NMBAQC

NE Atlantic Marine Biological Analytical Quality Control Scheme

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Fish Ring Test Bulletin – FRT17

11st March 2024

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APEM

MODULE / EXERCISE DETAILS

Module:	**Fish Ring Test (FRT)**
Exercises:	**FRT17**
Specimens Circulated:	**28th March 2024**
Data Submission Deadline:	**21st November 2024**
Number of Subscribing Laboratories:	**8**
Number of Submissions Received:	**14***

***multiple data entries per laboratory permitted**

Contents

Table 1. Summary of differences

Specimen	Genus	Species	Total differences for 12 returns	
			Genus	Species
F-RT1701	*Scomber*	*scombrus*	0	0
F-RT1702	*Clupea*	*harengus*	1	1
F-RT1703	*Trisopterus*	*esmarkii*	1	5
F-RT1704	*Solea*	*solea*	0	0
F-RT1705	*Limanda*	*limanda*	0	0
F-RT1706	*Merlangius*	*merlangus*	0	0
F-RT1707	*Gadus*	*morhua*	1	1
F-RT1708	*Melanogrammus*	*aeglefinus*	0	0
F-RT1709	*Trisopterus*	*luscus*	0	0
F-RT1710	*Sprattus*	*sprattus*	0	0
F-RT1711	*Pleuronectes*	*platessa*	1	1
F-RT1712	*Buglossidium*	*luteum*	0	0
F-RT1713	*Arnoglossus*	*laterna*	1	1
F-RT1714	*Callionymus*	*lyra*	0	1
F-RT1715a	*Dicentrarchus*	*labrax*	0	0
F-RT1715b	*Chelon*	*ramada*	0	0
		Total differences	5	10
		Average differences /lab.	**0.8**	**1.7**

