Individual Condition vs Nest Size

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AIC Values of all possible models with instar always included

note: InstarNumber is a factor

AIC_Diff	AIC	model	num.predictors
0	-2087	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarNumber + InstarSex + (1|NestID)	11
1.28	-2086	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	12
1.93	-2086	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	12
3.15	-2084	condResiduals ~ logCtFm + logCtFm:InstarNumber + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	13
5.93	-2082	condResiduals ~ logCtFm + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
5.93	-2082	condResiduals ~ InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	9
6.08	-2081	condResiduals ~ logCtFm + InstarNumber + InstarSex + (1|NestID)	8
7.01	-2080	condResiduals ~ logCtFm + InstarSex:InstarNumber + InstarSex:logCtFm + InstarNumber + InstarSex + (1|NestID)	10
7.38	-2080	condResiduals ~ logCtFm + InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	9
10.19	-2077	condResiduals ~ InstarSex:InstarNumber + InstarNumber + InstarSex + (1|NestID)	8

Graph with lowest AIC model superimposed

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Model:
condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

Note: If line on graph is blue R could not plot the lmer, plotting a simple lm insteadNote: If line on graph
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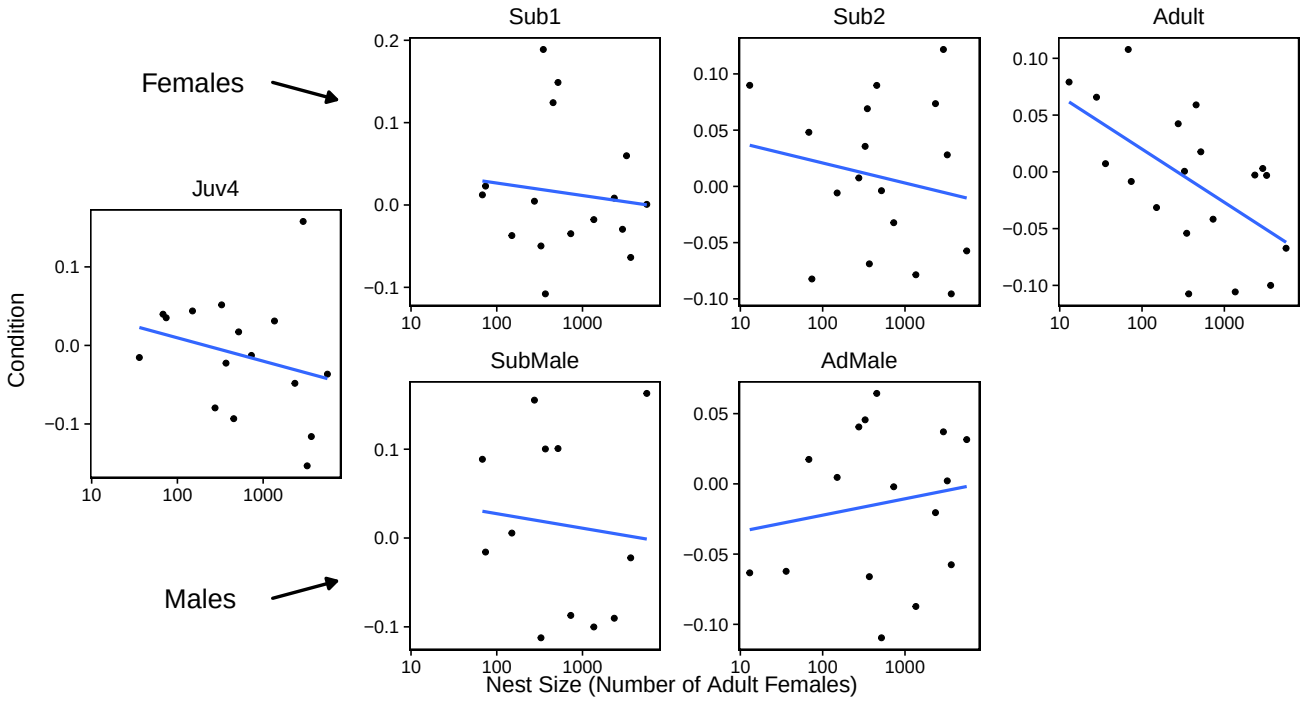

Statistics using model with lowest AIC

Anova of full model alone

-Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

	Sum Sq	Mean Sq	NumDF	DenDF	F.value	Pr(>F)
logCtFm	0.0378694	0.0378694	1	22.4056	3.5420796	0.0728840
InstarNumber	0.0992197	0.0330732	3	1259.3032	3.0934793	0.0261443
InstarSex	0.0000800	0.0000800	1	1250.7516	0.0074805	0.9310909
logCtFm:InstarNumber	0.1297467	0.0432489	3	1264.1620	4.0452516	0.0071053

—Testing Individual Variables, (Anova of full vs reduced model)—

Testing Interaction Term nest size * instar

-Full Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

-Reduced Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + (1 | NestID)

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	8	-2081.356	-2040.201	1048.678	-2097.356	NA	NA	NA
object	11	-2087.432	-2030.844	1054.716	-2109.432	12.07576	3	0.0071281

Testing Instar Number

-Full Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

-Reduced Model: condResiduals ~ logCtFm + InstarSex + (1 | NestID)

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	5	-2080.018	-2054.296	1045.009	-2090.018	NA	NA	NA
object	11	-2087.432	-2030.844	1054.716	-2109.432	19.41382	6	0.0035189

Testing Instar Sex

-Full Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

-Reduced Model: condResiduals ~ logCtFm + InstarNumber + +logCtFm:InstarNumber + (1 | NestID)

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	10	-2089.425	-2037.980	1054.712	-2109.425	NA	NA	NA
object	11	-2087.432	-2030.844	1054.716	-2109.432	0.0074801	1	0.9310788

Testing Nest Size

-Full Model: condResiduals ~ logCtFm + InstarNumber + InstarSex + logCtFm:InstarNumber + (1 | NestID)

-Reduced Model: condResiduals ~ InstarNumber + InstarSex + (1 | NestID)

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	7	-2078.512	-2042.501	1046.256	-2092.512	NA	NA	NA
object	11	-2087.432	-2030.844	1054.716	-2109.432	16.91972	4	0.0020036

Testing Individual Instars

As the interaction is significant testing instar individually

note: pops up saying 'refitting model(s) with ML (instead of REML)' but if make anova refit = FALSE results don't make sense

Adult

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-764.8555	-753.1558	385.4278	-770.8555	NA	NA	NA
object	4	-770.4985	-754.8989	389.2492	-778.4985	7.642948	1	0.0056995

Sub2

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-346.0882	-335.5359	176.0441	-352.0882	NA	NA	NA
object	4	-344.5367	-330.4669	176.2683	-352.5367	0.4484218	1	0.5030854

Sub1

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-415.8428	-404.9064	210.9214	-421.8428	NA	NA	NA
object	4	-413.9760	-399.3942	210.9880	-421.9760	0.133194	1	0.7151432

Juv4

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-338.6935	-328.3403	172.3467	-344.6935	NA	NA	NA
object	4	-337.8281	-324.0239	172.9140	-345.8281	1.134603	1	0.2867956

AdMale

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-293.6775	-285.7156	149.8387	-299.6775	NA	NA	NA
object	4	-291.8605	-281.2447	149.9303	-299.8605	0.1830181	1	0.6687923

SubMale

	Df	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
..1	3	-43.29431	-38.89711	24.64716	-49.29431	NA	NA	NA
object	4	-41.88070	-36.01776	24.94035	-49.88070	0.5863867	1	0.4438198