**Supplementary Material**

**Table S1.** eDNA sampling filtrations. Data about filters, stations and dates of sampling are provided.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Code** | **Sampling Method** | **Filter** | **Date** | **T\_start** | **T\_end** | **latitude\_start** | **longitude\_start** | **latitude\_end** | **longitude\_end** |
| Providencia | P\_SW | Transect | SPY181729 | 29/06/2018 | 14H07 | 14H45 | 13.34043 | -81.39829 | 13.34043 | -81.39829 |
| Providencia | P\_SW | Transect | SPY181719 | 30/06/2018 | 8H57 | 9H39 | 13.34043 | -81.39829 | 13.34043 | -81.39829 |
| Providencia | P\_NW\_1 | Transect | SPY181732 | 01/07/2018 | 9H25 | 10H09 | 13.36786 | -81.38864 | 13.36786 | -81.38864 |
| Providencia | P\_NW\_1 | Transect | SPY181724 | 01/07/2018 | 9H25 | 10H09 | 13.36786 | -81.38864 | 13.36786 | -81.38864 |
| Providencia | P\_N | Transect | SPY181721 | 02/07/2018 | 9H10 | 9H50 | 13.39172 | -81.38029 | 13.39172 | -81.38029 |
| Providencia | P\_N | Transect | SPY181730 | 02/07/2018 | 9H10 | 9H50 | 13.39172 | -81.38029 | 13.39172 | -81.38029 |
| Providencia | P\_NE | Transect | SPY181725 | 02/07/2018 | 10H06 | 10H50 | 13.38322 | -81.35909 | 13.38322 | -81.35909 |
| Providencia | P\_NE | Transect | SPY181733 | 02/07/2018 | 10H06 | 10H50 | 13.38322 | -81.35909 | 13.38322 | -81.35909 |
| Providencia | P\_SE\_2 | Transect | SPY181716 | 05/07/2018 | 9H27 | 10H07 | 13.32225 | -81.36716 | 13.32225 | -81.36716 |
| Providencia | P\_SE\_2 | Transect | SPY180774 | 05/07/2018 | 9H27 | 10H07 | 13.32225 | -81.36716 | 13.32225 | -81.36716 |
| Providencia | P\_W\_2 | Transect | SPY181728 | 04/07/2018 | 9H56 | 10H34 | 13.36726 | -81.41335 | 13.36726 | -81.41335 |
| Providencia | P\_W\_2 | Transect | SPY181722 | 04/07/2018 | 9H56 | 10H34 | 13.36726 | -81.41335 | 13.36726 | -81.41335 |
| Providencia | P\_SE\_1 | Transect | SPY181726 | 03/07/2018 | 10H30 | 11H00 | 13.34073 | -81.35124 | 13.34072 | -81.35561 |
| Providencia | P\_SE\_1 | Transect | SPY181731 | 03/07/2018 | 10H30 | 11H00 | 13.34073 | -81.35124 | 13.34072 | -81.35561 |
| Providencia | P\_E | Transect | SPY181718 | 03/07/2018 | 9H42 | 10H13 | 13.3652 | -81.3475 | 13.36264 | -81.34969 |
| Providencia | P\_E | Transect | SPY181727 | 03/07/2018 | 9H42 | 10H13 | 13.3652 | -81.3475 | 13.36264 | -81.34969 |
| Providencia | P\_W1 | Transect | SPY181723 | 30/06/2018 | 12H50 | 13H48 | 13.34393 | -81.39777 | 13.34393 | -81.39777 |
| Providencia | P\_W1 | Transect | SPY181734 | 30/06/2018 | 12H50 | 13H48 | 13.34393 | -81.39777 | 13.34393 | -81.39777 |
| Providencia | P\_NW\_2 | Transect | SPY181717 | 04/07/2018 | 9H10 | 9H40 | 13.36541 | -81.41025 | 13.36541 | -81.41025 |
| Providencia | P\_NW\_2 | Transect | SPY181715 | 04/07/2018 | 9H10 | 9H40 | 13.36541 | -81.41025 | 13.36541 | -81.41025 |
|  |  |  |  |  |  |  |  |  |  |  |
| Gayraca Bay | S\_P7 | Transect | SPY181508 | 23/10/2018 | 13H00 | 13H30 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P7 | Transect | SPY181538 | 23/10/2018 | 13H00 | 13H30 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P1 | Fixed point | SPY181515 | 23/10/2018 | 16H15 | 16H45 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P1 | Fixed point | SPY181525 | 23/10/2018 | 16H15 | 16H45 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P4 | Fixed point | SPY181501 | 24/10/2018 | 7H40 | 8H10 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P4 | Fixed point | SPY181514 | 24/10/2018 | 7H40 | 8H10 | 11,33765 | -74,11044 | 11,33738 | -74,1105 |
| Gayraca Bay | S\_P10 | Fixed point | SPY181500 | 25/10/2018 | 11H08 | 11H38 | 11,32828 | -74,11485 | 11,32799 | -74,11439 |
| Gayraca Bay | S\_P10 | Fixed point | SPY181516 | 25/10/2018 | 11H08 | 11H38 | 11,32828 | -74,11485 | 11,32799 | -74,11439 |
| Gayraca Bay |  S\_T9 | Transect | SPY181499 | 25/10/2018 | 12H02 | 12H32 | 11,33078 | -74,1163 | 11,33107 | -74,11662 |
| Gayraca Bay |  S\_T9 | Transect | SPY181539 | 25/10/2018 | 12H02 | 12H32 | 11,33078 | -74,1163 | 11,33107 | -74,11662 |