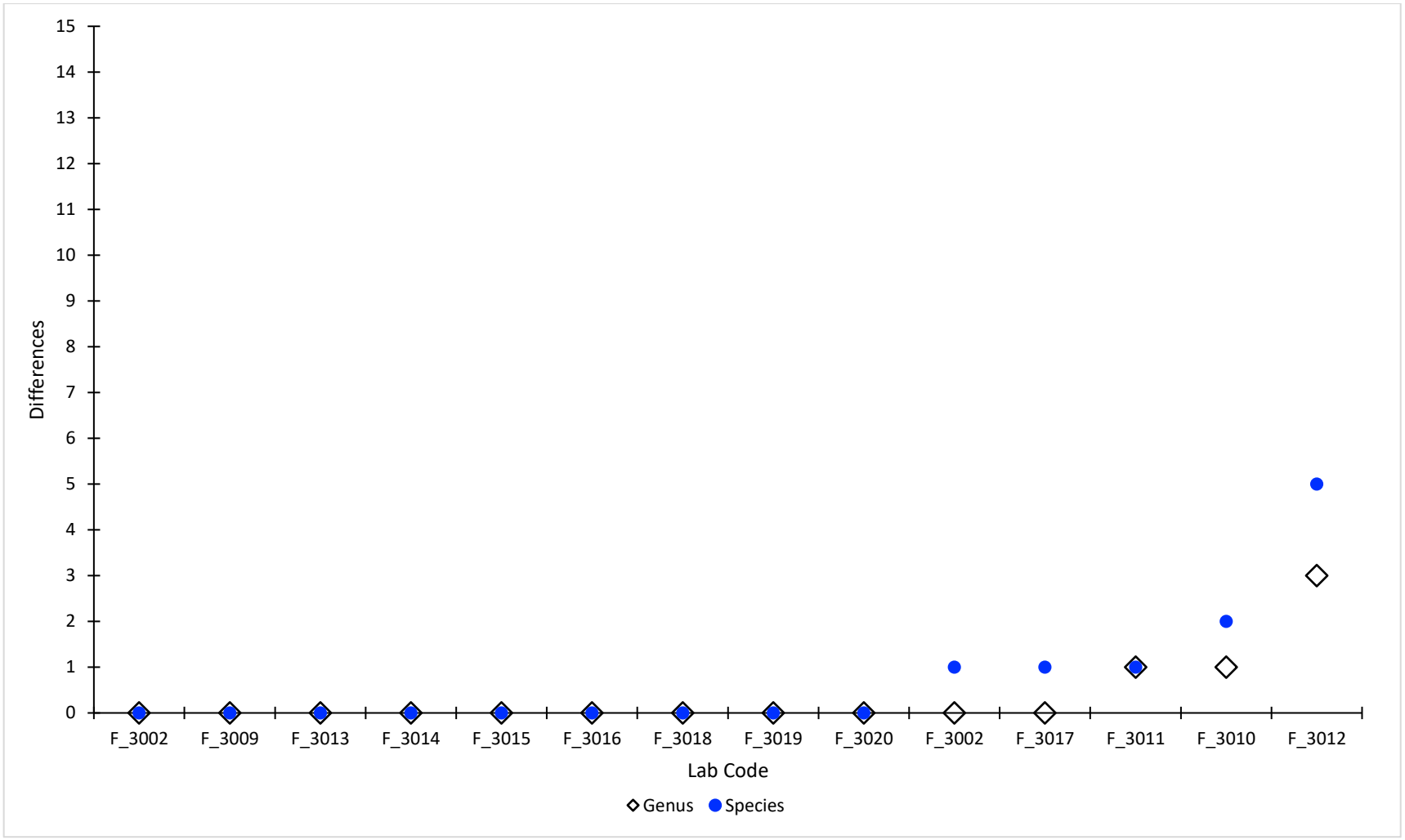

Figure 1. The number of differences from the AQC identification of specimens distributed in FRT17 for each of the participating laboratories. Arranged in order of increasing number of differences by specific (blue filled circles) followed by generic (open diamond) errors

Table 2. The identification of specimens made by participating laboratories for FRT17 (arranged by specimen). Names are given only where different from the AQC identification.

	Specimens					
	F-RT1702	**F-RT1703**	**F-RT1707**	**F-RT1711**	**F-RT1713**	**F-RT1714**
Lab code	***Clupea harengus***	***Trisopterus esmarkii***	***Gadus morhua***	***Pleuronectes platessa***	***Arnoglossus laterna***	***Callionymus lyra***
F_3001						
F_3002		*Trisopterus minutus*				
F_3009						
F_3010		*Triopterus minutus**		*Platichthys flesus*		
F_3011		*Pollachius pollachius*				
F_3012	*Sprattus sprattus*	*Trisopterus minutus*	*Trisopterus minutus*		*Lepidorhombus whiffiagonis*	*Callionymus reticulatus*
F_3013						
F_3014						
F_3015						
F_3016						
F_3017		*Trisopterus minutus*				
F_3018						
F_3019						
F_3020						

*As reported

Specimen images and detailed breakdown of identifications

Participating laboratories were asked to identify to species level the 15 specimens that were supplied with images and the basic habitat and geographic details from where they were collected. Participants could also submit notes on their identifications, confidence level and details of literature used. Due to difficulties sourcing sufficient specimens for distribution, some labs were issued different specimens from the rest. Lab codes with even numbers were given specimen 15b, while specimen 15a was given to participants with odd lab codes.

FRT17 was not a targeted ring test and most species included are commonly caught in routine monitoring surveys. Some specimens were relatively small but could still be expected to be caught using standard monitoring methods (e.g. seine netting).

LabCodes are abbreviated in this report to exclude the Scheme year, i.e. F_3001 = Lab 01. An additional terminal character has been added to the LabCode (small case sequential letters) to differentiate multiple data entries from the same laboratory, *i.e*. two participants from laboratory 01 would be coded as Lab 01a and Lab 01b. For details of your LabCode please contact your Scheme representative or APEM Ltd.

Figured FRT specimens are selected from the circulation series as typical of the size and condition range circulated. Due to difficulties sourcing sufficient specimens for distribution, some representative specimen images from previous ring tests have been used. Where possible, figured specimens of other species have been selected to be of similar size as the FRT specimen with which they have been compared.

F-RT1701 – *Scomber scombrus* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 20–22 cm.

No generic or specific differences recorded.

