

Appendix B: BBS Results

Table B1: Model selection table for ovenbirds in Maryland and Virginia, 1966-2010. We present model name and number, number of parameters (Par.), and difference in Akaike's information criterion between each model and the top model of that set (ΔAIC). The first section compares models for initial abundance, the second for detection probability, and the third for dynamics.

Model	Par.	ΔAIC
A. Initial Abundance		
A.1. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(\cdot)$	4	0
A.2. P $[\Lambda(\cdot)]$ Exponential $[r(\cdot)]p(\cdot)$	3	1262.7
A.3. ZIP $[\Lambda(\cdot)\psi(\cdot)]$ Exponential $[r(\cdot)]p(\cdot)$	4	1264.7
B. Detection Probability		
B.1. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(\text{wind}+1\text{st})$	8	0
B.2. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(\text{wind})$	7	0.9
B.3. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(1\text{st})$	5	5.0
B.4. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(\cdot)$	4	6.4
C. Dynamics		
C.1. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Ricker+Immigration $[r(\cdot)K(\cdot)\iota(\cdot)]p(\text{wind}+1\text{st})$	10	0
C.2. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Gompertz+Immigration $[r(\cdot)K(\cdot)\iota(\cdot)]p(\text{wind}+1\text{st})$	10	8.4
C.3. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential+Immigration $[r(\cdot)\iota(\cdot)]p(\text{wind}+1\text{st})$	9	36.5
C.4. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Geometric-recruitment+Immigration $[\gamma(\cdot)\omega(\cdot)\iota(\cdot)]p(\text{wind}+1\text{st})$	10	38.6
C.5. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Gompertz $[r(\cdot)K(\cdot)]p(\text{wind}+1\text{st})$	9	192.8
C.6. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Ricker $[r(\cdot)K(\cdot)]p(\text{wind}+1\text{st})$	9	195.1
C.7. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Exponential $[r(\cdot)]p(\text{wind}+1\text{st})$	8	271.3
C.8. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Geometric-recruitment $[\gamma(\cdot)\omega(\cdot)]p(\text{wind}+1\text{st})$	9	273.7
C.9. NB $[\Lambda(\cdot)\alpha(\cdot)]$ Constant-recruitment $[\gamma(\cdot)\omega(\cdot)]p(\text{wind}+1\text{st})$	9	1856.7

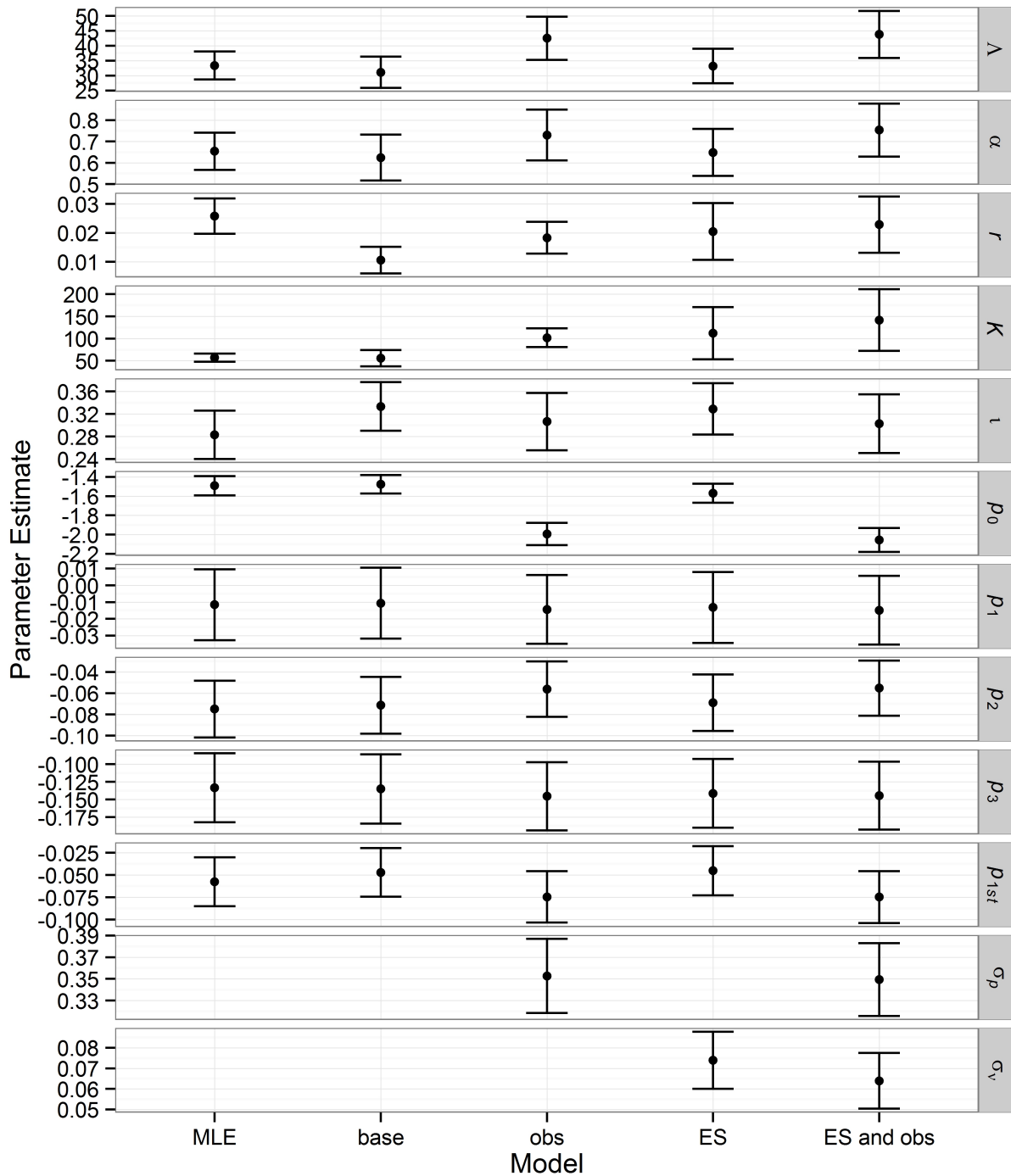


Figure B1: Parameter estimates for ovenbirds in Maryland and Virginia from BBS data, 1966-2010. MLE estimates come from the $\text{NB}[\Lambda(\cdot)\alpha(\cdot)]\text{Ricker+Immigration}[r(\cdot)K(\cdot)\iota(\cdot)]p(\text{wind}+1st)$ model run in the **R** package **unmarked**; base estimates from the same model run in **JAGS**; obs estimates from the base model with random observer effects added; and ES estimates from the base model with regional environmental stochasticity added. Detectability parameters (intercept: p_0 , effect of wind speed 1: p_1 , effect of wind speed 2: p_2 , effect of wind speed 3 or higher: p_3 , effect of first run of a route by an observer: p_{1st} , and random observer SD: σ_p) are on the logit scale. Error bars show SE for MLE estimates and SD for all others.