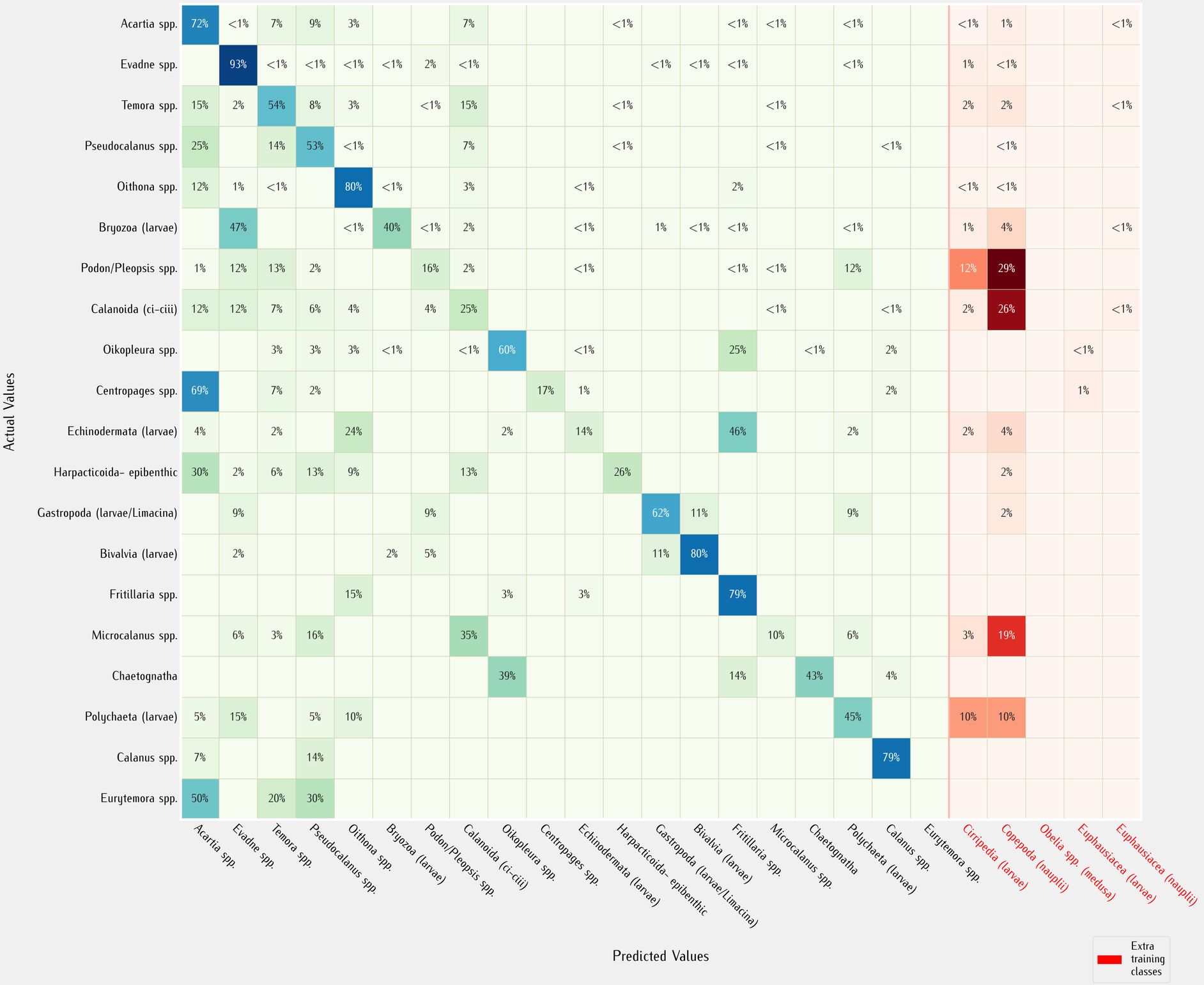
Use of SCN features: Yes
Max learning objects: 20000 objects/class
Strategy N° 4

