Table S1 Results of additional univariate and multivariate PERMANOVAs to test for differences in fish assemblages between treatment areas (mussel, seaweed or reference) (fixed) and survey dates (fixed) at both Porthallow and St Austell Bay farms. Significant differences are highlighted with an asterisk. Where significant differences between treatment and/or date were detected, the results of pairwise post hoc tests are shown.
$\begin{array}{llllllllll}\hline & & & \text { PERMANOVA } & \text { PERMDISP } & \\$\cline { 3 - 9 } \& $\left.\begin{array}{l}\text { Transforma } \\ \text { tion }\end{array} & \text { Factors } & \text { df } & \boldsymbol{F} & \mathbf{p} & \boldsymbol{F} & \text { p } & \begin{array}{l}\text { Post-hoc } \\ \text { significance } \\ \text { differences between } \\ \text { treatments and }\end{array} \\ \text { survey dates }\end{array}\right]$

|  |  |  |  |  |  |  | $16^{\text {th }}$ August: M-S\&R |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| (Mv) MaxT | Forth root  <br>  Dummy <br> variable $=1$  | Treatment | 2 | 24.65 | $0.001^{*}$ | 0.64 | 0.57 | N/A |
|  | Survey date | 2 | 14.78 | $0.001^{*}$ | 1.16 | 0.39 | N/A |  |
|  | Treatment x | 4 | 7.86 | $0.001^{*}$ | N/A | N/A | $3^{\text {rd }}$ May: M-S\&R, S- |  |
|  | survey date |  |  |  |  |  | R |  |
|  |  |  |  |  |  |  |  | $14^{\text {th }}$ June: M-S\&R |
|  |  |  |  |  |  |  | $16^{\text {th }}$ August: M-S\&R |  |



Fig. S1 Differences in fish assemblages between seaweed, mussel and reference areas across survey dates at Porthallow Bay farm and St Austell Bay farm in terms of A\&B) number of lesser sand eel shoals (Ammodytes spp.); C\&D) abundance based on MaxN ${ }^{-\mathrm{min}}$ of each species (excluding Ammodytes spp); E\&F) MaxT of each species (including Ammodytes spp). Bars are plotted with mean values per area (unless otherwise stated) and error bars represent standard error ( $\mathrm{n}=4$ per survey). Significant differences between treatment within survey dates are denoted with letters. NB. In C \& D differences relate to total MaxN ${ }^{-\mathrm{min}}$, and in A \& C there was no significant interaction between treatment and survey date, however there were overall differences between treatments, which are displayed across both survey dates


Fig. S2 Metric MDS plots depicting multivariate analyses of fish assemblages between seaweed lines, mussel lines and reference areas across survey dates for A) $\mathrm{MaxN}^{-\mathrm{min}}$ of different fish species, excluding Ammodytes spp., with data square root transformed with dummy variable $=0.1$ added at Porthallow Bay farm; B) $\mathrm{MaxN}^{-\mathrm{min}}$ of different fish species, excluding Ammodytes spp., with data square root transformed with dummy variable $=0.1$ added at St Austell Bay farm; C) MaxT of different fish species, including Ammodytes spp., with data square root transformed with dummy variable $=1$ added at Porthallow Bay farm; D) MaxT of different fish species, including Ammodytes spp., with data square root transformed with dummy variable $=1$ added at St Austell Bay farm. All plots are ordinated based on Bray-Curtis similarity matrices of species. $N=4$ for each treatment in each survey.

Table S2 Fish species caught over the survey dates at both farms, detailing which treatment areas (mussel, seaweed or reference area) fish were caught in, and whether they are typically pelagic or demersal. Number of fish of each species caught per survey is detailed ( n ) with their averaged standard, fork and tail lengths, body depth and mass, presented with the standard error. Averaged percentage contributions of different taxa to total stomach content biomass are also presented up to $95 \%$ contributions.

