Use of SCN features: Yes
Max learning objects: 200 objects/class
Strategy N° 2

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

Confusion Matrix – In percent of Actual Value

Actual Values

Acartia spp. 18% <1% <1% 34% 5% 4% <1% <1% 2% <1% <1% <1% 5% 1% <1% <1% 3% <1% <1% 4% <1% <1% <1% <1% <1% <1% <1% 3% 17% <1% 2%
Bivalvia (larvae) 91% 1% <1% <1% <1% <1% 1% 5% <1% <1% <1% <1% <1% <1% <1% <1% <1% <1% <1% <1% <1%
Copepoda (nauplii) 4% 84% <1% <1% <1% <1% <1% 4% 3% <1% <1% 3% 1% <1%
Podon/Pleopsis spp. 7% 15% 39% <1% <1% <1% 2% 17% <1% 10% 4% <1% <1% <1% <1% <1% 4% <1% <1% <1% <1% <1% <1% <1%
Oithona spp. <1% <1% <1% 71% 6% 5% <1% <1% <1% <1% <1% 12% 2% 1% <1% <1% <1% <1% 1% <1% <1% <1% <1%
Calanoida (ci-ciii) 3% 1% 10% 38% 9% <1% <1% 6% <1% 14% 4% 9% 3% <1% <1% 1%
Pseudodiaptomus spp. <1% 1% <1% 18% 17% 30% <1% <1% <1% 1% <1% 21% <1% 5% 2% <1% <1% <1% <1% <1% 2% <1%
Hydrozoa (medusa) 2% 3% 1% <1% 69% 6% <1% 3% <1% 1% <1% <1% 4% 6% 1% <1% <1% <1% <1% <1% <1% <1% <1%
Gastropoda (larvae/Limacina) 18% 9% 7% <1% 2% 53% <1% 5% 3% <1% <1% 1% <1% <1% <1% <1%
Temora spp. <1% 1% <1% 3% 9% 11% 21% 4% 6% 6% 4% 8% 2% 8% <1% <1% 2% <1% 6% 5% 2%
Bryozoa (larvae) 2% 23% 10% <1% <1% <1% 7% 51% <1% <1% 1% <1% <1% <1% <1% <1%
Polychaeta (larvae) <1% <1% 17% 4% <1% 4% 1% <1% 1% 45% 2% 6% <1% 6% 5% <1% 1% 2% <1% <1%
Ascidiacea (larvae) <1% 2% <1% 91% 2% <1% <1% <1% <1% 2% <1% <1% 2%
Harpacticoida- epibenthic <1% 4% 14% 13% 4% <1% <1% <1% <1% 48% 3% <1% 2% 3% <1% <1% <1% <1% 2% 2% 2%
Centropages spp. 20% 36% 5% 9% 2% 14% 5% 2% 2%
Echinodermata (larvae) 5% 5% 3% 16% 3% 27% 16% 22% 3%
Obelia spp. (medusa) 19% 5% 10% 19% 19% 19% 5% 5%
Evadne spp. 6% 6% 6% 62% 6% 6%
Cirripedia (larvae) 31% 6% 6% 19% 38%
Chaetognatha 8% 8% 8% 38% 38%
Pseudocalanus spp. 29% 14% 43% 14%
Cnidaria (larvae) 29% 29% 14% 29% 29%
Decapoda-non brachyura (larvae) 75% 25%
Fritillaria spp. 33% 67%
Oikopleura spp. 100%
Monstrillidae 100%
Decapoda-brachyura (zoeae) 100%
Osteichthyes (larvae) 100%
Ostracoda 100%
Paracalanus spp. 100%
Microsetella spp. 100%
Eurytemora spp. 100%

Acartia spp. | Bivalvia (larvae) | Copepoda (nauplii) | Podon/Pleopsis spp. | Oithona spp. | Calanoida (ci-ciii) | Pseudodiaptomus spp. | Hydrozoa (medusa) | Gastropoda (larvae/Limacina) | Temora spp. | Bryozoa (larvae) | Polychaeta (larvae) | Ascidiacea (larvae) | Harpacticoida- epibenthic | Centropages spp. | Echinodermata (larvae) | Obelia spp. (medusa) | Evadne spp. | Cirripedia (larvae) | Chaetognatha | Pseudocalanus spp. | Cnidaria (larvae) | Decapoda-non brachyura (larvae) | Fritillaria spp. | Oikopleura spp. | Monstrillidae | Decapoda-brachyura (zoeae) | Osteichthyes (larvae) | Ostracoda | Paracalanus spp. | Microsetella spp. | Eurytemora spp. | Calanus spp. | Labidocera spp. | Tortanus spp.

