Supplementary Material

# Supplementary Figures and Tables



**Supplementary Figure 1.** Temperature and dissolved oxygen profiles, taken across seasons and sampling periods, at sites A and B. The lower range of DO at site B reflects more early-morning data from that site (DO follows a diel cycle with lowest values overnight).

Chart

Description automatically generated **Supplementary Figure 2.** Rank abundance curve highlighting the ten most abundant taxa. “Gastropoda” was a catch-all for minute gastropods that could not be identified to lower taxonomic level, and was consequently not analyzed in detail. The annelid family Maldanidae was very abundant in 2015 but mostly absent in 2016, so it was also excluded from detailed taxon-level abundance analysis for each sampling period.

 **Supplementary Figure 3.** Proportional representation of *Capitella cf. capitata,* relative to other capitellid species, in sediment from *Ruppia* beds at sites A (ctrl) and B (oiled). Numbers at bottom indicate the number of samples identified to the genus level (top) and the total number of capitellid individuals counted in those samples (bottom). Note that no captellids were observed in any *Ruppia* samples following the summer 2016 reoiling event.

**Supplementary Table 1.** List of taxa used for analyses. In general, analyses were conducted at the family level, but in a few cases (i.e. Amphipoda) only order-level identification was possible.

|  |  |  |
| --- | --- | --- |
| **Annelida** | **Arthropoda** | **Echinodermata** |
| Oligochaeta.Oligochaeta | Crustacea.Amphipoda.Ampeliscidae | Holothuroidea.Holothuroidea |
| Polychaeta.Ampharetidae | Crustacea.Amphipoda.Other | Holothuroidea.Synaptidae |
| Polychaeta.Amphinomidae | Crustacea.Amphipoda.Caprellidae | Ophiuroidea.Amphiuridae |
| Polychaeta.Arenicolidae | Crustacea.Amphipoda.Corophiidae | Ophiuroidea.Ophiactidae |
| Polychaeta.Capitellidae | Crustacea.Amphipoda.Gammaridae | Ophiuroidea.Ophiuroidea |
| Polychaeta.Chaetopteridae | Crustacea.Brachyura.Cancridae | **Mollusca** |
| Polychaeta.Cirratulidae | Crustacea.Brachyura.Decapoda | Bivalvia.Astartidae |
| Polychaeta.Cossuridae | Crustacea.Brachyura.Panopeidae | Bivalvia.Bivalvia |
| Polychaeta.Eunicidae | Crustacea.Brachyura.Portunidae | Bivalvia.Mactridae |
| Polychaeta.Glyceridae | Crustacea.Brachyura.Xanthidae | Bivalvia.Myidae |
| Polychaeta.Goniadidae | Crustacea.Decapoda.Alpheidae | Bivalvia.Mytilidae |
| Polychaeta.Hesionidae | Crustacea.Decapoda.Hippolytidae | Bivalvia.Nuculanidae |
| Polychaeta.Lumbrineridae | Crustacea.Decapoda.Paguridae | Bivalvia.Solecurtidae |
| Polychaeta.Maldanidae | Crustacea.Decapoda.Pandalidae | Bivalvia.Solenoidea |
| Polychaeta.Nereididae | Crustacea.Decapoda.Pasiphaeidae | Bivalvia.Tellinidae |
| Polychaeta.Oenonidae | Crustacea.Decapoda.Pinnotheridae | Bivalvia.Veneridae |
| Polychaeta.Onuphidae | Crustacea.Isopoda.Anthuridae | Gastropoda.Acteocinidae |
| Polychaeta.Opheliidae | Crustacea.Isopoda.Idoteidae | Gastropoda.Acteonidae |
| Polychaeta.Orbiniidae | Crustacea.Isopoda.Sphaeromatidae | Gastropoda.Buccinidae |
| Polychaeta.Paraonidae | Crustacea.Malacostraca.Cumacea | Gastropoda.Calyptraeidae |
| Polychaeta.Phyllodocidae | Crustacea.Malacostraca.Euphausiidae | Gastropoda.Cerithiidae |
| Polychaeta.Pilargidae | Crustacea.Malacostraca.Other | Gastropoda.Columbellidae |
| Polychaeta.Polynoidae | Crustacea.Malacostraca.Mysidacea | Gastropoda.Cystiscidae |
| Polychaeta.Sabellidae | Crustacea.Malacostraca.Palaemonidae | Gastropoda.Other |
| Polychaeta.Spionidae | Crustacea.Malacostraca.Penaeidae | Gastropoda.Haminoidae |
| Polychaeta.Syllidae | Crustacea.Tanaidacea.Leptochelidae | Gastropoda.Hydrobiidae |
|  | Crustacea.Tanaidacea.Tanaidacea | Gastropoda.Litiopidae |
|  | **Chordata** | Gastropoda.Nassariidae |
|  | Cephalochordata.Branchiostomatidae | Gastropoda.Neritidae |
|  | Craniata.Osteichthyes.Gobiidae | Gastropoda.Pyramidellidae |
|  | Craniata.Osteichthyes.Ophichthidae |  |
|  | Craniata.Osteichthyes.Other |  |

