

Use of SCN features: Yes  
Max learning objects: Maximum objects/class  
Strategy N° 1

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

Confusion Matrix – In percent of Actual Value

Actual Values																																
	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)	Ascidacea (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.
Acartia spp.	74%	<1%	<1%	15%	4%	2%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Bivalvia (larvae)	<1%	93%	1%	<1%	<1%	<1%	<1%	<1%	4%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Copepoda (nauplii)	<1%	1%	94%	1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Podon/Pleopsis spp.	<1%	3%	14%	65%	<1%	<1%	<1%	1%	10%	<1%	2%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Oithona spp.	6%	<1%	<1%	79%	7%	4%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Calanoida (ci-ciii)	4%	4%	2%	16%	41%	12%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Pseudodiaptomus spp.	12%	<1%	2%	<1%	18%	11%	51%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Hydrozoa (medusa)	4%	2%	<1%	5%	1%	<1%	72%	6%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Gastropoda (larvae/Limacina)	<1%	13%	8%	10%	<1%	<1%	<1%	1%	64%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Temora spp.	31%	<1%	2%	<1%	5%	8%	16%	<1%	1%	18%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Bryozoa (larvae)	<1%	<1%	27%	20%	<1%	<1%	<1%	<1%	10%	<1%	39%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Polychaeta (larvae)	2%	<1%	22%	5%	<1%	6%	3%	<1%	2%	<1%	42%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Ascidacea (larvae)	4%	<1%	<1%	<1%	4%	<1%	1%	<1%	<1%	<1%	<1%	<1%	91%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Harpacticoida- epibenthic	8%	<1%	5%	<1%	41%	14%	11%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Centropages spp.	70%	<1%	<1%	<1%	18%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Echinodermata (larvae)	3%	<1%	11%	8%	3%	24%	5%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Obelia spp. (medusa)	14%	<1%	<1%	5%	14%	5%	<1%	10%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Evadne spp.	12%	<1%	<1%	<1%	<1%	<1%	6%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Cirripedia (larvae)	<1%	<1%	50%	<1%	<1%	6%	<1%	6%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Chaetognatha	15%	<1%	<1%	<1%	8%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	8%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Pseudocalanus spp.	100%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Cnidaria (larvae)	<1%	<1%	29%	14%	<1%	29%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Decapoda-non brachyura (larvae)	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<											

Predicted Values

Classification Report Matrix  
max available learning objects per class

	precision	recall	f1-score
Acartia spp. (n=18062-train=101461)	0.96	0.74	0.84
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)	0.39	0.79	0.52
Calanoida (ci-ciii) (n=1348-train=1531)	0.31	0.41	0.35
Pseudodiaptomus spp. (n=1059-train=2113)	0.43	0.51	0.46
Hydrozoa (medusa) (n=671-train=3730)	0.84	0.72	0.78
Gastropoda (larvae/Limacina) (n=629-train=2871)	0.38	0.64	0.48
Temora spp. (n=308-train=2199)	0.71	0.18	0.29
Bryozoa (larvae) (n=247-train=973)	0.40	0.39	0.40
Polychaeta (larvae) (n=237-train=464)	0.85	0.42	0.56
Ascidiaacea (larvae) (n=194-train=805)	0.98	0.91	0.94
Harpacticoida- epibenthic (n=108-train=372)	0.13	0.12	0.13
Centropages spp. (n=44-train=3461)	0.05	0.11	0.07
Echinodermata (larvae) (n=37-train=118)	0.25	0.05	0.09
Obelia spp. (medusa) (n=21-train=952)	0.50	0.24	0.32
Evadne spp. (n=16-train=7238)	0.01	0.75	0.02
Cirripedia (larvae) (n=16-train=716)	0.06	0.38	0.10
Chaetognatha (n=13-train=18)	1.00	0.08	0.14
Pseudocalanus spp. (n=7-train=228)	0.00	0.00	0.00
Cnidaria (larvae) (n=7-train=20)	1.00	0.14	0.25
Decapoda-non brachyura (larvae) (n=4-train=197)	0.31	1.00	0.47
Fritillaria spp. (n=3-train=2701)	0.02	1.00	0.04
Oikopleura spp. (n=2-train=37)	0.00	0.00	0.00
Monstrillidae (n=2-train=27)	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)	0.17	1.00	0.29
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=1730)	0.00	0.00	0.00
macro avg	0.39	0.41	0.32
weighted avg	0.85	0.76	0.79
	precision	recall	f1-score

# Predictions of discarded taxa from training

Predicted Taxa

Acartia spp.	11.4% (n=876)	0.0%	0.1% (n=1)
Ascidacea (larvae)	0.0% (n=1)	0.0%	0.1% (n=2)
Bivalvia (larvae)	0.0% (n=2)	0.0%	30.6% (n=558)
Bryozoa (larvae)	2.3% (n=181)	8.7% (n=2)	6.0% (n=110)
Calanoida (ci-ciii)	34.6% (n=2667)	8.7% (n=2)	2.8% (n=51)
Centropages spp.	0.0% (n=1)	0.0%	0.0%
Cirripedia (larvae)	0.8% (n=64)	0.0%	1.0% (n=19)
Copepoda (nauplii)	5.2% (n=402)	13.0% (n=3)	26.4% (n=481)
Echinodermata (larvae)	0.1% (n=7)	0.0%	0.2% (n=3)
Evadne spp.	10.1% (n=778)	4.3% (n=1)	1.9% (n=35)
Fritillaria spp.	1.6% (n=126)	8.7% (n=2)	0.8% (n=15)
Gastropoda (larvae/Limacina)	0.5% (n=42)	4.3% (n=1)	13.4% (n=245)
Harpacticoida- epibenthic	0.6% (n=49)	21.7% (n=5)	0.0%
Hydrozoa (medusa)	0.2% (n=13)	0.0%	2.0% (n=36)
Obelia spp. (medusa)	0.0% (n=2)	0.0%	0.0%
Oithona spp.	16.4% (n=1261)	17.4% (n=4)	0.7% (n=13)
Podon/Pleopsis spp.	1.6% (n=127)	0.0%	12.8% (n=234)
Polychaeta (larvae)	0.1% (n=6)	0.0%	0.6% (n=11)
Pseudodiaptomus spp.	14.2% (n=1094)	13.0% (n=3)	0.4% (n=8)
Temora spp.	0.2% (n=12)	0.0%	0.0%

Actual discarded Taxa

Calanoida (unid)  
n=7711

Cyclopoida (unid)  
n=23

Zooplankton (unid)  
n=1822

30

25

20

15

10

5

0

Relative Abundance of Top Taxonomic Instances per Sample

