

# Appendix 1

**Table S1**

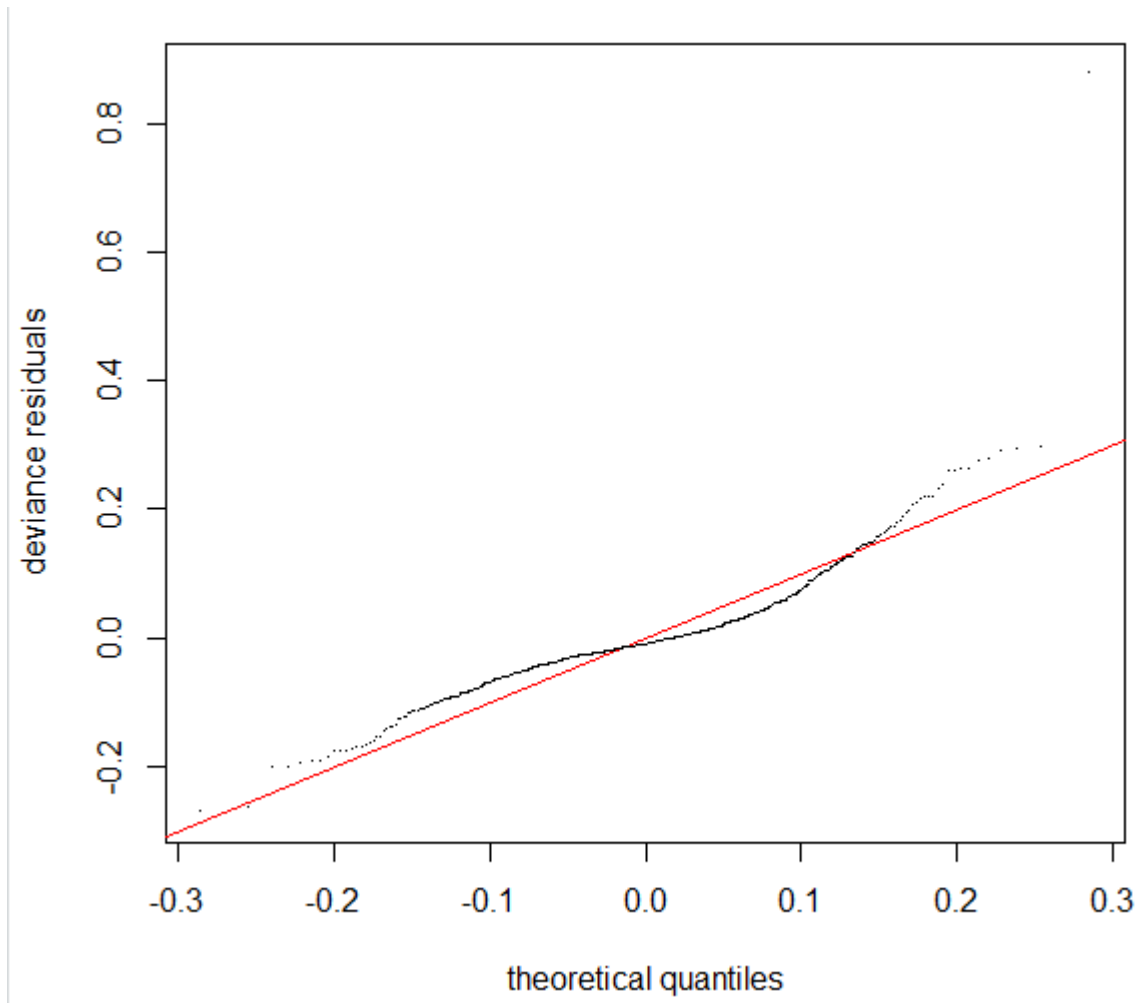
Estimated Westland Petrel burrow densities from the selected generalized additive mixed model (GAMM)

Year	Burrow density	SE
2007	0.070	0.021
2008	0.056	0.015
2011	0.074	0.015
2014	0.096	0.027
2016	0.165	0.016
2017	0.131	0.016
2019	0.084	0.012

