

Use of SCN features: Yes  
Max learning objects: 200 objects/class  
Strategy N° 6

PA Selected Samples prediction using all regions training set,  
Learning with all classes present in the selected samples, with extra regional training categories,  
No Calanoida (ci-vi), Cyclopoida, Zooplankton classes in learning set

Confusion Matrix – In percent of Actual Value

Classification Report Matrix  
max 200 learning objects per class

Actual Values

|                                 |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   |                     |                   |                  |                        |                           |                            |                     |                                 |           |               |                    |              |                    |              |                    |                       |                  |                       |                          |
|---------------------------------|---------------------|--------------|-----------------|---------------------|------------------|-------------|-------------|---------------------|------------------|------------------------------|-------------------|---------------------|-------------------|------------------|------------------------|---------------------------|----------------------------|---------------------|---------------------------------|-----------|---------------|--------------------|--------------|--------------------|--------------|--------------------|-----------------------|------------------|-----------------------|--------------------------|
| Cirripedia (larvae)             | 51%                 | <1%          | <1%             | 11%                 | <1%              | 12%         | <1%         | <1%                 | 1%               | 2%                           | <1%               | <1%                 | 2%                | <1%              | 3%                     | 1%                        | 4%                         | <1%                 | <1%                             | 1%        | 4%            |                    | 3%           | <1%                |              | <1%                |                       | 2%               | <1%                   | <1%                      |
|                                 | Acartia spp.        | <1%          | 16%             | <1%                 | <1%              | <1%         | 23%         | <1%                 | 29%              |                              |                   |                     | 1%                |                  | <1%                    | <1%                       |                            |                     | <1%                             | 4%        | <1%           | 13%                | 9%           |                    |              |                    |                       | 2%               |                       |                          |
| Oikopleura spp.                 | <1%                 | 1%           | 62%             | <1%                 | 18%              | 2%          | <1%         | <1%                 | 1%               |                              |                   | <1%                 | <1%               | <1%              | 2%                     | 3%                        | <1%                        | <1%                 | <1%                             | <1%       | <1%           | 1%                 | 1%           | <1%                |              | <1%                |                       | <1%              | <1%                   | 2%                       |
| Podon/Pleopsis spp.             | 11%                 | <1%          | <1%             | 25%                 |                  | 26%         | <1%         | <1%                 | 16%              | 2%                           |                   | 3%                  | 3%                | <1%              |                        | <1%                       | <1%                        | 3%                  | <1%                             | <1%       | <1%           |                    | 1%           | <1%                |              | <1%                |                       | 5%               | <1%                   | <1%                      |
| Fritillaria spp.                | <1%                 | 1%           | 27%             |                     | 45%              | 1%          | 3%          |                     | 1%               |                              |                   | <1%                 | 1%                |                  | 5%                     |                           |                            |                     |                                 |           | <1%           | 1%                 | 11%          |                    |              | <1%                |                       | <1%              | 1%                    | <1%                      |
| Evadne spp.                     | 4%                  |              | <1%             | 4%                  |                  | 44%         | 1%          | <1%                 | 6%               | 1%                           | <1%               | <1%                 | 19%               |                  | 1%                     | <1%                       |                            | 6%                  |                                 | 2%        |               |                    | <1%          |                    |              | <1%                |                       | 4%               | <1%                   | 4%                       |
| Corycaeidae                     | <1%                 | 4%           | 1%              | 1%                  |                  | 1%          | 66%         |                     | 9%               |                              |                   | 1%                  |                   | 1%               |                        | <1%                       |                            |                     | <1%                             |           | 2%            |                    | 1%           | 4%                 |              |                    | 1%                    | 3%               | <1%                   |                          |
| Calanoida (ci-ciii)             | 11%                 | 3%           |                 | 7%                  |                  | 21%         | 10%         | 3%                  | 9%               | <1%                          |                   | 1%                  |                   |                  | 6%                     |                           |                            |                     |                                 |           | <1%           |                    | 11%          |                    |              | 2%                 |                       | 7%               | 7%                    | <1%                      |
| Paracalanus spp.                |                     | 2%           | <1%             |                     |                  |             | <1%         |                     | 56%              |                              |                   |                     |                   | <1%              |                        |                           |                            | 1%                  |                                 | <1%       | 4%            |                    | 32%          |                    |              |                    | <1%                   |                  | <1%                   |                          |
| Gastropoda (larvae/Limacina)    | 2%                  |              |                 | 17%                 |                  | 11%         |             |                     | 4%               | 48%                          | 2%                | 2%                  | <1%               |                  |                        |                           |                            | <1%                 |                                 |           |               | 3%                 |              |                    | 2%           |                    | 3%                    |                  | 4%                    |                          |
|                                 | Bivalvia (larvae)   |              |                 |                     | 3%               |             | 1%          |                     |                  | 7%                           | 64%               |                     | 10%               |                  |                        |                           |                            |                     |                                 |           |               |                    |              |                    | 2%           |                    |                       |                  | 12%                   |                          |
| Polychaeta (larvae)             | 11%                 | 5%           |                 | 9%                  |                  | 9%          | 3%          |                     | 8%               | 2%                           |                   | 14%                 | 5%                |                  | 2%                     |                           | 3%                         | 6%                  | 5%                              |           |               | 3%                 | 12%          |                    | 2%           | 2%                 |                       |                  | 2%                    |                          |
| Hydrozoa (medusa)               |                     |              |                 |                     |                  |             |             | 4%                  |                  |                              |                   |                     | 29%               | 2%               |                        | 9%                        |                            | 53%                 | 2%                              |           |               |                    | 2%           |                    |              |                    |                       |                  |                       |                          |
