Supplementary material

Table S1. GenBank accession numbers (AN) for juvenile ophiuroids found associated to Nephtheidae soft corals in the Northwest Atlantic. DD = disc diameter (mm). Sample OFB-2\_BS\_A1 represents an adult specimen not associated to corals (MT152653). SN = Southern Newfoundland, GB = Grand Banks, LS: Labrador Shelf, UB = Ungava Bay, FB = Frobisher Bay.

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| --- | --- | --- | --- | --- | --- | --- |
| **Specimen id** | **GenBank AN** | **DD** | **Colony** | **Species** | **Host** | **Location** |
| 2618-2-BRS-1 | MT152641 | 2.8 | 2618-2 | *Ophiopholis aculeata* | *Gersemia rubiformis*1 | SN |
| 6682-2-BRS  | MT152642 | 2.17 | 6682-2 | *Ophiocten gracilis* | *Duva florida*2 | GB |
| 1667-1-BS-1  | MT152643 | 8.39 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 1667-1-BS-8  | MT152644 | 2.76 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 1682-3-BS-1  | MT152645 | 6.45 | 1682-3 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 7365-1-BS-16 | MT152646 | 2.47 | 7365-1 | *Gorgonocephalus arcticus* | *Drifa glomerata*2 | UB |
| 2275-1-BS-6  | MT152647 | 3.06 | 2275-1 | *Gorgonocephalus arcticus* | *Pseudodrifa* sp. | NS |
| 2275-1-BS-3  | MT152648 | 4.94 | 2275-1 | *Gorgonocephalus arcticus* | *Pseudodrifa* sp. | NS |
| 1667-1-BS-3  | MT152649 | 3.33 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 1667-1-BS-25 | MT152650 | 6.47 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 1768-1  | MT152651 | 15.88 | 1768-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | NS |
| 1667-1-BS-39 | MT152652 | 2.59 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| OFB-2\_BS\_A1  | MT152653 | na | OFB-2 | *Gorgonocephalus arcticus* | Adult basket star3 | FB |
| 2616-2-BS-3  | MT152654 | 6.28 | 2616-2 | *Gorgonocephalus arcticus* | *Drifa glomerata* | SN |
| 2275-1-BS-1  | MT152655 | 2.13 | 2275-1 | *Gorgonocephalus arcticus* | *Pseudodrifa* sp. | NS |
| 1667-1-BS-38 | MT152656 | 2.19 | 1667-1 | *Gorgonocephalus arcticus* | *Drifa glomerata* | LS |
| 2616-2-BS-1  | MT152657 | 6.67 | 2616-2 | *Gorgonocephalus arcticus* | *Drifa glomerata* | SN |

1Found loosely on main branch, 2Broken colony, 3Not on coral, only included for comparison.

Table S2. Statistical outputs on the pair-wise comparisons of linear mixed models on the effects of season on the disc diameters of juvenile basket stars found on the soft coral *Drifa glomerata*(Model 1). Pair-wise comparisons were obtained by using the *summary* function and changing the baseline season using the *relevel* function in R. There was no effect of seasonality on disc diameter for individuals associated to *Duva florida*, so pair-wise comparisons were not generated. Den. df = denominator degrees of freedom. Values in bold represent significant p-values.

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| --- | --- | --- | --- |
| **Season pair** | Den. *df* | *t*-value | p-value |
| Fall x Spring | 188 | 3.430 | **0.001** |
| Fall x Summer | 188 | -0.224 | 0.823 |
| Fall x Winter | 188 | 1.755 | 0.081 |
| Spring x Summer | 188 | -3.278 | **0.001** |
| Spring x Winter | 188 | -0.262 | 0.794 |
| Summer x Winter | 188 | 1.796 | 0.074 |

Table S3. Statistical outputs on the pair-wise comparisons of GAMMs on the effects of season on juvenile basket star presence-absence on the soft corals *Drifa glomerata* and *Duva florida* (Model 3) using the *summary* function. Pair-wise comparisons were obtained by changing the baseline season using the *relevel* function in R. Values in bold represent significant p-values.

|  |  |  |
| --- | --- | --- |
| **Season pair** | *Drifa glomerata* | *Duva florida* |
| Estimate | Std.Error | *t*-value | Pr(>|t|) | Estimate | Std.Error | *t*-value | Pr(>|t|) |
| Fall x Spring | 1.016 | 0.230 | 4.424 | **0.000** | 0.855 | 0.349 | 2.446 | 0.015 |
| Fall x Summer | 0.307 | 0.175 | 1.753 | 0.080 | 0.708 | 0.255 | 2.775 | 0.006 |
| Fall x Winter | -0.991 | 0.347 | -2.853 | **0.004** | -0.107 | 0.327 | -0.326 | 0.745 |
| Spring x Summer | -0.709 | 0.255 | -2.778 | **0.006** | -0.146 | 0.363 | -0.403 | 0.687 |
| Spring x Winter | -2.007 | 0.395 | -5.084 | **0.000** | -0.961 | 0.421 | -2.285 | 0.023 |
| Summer x Winter | -1.298 | 0.364 | -3.565 | **0.000** | -0.815 | 0.346 | -2.353 | 0.019 |

Table S4. Results of δ15N stable isotopes analysis and elemental N (%) on soft corals and associated juvenile basket stars in the Northwest Atlantic. Latitude (Lat.) and longitude (Long.) are provided in decimal degrees, depth in meters. Locations (Loc.) are shown by NAFO divisions except for HS (Hudson Strait). DD = basket star disc diameter (mm). Region refers to part of the specimen included in the analyses. Stable isotope values are provided in ‰.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Specimen id** | **Taxon** | **Lat.** | **Long.** | **Depth** | **Loc.** | **Month** | **DD** | **Region** | **δ15N** | **% N** |
| N1375-2\_BS | Basket star | 51.0500 | -49.8833 | 966 | 3K | March | 6.23 | Whole | 11.79 | 2.01 |
| N1375-1\* | *Duva* | na | Polyp | 11.33 | 8.41 |
| N1646\_BS | Basket star | 61.1483 | -65.3333 | 352 | HS | August | 7.62 | Whole | 11.26 | 3.30 |
| N1646-1\* | *Duva* | na | Polyp | 11.54 | 9.82 |
| N3045-2\_BS | Basket star | 58.0333 | -59.9500 | 254 | 2G | August | 10.09 | Whole | 10.53 | 2.07 |
| N3045-1 | *Duva* | na | Polyp | 11.07 | 9.66 |
| N6441-1\_BS1 | Basket star | 48.2367 | -49.4308 | 244 | 3L | May  | 1.31 | Whole | 10.34 | 2.00 |
| N6441-1\_BS2 | Basket star | 9.30 | Arm | 10.62 | 2.07 |
| N6441-1 | *Duva* | na | Polyp | 11.58 | 8.03 |
| N6714-2\_BR | Brachiopod | 53.7208 | -52.5383 | 793 | 2J | November | na | Whole | 11.46 | 5.08 |
| N6714-1\* | *Duva* | na | Polyp | 10.63 | 7.09 |
| N6714-3\_BS4 | Basket star | 9.80 | Whole | 11.35 | 2.24 |
| N6714-3 | *Duva* | na | Polyp | 10.98 | 9.72 |
| N9161\_BS | Basket star | 55.0275 | -54.3625 | 474 | 2J | October | 15.04 | Whole | 12.27 | 2.17 |
| N9161 | *Pseudodrifa* | na | Polyp | 11.31 | 3.14 |

\*Specimens from broken colonies.