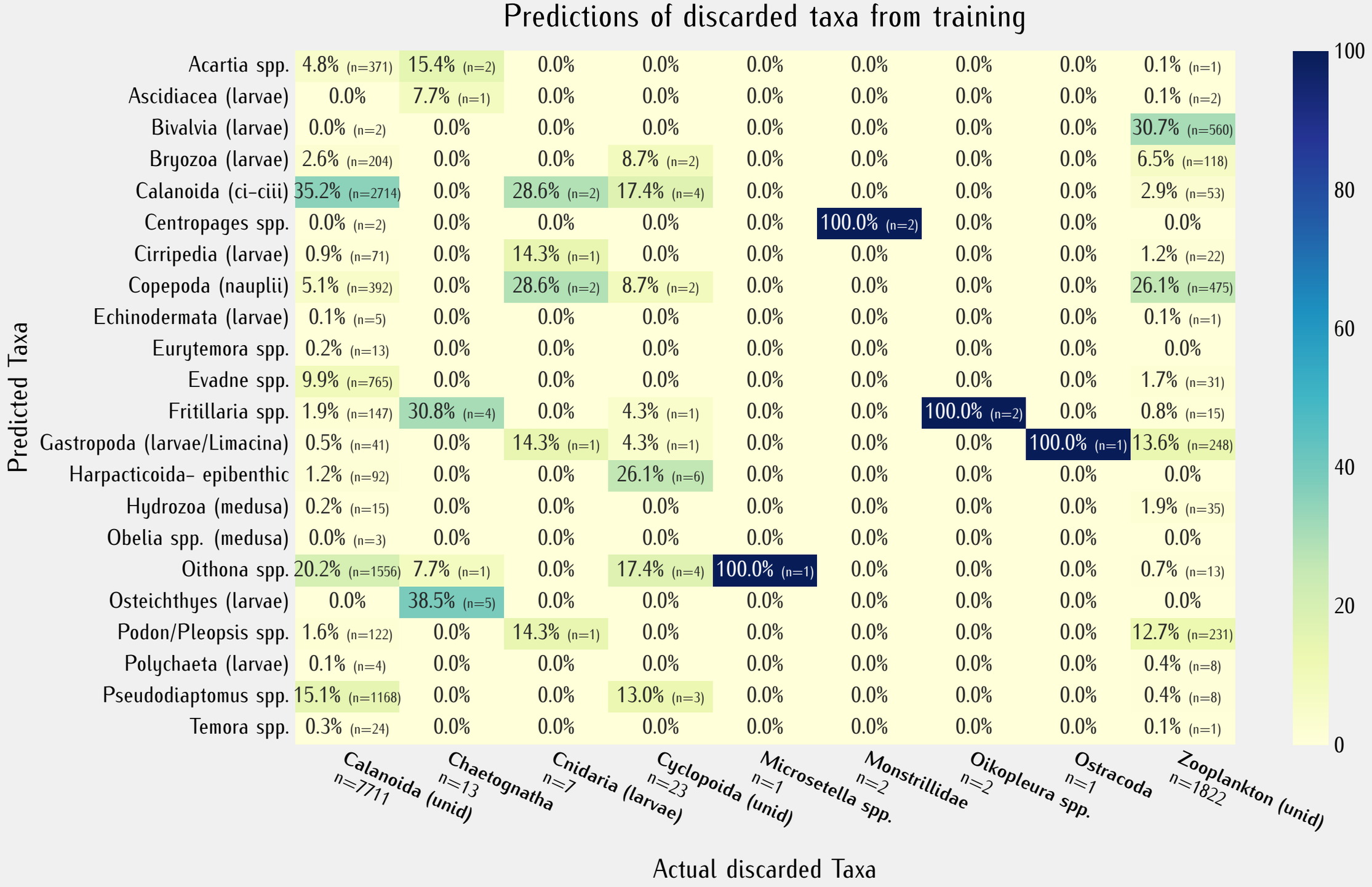
Use of SCN features: Yes
Max learning objects: 20000 objects/class
Strategy N° 4

