



# NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

## Own Sample Module Summary Report

Benthic Invertebrate Component - 2023/24

OS83, 84 and 85

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## **MODULE / EXERCISE DETAILS**

Module:	Own Sample (OS)
Exercises:	OS83, 84 and 85
Data/Sample Request Circulated:	15 November 2023
Sample Submission Deadline (Batch 2):	26 April 2024
Number of Subscribing Laboratories:	22
Number of Own Samples Received:	62

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Table 1. Summary of the performance of participating laboratories in the Own Sample (OS) exercises with respect to the NMBAQC standards.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	Estimation of Taxa							Taxonomic errors			No. Individuals							Estimation of Biomass				Similarity Index			Sample Flag
	OD	AD	Target	Pass / Fail	Missed Taxa	% Missed	Remedial Action	OD	%	Remedial Action	OD	AD	Target	Pass / Fail	Missed Ind.	% Missed	Remedial Action	OD	AD	Target	Pass / Fail	BCSI %	Target	Pass / Fail	NMBAQC Sample Flag
BI_3001 OS83	71	72	64.8 - 79.2	PASS	1	1.39	-	0	0.00	-	3057	3069	2762.1 - 3375.9	PASS	20	0.65	-	35.2866	36.3522	29.08176 - 43.62264	PASS	99.41	90	PASS	PASS - GOOD
BI_3001 OS84	118	118	106.2 - 129.8	PASS	0	0.00	-	0	0.00	-	1812	1825	1642.5 - 2007.5	PASS	31	1.70	-	14.5551	14.0208	11.21664 - 16.82496	PASS	99.17	90	PASS	PASS - GOOD
BI_3001 OS85	31	31	27.9 - 34.1	PASS	0	0.00	-	2	6.45	-	1595	1610	1449 - 1771	PASS	24	1.49	-	2.538	2.4289	1.94312 - 2.91468	PASS	99.36	90	PASS	PASS - GOOD
BI_3002 OS83	13	14	12.6 - 15.4	PASS	1	7.14	-	1	7.14	-	92	93	83.7 - 102.3	PASS	1	1.08	-	-	-	-	-	98.378	90	PASS	PASS - GOOD
BI_3002 OS84	40	54	48.6 - 59.4	FAIL	6	11.11	Reprocess	6	11.11	Reprocess	213	258	232.2 - 283.8	FAIL	38	14.73	Reprocess	-	-	-	-	88	90	FAIL	FAIL - POOR
BI_3002 OS85	63	67	60.3 - 73.7	PASS	2	2.99	-	5	7.46	-	855	956	860.4 - 1051.6	FAIL	85	8.89	-	-	-	-	-	93.612	90	PASS	PASS - ACCEPTABLE
BI_3003 OS83	48	48	43.2 - 52.8	PASS	0	0.00	-	0	0.00	-	95	98	88.2 - 107.8	PASS	2	2.04	-	-	-	-	-	98.446	90	PASS	PASS - GOOD
BI_3003 OS84	64	65	58.5 - 71.5	PASS	1	1.54	-	1	1.54	-	414	422	379.8 - 464.2	PASS	6	1.42	-	-	-	-	-	98.804	90	PASS	PASS - GOOD
BI_3003 OS85	52	52	46.8 - 57.2	PASS	0	0.00	-	0	0.00	-	187	188	169.2 - 206.8	PASS	1	0.53	-	-	-	-	-	99.733	90	PASS	PASS - GOOD
BI_3004 OS83	56	59	53.1 - 64.9	PASS	3	5.08	-	0	0.00	-	834	837	753.3 - 920.7	PASS	4	0.48	-	-	-	-	-	99.642	90	PASS	PASS - GOOD
BI_3004 OS84	44	45	40.5 - 49.5	PASS	1	2.22	-	0	0.00	-	529	528	475.2 - 580.8	PASS	0	0.00	-	-	-	-	-	99.716	90	PASS	PASS - GOOD
BI_3004 OS85	27	29	26.1 - 31.9	PASS	2	6.90	-	0	0.00	-	213	214	192.6 - 235.4	PASS	1	0.47	-	-	-	-	-	99.533	90	PASS	PASS - GOOD
BI_3006 OS83	7	7	6.3 - 7.7	PASS	0	0.00	-	1	14.29	-	125	126	113.4 - 138.6	PASS	0	0.00	-	0.356	0.371	0.2968 - 0.4452	PASS	98.814	90	PASS	PASS - GOOD
BI_3006 OS84	16	16	14.4 - 17.6	PASS	0	0.00	-	0	0.00	-	182	182	163.8 - 200.2	PASS	0	0.00	-	40.5529	41.1611	32.92888 - 49.39332	PASS	100	90	PASS	PASS - EXCELLENT
BI_3006 OS85	7	7	6.3 - 7.7	PASS	0	0.00	-	0	0.00	-	275	275	247.5 - 302.5	PASS	1	0.36	-	12.5065	12.8763	10.30104 - 15.45156	PASS	99.636	90	PASS	PASS - GOOD
BI_3007 OS83	8	12	10.8 - 13.2	FAIL	4	33.33	-	0	0.00	-	29	31	27.9 - 34.1	PASS	2	6.45	-	-	-	-	-	93.939	90	PASS	PASS - ACCEPTABLE
BI_3007 OS84	24	29	26.1 - 31.9	FAIL	4	13.79	-	1	3.45	-	73	76	68.4 - 83.6	PASS	1	1.32	-	-	-	-	-	94.805	90	PASS	PASS - ACCEPTABLE