| Survey | Species | Treatment area caught in and pelagic/ demersal association | n | Standard length (cm) | Fork length (cm) | Total length (cm) | Body depth (cm) | $\begin{aligned} & \text { Mass } \\ & (\mathrm{g}) \end{aligned}$ | Stomach contents |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { St Austell } \\ & 03 / 05 / 22 \end{aligned}$ | H. lanceolatus | Seaweed Pelagic | 10 | $\begin{aligned} & 26.99 \pm \\ & 0.50 \end{aligned}$ | $\begin{aligned} & \hline 27.97 \\ & \pm 0.46 \\ & \hline \end{aligned}$ | $\begin{aligned} & 29.57 \\ & \pm 0.47 \\ & \hline \end{aligned}$ | $\begin{aligned} & 2.51 \pm \\ & 0.05 \\ & \hline \end{aligned}$ | $\begin{aligned} & 77.7 \pm \\ & 4.26 \end{aligned}$ | Amphipod (86.23\%) <br> Fish (13.68\%) |
|  | S. scombrus | Reference Pelagic | 10 | $\begin{aligned} & 24.25 \pm \\ & 2.28 \end{aligned}$ | $\begin{aligned} & 25.2 \pm \\ & 2.34 \end{aligned}$ | $\begin{aligned} & 27.1 \pm \\ & 2.38 \end{aligned}$ | $\begin{aligned} & 4.86 \pm \\ & 0.26 \end{aligned}$ | $\begin{aligned} & 227.6 \\ & \pm \\ & 23.28 \end{aligned}$ | Fish (51.98\%) <br> Amphipod (35.48\%) <br> Crab (9.87\%) |
|  | $P$. pollachius | Seaweed Pelagic | 1 | 40 | 42 | 44 | 9.5 | 741 | Fish (94.80\%) Crab (4.63\%) |
|  | S. stellaris | Seaweed Demersal | 1 | 62 | NA | 66 | 7 | 880 | $\begin{aligned} & \hline \text { Fish (55.37\%) } \\ & \text { Worm (21.88\%) } \\ & \text { Crab (20.87\%) } \\ & \hline \end{aligned}$ |
| Porthallow $06 / 05 / 22$ | H. lanceolatus | Seaweed Pelagic | 10 | $\begin{aligned} & 26.5 \pm \\ & 0.73 \end{aligned}$ | $\begin{aligned} & 28.06 \\ & \pm 0.58 \end{aligned}$ | $\begin{aligned} & 29 \pm \\ & 0.70 \end{aligned}$ | $\begin{aligned} & 2.8 \pm \\ & 0.3 \end{aligned}$ | $\begin{aligned} & 70.33 \\ & \pm 3.09 \end{aligned}$ | Amphipod (67.40\%) Fish (32.15\%) |