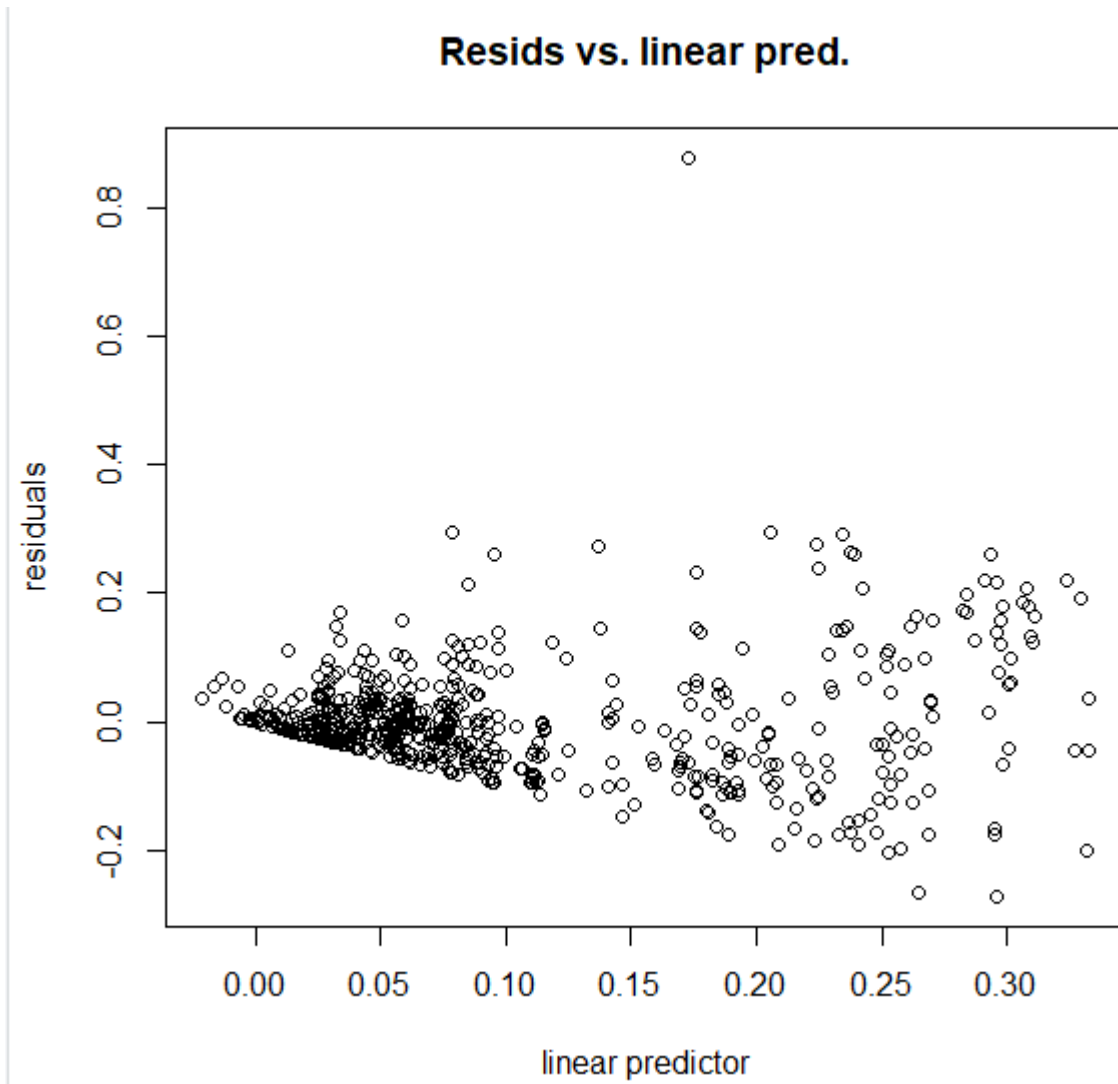
**Table S2**

Baker *et al.* (2011) estimates of burrow density and colony area

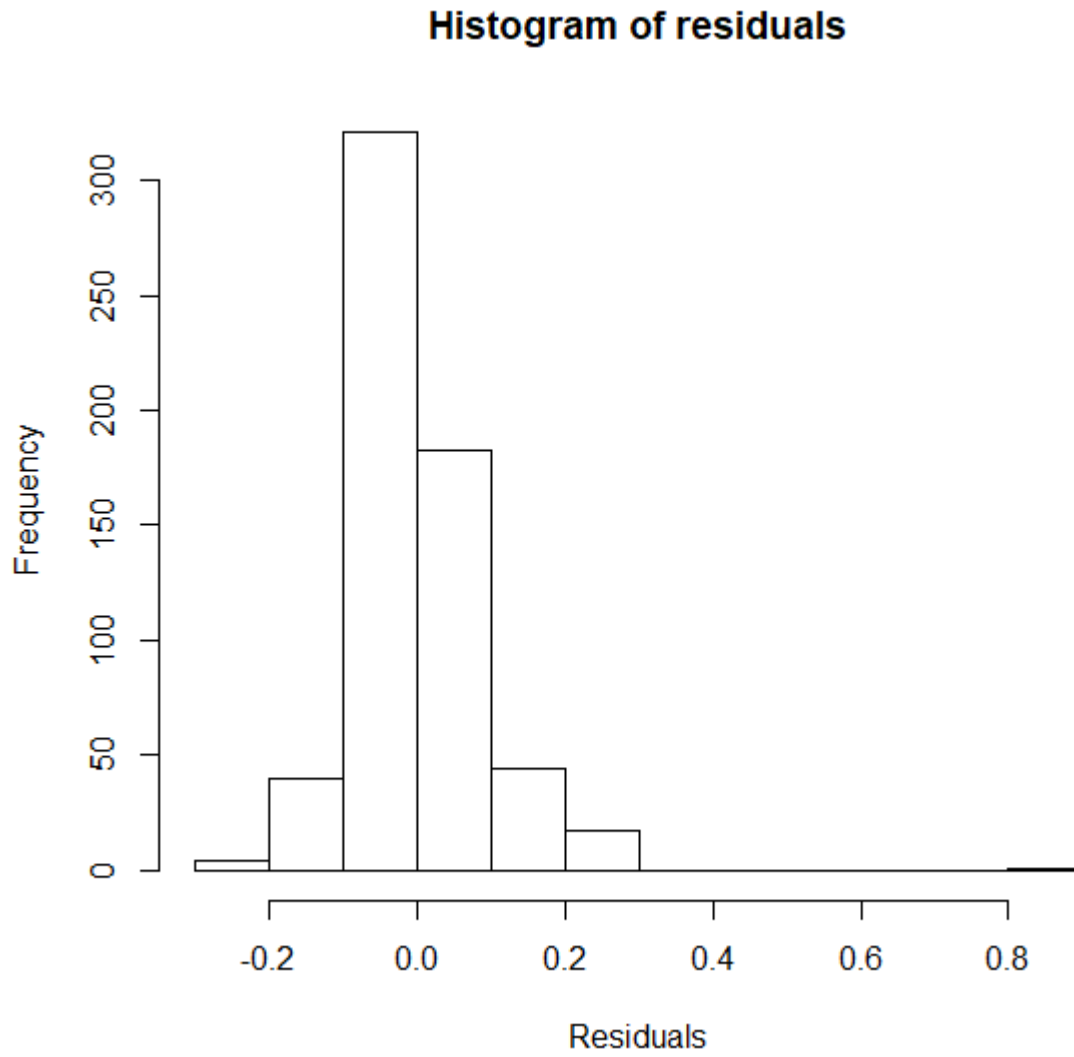
Colony ID	Breeding area	Year	Area (m <sup>2</sup> ) 2011	Burrow density 2011	No transects	No. burrows estimated 2011
1	Middle Bluff	2011	600	not calculated		20
2	BeesNest	2008	6 364	0.047	12	303
4	Dougies Bluff	2008	761	0.058	6	44
		2008	2 102	0.031	7	66
5	Three Bluffs	2011	1 500	0.038	5	57
7	Soloman and Reubs colony	2007	4 318.19	0.030	4	132
		2007	1 290	0.074	1	97
		2007	2 732.9	0.192	2	526
9	Power Barrow	2011	1 146	0.035	4	41
10	Study	2007	18 905	0.121	12	2 298
11	Track in					
12	Robs	2011	4 995	0.052	9	260
13	Noisy Knob	2011	3 026	0.107	9	325
14	Middle Colony	2008	1 491	0.028	7	43
		2008	5 945	0.048	10	288
18	Rowe	2007	12 346	0.065	7	809
19	Liddys	2008	3 559	0.052	4	186
		2008	6 907	0.069	4	482
		2008	5 996	0.041	8	247
20	Studio	2008	56 205	0.005	10	284
21	Liddy's Top	2008	1 806	0.058	7	105
		2008	476	0.067	4	32
24	Lawson's	2011	100	not calculated		10
25		2011	200	not calculated	2	10
26		2011	5 000	0.015	7	78