| Centropages spp.                |                     | 8%           | 2%              |                     |                  |             | 2%          | 4%                  |                  |                              |                   |                     | 30%               |                  | 2%                     |                           |                            |                     | 10%                             |           | 20%           |                    | 18%          | 4%                 |              |                    |                       |                  |                       |                          |
| Echinodermata (larvae)          |                     |              |                 |                     | 2%               | 10%         |             |                     | 2%               |                              |                   |                     | 69%               |                  |                        | 2%                        |                            | 7%                  | 5%                              |           |               |                    |              |                    |              | 2%                 |                       |                  |                       |                          |
| Calycophorae (nectophore)       |                     |              |                 |                     | 3%               |             |             |                     |                  |                              |                   |                     |                   | 5%               |                        | 68%                       |                            | 5%                  | 11%                             |           |               |                    | 5%           | 3%                 |              |                    |                       |                  |                       |                          |
| Decapoda-brachyura (zoeae)      |                     | 3%           |                 |                     |                  |             |             |                     | 3%               |                              |                   |                     |                   | 9%               |                        | 3%                        | 62%                        | 3%                  | 6%                              |           | 6%            |                    |              |                    |              |                    |                       | 3%               |                       |                          |
| Ctenophora (larvae)             | 3%                  |              |                 |                     |                  | 6%          |             |                     |                  |                              |                   |                     | 23%               |                  |                        | 3%                        |                            | 45%                 |                                 |           |               |                    |              |                    |              |                    | 13%                   |                  | 6%                    |                          |
| Decapoda-non brachyura (larvae) |                     |              |                 |                     |                  | 4%          |             |                     |                  |                              |                   |                     |                   | 4%               |                        |                           |                            | 8%                  | 69%                             |           |               |                    |              | 12%                |              |                    |                       |                  | 4%                    |                          |
| Ostracoda                       |                     |              |                 |                     |                  | 4%          | 4%          |                     |                  |                              | 16%               |                     |                   |                  |                        |                           |                            |                     |                                 | 40%       |               |                    |              |                    |              |                    |                       |                  | 36%                   |                          |
| Tortanus spp.                   |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   |                     |                   | 21%              |                        | 17%                       | 4%                         |                     |                                 |           | 54%           | 4%                 |              |                    |              |                    |                       |                  |                       |                          |
| Ascidacea (larvae)              |                     |              | 26%             |                     | 17%              |             |             |                     |                  |                              |                   |                     |                   |                  |                        |                           |                            |                     |                                 |           |               | 57%                |              |                    |              |                    |                       |                  |                       |                          |
| Oithona spp.                    |                     | 24%          | 6%              |                     | 12%              |             | 12%         |                     |                  |                              |                   |                     |                   |                  |                        |                           |                            |                     | 6%                              |           | 6%            |                    | 35%          |                    |              |                    |                       |                  |                       |                          |
| Pseudocalanus spp.              |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   |                     |                   |                  |                        |                           |                            |                     | 14%                             |           |               |                    | 86%          |                    |              |                    |                       |                  |                       |                          |
| Calanus spp.                    |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   |                     | 17%               |                  |                        |                           |                            |                     | 67%                             |           |               |                    | 17%          |                    |              |                    |                       |                  |                       |                          |
| Copepoda (nauplii)              |                     |              |                 | 25%                 |                  |             |             |                     | 25%              |                              |                   |                     |                   |                  |                        |                           |                            |                     |                                 |           |               |                    |              |                    | 50%          |                    |                       |                  |                       |                          |
| Euphysa spp. (medusa)           |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   |                     |                   |                  |                        | 100%                      |                            |                     |                                 |           |               |                    |              |                    |              |                    |                       |                  |                       |                          |
| Bryozoa (larvae)                |                     |              |                 |                     |                  |             |             |                     |                  |                              |                   | 100%                |                   |                  |                        |                           |                            |                     |                                 |           |               |                    |              |                    |              |                    |                       |                  |                       |                          |
|                                 | Cirripedia (larvae) | Acartia spp. | Oikopleura spp. | Podon/Pleopsis spp. | Fritillaria spp. | Evadne spp. | Corycaeidae | Calanoida (ci-ciii) | Paracalanus spp. | Gastropoda (larvae/Limacina) | Bivalvia (larvae) | Polychaeta (larvae) | Hydrozoa (medusa) | Centropages spp. | Echinodermata (larvae) | Calycophorae (nectophore) | Decapoda-brachyura (zoeae) | Ctenophora (larvae) | Decapoda-non brachyura (larvae) | Ostracoda | Tortanus spp. | Ascidacea (larvae) | Oithona spp. | Pseudocalanus spp. | Calanus spp. | Copepoda (nauplii) | Euphysa spp. (medusa) | Bryozoa (larvae) | Haracticoida (larvae) | Platyhelminthes (larvae) |

