Use of SCN features: No Max learning objects: 5000 objects/class Strategy N° 5

Actual Values

Gulf Selected Samples prediction using all regions training set, Learning with all classes present in the selected samples, no extra training categories, No Calanoida, Cyclopoida, Zooplankton classes in learning set

Confusion Matrix - In percent of Actual Value

| | | | | | | | | | | | | COIII | นรเป | II IVIC | ıtıtX · | - 111 | Jerce | ent O | r ACII | uat vatue | | | | | | | |
|---------------------------------|-------|-------|-----------------|-----------|-----------------------|-------------------------------|------------|-------------------|------------------------|----------------|---------------------|----------------|----------------|-------------------|----------------------|---------------------------------|---------------|---------------|-------------------|-------------------------------|--------------|-----------------|------------------------------------|---------------------------|----------------|-----------------|----------------------|
| Acartia spp. | 39% | | <1% | <1% | 30% | 8% | 4% | <1% | <1% | 1% | <1% | <1% | <1% | 1% | 2% | <1% | <1% | 2% | <1% | <1% | <1% | <1% | <1% <1% | <1% | | 6% | 4% |
| Bivalvia (larvae) | | 93% | <1% | <1% | <1% | <1% | <1% | <1% | 4% | | <1% | <1% | <1% | <1% | | | | <1% | <1% | | | <1% | <1% | | | | |
| Copepoda (nauplii) | | 2% | 92% | 1% | <1% | <1% | <1% | | <1% | | 1% | <1% | | <1% | | 2% | | | 1% | | | | <1% | | | | |
| Podon/Pleopsis spp. | | 3% | 13% | 64% | <1% | <1% | <1% | 1% | 10% | <1% | 4% | <1% | | <1% | | | | <1% | 1% | | | | <1% | <1% | | <1% | |
| Oithona spp. | <1% | | <1% | <1% | 81% | 3% | 5% | | | | <1% | <1% | <1% | 3% | | 3% | | <1% | 1% | | | <1% | <1% | | | <1% | <1% |
| Calanoida (ci-ciii) | <1% | | 4% | 3% | 15% | 32% | 14% | <1% | <1% | | 4% | <1% | | 5% | | 4% | | 11% | 6% | | | <1% | <1% | | | <1% | |
| Pseudodiaptomus spp. | <1% | | 1% | <1% | 17% | 5% | 62% | | <1% | | 1% | <1% | | 1% | <1% | <1% | | 2% | 3% | <1% | | | | | | 2% | <1% |
| Hydrozoa (medusa) | <1% | 2% | <1% | 6% | <1% | 1% | | 70% | 6% | <1% | 1% | 1% | | | | <1% | 1% | 5% | <1% | <1% | | 1% | | | <1% | <1% | |
| Gastropoda (larvae/Limacina) | | 13% | 7% | 11% | <1% | <1% | <1% | 1% | 66% | | <1% | <1% | | | | | | <1% | <1% | | | | | | | | |
| Temora spp. | <1% | | 2% | <1% | 4% | 6% | 19% | | <1% | 23% | 1% | 2% | | <1% | 5% | <1% | | 9% | 5% | 11% | | | | <1% | | 6% | 3% |
| Bryozoa (larvae) | | <1% | 19% | 17% | <1% | <1% | | | 9% | | 51% | 2% | | | | | | | <1% | | | | <1% | | | | |
| Polychaeta (larvae) | <1% | | 20% | 6% | <1% | 3% | 2% | | <1% | <1% | | 45% | | <1% | | 3% | | 6% | 11% | | | <1% | | <1% | <1% | | |
| Ascidiacea (larvae) | <1% | | | | 4% | | <1% | | | | | 2% | 90% | | | | | | | | <1% | <1% | 2% | | <1% | | |
| Harpacticoida- epibenthic | | | 5% | | 35% | 9% | 10% | | | 2% | <1% | | | 27% | | <1% | | <1% | <1% | <1% | | 3% | | | | 4% | <1% |
| Centropages spp. | 27% | | | | 30% | 9% | 2% | | | 7% | | | | | 14% | | | | | | | | | | | 9% | 2% |
| Echinodermata (larvae) | | | 8% | 11% | | 3% | 3% | | | | | | | | | 27% | | 16% | 32% | | | | | | | | |
| Obelia spp. (medusa) | | | | 5% | 24% | 5% | | 10% | | | | | | 5% | | 5% | 24% | 14% | 5% | | | | | | | 5% | |
| Evadne spp. | | | | | 6% | | | | | | 12% | | | | | | | 75% | 6% | | | | | | | | |
| Cirripedia (larvae) | | | 44% | 6% | | | | | 6% | | 6% | | | | | 6% | | | 31% | | | | | | | | |
| Chaetognatha | | | | | | | | | | | | | 8% | | | | | | | 8% | | 23% | 62% | | | | |
| Pseudocalanus spp. | 29% | | | | | | 14% | | | 14% | | | | | 14% | | | | | 14% | | | | | | 14% | |
| Cnidaria (larvae) | | | 29% | | | 14% | | | 29% | | | | | | | | | | 29% | | | | | | | | |
| Decapoda-non brachyura (larvae) | | | | | | | | | | | | | | | | | | | | | 100% | | | | | | |
| Fritillaria spp. | | | | | | | | | | | | | | | | | | | | | | 67% | 33% | | | | |
| Oikopleura spp. | | | | | | | | | | | | | | | | | | | | | | 100% | | | | | |
| Monstrillidae | | | | | | | | | | | | | | | 50% | | | | | | | 50% | | | | | |
| Decapoda-brachyura (zoeae) | | | | | | | | | | | | | | | | | | | | | | | | 100% | | | |
| Osteichthyes (larvae) | | | | | | | | | | | | | | | | | | | | | 100% | | | | | | |
| Ostracoda | | | | | | | | | 100% | | | | | | | | | | | | | | | | | | |
| Paracalanus spp. | | | | | | | | | | | | | | | | | | | | | | | | | | | 100% |
| Microsetella spp. | | | | | | | | | | | | | | | | | | | 100% | | | | | | | | |
| Eurytemora spp. | | | | | | | | | | | | | | | | | | | | 100% | | | | | | | |
| | Acart | Bival | Copelaria Maria | Podlo (no | Oithe Oithe On Pleops | Caldi Ona Spp. Sis Spp. | Polita (c) | Hydr Hodiaptol | Castle Castle Mus Spp. | Penol Poda (le | Bryon Spp. Prac/lin | Polyto Parina) | Ascide The Tel | Harp Race (Ronae) | Centi oida nae | Ching opages St. Ching Childens | Obell Oderman | Stade (Innae) | The Spp. Thedusa) | Chactognatha Pedia (lange) | Chidaria Can | Printe Poda no. | Oikopleura Sp. Sp. brachyura (lane | Decap Strillidae De | Osteichthyes (| Paraco (larvae) | Microsofolla Sp. Sp. |
| | | | | | | | | | | | | | | | Pre | edicte | d Val | lues | | | | | | | | | |