|  | $P$. pollachius | Seaweed <br> Pelagic | 4 | $\begin{aligned} & 30.75 \pm \\ & 2.78 \\ & \hline \end{aligned}$ | $\begin{aligned} & 33.25 \\ & \pm 2.72 \\ & \hline \end{aligned}$ | $\begin{aligned} & 34.25 \\ & \pm 2.72 \\ & \hline \end{aligned}$ | $\begin{aligned} & 7.5 \pm \\ & 0.54 \\ & \hline \end{aligned}$ | $\begin{aligned} & 375 \pm \\ & 76.08 \\ & \hline \end{aligned}$ | Fish (85.06\%) <br> Amphipod (9.09\%) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | L. mixtus ( + and ${ }^{\top}$ ) | Seaweed Demersal | 2 | $\begin{aligned} & 29.5 \pm \\ & 1.50 \end{aligned}$ | NA | $33 \pm 1$ | $5.25 \pm$ | $\begin{aligned} & 264 \pm \\ & 153 \end{aligned}$ | $\begin{aligned} & \text { Mussel (76.31\%) } \\ & \text { Gastropod (19.70\%) } \\ & \text { Crab (4.00\%) } \end{aligned}$ |
|  | L. bergylta | Seaweed Demersal | 1 | 28 | NA | 32.5 | 9.5 | 589 | Mussel (100\%) |
| Porthallow$31 / 05 / 22$ | H. lanceolatus | Seaweed Mussel | 10 | $\begin{aligned} & 26.1 \pm \\ & 1.07 \\ & \hline \end{aligned}$ | $\begin{aligned} & 27.1 \pm \\ & 1.07 \\ & \hline \end{aligned}$ | $\begin{aligned} & 28.35 \\ & \pm 1.14 \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline 2.61 \pm \\ & 0.26 \\ & \hline \end{aligned}$ | $\begin{aligned} & \hline 65.7 \pm \\ & 8.87 \\ & \hline \end{aligned}$ | Amphipod (67.42\%) Fish (31.10\%) |
|  | $P$. pollachius | Mussel Pelagic | 2 | $\begin{aligned} & 31.75 \pm \\ & 4.25 \\ & \hline \end{aligned}$ | $34 \pm 4$ | $35 \pm 4$ | $\begin{aligned} & 8.5 \pm \\ & 1 \\ & \hline \end{aligned}$ | $\begin{aligned} & 460 \pm \\ & 185 \\ & \hline \end{aligned}$ | Fish (92.05\%) <br> Amphipod (7.89\%) |
|  | L. mixtus (?) | Mussel Demersal | 1 | $\begin{aligned} & 24.5 \pm \\ & \text { NA } \end{aligned}$ | NA | 27.5 | 5.5 | 238.3 | Mussel (100\%) |
|  | S. scombrus | Seaweed Pelagic | 2 | $27 \pm 2.5$ | $\begin{aligned} & 28 \pm \\ & 2.5 \end{aligned}$ | $\begin{aligned} & 30.25 \\ & \pm 3.25 \end{aligned}$ | $\begin{aligned} & 5 \pm \\ & 0.5 \\ & \hline \end{aligned}$ | $\begin{aligned} & 235 \pm \\ & 75 \\ & \hline \end{aligned}$ | Fish (100\%) |
|  | L. bergylta | Mussel Demersal | 1 | $31 \pm$ NA | NA | 35 | 10 | 673 | Bivalve other (89.62\%) Crab (5.92\%) <br> Amphipod (3.90\%) |
| $\begin{aligned} & \hline \text { St Austell } \\ & 14 / 06 / 22 \end{aligned}$ | H. lanceolatus | Seaweed <br> Mussel <br> Pelagic | 10 | $\begin{aligned} & 28.1 \pm \\ & 0.96 \end{aligned}$ | $\begin{aligned} & \hline 29.25 \\ & \pm 0.55 \end{aligned}$ | $\begin{aligned} & 30.45 \\ & \pm 0.60 \end{aligned}$ | $\begin{aligned} & 2.63 \pm \\ & 0.61 \end{aligned}$ | $\begin{aligned} & 87.9 \pm \\ & 0.07 \end{aligned}$ | Amphipod (99.78\%) |
|  | S. scombrus | Seaweed <br> Mussel <br> Pelagic | 4 | $29 \pm 0.46$ | $\begin{aligned} & 29.63 \\ & \pm 0.43 \end{aligned}$ | $\begin{aligned} & 31.38 \\ & \pm 0.55 \end{aligned}$ | $\begin{aligned} & 5.68 \pm \\ & 0.14 \end{aligned}$ | $\begin{aligned} & 295.75 \\ & \pm \\ & 17.05 \end{aligned}$ | Amphipod (73.92\%) <br> Fish (24.98\%) |
|  | T. trachurus | Mussel Pelagic | 2 | $\begin{aligned} & 25.5 \pm \\ & 0.50 \end{aligned}$ | $\begin{aligned} & 26.5 \pm \\ & 0.5 \end{aligned}$ | $\begin{aligned} & 29.5 \pm \\ & 0.5 \end{aligned}$ | $\begin{aligned} & \hline 6.15 \pm \\ & 0.05 \end{aligned}$ | $\begin{aligned} & 253.75 \\ & \pm \\ & 16.75 \\ & \hline \end{aligned}$ | Amphipod (100\%) |
|  | L. bergylta | Seaweed <br> Mussel | 2 | $33 \pm 2.00$ | NA | $38 \pm 2$ | $\begin{aligned} & 10.75 \\ & \pm 0.25 \end{aligned}$ | $\begin{aligned} & 959.5 \\ & \pm 24.5 \end{aligned}$ | $\begin{aligned} & \text { Mussel (90.52\%) } \\ & \text { Amphipod (6.06\%) } \end{aligned}$ |
|  | S. stellaris | Mussel | 1 | NA | NA | 59 | 7 | 777 | $\begin{aligned} & \text { Crab (84.61\%) } \\ & \text { Other (10.93\%) } \end{aligned}$ |
| $\begin{aligned} & \hline \text { St Austell } \\ & 16 / 08 / 22 \end{aligned}$ | $P$. <br> pollachius <br> (all <br> juvenile) | Mussel Pelagic | 5 | $\begin{aligned} & 14.3 \pm \\ & 0.37 \end{aligned}$ | $\begin{aligned} & 15.1 \pm \\ & 0.49 \end{aligned}$ | $\begin{aligned} & 15.6 \pm \\ & 0.49 \end{aligned}$ | $\begin{aligned} & 3.4 \pm \\ & 0.17 \end{aligned}$ | $\begin{aligned} & 38.4 \pm \\ & 280 \end{aligned}$ | Amphipod (98.33\%) Mussel (1.36\%) |
|  | T. trachurus | Mussel <br> Pelagic | 10 | $\begin{aligned} & 18.25 \pm \\ & 0.75 \end{aligned}$ | $\begin{aligned} & \hline 19.45 \\ & \pm 0.77 \end{aligned}$ | $\begin{aligned} & 21.15 \\ & \pm 0.81 \end{aligned}$ | $\begin{aligned} & \hline 4.13 \pm \\ & 0.16 \end{aligned}$ | $\begin{aligned} & \hline 85.50 \\ & \pm 8.03 \end{aligned}$ | Amphipod (86.46\%) <br> Other (7.60\%) <br> Fish (5.56\%) |
|  | S. scombrus | Mussel <br> Pelagic | 3 | $\begin{aligned} & 27.67 \pm \\ & 1.33 \end{aligned}$ | $\begin{aligned} & 28.5 \pm \\ & 1.26 \end{aligned}$ | $\begin{aligned} & 30.67 \\ & \pm 1.33 \end{aligned}$ | $\begin{aligned} & 5.33 \pm \\ & 0.17 \end{aligned}$ | $\begin{aligned} & 259.73 \\ & \pm \\ & 21.11 \end{aligned}$ | Fish (66.67\%) <br> Amphipod (33.33\%) |
|  | L. bergylta | Mussel Demersal | 1 | 32 | NA | 36 | 10 | 696.7 | $\begin{aligned} & \hline \text { Mussel (91.01\%) } \\ & \text { Other ( } 6.53 \% \text { ) } \\ & \hline \end{aligned}$ |
|  | L. mixtus (q) | Mussel Demersal | 1 | 24.2 | NA | 27.5 | 5.5 | 235.2 | Crab (99.63\%) |