BI_3007 OS85	38	43	38.7 - 47.3	FAIL	3	6.98	Review	1	2.33	-	85	115	103.5 - 126.5	FAIL	28	24.35	Reprocess	-	-	-	-	84.158	90	FAIL	FAIL - BAD
BI_3011 OS83	34	35	31.5 - 38.5	PASS	1	2.86	-	0	0.00	-	121	122	109.8 - 134.2	PASS	0	0.00	-	-	-	-	-	99.187	90	PASS	PASS - GOOD
BI_3011 OS84	24	25	22.5 - 27.5	PASS	0	0.00	-	0	0.00	-	30	29	26.1 - 31.9	PASS	1	3.45	-	-	-	-	-	93.75	90	PASS	PASS - ACCEPTABLE
BI_3011 OS85	30	31	27.9 - 34.1	PASS	1	3.23	-	0	0.00	-	50	50	45 - 55	PASS	0	0.00	-	-	-	-	-	99.029	90	PASS	PASS - GOOD
BI_3012 OS83	27	27	24.3 - 29.7	PASS	0	0.00	-	1	3.70	-	47	48	43.2 - 52.8	PASS	1	2.08	-	-	-	-	-	94.545	90	PASS	PASS - ACCEPTABLE
BI_3012 OS84	23	24	21.6 - 26.4	PASS	0	0.00	-	0	0.00	-	573	574	516.6 - 631.4	PASS	0	0.00	-	-	-	-	-	99.565	90	PASS	PASS - GOOD
BI_3012 OS85	46	50	45 - 55	PASS	1	2.00	-	3	6.00	-	279	282	253.8 - 310.2	PASS	2	0.71	-	-	-	-	-	97.173	90	PASS	PASS - GOOD
BI_3019 OS83	9	11	9.9 - 12.1	FAIL	2	18.18	-	0	0.00	-	22	24	21.6 - 26.4	PASS	2	8.33	-	0.40302	0.2269	0.18152 - 0.27228	FAIL	92	90	PASS	PASS - ACCEPTABLE
BI_3019 OS84	7	7	6.3 - 7.7	PASS	0	0.00	-	2	28.57	Review	12	12	10.8 - 13.2	PASS	0	0.00	-	0.44497	0.2905	0.2324 - 0.3486	FAIL	72	90	FAIL	FAIL - BAD
BI_3019 OS85	28	30	27 - 33	PASS	2	6.67	-	3	10.00	-	119	126	113.4 - 138.6	PASS	2	1.59	-	3.86793	2.6298	2.10384 - 3.15576	FAIL	92.369	90	PASS	PASS - ACCEPTABLE
BI_3031 OS83	21	22	19.8 - 24.2	PASS	1	4.55	-	0	0.00	-	616	618	556.2 - 679.8	PASS	2	0.32	-	-	-	-	-	99.757	90	PASS	PASS - GOOD
BI_3031 OS84	12	12	10.8 - 13.2	PASS	0	0.00	-	0	0.00	-	27	27	24.3 - 29.7	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3031 OS85	23	23	20.7 - 25.3	PASS	0	0.00	-	1	4.35	-	75	75	67.5 - 82.5	PASS	0	0.00	-	-	-	-	-	98.667	90	PASS	PASS - GOOD
BI_3032 OS83	9	11	9.9 - 12.1	FAIL	1	9.09	-	1	9.09	-	184	204	183.6 - 224.4	PASS	1	0.49	-	-	-	-	-	94.629	90	PASS	PASS - ACCEPTABLE
BI_3032 OS84	21	21	18.9 - 23.1	PASS	0	0.00	-	0	0.00	-	456	463	416.7 - 509.3	PASS	12	2.59	-	-	-	-	-	98.585	90	PASS	PASS - GOOD
BI_3032 OS85	17	17	15.3 - 18.7	PASS	0	0.00	-	0	0.00	-	81	81	72.9 - 89.1	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3033 OS83	18	18	16.2 - 19.8	PASS	0	0.00	-	0	0.00	-	719	717	645.3 - 788.7	PASS	0	0.00	-	-	-	-	-	99.444	90	PASS	PASS - GOOD
BI_3033 OS84	12	13	11.7 - 14.3	PASS	0	0.00	-	2	15.38	-	62	65	58.5 - 71.5	PASS	2	3.08	-	-	-	-	-	96.183	90	PASS	PASS - GOOD
BI_3033 OS85	10	11	9.9 - 12.1	PASS	1	9.09	-	0	0.00	-	72	72	64.8 - 79.2	PASS	0	0.00	-	-	-	-	-	99.31	90	PASS	PASS - GOOD
BI_3034 OS83	2	2	1.8 - 2.2	PASS	0	0.00	-	0	0.00	-	116	116	104.4 - 127.6	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3034 OS84	32	33	29.7 - 36.3	PASS	1	3.03	-	0	0.00	-	166	167	150.3 - 183.7	PASS	1	0.60	-	-	-	-	-	99.401	90	PASS	PASS - GOOD
BI_3034 OS85	41	42	37.8 - 46.2	PASS	0	0.00	-	1	2.38	-	369	370	333 - 407	PASS	1	0.27	-	-	-	-	-	99.394	90	PASS	PASS - GOOD
BI_3035 OS83	24	25	22.5 - 27.5	PASS	1	4.00	-	0	0.00	-	78	81	72.9 - 89.1	PASS	3	3.70	-	-	-	-	-	98.113	90	PASS	PASS - GOOD
BI_3035 OS84	20	22	19.8 - 24.2	PASS	1	4.55	-	1	4.55	-	163	167	150.3 - 183.7	PASS	4	2.40	-	-	-	-	-	98.182	90	PASS	PASS - GOOD
BI_3035 OS85	28	28	25.2 - 30.8	PASS	0	0.00	-	1	3.57	-	186	179	161.1 - 196.9	PASS	0	0.00	-	-	-	-	-	97.548	90	PASS	PASS - GOOD
BI_3036 OS83	22	22	19.8 - 24.2	PASS	0	0.00	-	0	0.00	-	112	114	102.6 - 125.4	PASS	1	0.88	-	-	-	-	-	99.153	90	PASS	PASS - GOOD
BI_3036 OS85	27	31	27.9 - 34.1	FAIL	5	16.13	Reprocess	1	3.23	-	89	110	99 - 121	FAIL	21	19.09	Reprocess	-	-	-	-	89.109	90	FAIL	FAIL - POOR

