

Table S1. Parameter prior probabilities and estimates (posterior medians and 95% credible intervals) for a model of direct and indirect effects on loggerhead sea turtle hatching success. Bolded parameters are effects that have credible intervals that do not overlap with zero.

Parameter	Prior probability	Posterior median (95% Credible Interval)
<i>Hatching success:</i> ($R^2 = 0.58$)		
Clutch size	Normal (0, 10^3)	-0.06 (-0.10 – -0.03)
Mean temp.	Normal (0, 10^3)	1.28 (1.22 – 1.34)
Hot temp.	Normal (0, 10^3)	0.07 (0.03 – 0.11)
Cool temp.	Normal (0, 10^3)	0.42 (0.38 – 0.47)
Moisture	Normal (0, 10^3)	0.47 (0.41 – 0.50)
Washover	Normal (0, 10^3)	-1.40 (-1.48 – -1.32)
Baseline probability	Uniform (0, 1)	0.39 (0.38 – 0.40)
<i>Mean temp.:</i> ($R^2 = 0.61$)		
Nest depth	Normal (0, 10^3)	-0.09 (-0.19 – 0.00)
Elevation	Normal (0, 10^3)	0.32 (0.20 – 0.43)
Vegetation	Normal (0, 10^3)	0.27 (0.17 – 0.38)
Moisture	Normal (0, 10^3)	-0.21 (-0.32 – -0.10)
Dip	Normal (0, 10^3)	0.03 (-0.08 – 0.13)
Strike	Normal (0, 10^3)	0.00 (-0.10 – 0.10)
Date	Normal (0, 10^3)	0.40 (0.30 – 0.51)
σ	Uniform (0, 20)	0.63 (0.57 – 0.71)
<i>Hot temp.:</i> ($R^2 = 0.25$)		
Nest depth	Normal (0, 10^3)	-0.06 (-0.20 – 0.08)
Elevation	Normal (0, 10^3)	0.40 (0.24 – 0.57)
Vegetation	Normal (0, 10^3)	0.23 (0.08 – 0.37)
Moisture	Normal (0, 10^3)	0.03 (-0.11 – 0.19)
Dip	Normal (0, 10^3)	-0.07 (-0.22 – 0.08)
Strike	Normal (0, 10^3)	0.02 (-0.12 – 0.16)
Date	Normal (0, 10^3)	-0.22 (-0.78 – -0.55)_
σ	Uniform (0, 20)	0.89 (0.80 – 0.99)
<i>Cool temp.:</i> ($R^2 = 0.48$)		
Nest depth	Normal (0, 10^3)	-0.12 (-0.24 – 0.00)
Elevation	Normal (0, 10^3)	0.01 (-0.12 – 0.15)
Vegetation	Normal (0, 10^3)	-0.03 (-0.15 – 0.08)
Moisture	Normal (0, 10^3)	0.09 (-0.04 – 0.22)
Dip	Normal (0, 10^3)	0.00 (-0.12 – 0.13)
Strike	Normal (0, 10^3)	-0.03 (-0.14 – 0.09)
Date	Normal (0, 10^3)	-0.67 (-0.79 – -0.55)
σ	Uniform (0, 20)	0.73 (0.66 – 0.82)
<i>Moisture:</i> ($R^2 = 0.21$)		
Nest depth	Normal (0, 10^3)	-0.05 (-0.20 – 0.09)
Elevation	Normal (0, 10^3)	-0.28 (-0.44 – -0.12)