Fig. S3 Differences in stomach contents of all fish caught over all surveys throughout the study, presented as percentage contributions of total stomach content biomass (wet weight).

Table S3 Percentage contributions of individual fish species to observed differences between treatment and survey dates in Porthallow Bay, as determined by SIMPER analysis. MaxN abundance values were square-root transformed prior to analysis.

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| C. labrosus | 1.18 | 1.32 | 20.31 | 0.98 | 34.97 | 34.97 |
| Juveniles | 1.19 | 1.10 | 18.19 | 1.16 | 31.31 | 66.28 |
| H. lanceolatus | 1.22 | 0.65 | 13.32 | 1.09 | 22.93 | 89.21 |
|  | Mussel | Reference |  |  |  |  |
| H. lanceolatus | 1.22 | 0.00 | 35.76 | 1.22 | 35.76 | 35.76 |
| C. labrosus | 1.18 | 0.00 | 33.73 | 1.05 | 33.73 | 69.49 |
| Juveniles | 1.19 | 0.00 | 23.87 | 0.95 | 23.87 | 93.35 |
|  | Seaweed | Reference |  |  |  |  |
| C. labrosus | 1.32 | 0.00 | 40.83 | 1.65 | 40.83 | 40.83 |
| Juveniles | 1.10 | 0.00 | 28.94 | 1.04 | 28.94 | 69.77 |
| H. lanceolatus | 0.65 | 0.00 | 20.57 | 1.22 | 20.57 | 90.34 |
|  | $\mathbf{6}^{\text {th }} \mathbf{M a y}$ | $\mathbf{3 1}$ May |  |  |  |  |
| Juveniles | 1.13 | 0.40 | 23.97 | 1.23 | 38.85 | 38.85 |
| C. labrosus | 0.87 | 0.80 | 19.01 | 1.08 | 30.81 | 69.66 |
| H. lanceolatus | 0.59 | 0.66 | 11.92 | 0.91 | 19.33 | 88.99 |

Table S4. Percentage contributions of individual fish species to observed differences between treatment and survey dates in St Austell Bay, as determined by SIMPER analysis. MaxN abundance values were square-root transformed prior to analysis.