NB. This table details the findings of the audit only. For details of Own Sample remedial action please refer to NMBAQCS Year 30 Annual report, section 2.4.

Table 1. Summary of the performance of participating laboratories in the Own Sample (OS) exercises with respect to the NMBAQC standards.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	Estimation of Taxa							Taxonomic errors			No. Individuals							Estimation of Biomass				Similarity Index			Sample Flag
	OD	AD	Target	Pass / Fail	Missed Taxa	% Missed	Remedial Action	OD	%	Remedial Action	OD	AD	Target	Pass / Fail	Missed Ind.	% Missed	Remedial Action	OD	AD	Target	Pass / Fail	BCSI %	Target	Pass / Fail	NMBAQC Sample Flag
BI_3037 OS83	50	52	46.8 - 57.2	PASS	2	3.85	-	0	0.00	-	293	296	266.4 - 325.6	PASS	3	1.01	-	-	-	-	-	99.492	90	PASS	PASS - GOOD
BI_3037 OS84	14	14	12.6 - 15.4	PASS	0	0.00	-	0	0.00	-	152	153	137.7 - 168.3	PASS	1	0.65	-	-	-	-	-	99.676	90	PASS	PASS - GOOD
BI_3037 OS85	34	37	33.3 - 40.7	PASS	3	8.11	-	0	0.00	-	224	227	204.3 - 249.7	PASS	3	1.32	-	-	-	-	-	99.349	90	PASS	PASS - GOOD
BI_3038 OS83	7	7	6.3 - 7.7	PASS	0	0.00	-	0	0.00	-	10	10	9 - 11	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3038 OS84	7	7	6.3 - 7.7	PASS	0	0.00	-	0	0.00	-	8	8	7.2 - 8.8	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3038 OS85	12	12	10.8 - 13.2	PASS	0	0.00	-	0	0.00	-	136	136	122.4 - 149.6	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3039 OS83	7	7	6.3 - 7.7	PASS	0	0.00	-	0	0.00	-	39	39	35.1 - 42.9	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3039 OS84	4	4	3.6 - 4.4	PASS	0	0.00	-	0	0.00	-	5	5	4.5 - 5.5	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3039 OS85	1	1	0.9 - 1.1	PASS	0	0.00	-	0	0.00	-	1	1	0.9 - 1.1	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3040 OS83	8	9	8.1 - 9.9	FAIL	1	11.11	-	0	0.00	-	26	28	25.2 - 30.8	PASS	2	7.14	-	-	-	-	-	96.296	90	PASS	PASS - GOOD
BI_3040 OS84	23	23	20.7 - 25.3	PASS	0	0.00	-	0	0.00	-	197	197	177.3 - 216.7	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3040 OS85	41	41	36.9 - 45.1	PASS	0	0.00	-	0	0.00	-	239	239	215.1 - 262.9	PASS	4	1.67	-	-	-	-	-	94.239	90	PASS	PASS - ACCEPTABLE
BI_3041 OS83	6	6	5.4 - 6.6	PASS	0	0.00	-	0	0.00	-	176	177	159.3 - 194.7	PASS	3	1.69	-	-	-	-	-	99.15	90	PASS	PASS - GOOD
BI_3041 OS84	11	13	11.7 - 14.3	FAIL	1	7.69	-	1	7.69	-	1071	1104	993.6 - 1214.4	PASS	34	3.08	-	-	-	-	-	98.483	90	PASS	PASS - GOOD
BI_3041 OS85	5	6	5.4 - 6.6	FAIL	1	16.67	-	0	0.00	-	138	142	127.8 - 156.2	PASS	1	0.70	-	-	-	-	-	98.571	90	PASS	PASS - GOOD
BI_3042 OS83	8	8	7.2 - 8.8	PASS	0	0.00	-	0	0.00	-	11	11	9.9 - 12.1	PASS	0	0.00	-	-	-	-	-	100	90	PASS	PASS - EXCELLENT
BI_3042 OS84	23	24	21.6 - 26.4	PASS	1	4.17	-	0	0.00	-	74	76	68.4 - 83.6	PASS	3	3.95	-	-	-	-	-	97.368	90	PASS	PASS - GOOD
BI_3042 OS85	24	25	22.5 - 27.5	PASS	1	4.00	-	0	0.00	-	132	133	119.7 - 146.3	PASS	1	0.75	-	-	-	-	-	99.623	90	PASS	PASS - GOOD

