Amphibia-Reptilia

Survival and recruitment in the population ecology of the endangered *Bombina pachypus* (Amphibia: Anura)

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Supplementary Material

Table S1. Number of capture occasions taken into consideration for the analyses at each site during the study period; numbers between parentheses report the number of unique individuals captured and marked at each site during each year. Population codes as in the text; number between parentheses after population code is the total number of unique individuals captured and marked at the site .

population	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
MA (39)							2 (9)	3 (20)	2 (17)	3 (11)	3 (13)	3 (16)	
SC (108)								4 (61)	3 (44)	5 (59)		3 (59)	
FP (19)							10 (8)	11 (8)	4 (9)	4 (11)	4 (15)	4 (15)	
AQ (43)				1 (31)			8 (27)	13 (15)	4 (16)	3 (12)	4 (11)	3 (8)	
RI (11)	17 (7)	7 (5)	3 (6)	2 (7)	1 (8)	4 (8)	4 (8)	5 (8)	4 (8)	4 (7)	4 (8)	3 (7)	
PA (45)		5 (11)	1 (6)	3 (13)	1 (3)	3 (9)	1 (8)	3 (15)	2 (11)	3 (11)	2 (11)	2 (8)	2 (12)

Table S2. Selection of POPAN models (Φ is for survival probabilities, *p* for capture probabilities, *pent* for probabilities of entrance; the subscripts "t" and "." denote time dependent and constant parameters, respectively) for five populations of *B. pachypus* (codes as in the text). ΔAIC_c is the difference between the AIC_c of the best model and the one of the given model; AIC_c weight is the Akaike weight; *K* is the number of parameters; only models with AIC_c weights > 0.01 are shown.

population	model	ΔAIC_c	AIC_c weight	*K*
MA				
	$\Phi.\ p_t\ pent_t$	0	0.39	10
	$\Phi_t\ p.\ pent_t$	0.19	0.35	11
	$\Phi_t\ p_t\ pent_t$	1.92	0.15	13
	$\Phi.\ p.\ pent_t$	2.42	0.11	8
SC				
	$\Phi_t\ p_t\ pent_t$	0	0.53	8
	$\Phi.\ p_t\ pent_t$	0.27	0.46	7
	$\Phi_t\ p.\ pent_t$	8.08	0.01	7
FP				
	$\Phi.\ p.\ pent_t$	0	0.72	6
	$\Phi_t\ p.\ pent_t$	1.92	0.28	8
AQ				
	$\Phi_t\ p_t\ pent_t$	0	0.65	11
	$\Phi_t\ p.\ pent_t$	1.32	0.34	10
PA				
	$\Phi.\ p_t\ pent_t$	0	0.97	18
	$\Phi\ p.\ pent_t$	6.89	0.03	11

Table S3. Estimates of survival probabilities and capture probabilities from POPAN model for five populations of *B. pachypus* (codes as in the text).

population	year	survival probabilities	capture probabilities
MA	2007		0.87 [0.33 – 0.99]
		0.85 [0.35 – 0.98]	
	2008		0.73 [0.46 – 0.89]
		0.8 [0.45 – 0.95]	
	2009		0.72 [0.46 – 0.89]
		0.6 [0.28 – 0.85]	
	2010		0.62 [0.33 – 0.84]
		0.77 [0.5 – 0.92]	
	2011		0.8 [0.46 – 0.95]
		0.83 [0.43 – 0.97]	
	2012		0.87 [0.33 – 0.99]
SC	2008		0.99 [0.93 – 1]
		0.8 [0.65 – 0.9]	
	2009		0.55 [0.43 – 0.67]
		0.88 [0.67 – 0.96]	
	2010		0.83 [0.67 – 0.92]
		0.79 [0.66 – 0.88]	
	2012		0.93 [0.28 – 0.99]
FP	2007		0.99 [0.99 – 1]
		0.92 [0.61 – 0.99]	
	2008		0.99 [0.99 – 1]
		0.96 [0.78 – 0.99]	
	2009		0.99 [0.99 – 1]
		0.93 [0.65 – 0.99]	
	2010		0.99 [0.99 – 1]
		0.96 [0.78 – 0.99]	
	2011		0.99 [0.99 – 1]
		0.94 [0.77 – 0.99]	
	2012		0.99 [0.99 – 1]
AQ	2004		0.78 [0.39 – 0.95]
		0.84 [0.74 – 0.91]	
	2007		0.99 [0.68 – 1]
		0.52 [0.33 – 0.7]	
	2008		0.99 [0.68 – 1]
		0.99 [0.96 – 1]	
	2009		0.95 [0.72 – 0.99]

		0.85 [0.54 – 0.96]	
	2010		0.87 [0.47 – 0.98]
		0.76 [0.46 – 0.92]	
	2011		0.99 [0.68 – 1]
		0.84 [0.52 – 0.96]	
	2012		0.86 [0.66 – 0.95]
PA	2002		0.99 [0.99 – 1]
		0.75 [0.67 – 0.82]	
	2003		0.99 [0.99 – 1]
		0.75 [0.67 – 0.82]	
	2004		0.77 [0.44 – 0.94]
		0.75 [0.67 – 0.82]	
	2005		0.22 [0.07 – 0.52]
		0.75 [0.67 – 0.82]	
	2006		0.85 [0.43 – 0.98]
		0.75 [0.67 – 0.82]	
	2007		0.71 [0.33 – 0.92]
		0.75 [0.67 – 0.82]	
	2008		0.65 [0.4 – 0.84]
		0.75 [0.67 – 0.82]	
	2009		0.65 [0.36 – 0.87]
		0.75 [0.67 – 0.82]	
	2010		0.77 [0.43 – 0.94]
		0.75 [0.67 – 0.82]	
	2011		0.89 [0.51 – 0.98]
		0.75 [0.67 – 0.82]	
	2012		0.82 [0.38 – 0.97]
		0.75 [0.67 – 0.82]	
	2013		0.99 [0.99 – 1]