# Gulf Selected Samples prediction using Gulf training set, Learning with selected samples classes with no low regional training instances, with extra training categories, No Calanoida, Cyclopoida, Zooplankton classes in learning set

## Confusion Matrix - In percent of Actual Value

## Classification Report Matrix
max 20000 learning objects per class

| | precision | recall | f1-score |
|---|---|---|---|
| **Acartia spp.** (n=18062-train=20000) | 0.99 | 0.57 | 0.72 |
| **Bivalvia (larvae)** (n=7955-train=3574) | 0.97 | 0.93 | 0.95 |
| **Copepoda (nauplii)** (n=2753-train=10297) | 0.77 | 0.94 | 0.85 |
| **Podon/Pleopsis spp.** (n=2715-train=3541) | 0.87 | 0.65 | 0.74 |
| **Oithona spp.** (n=2572-train=4428) | 0.29 | 0.82 | 0.43 |
| **Calanoida (ci-ciii)** (n=1348-train=1531) | 0.31 | 0.42 | 0.35 |
| **Pseudodiaptomus spp.** (n=1059-train=2113) | 0.35 | 0.55 | 0.43 |
| **Hydrozoa (medusa)** (n=671-train=3730) | 0.85 | 0.72 | 0.78 |
| **Gastropoda (larvae/Limacina)** (n=629-train=2871) | 0.38 | 0.64 | 0.48 |
| **Temora spp.** (n=308-train=2199) | 0.30 | 0.32 | 0.31 |
| **Bryozoa (larvae)** (n=247-train=973) | 0.38 | 0.40 | 0.39 |
| **Polychaeta (larvae)** (n=237-train=464) | 0.84 | 0.43 | 0.57 |
| **Ascidiacea (larvae)** (n=194-train=805) | 0.97 | 0.93 | 0.95 |
| **Harpacticoida- epibenthic** (n=108-train=372) | 0.11 | 0.18 | 0.14 |
| **Centropages spp.** (n=44-train=3461) | 0.02 | 0.14 | 0.04 |
| **Echinodermata (larvae)** (n=37-train=118) | 0.12 | 0.03 | 0.04 |
| **Obelia spp. (medusa)** (n=21-train=952) | 0.28 | 0.33 | 0.30 |
| **Evadne spp.** (n=16-train=7238) | 0.01 | 0.81 | 0.02 |
| **Cirripedia (larvae)** (n=16-train=716) | 0.06 | 0.38 | 0.10 |
| **Pseudocalanus spp.** (n=7-train=228) | 0.00 | 0.00 | 0.00 |
| **Decapoda-non brachyura (larvae)** (n=4-train=197) | 0.25 | 0.75 | 0.38 |
| **Fritillaria spp.** (n=3-train=2701) | 0.01 | 0.67 | 0.02 |
| **Eurytemora spp.** (n=1-train=1730) | 0.00 | 0.00 | 0.00 |
| **Decapoda-brachyura (zoeae)** (n=1-train=277) | 0.00 | 0.00 | 0.00 |
| **Osteichthyes (larvae)** (n=1-train=43) | 0.00 | 0.00 | 0.00 |
| **Paracalanus spp.** (n=1-train=82) | 0.00 | 0.00 | 0.00 |
| **Calanus spp.** (n=0-train=109) | – | – | – |
| **Labidocera spp.** (n=0-train=493) | – | – | – |
| **Tortanus spp.** (n=0-train=111) | – | – | – |
| **macro avg (corr)** | 0.35 | 0.45 | 0.35 |
| **weighted avg** | 0.84 | 0.68 | 0.73 |
| | precision | recall | f1-score |