Key:

OD = Original Data (participant), AD = Auditor Data, Target for Estimation of Taxa and No. Individuals is +/- 10% AD, Target for Estimation of Biomass is +/- 20% AD, BCSI = Bray Curtis Similarity Index.

Table 2. Comparison of the extraction efficiency by the participating laboratories for the major taxonomic groups present in Own Samples (OS83-85).

LabCode			Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall
BI_3001	OS83	AD count	34	634	-	-	711	1596	67	27	3069
		Missed	0	1	-	-	1	17	0	1	20
		%missed	0.0	0.2	-	-	0.1	1.1	0.0	3.7	0.7
	OS84	AD count	4	524	2	6	571	441	13	264	1825
		Missed	0	5	0	0	3	19	1	3	31
		%missed	0.0	1.0	0.0	0.0	0.5	4.3	7.7	1.1	1.7
	OS85	AD count	-	1272	50	-	4	282	-	2	1610
		Missed	-	17	1	-	0	6	-	0	24
		%missed	-	1.3	2.0	-	0.0	2.1	-	0.0	1.5
BI_3002	OS83	AD count	3	14	-	-	-	21	-	-	38
		Missed	0	0	-	-	-	1	-	-	1
		%missed	0.0	0.0	-	-	-	4.8	-	-	2.6
	OS84	AD count	2	99	1	-	39	97	4	16	258
		Missed	0	13	0	-	5	15	0	5	38
		%missed	0.0	13.1	0.0	-	12.8	15.5	0.0	31.3	14.7
	OS85	AD count	24	780	2	-	6	94	6	44	956
		Missed	2	40	0	-	4	37	0	2	85
		%missed	8.3	5.1	0.0	-	66.7	39.4	0.0	4.5	8.9
BI_3003	OS83	AD count	-	36	-	-	7	34	18	3	98
		Missed	-	1	-	-	0	1	0	0	2
		%missed	-	2.8	-	-	0.0	2.9	0.0	0.0	2.0
	OS84	AD count	2	242	-	-	16	122	33	7	422
		Missed	0	3	-	-	0	2	1	0	6
		%missed	0.0	1.2	-	-	0.0	1.6	3.0	0.0	1.4
	OS85	AD count	1	95	-	-	3	66	18	5	188
		Missed	0	0	-	-	0	1	0	0	1
		%missed	0.0	0.0	-	-	0.0	1.5	0.0	0.0	0.5
BI_3004	OS83	AD count	-	551	-	-	39	58	185	4	837
		Missed	-	0	-	-	3	1	0	0	4
		%missed	-	0.0	-	-	7.7	1.7	0.0	0.0	0.5
	OS84	AD count	-	309	-	-	9	33	176	1	528
		Missed	-	0	-	-	0	0	0	0	0
		%missed	-	0.0	-	-	0.0	0.0	0.0	0.0	0.0
	OS85	AD count	-	41	-	-	7	24	139	3	214
		Missed	-	0	-	-	0	0	0	1	1
		%missed	-	0.0	-	-	0.0	0.0	0.0	33.3	0.5
BI_3006	OS83	AD count	-	43	20	-	62	-	-	1	126
		Missed	-	0	0	-	0	-	-	0	0
		%missed	-	0.0	0.0	-	0.0	-	-	0.0	0.0
	OS84	AD count	-	32	-	-	5	142	-	3	182
		Missed	-	0	-	-	0	0	-	0	0
		%missed	-	0.0	-	-	0.0	0.0	-	0.0	0.0
	OS85	AD count	-	1	-	-	2	272	-	-	275
		Missed	-	0	-	-	0	1	-	-	1
		%missed	-	0.0	-	-	0.0	0.4	-	-	0.4
BI_3007	OS83	AD count	-	22	-	-	3	6	-	-	31
		Missed	-	2	-	-	0	0	-	-	2
		%missed	-	9.1	-	-	0.0	0.0	-	-	6.5
	OS84	AD count	-	26	-	-	6	43	-	1	76
		Missed	-	0	-	-	0	1	-	0	1
		%missed	-	0.0	-	-	0.0	2.3	-	0.0	1.3
	OS85	AD count	3	55	-	-	9	20	2	26	115
		Missed	0	7	-	-	1	6	1	13	28
		%missed	0.0	12.7	-	-	11.1	30.0	50.0	50.0	24.3
BI_3011	OS83	AD count	1	68	-	-	9	29	6	9	122
		Missed	0	0	-	-	0	0	0	0	0
		%missed	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0
	OS84	AD count	2	12	-	-	3	2	5	5	29
		Missed	0	0	-	-	0	0	0	1	1
		%missed	0.0	0.0	-	-	0.0	0.0	0.0	20.0	3.4
	OS85	AD count	-	32	-	-	5	4	2	7	50
		Missed	-	0	-	-	0	0	0	0	0
		%missed	-	0.0	-	-	0.0	0.0	0.0	0.0	0.0

Table 2. Comparison of the extraction efficiency by the participating laboratories for the major taxonomic groups present in Own Samples (OS83-85).

