

# Leg Length vs Nest Size

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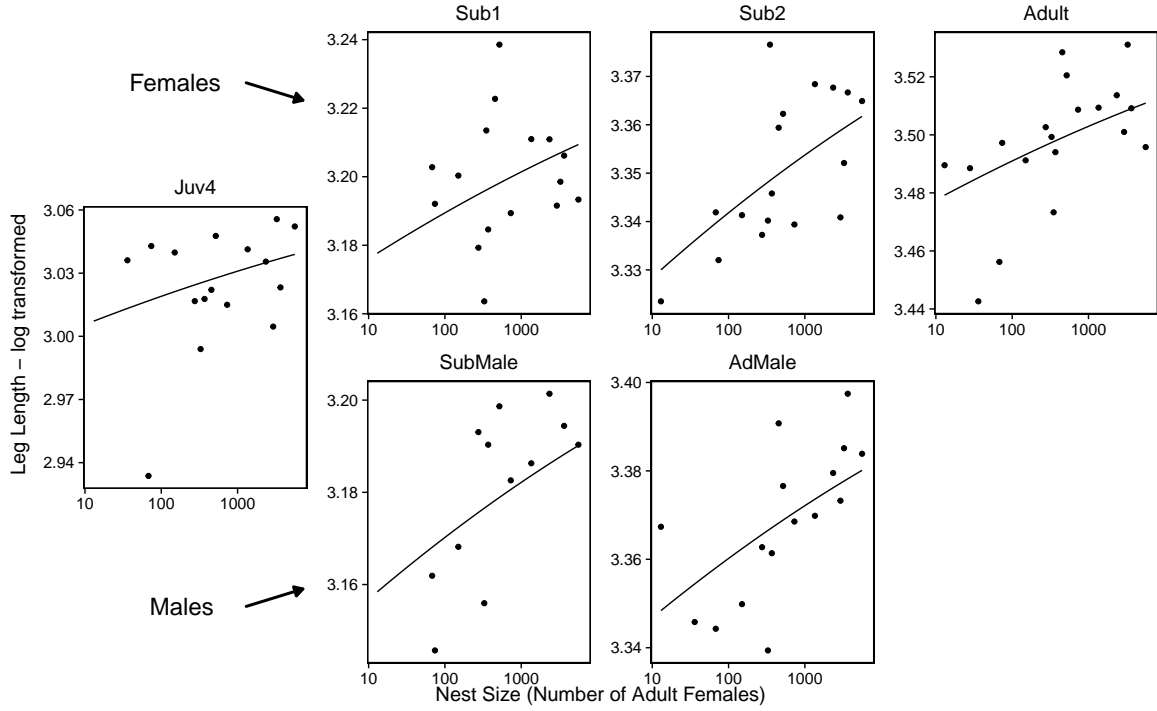
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## AIC Values of all possible models with instar included

(note: If include models without instar as a factor the results seem strange and no significance to lowest AIC model as it doesn't have instar)

AIC	model	num.predictors
-5261	$\log \text{Leg} \sim \log \text{CtFm} + \text{I}(\log \text{CtFm}^2) + \text{Instar} + (1 \text{NestID})$	10
-5262	$\log \text{Leg} \sim \text{I}(\log \text{CtFm}^2) + \text{Instar} + (1 \text{NestID})$	9
-5263	$\log \text{Leg} \sim \log \text{CtFm} + \text{Instar} + (1 \text{NestID})$	9
-5272	$\log \text{Leg} \sim \log \text{CtFm} + \text{I}(\log \text{CtFm}^2) + \text{I}(\log \text{CtFm}^2):\text{Instar} + \text{Instar} + (1 \text{NestID})$	15
-5274	$\log \text{Leg} \sim \text{I}(\log \text{CtFm}^2) + \text{I}(\log \text{CtFm}^2):\text{Instar} + \text{Instar} + (1 \text{NestID})$	14
-5279	$\log \text{Leg} \sim \log \text{CtFm} + \log \text{CtFm}:\text{Instar} + \text{I}(\log \text{CtFm}^2) + \text{Instar} + (1 \text{NestID})$	15
-5281	$\log \text{Leg} \sim \log \text{CtFm} + \log \text{CtFm}:\text{Instar} + \text{Instar} + (1 \text{NestID})$	14
-5303	$\log \text{Leg} \sim \log \text{CtFm} + \log \text{CtFm}:\text{Instar} + \text{I}(\log \text{CtFm}^2) + \text{I}(\log \text{CtFm}^2):\text{Instar} + \text{Instar} + (1 \text{NestID})$	20
-5303	$\log \text{Leg} \sim \log \text{CtFm}:\text{Instar} + \text{I}(\log \text{CtFm}^2) + \text{I}(\log \text{CtFm}^2):\text{Instar} + \text{Instar} + (1 \text{NestID})$	20

## Graph with lowest AIC model superimposed



## Statistics of lowest AIC model

```
## Anova of full model by itself. Model: logLeg ~ I(logCtFm^2) + logCtFm + Instar + (1 | NestID)
## Warning in summary.merMod(model, ddf = "lme4"): additional arguments
## ignored
```

Table 2: Anova of full model by itself. Model:  $\log\text{Leg} \sim I(\log\text{CtFm}^2) + \log\text{CtFm} + \text{Instar} + (1 | \text{NestID})$

	Sum Sq	Mean Sq	NumDF	DenDF	F.value	Pr(>F)
$I(\log\text{CtFm}^2)$	0.0000204	0.0000204	1	22.90761	0.0230657	0.8806161
$\log\text{CtFm}$	0.0003561	0.0003561	1	24.25950	0.4016735	0.5321570
Instar	34.1988088	6.8397618	5	1260.66316	7715.1011466	0.0000000

Table 3: Anova of full vs reduced model. Formulas:  $\log\text{Leg} \sim I(\log\text{CtFm}^2) + \log\text{CtFm} + \text{Instar} + (1 | \text{NestID})$  Reduced:  $\log\text{Leg} \sim \text{Instar} + (1 | \text{NestID})$

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	8	-5256.000	-5214.826	2636.000	-5272.000	NA	NA	NA
object	10	-5260.733	-5209.265	2640.367	-5280.733	8.732802	2	0.0126969