



# NMBQQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

The NE Atlantic Marine Biological  
Analytical Quality Control Scheme

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## Fish Reverse Ring Test Bulletin

**FRRT10**

2018/2019

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**Table 1. Summary of data and specimens received from participating laboratories for the tenth Fish Reverse Ring Test FRRT10**

Number of specimens submitted – **244**

Number of taxonomic errors (TE) – **13** (\*)

Number of taxonomic discrepancies (TD) (i.e. generic name changes, missing comma, incorrect parentheses or year in authorities\*\*) – **226** / 23 / 19

Class	Order	Family	Species as ID'd by lab	Species submitted (total: 80, incl. synonyms)			No. of TD	Pisces ID references	
				Authority given	Correct authority for sp. submitted	No. of spms			
Actinopterygii	Anguilliformes	Congridae	<i>Conger conger</i>		(Linnaeus, 1758)	1	0	0	Henderson 2015
"	Atheriniformes	Atherinidae	<i>Atherina presbyter</i>		Cuvier, 1829	5	0	0	Henderson 2015
"	Belontiiformes	Belontiidae	<i>Belone belone</i>		(Linnaeus, 1761)	3	0	0	Henderson 2015
"	Blenniiformes	Blenniidae	<i>Blennius ocellaris</i>	(Linnaeus, 1758)	Linnaeus, 1758	1	0	<b>1</b>	Henderson 2015
"	Clupeiformes	Clupeidae	<i>Clupea harengus</i>		Linnaeus, 1758	9	0	<b>1</b>	Henderson 2015
"	"	"	<i>Sardina pilchardus</i>		(Walbaum, 1792)	2	0	0	Henderson 2015
"	"	"	<i>Sprattus sprattus</i>		(Linnaeus, 1758)	7	<b>1</b>	<b>1</b>	Henderson 2015
"	"	Engraulidae	<i>Engraulis encrasicolus</i>		(Linnaeus, 1758)	1	0	0	Henderson 2015
"	Cypriniformes	Cyprinidae	<i>Gobio gobio</i>		(Linnaeus, 1758)	1	0	0	Maitland 1992
"	"	"	<i>Leuciscus leuciscus</i>		(Linnaeus, 1758)	1	0	0	Maitland 1992
"	"	"	<i>Rutilus rutilus</i>		(Linnaeus, 1758)	2	0	<b>1</b>	Maitland 1992
"	"	Nemacheilidae	<i>Barbatula barbatula</i>	Linnaeus 1758		1	0	0	Maitland 1992
"	Gadiformes	Gadidae	<i>Gadus morhua</i>		Linnaeus, 1758	4	0	0	Henderson 2015
"	"	"	<i>Merlangius merlangus</i>		(Linnaeus, 1758)	12	<b>1</b>	0	Henderson 2015
"	"	"	<i>Pollachius pollachius</i>		(Linnaeus, 1758)	1	0	0	Henderson 2015
"	"	"	<i>Pollachius virens</i>		(Linnaeus, 1758)	2	<b>1</b>	0	Henderson 2015
"	"	"	<i>Trisopterus luscus</i>		(Linnaeus, 1758)	3	0	0	Henderson 2015
"	"	"	<i>Trisopterus minutus</i>		(Linnaeus, 1758)	2	0	0	Henderson 2015
"	"	Lotidae	<i>Ciliata mustela</i>		(Linnaeus, 1758)	2	0	0	Henderson 2015
"	"	"	<i>Gaidropsarus mediterraneus</i>		(Linnaeus, 1758)	1	<b>1</b>	0	Henderson 2015
"	"	"	<i>Gaidropsarus vulgaris</i>		(Cloquet, 1824)	1	<b>1</b>	0	Henderson 2015
"	Gasterosteiformes	Gasterosteidae	<i>Gasterosteus aculeatus</i>	Linnaeus 1758	Linnaeus, 1758	3	0	<b>1</b>	Henderson 2015
"	"	"	<i>Spinachia spinachia</i>		(Linnaeus, 1758)	2	0	0	Henderson 2015