Classification Report Matrix

| m | | ation Repo arning obje | |
|--|-----------|---------------------------|----------|
| | precision | recall | f1-score |
| Acartia spp. (n=18062-train=5000) | 0.99 | 0.39 | 0.56 |
| Bivalvia (larvae) (n=7955-train=3764) | 0.97 | 0.93 | 0.95 |
| Copepoda (nauplii) (n=2753-train=5000) | 0.79 | 0.92 | 0.85 |
| Podon/Pleopsis spp. (n=2715-train=5000) | 0.84 | 0.64 | 0.73 |
| Oithona spp. (n=2572-train=5000) | 0.26 | 0.81 | 0.40 |
| Calanoida (ci-ciii) (n=1348-train=5000) | 0.21 | 0.32 | 0.26 |
| Pseudodiaptomus spp. (n=1059-train=2113) | 0.35 | 0.62 | 0.45 |
| Hydrozoa (medusa) (n=671-train=4052) | 0.83 | 0.70 | 0.76 |
| Gastropoda (larvae/Limacina) (n=629-train=3272) | 0.39 | 0.66 | 0.49 |
| Temora spp. (n=308-train=5000) | 0.25 | 0.23 | 0.24 |
| Bryozoa (larvae) (n=247-train=1142) | 0.31 | 0.51 | 0.39 |
| Polychaeta (larvae) (n=237-train=1577) | 0.58 | 0.45 | 0.51 |
| Ascidiacea (larvae) (n=194-train=861) | 0.95 | 0.90 | 0.92 |
| Harpacticoida- epibenthic (n=108-train=555) | 0.07 | 0.27 | 0.11 |
| Centropages spp. (n=44-train=3620) | 0.02 | 0.14 | 0.03 |
| Echinodermata (larvae) (n=37-train=3043) | 0.03 | 0.27 | 0.05 |
| Obelia spp. (medusa) (n=21-train=1003) | 0.12 | 0.24 | 0.16 |
| Evadne spp. (n=16-train=5000) | 0.02 | 0.75 | 0.04 |
| Cirripedia (larvae) (n=16-train=5000) | 0.01 | 0.31 | 0.02 |
| Chaetognatha (n=13-train=89) | 1.00 | 0.08 | 0.14 |
| Pseudocalanus spp. (n=7-train=4845) | 0.01 | 0.14 | 0.01 |
| Cnidaria (larvae) (n=7-train=25) | 0.00 | 0.00 | 0.00 |
| Decapoda-non brachyura (larvae) (n=4-train=423) | 0.57 | 1.00 | 0.73 |
| Fritillaria spp. (n=3-train=5000) | 0.02 | 0.67 | 0.05 |
| Oikopleura spp. (n=2-train=5000) | 0.00 | 0.00 | 0.00 |
| Monstrillidae (n=2-train=27) | 0.00 | 0.00 | 0.00 |
| Decapoda-brachyura (zoeae) (n=1-train=628) | 0.07 | 1.00 | 0.13 |
| Osteichthyes (larvae) (n=1-train=45) | 0.00 | 0.00 | 0.00 |
| Ostracoda (n=1-train=25) | 0.00 | 0.00 | 0.00 |
| Paracalanus spp. (n=1-train=1619) | 0.00 | 0.00 | 0.00 |
| Microsetella spp. (n=1-train=4) | 0.00 | 0.00 | 0.00 |
| Eurytemora spp. (n=1-train=1818) | 0.00 | 0.00 | 0.00 |
| macro avg | 0.30 | 0.40 | 0.28 |
| weighted avg | 0.84 | 0.60 | 0.64 |
| | precision | recall | f1-score |