LabCode			Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall	
BI_3012	OS83	AD count	3	33	-	-	2	8	1	1	48	
		Missed	0	1	-	-	0	0	0	0	1	
		%missed	0.0	3.0	-	-	0.0	0.0	0.0	0.0	2.1	
	OS84	AD count	-	394	160	-	13	1	-	-	6	574
		Missed	-	0	0	-	0	0	-	-	0	0
		%missed	-	0.0	0.0	-	0.0	0.0	-	-	0.0	0.0
	OS85	AD count	3	111	1	-	119	42	2	4	282	
		Missed	0	2	0	-	0	0	0	0	2	
		%missed	0.0	1.8	0.0	-	0.0	0.0	0.0	0.0	0.7	
BI_3019	OS83	AD count	-	12	-	-	-	12	-	-	24	
		Missed	-	0	-	-	-	2	-	-	2	
		%missed	-	0.0	-	-	-	16.7	-	-	8.3	
	OS84	AD count	1	6	-	-	4	1	-	-	12	
		Missed	0	0	-	-	0	0	-	-	0	
		%missed	0.0	0.0	-	-	0.0	0.0	-	-	0.0	
	OS85	AD count	6	53	-	-	27	6	32	2	126	
		Missed	0	0	-	-	0	2	0	0	2	
		%missed	0.0	0.0	-	-	0.0	33.3	0.0	0.0	1.6	
BI_3031	OS83	AD count	9	25	-	-	3	351	228	2	618	
		Missed	0	0	-	-	0	0	2	0	2	
		%missed	0.0	0.0	-	-	0.0	0.0	0.9	0.0	0.3	
	OS84	AD count	1	4	1	-	1	12	8	-	27	
		Missed	0	0	0	-	0	0	0	-	0	
		%missed	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	
	OS85	AD count	1	38	2	-	-	33	1	-	75	
		Missed	0	0	0	-	-	0	0	-	0	
		%missed	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	
BI_3032	OS83	AD count	-	8	172	-	1	23	-	-	204	
		Missed	-	0	0	-	0	1	-	-	1	
		%missed	-	0.0	0.0	-	0.0	4.3	-	-	0.5	
	OS84	AD count	-	130	12	-	26	295	-	-	463	
		Missed	-	4	0	-	0	8	-	-	12	
		%missed	-	3.1	0.0	-	0.0	2.7	-	-	2.6	
	OS85	AD count	-	24	-	-	42	15	-	-	81	
		Missed	-	0	-	-	0	0	-	-	0	
		%missed	-	0.0	-	-	0.0	0.0	-	-	0.0	
BI_3033	OS83	AD count	-	116	16	-	577	8	-	-	717	
		Missed	-	0	0	-	0	0	-	-	0	
		%missed	-	0.0	0.0	-	0.0	0.0	-	-	0.0	
	OS84	AD count	-	28	-	-	36	1	-	-	65	
		Missed	-	0	-	-	2	0	-	-	2	
		%missed	-	0.0	-	-	5.6	0.0	-	-	3.1	
	OS85	AD count	-	58	1	-	6	6	-	1	72	
		Missed	-	0	0	-	0	0	-	0	0	
		%missed	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0	
BI_3034	OS83	AD count	-	107	-	-	-	-	-	9	116	
		Missed	-	0	-	-	-	-	-	0	0	
		%missed	-	0.0	-	-	-	-	-	0.0	0.0	
	OS84	AD count	2	41	1	-	83	24	13	3	167	
		Missed	0	1	0	-	0	0	0	0	1	
		%missed	0.0	2.4	0.0	-	0.0	0.0	0.0	0.0	0.6	
	OS85	AD count	1	204	37	-	83	35	3	7	370	
		Missed	0	1	0	-	0	0	0	0	1	
		%missed	0.0	0.5	0.0	-	0.0	0.0	0.0	0.0	0.3	
BI_3035	OS83	AD count	-	22	-	-	21	30	4	4	81	
		Missed	-	0	-	-	1	2	0	0	3	
		%missed	-	0.0	-	-	4.8	6.7	0.0	0.0	3.7	
	OS84	AD count	-	34	-	-	8	115	10	-	167	
		Missed	-	3	-	-	1	0	0	-	4	
		%missed	-	8.8	-	-	12.5	0.0	0.0	-	2.4	
	OS85	AD count	4	116	-	-	3	53	3	-	179	
		Missed	0	0	-	-	0	0	0	-	0	
		%missed	0.0	0.0	-	-	0.0	0.0	0.0	-	0.0	

Table 2. Comparison of the extraction efficiency by the participating laboratories for the major taxonomic groups present in Own Samples (OS83-85).