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| T. trachurus | 2.91 | 0.00 | 39.59 | 0.99 | 44.12 | 44.12 |
| H. lanceolatus | 1.64 | 0.25 | 18.33 | 1.16 | 20.43 | 64.54 |
| C. labrosus | 1.00 | 0.73 | 17.92 | 0.91 | 19.97 | 85.51 |
|  | Mussel | Reference |  |  |  |  |
| T. trachurus | 2.91 | 0.29 | 33.96 | 0.95 | 35.74 | 35.74 |
| H. lanceolatus | 1.64 | 0.00 | 28.98 | 1.10 | 30.49 | 66.23 |
| C. labrosus | 1.00 | 0.00 | 13.84 | 0.66 | 14.56 | 80.79 |
|  | Seaweed | Reference |  |  |  |  |
| Juveniles | 0.39 | 0.74 | 35.86 | 0.96 | 42.01 | 42.01 |
| C. labrosus | 0.73 | 0.00 | 26.63 | 0.80 | 31.19 | 73.20 |
|  | $\mathbf{3}^{\text {rd }}$ May | $\mathbf{1 4}{ }^{\text {th }}$ June |  |  |  |  |
| Juveniles | 0.90 | 0.06 | 36.24 | 0.86 | 46.94 | 46.94 |
| C. labrosus | 0.87 | 0.70 | 16.87 | 0.74 | 21.85 | 68.80 |
| H. lanceolatus | 1.36 | 0.53 | 10.04 | 0.84 | 13.01 | 81.81 |
|  | $\mathbf{3}^{\text {rd }}$ May | $\mathbf{1 6}^{\text {th }}$ August |  |  |  |  |
| Juveniles | 0.90 | 0.17 | 28.20 | 0.73 | 31.80 | 31.80 |
| T. trachurus | 0.08 | 2.57 | 23.83 | 0.77 | 26.88 | 58.68 |
| C. labrosus | 0.87 | 0.17 | 15.82 | 0.65 | 17.85 | 76.52 |
|  | $\mathbf{l 4}^{\text {th }}$ June | $\mathbf{1 6}^{\text {th }}$ August |  |  |  |  |
| T. trachurus | 0.55 | 2.57 | 29.83 | 1.09 | 37.05 | 37.05 |
| Juveniles | 0.06 | 0.17 | 19.67 | 0.53 | 24.43 | 61.47 |
| C. labrosus | 0.70 | 0.17 | 19.25 | 0.57 | 23.90 | 85.38 |

Table S5 Percentage contributions of individual fish species to observed differences between treatment and survey dates in Porthallow Bay, as determined by SIMPER analysis. MaxN ${ }^{-m i n}$ abundance values were square-root transformed prior to analysis

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| H. lanceolatus | 0.40 | 0.19 | 21.15 | 1.35 | 32.42 | 32.42 |
| Juveniles | 0.38 | 0.17 | 19.69 | 1.10 | 30.19 | 62.61 |
| C. labrosus | 0.23 | 0.23 | 18.08 | 0.91 | 27.72 | 90.33 |
|  | Mussel | Reference |  |  |  |  |
| H. lanceolatus | 0.40 | 0.00 | 41.19 | 1.28 | 41.19 | 41.19 |
| C. labrosus | 0.23 | 0.00 | 28.05 | 0.89 | 28.05 | 69.24 |
| Juveniles | 0.38 | 0.00 | 25.29 | 0.84 | 25.29 | 94.53 |
|  | Seaweed | Reference |  |  |  |  |
| C. labrosus | 0.23 | 0.00 | 37.15 | 1.40 | 37.15 | 37.15 |
| Juveniles | 0.17 | 0.00 | 26.78 | 0.95 | 26.78 | 63.93 |
| H. lanceolatus | 0.19 | 0.00 | 26.75 | 1.28 | 26.75 | 90.68 |
|  | $\mathbf{6}^{\text {th }}$ May | $\mathbf{3 1}$ May |  |  |  |  |
| Juveniles | 0.30 | 0.07 | 25.03 | 1.16 | 37.46 | 37.46 |
| H. lanceolatus | 0.17 | 0.22 | 18.45 | 1.10 | 27.61 | 65.07 |
| C. labrosus | 0.14 | 0.17 | 16.33 | 0.93 | 24.43 | 89.50 |

Table S6 Percentage contributions of individual fish species to observed differences between treatment and survey dates in St Austell Bay, as determined by SIMPER analysis. MaxN ${ }^{-m i n}$ abundance values were square-root transformed prior to analysis.