Species submitted (total: 80, incl. synonyms)								
Class	Order	Family	Species as ID'd by lab	Authority given	No. of spms	No. of TE	No. of TD	Pisces ID references
Correct authority for sp. submitted								
"	Gobiesociformes	Gobiesocidae	<i>Diplecogaster bimaculata</i>	(Bonnaterre, 1788)	1	0	0	Henderson 2015
"	Osmeriformes	Osmeridae	<i>Osmerus eperlanus</i>	(Linnaeus, 1758)	3	0	1	Henderson 2015
"	Perciformes	Ammodytidae	<i>Ammodytes tobianus</i>	Linnaeus, 1758	4	0	0	Henderson 2015
"	"	Blenniidae	<i>Lipophrys pholis</i>	(Linnaeus, 1758)	1	0	0	Henderson 2015
"	"	Callionymidae	<i>Callionymus lyra</i>	Linnaeus, 1758	8	0	1	Henderson 2015
"	"	"	<i>Callionymus maculatus</i>	Rafinesque, 1810	1	0	0	Henderson 2015
"	"	Carangidae	<i>Trachurus trachurus</i>	(Linnaeus, 1758)	2	0	0	Henderson 2015
"	"	Cepolidae	<i>Cepola macrophthalmia</i>	(Linnaeus, 1758)	1	0	0	Henderson 2015
"	"	Gobiidae	<i>Gobius couchii</i>	Miller & El-Tawil, 1974	1	0	0	Henderson 2015
"	"	"	<i>Gobius niger</i>	Linnaeus, 1758	4	0	0	Henderson 2015
"	"	"	<i>Gobiusculus flavescens</i>	(Fabricius, 1779)	2	0	0	Henderson 2015
"	"	"	<i>Pomatoschistus microps</i>	(Kjølner, 1838)	9	3	1	Henderson 2015
"	"	"	<i>Pomatoschistus minutus</i>	(Pallas, 1870)	13	0	1	Henderson 2015
"	"	"	<i>Pomatoschistus pictus</i>	(Malm, 1865)	4	0	0	Henderson 2015
"	"	Labridae	<i>Crenilabrus bailloni</i>	Valenciennes, 1839	1	0	1	Henderson 2015
"	"	"	<i>Crenilabrus melops*</i>	(Linnaeus, 1758)	2	0	2	Henderson 2015
"	"	"	<i>Ctenolabrus rupestris</i>	(Linnaeus, 1758)	1	0	0	Henderson 2015
"	"	"	<i>Labrus bergylta</i>	Ascanius, 1767	3	1	0	Henderson 2015
"	"	"	<i>Symphodus melops*</i>	(Linnaeus, 1758)	1	0	1	Henderson 2015
"	"	Moronidae	<i>Dicentrarchus labrax</i>	(Linnaeus, 1758)	5	0	1	Henderson 2015
"	"	Mugilidae	<i>Chelon aurata</i>	Risso 1810	1	1	1	Henderson 2015
"	"	"	<i>Chelon labrosus</i>	(Risso, 1827)	3	1	0	Henderson 2015
"	"	"	Juvenile mullet sp.		1	0	0	Henderson 2015
"	"	"	<i>Liza ramada</i>	(Risso, 1827)	2	0	0	Henderson 2015
"	"	Mullidae	<i>Mullus surmuletus</i>	Linnaeus, 1758	6	0	1	Henderson 2015
"	"	Pholidae	<i>Pholis gunnellus</i>	(Linnaeus, 1758)	3	0	0	Henderson 2015
"	"	Sparidae	<i>Sparus aurata</i>	Linnaeus, 1758	1	0	0	Henderson 2015
"	"	Trachimidae	<i>Echiichthys vipera</i>	(Cuvier, 1829)	2	0	0	Henderson 2015
"	Pleuronectiformes	Bothidae	<i>Arnoglossus laterna</i>	(Walbaum, 1792)	2	0	0	Henderson 2015