Vegetation	Normal (0, 10 ³)	-0.18 (-0.32 – -0.03)
Dip	Normal (0, 10 ³)	0.07 (-0.08 – 0.22)
Strike	Normal (0, 10 ³)	-0.17 (-0.31 – -0.02)
Date	Normal (0, 10 ³)	-0.24 (-0.38 – -0.10)
σ	Uniform (0, 20)	0.90 (0.81 – 1.01)
<i>Washover: (R² = 0.17)</i>		
Elevation	Normal (0, 10 ³)	-0.31 (-0.47 – 0.14)
Vegetation	Normal (0, 10 ³)	-0.26 (-.40 – -0.11)
Dip	Normal (0, 10 ³)	0.03 (-0.13 – 0.18)
Strike	Normal (0, 10 ³)	0.01 (-0.14 – 0.15)
σ	Uniform (0, 20)	0.92 (0.83 – 1.03)

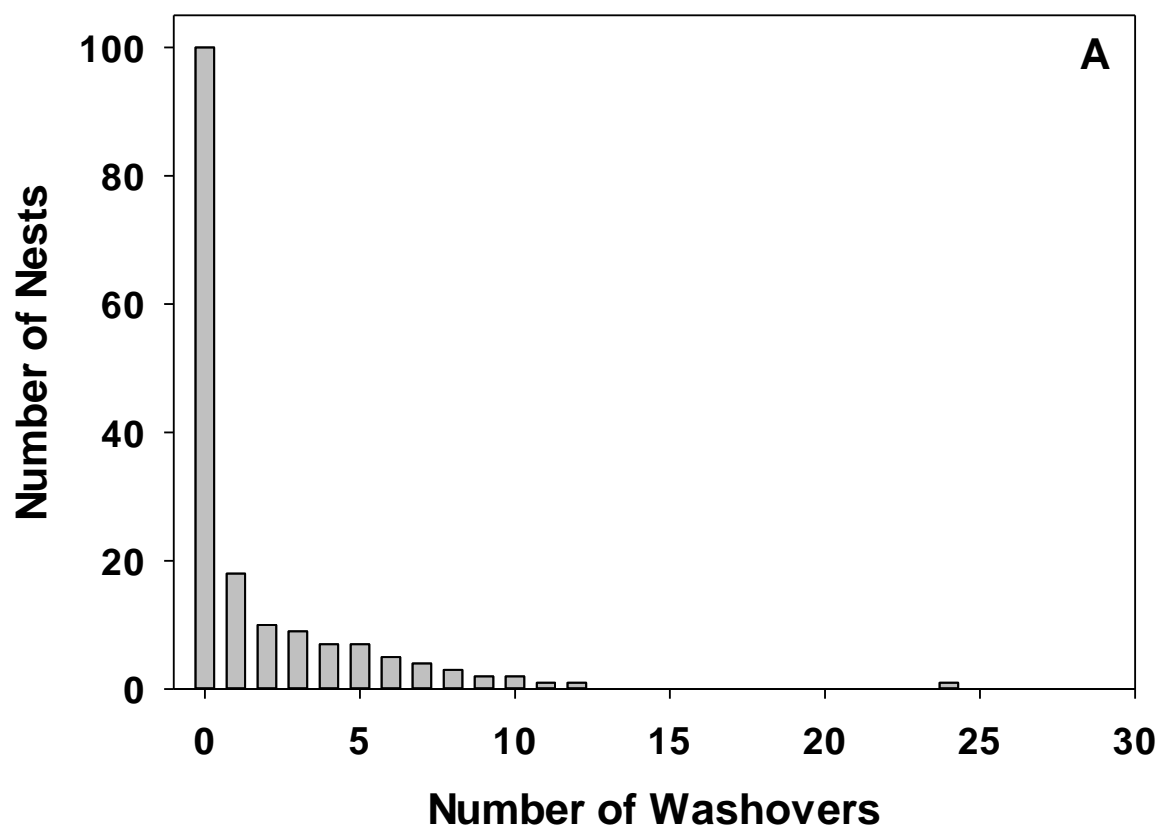


Figure S1: Distribution of washover frequency experienced by individual nests over both 2017 and 2018 survey periods.