Predictions of discarded taxa from training

| | Acartia spp. | 2.2% (n=166) | 0.0% | 0.0% | |
|----------------|------------------------------|---------------------|--|--|----|
| | Ascidiacea (larvae) | 0.0% (n=1) | 0.0% | 0.1% (n=2) | |
| | Bivalvia (larvae) | 0.0% (n=3) | 0.0% | 30.9% (n=563) | |
| | Bryozoa (larvae) | 3.2% (n=248) | 13.0% (n=3) | 9.6% (n=175) | 30 |
| | Calanoida (ci-ciii) | 27.0% (n=2085) | 0.0% | 1.4% (n=26) | |
| | Centropages spp. | 0.0% (n=2) | 0.0% | 0.0% | |
| | Cirripedia (larvae) | 4.5% (n=349) | 4.3% (n=1) | 1.6% (n=30) | 25 |
| | Copepoda (nauplii) | 4.6% (n=351) | 8.7% (n=2) | 21.8% (n=397) | 25 |
| | Decapoda-brachyura (zoeae) | 0.0% | 0.0% | 0.1% (n=1) | |
| - | Echinodermata (larvae) | 5.0% (n=384) | 4.3% (n=1) | 1.0% (n=18) | |
| Predicted Taxa | Eurytemora spp. | 0.3% (n=20) | 0.0% | 0.0% | 20 |
| <u> </u> | Evadne spp. | 6.5% (n=500) | 0.0% | 1.1% (n=20) | |
| tec | Fritillaria spp. | 0.7% (n=53) | 0.0% | 0.5% (n=10) | |
| ا اغز | Gastropoda (larvae/Limacina) | 0.7% (n=55) | 0.0% | 13.7% (n=249) | |
|) re | Harpacticoida— epibenthic | 2.4% (n=187) | 34.8% (n=8) | 0.1% (n=2) | 15 |
| <u> </u> | Hydrozoa (medusa) | 0.2% (n=17) | 0.0% | 2.6% (n=47) | |
| | Obelia spp. (medusa) | 0.0% (n=3) | 0.0% | 0.0% | |
| | Oikopleura spp. | 0.3% (n=23) | 0.0% | 0.3% (n=5) | 10 |
| | Oithona spp. | 19.2% (n=1480) | 13.0% (n=3) | 0.3% (n=6) | 10 |
| | Paracalanus spp. | 1.0% (n=79) | 0.0% | 0.0% | |
| | Podon/Pleopsis spp. | 2.4% (n=182) | 4.3% (n=1) | 13.2% (n=240) | |
| | Polychaeta (larvae) | 0.9% (n=71) | 0.0% | 1.2% (n=21) | 5 |
| | Pseudocalanus spp. | 0.1% (n=8) | 0.0% | 0.0% | |
| | Pseudodiaptomus spp. | 18.6% (n=1434) | 17.4% (n=4) | 0.5% (n=10) | |
| | Temora spp. | 0.1% (n=10) | 0.0% | 0.0% | 0 |
| | | Calanoida (uni | $C_{yclopoid_{m{\partial}}}$ (u_{t}) | $lpha_{m{oop}_{m{lan}_{kton}}}$ $_{n \geq 1822}$ | ia |

Actual discarded Taxa

Relative Abundance of Top Taxonomic Instances per Sample