| Gayraca Bay | S\_P7 | Fixed point | SPY181503 | 25/10/2018 | 14H07 | 14H37 | 11,34072 | -74,1121 | 11,34031 | -74,11184 |
| Gayraca Bay | S\_P7 | Fixed point | SPY181530 | 25/10/2018 | 14H07 | 14H37 | 11,34072 | -74,1121 | 11,34031 | -74,11184 |
| Gayraca Bay | S\_T2 | Transect | SPY181903 | 25/10/2018 | 14H55 | 15H25 | 11,34196 | -74,11269 | 11,34208 | -74,11231 |
| Gayraca Bay | S\_T2 | Transect | SPY181534 | 25/10/2018 | 14H55 | 15H25 | 11,34196 | -74,11269 | 11,34208 | -74,11231 |
| Gayraca Bay | S\_T5 | Transect | SPY181889 | 25/10/2018 | 15H48 | 16H18 | 11,32668 | -74,11428 | 11,32873 | -74,11475 |
| Gayraca Bay | S\_T5 | Transect | SPY181891 | 25/10/2018 | 15H48 | 16H18 | 11,32668 | -74,11428 | 11,32873 | -74,11475 |
| Gayraca Bay | S\_T6 | Transect | SPY181540 | 25/10/2018 | 17H25 | 17H55 | 11,33017 | -74,11576 | 11,32756 | -74,11442 |
| Gayraca Bay | S\_T6 | Transect | SPY181504 | 25/10/2018 | 17H25 | 17H55 | 11,33017 | -74,11576 | 11,32756 | -74,11442 |
| Gayraca Bay | S\_T3 | Transect | SPY181505 | 26/10/2018 | 6H41 | 7H11 | 11,32842 | -74,1143 | 11,32764 | -74,11383 |
| Gayraca Bay | S\_T3 | Transect | SPY181509 | 26/10/2018 | 6H41 | 7H11 | 11,32842 | -74,1143 | 11,32764 | -74,11383 |

**Table S2.** Summary table of the species using OBITools for the three different primer sets for Providencia. The second column indicates which species were observed during the underwater visual censuses (UVC), and the third column indicates which species were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Species** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads Chon01** | **# Reads teleo** | **# Reads Vert01t** |
| *Carcharhinus perezii* |   | R | 531398 | 10654 |   |
| *Rhizoprionodon terraenovae* |   | R | 36504 | 147 |   |
| *Sphyrna mokarran* |   | R | 18136 | 724 |   |
| *Aetobatus narinari* | UVC | R | 1524160 | 50603 |   |
| *Ginglymostoma cirratum* | UVC | R | 1280127 | 79486 |   |
| *Urobatis jamaicensis* | UVC | R |   | 126501 |   |
| *Chilorhinus suensonii* |   | R |   | 18462 | 8187 |
| *Kaupichthys hyoproroides* |   | R |   | 2574 | 5980 |
| *Ariosoma balearicum* |   | R |   |   | 168 |
| *Moringua edwardsi* |   | R |   | 1616 | 35872 |
| *Enchelycore carychroa* |   | R |   |   | 3856 |
| *Gymnothorax miliaris* |   | R |   |   | 21561 |
| *Gymnothorax vicinus* |   | R |   |   | 6490 |
| *Uropterygius macularius* |   | R |   |   | 7931 |
| *Atherinomorus stipes* |   | R |   |   | 132604 |
| *Tylosurus crocodilus* |   | R |   |   | 41374 |
| *Starksia atlantica* |   | R |   |   | 75916 |
| *Starksia nanodes* |   | R |   |   | 4862 |
| *Selar crumenophthalmus* |   | R |   |   | 274 |
| *Trachinotus carolinus* |   | R |   |   | 571 |
| *Rachycentron canadum* |   | R |   |   | 614 |
| *Kyphosus bigibbus* |   |  |   | 32092 | 27631 |
| *Kyphosus cinerascens* |   | R |   | 30353 |   |
| *Kyphosus vaigiensis* |   | R |   | 31130 |   |
| *Harengula jaguana* |   | R |   | 1891 | 21932 |
| *Jenkinsia lamprotaenia* |   | R |   |   | 910956 |
| *Opisthonema oglinum* |   | R |   | 657 | 10404 |
| *Megalops atlanticus* |   | R |   | 38355 | 21212 |
| *Chaetodipterus faber* |   | R |   |   | 4871 |
| *Diapterus auratus* |   | R |   |   | 1464 |
| *Eucinostomus argenteus* |   | R |   |   | 16227 |
| *Eucinostomus gula* |   | R |   |   | 1173 |
| *Eucinostomus melanopterus* |   | R |   |   | 3626 |
| *Gerres cinereus* | UVC | R |   |   | 189743 |
| *Eleotris amblyopsis* |   | R |   | 492 |   |
| *Erotelis smaragdus* |   |  |   | 6400 |   |
| *Gnatholepis thompsoni* |   | R |   |   | 395683 |
| *Lythrypnus crocodilus* |   | R |   |   | 5168 |
| *Lythrypnus nesiotes* |   | R |   |   | 2755 |
| *Nes longus* |   | R |   | 306 |   |
| *Oxyurichthys stigmalophius* |   | R |   | 789 |   |
| *Priolepis hipoliti* |   | R |   | 481 |   |
| *Ostichthys trachypoma* |   | R |   |   | 114 |
| *Sargocentron coruscum* |   | R |   |   | 289 |
| *Apogon aurolineatus* |   | R |   | 2937 |   |
| *Apogon phenax* |   | R |   | 5084 |   |
| *Apogon planifrons* |   | R |   | 13988 |   |