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| T. trachurus | 0.93 | 0.00 | 41.31 | 0.99 | 45.17 | 45.17 |
| H. lanceolatus | 0.61 | 0.08 | 23.52 | 1.23 | 25.72 | 70.89 |
|  | Mussel | Reference |  |  |  |  |
| T. trachurus | 0.93 | 0.05 | 37.62 | 1.00 | 38.83 | 38.83 |
| H. lanceolatus | 0.61 | 0.00 | 35.14 | 1.16 | 36.27 | 75.10 |
|  | Seaweed | Reference |  |  |  |  |
| Juveniles | 0.12 | 0.15 | 35.14 | 0.96 | 40.24 | 40.24 |
| C. labrosus | 0.18 | 0.00 | 27.45 | 0.79 | 31.44 | 71.68 |
|  | $\mathbf{3}^{\text {rd }}$ May | $\mathbf{1 4}^{\text {th }}$ June |  |  |  |  |
| Juveniles | 0.23 | 0.01 | 37.91 | 0.92 | 47.23 | 47.23 |
| C. labrosus | 0.25 | 0.13 | 15.67 | 0.68 | 19.53 | 66.76 |
| H. lanceolatus | 0.53 | 0.16 | 13.48 | 0.92 | 16.80 | 83.56 |
|  | $\mathbf{3}^{\text {rd }}$ May | $\mathbf{1 6}^{\text {th }}$ August |  |  |  |  |
| Juveniles | 0.23 | 0.04 | 28.78 | 0.78 | 31.93 | 31.93 |
| T. trachurus | 0.01 | 0.82 | 24.00 | 0.79 | 26.64 | 58.57 |
| C. labrosus | 0.53 | 0.00 | 15.39 | 0.97 | 17.08 | 75.65 |
|  | $\mathbf{1 4}^{\text {th }}$ June | $\mathbf{1 6}^{\text {th }}$ August |  |  |  |  |
| T. trachurus | 0.14 | 0.82 | 36.72 | 1.23 | 43.57 | 43.57 |
| Juveniles | 0.01 | 0.04 | 20.38 | 0.54 | 24.18 | 67.75 |
| C. labrosus | 0.13 | 0.03 | 17.43 | 0.52 | 20.68 | 88.43 |

Table S7 Percentage contributions of individual fish species to observed differences between treatment and survey dates in Porthallow Bay, as determined by SIMPER analysis. MaxT values were forth-root transformed prior to analysis.

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| Ammodytes spp. | 1.83 | 3.17 | 12.99 | 1.22 | 26.26 | 26.26 |
| Juveniles | 1.70 | 1.48 | 11.36 | 1.15 | 22.97 | 49.23 |
| H. lanceolatus | 2.19 | 1.32 | 11.08 | 1.37 | 22.40 | 71.63 |
|  | Mussel | Reference |  |  |  |  |
| H. lanceolatus | 2.19 | 0.00 | 28.23 | 1.10 | 33.85 | 33.85 |
| Juveniles | 1.70 | 0.00 | 17.29 | 0.81 | 20.73 | 54.58 |
| Ammodytes spp. | 1.83 | 1.47 | 16.76 | 1.02 | 20.09 | 74.67 |
|  | Seaweed | Reference |  |  |  |  |
| Ammodytes spp. | 3.17 | 1.47 | 27.87 | 1.28 | 37.19 | 37.19 |
| Juveniles | 1.48 | 0.00 | 14.63 | 0.87 | 19.52 | 56.71 |
| C. labrosus | 1.32 | 0.00 | 14.61 | 1.29 | 19.50 | 76.21 |
|  | $\mathbf{6}$ May | $\mathbf{3 1}$ 点 $\mathbf{M a y}$ |  |  |  |  |
| Ammodytes spp. | 2.05 | 2.26 | 32.53 | 0.86 | 53.40 | 53.40 |
| Juveniles | 1.65 | 0.47 | 10.87 | 0.89 | 17.85 | 71.25 |

Table S8 Percentage contributions of individual fish species to observed differences between treatment and survey dates in St Austell Bay, as determined by SIMPER analysis. MaxT values were forth-root transformed prior to analysis.