Species submitted (total: 80, incl. synonyms)								
Class	Order	Family	Species as ID'd by lab	Authority given	No. of spms	No. of TE	No. of TD	Pisces ID references
Correct authority for sp. submitted								
"	"	Pleuronectidae	<i>Hippoglossoides platessoides</i>	(Fabricius, 1780)	1	0	0	Henderson 2015
"	"	"	<i>Limanda limanda</i>	(Linnaeus, 1758)	8	0	0	Henderson 2015
"	"	"	<i>Microstomus kitt</i>	(Walbaum, 1792)	1	0	0	Henderson 2015
"	"	"	<i>Platichthys flesus</i>	(Linnaeus, 1758)	9	0	0	Henderson 2015
"	"	"	<i>Pleuronectes platessa</i>	Linnaeus, 1758	12	0	0	Henderson 2015
"	"	Scophthalmidae	<i>Scophthalmus rhombus</i>	(Linnaeus, 1758)	3	0	0	Henderson 2015
"	"	"	<i>Zeugopterus punctatus</i>	(Bloch, 1787)	1	0	0	Henderson 2015
"	"	Soleidae	<i>Buglossidium luteum</i>	(Risso, 1810)	4	0	0	Henderson 2015
"	"	"	<i>Microchirus variegatus</i>	(Donovan, 1808)	1	0	1	Henderson 2015
"	"	"	<i>Solea solea</i>	(Linnaeus, 1758)	10	0	0	Henderson 2015
"	Scorpaeniformes	Agonidae	<i>Agonus cataphractus</i>	(Linnaeus, 1758)	7	0	0	Henderson 2015
"	"	Cottidae	<i>Myoxocephalus scorpius</i>	(Linnaeus, 1758)	1	0	0	Henderson 2015
"	"	"	<i>Taurulus bubalis</i>	(Euphrasen, 1786)	1	1	0	Henderson 2015
"	"	Liparidae	<i>Liparis liparis</i>	(Linnaeus, 1766)	2	0	0	Henderson 2015
"	"	Triglidae	<i>Chelidonichthys cuculus</i>	(Linnaeus, 1758)	1	0	1	Henderson 2015
"	"	"	<i>Chelidonichthys lucerna</i>	(Linnaeus, 1758)	2	0	0	Henderson 2015
"	"	"	<i>Eutrigla gurnardus</i>	(Linnaeus, 1758)	3	0	0	Henderson 2015
"	"	"	<i>Trigla lucerna</i>	(Linnaeus, 1758)	1	0	1	Henderson 2015
"	Syngnathiformes	Syngnathidae	<i>Nerophis lumbriciformis</i>	(Jenyns, 1835)	1	0	0	Henderson 2015
"	"	"	<i>Syngnathus acus</i>	Linnaeus, 1758	3	0	0	Henderson 2015
"	"	"	<i>Syngnathus rostellatus</i>	Nilsson, 1855	6	0	0	Henderson 2015
"	"	Unknown	Unknown**	Unknown	2	1	0	Fishbase 2019
Elasmobranchii	Carcharhiniformes	Scyliorhinidae	<i>Scyliorhinus canicula</i>	(Linnaeus, 1758)	2	0	0	Henderson 2015
"	"	Triakidae	<i>Mustelus asterias</i>	Cloquet, 1819	2	0	0	Henderson 2015
"	Rajiformes	Rajidae	<i>Leucoraja naevus</i>	(Müller et Henle, 1841)	1	0	0	Henderson 2015
"	"	"	<i>Raja clavata</i>	Linnaeus, 1758	2	0	0	Henderson 2015
"	"	"	<i>Raja montagui</i>	Fowler, 1910	1	0	0	Henderson 2015

Species submitted (total: 80, incl. synonyms)						
Class	Order	Family	Species as ID'd by lab	Authority given	Correct authority for sp. submitted	Pisces ID references
Petromyzonti	Petromyzontiformes	Petromyzontidae	<i>Lampetra planeri</i>		(Bloch, 1784)	Henderson 2015
					No. of spms	No. of TD
					1	0
					<b>244</b>	<b>13</b>
					No. of TE	No. of TD
					0	0
					<b>13</b>	<b>19</b>

\* *C. melops* and *S. melops* are synonyms of *Symphodus (Crenilabrus) melops* (L., 1758).

