Appendix 3. *A priori* candidate models describing herbicide treatment and air temperature effects on House Wren nest survival, number of offspring produced, and nestling body condition in the Oregon Coast Range, US, 2014

Model name	Parameters	Description
Nest survival		
Null*	Elevation + mean nest age	Documented variation in nest survival with elevation and nest age
Temperature	T_{max}	Daily maximum temperature influences nest survival directly via inducing nestling metabolic stress and decreased nest survival
Temperature^2	T_{max^2}	Daily maximum temperature influences nest survival directly via inducing nestling metabolic stress and decreased nest survival and may exhibit a quadratic relationship
Herbicide intensity	Herbicide treatment†	Herbicide treatment influences nest survival via altered vegetative abundance, structure, and composition and thus decreased food availability
Temperature + Herbicide intensity	T_{max} + herbicide treatment†	Herbicide treatment influences nest survival but this effect is compounded daily maximum temperatures
Temperature^2 + Herbicide intensity	T_{max^2} + herbicide treatment†	Herbicide treatment influences nest survival but this effect is compounded daily maximum temperatures and may exhibit a quadratic relationship

Number of offspring produced

Null*	Elevation + Maximum brood size	Null model accounts for documented variation in fledgling brood size with elevation and the number of nestlings present in each nest able to survive to fledging
Temperature	T_{max}	Daily maximum temperature influences fledgling brood size directly via inducing nestling metabolic stress and decreased nestling survival
Temperature^2	T_{max^2}	Daily maximum temperature influences fledgling brood size directly via inducing nestling metabolic stress and decreased nestling survival and may exhibit a quadratic relationship
Herbicide intensity	Herbicide treatment†	Herbicide treatment influences fledgling brood size via decreased food availability and thus fewer nestlings survive to fledging
Temperature + Herbicide intensity	T_{max} + herbicide treatment†	Herbicide treatment influences fledging brood size but this effect is compounded by daily maximum temperatures
Temperature^2 + Herbicide intensity (Global model)	Tmax^2 + herbicide treatment†	Herbicide treatment influences nest survival but this effect is compounded daily maximum temperatures and may exhibit a quadratic relationship

Nestling body condition

Null*	Elevation + Mean tarsus length + Mean nestling age	Null model accounts for documented variation in songbird nestling mass with elevation with a factor to correct for nestling size
Temperature	T_{max}	Daily maximum temperature influences nestling mass directly via inducing nestling metabolic stress and thus influencing growth
Temperature^2	T_{max^2}	Daily maximum temperature influences nestling mass directly via inducing nestling metabolic stress and thus influencing growth and may exhibit a quadratic relationship
Herbicide intensity	Herbicide treatment†	Herbicide treatment influences nestling mass via decreased food availability and thus slower nestling growth and lower mass
Temperature + Herbicide intensity	T_{max} + herbicide treatment	Herbicide treatment influences nestling mass but this effect is compounded by daily maximum temperatures
Temperature^2 + Herbicide intensity (Global model)	T_{max}^2 + herbicide treatment†	Herbicide treatment influences nest survival but this effect is compounded daily maximum temperatures and may exhibit a quadratic relationship

* All terms in the null model were included in the candidate set.

† Herbicide treatment includes four levels of intensity (i.e., control, light, moderate, intensive)