| *Apogon townsendi* |   | R |   | 133 |   |
| *Astrapogon puncticulatus* |   | R |   | 10192 |   |
| *Phaeoptyx conklini* |   | R |   | 13682 |   |
| *Phaeoptyx pigmentaria* |   | R |   | 116147 |   |
| *Bodianus rufus* | UVC | R |   | 3055 | 1678 |
| *Clepticus parrae* | UVC | R |   |   | 82594 |
| *Cryptotomus roseus* | UVC | R |   | 20924 | 20200 |
| *Halichoeres maculipinna* | UVC | R |   | 49523 | 47191 |
| *Halichoeres bivittatus* | UVC | R |   | 358262 |   |
| *Halichoeres garnoti* | UVC | R |   | 574848 |   |
| *Halichoeres poeyi* | UVC | R |   | 19849 |   |
| *Halichoeres radiatus* |   | R |   | 635 |   |
| *Lachnolaimus maximus* | UVC | R |   | 6058 | 15229 |
| *Scarus guacamaia* | UVC | R |   |   | 5771 |
| *Scarus iseri* | UVC | R |   |   | 40254 |
| *Sparisoma aurofrenatum* | UVC | R |   |   | 1408 |
| *Sparisoma axillare* |   |  |   |   | 108001 |
| *Sparisoma chrysopterum* | UVC | R |   | 74817 | 3807 |
| *Sparisoma viride* | UVC | R |   |   | 544023 |
| *Thalassoma bifasciatum* | UVC | R |   | 69030 | 363881 |
| *Xyrichtys martinicensis* |   | R |   |   | 53863 |
| *Xyrichtys novacula* |   | R |   |   | 2161 |
| *Xyrichtys splendens* |   | R |   |   | 72511 |
| *Mugil curema* |   | R |   |   | 1080 |
| *Holacanthus tricolor* | UVC | R |   | 14093 | 1354 |
| *Pomacanthus arcuatus* | UVC | R |   |   | 6688 |
| *Abudefduf saxatilis* | UVC | R |   | 136065 |   |
| *Abudefduf taurus* |   | R |   | 2978 |   |
| *Chromis multilineata* | UVC | R |   | 25300 |   |
| *Chromis cyanea* | UVC | R |   |   | 14420 |
| *Microspathodon chrysurus* | UVC | R |   | 78942 | 238727 |
| *Stegastes adustus* | UVC | R |   |   | 153703 |
| *Stegastes partitus* | UVC | R |   |   | 390446 |
| *Stegastes planifrons* | UVC | R |   |   | 8174 |
| *Stegastes variabilis* | UVC | R |   | 716 |   |
| *Petrotyx sanguineus* |   | R |   |   | 13803 |
| *Scorpaena brasiliensis* |   | R |   |   | 11962 |
| *Cephalopholis fulva* | UVC | R |   |   | 942 |
| *Hypoplectrus gemma* |   |  |   | 936 |   |
| *Pseudogramma gregoryi* |   | R |   |   | 9232 |
| *Eumegistus brevorti* |   | R |   | 104 |   |
| *Gempylus serpens* |   | R |   | 223 |   |
| *Bothus lunatus* |   | R |   |   | 387 |
| *Euthynnus alletteratus* |   | R |   | 3270 |   |
| *Aulostomus maculatus* |   | R |   |   | 11089 |
| *Mulloidichthys martinicus* | UVC | R |   | 112069 | 124323 |
| *Pseudupeneus maculatus* | UVC | R |   |   | 1817 |
| *Balistes capriscus* |   | R |   |   | 21375 |
| *Balistes vetula* |   | R |   | 17453 | 31930 |
| *Canthidermis maculata* |   | R |   | 71057 | 127962 |
| *Melichthys niger* | UVC | R |   | 10976 |   |
| *Diodon hystrix* |   | R |   | 4532 | 37486 |
| *Aluterus monoceros* |   | R |   | 7262 | 3721 |
| *Aluterus scriptus* | UVC | R |   | 385 | 286 |
| *Monacanthus tuckeri* |   | R |   |   | 38387 |
| *Acanthostracion polygonius* | UVC | R |   |   | 14341 |
| *Lactophrys bicaudalis* |   | R |   |   | 31926 |
| *Lactophrys triqueter* |   | R |   |   | 1481 |
| *Canthigaster rostrata* | UVC | R |   |   | 1849671 |
| *Sphoeroides spengleri* |   | R |   |   | 19765 |

**Table S3.** Summary table of the genera using OBITools for the three different primer sets for Providencia. The second column indicates which genera were observed during the underwater visual censuses (UVC), and the third column indicates which genera were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Genus** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads Chon01** | **# Reads teleo** | **# Reads Vert01t** |
| *Carcharhinus* |   | R | 233243 | 28053 |   |
| *Sphyrna* |   | R | 280 |   |   |
| *Urobatis* | UVC | R | 2330873 | 9445 |   |
| *Ginglymostoma* | UVC | R | 2946 |   |   |
| *Acanthurus* | UVC | R |   | 147474 | 395956 |
| *Albula* |   | R |   |   | 15993 |
| *Ariosoma* |   | R |   | 127 |   |
| *Gymnothorax* | UVC | R |   |   | 20123 |
| *Atherinomorus* |   | R |   |   | 653 |
| *Synodus* |   | R |   |   | 606 |
| *Strongylura* |   | R |   |   | 280 |
| *Tylosurus* |   | R |   |   | 649220 |
| *Cheilopogon* |   | R |   |   | 133 |