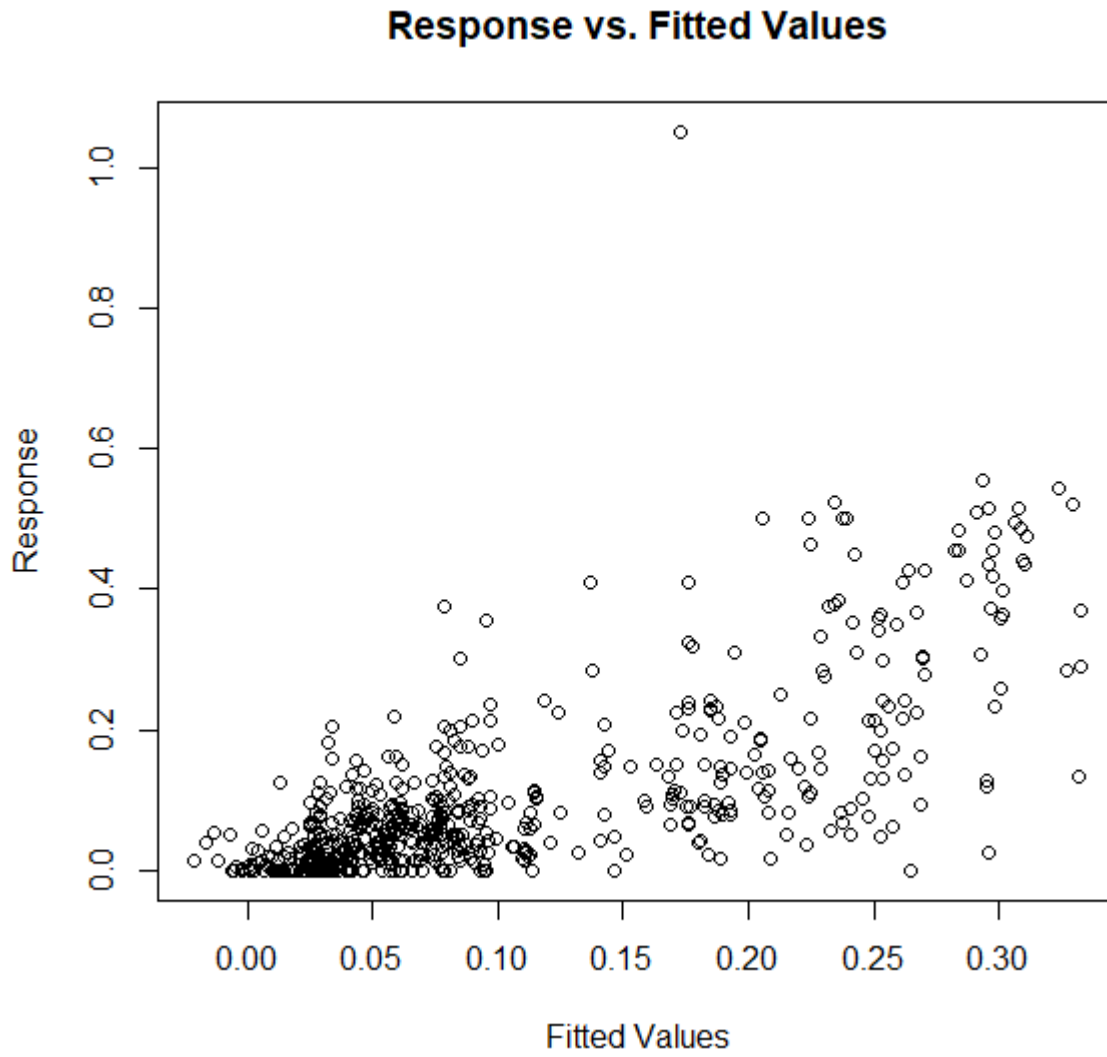
**Figure S1.** Residuals on modelled Westland Petrel burrow density estimates



**Figure S2.** Residuals as a function of linear predictor for Westland Petrel burrow density estimates



**Figure S3.** Residuals of Westland Petrel burrow density estimates



**Figure S4.** Response variables and fitted values for Westland Petrel burrow density estimates