**Supplementary Appendix 1  
Constraining the False Discovery Rate**

Ecological community data can be explored at many taxonomic or functional levels, leading to multiple comparisons in most community studies. When conducting multiple comparisons, it is important to consider the implications for Type I error – falsely rejecting a true null hypothesis. Various methods exist to constrain the Type I error risk. Some minimize the risk of making even one Type I error (i.e. the Bonferroni method, (Cabin & Mitchell 2000)), while others focus on keeping the rate of Type I error below 0.05 – this is the False Discovery Rate (FDR, (Benjamini & Hochberg 1995)). Both approaches reduce statistical power, essentially trading reduced Type I error risk for increased Type II error risk, but the Benjamini and Hochberg (B-H) approach sacrifices less power than Bonferroni, and their False Discovery concept is the basis for multiple comparison procedures now widely used in bioinformatics.

In the ecological literature, there is little consensus about when and how to apply multiple comparison procedures (reviewed (Cabin & Mitchell 2000, Moran 2003, García 2004); many published studies ignore the issue entirely. The greatest risk of false discovery occurs when hypotheses are not independent. For our study, one could argue that each taxon represents an independent hypothesis test, rendering correction unnecessary. However, all of the data within a given sampling period came from a single set of cores, and animals within a single core may or may not influence each other, so the argument for independence is weak.

False discovery becomes progressively less likely when many hypotheses are being rejected (Storey 2002), and when strong biological reasons suggest *a priori* that many nulls will be false. In this study, we were primarily interested in evaluating the ‘site’ effect (oiled vs unoiled). Because we may or may not expect to see an oil effect, this is where the greatest risk of false discovery lies. We also evaluated ‘habitat’ effects, because any benthic ecologist would expect infaunal communities to differ in *Ruppia* versus unvegetated areas. Given this biological knowledge, we see false discovery regarding ‘habitat’ terms as being unlikely. (Even if we did make a Type I error regarding ‘habitat’, it would be of little consequence relative to the large literature that already exists for seagrass ecology.)

Taking all these mathematical and philosophical considerations together, we have opted to apply the B-H method to p-value interpretations for the ‘site’ main effect for all univariate analyses in the study. This includes individual-taxon abundance, total abundance, taxon richness, and Shannon diversity. The B-H method does not adjust p-values, nor does it identify a single p-value significance cut-off; rather, it identifies the range of ranked p- values that ought to be rejected. We show these ranks in **Supplementary Table 2**. The B-H procedure, with few exceptions, does not alter the interpretation of our statistical results. We therefore report raw p-values throughout the main text, with any exceptions clearly noted.

We have applied the B-H procedure to all comparisons, ranked irrespective of sampling periods. We would argue that samples collected in different sampling periods are independent of each other, and therefore the B-H procedure could be applied to each sampling period separately, which should be less conservative. In practice, however, the B- H interpretation is the same either way.

To implement the B-H procedure, we first ranked all univariate p-values for ‘site’ effects.   
We then applied the B-H equation, " !, where *i* = the rank of the *ith* p-value, *m* = the number of hypotheses tested (here m = 48), and Q = 0.05, the target False Discovery Rate. We then identify the highest ranked p-value for which "#$% < ! !, and reject the null hypothesis for this and all lower-ranked tests.