| *Hemiramphus* |   | R |   |   | 247635 |
| *Entomacrodus* |   | R |   |   | 7034 |
| *Parablennius* |   | R |   |   | 15810 |
| *Chaenopsis* |   | R |   |   | 13183 |
| *Arcos* |   | R |   | 4105 |   |
| *Malacoctenus* | UVC | R |   |   | 286196 |
| *Starksia* |   | R |   |   | 314 |
| *Caranx* | UVC | R |   | 618 | 189061 |
| *Selar* |   | R |   | 148 |   |
| *Trachinotus* |   | R |   |   | 75764 |
| *Echeneis* |   | R |   |   | 8252 |
| *Kyphosus* | UVC | R |   |   | 159200 |
| *Chaetodon* | UVC | R |   |   | 5935 |
| *Harengula* |   | R |   |   | 326 |
| *Jenkinsia* |   | R |   | 55403 | 4857 |
| *Engraulis* |   | R |   |   | 724 |
| *Anchoa* |   | R |   |   | 7126 |
| *Poecilia* |   | R |   |   | 608 |
| *Elops* |   | R |   | 3280 | 5358 |
| *Gerres* | UVC | R |   |   | 1945 |
| *Gnatholepis* |   | R |   |   | 3343 |
| *Nes* |   | R |   | 29186 |   |
| *Myripristis* | UVC | R |   |   | 1476 |
| *Apogon* |   | R |   | 55441 |   |
| *Astrapogon* |   | R |   | 1590 |   |
| *Clepticus* | UVC | R |   |   | 432 |
| *Halichoeres* | UVC | R |   | 22632 | 739789 |
| *Lachnolaimus* | UVC | R |   |   | 143 |
| *Scarus* | UVC | R |   | 58317 | 8757 |
| *Sparisoma* | UVC | R |   |   | 264140 |
| *Thalassoma* | UVC | R |   |   | 2158 |
| *Xyrichtys* |   | R |   |   | 464 |
| *Lutjanus* | UVC | R |   | 269470 | 1008490 |
| *Mugil* |   | R |   | 3660 | 12672 |
| *Holacanthus* | UVC | R |   | 744 | 417 |
| *Abudefduf* | UVC | R |   | 5470 | 539730 |
| *Microspathodon* | UVC | R |   | 2950 | 2495 |
| *Stegastes* | UVC | R |   |   | 13050 |
| *Sphyraena* | UVC | R |   | 4559 | 51758 |
| *Pterois* | UVC | R |   |   | 3239 |
| *Cephalopholis* | UVC | R |   |   | 15179 |
| *Diplectrum* | UVC | R |   |   | 1046 |
| *Hypoplectrus* | UVC | R |   |   | 194 |
| *Liopropoma* |   | R |   |   | 352 |
| *Rypticus* |   | R |   |   | 18432 |
| *Bothus* |   | R |   |   | 15770 |
| *Cubiceps* |   | R |   |   | 368 |
| *Auxis* |   | R |   | 215 | 2903 |
| *Scomberomorus* |   | R |   | 4204 | 4677 |
| *Thunnus* |   | R |   | 8446 | 49512 |
| *Mulloidichthys* | UVC | R |   |   | 2458 |
| *Syngnathus* |   | R |   | 2829 | 10512 |
| *Balistes* |   | R |   |   | 188 |
| *Canthidermis* |   | R |   |   | 805 |
| *Melichthys* | UVC | R |   |   | 203037 |
| *Diodon* | UVC | R |   | 18009 | 151019 |
| *Cantherhines* | UVC | R |   |   | 10114 |
| *Stephanolepis* |   | R |   | 310 | 6033 |
| *Acanthostracion* | UVC | R |   |   | 25458 |
| *Canthigaster* | UVC | R |   |   | 20991 |
| *Epinephelus* | UVC | R |   |   | 7068 |
| *Rhizoprionodon* |   | R | See species table |   |   |
| *Aetobatus* | UVC | R | See species table |   |   |
| *Chilorhinus* |   | R | See species table |   |   |
| *Kaupichthys* |   | R | See species table |   |   |
| *Moringua* |   | R | See species table |   |   |
| *Enchelycore* |   | R | See species table |   |   |
| *Uropterygius* |   | R | See species table |   |   |
| *Rachycentron* |   | R | See species table |   |   |
| *Opisthonema* |   | R | See species table |   |   |
| *Megalops* |   | R | See species table |   |   |
| *Chaetodipterus* |   | R | See species table |   |   |
| *Eucinostomus* | UVC | R | See species table |   |   |
| *Priolepis* |   | R | See species table |   |   |
| *Ostichthys* |   | R | See species table |   |   |
| *Sargocentron* |   | R | See species table |   |   |
| *Phaeoptyx* |   | R | See species table |   |   |
| *Bodianus* | UVC | R | See species table |   |   |
| *Cryptotomus* | UVC | R | See species table |   |   |
| *Pomacanthus* | UVC | R | See species table |   |   |
| *Petrotyx* |   | R | See species table |   |   |
| *Scorpaena* |   | R | See species table |   |   |
| *Pseudogramma* |   | R | See species table |   |   |
| *Eumegistus* |   | R | See species table |   |   |
| *Gempylus* |   | R | See species table |   |   |
| *Euthynnus* |   | R | See species table |   |   |
| *Aulostomus* |   | R | See species table |   |   |
| *Pseudupeneus* | UVC | R | See species table |   |   |
| *Aluterus* | UVC | R | See species table |   |   |