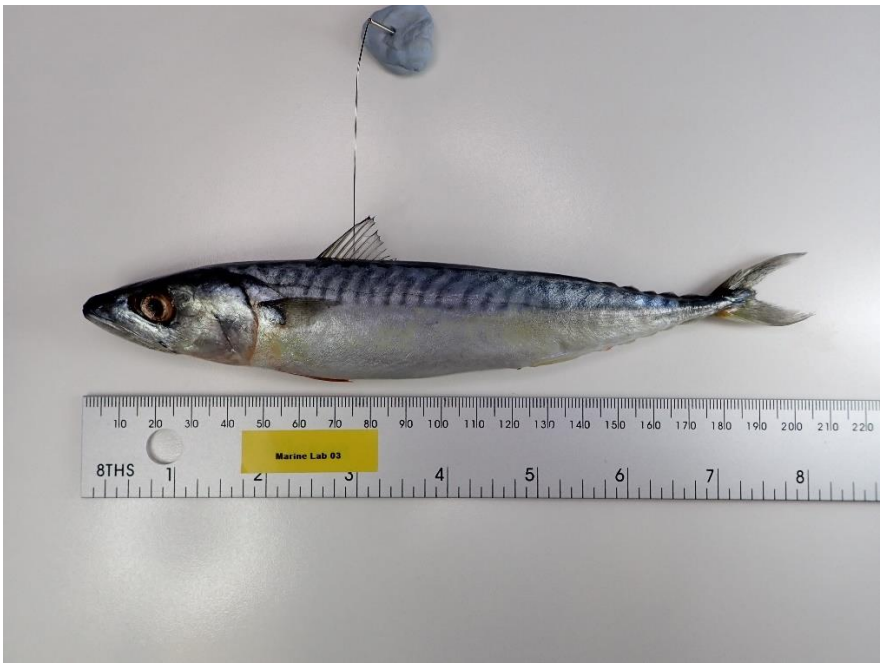

Figure 2. Scomber scombrus

F-RT1702 – *Clupea harengus* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 13–15 cm.

One generic and one specific error was submitted this year. Lab 12 submitted the name *Sprattus sprattus* which has a serrated keel, unlike *C. harengus* which has a smooth keel. The dorsal fin in *C. harengus* begins in front of the pelvic fin, while in *S. sprattus* the pelvic fin starts in front of the dorsal fin. A third difference between *S. sprattus* and *C. harengus* is eye size, *C. harengus* has a larger eye than *S. sprattus*. See Figure 4 for highlighted differences.

Figure 3. *Clupea harengus* (F-RT1702)

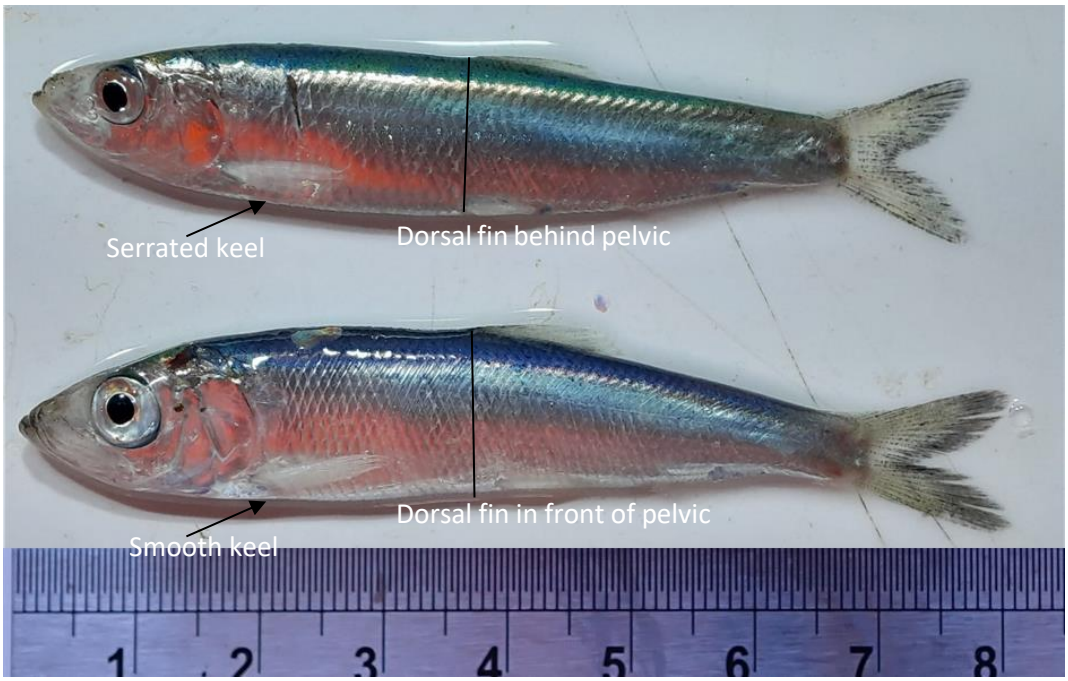

Figure 4. Specimens of *Sprattus sprattus* (top) and *Clupea harengus* (bottom) (specimens from FRRT13)

F-RT1703 – *Trisopterus esmarkii* (Nilsson, 1855)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 16–19 cm.

Three generic differences and four specific differences were submitted for this species, with five laboratories misidentifying this specimen, making *Trisopterus esmarkii* (Figure *5*) the most problematic species of the test. Labs 02, 10, 12 and 17 identified the specimen as *Trisopterus minutus* (Figure 6), while lab 11 identified the sample as *Pollachius pollachius*. Lab 10 also misspelled the genus, submitting *Triopterus*. A key difference between *T. esmarkii* and *T. minutus* is that the lower jaw in *T. esmarkii* extends past the upper jaw, while the upper jaw overlaps the lower jaw in *T. minutus*. *T. esmarkii* has a slender body, with a large eye and a thin barbel, while the barbel on *T. minutus* is longer and the body much shorter.