\*\* 1 specimen was Atlantic bonito, *Sarda sarda*, the other a juvenile grey mullet, sp. indet.

(\*) One instance of a specimen submitted as "Unknown" has been counted as a TE. The following were not counted as TEs:

- one instance where an ID was given (*Limanda limanda*), although the specimen was missing;
- one instance where a specimen was identified as a juvenile mullet, although not taken to species;
- one instance where a pair of ID'd specimens had been swapped over (*i.e.* Specimen 11 had been written down as Specimen 12, and *vice versa*). Both IDs were correct, so it was simply a recording error.

(\*\*) Most labs either left out the Authority information altogether, or auto-filled the column with the same information for each species supplied. 3 labs (2511, 2514 and 2525) supplied authority information. The number of Taxonomic Discrepancies depends upon the strictness of the interpretation – see table below. The full table above gives the number of TDs according to the least strict interpretation.

Interpretation	No. of TDs
<b>Most strict:</b> Generic name changes, incorrect authority or year, incorrect parenthesis, missing comma in authority, no authority given.	226
<b>Middle:</b> Generic name changes, incorrect authority or year, incorrect parenthesis, missing comma in authority.	23
<b>Least strict:</b> Generic name changes, incorrect authority or year, incorrect parenthesis.	19

In a taxonomic context the species name consists of the genus (starting with a capital letter), the species (all small letters), the authority separated by a comma from the date of publication and finally, where the original author used another generic name than the one currently used, this is highlighted by the use of parentheses. The correct usage of names is ruled by the International Code for Zoological Nomenclature (ICZN). We recommend also Winston (1999): *Describing Species: Practical Taxonomic Procedure for Biologists*. Columbia University Press, 518 pp.

Species names according to NHM UK species list accessed February 2019 - note discrepancies with Catalog of Fishes (<https://www.calacademy.org/scientists/projects/catalog-of-fishes>) which currently lists *Chelon auratus* (Risso, 1810) and *C. ramada* (Risso, 1827) for *Liza aurata* (Risso, 1810) and *L. ramada* (Risso, 1827) resp., and *Chelidonichthys cuculus* (Linnaeus, 1758) for *Aspitrigla cuculus* (Linnaeus, 1758).

**Table 2. Summary of taxonomic errors / discrepancies by participating laboratories for the tenth Fish Reverse Ring Test FRRT10**