| *Monacanthus* |   | R | See species table |   |   |
| *Lactophrys* | UVC | R | See species table |   |   |
| *Sphoeroides* |   | R | See species table |   |   |
| *Chromis* |   | R | See species table |   |   |

**Table S4.** Summary table of the families using OBITools for the three different primers sets for Providencia. The second column indicates which families were observed during the underwater visual censuses (UVC), and the third column indicates which genera were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Family** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads Chon01** | **# Reads teleo** | **# Reads Vert01t** |
| Carcharhinidae |   | R | 198 |   |   |
| Dasyatoidea | UVC | R |   | 64521 |   |
| Myliobatidae |   | R | 1252 |   |   |
| Urotrygonidae | UVC | R | 14101 | 2500 |   |
| Ginglymostomatidae | UVC | R | 9814 |   |   |
| Acanthuridae | UVC | R |   | 275279 | 823561 |
| Albulidae |   | R |   | 19333 |   |
| Chlopsidae |   | R |   |   | 944 |
| Ophichthidae | UVC | R |   | 5034 | 4517 |
| Muraenidae | UVC | R |   | 67484 | 941 |
| Paralepididae |   | R |   |   | 137 |
| Belonidae |   | R |   | 482289 | 93219 |
| Exocoetidae |   | R |   | 2955 | 458 |
| Hemiramphidae |   | R |   | 148625 | 4008 |
| Blenniidae |   | R |   |   | 2551 |
| Chaenopsidae |   | R |   |   | 11423 |
| Gobiesocidae |   | R |   |   | 1343 |
| Labrisomidae | UVC | R |   |   | 582788 |
| Carangidae | UVC | R |   | 28257 | 312106 |
| Kyphosidae |   | R |   |   | 131 |
| Chaetodontidae | UVC | R |   | 17032 |   |
| Cichlidae |   | R |   |   | 2685 |
| Clupeidae |   | R |   | 1439 | 12248 |
| Engraulidae |   | R |   | 3190 |   |
| Cyprinidae |   | R |   | 3793 | 3132 |
| Poeciliidae |   | R |   | 1292 |   |
| Elopidae |   | R |   | 1111 |   |
| Megalopidae |   | R |   |   | 103 |
| Gerreidae | UVC | R |   |   | 60854 |
| Eleotridae |   | R |   |   | 2427 |
| Gobiidae | UVC | R |   | 319 | 99437 |
| Holocentridae | UVC | R |   | 72793 |   |
| Apogonidae |   | R |   | 6880 | 128904 |
| Labridae | UVC | R |   | 5524 | 83232 |
| Haemulidae | UVC | R |   |   | 212850 |
| Lutjanidae | UVC | R |   | 292162 | 1424 |
| Mugilidae |   | R |   | 600 |   |
| Myctophidae |   | R |   | 18219 |   |
| Pomacanthidae | UVC | R |   | 7000 |   |
| Pomacentridae | UVC | R |   | 1544396 | 889 |
| Sciaenidae | UVC | R |   | 1628 | 9271 |
| Ophidiidae |   | R |   |   | 4935 |
| Hexagrammidae |   | R |   |   | 542 |
| Serranidae | UVC | R |   | 12323 |   |
| Bothidae |   | R |   |   | 57447 |
| Cynoglossidae |   | R |   |   | 1084 |
| Paralichthyidae |   | R |   |   | 1927 |
| Scombridae |   | R |   |   | 252 |
| Sparidae | UVC | R |   |   | 54590 |
| Aulostomidae |   | R |   | 18290 |   |
| Callionymidae |   | R |   |   | 54975 |
| Fistulariidae | UVC | R |   | 115 | 817 |
| Mullidae | UVC | R |   |   | 210 |
| Balistidae | UVC | R |   | 10195 | 1296 |
| Diodontidae | UVC | R |   |   | 1388 |
| Ostraciidae | UVC | R |   |   | 1768 |
| Tetraodontidae | UVC | R |   | 1372210 | 4963 |
| Sphyrnidae |   | R | See genera/species table |   |   |
| Aetobatidae | UVC | R | See species table |   |   |
| Congridae |   | R | See species table |   |   |
| Moringuidae |   | R | See species table |   |   |
| Atherinidae |   | R | See species table |   |   |
| Rachicentridae |   | R | See species table |   |   |
| Ephipiidae |   | R | See species table |   |   |
| Scorpaenidae | UVC | R | See species table |   |   |
| Gempylidae |   | R | See species table |   |   |
| Monacanthidae | UVC | R | See genera/species table |   |   |
| Synodontidae |   | R | See genera table |   |   |
| Echeneidae |   | R | See genera table |   |   |
| Chaetodontidae |   | R | See genera table |   |   |
| Poeciliidae |   | R | See genera table |   |   |
| Noemidae |   | R | See genera table |   |   |
| Syngnathidae | UVC | R | See genera table |   |   |