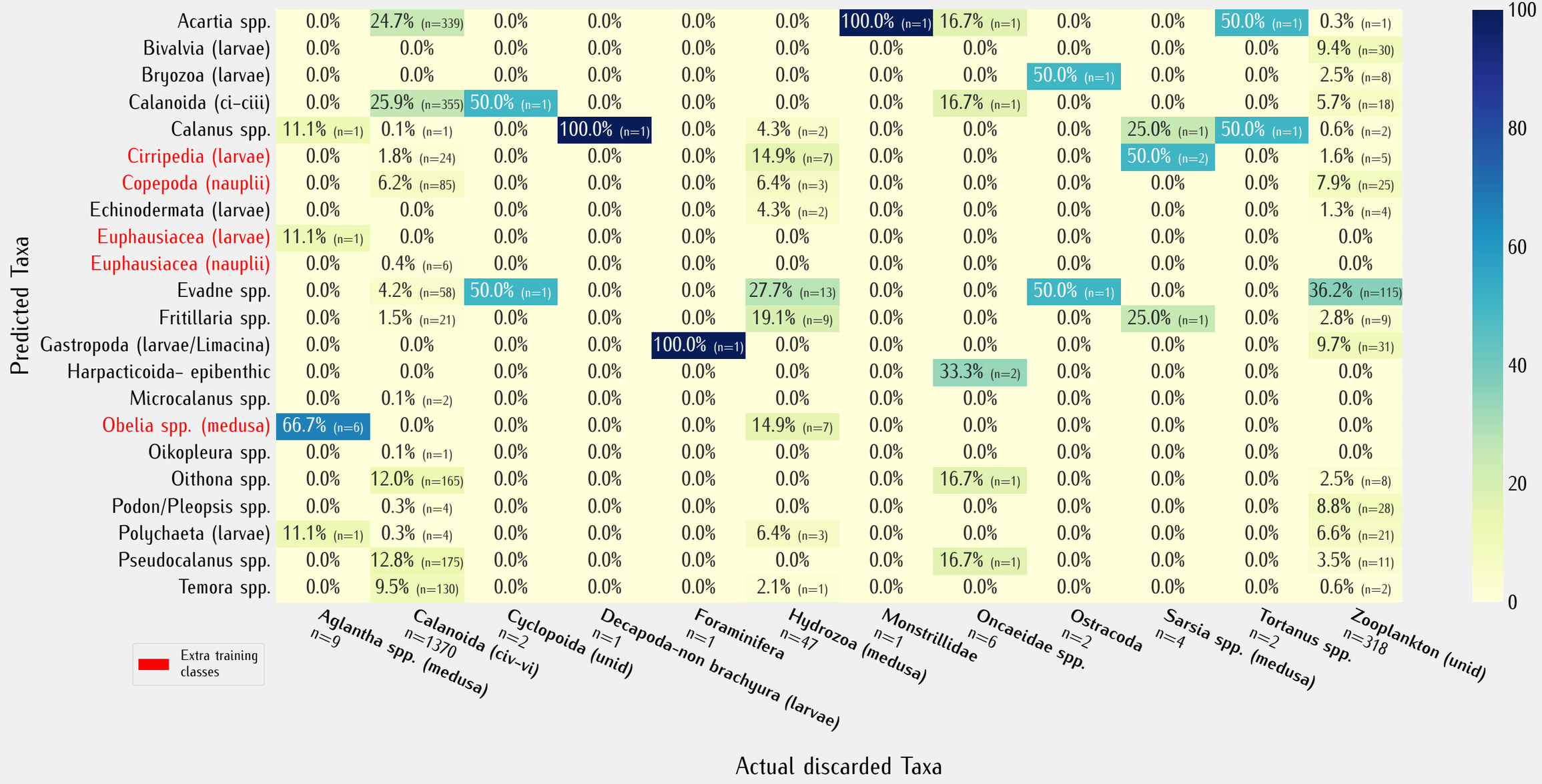
# NL 2021 Selected Samples prediction using NL 2021 training set, Learning with selected samples classes with no low regional training instances, with extra training categories, No Calanoida (civ–vi), Cyclopoida, Zooplankton classes in learning set