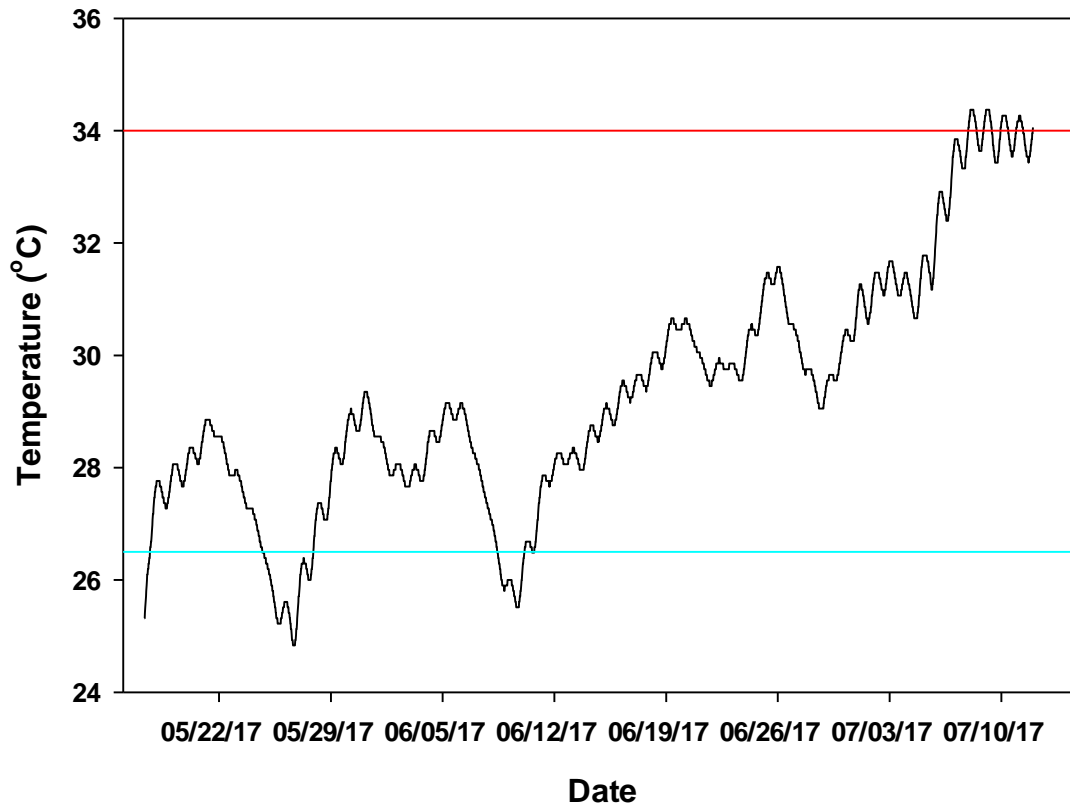


Figure S2: Temperature profile plot for nest NB 011, laid on 5/17/2017 which exhibited both extreme cold and extreme high nest temperatures, which exhibited a hatching success of 72%. The red reference line is at 34°C, considered to be the upper threshold of suitable nest temperatures, whereas the blue reference line is 26.5°C, considered to be the lower threshold of suitable nest temperatures.