**Table S5.** Summary table of the species using OBITools for the three different primers for Gayraca. The second column indicates which species were observed during the underwater visual censuses (UVC), and the third column indicates which genera were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Species** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads teleo** | **# Reads Vert01t** |
| *Moringua edwardsi* |   | R | 233 | 1274 |
| *Enchelycore carychroa* |   | R |   | 6263 |
| *Gymnothorax miliaris* |   | R |   | 3558 |
| *Gymnothorax vicinus* |   | R |   | 2738 |
| *Antigonia capros* |   | R | 29 | 463138 |
| *Ablennes hians* |   | R |   | 50002 |
| *Tylosurus crocodilus* |   | R |   | 327683 |
| *Parexocoetus brachypterus* |   | R |   | 82791 |
| *Hyporhamphus unifasciatus* |   | R |   | 383 |
| *Hypsoblennius invemar* |   | R |   | 786 |
| *Decapterus macarellus* |   | R | 3768 |   |
| *Selar crumenophthalmus* |   | R |   | 51096 |
| *Selene setapinnis* |   | R |   | 1494 |
| *Coryphaena hippurus* |   | R | 2309 |   |
| *Kyphosus bigibbus* |   |  | 2849 |   |
| *Kyphosus cinerascens* |   | R | 52 |   |
| *Kyphosus vaigiensis* |   | R | 82714 |   |
| *Chaetodon ocellatus* | UVC | R |   | 19979 |
| *Harengula jaguana* |   | R | 1309663 | 3745199 |
| *Jenkinsia lamprotaenia* |   | R | 3237 | 3691 |
| *Opisthonema oglinum* |   | R | 306590 | 687423 |
| *Chaetodipterus faber* |   | R |   | 8572 |
| *Diapterus auratus* |   | R |   | 900 |
| *Diapterus rhombeus* |   | R |   | 2025 |
| *Eucinostomus argenteus* |   | R |   | 104148 |
| *Eucinostomus dowii* |   | R |   | 442 |
| *Eucinostomus gula* |   | R |   | 4911 |
| *Eucinostomus melanopterus* |   | R |   | 4276 |
| *Gerres cinereus* |   | R |   | 36258 |
| *Awaous banana* |   | R | 2473 |   |
| *Gnatholepis thompsoni* |   | R |   | 117288 |
| *Lythrypnus crocodilus* |   | R |   | 9857 |
| *Oxyurichthys stigmalophius* |   | R | 419 |   |
| *Priolepis hipoliti* |   | R | 2593 |   |
| *Sargocentron coruscum* |   | R |   | 2075 |
| *Apogon pseudomaculatus* |   | R | 203 |   |
| *Phaeoptyx pigmentaria* |   | R | 50383 |   |
| *Bodianus rufus* | UVC | R | 602921 | 1961600 |
| *Clepticus parrae* |   | R |   | 34455 |
| *Cryptotomus roseus* |   | R | 1199 | 3983 |
| *Halichoeres maculipinna* |   | R | 34142 | 40293 |
| *Halichoeres bivittatus* |   | R | 94662 |   |
| *Halichoeres garnoti* |   | R | 28881 |   |
| *Halichoeres poeyi* |   | R | 5280 |   |
| *Halichoeres radiatus* |   | R | 20422 |   |
| *Nicholsina usta* |   | R | 437 | 870 |
| *Scarus iseri* | UVC | R |   | 104720 |
| *Sparisoma aurofrenatum* | UVC | R |   | 72565 |
| *Sparisoma axillare* |   |  |   | 206834 |
| *Sparisoma chrysopterum* | UVC | R | 28610 | 11728 |
| *Sparisoma viride* | UVC | R |   | 106724 |
| *Thalassoma bifasciatum* |   | R | 385478 | 752854 |
| *Mugil incilis* |   | R | 11842 |   |
| *Mugil curema* |   | R |   | 8489 |
| *Holacanthus tricolor* | UVC | R | 32220 | 9645 |
| *Pomacanthus arcuatus* |   | R |   | 1776 |
| *Abudefduf taurus* |   | R | 52992 | 2051 |
| *Abudefduf saxatilis* | UVC | R | 118994 |   |
| *Chromis cyanea* |   | R |   | 3196 |
| *Chromis multilineata* |   | R | 77656 |   |
| *Microspathodon chrysurus* | UVC | R | 77396 | 186472 |
| *Stegastes adustus* | UVC | R |   | 188705 |
| *Stegastes partitus* | UVC | R |   | 58175 |
| *Stegastes planifrons* | UVC | R |   | 45930 |
| *Pterois volitans* | UVC | R | 886 |   |
| *Scorpaena brasiliensis* |   | R |   | 333 |
| *Hypoplectrus gemma* |   |  | 4029 |   |
| *Cephalopholis fulva* | UVC | R |   | 317 |
| *Pseudogramma gregoryi* |   | R |   | 4956 |
| *Serranus tigrinus* |   | R |   | 4715 |
| *Euthynnus alletteratus* |   | R | 13548 |   |
| *Katsuwonus pelamis* |   | R | 771 |   |
| *Aulostomus maculatus* |   | R |   | 686 |
| *Mulloidichthys martinicus* | UVC | R | 172658 | 111386 |
| *Pseudupeneus maculatus* |   | R |   | 675 |
| *Diodon hystrix* |   | R | 6780 | 45295 |
| *Aluterus monoceros* |   | R | 291 | 308 |
| *Aluterus scriptus* |   | R | 1466 | 700 |
| *Monacanthus tuckeri* |   | R |   | 9034 |
| *Acanthostracion polygonius* | UVC | R |   | 14553 |
| *Acanthostracion quadricornis* |   | R |   | 10362 |
