S3: Description of results of a one way ANOVA and post hoc Tukeys HSD statistics with field trip as the factor and shoot density of *Posidonia australis* and stem density of *Amphibolis antarctica* as dependent variables.

*Posidonia australis* : ANOVA ln transformed location data

summary(model)

 Df Sum Sq Mean Sq F value Pr(>F)

field.trip 9 19.654 2.1837 11.23 2.35e-09 \*\*\*

Residuals 50 9.723 0.1945

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

##Post hoc tests Tukeys HSD

$field.trip

 diff lwr upr p adj

DBCA2-DBCA1 -0.48192857 -1.26218412 0.2983270 0.5731776

DBCA3-DBCA1 -0.21565714 -0.99591269 0.5645984 0.9952479

**DW1-DBCA1** 0.87881429 0.09855873 1.6590698 **0.0161403**

GK1-DBCA1 0.89667143 -0.01825930 1.8116022 0.0590867

GK2-DBCA1 0.88984643 -0.02508430 1.8047772 0.0628354

**GK3-DBCA1** 1.03847143 0.12354070 1.9534022 **0.0148663**

**JS1-DBCA1** 0.94849143 0.09376430 1.8032186 **0.0188541**

**JS2-DBCA1** 0.98981310 0.29557563 1.6840506 **0.0007551**

XCG1-DBCA1 0.19250476 -0.81480082 1.1998103 0.9997353

DBCA3-DBCA2 0.26627143 -0.51398412 1.0465270 0.9790726

**DW1-DBCA2** 1.36074286 0.58048731 2.1409984 **0.0000206**

**GK1-DBCA2** 1.37860000 0.46366927 2.2935307 **0.0003093**

**GK2-DBCA2** 1.37177500 0.45684427 2.2867057 **0.0003360**

**GK3-DBCA2** 1.52040000 0.60546927 2.4353307 **0.0000534**

**JS1-DBCA2** 1.43042000 0.57569287 2.2851471 **0.0000466**

**JS2-DBCA2** 1.47174167 0.77750420 2.1659791 **0.0000002**

XCG1-DBCA2 0.67443333 -0.33287225 1.6817389 0.4596744

**DW1-DBCA3** 1.09447143 0.31421588 1.8747270 **0.0009695**

**GK1-DBCA3** 1.11232857 0.19739784 2.0272593 **0.0067850**

**GK2-DBCA3** 1.10550357 0.19057284 2.0204343 **0.0073068**

**GK3-DBCA3** 1.25412857 0.33919784 2.1690593 **0.0013668**

**JS1-DBCA3** 1.16414857 0.30942144 2.0188757 **0.0015001**

**JS2-DBCA3** 1.20547024 0.51123277 1.8997077 **0.0000225**

XCG1-DBCA3 0.40816190 -0.59914368 1.4154675 0.9386392

GK1-DW1 0.01785714 -0.89707359 0.9327879 1.0000000

GK2-DW1 0.01103214 -0.90389859 0.9259629 1.0000000

GK3-DW1 0.15965714 -0.75527359 1.0745879 0.9998750

JS1-DW1 0.06967714 -0.78504999 0.9244043 0.9999998

JS2-DW1 0.11099881 -0.58323866 0.8052363 0.9999399

XCG1-DW1 -0.68630952 -1.69361511 0.3209961 0.4347944

GK2-GK1 -0.00682500 -1.03900607 1.0253561 1.0000000

GK3-GK1 0.14180000 -0.89038107 1.1739811 0.9999835

JS1-GK1 0.05182000 -0.92739295 1.0310329 1.0000000

JS2-GK1 0.09314167 -0.74963065 0.9359140 0.9999975

XCG1-GK1 -0.70416667 -1.81904965 0.4107163 0.5422829

GK3-GK2 0.14862500 -0.88355607 1.1808061 0.9999753

JS1-GK2 0.05864500 -0.92056795 1.0378579 1.0000000

JS2-GK2 0.09996667 -0.74280565 0.9427390 0.9999953

XCG1-GK2 -0.69734167 -1.81222465 0.4175413 0.5558283

JS1-GK3 -0.08998000 -1.06919295 0.8892329 0.9999995

JS2-GK3 -0.04865833 -0.89143065 0.7941140 1.0000000

XCG1-GK3 -0.84596667 -1.96084965 0.2689163 0.2874133

JS2-JS1 0.04132167 -0.73567602 0.8183194 1.0000000

XCG1-JS1 -0.75598667 -1.82201870 0.3100454 0.3782966

XCG1-JS2 -0.79730833 -1.73955643 0.1449398 0.1641428

summary(modellm)

Residuals:

 Min 1Q Median 3Q Max

-1.06510 -0.20065 -0.07809 0.30586 1.24880

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 5.5581 0.1667 33.348 < 2e-16 \*\*\*

field.tripDBCA2 -0.4819 0.2357 -2.045 0.046177 \*

field.tripDBCA3 -0.2157 0.2357 -0.915 0.364617

field.tripDW1 0.8788 0.2357 3.728 0.000492 \*\*\*

field.tripGK1 0.8967 0.2764 3.244 0.002102 \*\*

field.tripGK2 0.8898 0.2764 3.220 0.002258 \*\*

field.tripGK3 1.0385 0.2764 3.757 0.000450 \*\*\*

field.tripJS1 0.9485 0.2582 3.673 0.000583 \*\*\*

field.tripJS2 0.9898 0.2097 4.720 1.94e-05 \*\*\*

field.tripXCG1 0.1925 0.3043 0.633 0.529864

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.441 on 50 degrees of freedom

Multiple R-squared: 0.669, Adjusted R-squared: 0.6095

F-statistic: 11.23 on 9 and 50 DF, p-value: 2.346e-09

> model <- car::Anova(modellm, type = 2)

> summary(model)

 Sum Sq Df F value Pr(>F)

 Min. : 9.723 Min. : 9.00 Min. :11.23 Min. :0

 1st Qu.:12.205 1st Qu.:19.25 1st Qu.:11.23 1st Qu.:0

 Median :14.688 Median :29.50 Median :11.23 Median :0

 Mean :14.688 Mean :29.50 Mean :11.23 Mean :0

 3rd Qu.:17.171 3rd Qu.:39.75 3rd Qu.:11.23 3rd Qu.:0

 Max. :19.654 Max. :50.00 Max. :11.23 Max. :0

 NA's :1 NA's :1

Amphibolis Antarctica: One Way ANOVA (Type II) with ln transformed stem density as dependent variable.

1 WAY ANOVA

 Df Sum Sq Mean Sq F value Pr(>F)

Field.trip 4 12.27 3.0677 9.139 4.28e-06 \*\*\*

Residuals 77 25.85 0.3357

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Signif. codes:

0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Post hoc tests Tukeys HSD

diff lwr upr p adj

**DW1-DPAW1** 1.2109929 0.54086673 1.88111899 **0.0000282**

**GK1-DPAW1** 0.9423710 0.35376314 1.53097879 **0.0002494**

GK2-DPAW1 0.5314045 -0.08587033 1.14867942 0.1250081

GK3-DPAW1 0.1914000 -0.69509354 1.07789354 0.9741961

GK1-DW1 -0.2686219 -0.78978821 0.25254443 0.6041690

**GK2-DW1** -0.6795883 -1.23292675 -0.12624987 **0.0083749**

**GK3-DW1** -1.0195929 -1.86281641 -0.17636930 **0.0098357**

GK2-GK1 -0.4109664 -0.86215770 0.04022486 0.0914643

GK3-GK1 -0.7509710 -1.53098129 0.02903936 0.0647946

GK3-GK2 -0.3400045 -1.14186813 0.46185903 0.7601838

> plot(TukeyHSD(modelAA,"Field.trip"))

>

> modellmAA <- lm(formula =

+ ln.density ~ Field.trip,

+ data = amphibolis,)

>

> summary(modellmAA)

Call:

lm(formula = ln.density ~ Field.trip, data = amphibolis)

Residuals:

 Min 1Q Median 3Q Max

-1.30530 -0.38865 -0.01735 0.34705 1.22743

Coefficients:

 Estimate Std. Error t value Pr(>|t|)

(Intercept) 5.2661 0.1832 28.742 < 2e-16 \*\*\*

Field.tripDW1 1.2110 0.2399 5.048 2.91e-06 \*\*\*

Field.tripGK1 0.9424 0.2107 4.472 2.63e-05 \*\*\*

Field.tripGK2 0.5314 0.2210 2.405 0.0186 \*

Field.tripGK3 0.1914 0.3173 0.603 0.5482

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Signif. codes:

0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.5794 on 77 degrees of freedom

Multiple R-squared: 0.3219, Adjusted R-squared: 0.2867

F-statistic: 9.139 on 4 and 77 DF, p-value: 4.28e-06

> modelAA <- car::Anova(modellmAA, type = 2)

> summary(modelAA)

 Sum Sq Df F value

 Min. :12.27 Min. : 4.00 Min. :9.139

 1st Qu.:15.67 1st Qu.:22.25 1st Qu.:9.139

 Median :19.06 Median :40.50 Median :9.139

 Mean :19.06 Mean :40.50 Mean :9.139

 3rd Qu.:22.45 3rd Qu.:58.75 3rd Qu.:9.139

 Max. :25.85 Max. :77.00 Max. :9.139

 NA's :1

 Pr(>F)

 Min. :4.3e-06

 1st Qu.:4.3e-06 1