LabCode			Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall
BI_3036	OS83	AD count	-	91	10	-	7	4	-	2	114
		Missed	-	0	1	-	0	0	-	0	1
		%missed	-	0.0	10.0	-	0.0	0.0	-	0.0	0.9
	OS85	AD count	1	43	-	-	24	28	6	8	110
		Missed	0	7	-	-	6	4	1	3	21
		%missed	0.0	16.3	-	-	25.0	14.3	16.7	37.5	19.1
BI_3037	OS83	AD count	10	89	14	1	21	116	38	7	296
		Missed	0	1	0	0	0	1	1	0	3
		%missed	0.0	1.1	0.0	0.0	0.0	0.9	2.6	0.0	1.0
	OS84	AD count	1	75	74	-	-	2	-	1	153
		Missed	0	0	1	-	-	0	-	0	1
		%missed	0.0	0.0	1.4	-	-	0.0	-	0.0	0.7
	OS85	AD count	3	120	11	-	1	31	-	61	227
		Missed	0	1	0	-	0	2	-	0	3
		%missed	0.0	0.8	0.0	-	0.0	6.5	-	0.0	1.3
BI_3038	OS83	AD count	-	3	5	-	1	1	-	-	10
		Missed	-	0	0	-	0	0	-	-	0
		%missed	-	0.0	0.0	-	0.0	0.0	-	-	0.0
	OS84	AD count	-	2	-	-	4	2	-	-	8
		Missed	-	0	-	-	0	0	-	-	0
		%missed	-	0.0	-	-	0.0	0.0	-	-	0.0
OS85	AD count	-	72	-	-	29	35	-	-	136	
	Missed	-	0	-	-	0	0	-	-	0	
	%missed	-	0.0	-	-	0.0	0.0	-	-	0.0	
BI_3039	OS83	AD count	-	39	4	-	1	-	-	-	44
		Missed	-	0	0	-	0	-	-	-	0
		%missed	-	0.0	0.0	-	0.0	-	-	-	0.0
	OS84	AD count	-	3	-	-	-	1	-	1	5
		Missed	-	0	-	-	-	0	-	0	0
		%missed	-	0.0	-	-	-	0.0	-	0.0	0.0
	OS85	AD count	-	-	-	-	1	-	-	-	1
		Missed	-	-	-	-	0	-	-	-	0
		%missed	-	-	-	-	0.0	-	-	-	0.0
BI_3040	OS83	AD count	-	18	4	-	1	5	-	-	28
		Missed	-	0	0	-	0	2	-	-	2
		%missed	-	0.0	0.0	-	0.0	40.0	-	-	7.1
	OS84	AD count	-	21	50	-	18	107	1	-	197
		Missed	-	0	0	-	0	0	0	-	0
		%missed	-	0.0	0.0	-	0.0	0.0	0.0	-	0.0
	OS85	AD count	1	117	22	-	29	52	-	14	235
		Missed	0	0	0	-	1	3	-	0	4
		%missed	0.0	0.0	0.0	-	3.4	5.8	-	0.0	1.7
BI_341	OS83	AD count	-	8	12	-	2	151	-	4	177
		Missed	-	1	0	-	1	1	-	0	3
		%missed	-	12.5	0.0	-	50.0	0.7	-	0.0	1.7
	OS84	AD count	-	10	1028	-	1	11	-	54	1104
		Missed	-	0	27	-	0	0	-	7	34
		%missed	-	0.0	2.6	-	0.0	0.0	-	13.0	3.1
	OS85	AD count	1	83	54	-	1	-	-	3	142
		Missed	0	0	0	-	1	-	-	0	1
		%missed	0.0	0.0	0.0	-	100.0	-	-	0.0	0.7
BI_3042	OS83	AD count	-	5	-	-	2	2	2	-	11
		Missed	-	0	-	-	0	0	0	-	0
		%missed	-	0.0	-	-	0.0	0.0	0.0	-	0.0
	OS84	AD count	-	59	-	-	7	5	3	2	76
		Missed	-	1	-	-	0	0	2	0	3
		%missed	-	1.7	-	-	0.0	0.0	66.7	0.0	3.9
	OS85	AD count	-	25	-	-	11	35	61	1	133
		Missed	-	0	-	-	0	0	0	1	1
		%missed	-	0.0	-	-	0.0	0.0	0.0	100.0	0.8

Key: AD = Audit Data  
Missed = numbers of individuals missed in residue sorting  
% Missed = Percentage missed in residue sorting

Table 3. Summary of mis-identified taxa in the Own Sample Module (OS83 - 85) (erroneous identifications in brackets).