| Taxa | Av. Abund | Av. Abund. | Av. Diss | Diss/SD | Contrib\% | Cum.\% |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Mussel | Seaweed |  |  |  |  |
| T. trachurus | 2.61 | 0.00 | 39.31 | 1.01 | 42.25 | 42.25 |
| H. lanceolatus | 2.40 | 0.29 | 20.50 | 1.19 | 22.03 | 64.28 |
| C. labrosus | 0.86 | 0.63 | 10.74 | 0.95 | 11.54 | 75.81 |
|  | Mussel | Reference |  |  |  |  |
| T. trachurus | 2.61 | 0.16 | 32.35 | 0.98 | 36.23 | 36.23 |
| H. lanceolatus | 2.40 | 0.00 | 28.18 | 1.17 | 31.56 | 67.80 |
| Juveniles | 0.00 | 1.14 | 14.25 | 0.93 | 15.96 | 83.76 |
|  | Seaweed | Reference |  |  |  |  |
| Ammodytes spp. | 0.50 | 0.53 | 31.14 | 0.86 | 36.55 | 36.55 |
| Juveniles | 0.57 | 1.14 | 23.55 | 0.77 | 27.64 | 64.19 |
| C. labrosus | 0.63 | 0.00 | 12.30 | 0.61 | 14.44 | 78.63 |
|  | $\mathbf{3 r}^{\text {rd }}$ May | $\mathbf{1 4}$ June |  |  |  |  |
| Juveniles | 1.37 | 0.08 | 26.48 | 0.92 | 35.33 | 35.33 |
| Ammodytes spp. | 0.62 | 0.93 | 18.23 | 1.11 | 24.33 | 59.66 |
| C. labrosus | 0.81 | 0.55 | 9.00 | 0.80 | 12.01 | 71.67 |
|  | $\mathbf{r r}^{\text {tr }}$ May | $\mathbf{1 6} \mathbf{6}^{\text {th }}$ August |  |  |  |  |
| Juveniles | 1.37 | 0.26 | 26.36 | 0.80 | 29.91 | 29.91 |
| T. trachurus | 0.12 | 1.87 | 17.69 | 0.76 | 20.07 | 49.98 |
| H. lanceolatus | 1.71 | 0.00 | 16.22 | 0.90 | 18.41 | 68.39 |
| $\boldsymbol{P}$ pollachius | 0.56 | 0.00 | 9.05 | 0.51 | 10.27 | 78.66 |
|  | $\mathbf{1 4}^{\text {th }}$ June | $\mathbf{1 6}^{\text {th }}$ August |  |  |  |  |
| Ammodytes spp. | 0.93 | 0.00 | 27.15 | 0.86 | 33.54 | 33.54 |
| C. labrosus | 0.55 | 0.14 | 15.84 | 0.50 | 19.57 | 53.10 |
| T. trachurus | 0.78 | 1.87 | 14.33 | 0.89 | 17.71 | 70.81 |
|  |  |  |  |  |  |  |

Table S9 Fish species recorded in the study (either via BRUV survey or direct catch) with trophic levels, typical diets and spawning dates detailed. Trophic level information collated from FishBase Trophic Ecology (Froese et al. 1992, Froese and Pauly 2023).

| Fish species | Trophic level ( $\pm$ SE) | Typical diet | Spawning months (and regions determined from) | References |
| :---: | :---: | :---: | :---: | :---: |
| Chelon labrosus | $\begin{aligned} & 2.6 \pm \\ & 0.32 \end{aligned}$ | Adults feed mainly on benthic diatoms, epiphytic algae, small invertebrates and detritus, juveniles only feed on zooplankton | July \& August: UK | Kottelat \& Freyhof 2007, Muus \& Nielsen 1999 |
| Ammodytes tobianus (representative of Ammodytes spp.) | $3.1 \pm 0.1$ | Adults feed on zooplankton and some large diatoms | F, M, A; S, O, N: Northeast Atlantic | Bauchot 1987, Reay 1986 |
| Labrus bergylta | $3.2 \pm 0.0$ | Feed on crustaceans and mollusks | A, M, J, J, A: UK | Quignard \& Pras 1986 |
| Spondyliosoma cantharus | $3.3 \pm 0.2$ | Omnivorous, feeding on seaweeds and small invertebrates, especially crustaceans | April \& May: UK | Bauchot \& Hureau 1990, <br> Druzhinin 1976, Wheeler 1969 |
| Dicentrarchus labrax | $\begin{aligned} & 3.5 \pm \\ & 0.50 \end{aligned}$ | Feed chiefly on shrimps and mollusks, also on fishes. Juveniles feed on invertebrates, taking increasingly more fish with age. Adults piscivorous | M, A, M, J: UK | Tortonese 1986, Kottelat \& Freyhof, 2007 |
| Scomber scombrus | $3.6 \pm 0.2$ | Feed on zooplankton and small fish | May \& June: UK | Collette \& Nauen 1983, Muus \& Nielsen 1999 |
| Trachurus trachurus | $3.7 \pm 0.0$ | Feed on fish, crustaceans, and cephalopods | A, M, J, J: Ireland | Smith-Vaniz 1986, <br>  <br> Vingerhoed, 1989 |
| Labrus mixtus | $\begin{aligned} & 3.9 \pm \\ & 0.62 \end{aligned}$ | Feed mainly on crustaceans but also fishes and mollusks and worms | M, J, J: UK | Quignard \& Pras 1986, Muus \& Nielsen 1999 |
| Hyperoplus lanceolatus | $4.0 \pm 0.1$ | Feeds initially on zooplankton, later small fish (clupeids and ammodytids) dominate the diet | A, M, J, J, A, S: North Sea | $\begin{aligned} & \text { Muus \& Dahlström } \\ & 1974, \\ & \text { Muus \& Nielsen } \\ & 1999 \end{aligned}$ |
| Scyliorhinus stellaris | $4.0 \pm 0.3$ | Feed on bottom-living invertebrates such as mollusks, crustaceans and cephalopods, and on demersal fishes (e.g. sharks, $S$. canicula) | $\begin{aligned} & \text { M, A, M, J, J, A, S, O: } \\ & \text { UK } \end{aligned}$ | Ford 1921, Compagno 1984 |
| Pollachius pollachius | $4.3 \pm 0.3$ | Crustaceans and fish | $\mathrm{J}, \mathrm{~F}, \mathrm{M}, \mathrm{~A}, \mathrm{M}:$ <br> Northeast Atlantic | Svetovidov 1986, <br> Naylor 2021 |