Lab Code	Laboratory identification	PISCES Conservation Ltd. identification	Reason for Taxonomic Error (TE) / Taxonomic Discrepancy (TD) / Problem Taxa (unidentified)
2501	<i>Sprattus sprattus</i>	<i>Clupea harengus</i> Linnaeus, 1758	<b>TE</b> – <i>S. sprattus</i> has a sharp serrated keel below the head / gills, whereas <i>C. harengus</i> is smooth. In <i>S. sprattus</i> the origin of the pelvic fin is level with, or a little anterior from, the anterior origin of the dorsal fin; in <i>C. harengus</i> , the origin of the pelvic fin is set a little behind the origin of the dorsal fin. <b>TD</b> – Synonym.
2502	<i>Crenilabrus melops</i>	<i>Symphodus (Crenilabrus) melops</i> (Linnaeus, 1758)	<b>TD</b> – Synonym.
2505	<i>Crenilabrus melops</i>	<i>Symphodus (Crenilabrus) melops</i> (Linnaeus, 1758)	<b>TD</b> – Synonym.
2506	<i>Taurulus bubalis</i> , Long-spined sea scorpion	<i>Chelidonicichthys lucerna</i> , (Linnaeus, 1758). Tub gurnard	<b>TE</b> – Species incorrect. The preopercular spine is smaller, and in a different position, than would be expected for <i>T. bubalis</i> ; the eyes are positioned on the side of the head rather than the upper surface; no white barbel at the corners of the mouth; the upper surface of the body is ridged, with the dorsal fins set in the depression between the two ridges; the ridges have a distinct row of spines along them; the first rays of the pectoral fins are free of fin membrane and form finger-like projections, and finally the pectoral fins are long, reaching past the vent. <b>TE</b> – Specimen had 5 barbels around the mouth, making it either <i>C. vulgaris</i> or <i>C. septentrionalis</i> . The presence of papillae along the upper lip confirms it as <i>C. septentrionalis</i> .
2508	<i>Pomatoschistus microps</i>	<i>P. minutus</i> (Pallas, 1870)	<b>TE</b> – The sand goby, <i>P. minutus</i> , can be distinguished from the common goby, <i>P. microps</i> by the presence of villi on the anterior edge of the pelvic disc membrane in the former species.
2510	<i>Pomatoschistus minutus</i>	<i>Pomatoschistus microps</i> (Krøyer, 1838)	<b>TE</b> – The specimen had no villi present on the anterior edge of the pelvic disc membrane, confirming it as <i>P. microps</i> .
2511	<i>Chelon aurata</i> , Risso 1810	<i>Liza ramada</i> (Risso, 1827)	<b>TE</b> – Species incorrect. When the pectoral fin is folded forwards, the tip barely reaches the orbit of the eye, confirming this as <i>L. ramada</i> . In the golden grey mullet, the fin tip reaches half way across the orbit of the eye. The pre-orbital bone in <i>Liza ramada</i> is a distinctive shape, with long toothing around its perimeter, rather than small serrations on one edge. <b>TD</b> – Synonym; if the specimen were the golden grey mullet, <i>Chelon aurata</i> is not its preferred scientific name. <i>Liza aurata</i> (Risso, 1810) should be used.
	“	“	

