Supplementary Materials

**A close up of a map

Description automatically generated**

**Fig. S1. Rarefaction curves of OTU and ESV richness across total sequences for six species in the Arabian Gulf (blue) and Gulf of Oman (gold).** OTU curves (a) indicate the diversity of prey items for each species and population as obtained from gut content DNA metabarcoding with the COI marker, while ESV curves (b) show the diversity of prey items obtained with the 23S marker. Solid lines indicate interpolated richness, while dashed lines indicate extrapolated richness (to the maximum number of sequences across species). Shaded ribbons indicate 95% confidence intervals of extrapolations.

**Table S1. Presence, abundance, and previous records of species sampled in the present study.** Each row represents a species, with columns *AG* (Arabian Gulf) and *GO* (Gulf of Oman) indicating the abundance of the species in our samples. Column *R* indicates whether the species has been previously recorded in other parts of the Arabian Gulf (\* = yes, – = no). References for previous records are provided.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Family*** | ***Species*** | ***AG*** | ***GO*** | ***R*** | ***Reference*** |
| Apogonidae | *Apogon coccineus* | 6 | 10 | \* | present |
| Apogonidae | *Apogonichthyoides taeniatus* | 2 | 0 | \* | present |
| Apogonidae | *Cheilodipterus novemstriatus* | 2 | 9 | \* | present |
| Apogonidae | *Cheilodipterus persicus* | 0 | 1 | \* | Krupp & Müller 1994 |
| Apogonidae | *Fowleria variegata* | 5 | 1 | \* | present |
| Apogonidae | *Ostorhinchus cyanosoma* | 0 | 15 | \* | Krupp & Müller 1994 |
| Apogonidae | *Ostorhinchus fleurieu* | 0 | 30 | \* | Eagderi et al. 2019 |
| Batrachoididae | *Colletteichthys occidentalis* | 6 | 0 | \* | present |
| Blenniidae | *Antennablennius adenensis* | 0 | 54 | \* | Bishop 2003 |
| Blenniidae | *Ecsenius pulcher* | 8 | 97 | \* | present |
| Blenniidae | *Laiphognathus multimaculatus* | 1 | 0 | \* | present |
| Bythitidae | *Dinematichthys iluocoeteoides* | 5 | 0 | \* | present |
| Gobiidae | *Asterropteryx semipunctata* | 0 | 2 | \* | Krupp & Müller 1994 |
| Gobiidae | *Callogobius bifasciatus* | 2 | 0 | \* | present |
| Gobiidae | *Callogobius speA* | 0 | 3 | \* | Eagderi et al. 2019 |
| Gobiidae | *Coryogalops anomalus* | 65 | 33 | \* | present |
| Gobiidae | *Eviota guttata* | 0 | 69 | \* | Krupp & Müller 1994 |
| Gobiidae | *Eviota punyit* | 0 | 12 | \* | Krupp & Müller 19941 |
| Gobiidae | *Favonigobius melanobranchus* | 1 | 0 | \* | present |
| Gobiidae | *Fusigobius inframaculatus* | 0 | 3 | \* | Eagderi et al. 2019 |
| Gobiidae | *Gnatholepis caudimaculata* | 0 | 14 | \* | Eagderi et al. 2019 |
| Gobiidae | *Gobiodon reticulatus* | 0 | 2 | \* | Bishop 2003 |
| Gobiidae | *Hetereleotris vulgaris* | 0 | 405 | \* | Eagderi et al. 2019 |
| Gobiidae | *Istigobius decoratus* | 0 | 15 | \* | Eagderi et al. 2019 |
| Gobiidae | *Priolepis cincta* | 0 | 4 | \* | Winterbottom & Burridge 1992 |
| Gobiidae | *Priolepis randalli* | 0 | 2 | \* | Winterbottom & Burridge 1993 |
| Gobiidae | *Priolepis semidoliata* | 0 | 10 | – | NA |
| Gobiidae | *Trimma corallinum* | 0 | 11 | \* | Eagderi et al. 20192 |
| Muraenidae | *Gymnothorax speA* | 0 | 12 | \* | Eagderi et al. 20193 |
| Ostraciidae | *Ostracion cubicus* | 0 | 3 | \* | Eagderi et al. 2019 |
| Pomacanthidae | *Pomacanthus maculosus* | 7 | 0 | \* | present |
| Pomacentridae | *Chromis flavaxilla* | 0 | 19 | \* | Bishop 2003 |
| Pomacentridae | *Chromis xanthopterygius* | 0 | 3 | \* | Bishop 2003 |
| Pomacentridae | *Neopomacentrus cyanomos* | 0 | 38 | \* | Bishop 2003 |
| Pomacentridae | *Neopomacentrus miryae* | 0 | 38 | – | NA |
| Pomacentridae | *Neopomacentrus sindensis* | 0 | 6 | \* | Bishop 2003 |
| Pomacentridae | *Pomacentrus aquilus* | 3 | 0 | \* | present |
| Pomacentridae | *Pomacentrus leptus* | 0 | 5 | \* | Bishop 2003 |
| Pomacentridae | *Pomacentrus trichrourus* | 5 | 0 | \* | present |
| Pseudochromidae | *Pseudochromis aldabraensis* | 0 | 4 | \* | Bishop 2003 |
| Pseudochromidae | *Pseudochromis linda* | 1 | 0 | \* | present |
| Pseudochromidae | *Pseudochromis nigrovittatus* | 2 | 1 | \* | present |
| Pseudochromidae | *Pseudochromis persicus* | 1 | 0 | \* | present |
| Serranidae | *Cephalopholis hemistiktos* | 2 | 2 | \* | present |
| Syngnathidae | *Corythoichthys flavofasciata* | 0 | 5 | \* | Froese & Pauly 2019 |
| Syngnathidae | *Doryrhamphus excisus* | 0 | 3 | \* | Bishop 2003 |
| Tripterygiidae | *Enneapterygius ventermaculus* | 131 | 262 | \* | present |
| Tripterygiidae | *Helcogramma fuscopinna* | 0 | 134 | – | NA |