## Supplementary references

Bauchot ML (1987) Poissons osseux. In Fischer W, Bauchot ML and Schneider M (eds.) Fiches FAO d'identification pour les besoins de la pêche. Méditerranée et mer Noire. Zone de pêche 37. Commission des Communautés Européennes and FAO, Rome. 1(2): 891-1421.

Bauchot ML, Hureau JC (1990) Sparidae. In Quero JC, Hureau JC, Karrer C, Post A and Saldanha L (eds.) Check-list of the fishes of the eastern tropical Atlantic (CLOFETA). JNICT, Lisbon; SEI, Paris; and UNESCO, Paris. 2:790-812.

Collette BB, Nauen CE (1983) FAO Species Catalogue. Scombrids of the world. An annotated and illustrated catalogue of tunas, mackerels, bonitos and related species known to date. Rome: FAO. FAO Fish. Synop. 125(2):137

Compagno LJV (1984) FAO Species Catalogue. Sharks of the world. An annotated and illustrated catalogue of shark species known to date. Part 2 - Carcharhiniformes. FAO Fish. Synop. 125(4/2):251-655. Rome: FAO

Druzhinin AD (1976) Sparid fishes of the world oceans. Moscow, Pishchevaya Promyshlennost, p. 195
Eltink A, Vingerhoed B (1989) The total fecundity of Western horse mackerel (Trachurus trachurus L.). ICES:C.M. 44:11
Ford E (1921) A contribution to our knowledge of the life-histories of the dogfishes landed at Plymouth. Journal of the Marine Biological Association of the United Kingdom. 12 (3): 468-505

Froese F, Pauly D (2023) FishBase. www.fishbase.org, (Accessed 30 August 2023)
Froese R, Palomares MLD, Pauly D (1992) Draft user's manual of FishBase, a biological database on fish. (ver. 1.0). ICLARM Software 7, pag. var.

Kottelat M, Freyhof J (2007) Handbook of European freshwater fishes. Publications Kottelat, Cornol and Freyhof, Berlin. 646 pp.

Muus BJ, Nielsen JG (1999). Sea fish. Scandinavian Fishing Year Book, Hedehusene, Denmark.
Muus BJ, Dahlström P (1974). Collins guide to the sea fishes of Britain and North-Western Europe. Collins, London, UK.
Naylor P (2021) Fish. In: Great British Marine Animals: 4th Edition - with special focus on their behaviour, 1st ed. Sound Diving Publications, Cornwall, p 306-413

Quignard JP, Pras A (1986) Labridae. In: Whitehead PJP, Bauchot ML, Hureau JC, Nielsen J and Tortonese E (eds.) Fishes of the north-eastern Atlantic and the Mediterranean Vol. 2. UNESCO, Paris, p 919-942

Reay, PJ (1986) Ammodytidae. In: Whitehead PJP, Bauchot ML, Hureau JC, Nielsen J and Tortonese E (eds.) Fishes of the north-eastern Atlantic and the Mediterranean Vol. 2. UNESCO, Paris, p 945-950

Smith-Vaniz, WF (1986). Carangidae. In: Whitehead PJP, Bauchot ML, Hureau JC, Nielsen J and Tortonese E (eds.) Fishes of the north-eastern Atlantic and the Mediterranean Vol. 2. UNESCO, Paris, p 815-844

Svetovidov, AN (1986) Gadidae. In: Whitehead PJP, Bauchot ML, Hureau JC, Nielsen J and Tortonese E (eds.) Fishes of the north-eastern Atlantic and the Mediterranean Vol. 2. UNESCO, Paris, p 680-710

Tortonese E (1986) Moronidae. In: Whitehead PJP, Bauchot ML, Hureau JC, Nielsen J and Tortonese E (eds.) Fishes of the north-eastern Atlantic and the Mediterranean Vol. 2. UNESCO, Paris, p 793-796

Wheeler A (1969) The fishes of the British Isles and northwest Europe. Macmillan, London