| *Lactophrys bicaudalis* |   | R |   | 7036 |
| *Lactophrys triqueter* |   | R |   | 11981 |
| *Canthigaster rostrata* |   | R |   | 65944 |
| *Sphoeroides spengleri* |   | R |   | 5841 |

**Table S6.** Summary table of the genera using OBITools for the three different primers for Gayraca. The second column indicates which genera were observed during the underwater visual censuses (UVC), and the third column indicates which genera were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genera** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads teleo** | **# Reads Vert01t** |
| Acanthurus | UVC | R | 273646 | 695441 |
| Gymnothorax |   | R |   | 24914 |
| Parexocoetus |   | R | 25403 | 6739 |
| Arcos |   | R | 663 | 1775 |
| Synodus |   | R |   | 23054 |
| Ablennes |   | R |   | 207 |
| Tylosurus |   | R |   | 302611 |
| Cheilopogon |   | R |   | 48569 |
| Parexocoetus |   | R |   | 1770 |
| Hemiramphus |   | R |   | 27926 |
| Entomacrodus |   | R |   | 56222 |
| Parablennius |   | R |   | 1319 |
| Malacoctenus |   | R |   | 1536 |
| Caranx | UVC | R | 5204 | 869258 |
| Selar |   | R | 1632 | 503 |
| Uraspis |   | R | 220170 |   |
| Trachinotus |   | R |   | 16694 |
| Kyphosus |   | R |   | 122331 |
| Chaetodon | UVC | R |   | 71586 |
| Harengula |   | R |   | 29404 |
| Opisthonema |   | R | 120 | 3857 |
| Sardinella |   | R | 61051 | 2466 |
| Engraulis |   | R |   | 16897 |
| Elops |   | R | 16826 |   |
| Chaetodipterus |   | R |   | 112 |
| Eucinostomus |   | R |   | 34231 |
| Gnatholepis |   | R |   | 681 |
| Lythrypnus |   | R |   | 3596 |
| Tigrigobius |   | R | 624 |   |
| Myripristis |   | R |   | 351 |
| Ostichthys |   | R |   | 688 |
| Sargocentron |   | R |   | 584 |
| Apogon |   | R | 12060 | 51730 |
| Bodianus | UVC | R |   | 1265 |
| Halichoeres |   | R | 18620 | 117075 |
| Scarus | UVC | R | 171662 | 35709 |
| Sparisoma | UVC | R |   | 1194 |
| Thalassoma |   | R |   | 3288 |
| Lutjanus | UVC | R | 97249 | 114910 |
| Pristipomoides |   | R |   | 7291 |
| Mugil |   | R | 29950 | 26518 |
| Diaphus |   | R |   | 448 |
| Holacanthus | UVC | R | 1274 | 22645 |
| Abudefduf | UVC | R | 4767 | 311664 |
| Chromis |   | R | 1479 | 123 |
| Microspathodon | UVC | R |   | 3348 |
| Stegastes | UVC | R |   | 7752 |
| Sphyraena |   | R | 3274 | 69510 |
| Pterois | UVC | R |   | 355 |
| Cephalopholis | UVC | R |   | 96968 |
| Rypticus |   | R |   | 8188 |
| Achirus |   | R |   | 10940 |
| Auxis |   | R | 76220 | 91187 |
| Scomberomorus |   | R |   | 1752 |
| Diplodus |   | R |   | 119223 |
| Thunnus |   | R | 1573 |   |
| Mulloidichthys |   | R |   | 575 |
| Chilomycterus |   | R |   | 4418 |
| Diodon | UVC | R | 13905 | 31297 |
| Cantherhines | UVC | R | 8231 | 21820 |
| Acanthostracion | UVC | R |   | 13893 |
| Canthigaster |   | R |   | 526 |
| Sphoeroides |   | R |   | 309 |
| Bothus |   | R |   | 6579 |
| Moringua |   | R | See species table |   |
| Enchelycore |   | R | See species table |   |
| Antigonia |   | R | See species table |   |
| Hyporamphus |   | R | See species table |   |
| Hypsoblennius |   | R | See species table |   |
| Decapterus |   | R | See species table |   |
| Selene |   | R | See species table |   |
| Coryphaena |   | R | See species table |   |
| Jenkinsia |   | R | See species table |   |
| Diapterus |   | R | See species table |   |
| Oxyurichthys |   | R | See species table |   |
| Priolepis |   | R | See species table |   |
| Phaeoptyx |   | R | See species table |   |
| Clepticus |   | R | See species table |   |
| Cryptotomus |   | R | See species table |   |
| Nicholsina |   | R | See species table |   |
| Pomacanthus | UVC | R | See species table |   |
| Scorpaena |   | R | See species table |   |
| Hypoplectrus |   | R | See species table |   |
| Pseudogramma |   | R | See species table |   |
| Serranus |   | R | See species table |   |
| Euthynnus |   | R | See species table |   |
| Katsuwonus |   | R | See species table |   |
| Aulostomus |   | R | See species table |   |
| Pseudupeneus |   | R | See species table |   |