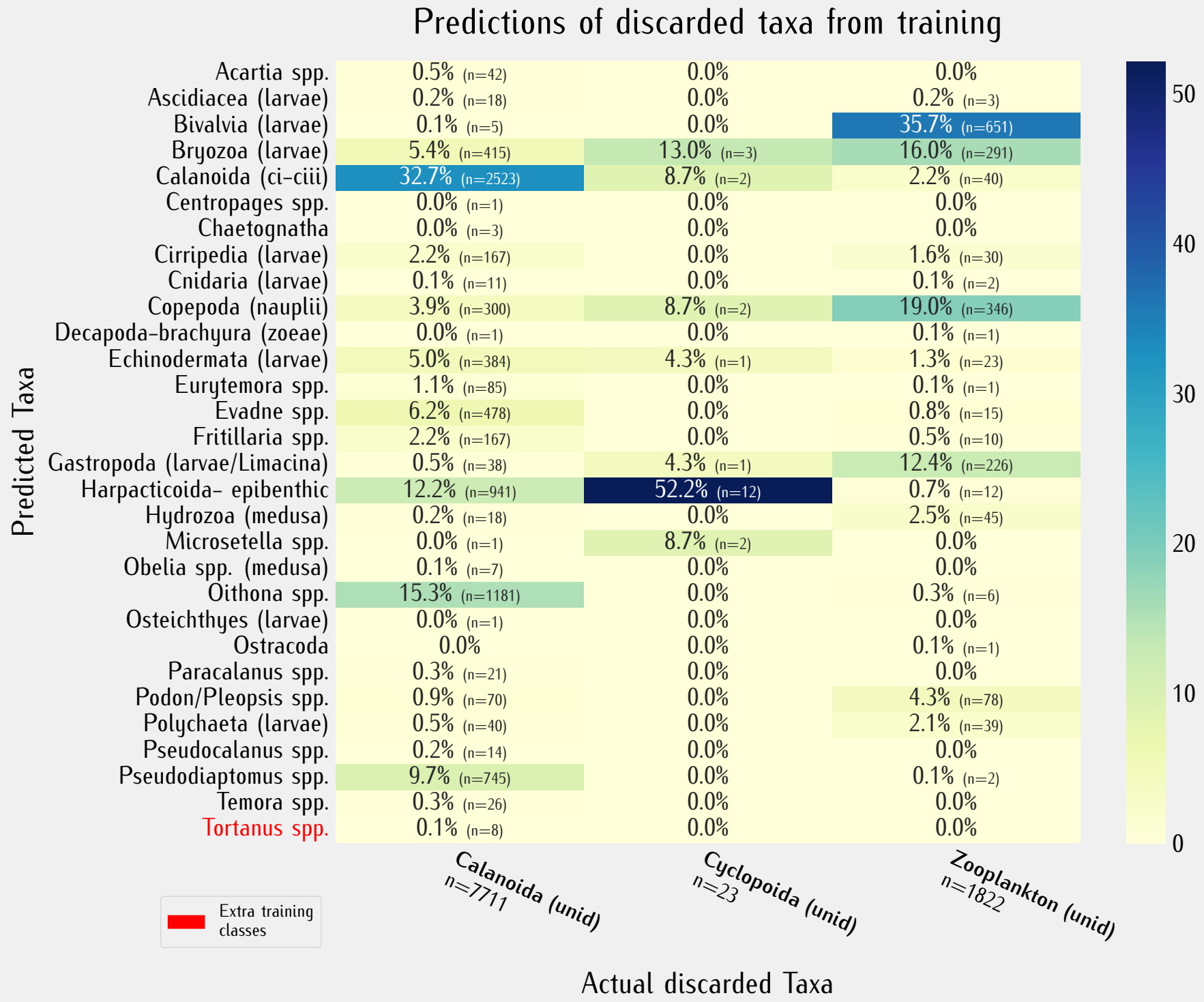
Extra training classes

Predicted Values

Classification Report Matrix
max 200 learning objects per class

	precision	recall	f1-score
Acartia spp. (n=18062-train=200)	0.99	0.18	0.30
Bivalvia (larvae) (n=7955-train=200)	0.94	0.91	0.93
Copepoda (nauplii) (n=2753-train=200)	0.75	0.84	0.79
Podon/Pleopsis spp. (n=2715-train=200)	0.88	0.39	0.54
Oithona spp. (n=2572-train=200)	0.22	0.71	0.33
Calanoida (ci-ciii) (n=1348-train=200)	0.28	0.38	0.32
Pseudodiaptomus spp. (n=1059-train=200)	0.24	0.30	0.27
Hydrozoa (medusa) (n=671-train=200)	0.73	0.69	0.71
Gastropoda (larvae/Limacina) (n=629-train=200)	0.27	0.53	0.35
Temora spp. (n=308-train=200)	0.17	0.21	0.19
Bryozoa (larvae) (n=247-train=200)	0.17	0.51	0.25
Polychaeta (larvae) (n=237-train=200)	0.33	0.45	0.38
Ascidiacea (larvae) (n=194-train=200)	0.65	0.91	0.76
Harpacticoida- epibenthic (n=108-train=200)	0.03	0.48	0.06
Centropages spp. (n=44-train=200)	0.02	0.14	0.04
Echinodermata (larvae) (n=37-train=118)	0.03	0.27	0.05
Obelia spp. (medusa) (n=21-train=200)	0.04	0.19	0.07
Evadne spp. (n=16-train=200)	0.01	0.62	0.03
Cirripedia (larvae) (n=16-train=200)	0.02	0.38	0.04
Chaetognatha (n=13-train=18)	0.31	0.38	0.34
Pseudocalanus spp. (n=7-train=200)	0.00	0.43	0.01
Cnidaria (larvae) (n=7-train=20)	0.11	0.29	0.15
Decapoda-non brachyura (larvae) (n=4-train=197)	0.06	0.75	0.11
Fritillaria spp. (n=3-train=200)	0.01	0.67	0.02
Oikopleura spp. (n=2-train=37)	0.00	0.00	0.00
Monstrillidae (n=2-train=27)	0.22	1.00	0.36
Decapoda-brachyura (zoeae) (n=1-train=200)	0.00	0.00	0.00
Osteichthyes (larvae) (n=1-train=43)	0.00	0.00	0.00
Ostracoda (n=1-train=1)	0.00	0.00	0.00
Paracalanus spp. (n=1-train=82)	0.00	0.00	0.00
Microsetella spp. (n=1-train=4)	0.00	0.00	0.00
Eurytemora spp. (n=1-train=200)	0.00	0.00	0.00
Calanus spp. (n=0-train=109)	–	–	–
Labidocera spp. (n=0-train=200)	–	–	–
Tortanus spp. (n=0-train=111)	–	–	–