Pollachius pollachius can be identified by a sharply curving lateral line, the lateral line curves sharply downwards past the pectoral fin (Figure 7). *P. pollachius,* unlike both *T. esmarkii* and *T. minutus,* does not have a barbel on the chin.

Figure 5. *Trisopterus esmarkii*

Figure 6. *Trisopterus minutus* (Taken from F-RT1503)

Figure 7. *Pollachius pollachius* (Blackwater Estuary – FRT13 report)

F-RT1704 – *Solea solea* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: North Sea. Condition: Good. Size: 7–9 cm.

No generic or specific differences recorded.

Figure 8. *Solea solea*

F-RT1705 – *Limanda limanda* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: North Sea. Condition: Good. Size: 6–8 cm.

No generic or specific identification differences.

Figure 9. *Limanda limanda*

F-RT1706 – *Merlangius merlangus* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: North Sea. Condition: Good. Size: 11–13 cm.

No generic or specific differences.

Laboratory 12 misspelled the genus, providing the name *Merlanguis* for submission.

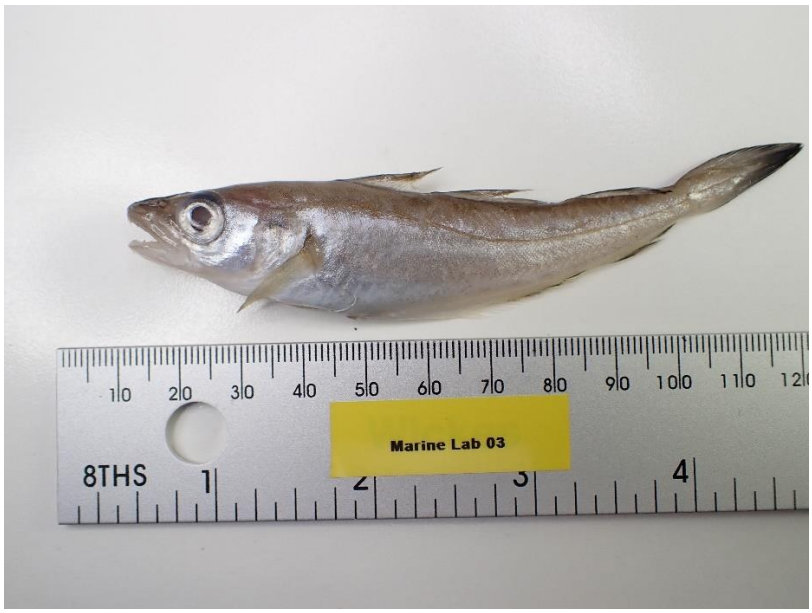

Figure 10. *Merlangius merlangus*

F-RT1707 – *Gadus morhua* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: North Sea. Condition: Good. Size: 12–14 cm.

One generic and one specific error was submitted this year. Lab 12 submitted the specimen as *Trisopterus minutus* (Figure 6). *Gadus morhua* can be identified by its mottled colouration, white lateral line and a large chin barbel (Figure 11).