**Supplementary Table 2.** Results of the Benjamini-Hochberg method for constraining the False Discovery Rate.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Response Variable | Sampling period | Observed Pr(>F) for the ‘site’ term | Rank |  | B-H  interpretation  (\* = Reject H0) | B-H interpretation different from p ≤ 0.05? |
| Capitellid Abundance | S16 | 3.72E-24 | 1 |  | \* | no |
| Amphipod Abundance | S16 | 4.30E-10 | 2 |  | \* | no |
| Total Abundance | S16 | 1.08E-08 | 3 |  | \* | no |
| Capitellid Abundance | S15 | 4.05E-08 | 4 |  | \* | no |
| Taxon Richness | S16 | 9.94E-08 | 5 |  | \* | no |
| Nereidid Abundance | F15 | 2.15E-06 | 6 |  | \* | no |
| Tellinid Abundance | S15 | 4.99E-06 | 7 |  | \* | no |
| Ampharetid Abundance | S15 | 6.25E-06 | 8 |  | \* | no |
| Spionid Abundance | S16 | 1.33E-05 | 9 |  | \* | no |
| Neritid Abundance | F15 | 1.43E-05 | 10 |  | \* | no |
| Neritid Abundance | F16 | 3.52E-05 | 11 |  | \* | no |
| Ampharetid Abundance | F15 | 1.21E-04 | 12 |  | \* | no |
| Paraonid Abundance | F15 | 1.52E-04 | 13 |  | \* | no |
| Capitellid Abundance | F16 | 1.68E-04 | 14 |  | \* | no |
| Capitellid Abundance | F15 | 2.00E-04 | 15 |  | \* | no |
| Ampharetid Abundance | S16 | 2.49E-04 | 16 |  | \* | no |
| Paraonid Abundance | S15 | 2.85E-04 | 17 |  | \* | no |
| Neritid Abundance | S16 | 2.89E-04 | 18 |  | \* | no |
| Amphipod Abundance | S15 | 0.0012 | 19 |  | \* | no |
| Spionid Abundance | S15 | 0.0013 | 20 |  | \* | no |
| Shannon |  | 0.0018 | 21 |  | \* | no |
| Tellinid Abundance | S16 | 0.0018 | 22 |  | \* | no |
| Arenicolid Abundance | S16 | 0.0050 | 23 |  | \* | no |
| Nereidid Abundance | S16 | 0.0067 | 24 |  | \* | no |
| Arenicolid Abundance | F16 | 0.0131 | 25 |  | \* | no |
| Functional Richness | S15 | 0.0260 | 26 |  | \* | no |
| Spionid Abundance | F16 | 0.0268 | 27 |  | \* | no |
| Arenicolid Abundance | S15 | 0.0320 | 28 |  | ns | **yes** |
| Taxon Richness | S15 | 0.0330 | 29 |  | ns | **yes** |
| Nereidid Abundance | F16 | 0.0944 | 30 |  | ns | no |
| Ampharetid Abundance | F16 | 0.0954 | 31 |  | ns | no |
| Arenicolid Abundance | F15 | 0.1130 | 32 |  | ns | no |
| Neritid Abundance | S15 | 0.1133 | 33 |  | ns | no |
| Functional Richness | F15 | 0.1220 | 34 |  | ns | no |
| Taxon Richness | F15 | 0.1470 | 35 |  | ns | no |
| Amphipod Abundance | F15 | 0.1480 | 36 |  | ns | no |
| Taxon Richness | F16 | 0.1590 | 37 |  | ns | no |
| Total Abundance | S15 | 0.1600 | 38 |  | ns | no |
| Functional Richness | F16 | 0.2260 | 39 |  | ns | no |
| Spionid Abundance | F15 | 0.2320 | 40 |  | ns | no |
| Paraonid Abundance | F16 | 0.2512 | 41 |  | ns | no |
| Tellinid Abundance | F16 | 0.3550 | 42 |  | ns | no |
| Tellinid Abundance | F15 | 0.3870 | 43 |  | ns | no |
| Nereidid Abundance | S15 | 0.6050 | 44 |  | ns | no |
| Total Abundance | F16 | 0.6490 | 45 |  | ns | no |
| Total Abundance | F15 | 0.7730 | 46 |  | ns | no |
| Paraonid Abundance | S16 | 0.8394 | 47 |  | ns | no |
| Amphipod Abundance | F16 | 0.8990 | 48 |  | ns | no |