## Confusion Matrix – In percent of Actual Value




## Classification Report Matrix
max 20000 learning objects per class

| | precision | recall | f1-score |
|---|---|---|---|
| **Acartia spp.** (n=2490-train=5448) | 0.75 | 0.72 | 0.73 |
| **Evadne spp.** (n=1931-train=2845) | 0.90 | 0.93 | 0.91 |
| **Temora spp.** (n=1416-train=5148) | 0.67 | 0.54 | 0.60 |
| **Pseudocalanus spp.** (n=1044-train=4552) | 0.59 | 0.53 | 0.56 |
| **Oithona spp.** (n=345-train=1409) | 0.65 | 0.80 | 0.72 |
| **Bryozoa (larvae)** (n=248-train=119) | 0.96 | 0.40 | 0.56 |
| **Podon/Pleopsis spp.** (n=230-train=201) | 0.39 | 0.16 | 0.23 |
| **Calanoida (ci-ciii)** (n=130-train=3713) | 0.06 | 0.25 | 0.10 |
| **Oikopleura spp.** (n=115-train=761) | 0.84 | 0.60 | 0.70 |
| **Centropages spp.** (n=88-train=40) | 1.00 | 0.17 | 0.29 |
| **Echinodermata (larvae)** (n=50-train=276) | 0.54 | 0.14 | 0.22 |
| **Harpacticoida- epibenthic** (n=47-train=136) | 0.80 | 0.26 | 0.39 |
| **Gastropoda (larvae/Limacina)** (n=47-train=110) | 0.52 | 0.62 | 0.56 |
| **Bivalvia (larvae)** (n=44-train=71) | 0.83 | 0.80 | 0.81 |
| **Fritillaria spp.** (n=34-train=3447) | 0.26 | 0.79 | 0.39 |
| **Microcalanus spp.** (n=31-train=80) | 0.25 | 0.10 | 0.14 |
| **Chaetognatha** (n=28-train=67) | 0.92 | 0.43 | 0.59 |
| **Polychaeta (larvae)** (n=20-train=452) | 0.19 | 0.45 | 0.26 |
| **Calanus spp.** (n=14-train=213) | 0.58 | 0.79 | 0.67 |
| **Eurytemora spp.** (n=10-train=88) | 0.00 | 0.00 | 0.00 |
| **Cirripedia (larvae)** (n=0-train=611) | – | – | – |
| **Copepoda (nauplii)** (n=0-train=1025) | – | – | – |
| **Obelia spp. (medusa)** (n=0-train=43) | – | – | – |
| **Euphausiacea (larvae)** (n=0-train=75) | – | – | – |
| **Euphausiacea (nauplii)** (n=0-train=122) | – | – | – |
| **macro avg (corr)** | 0.58 | 0.47 | 0.47 |
| **weighted avg** | 0.73 | 0.67 | 0.68 |
| | precision | recall | f1-score |


