|  |  |  |  |
| --- | --- | --- | --- |
| **Observation** | **Parameter** | **Relative importance** | **Model distribution** |
| Wave height | IH wave height | 0.600 | Gamma |
|  | VH wave height | 0.400 |  |
| Light | IH deep | 0.222 | Gaussian |
|  | IH shallow | 0.259 |  |
|  | VH deep | 0.241 |  |
|  | VH shallow | 0.278 |  |
| Temperature | IH deep | 0.248 | Gaussian |
|  | IH shallow | 0.250 |  |
|  | VH deep | 0.250 |  |
|  | VH shallow | 0.252 |  |
| Rugosity | IH deep | 0.138 | Gaussian |
|  | IH shallow | 0.194 |  |
|  | VH deep | 0.306 |  |
|  | VH shallow | 0.362 |  |
| Coralline cover | IH deep | 0.383 | Zero-inflated Beta |
|  | IH shallow | 0.261 |  |
|  | VH deep | 0.239 |  |
|  | VH shallow | 0.117 |  |
| Macroalgae cover | IH deep | 0.250 | Zero-inflated Beta |
|  | IH shallow | 0.251 |  |
|  | VH deep | 0.249 |  |
|  | VH shallow | 0.250 |  |
| Turf algae cover | IH deep | 0.283 | Zero-inflated Beta |
|  | IH shallow | 0.249 |  |
|  | VH deep | 0.251 |  |
|  | VH shallow | 0.217 |  |
| Substrate cover | IH deep | 0.446 | Zero-one inflated Beta |
|  | IH shallow | 0.258 |  |
|  | VH deep | 0.242 |  |
|  | VH shallow | 0.054 |  |
| Microhabitat | IH deep: Small *D. savignyi* in crevices | 0.020 | Beta |
|  | IH deep: Medium *D. savignyi* in crevices | 0.021 |  |
|  | IH deep: Small *D. savignyi* as free-living | 0.017 |  |
|  | IH deep: Medium *D. savignyi* as free-living | 0.018 |  |
|  | IH deep: Small *D. setosum* in crevices | 0.014 |  |
|  | IH deep: Medium *D. setosum* in crevices | 0.015 |  |
|  | IH deep: Medium *D. setosum* as free-living | 0.012 |  |
|  | IH deep: Large *D. setosum* as free-living | 0.015 |  |
|  | IH deep: Medium *H. crassispina* in crevices | 0.022 |  |
|  | IH deep: Medium *H. crassispina* as free-living | 0.019 |  |
|  | IH shallow: Small *D. savignyi* in pits | 0.022 |  |
|  | IH shallow: Medium *D. savignyi* in pits | 0.023 |  |
|  | IH shallow: Small *D. savignyi* in crevices | 0.022 |  |
|  | IH shallow: Medium *D. savignyi* in crevices | 0.023 |  |
|  | IH shallow: Small *D. savignyi* as free-living | 0.019 |  |
|  | IH shallow: Medium *D. savignyi* as free-living | 0.020 |  |
|  | IH shallow: Large *D. savignyi* as free-living | 0.023 |  |
|  | IH shallow: Small *D. setosum* in pits | 0.016 |  |
|  | IH shallow: Medium *D. setosum* in pits | 0.017 |  |
|  | IH shallow: Small *D. setosum* in crevices | 0.016 |  |
|  | IH shallow: Medium *D. setosum* in crevices | 0.017 |  |
|  | IH shallow: Small *D. setosum* as free-living | 0.013 |  |
|  | IH shallow: Medium *D. setosum* as free-living | 0.014 |  |
|  | IH shallow: Medium *H. crassispina* in pits | 0.024 |  |
|  | IH shallow: Medium *H. crassispina* in crevices | 0.024 |  |
|  | IH shallow: Medium *H. crassispina* as free-living | 0.021 |  |
|  | VH deep: Small *D. savignyi* in crevices | 0.019 |  |
|  | VH deep: Large *D. savignyi* in crevices | 0.023 |  |
|  | VH deep: Small *D. savignyi* as free-living | 0.016 |  |
|  | VH deep: Large *D. savignyi* as free-living | 0.020 |  |
|  | VH deep: Small *D. setosum* in crevices | 0.013 |  |