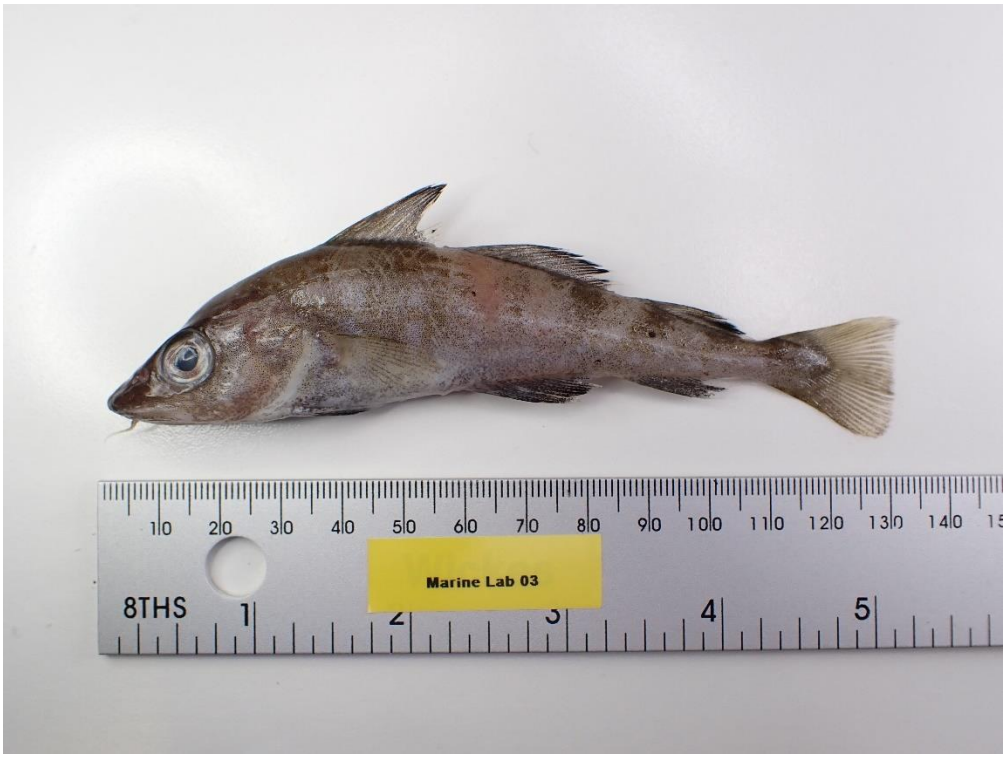

Figure 11. *Gadus morhua*

F-RT1708 – *Melanogrammus aeglefinus* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 21–23 cm.

No generic or specific differences.

Laboratory 12 misspelled the genus, providing the name *Melongrammus* for submission.

Figure 12. *Melanogrammus aeglefinus*

F-RT1709 – *Trisopterus luscus* (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 10–12 cm.

No generic or specific differences.

Figure 13. *Trisopterus luscus*

F-RT1710 – Sprattus sprattus (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 11–13 cm.

No generic or specific differences.

Figure 14. *Sprattus sprattus*

F-RT1711 – Pleuronectes platessa (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: North Sea. Condition: Good. Size: 7–9 cm.

One generic and one specific error was submitted this year. Lab 10 submitted the specimen as *Platichthys flesus*. *Pleuronectes platessa* can be separated from *P. flesus* by the absence of spiny lumps on the base of both the anal and dorsal fins (Figure 16). *P. platessa*, also has a higher number of anal (48–59) and caudal fin rays (19–22) than *P. flesus*, which has 35–46 and 18 respectively. *P. flesus* (Figure 16) also has a relatively longer caudal peduncle (length > height) compared to *P. platessa* (length ≤ height; Figure 15).

Lab 12 misspelled the genus, providing the name *Plueronectes* for submission.