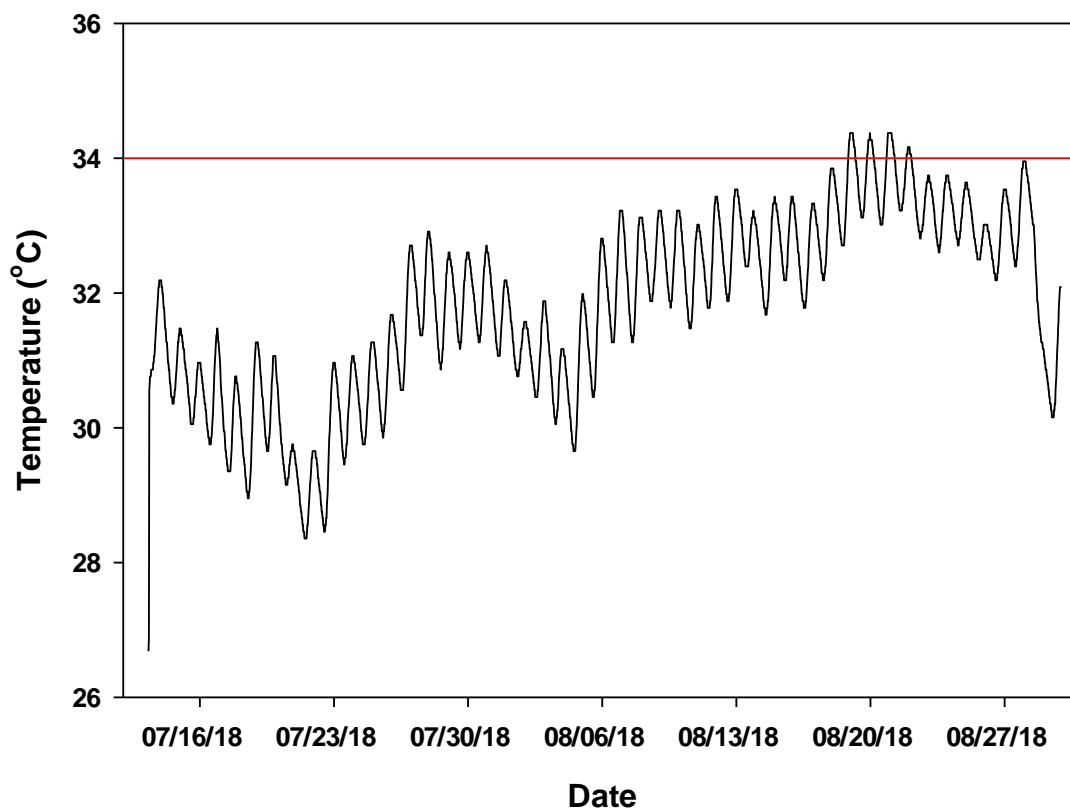


Figure S3: Temperature profile plot for nest NB 102, laid on 7/13/2018 which exhibited both extreme high nest temperatures and a hatching success of 88%. The red reference line is at 34°C, considered to be the upper threshold of suitable nest temperatures.