LabCode / Smp.	Taxonomic Errors	Major Taxonomic Group					
		Polychaeta	Oligochaeta	Crustacea	Mollusca	Echinodermata	Other
BL_3001	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	2	-	-	-	<i>Macomangulus tenuis (Mya arenaria juvenile)</i>	<i>Einhornia crustulenta (Canopeum reticulum)</i>
BL_3002	OS83	1	-	-	-	<i>Abra nitida (Abra alba)</i>	-
			<i>Spio symphyta (Spio filicornis)</i>	-	-	<i>Dosinia juv. (Chamelea striatula)</i>	-
			-	-	-	<i>Acanthocardia juv. (Parvicardium ovale)</i>	-
	OS84	6	-	-	-	<i>Phaxas pellucidus (Mysia undata)</i>	-
			-	-	-	<i>Mysia undata juv. (Thyasira flexuosa)</i>	-
			-	-	-	<i>Ennucula tenuis/ Fabulina fabula/ Spisula juv. (Abra alba)</i>	-
OS85	5	<i>Polycirrus (Terebellides stroemi)</i>	-	-	<i>Mya truncata juv. (Mya arenaria)</i>	-	
		<i>Oxydromus pallidus (Nereimyra punctata)</i>	-	-	<i>Venerupis corrugata juv. (Kurtiella bidentata)</i>	-	
		<i>Capitella (Lumbrineris cingulata)</i>	-	-	-	-	
BL_3003	OS83	0	-	-	-	-	-
	OS84	1	<i>Abyssoninae hibernica (Lumbrineris cf. cingulata)</i>	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3004	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3006	OS83	1	-	-	-	-	<i>Uva (Blidingia)</i>
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3007	OS83	0	-	-	-	-	-
	OS84	1	<i>Praxillella affinis (Euclymene oerstedii)</i>	-	-	-	-
	OS85	1	-	-	-	<i>Oesterqrenia digitata (Labidoplax Damaged)</i>	-
BL_3011	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3012	OS83	1	<i>Nephtys hambergii (Nephtys kersivalensis)</i>	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	3	<i>Harmathoe glabra (Malmgrenia marphysae)</i> <i>Spiophanes bombyx (Pygospio elegans)</i>	-	-	<i>Philine (Hermania)</i>	-
BL_3019	OS83	0	-	-	-	-	-
	OS84	2	-	-	<i>Natatalana borealis (Eurydice spinigera)</i>	-	-
			-	-	<i>Pseudocuma simile (Pseudocuma longicorne)</i>	-	-
OS85	3	-	-	<i>Cheirocratus pseudosundevallii (Cheirocratus sundevallii)</i> <i>Synchelidium maculatum (Pontocrates arenarius)</i>	-	<i>Amphipholis squamata (Ophiuridae Juvenile)</i>	
BL_3031	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	1	<i>Cauleriella species C (Cauleriella alata)</i>	-	-	-	-
BL_3032	OS83	1	-	<i>Tubificoides diazi</i> agg. ( <i>Tubificoides benedii</i> )	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3033	OS83	0	-	-	-	-	-
	OS84	2	<i>Nephtys cirrosa (Nephtys caeca)</i>	-	-	-	-
			<i>Heteromastus filiformis (Capitella)</i>	-	-	-	-
OS85	0	-	-	-	-	-	
BL_3034	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	1	<i>Glycera fallax (Glycera alba)</i>	-	-	-	-
BL_3035	OS83	0	-	-	-	-	-
	OS84	1	-	-	-	<i>Ensis juv. (Phaxas pellucidus)</i>	-
	OS85	1	<i>Nephtys cirrosa (Aglaphamus agilis)</i>	-	-	-	-
BL_3036	OS83	0	-	-	-	-	-
	OS85	1	-	-	-	-	<i>Phoronis (Owenia)</i>
BL_3037	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BL_3038	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-



Table 3. Summary of mis-identified taxa in the Own Sample Module (OS83 - 85) (erroneous identifications in brackets).

LabCode / Smp.	Taxonomic Errors	Major Taxonomic Group					
		Polychaeta	Oligochaeta	Crustacea	Mollusca	Echinodermata	Other
BI_3039	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BI_3040	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
BI_3041	OS83	0	-	-	-	-	-
	OS84	1	-	<i>Paranis litoralis</i> (Enchytraeidae)	-	-	-
	OS85	0	-	-	-	-	-
BI_3042	OS83	0	-	-	-	-	-
	OS84	0	-	-	-	-	-
	OS85	0	-	-	-	-	-
<b>TOTAL</b>	<b>36</b>	<b>14</b>	<b>2</b>	<b>4</b>	<b>11</b>	<b>2</b>	<b>3</b>
<b>% Error</b>		<b>39</b>	<b>6</b>	<b>11</b>	<b>31</b>	<b>6</b>	<b>8</b>

NB: % errors for taxonomic groups are percentages of the total errors generated by each taxon (not percentages of errors within each taxon)

Table 4. Comparison of the estimates of biomass made by the participating laboratories with those made by APEM Ltd. for the major taxonomic groups present in samples OS83-OS85.

		OS83								
LabCode		Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall
BI_3001	OD	0.3457	3.8128	-	-	0.1939	1.1230	28.9879	0.8233	35.2866
	AD	0.3753	4.7526	-	-	0.1923	1.1291	29.0760	0.8269	36.3522
	%diff.	-8.56	-24.65	-	-	0.83	-0.54	-0.30	-0.44	-3.02
BI_3006	OD	-	0.2726	0.0065	-	0.0768	-	-	0.0001	0.3560
	AD	-	0.2925	0.0057	-	0.0727	-	-	0.0001	0.3710
	%diff.	-	-7.3001	12.3077	-	5.3385	-	-	0.0000	-4.2135
BI_3019	OD	0.0017	0.3856	-	-	-	0.0158	-	-	0.4031
	AD	0.0012	0.2136	-	-	-	0.0121	-	-	0.2269
	%diff.	29.4118	44.6058	-	-	-	23.4177	-	-	43.7112

Key: OD - Own data, participating laboratory  
 AD - Audit data  
 "-" - No data.