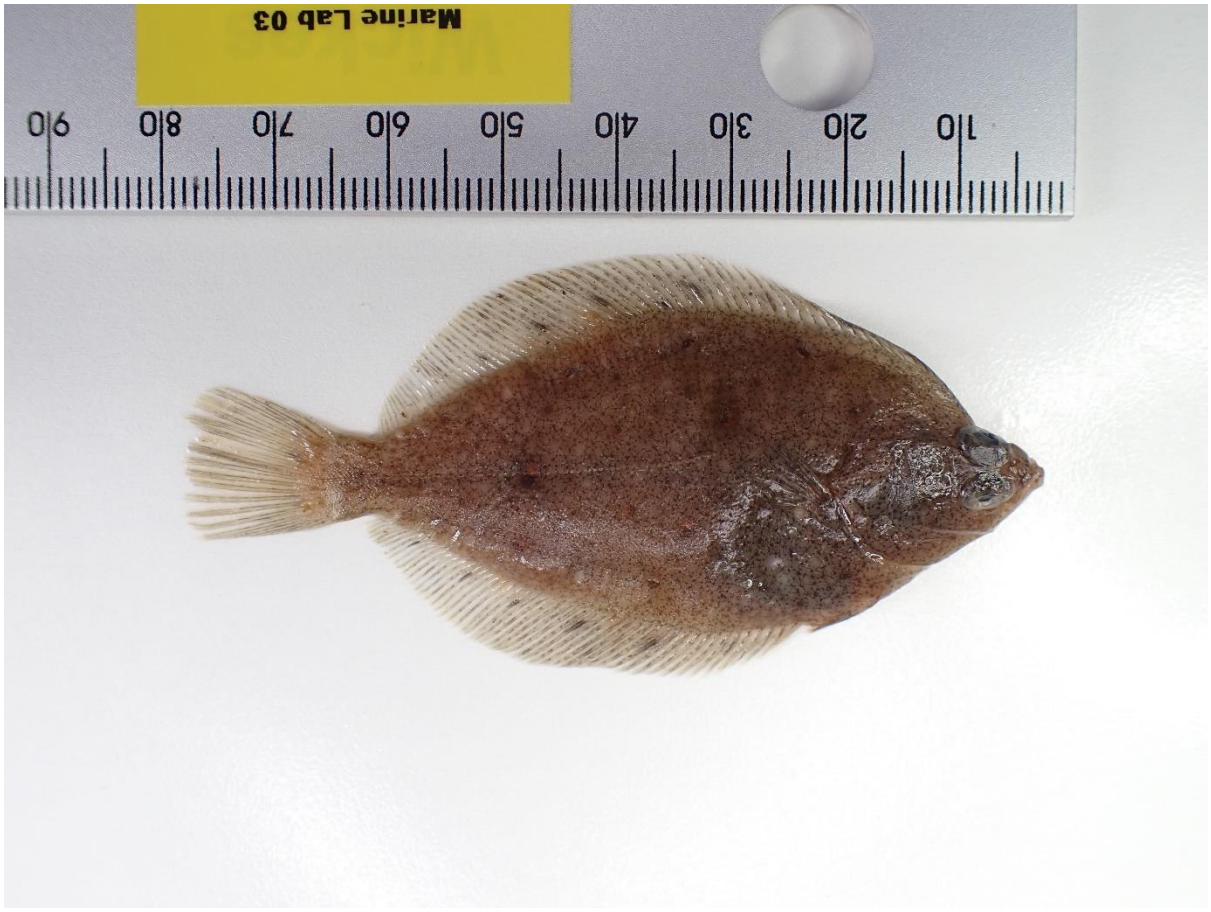

Figure 15. *Pleuronectes platessa*

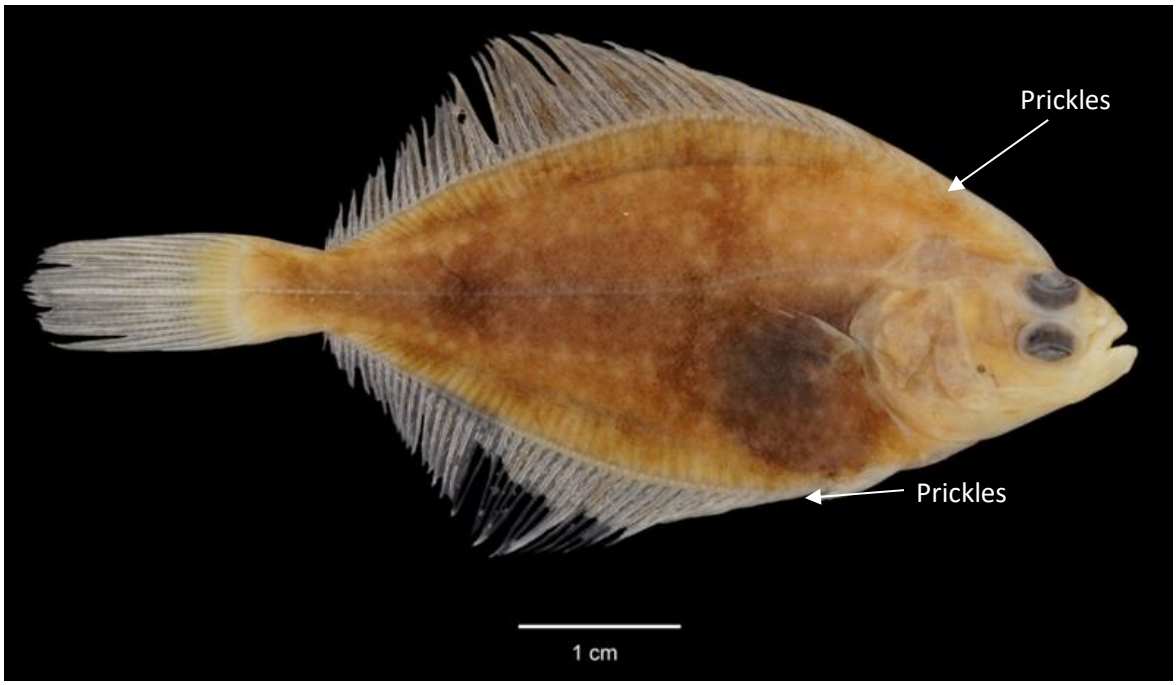

Figure 16. *Platichthys flesus* (From FRT1303)

F-RT1712 – Buglossidium luteum (Risso, 1810)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 12–14 cm.

No generic or specific differences.

Laboratory 12 misspelled the genus, providing the name *Buglossdium* for submission.

Figure 17. *Buglossidium luteum*

F-RT1713 – Arnoglossus laterna (Walbaum, 1792)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 11–13 cm.

One generic and one specific error was submitted this year. Lab 12 submitted the specimen as *Lepidorhombus whiffiagonis*. The lower eye in *L. whiffiagonis* is positioned in front of the upper eye, while in *Arnoglossus laterna* (Figure 18) they are in line with one another. *L. whiffiagonis* also differs from *A. laterna* as it has a larger mouth, and the lower jaw protrudes past the upper jaw.