Predictions of discarded taxa from training
Predicted Taxa
Acartia spp. 4.8% (n=371) 15.4% (n=2) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.1% (n=1)
Ascidiacea (larvae) 0.0% 7.7% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.1% (n=2)
Bivalvia (larvae) 0.0% (n=2) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 30.7% (n=560)
Bryozoa (larvae) 2.6% (n=204) 0.0% 0.0% 8.7% (n=2) 0.0% 0.0% 0.0% 0.0% 6.5% (n=118)
Calanoida (ci-ciii) 35.2% (n=2714) 0.0% 28.6% (n=2) 17.4% (n=4) 0.0% 0.0% 0.0% 0.0% 2.9% (n=53)
Centropages spp. 0.0% (n=2) 0.0% 0.0% 0.0% 0.0% 100.0% (n=2) 0.0% 0.0% 0.0%
Cirripedia (larvae) 0.9% (n=71) 0.0% 14.3% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 1.2% (n=22)
Copepoda (nauplii) 5.1% (n=392) 0.0% 28.6% (n=2) 8.7% (n=2) 0.0% 0.0% 0.0% 0.0% 26.1% (n=475)
Echinodermata (larvae) 0.1% (n=5) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.1% (n=1)
Eurytemora spp. 0.2% (n=13) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Evadne spp. 9.9% (n=765) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 1.7% (n=31)
Fritillaria spp. 1.9% (n=147) 30.8% (n=4) 0.0% 4.3% (n=1) 0.0% 0.0% 100.0% (n=2) 0.0% 0.8% (n=15)
Gastropoda (larvae/Limacina) 0.5% (n=41) 0.0% 14.3% (n=1) 4.3% (n=1) 0.0% 0.0% 0.0% 100.0% (n=1) 13.6% (n=248)
Harpacticoida- epibenthic 1.2% (n=92) 0.0% 0.0% 26.1% (n=6) 0.0% 0.0% 0.0% 0.0% 0.0%
Hydrozoa (medusa) 0.2% (n=15) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 1.9% (n=35)
Obelia spp. (medusa) 0.0% (n=3) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Oithona spp. 20.2% (n=1556) 7.7% (n=1) 0.0% 17.4% (n=4) 100.0% (n=1) 0.0% 0.0% 0.0% 0.7% (n=13)
Osteichthyes (larvae) 0.0% 38.5% (n=5) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Podon/Pleopsis spp. 1.6% (n=122) 0.0% 14.3% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 12.7% (n=231)
Polychaeta (larvae) 0.1% (n=4) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.4% (n=8)
Pseudodiaptomus spp. 15.1% (n=1168) 0.0% 0.0% 13.0% (n=3) 0.0% 0.0% 0.0% 0.0% 0.4% (n=8)
Temora spp. 0.3% (n=24) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.1% (n=1)
Calanoida (unid) n=7711
Chaetognatha n=13
Cnidaria (larvae) n=7
Cyclopoida (unid) n=23
Microsetella spp. n=1
Monstrillidae n=2
Oikopleura spp. n=2
Ostracoda n=1
Zooplankton (unid) n=1822
Actual discarded Taxa
100
80
60
40
20
0

Relative Abundance of Top Taxonomic Instances per Sample

Val Pred Val Pred Val Pred Val Pred Val Pred Val Pred Val Pred Val Pred Val Pred Val Pred

1.0
0.8
0.6
0.4
0.2
0.0

Relative Abundance

S01 S02 S03 S04 S05 S06 S07 S08 S09 S10

Sample Short ID

Most abundant classes (In Val or Pred)
- Acartia spp.
- Bivalvia (larvae)
- Calanoida (ci–ciii)
- Calanoida (unid)
- Copepoda (nauplii)
- Gastropoda (larvae/Limacina)
- Hydrozoa (medusa)
- Oithona spp.
- Podon/Pleopsis spp.
- Pseudodiaptomus spp.
- Zooplankton (unid)
- Others