| Aluterus |   | R | See species table |   |
| Monacanthus |   | R | See species table |   |
| Lactophrys |   | R | See species table |   |

**Table S7.** Summary table of the families using OBITools for the three different primers for Gayraca. The second column indicates which families were observed during the underwater visual censuses (UVC), and the third column indicates which genera were documented as present in the study area in an existing regional database (R). The last three columns indicate the total number of reads across all stations found for each primer.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Family** | **UVC- Underwater visual census** | **R-Present in a regional database** | **# Reads teleo** | **# Reads Vert01t** |
| Narcinidae |   | R | 625 |  |
| Acanthuridae | UVC | R | 190209 | 330461 |
| Congridae |   | R | 125 |   |
| Chlopsidae |   | R |   | 567 |
| Muraenidae |   | R | 32973 | 7553 |
| Belonidae |   | R | 1023552 | 21121 |
| Exocoetidae |   | R | 18346 | 4841 |
| Hemiramphidae |   | R | 74088 | 288 |
| Atherinopsidae |   | R |   | 19146 |
| Belonidae |   | R |   | 85614 |
| Exocoetidae |   | R |   | 1555 |
| Hemiramphidae |   | R |   | 343 |
| Blenniidae |   | R |   | 144691 |
| Gobiesocidae |   | R |   | 13716 |
| Labrisomidae |   | R |   | 27326 |
| Carangidae | UVC | R | 59865 | 632394 |
| Chaetodontidae | UVC | R | 116512 | 273 |
| Clupeidae |   | R | 43651 | 530020 |
| Engraulidae |   | R | 1330 | 5199 |
| Pristigasteridae |   | R |   | 231 |
| Gerreidae |   | R |   | 27073 |
| Gobiidae |   | R | 565 | 96542 |
| Holocentridae |   | R | 76413 |   |
| Labridae | UVC | R | 67332 | 72105 |
| Haemulidae | UVC | R |   | 33355 |
| Lutjanidae | UVC | R | 36379 | 602 |
| Mugilidae |   | R | 4460 |   |
| Myctophidae |   | R |   | 3489 |
| Pomacanthidae | UVC | R |   | 110 |
| Pomacentridae | UVC | R | 2290064 | 2867 |
| Sciaenidae |   | R | 1953 | 25960 |
| Scorpaenidae | UVC | R |   | 261 |
| Serranidae | UVC | R | 235 | 158 |
| Achiridae |   | R |   | 136 |
| Bothidae |   | R |   | 17800 |
| Cynoglossidae |   | R |   | 384 |
| Paralichthyidae |   | R |   | 14457 |
| Scombridae |   | R |   | 324 |
| Sparidae |   | R | 46598 | 54226 |
| Aulostomidae |   | R | 51552 |   |
| Callionymidae |   | R |   | 13450 |
| Fistulariidae |   | R |   | 5419 |
| Mullidae |   | R |   | 399 |
| Syngnathidae |   | R |   | 374 |
| Balistidae |   | R |   | 493 |
| Diodontidae | UVC | R |   | 1372 |
| Monacanthidae |   | R |   | 469 |
| Tetraodontidae |   | R | 25897 | 689 |
| Moringuidae |   | R | See species table |   |
| Caproidae |   | R | See species table |   |
| Coryphaenidae |   | R | See species table |   |
| Kyphosidae |   | R | See genera/species tables |   |
| Ephippidae |   | R | See genera/species tables |   |
| Apogonidae |   | R | See species table |   |
| Ostraciidae | UVC | R | See species table |   |
| Sphyraenidae |   | R | See genera table |   |
| Achiridae |   | R | See genera table |   |



**Figure S1.** Distribution of MOTU reads and of the number of species per genus (top row) and per family (bottom row) for Providencia (left column) and Gayraca Bay (right column). The size of the dots corresponds to the number of species per genus or family found in the UVCs. The dot size is log+1 scaled. Many more families were detected in the eDNA than in the UVCs.



**Figure S2.** Distribution of MOTU reads and of the number of individuals per genus (top row) and per family (bottom row) for Providencia (left column) and Gayraca Bay (right column). The number of MOTU reads and individuals counted in the UVCs were scaled between zero and one for their comparison. The size of the dots is proportional to the number of individuals per genus or family counted in the UVCs.

**Figure S3.** (A) Compositional differences (PCoA) from the MOTU presence–absence matrix between the eDNA sampling stations in Providencia. (B) Transects maps of Providencia, where colors correspond to the position of the transect in the ordination space.