Figure 18. *Arnoglossus laterna*

F-RT1714 – Callionymus lyra (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Western Channel and Celtic Sea. Condition: Good. Size: 16–18 cm.

One specific error was submitted for this specimen. Lab 12 submitted the specimen as *Calliomymus reticulatus*, with the genus also being misspelled. *Callionymus lyra* has nine fin rays and a striped pattern across the second dorsal fin (Figure 19). *C. lyra* can also be identified by the presence of four preopercular spines (Figure 19), unlike *Callionymus reticulatus*, which only has 3 spines.

Figure 19. *Callionymus lyra* identification features

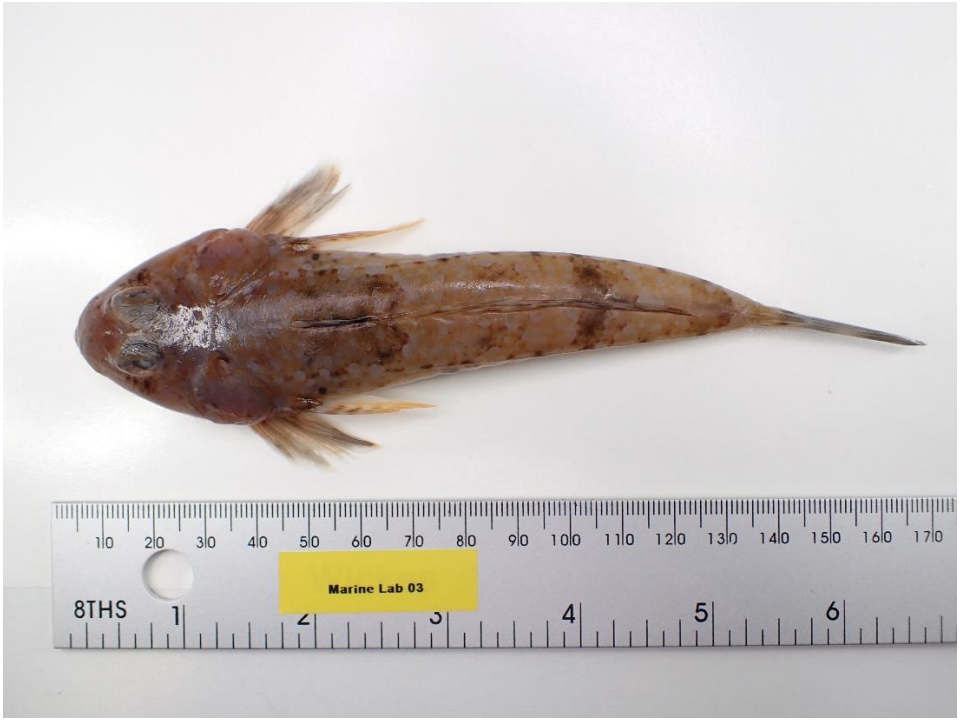

Figure 20. *Callionymus lyra*

F-RT1715a – Dicentrarchus labrax (Linnaeus, 1758)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Irish Sea. Condition: Good. Size: 7–9 cm.

No generic or specific differences.

Figure 21. *Dicentrarchus labrax*

F-RT1715b – Chelon ramada (Risso, 1810)

Substratum: Mixed. Salinity: High. Depth: Continental shelf of British Isles. Geography: Irish Sea. Condition: Good. Size: 8–10 cm.

No generic or specific differences.

Lab 14 submitted an older scientific name, *Liza ramada*, that is not considered the valid name.