1identified as *E. sebreei*

2synonymous with *T. winterbottomi*

3genus level

**Table S2. Contrasts between levels of the explanatory variable for the model testing CTmax differences in cryptobenthic reef fishes.** Population columns highlight the contrast estimated in the model, whereas the estimate and its confidence intervals indicate estimated differences.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Population I** | **Population II** | **Estimate** | **LCI** | **UCI** |
| *C. anomolus.AG* | *E. pulcher.AG* | *0.486* | *-0.079* | *1.054* |
| *C. anomolus.AG* | *E. ventermaculus.AG* | *1.360* | *0.808* | *1.949* |
| *C. anomolus.AG* | *E. pulcher.GoO* | *1.114* | *0.581* | *1.726* |
| *C. anomolus.AG* | *E. ventermaculus.GoO* | *1.633* | *0.939* | *2.342* |
| *C. anomolus.AG* | *E. guttata.GoO* | *1.143* | *0.534* | *1.759* |
| *C. anomolus.AG* | *H. fuscopinna.GoO* | *2.392* | *1.758* | *2.992* |
| *C. anomolus.AG* | *H. vulgaris.GoO* | *0.492* | *-0.061* | *1.078* |
| *E. pulcher.AG* | *E. ventermaculus.AG* | *0.879* | *0.509* | *1.252* |
| *E. pulcher.AG* | *E. pulcher.GoO* | *0.636* | *0.244* | *1.016* |
| *E. pulcher.AG* | *E. ventermaculus.GoO* | *1.159* | *0.624* | *1.737* |
| *E. pulcher.AG* | *E. guttata.GoO* | *0.656* | *0.227* | *1.134* |
| *E. pulcher.AG* | *H. fuscoguttata.GoO* | *1.905* | *1.463* | *2.341* |
| *E. pulcher.AG* | *H. vulgaris.GoO* | *0.011* | *-0.368* | *0.417* |
| *E. ventermaculus.AG* | *E. pulcher.GoO* | *-0.245* | *-0.640* | *0.118* |
| *E. ventermaculus.AG* | *E. ventermaculus.GoO* | *0.277* | *-0.260* | *0.815* |
| *E. ventermaculus.AG* | *E. guttata.GoO* | *-0.225* | *-0.680* | *0.212* |
| *E. ventermaculus.AG* | *H. fuscopinna.GoO* | *1.024* | *0.578* | *1.449* |
| *E. ventermaculus.AG* | *H. vulgaris.GoO* | *-0.878* | *-1.265* | *-0.508* |
| *E. pulcher.GoO* | *E. ventermaculus.GoO* | *0.519* | *-0.0290* | *1.073* |
| *E. pulcher.GoO* | *E. guttata.GoO* | *0.020* | *-0.426* | *0.494* |
| *E. pulcher.GoO* | *H. fuscopinna.GoO* | *1.274* | *0.839* | *1.726* |
| *E. pulcher.GoO* | *H. vulgaris.GoO* | *-0.628* | *-1.037* | *-0.253* |
| *E. ventermaculus.GoO* | *E. guttata.GoO* | *-0.502* | *-1.125* | *0.106* |
| *E. ventermaculus.GoO* | *H. fuscopinna.GoO* | *0.750* | *0.130* | *1.344* |
| *E. ventermaculus.GoO* | *H. vulgaris.GoO* | *-1.148* | *-1.710* | *-0.584* |
| *E. guttata.GoO* | *H. fuscopinna.GoO* | *1.252* | *0.735* | *1.778* |
| *E. guttata.GoO* | *H. vulgaris.GoO* | *-0.647* | *-1.094* | *-0.148* |
| *H. fuscopinna.GoO* | *H. vulgaris.GoO* | *-1.906* | *-2.363* | *-1.449* |