|  | VH deep: Large *D. setosum* in crevices | 0.017 |  |
|  | VH deep: Small *D. setosum* as free-living | 0.010 |  |
|  | VH deep: Large *D. setosum* as free-living | 0.015 |  |
|  | VH deep: Small *H. crassispina* in crevices | 0.020 |  |
|  | VH deep: Large *H. crassispina* in crevices | 0.024 |  |
|  | VH deep: Large *H. crassispina* as free-living | 0.021 |  |
|  | VH shallow: Small *D. savignyi* in pits | 0.021 |  |
|  | VH shallow: Medium *D. savignyi* in crevices | 0.022 |  |
|  | VH shallow: Large *D. savignyi* in crevices | 0.026 |  |
|  | VH shallow: Medium *D. savignyi* as free-living | 0.019 |  |
|  | VH shallow: Large *D. savignyi* as free-living | 0.023 |  |
|  | VH shallow: Small *D.* *setosum* in pits | 0.015 |  |
|  | VH shallow: Medium *D. setosum* in pits | 0.016 |  |
|  | VH shallow: Small *D. setosum* in crevices | 0.016 |  |
|  | VH shallow: Medium *D. setosum* in crevices | 0.017 |  |
|  | VH shallow: Large *D. setosum* in crevices | 0.020 |  |
|  | VH shallow: Medium *D. setosum* as free-living | 0.014 |  |
|  | VH shallow: Large *D. setosum* as free-living | 0.017 |  |
|  | VH shallow: Small *H. crassispina* in pits | 0.022 |  |
|  | VH shallow: Medium *H. crassispina* in pits | 0.023 |  |
|  | VH shallow: Medium *H. crassispina* in crevices | 0.023 |  |
|  | VH shallow: Medium *H. crassispina* as free-living | 0.020 |  |
| D. savignyi density | IH deep | 0.161 | Hurdle negative binomial |
|  | IH shallow | 0.230 |  |
|  | VH deep | 0.270 |  |
|  | VH shallow | 0.339 |  |
| D. setosum density | IH deep | 0.263 | Hurdle negative binomial |
|  | IH shallow | 0.235 |  |
|  | VH deep | 0.265 |  |
|  | VH shallow | 0.237 |  |
| H. crassispina density | IH deep | 0.112 | Hurdle negative binomial |
|  | IH shallow | 0.293 |  |
|  | VH deep | 0.207 |  |
|  | VH shallow | 0.388 |  |
| *D. savignyi* biomass | IH deep | 0.230 | Hurdle Gamma |
|  | IH shallow | 0.231 |  |
|  | VH deep | 0.269 |  |
|  | VH shallow | 0.270 |  |
| *D. setosum* biomass | IH deep | 0.245 | Hurdle Gamma |
|  | IH shallow | 0.232 |  |
|  | VH deep | 0.268 |  |
|  | VH shallow | 0.255 |  |
| *H. crassispina* biomass | IH deep | 0.196 | Hurdle Gamma |
|  | IH shallow | 0.222 |  |
|  | VH deep | 0.278 |  |
|  | VH shallow | 0.304 |  |
| Linear displacement | IH: *D. setosum* at 1st recapture | 0.130 | Hurdle Gamma |
|  | IH: *D. setosum* at 2nd recapture | 0.203 |  |
|  | IH: *H. crassispina* at 1st recapture | 0.120 |  |
|  | IH: *H. crassispina* at 2nd recapture | 0.047 |  |
|  | VH: *D. setosum* at 1st recapture | 0.070 |  |
|  | VH: *D. setosum* at 2nd recapture | 0.143 |  |
|  | VH: *H. crassispina* at 1st recapture | 0.180 |  |
|  | VH: *H. crassispina* at 2nd recapture | 0.107 |  |
| Group composition | IH: *D. setosum* at start | 0.191 | Negative binomial |
|  | IH: *D. setosum* at 1st recapture | 0.120 |  |
|  | IH: *D. setosum* at 2nd recapture | 0.132 |  |
|  | VH: *D. setosum* at start | 0.229 |  |
|  | VH: *D. setosum* at 1st recapture | 0.158 |  |
|  | VH: *D. setosum* at 2nd recapture | 0.170 |  |