

## NCEAS benchmark results

Benchmark from NCEAS nonlinear modelling project (Bolker et al. 2013), showing model run time in seconds.

<b>Application</b>	<b>Type of model</b>	<b>ADMB</b>	<b>R</b>	<b>BUGS</b>
Orange tree growth	Logistic NLME	0.34	0.05	1.83
Mineralization of terbuthylazine	NLM with ODE	0.6	12	51
N-mixture models with random effects	Binomial mixture model	240	-	720
Owl nestling negotiation	Zero-inflated GLMM	4.5	15.5	725.9
Skate length-based stock assessment	State-space population model	13.0	-	174.2
Tadpole mortality as a function of size	Binomial MLE	0.031	0.066	0.194
Population growth	State-space theta-logistic	5.9	533.9	122.2
Weed density over time	Logistic NLM	0.096	0.008	1.018
Flowering stage and seed production	Binomial GLMM	21	56	525

In summary, ADMB performs several times faster than R and BUGS, except for trivial models that take <0.5 sec to run.