**Supplementary Appendix 2**

**Statistical tables for community-level analyses (Figures 2-3)**

PERMANOVA summary for family-level ordination shown in Figure 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sampling Period** | **Term** | **F** | **R2** | **P** |
| Summer 2015 | Site | F1,39 = 14.0 | 0.245 | 0.001 |
|  | Habitat | F1,39 = 4.98 | 0.087 | 0.002 |
|  | Interaction | F1,39 = 2.04 | 0.036 | 0.034 |
| Fall 2015 | Site | F1,30 = 8.25 | 0.171 | 0.001 |
|  | Habitat | F1,30 = 10.83 | 0.224 | 0.001 |
|  | Interaction | F1,30 = 2.24 | 0.046 | 0.034 |
| Summer 2016 | Site | F1, 48 = 15.7 | 0.208 | 0.001 |
|  | Habitat | F1, 48 = 9.77 | 0.129 | 0.001 |
|  | Interaction | F1, 48 = 4.28 | 0.056 | 0.001 |
| Fall 2016 | Site | F1,53 = 7.47 | 0.087 | 0.001 |
|  | Habitat | F1,53 = 23.7 | 0.276 | 0.001 |
|  | Interaction | F1,53 = 0.87 | 0.057 | 0.004 |

ANOVA results for square root transformed total abundance (Figure 3). Non-significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Sum Sq | df | F value | Pr(>F) |
| **Summer 2015** |  |  |  |  |
| Site | 15.57 | 1 | 2.06 | 0.16 |
| Residuals | 287.79 | 38 |  |  |
| **Fall 2015** |  |  |  |  |
| Site | 0.26 | 1 | 0.09 | 0.77 |
| Habitat | 174.62 | 1 | 56.46 | <<0.0001 |
| Residuals | 86.59 | 28 |  |  |
| **Summer 2016 (re-oiling event)** |  |  |  |  |
| Site | 222.11 | 1 | 48.32 | <<0.0001 |
| Habitat | 2.41 | 1 | 0.52 | 0.47 |
| Site x Habitat | 50.76 | 1 | 11.04 | <<0.0001 |
| Residuals | 211.43 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| Site | 0.71 | 1 | 0.21 | 0.65 |
| Habitat | 72.47 | 1 | 21.36 | <<0.0001 |
| Residuals | 173.06 | 51 |  |  |

ANOVA results for taxonomic richness (Figure 3). Non-significant terms have been dropped. The p-value marked as ns is non-significant after applying the Benjamini-Hochberg procedure, see Supplementary Table 2.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Sum Sq | df | F value | Pr(>F) |
| **Summer 2015** |  |  |  |  |
| site | 53.04 | 1 | 4.91 | 0.03 (ns) |
| habitat | 185.82 | 1 | 17.19 | 0.0002 |
| Residuals | 399.96 | 37 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 19.67 | 1 | 2.22 | 0.15 |
| habitat | 351.57 | 1 | 39.71 | <<0.0001 |
| Residuals | 247.88 | 28 |  |  |
| **Summer 2016 (re-oiling event)** |  |  |  |  |
| site | 437.61 | 1 | 39.81 | <<0.0001 |
| habitat | 12.32 | 1 | 1.12 | 0.3 |
| site:habitat | 144.35 | 1 | 13.13 | 0.0007 |
| Residuals | 505.71 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 20.43 | 1 | 2.04 | 0.16 |
| habitat | 77.39 | 1 | 7.75 | 0.008 |
| Residuals | 509.57 | 51 |  |  |