	<i>Sprattus sprattus</i> Linnaeus 1758 <i>Rutilus rutilus</i> Linnaeus 1758 <i>Gasterosteus aculeatus</i> Linnaeus 1758 <i>Osmerus eperlanus</i> Linnaeus 1758 <i>Pomatoschistus microps</i> Kroyer 1840 <i>Pomatoschistus minutus</i> Pallas 1870 <i>Dicentrarchus labrax</i> Linnaeus 1758 <i>Symphodus melops</i>	<i>Sprattus sprattus</i> (Linnaeus, 1758) <i>Rutilus rutilus</i> (Linnaeus, 1758) <i>Gasterosteus aculeatus</i> Linnaeus, 1758 <i>Osmerus eperlanus</i> (Linnaeus, 1758) <i>Pomatoschistus microps</i> (Krøyer, 1838) <i>Pomatoschistus minutus</i> (Pallas, 1770) <i>Dicentrarchus labrax</i> (Linnaeus, 1758) <i>Symphodus (Crenilabrus) melops</i> (Linnaeus, 1758) <i>Chelidonichthys lucerna</i> (Linnaeus, 1758) <i>Clupea harengus</i> Linnaeus, 1758	<b>TD</b> – No bracketing of authority; no comma (scored as single TD). <b>TD</b> – No bracketing of authority; no comma “. <b>TD</b> – No comma. <b>TD</b> – No bracketing of authority; no comma “. <b>TD</b> – No bracketing, date incorrect, no comma “. <b>TD</b> – No bracketing, date incorrect, no comma “. <b>TD</b> – No bracketing of authority; no comma “. <b>TD</b> – Synonym.
2513	<i>Trigla lucerna</i> <i>Clupea harengus</i> (Linnaeus, 1758)		<b>TD</b> – Synonym. <b>TD</b> – Incorrect bracketing.
2515	<i>Crenilabrus bailloni</i>	<i>Symphodus (Crenilabrus) bailloni</i> (Valenciennes in Cuvier & Valenciennes, 1839)	<b>TD</b> – Synonym
2518	<i>Pollachius virens</i>	<i>Trisopterus minutus</i> (Linnaeus, 1758)	<b>TE</b> – Specimen has the upper jaw projecting beyond the lower jaw, a dark lateral line (perhaps only in adult specimens) and a long barbel on the chin, confirming it as <i>T. minutus</i> . <i>P. virens</i> has a slightly protruding lower jaw (or jaws of roughly equal length), white lateral line, and only a minute barbel.
2519	<i>Merlangius merlangus</i> <i>Pomatoschistus microps</i>	<i>Gadus morhua</i> (Linnaeus, 1758)  <i>P. minutus</i> (Pallas, 1870)	<b>TE</b> – <i>M. merlangus</i> has no barbel on the chin and a dark lateral line; <i>G. morhua</i> has a prominent and thick barbel and white lateral line, as well as characteristic mottling on the upper surface. <b>TE</b> – Specimen badly damaged, but visible features indicate <i>P. minutus</i> . <i>P. minutus</i> is distinguished from <i>P. microps</i> by the presence of villi on the anterior edge of the pelvic disc membrane in the former species.
2521	<i>Gaidropsarus mediterraneus</i>  <i>Labrus bergylta</i> Submitted as unknown	<i>Ciliata septentrionalis</i> (Collett, 1875)  <i>Symphodus (Crenilabrus) melops</i> (Linnaeus, 1758) <i>Sarda sarda</i> (Bloch, 1793)	<b>TE</b> – Specimen had 5 barbels around the mouth, making it either <i>C. vulgaris</i> or <i>C. septentrionalis</i> . The presence of papillae along the upper lip confirms it as <i>C. septentrionalis</i> . <b>TE</b> – Specimen has a serrated rear edge to the pre-operculum; in <i>L. bergylta</i> the edge of the pre-operculum is smooth. <b>TE</b> – A classic mackerel-like fish with 2 closely-spaced dorsal fins and finlets behind the 2nd dorsal, and dark oblique striping on the upper surface.
2523	<i>Chelon labrosus</i>	<i>Liza ramada</i> (Risso, 1827)	<b>TE</b> – Species incorrect. When the pectoral fin is folded forwards, the tip barely reaches the orbit of the eye, confirming this as <i>L. ramada</i> . In the <i>C. labrosus</i> , the fin tip reaches as far as the anterior edge of the eye orbit. The pre-orbital bone in <i>Liza ramada</i> is a distinctive shape, with



			long toothing around its perimeter, rather than small serrations on one edge.
2525	<i>Blennius ocellaris</i> (Linnaeus, 1758) <i>Callionymus lyra</i> (Linnaeus, 1758) <i>Mullus surmuletus</i> (Linnaeus, 1758) <i>Microchirus variegatus</i> (Linnaeus, 1758) <i>Chelidonichthys cuculus</i> (Linnaeus, 1758)	<i>Blennius ocellaris</i> Linnaeus, 1758 <i>Callionymus lyra</i> Linnaeus, 1758 <i>Mullus surmuletus</i> Linnaeus, 1758 <i>Microchirus variegatus</i> (Donovan, 1808) <i>Aspitrigla cuculus</i> (Linnaeus, 1758)	<b>TD</b> – Incorrect bracketing of authority. <b>TD</b> – Incorrect bracketing of authority. <b>TD</b> – Incorrect bracketing of authority. <b>TD</b> – Incorrect authority <b>TD</b> –Synonym.

## References

Henderson P. 2015. Identification Guide to the Inshore Fish of the British Isles. Pisces Conservation Limited, Pennington.  
Maitland P.S. & Campbell R.N.B. 1992. Freshwater fishes of the British Isles. Harper Collins.

## Databases

FishBase <http://www.fishbase.org/>

Species names and authorities referred to NHM UK Species  
<http://www.nhm.ac.uk/our-science/data/uk-species/species/index.html/>