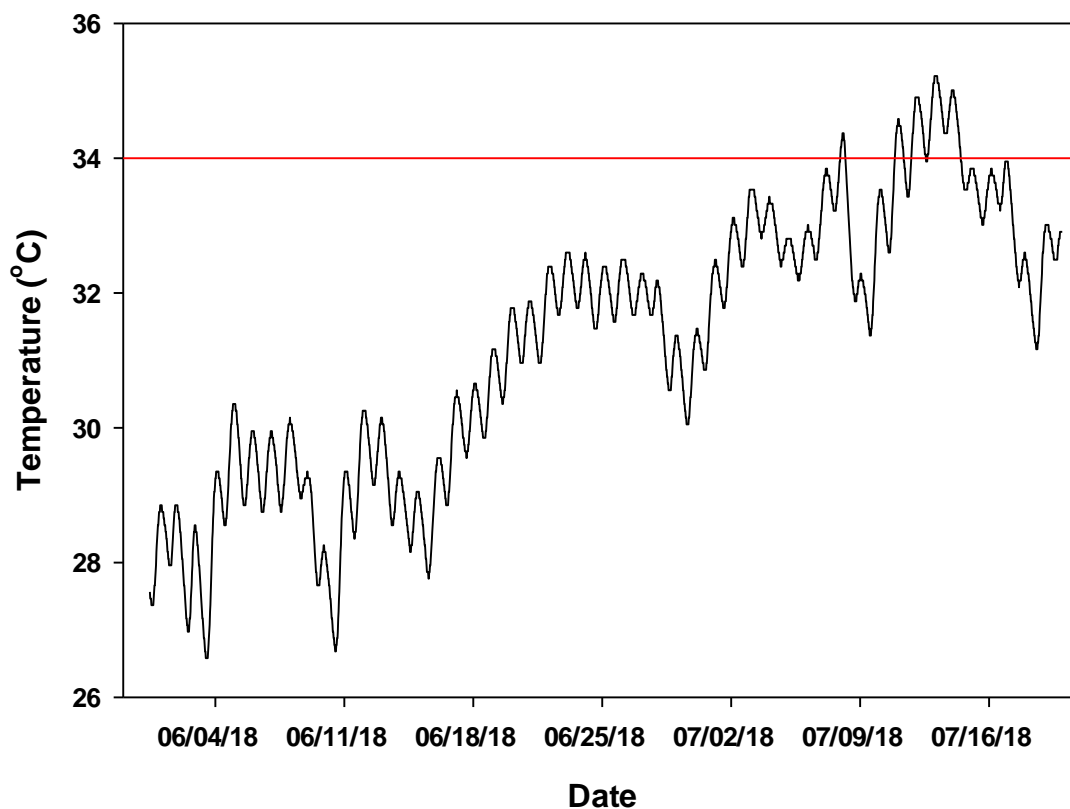


Figure S4: Temperature profile plot for nest SM006, laid on 5/31/2018 which exhibited extreme high nest temperatures and a hatching success of 97%. The red reference line is at 34°C, considered to be the upper threshold of suitable nest temperatures.

