

**Dataset S3:** Ecological estimate of population size of *Dinornis robustus* (South Island only), revised from values for North and South Islands together given in Holdaway & Jacomb (2000). “Raw” values are as calculated for the three taxa of *Dinornis* as recognised in 2000 (“DIST” = *D. struthoides*; “DINO” = *D. novaezealandiae*; “DIGI” = *D. giganteus*), for both islands, for the habitat areas (I-VI, as defined in Holdaway & Jacomb 2000), using the upper range of biomass carrying capacity used by Anderson (1989), and standard body masses for the three “taxa”. “Adjusted occurrences – Both islands” applies the same body masses and biomass carrying capacities to the same habitat areas but recognises the presence of a single taxon (North Island, *D. novaezealandiae*; South Island, *D. robustus*) in each island, with “DIGI” and “DINO” being habitat size morphs of the females, occupying different habitats, and “DIST” of the males, occupying all habitats. “Adjusted occurrences – South Island” gives the population sizes of *D. robustus* predicted for habitat areas I-VI, and South Island total for comparison with estimates based on habitat information in Leathwick et al. (2002; 2003). Worst, medium, best: broad habitat qualities, as defined in Anderson (1989).

RAW			Birds km <sup>-2</sup> (Upper range)							Published total	Difference (= other taxa)
BOTH ISLANDS			100 kg	150 kg	200 kg	Totals			Total		
Quality	Area	km <sup>2</sup>	“DIST”	“DINO”	“DIGI”	“DIST”	“DINO”	“DIGI”			
Medium	I	130000	0.091	0.061	0.046	11830	7930	5980	25740	48025	22285
Best	II	20600	0.168	0.112	0.084	3461	2307	1730	7498	31724	24226
Worst	III	52200	0.025	0.017	0.0125	1305	887	652.5	2845	7621	4776
Medium	IV	12500	0.091	0.061	0.046	1138	763	575	2475	6650	4175
Best	V	64400	0.168	0.112	0.084	10819	7213	5410	23442	56672	33230
Worst	VI	6200									
									62000	150692	88692
ADJUSTED OCCURRENCES*			Birds km <sup>-2</sup> (Upper range)							Published total	Difference (= other taxa)
BOTH ISLANDS			100 kg	150 kg	200 kg	Totals			Total		
Quality	Area	km <sup>2</sup>	“DIST”	“DINO”	“DIGI”	“DIST”	“DINO”	“DIGI”			
Medium	I	130000	0.091	0.061		11830	7930	0	19760	48025	28265
Best	II	20600	0.168		0.084	3461	0	1730	5191	31724	26533
Worst	III	52200	0.025	0.017		1305	887	0	2192	7621	5429
Medium	IV	12500	0.091	0.061		1138	763	0	1900	6650	4750
Best	V	64400	0.168		0.084	10819	0	5410	16229	56672	40443
Worst	VI	6200							0		
									45272	150692	105420
ADJUSTED OCCURRENCES*			Birds km <sup>-2</sup> (Upper range)							Published total	Difference (= other taxa)
SOUTH ISLAND			100 kg	150 kg	200 kg	Totals			Total		
Quality	Area	km <sup>2</sup>	“DIST”	“DINO”	“DIGI”	“DIST”	“DINO”	“DIGI”			
Medium	I	26000	0.091	0.061		2366	1586	0	3952		
Best	II	2060	0.168		0.084	346	0	173	519		
Worst	III	41760	0.025	0.017		1044	710	0	1754		
Medium	IV	10000	0.091	0.061		910	610	0	1520		
Best	V	64400	0.168		0.084	10819	0	5410	16229		
Worst	VI	6200							0		
									23974		

\*Occurrences taking into account the different - non-sympatric - distributions of the three components of the taxon *Dinornis* that were considered to be separate species in 2000. The adjustments were made to allow quantification of the birds in each island for comparison with results of genetic analyses for the South Island alone, as the estimates in Holdaway & Jacomb (2000) were for both main islands.