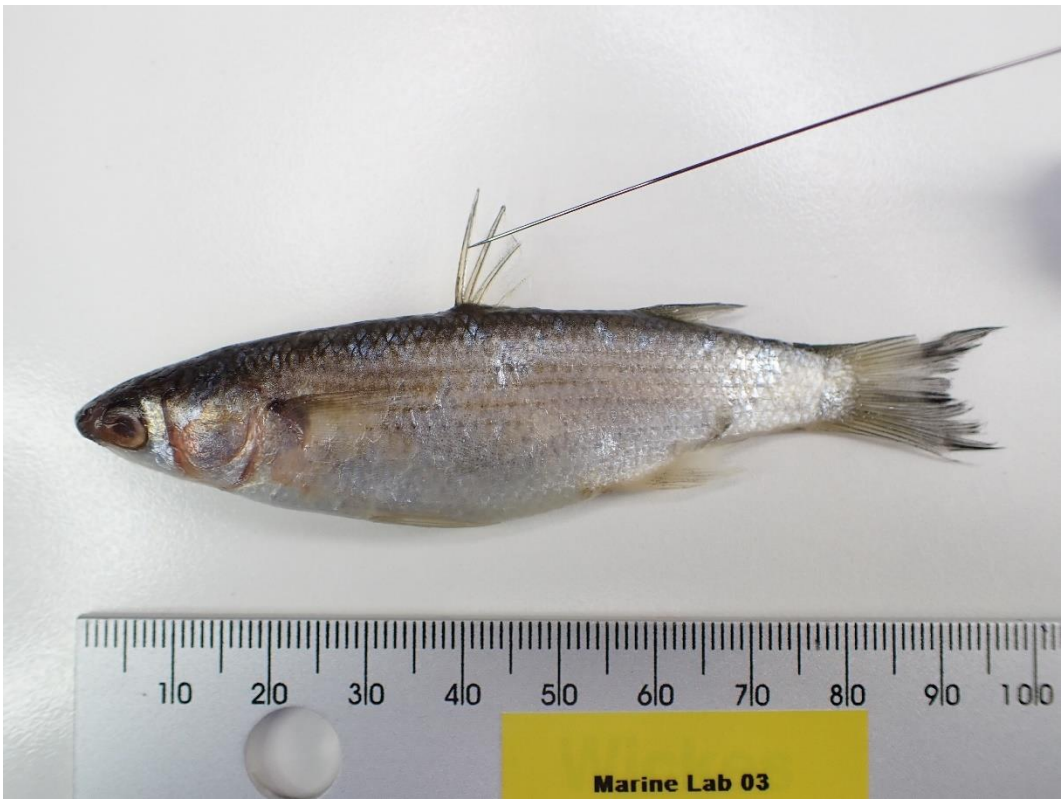

Figure 22. *Chelon ramada*

Taxonomic discrepancies and confidence level

Synonyms

The World Register of Marine Species (WoRMS) and FishBase were used for currently valid species names. All but one of the participants submitted currently valid scientific names. Participants are asked to identify each specimen to species level and return results forms with species names, uncertain identifications can be indicated through use of the confidence level column.

Authority errors

Of the 210 entries, 90 of the specimen names were submitted with an authority, there were no errors identified.

Confidence level

Confidence of identification was given for 165 entries (from 210 answers submitted). For those given, 89% were confident with species identification, 2% genus 8% high confidence and 1% medium confidence. Most confidence levels given were accurate (90%).

Literature cited for FRT17 identification

The following sources were all cited as literature used during FRT17:

Maitland & Herdson, 2009 - Key to the Marine and Freshwater Fishes of Britain and Ireland;

Baldock & Dipper, 2023 - Inshore Fishes of Britain and Ireland;

Wheeler, 1969 - The fishes of the British Isles and North West Europe;

Maitland & Herderson 2009 - Key to the Marine and Freshwater Fishes of Britain and Ireland; Henderson, 2015 - Identification Guide to the Inshore Fish of the British Isles;

Maitland, Herdson, Coates, (undated) - Key to the Marine and Freshwater Fishes of Britain and Ireland

Pisces Conservation Ltd.

Taxonomic and identification policy problems highlighted by this FRT

There were relatively few taxonomic errors for the specimens circulated. Ten out of 15 specimens were identified by all participants correctly. Norway Pout, *Trisopterus esmarkii* (F-RT1703), seemed to cause the most trouble for participants, with one generic difference being submitted and five specific differences being submitted.

Several specimens were noted by the participants as degraded, reducing the number of possible identifiable features for ID, which could have been the reason for their misidentification. Examples of the specimens in poor condition were *Trisopterus minutus* and *Arnoglossus laterna*, both were misidentified. The only specimen that was submitted with an outdated name was highlighted as a mistake due to the use of out-of-date literature used during the identification process.

Incorrect internal paper labels were labelled as the previous year for a group of specimens, however, this was corrected immediately and the correct external labels were used.

References

Baldock, L. and Dipper, F., 2023. Inshore Fishes of Britain and Ireland. Princeton University Press.

Froese, R. and D. Pauly. Editors. 2024. FishBase. World Wide Web electronic publication. www.fishbase.org , version (02/2024).

Fricke, R., Eschmeyer, W. N. & R. van der Laan (eds) 2022. Eschmeyer's Catalog of Fishes: Genera, species,references. (http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp).

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Kay, P. & Dipper F., 2009. *A Field Guide to the Marine Fishes of Wales and adjacent waters*. Marine Wildlife, Llanfairfechan, 256 pp.

Maitland P.S., Herdson D., Coates S. (ed) (2009) Key to the Marine and Freshwater Fishes of Britain and Ireland, Environment Agency: Bristol, ISBN 978-1-84911-049-5.

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Wheeler, A., 1969. *The fishes of the British Isles and North West Europe*. Macmillan, London, 613 pp.

Wheeler, A., 1978. *Key to the fishes of Northern Europe*. Warne, London, 380 pp.