Table 4. Comparison of the estimates of biomass made by the participating laboratories with those made by APEM Ltd. for the major taxonomic groups present in samples OS83-OS85.

		OS84								
LabCode		Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall
BI_3001	OD	0.0054	3.6332	0.0004	0.0016	0.4502	9.6624	0.6884	0.1135	14.5551
	AD	0.0037	3.4774	0.0002	0.0010	0.3689	9.4368	0.6172	0.1156	14.0208
	%diff.	31.48	4.29	50.00	37.50	18.06	2.33	10.34	-1.85	3.67
BI_3006	OD	-	0.0229	-	-	0.0031	40.5268	-	0.0001	40.5529
	AD	-	0.0162	-	-	0.0035	41.1413	-	0.0001	41.1611
	%diff.	-	29.26	-	-	-12.90	-1.52	-	0.00	-1.4998
BI_3019	OD	0.1082	0.2475	-	-	0.0716	0.0177	-	-	0.4450
	AD	0.0706	0.1643	-	-	0.0432	0.0124	-	-	0.2905
	%diff.	34.75	33.62	-	-	39.66	29.94	-	-	34.7191

Key: OD - Own data, participating laboratory  
 AD - Audit data  
 "-" - No data.

Table 4. Comparison of the estimates of biomass made by the participating laboratories with those made by APEM Ltd. for the major taxonomic groups present in samples OS83-OS85.

		OS85								
LabCode		Nemertea	Polychaeta	Oligochaeta	Chelicerata	Crustacea	Mollusca	Echinodermata	Other	Overall
BI_3001	OD	-	1.4290	0.0180	-	0.0023	1.0886	-	0.0001	2.5380
	AD	-	1.3374	0.0091	-	0.0015	1.0808	-	0.0001	2.4289
	%diff.	-	6.41	49.44	-	34.78	0.72	-	0.00	4.30
BI_3006	OD	-	0.0002	-	-	0.0012	12.5051	-	-	12.5065
	AD	-	0.0008	-	-	0.0016	12.8739	-	-	12.8763
	%diff.	-	-300.00	-	-	-33.33	-2.95	-	-	-2.9569
BI_3019	OD	0.0212	1.1622	-	-	0.0835	0.0146	0.5564	2.0301	3.8680
	AD	0.0127	0.6885	-	-	0.0495	0.0140	0.5203	1.3448	2.6298
	%diff.	40.09	40.76	-	-	40.72	4.11	6.49	33.76	32.0114

Key: OD - Own data, participating laboratory  
 AD - Audit data  
 "-" - No data.

Table 5. Comparison of the overall performance of laboratories in the Own Sample exercises from 1995/96 to 2023/24 (OS01-85).

Scheme Year	Exercise	Number of samples		% Pass
		Pass (>90% BCSI)	Fail (<90% BCSI)	
02 (1995/96)	01	14	0	100
03 (1996/97)	02, 03, 04	27	11	71
04 (1997/98)	05, 06, 07	33	7	83
05 (1998/99)	08, 09, 10	30	12	71
06 (1999/00)	11, 12, 13	37	14	73
07 (2000/01)	14, 15, 16	30	15	67
08 (2001/02)*	17, 18, 19	35	10	78
09 (2002/03)*	20, 21, 22	33	11	75
10 (2003/04)*	23, 24, 25	43	8	84
11 (2004/05)*	26, 27, 28	51	3	94
12 (2005/06)*	29, 30, 31	50	4	93
13 (2006/07)*	32, 33, 34	63	6	91
14 (2007/08)*	35, 36, 37	69	12	85
15 (2008/09)*	38, 39, 40	67	24	74
16 (2009/10)*	41, 42, 43	75	18	81
17 (2010/11)*	44, 45, 46	85	14	86
18 (2011/12)*	47, 48, 49	95	4	96
19 (2012/13)*	50, 51, 52	102	6	94
20 (2013/14)*	53, 54, 55	73	29	72
2014/15 (21)*	56, 57, 58	71	22	76
2015/16 (22)*	59, 60, 61	81	15	84
2016/17 (23)*	62, 63, 64	72	12	86
2017/18 (24)*	65, 66, 67	70	9	89
2018/19 (25)*	68, 69, 70	73	16	82
2019/20 (26)*	71, 72, 73	89	8	92
2020/21 (27)*	74, 75, 76	65	4	94
2021/22 (28)*	77, 78, 79	83	6	93
2022/23 (29)**	80, 81, 82	91	16	85
2023/24 (30)*	83, 84, 85	58	4	94
	<b>Total</b>	<b>1765</b>	<b>320</b>	<b>85</b>

\* - Own Samples selected from completed data matrices

\* - includes 15 Own Samples from the Black Sea

BCSI - Bray Curtis Similarity Index (untransformed)