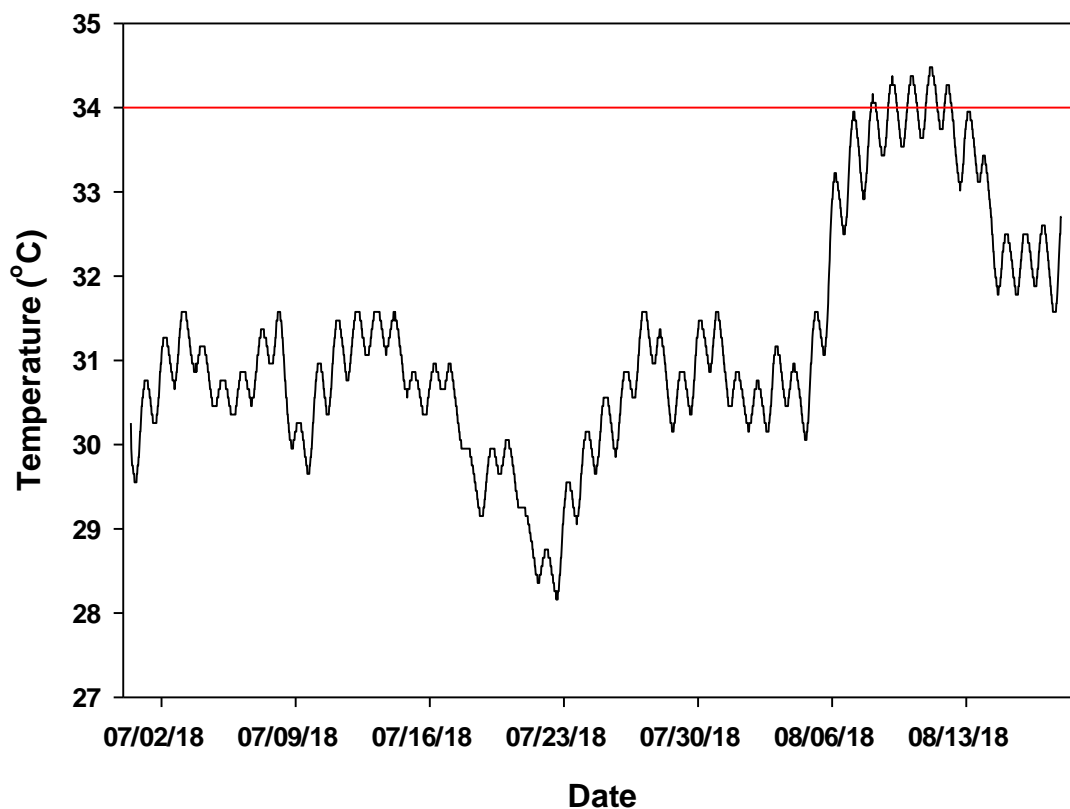


Figure S5: Temperature profile plot for nest SM025, laid on 6/30/2018 which exhibited extreme high nest temperatures and a hatching success of 76%. The red reference line is at 34°C, considered to be the upper threshold of suitable nest temperatures.

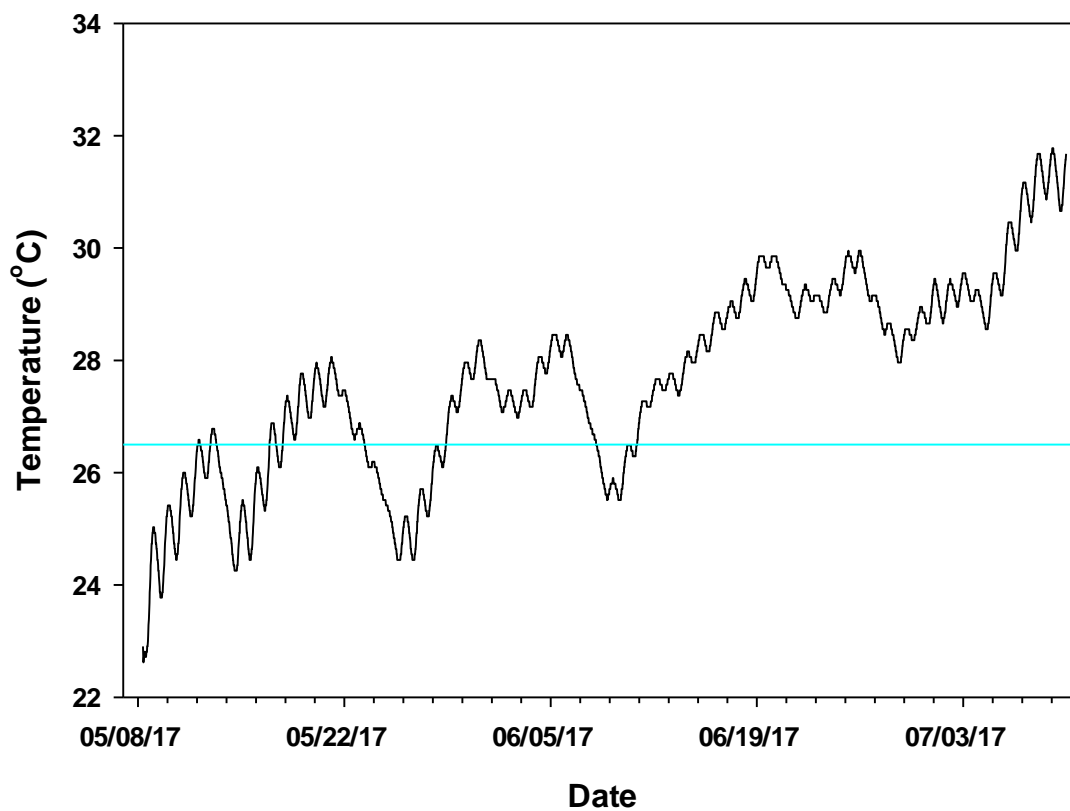


Figure S6: Temperature profile plot for nest NB001, laid on 5/08/2017 which exhibited extreme cold nest temperatures and a hatching success of 49%. The blue reference line is 26.5°C, considered to be the lower threshold of suitable nest temperatures.