Table S1 Model selection table showing the information criteria (AICc and ΔAICc), model likelihood, and relative likelihood (Weight) for each model.

model		# Par	AICc	ΔAICc	Weight
ϕ(st(E,L),date)	ψ(stage)	28	1588.86	0	0.5
ϕ(stage)	ψ(stage)	29	1588.87	0.01	0.5
ϕ(st(E,L))	ψ(stage)	26	1603.58	14.72	0
ϕ(stage,density)	ψ(stage,temp)	38	1605	16.14	0
ϕ(st(E,L),density)	ψ(stage,temp)	32	1606.37	17.51	0
ϕ(st(E,L))	ψ(stage,temp)	30	1607.96	19.1	0
ϕ(stage)	ψ(stage,date)	33	1608.09	19.23	0
ϕ(st(E,L),date)	ψ(stage,temp)	32	1612.62	23.76	0
ϕ(st(E,L),density)	ψ(stage,date)	32	1617.25	28.39	0
ϕ(stage,date)	ψ(stage,date)	38	1620.53	31.67	0
ϕ(stage)	ψ(stage,temp)	33	1621.13	32.27	0
ϕ(stage,density)	ψ(stage,date)	34	1629.24	40.38	0
ϕ(st(E,L),date)	ψ(stage,date)	32	1630.5	41.64	0
ϕ(st(E,L),density)	ψ(stage)	28	1633	44.14	0
ϕ(stage,date)	ψ(stage,temp)	38	1641.69	52.83	0
ϕ(stage,density)	ψ(stage)	38	1647.73	58.87	0
ϕ(st(E,L))	ψ(stage,date)	30	1663.16	74.3	0
ϕ(stage,date)	ψ(stage)	34	1665.02	76.16	0

Note: Models were manipulated such that either survival (ϕ) or transition (ψ) probabilities were functions of stage, survey date, density, or temperature. For survival only, stage was grouped into early and late instar, represented as, st(E,L). All models used stage-dependent probability of observation.

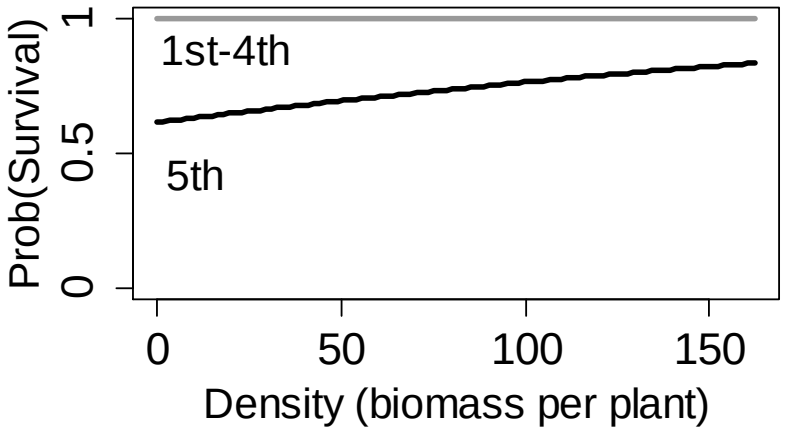

Figure S2 Change in mean survival of *A. aidea* in response to size-scaled density. Size-scaled density was estimated by the sum of the lengths of all caterpillars on a plant at each survey.

Online resource 5: R code and data

See text file with data and R script, “A_aidea_HidMark_Script.txt”