

Use of SCN features: No
Max learning objects: 5000 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 5000 learning objects per class

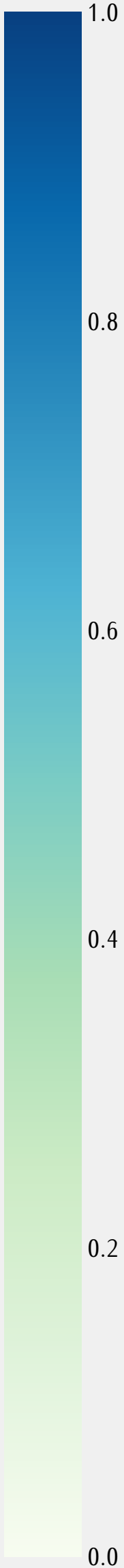
Actual Values

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|-------------|-------------|--------------------|--------------|---------|---------------------|---------------------|-----------------|------------------|------------------------|---------------------------|------------------------------|-------------------|------------------|-------------------|--------------|---------------------|--------------|-----------------|-----------------|-------------------|-----------------------|-----------------------|-----------------------|
| Acartia spp. | 72% | <1% | 7% | 8% | 3% | | | 8% | | <1% | | <1% | | | <1% | <1% | | | <1% | <1% | | | <1% | <1% |
| Evadne spp. | | 92% | <1% | <1% | <1% | <1% | 2% | <1% | | | | <1% | <1% | <1% | | | <1% | | | 2% | 1% | | | |
| Temora spp. | 14% | 1% | 54% | 9% | 2% | | | 14% | | | | | | <1% | <1% | | | | | 2% | 3% | | | <1% |
| Pseudocalanus spp. | 19% | | 14% | 57% | | | | 9% | | | | <1% | | | <1% | | | <1% | | | <1% | | <1% | |
| Oithona spp. | 11% | 1% | <1% | | 81% | <1% | | 3% | | | <1% | | | 3% | | | | | | <1% | | | | |
| Bryozoa (larvae) | | 29% | | | | 52% | <1% | 3% | | | 1% | <1% | 2% | <1% | 1% | | | <1% | | <1% | 8% | | | |
| Podon/Pleopsis spp. | 1% | 10% | 14% | 2% | | <1% | 11% | 4% | | | | | | <1% | 2% | | 15% | | | 12% | 26% | | | |
| Calanoida (ci-ciii) | 11% | 8% | 7% | 8% | 4% | 2% | 5% | 25% | | | | | | | 4% | | | <1% | | 2% | 25% | | | |
| Oikopleura spp. | | | 2% | 3% | 2% | <1% | | 2% | 63% | | <1% | | | | 24% | | | <1% | | | | <1% | <1% | |
| Centropages spp. | 61% | | 8% | 2% | | | | 1% | 25% | | | | | | | | 1% | | | | | | 1% | |
| Echinodermata (larvae) | 4% | | | | 20% | | | 4% | 2% | | 18% | | | 42% | | | 4% | | | 2% | 2% | | | 2% |
| Harpacticoida- epibenthic | 19% | | 6% | 9% | 9% | | | 13% | | | | 38% | | | | | | | | | 4% | | 2% | |
| Gastropoda (larvae/Limacina) | | 9% | | | | | 11% | | | | | | 57% | 13% | | | 9% | | | | 2% | | | |
| Bivalvia (larvae) | | | | | | 5% | 5% | | | | | | 14% | 77% | | | | | | | | | | |
| Fritillaria spp. | | | | | 12% | | | 9% | | 3% | | | | 76% | | | | | | | | | | |
| Microcalanus spp. | | 6% | 3% | 10% | | | | 23% | | | 3% | | | | 19% | | 10% | | | 3% | 23% | | | |
| Chaetognatha | | | | | | | | 29% | | | | | | 7% | | 61% | | 4% | | | | | | |
| Polychaeta (larvae) | | 5% | 5% | | 10% | | | | | | | | | | | | 45% | | | 10% | 15% | 5% | | 5% |
| Calanus spp. | 7% | | | 14% | | | | | | | | | | | | | | 79% | | | | | | |
| Eurytemora spp. | 50% | | 20% | 30% | | | | | | | | | | | | | | | | | | | | |
| Acartia spp. | Evadne spp. | Temora spp. | Pseudocalanus spp. | Oithona spp. | Bryozoa | Podon/Pleopsis spp. | Calanoida (ci-ciii) | Oikopleura spp. | Centropages spp. | Echinodermata (larvae) | Harpacticoida- epibenthic | Gastropoda (larvae/Limacina) | Bivalvia (larvae) | Fritillaria spp. | Microcalanus spp. | Chaetognatha | Polychaeta (larvae) | Calanus spp. | Eurytemora spp. | Cirripedia spp. | Copepoda (larvae) | Obelia spp. (nauplii) | Euphausiacea (larvae) | Euphausiacea (medusa) |