**Table S3. Contrasts between levels of the explanatory variable for the model testing CTmin differences in cryptobenthic reef fishes.** Population columns highlight the contrast estimated in the model, whereas the estimate and its confidence intervals indicate estimated differences.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Population I** | **Population II** | **Estimate** | **LCI** | **UCI** |
| *C. anomolus.AG* | *E. pulcher.AG* | *0.613* | *0.173* | *1.069* |
| *C. anomolus.AG* | *E. ventermaculus.AG* | *-0.400* | *-0.851* | *0.054* |
| *C. anomolus.AG* | *E. pulcher.GoO* | *0.747* | *0.316* | *1.211* |
| *C. anomolus.AG* | *E. ventermaculus.GoO* | *-1.391* | *-1.887* | *-0.888* |
| *C. anomolus.AG* | *E. guttata.GoO* | *-0.784* | *-1.241* | *-0.317* |
| *C. anomolus.AG* | *H. fuscopinna.GoO* | *-1.235* | *-1.736* | *-0.754* |
| *C. anomolus.AG* | *H. vulgaris.GoO* | *-0.080* | *-0.549* | *0.384* |
| *E. pulcher.AG* | *E. ventermaculus.AG* | *-1.011* | *-1.313* | *-0.709* |
| *E. pulcher.AG* | *E. pulcher.GoO* | *0.137* | *-0.165* | *0.446* |
| *E. pulcher.AG* | *E. ventermaculus.GoO* | *-2.003* | *-2.402* | *-1.641* |
| *E. pulcher.AG* | *E. guttata.GoO* | *-1.394* | *-1.704* | *-1.076* |
| *E. pulcher.AG* | *H. fuscopinna.GoO* | *-1.847* | *-2.206* | *-1.489* |
| *E. pulcher.AG* | *H. vulgaris.GoO* | *-0.694* | *-1.010* | *-0.358* |
| *E. ventermaculus.AG* | *E. pulcher.GoO* | *1.149* | *0.847* | *1.459* |
| *E. ventermaculus.AG* | *E. ventermaculus.GoO* | *-0.990* | *-1.382* | *-0.610* |
| *E. ventermaculus.AG* | *E. guttata.GoO* | *-0.381* | *-0.706* | *-0.065* |
| *E. ventermaculus.AG* | *H. fuscopinna.GoO* | *-0.836* | *-1.201* | *-0.475* |
| *E. ventermaculus.AG* | *H. vulgaris.GoO* | *0.318* | *-0.016* | *0.648* |
| *E. pulcher.GoO* | *E. ventermaculus.GoO* | *-2.138* | *-2.526* | *-1.766* |
| *E. pulcher.GoO* | *E. guttata.GoO* | *-1.530* | *-1.843* | *-1.213* |
| *E. pulcher.GoO* | *H. fuscopinna.GoO* | *-1.985* | *-2.341* | *-1.615* |
| *E. pulcher.GoO* | *H. vulgaris.GoO* | *-0.832* | *-1.174* | *-0.519* |
| *E. ventermaculus.GoO* | *E. guttata.GoO* | *0.607* | *0.231* | *1.018* |
| *E. ventermaculus.GoO* | *H. fuscopinna.GoO* | *0.152* | *-0.260* | *0.582* |
| *E. ventermaculus.GoO* | *H. vulgaris.GoO* | *1.307* | *0.895* | *1.691* |
| *E. guttata.GoO* | *H. fuscopinna.GoO* | *-0.453* | *-0.822* | *-0.088* |
| *E. guttata.GoO* | *H. vulgaris.GoO* | *0.700* | *0.360* | *1.041* |
| *H. fuscopinna.GoO* | *H. vulgaris.GoO* | *1.153* | *0.799* | *1.543* |