ANOVA results for Shannon diversity (Figure 3).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Sum Sq | Df | F value | Pr(>F) | Exact Pr(>F) |
| **Summer 2015** |  |  |  |  |  |
| site | 1.64 | 1 | 21.79 | 0 | << 0.0001 |
| habitat | 0.87 | 1 | 11.59 | 0 | 0.0016 |
| Residuals | 2.78 | 37 |  |  |  |
| **Fall 2015** |  |  |  |  |  |
| site | 1.72 | 1 | 13.18 | 0 | 0.0012 |
| habitat | 2.12 | 1 | 16.24 | 0 | 0.00041 |
| site:habitat | 0.31 | 1 | 2.41 | 0.13 | 0.13 |
| Residuals | 3.53 | 27 |  |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |  |
| site | 2.1 | 1 | 11.34 | 0 | 0.0015 |
| habitat | 0.37 | 1 | 2.02 | 0.16 | 0.16 |
| site:habitat | 1.59 | 1 | 8.6 | 0.01 | 0.005 |
| Residuals | 8.52 | 46 |  |  |  |
| **Fall 2016** |  |  |  |  |  |
| site | 0.31 | 1 | 3.29 | 0.08 | 0.08 |
| Residuals | 4.93 | 52 |  |  |  |

**Supplementary Appendix 3**

**Tables for taxon level analyses (Figures 4-6)**

***Taxa are in alphabetical order by family***

Ampharetidae (Annelida) ANOVA results. A square-root transformation has been applied, and non-significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Summer 2015** | Sum Sq | Df | F value | Pr(>F) |
| site | 17.67 | 1 | 27.94 | <<0.0001 |
| habitat | 7.48 | 1 | 11.83 | 0.0015 |
| site:habitat | 1.8 | 1 | 2.84 | 0.1 |
| Residuals | 22.76 | 36 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 14.42 | 1 | 20.13 | 0.0001 |
| habitat | 11.12 | 1 | 15.54 | 0.0005 |
| site:habitat | 2.89 | 1 | 4.03 | 0.05 |
| Residuals | 19.33 | 27 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 37.48 | 1 | 15.72 | 0.0003 |
| habitat | 9.63 | 1 | 4.2 | 0.046 |
| Residuals | 117.37 | 47 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 3.15 | 1 | 2.89 | 0.09 |
| habitat | 1.94 | 1 | 1.78 | 0.19 |
| site:habitat | 7.13 | 1 | 6.55 | 0.01 |
| Residuals | 54.46 | 50 |  |  |

Amphipoda (Arthropoda: Crustacea) ANOVA results. A square-root transformation has been applied, and non-significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Summer 2015** | Sum Sq | Df | F value | Pr(>F) |
| site | 21.39 | 1 | 12.27 | 0.001 |
| habitat | 3.89 | 1 | 2.23 | 0.14 |
| Residuals | 64.53 | 37 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 1.73 | 1 | 2.21 | 0.15 |
| habitat | 11.06 | 1 | 14.14 | 0.0008 |
| Residuals | 21.9 | 28 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 36.31 | 1 | 62.25 | <<0.0001 |
| habitat | 6.9 | 1 | 11.84 | 0.0013 |
| site:habitat | 1.8 | 1 | 3.08 | 0.09 |
| Residuals | 26.84 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 0.02 | 1 | 0.02 | 0.9 |
| habitat | 41.08 | 1 | 33.49 | <<0.0001 |
| Residuals | 62.57 | 51 |  |  |

Arenicolidae (Annelida) Kruskal-Wallis results. Note that the p-value for Summer 2015 just misses the B-H adjusted cut-off for significance for this test, which is 0.030 (see Supplementary Table 2)

|  |  |  |
| --- | --- | --- |
|  |  | p |
| **Summer 2015** | 4.6 | 0.03 (ns) |
| **Fall 2015** | 2.5 | 0.11 |
| **Summer 2016 (re-oiling event)** | 7.5 | 0.005 |
| **Fall 2016** | 6.15 | 0.013 |

Capitellidae (Annelida) ANOVA results. A square-root transformation has been applied, and non -significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Sum Sq | Df | F value | Pr(>F) |
| **Summer 2015** |  |  |  |  |
| site | 109.1 | 1 | 46.79 | <<0.0001 |
| Residuals | 88.61 | 38 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 69.8 | 1 | 18.48 | <<0.0001 |
| habitat | 11.35 | 1 | 3.01 | 0.09 |
| site:habitat | 28.12 | 1 | 7.44 | 0.01 |
| Residuals | 102 | 27 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 255.78 | 1 | 392.44 | <<0.0001 |
| habitat | 9.95 | 1 | 15.27 | 0.0003 |
| site:habitat | 40.9 | 1 | 62.75 | <<0.0001 |
| Residuals | 30.49 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 24.99 | 1 | 16.55 | 0.0002 |
| habitat | 46.1 | 1 | 30.54 | <<0.0001 |
| site:habitat | 9.47 | 1 | 6.28 | 0.02 |
| Residuals | 75.47 | 50 |  |  |