Predicted Values

Extra  
training  
classes

|  | precision | recall | f1-score |
|--|-----------|--------|----------|
| Cirripedia (larvae)<br>(n=3231-train=200)            | 0.92      | 0.51   | 0.66     |
| Acartia spp.<br>(n=2290-train=200)                   | 0.82      | 0.16   | 0.27     |
| Oikopleura spp.<br>(n=1773-train=200)                | 0.87      | 0.62   | 0.72     |
| Podon/Pleopsis spp.<br>(n=607-train=200)             | 0.26      | 0.25   | 0.25     |
| Fritillaria spp.<br>(n=475-train=200)                | 0.38      | 0.45   | 0.41     |
| Evadne spp.<br>(n=358-train=200)                     | 0.19      | 0.44   | 0.26     |
| Corycaeidae<br>(n=335-train=200)                     | 0.27      | 0.66   | 0.39     |
| Calanoida (ci-ciüi)<br>(n=150-train=200)             | 0.20      | 0.03   | 0.05     |
| Paracalanus spp.<br>(n=141-train=200)                | 0.08      | 0.56   | 0.14     |
| Gastropoda (larvae/Limacina)<br>(n=126-train=200)    | 0.41      | 0.48   | 0.44     |
| Bivalvia (larvae)<br>(n=96-train=200)                | 0.82      | 0.64   | 0.72     |
| Polychaeta (larvae)<br>(n=65-train=200)              | 0.17      | 0.14   | 0.15     |
| Hydrozoa (medusa)<br>(n=55-train=200)                | 0.08      | 0.29   | 0.12     |
| Centropages spp.<br>(n=50-train=200)                 | 0.19      | 0.30   | 0.24     |
| Echinodermata (larvae)<br>(n=42-train=200)           | 0.00      | 0.00   | 0.00     |
| Calycophorae (nectophore)<br>(n=37-train=200)        | 0.17      | 0.68   | 0.27     |
| Decapoda-brachyura (zoeae)<br>(n=32-train=200)       | 0.13      | 0.62   | 0.21     |
| Ctenophora (larvae)<br>(n=31-train=42)               | 0.12      | 0.45   | 0.19     |
| Decapoda-non brachyura (larvae)<br>(n=26-train=200)  | 0.33      | 0.69   | 0.45     |
| Ostracoda<br>(n=25-train=25)                         | 0.17      | 0.40   | 0.24     |
| Tortanus spp.<br>(n=24-train=200)                    | 0.05      | 0.54   | 0.09     |
| Ascidacea (larvae)<br>(n=23-train=200)               | 0.34      | 0.57   | 0.43     |
| Oithona spp.<br>(n=17-train=200)                     | 0.01      | 0.35   | 0.02     |
| Pseudocalanus spp.<br>(n=7-train=200)                | 0.02      | 0.86   | 0.04     |
| Calanus spp.<br>(n=6-train=200)                      | 0.00      | 0.00   | 0.00     |
| Copepoda (nauplii)<br>(n=4-train=200)                | 0.04      | 0.50   | 0.08     |
| Euphysa spp. (medusa)<br>(n=3-train=3)               | 0.00      | 0.00   | 0.00     |
| Bryozoa (larvae)<br>(n=1-train=200)                  | 0.00      | 0.00   | 0.00     |
| Harpacticoida- epibenthic<br>(n=0-train=200)         | -         | -      | -        |
| Platyhelminthes/Nemertea (larvae)<br>(n=0-train=183) | -         | -      | -        |
| macro avg (corr)                                     | 0.25      | 0.40   | 0.24     |
| weighted avg   | 0.71      | 0.42   | 0.48     |
|  | precision | recall | f1-score |

