

Segregation in space and time explains the coexistence of two sympatric sub-Antarctic petrels

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Supplementary tables

In this online supplementary document we present full model outputs of the best-fit models describing trip characteristics (Supplementary Table 1) and habitat preferences (Supplementary Table 2) of foraging northern and southern giant petrels tracked at Bird Island, South Georgia.

Supplementary Table 1. Parameter estimates of the best-fit models explaining characteristics of all foraging trips made by giant petrels tracked from Bird Island, South Georgia, in austral summer 2005/06. Parameter estimates for species are given as the difference of southern compared to northern giant petrels, for sex as males compared to females, and for season (reflecting calendar date) as middle compared to early season (except for maximum range, where the larger sample also allowed late-season trips to be included in the analysis). For breeding stages, parameter estimates are given as brood-guard (br.) and post-brood (pbr.) compared to incubation. In the “Non-zero effect” column, a * indicates variables whose influence were non-zero (mean \pm 1.96 x s.e. did not overlap 0).

Trip characteristic	Model term	Value	Std. error	Non-zero effect	Trip characteristic	Model term	Value	Std. error	Non-zero effect
By breeding stage					By season				
<i>Travel distance (km)</i>					<i>Travel distance (km)</i>				
	(Intercept)	3385.7	1081.5	*		(Intercept)	2646.1	625.4	*
	Species	1734.2	956.2			Sex	-2073.3	617.0	*
	Sex	-2267.8	840.8	*		Species	4152.9	915.3	*
	Stage (br.)	-1956.7	965.0	*		Season	2650.9	1006.3	*
	Stage (pbr.)	2103.4	1009.0	*		Species:Season	-6835.2	1344.9	*
<i>Trip duration (hrs)</i>					<i>Trip duration (hrs)</i>				
	(Intercept)	130.4	49.8	*		(Intercept)	112.0	26.0	*
	Species	93.5	44.3	*		Sex	-65.1	25.8	*

Sex	-74.5	38.9		Species	155.0	36.8	*
Stage (br.)	-71.2	44.3		Season	119.5	38.0	*
Stage (pbr.)	112.4	46.1	*	Species:Season	-260.7	52.2	*
Max. range (km)				Max. range (km)			
(Intercept)	573.5	91.8	*	(Intercept)	513.1	81.4	*
Sex	-327.1	72.6	*	Sex	-311.3	80.4	*
Stage (br.)	-170.6	98.8		Season (middle)	-35.6	98.4	
Stage (pbr.)	220.0	105.9	*	Season (late)	184.9	97.9	
Proportion of trip coastal (logit-transformed)				Proportion of trip coastal (logit-transformed)			
(Intercept)	-1.5	0.6	*	(Intercept)	-2.75	0.38	*
Species	-1.7	0.6	*	Species	-1.20	0.43	*
Sex	2.2	0.7	*	Sex	3.95	0.41	*
Stage (br.)	1.0	0.4	*	Season	1.88	0.33	*
Stage (pbr.)	-0.5	0.4					
Species:Sex	2.1	0.9	*				
Trip start time				Trip start time			
(Intercept)	0.6	0.0		<i>(intercept-only model)</i>			
Stage (br.)	0.0	0.1					
Stage (pbr.)	-0.2	0.1					

Supplementary Table 2. Parameter estimates of the best-fit models explaining habitat variables of pelagic trips made by female giant petrels tracked from Bird Island, South Georgia, in austral summer 2005/06. Parameter estimates for species are given as the difference of southern compared to northern giant petrels and for season (reflecting calendar date) as middle compared to early season. For breeding stages, parameter estimates are given as brood-guard (br.) and post-brood (pbr.) compared to incubation. In the “Non-zero effect” column, a * indicates variables whose influence were non-zero (mean \pm 1.96 x s.e. did not overlap 0). Wind and chlorophyll were log-transformed for modelling and the parameter estimates are presented on a log scale.

Habitat variable	Model term	Value	Std. error	Non-zero effect	Habitat variable	Model term	Value	Std. error	Non-zero effect
By breeding stage					By season				
Temperature					Temperature				
	(Intercept)	1.3	0.6	*		(Intercept)	2.1	0.3	*
	Species	0.9	0.7			Season	0.9	0.5	*
	Stage (br.)	0.6	0.9						
	Stage (pbr.)	2.2	0.8	*					
	Species:Stage (br)	0.2	1.0						
	Species:Stage (pbr.)	-2.2	0.9	*					
Chlorophyll					Chlorophyll				
	(Intercept)	-0.5	0.1	*		(Intercept)	-0.5	0.1	*
	Species	-0.4	0.1	*		Species	-0.4	0.1	*
	Stage (br.)	0.2	0.1			Season	0.2	0.1	
	Stage (pbr.)	0.0	0.1						
Wind					Wind				
	<i>No clear favoured model or factors</i>					(Intercept)	2.1	0.0	*
						Species	0.1	0.0	
						Season	-0.1	0.0	*
Bathymetry					Bathymetry				
	<i>No clear favoured model or factors</i>					(Intercept)	2833.3	212.4	*
						Season	-1150.0	297.5	*