 4-letter codes in the last column).

Sector	Location name	Location coordinates	Species
Indian Ocean	Prince Edward Islands	46° 46' S, 37° 51' E	ANFS, DMSA, GHAL, KIPE, LMSA, MAPE, SOES, WAAL
	Crozet Islands	46° 25' S, 51° 59' E	KIPE, WAAL, WHCP
	Kerguelen Islands	49° 15' S, 69° 10' E	ANFS, BBAL, SOES, WAAL
	Heard Island	53° 6' S, 73° 31' E	ANFS, BBAL, KIPE, LMSA, MAPE
South Atlantic Ocean	Falkland (Islas Malvinas)	51° 41' S, 59° 10' W	KIPE, SOES
	Signy Island	60° 43' S, 45° 36' W	ADPE
	South Georgia	54° 15' S, 36° 45' W	ANFS, BBAL, KIPE, MAPE, SOES, WAAL, WHCP
	Bouvet Island	54° 25' S, 3° 22' E	ANFS, SOES
Antarctic Peninsula	South Shetland Islands (incl. Elephant Island)	62° 0' S, 58° 0' W	ADPE, ANFS, SOES, WESE
	Sea ice or at sea		CRAS, HUWH, WESE
South Pacific Ocean	Macquarie Island	54° 30' S, 158° 57' E	ANFS, BBAL, GHAL, KIPE, LMSA, ROPE, SOES, WAAL
	Campbell Island	52° 32' S, 169° 8' E	GHAL
	At sea off Raoul Island	29° 15' S, 177° 59' W	HUWH
	At sea off the Australian east coast		HUWH
Weddell Sea	Filchner Trough	77° 0' S, 36° 0' W	WESE
	Drescher Inlet	72° 50' S, 19° 2' W	CRAS, WESE
	Sea ice		CRAS, WESE
Queen Maud Land	Svarthamaren	71° 54' S, 5° 10' E	ANPE

	Hukuro Cove	69° 12' S, 39° 37' E	ADPE
Mac.Robertson Land	Taylor Glacier	67° 27' S, 60° 51' E	EMPE
	Ufs Island	67° 28' S, 61° 8' E	ADPE
	Béchervaise Island	67° 35' S, 62° 49' E	ADPE
	Auster Rookery	67° 24' S, 63° 57' E	EMPE
	Scullin Monolith	67° 47' S, 66° 42' E	ADPE
Princess Elizabeth Land	Amanda Bay	69° 15' S, 76° 51' E	EMPE
	Magnetic Island	68° 33' S, 77° 55' E	ADPE
	Vestfold Hills	68° 33' S, 78° 15' E	SOES, WESE
Wilkes Land	Shirley Island	66° 17' S, 110° 29' E	ADPE
East Antarctica	Sea ice		CRAS
Terre Adélie	Pétrel Island, Terre Adélie	66° 40' S, 140° 1' E	ADPE, EMPE, WESE
Ross Sea	McMurdo Sound	77° 30' S, 165° 0' E	WESE
	Edmonson Point	74° 20' S, 165° 8' E	ADPE
	Ross Island	77° 30' S, 168° 0' E	ADPE, EMPE
	Coulman Island	73° 29' S, 169° 45' E	EMPE
	Sea ice		WESE