0.8

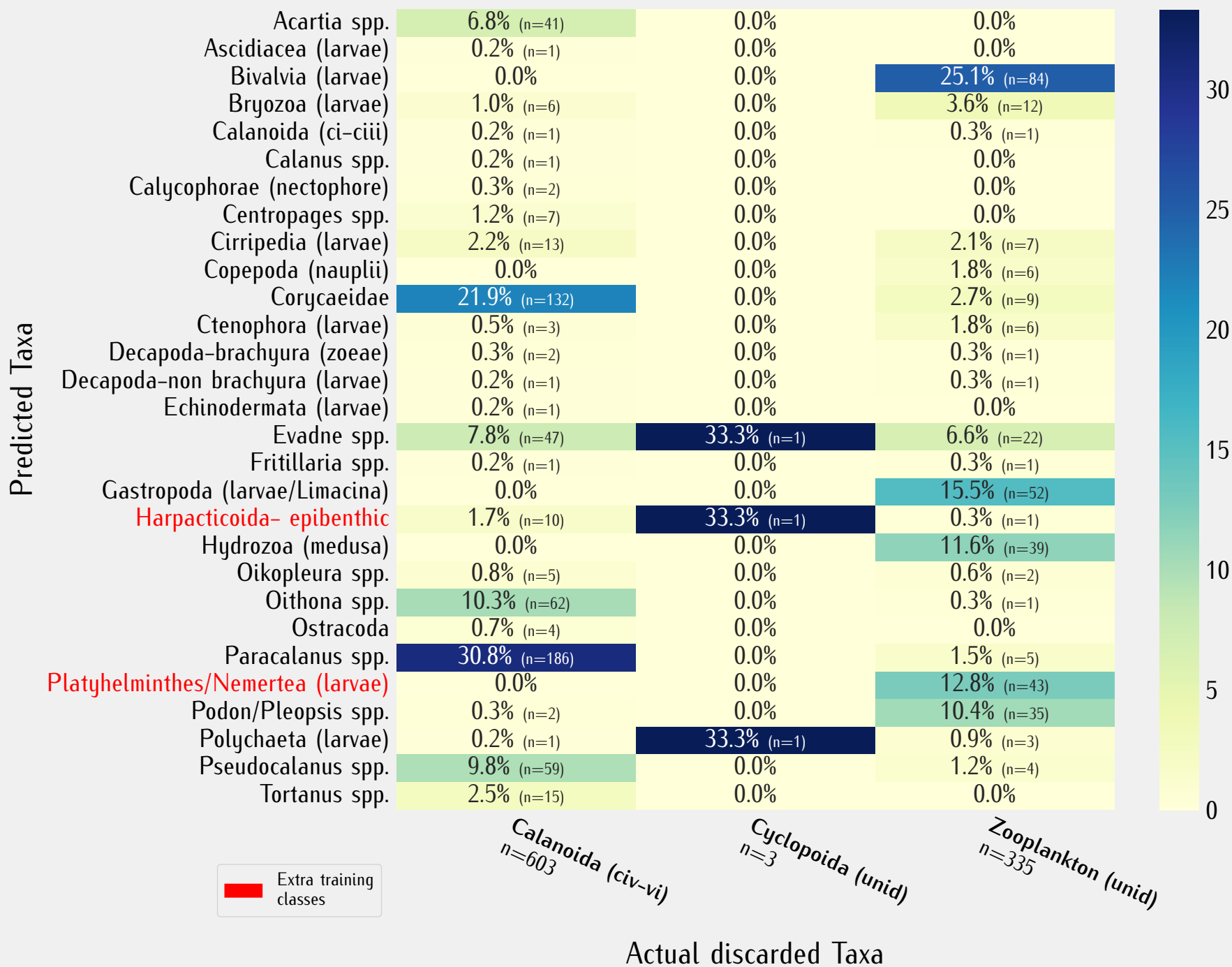
0.6

0.4

0.2

0.0

# Predictions of discarded taxa from training



Relative Abundance of Top Taxonomic Instances per Sample