macro avg (corr)	0.23	0.39	0.23
weighted avg	0.82	0.46	0.49
	precision	recall	f1-score

1.0 0.8 0.6 0.4 0.2 0.0


Predictions of discarded taxa from training
Predicted Taxa
Acartia spp. 0.5% (n=42) 0.0% 0.0%
Ascidiacea (larvae) 0.2% (n=18) 0.0% 0.2% (n=3)
Bivalvia (larvae) 0.1% (n=5) 0.0% 35.7% (n=651)
Bryozoa (larvae) 5.4% (n=415) 13.0% (n=3) 16.0% (n=291)
Calanoida (ci-ciii) 32.7% (n=2523) 8.7% (n=2) 2.2% (n=40)
Centropages spp. 0.0% (n=1) 0.0% 0.0%
Chaetognatha 0.0% (n=3) 0.0% 0.0%
Cirripedia (larvae) 2.2% (n=167) 0.0% 1.6% (n=30)
Cnidaria (larvae) 0.1% (n=11) 0.0% 0.1% (n=2)
Copepoda (nauplii) 3.9% (n=300) 8.7% (n=2) 19.0% (n=346)
Decapoda-brachyura (zoeae) 0.0% (n=1) 0.0% 0.1% (n=1)
Echinodermata (larvae) 5.0% (n=384) 4.3% (n=1) 1.3% (n=23)
Eurytemora spp. 1.1% (n=85) 0.0% 0.1% (n=1)
Evadne spp. 6.2% (n=478) 0.0% 0.8% (n=15)
Fritillaria spp. 2.2% (n=167) 0.0% 0.5% (n=10)
Gastropoda (larvae/Limacina) 0.5% (n=38) 4.3% (n=1) 12.4% (n=226)
Harpacticoida- epibenthic 12.2% (n=941) 52.2% (n=12) 0.7% (n=12)
Hydrozoa (medusa) 0.2% (n=18) 0.0% 2.5% (n=45)
Microsetella spp. 0.0% (n=1) 8.7% (n=2) 0.0%
Obelia spp. (medusa) 0.1% (n=7) 0.0% 0.0%
Oithona spp. 15.3% (n=1181) 0.0% 0.3% (n=6)
Osteichthyes (larvae) 0.0% (n=1) 0.0% 0.0%
Ostracoda 0.0% 0.0% 0.1% (n=1)
Paracalanus spp. 0.3% (n=21) 0.0% 0.0%
Podon/Pleopsis spp. 0.9% (n=70) 0.0% 4.3% (n=78)
Polychaeta (larvae) 0.5% (n=40) 0.0% 2.1% (n=39)
Pseudocalanus spp. 0.2% (n=14) 0.0% 0.0%
Pseudodiaptomus spp. 9.7% (n=745) 0.0% 0.1% (n=2)
Temora spp. 0.3% (n=26) 0.0% 0.0%
Tortanus spp. 0.1% (n=8) 0.0% 0.0%
Calanoida (unid) n=7711
Cyclopoida (unid) n=23
Zooplankton (unid) n=1822
Extra training classes
Actual discarded Taxa
50
40
30
20
10
0

Relative Abundance of Top Taxonomic Instances per Sample

Relative Abundance

1.0
0.8
0.6
0.4
0.2
0.0

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

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