

1 SUPPLEMENTARY MATERIALS

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3 **Table 1.** Support for specific models of survival and site fidelity from MARK. MARK  
 4 models are ordered by AIC<sub>c</sub> values. The best two models indicate that encounter probability  
 5 differs by habitat grouping ( $p(g)$ ).

Model <sup>a</sup>	AIC <sub>c</sub> <sup>b</sup>	ΔAIC <sub>c</sub> <sup>b</sup>	w <sub>i</sub> <sup>b</sup>
$\Phi (\cdot) p(g)$	299.744	0.00	0.53797
$\Phi (g) p(g)$	300.393	0.65	0.38883
$\Phi (t) p(g)$	304.885	5.14	0.04115
$\Phi (\cdot) p(\cdot)$	307.904	8.16	0.00910
$\Phi (g) p(\cdot)$	308.082	8.34	0.00832
$\Phi (\cdot) p(g^*t)$	308.944	9.20	0.00541
$\Phi (g) p(g^*t)$	309.656	9.91	0.00379
$\Phi (g^*t) p(g)$	311.440	11.70	0.00155
$\Phi (g) p(t)$	312.183	12.44	0.00107
$\Phi (\cdot) p(t)$	312.501	12.76	0.00091
$\Phi (t) p(\cdot)$	313.327	13.58	0.00060
$\Phi (t) p(g^*t)$	313.529	13.79	0.00055
$\Phi (t) p(t)$	314.347	14.60	0.00036
$\Phi (g^*t) p(\cdot)$	314.775	15.03	0.00029
$\Phi (g^*t) p(t)$	317.959	18.22	0.00006
$\Phi (g^*t) p(g^*t)$	318.993	19.25	0.00004

6 <sup>a</sup>  $\Phi$  is the survival probability and p is the encounter probability; full stops (·) indicate a  
 7 single value for both habitats; (g) indicates that value differ by habitat group; (t) indicates that  
 8 values differ by time; and asterisks ( $g^*t$ ) indicate an interaction term between group and time.

9 <sup>b</sup> The lowest AIC<sub>c</sub> indicates the model fitting mark-recapture data best; ΔAIC<sub>c</sub> is the AIC<sub>c</sub>  
 10 difference between the best and individual model; w<sub>i</sub> is the support weight for each model.

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**Table 2.** Details of model averaging for to yield rockpool specific estimates of survival ( $\Phi$ ) and encounter probability ( $p$ ). Variable specific MARK estimates for the best two models are reported and a weighted average of models was conducted as recommended in the MARK guidelines (Cooch and White 2006).

Rockpool ID	Model	weight	$\Phi$		$p$	
			estimate	SE	estimate	SE
A	$\Phi(.) p(g)$	0.580	0.596	0.048	0.172	0.099
	$\Phi(g) p(g)$	0.420	0.936	0.335	0.076	0.078
	Weighted Average		0.739	0.168	0.131	0.090
B	$\Phi(.) p(g)$	0.580	0.596	0.048	0.441	0.133
	$\Phi(g) p(g)$	0.420	0.766	0.138	0.309	0.142
	Weighted Average		0.667	0.086	0.386	0.137
C	$\Phi(.) p(g)$	0.580	0.596	0.048	0.801	0.095
	$\Phi(g) p(g)$	0.420	0.607	0.063	0.796	0.100
	Weighted Average		0.601	0.054	0.799	0.097
D	$\Phi(.) p(g)$	0.580	0.596	0.048	0.468	0.115
	$\Phi(g) p(g)$	0.420	0.457	0.078	0.648	0.154
	Weighted Average		0.538	0.060	0.543	0.131