Predicted Values



| | precision | recall | f1-score |
|---|-----------|--------|----------|
| Acartia spp. (n=2490-train=5000) | 0.78 | 0.72 | 0.75 |
| Evadne spp. (n=1931-train=2845) | 0.92 | 0.92 | 0.92 |
| Temora spp. (n=1416-train=5000) | 0.67 | 0.54 | 0.59 |
| Pseudocalanus spp. (n=1044-train=4552) | 0.62 | 0.57 | 0.59 |
| Oithona spp. (n=345-train=1409) | 0.67 | 0.81 | 0.73 |
| Bryozoa (larvae) (n=248-train=119) | 0.91 | 0.52 | 0.66 |
| Podon/Pleopsis spp. (n=230-train=201) | 0.31 | 0.11 | 0.17 |
| Calanoida (ci-ciii) (n=130-train=3713) | 0.06 | 0.25 | 0.09 |
| Oikopleura spp. (n=115-train=761) | 0.85 | 0.63 | 0.72 |
| Centropages spp. (n=88-train=40) | 0.96 | 0.25 | 0.40 |
| Echinodermata (larvae) (n=50-train=276) | 0.60 | 0.18 | 0.28 |
| Harpacticoida- epibenthic (n=47-train=136) | 0.56 | 0.38 | 0.46 |
| Gastropoda (larvae/Limacina) (n=47-train=110) | 0.52 | 0.57 | 0.55 |
| Bivalvia (larvae) (n=44-train=71) | 0.72 | 0.77 | 0.75 |
| Fritillaria spp. (n=34-train=3447) | 0.23 | 0.76 | 0.36 |
| Microcalanus spp. (n=31-train=80) | 0.27 | 0.19 | 0.23 |
| Chaetognatha (n=28-train=67) | 1.00 | 0.61 | 0.76 |
| Polychaeta (larvae) (n=20-train=452) | 0.14 | 0.45 | 0.21 |
| Calanus spp. (n=14-train=213) | 0.65 | 0.79 | 0.71 |
| 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) | 0.57 | 0.50 | 0.50 |
| weighted avg | 0.74 | 0.67 | 0.70 |
| | precision | recall | f1-score |



Predictions of discarded taxa from training

Predicted Taxa

| | | | | | | | | | | | | |
|------------------------------|-------------|---------------|-------------|--------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|---------------|
| Acartia spp. | 0.0% | 23.7% (n=325) | 0.0% | 0.0% | 0.0% | 0.0% | 100.0% (n=1) | 16.7% (n=1) | 0.0% | 0.0% | 50.0% (n=1) | 0.9% (n=3) |
| Bivalvia (larvae) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 9.7% (n=31) |
| Bryozoa (larvae) | 0.0% | 0.2% (n=3) | 0.0% | 0.0% | 0.0% | 2.1% (n=1) | 0.0% | 0.0% | 50.0% (n=1) | 0.0% | 0.0% | 4.7% (n=15) |
| Calanoida (ci-ciii) | 0.0% | 26.4% (n=361) | 0.0% | 0.0% | 0.0% | 2.1% (n=1) | 0.0% | 16.7% (n=1) | 0.0% | 0.0% | 0.0% | 4.4% (n=14) |
| Calanus spp. | 0.0% | 0.1% (n=1) | 0.0% | 100.0% (n=1) | 0.0% | 2.1% (n=1) | 0.0% | 0.0% | 0.0% | 25.0% (n=1) | 50.0% (n=1) | 0.6% (n=2) |
| Cirripedia (larvae) | 0.0% | 2.3% (n=31) | 0.0% | 0.0% | 0.0% | 12.8% (n=6) | 0.0% | 0.0% | 0.0% | 25.0% (n=1) | 0.0% | 1.9% (n=6) |
| Copepoda (nauplii) | 0.0% | 6.6% (n=91) | 0.0% | 0.0% | 0.0% | 2.1% (n=1) | 0.0% | 0.0% | 50.0% (n=1) | 0.0% | 0.0% | 7.2% (n=23) |
| Echinodermata (larvae) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 2.1% (n=1) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.9% (n=3) |
| Euphausiacea (nauplii) | 0.0% | 0.4% (n=5) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% (n=1) |
| Evadne spp. | 0.0% | 4.0% (n=55) | 50.0% (n=1) | 0.0% | 0.0% | 25.5% (n=12) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 31.4% (n=100) |
| Fritillaria spp. | 0.0% | 1.5% (n=20) | 0.0% | 0.0% | 0.0% | 19.1% (n=9) | 0.0% | 0.0% | 0.0% | 25.0% (n=1) | 0.0% | 3.1% (n=10) |
| Gastropoda (larvae/Limacina) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 8.2% (n=26) |
| Harpacticoida- epibenthic | 0.0% | 0.6% (n=8) | 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) | 50.0% (n=1) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.3% (n=1) |
| Obelia spp. (medusa) | 77.8% (n=7) | 0.0% | 0.0% | 0.0% | 0.0% | 23.4% (n=11) | 0.0% | 0.0% | 0.0% | 25.0% (n=1) | 0.0% | 0.0% |
| Oikopleura spp. | 11.1% (n=1) | 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% | 11.2% (n=153) | 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% | 0.4% (n=5) | 0.0% | 0.0% | 100.0% (n=1) | 4.3% (n=2) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 11.6% (n=37) |
| Polychaeta (larvae) | 11.1% (n=1) | 0.5% (n=7) | 0.0% | 0.0% | 0.0% | 4.3% (n=2) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 7.9% (n=25) |
| Pseudocalanus spp. | 0.0% | 12.5% (n=171) | 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% | 9.6% (n=131) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.6% (n=2) |



Extra training classes

Aglantha spp. (medusa) n=9
Calanoida (civ-vi) n=1370
Cyclopoida (unid) n=2
Decapoda-non brachyura (larvae) n=1
Foraminifera n=1
Hydrozoa (medusa) n=47
Monstrillidae n=1
Oncaeidae n=6
Ostracoda n=2
Sarsia spp. (medusa) n=4
Tortanus spp. (medusa) n=2
Zooplankton (unid) n=318

Actual discarded Taxa

Relative Abundance of Top Taxonomic Instances per Sample