Nereididae (Annelida) ANOVA results. A square-root transformation has been applied, and non -significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Summer 2015** | Sum Sq | Df | F value | Pr(>F) |
| site | 0.24 | 1 | 0.27 | 0.6 |
| habitat | 18.17 | 1 | 20.79 | <<0.0001 |
| Residuals | 32.34 | 37 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 17.85 | 1 | 35.28 | <<0.0001 |
| habitat | 21.53 | 1 | 42.56 | <<0.0001 |
| Residuals | 14.16 | 28 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 2.53 | 1 | 8.06 | 0.007 |
| habitat | 4.67 | 1 | 13.48 | 0.00067 |
| site:habitat | 1.62 | 1 | 5.24 | 0.027 |
| Residuals | 15.4 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 2.89 | 1 | 2.91 | 0.09 |
| habitat | 12.04 | 1 | 12.13 | 0.0010 |
| site:habitat | 10.94 | 1 | 11.02 | 0.0017 |
| Residuals | 49.63 | 50 |  |  |

Neritidae (Gastropoda) Kruskal-Wallis results.

|  |  |  |
| --- | --- | --- |
|  |  | p |
| **Summer 2015** | 2.511 | 0.11 |
| **Fall 2015** | 18.83 | <<0.0001 |
| **Summer 2016 (re-oiling event)** | 13.14 | 0.0003 |
| **Fall 2016** | 17.11 | <<0.0001 |

Paraonidae (Annelida) Kruskal-Wallis results.

|  |  |  |
| --- | --- | --- |
|  |  | p |
| **Summer 2015** | 13.2 | 0.0003 |
| **Fall 2015** | 14.30 | 0.0002 |
| **Summer 2016 (re-oiling event)** | 0.04 | 0.84 |
| **Fall 2016** | 1.32 | 0.25 |

Spionidae (Annelida) ANOVA results. A square-root transformation has been applied, and non-significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Sum Sq | Df | F value | Pr(>F) |
| **Summer 2015** |  |  |  |  |
| site | 56.71 | 1 | 12.05 | 0.0013 |
| Residuals | 178.77 | 38 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 1.31 | 1 | 1.49 | 0.23 |
| habitat | 76.43 | 1 | 87.19 | <<0.0001 |
| site:habitat | 4.52 | 1 | 5.15 | 0.03 |
| Residuals | 23.67 | 27 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 20.36 | 1 | 23.78 | <<0.0001 |
| habitat | 0.97 | 1 | 1.14 | 0.3 |
| site:habitat | 6.24 | 1 | 7.29 | 0.01 |
| Residuals | 40.04 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 6.39 | 1 | 5.2 | 0.03 |
| habitat | 54.87 | 1 | 44.63 | <<0.0001 |
| Residuals | 62.7 | 51 |  |  |

Tellinidae (Mollusca: Bivalvia) ANOVA results. A square-root transformation has been applied, and non -significant terms have been dropped.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Summer 2015** | Sum Sq | Df | F value | Pr(>F) |
| site | 49.98 | 1 | 28.22 | <<0.0001 |
| Residuals | 67.31 | 38 |  |  |
| **Fall 2015** |  |  |  |  |
| site | 0.47 | 1 | 0.77 | 0.39 |
| Residuals | 17.56 | 29 |  |  |
| **Summer 2016**  **(re-oiling event)** |  |  |  |  |
| site | 11.59 | 1 | 10.93 | 0.002 |
| habitat | 15.73 | 1 | 14.79 | 0.0004 |
| site:habitat | 8.15 | 1 | 7.71 | 0.008 |
| Residuals | 50.5 | 46 |  |  |
| **Fall 2016** |  |  |  |  |
| site | 0.78 | 1 | 0.87 | 0.35 |
| habitat | 44.82 | 1 | 50.34 | <<0.0001 |
| site:habitat | 3.6 | 1 | 4.05 | 0.05 |
| Residuals | 44.51 | 50 |  |  |

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