Predictions of discarded taxa from training
Predicted Taxa
Acartia spp. 0.0% 24.7% (n=339) 0.0% 0.0% 0.0% 0.0% 100.0% (n=1) 16.7% (n=1) 0.0% 0.0% 50.0% (n=1) 0.3% (n=1)
Bivalvia (larvae) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 9.4% (n=30)
Bryozoa (larvae) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 50.0% (n=1) 0.0% 0.0% 2.5% (n=8)
Calanoida (ci-ciii) 0.0% 25.9% (n=355) 50.0% (n=1) 0.0% 0.0% 0.0% 0.0% 16.7% (n=1) 0.0% 0.0% 0.0% 5.7% (n=18)
Calanus spp. 11.1% (n=1) 0.1% (n=1) 0.0% 100.0% (n=1) 0.0% 4.3% (n=2) 0.0% 0.0% 0.0% 25.0% (n=1) 50.0% (n=1) 0.6% (n=2)
Cirripedia (larvae) 0.0% 1.8% (n=24) 0.0% 0.0% 0.0% 14.9% (n=7) 0.0% 0.0% 0.0% 50.0% (n=2) 0.0% 1.6% (n=5)
Copepoda (nauplii) 0.0% 6.2% (n=85) 0.0% 0.0% 0.0% 6.4% (n=3) 0.0% 0.0% 0.0% 0.0% 0.0% 7.9% (n=25)
Echinodermata (larvae) 0.0% 0.0% 0.0% 0.0% 0.0% 4.3% (n=2) 0.0% 0.0% 0.0% 0.0% 0.0% 1.3% (n=4)
Euphausiacea (larvae) 11.1% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Euphausiacea (nauplii) 0.0% 0.4% (n=6) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Evadne spp. 0.0% 4.2% (n=58) 50.0% (n=1) 0.0% 0.0% 27.7% (n=13) 0.0% 0.0% 50.0% (n=1) 0.0% 0.0% 36.2% (n=115)
Fritillaria spp. 0.0% 1.5% (n=21) 0.0% 0.0% 0.0% 19.1% (n=9) 0.0% 0.0% 0.0% 25.0% (n=1) 0.0% 2.8% (n=9)
Gastropoda (larvae/Limacina) 0.0% 0.0% 0.0% 0.0% 100.0% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 9.7% (n=31)
Harpacticoida- epibenthic 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 33.3% (n=2) 0.0% 0.0% 0.0% 0.0%
Microcalanus spp. 0.0% 0.1% (n=2) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Obelia spp. (medusa) 66.7% (n=6) 0.0% 0.0% 0.0% 0.0% 14.9% (n=7) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Oikopleura spp. 0.0% 0.1% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%
Oithona spp. 0.0% 12.0% (n=165) 0.0% 0.0% 0.0% 0.0% 0.0% 16.7% (n=1) 0.0% 0.0% 0.0% 2.5% (n=8)
Podon/Pleopsis spp. 0.0% 0.3% (n=4) 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 8.8% (n=28)
Polychaeta (larvae) 11.1% (n=1) 0.3% (n=4) 0.0% 0.0% 0.0% 6.4% (n=3) 0.0% 0.0% 0.0% 0.0% 0.0% 6.6% (n=21)
Pseudocalanus spp. 0.0% 12.8% (n=175) 0.0% 0.0% 0.0% 0.0% 0.0% 16.7% (n=1) 0.0% 0.0% 0.0% 3.5% (n=11)
Temora spp. 0.0% 9.5% (n=130) 0.0% 0.0% 0.0% 2.1% (n=1) 0.0% 0.0% 0.0% 0.0% 0.0% 0.6% (n=2)
100
80
60
40
20
0
Extra training classes
Aglantha spp. n=9
Calanoida (medusa) n=1370
Cyclopoida (civ-vi) n=2
Decapoda-non brachyura (unid) n=1
Foraminifera larvae) n=1
Hydrozoa (medusa) n=47
Monstrillidae n=1
Oncaeidae spp. n=6
Ostracoda n=2
Sarsia spp. n=4
Tortanus spp. (medusa) n=2
Zooplankton (unid) n=318
Actual discarded Taxa

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

S31 S32 S33 S34 S35 S36 S37 S38 S39 S40

Sample Short ID

Most abundant classes (In Val or Pred)
- Acartia spp.
- Bryozoa (larvae)
- Calanoida (ci–ciii)
- Calanoida (civ–vi)
- Evadne spp.
- Oikopleura spp.
- Oithona spp.
- Podon/Pleopsis spp.
- Pseudocalanus spp.
- Temora spp.
- Zooplankton (unid)
- Others