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Fish Reverse Ring Test Bulletin – FRRT14

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MODULE / EXERCISE DETAILS

Module:	Fish Reverse Ring Test - FRRT
Exercises:	FRRT14
Specimen Request Circulated:	17th October 2022
Specimen Submission Deadline:	6th January 2023
Number of Subscribing Laboratories:	8
Number of Submissions Received:	6

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Table 1 Summary specimens and data received from participating laboratories FRRT14

Number of specimens submitted: **89**
Number of species: **51**
Number of taxonomic errors (TE): **3**
Number of taxonomic discrepancies (TD; *synonym, **unaccepted, ***other): **7**
Number of problematic taxa submitted (†): **1**

Class	Order	Family	Species	Common name	No. of spms	No. of TE	No. of TD
Elasmobranchii	Carcharhiniformes	Scyliorhinidae	*Scyliorhinus stellaris* (Linnaeus, 1758)	Nursehound, greater spotted dogfish, bull huss	1		
			Scyliorhinus canicula (Linnaeus, 1758)	Lesser spotted dogfish	1		
	Squaliformes	Squalidae	*Squalus acanthias* Linnaeus, 1758	Spurdog, spiny dogfish	1		
	Rajiformes	Rajidae	*Raja montagui* Fowler, 1910	Spotted ray	1		
			Raja clavata Linnaeus, 1758	Thornback ray	1		
			Raja brachyura Lafont, 1871	Blonde ray	1		
Actinopterygii	Salmoniformes	Salmonidae	*Salmo salar* Linnaeus, 1758	Salmon	1		
	Clupeiformes	Clupeidae	*Clupea harengus* Linnaeus, 1758	Herring	2	1	
			†Unidentified problem taxon	Juvenile herring?	1		1***
	Argentiniformes	Argentinidae	*Argentina sphyraena* Linnaeus, 1758	Argentine	1		
	Osmeriformes	Osmeridae	*Osmerus eperlanus* (Linnaeus, 1758)	European smelt	1		
	Anguilliformes	Congridae	*Conger conger* (Linnaeus, 1758)	European conger eel	1		
	Gadiformes	Gadidae	*Melanogrammus aeglefinus* (Linnaeus, 1758)	Haddock	1		
			Merlangius merlangus (Linnaeus, 1758)	Whiting	4		2*
			Pollachius virens (Linnaeus, 1758)	Saithe, coley, coalfish	1		
			Trisopterus luscus (Linnaeus, 1758)	Pouting, bib	4		1*
		Lotidae	*Enchelyopus cimbrius* (Linnaeus, 1766)	Four-bearded rockling	1		
	Syngnathiformes	Syngnathidae	*Syngnathus acus* Linnaeus, 1758	Greater pipefish	3		
			Syngnathus rostellatus Nilsson, 1855	Lesser pipefish, Nilsson's pipefish	2		
			Nerophis lumbriciformis (Jenyns, 1835)	Worm pipefish	1		
		Mullidae	*Mullus barbatus* Linnaeus, 1758	Red mullet	1		
			Mullus surmuletus Linnaeus, 1758	Striped red mullet, surmullet	2		
	Perciformes	Agonidae	*Agonus cataphractus* (Linnaeus, 1758)	Hooknose, pogge	3		

		Ammodytidae	*Ammodytes tobianus* Linnaeus, 1758	Lesser sandeel	1		
			Chelidonichthys cuculus (Linnaeus, 1758)	Red gurnard	1		
		Triglidae	*Chelidonichthys lucerna* (Linnaeus, 1758)	Tub gurnard	2		1*
			Eutrigla gurnardus (Linnaeus, 1758)	Grey gurnard	4		
		Trachinidae	*Echiichthys vipera* (Cuvier, 1829)	Lesser weever	2		
		Gasterosteidae	*Spinachia spinachia* (Linnaeus, 1758)	Fifteen-spined stickleback	1		
	Eupercaria *incertae sedis*	Moronidae	*Dicentrarchus labrax* (Linnaeus, 1758)	Bass	3		1*
		Cepolidae	*Cepola macrophthalma* (Linnaeus, 1758)	Red bandfish	1		
		Labridae	*Labrus bergylta* Ascanius, 1767	Ballan wrasse	1		
			Symphodus melops (Linnaeus, 1758)	Corkwing wrasse	2		1**
	Pleuronectiformes	Bothidae	*Arnoglossus laterna* (Walbaum, 1792)	Scaldfish	2		
		Soleidae	*Buglossidium luteum* (Risso, 1810)	Solenette	2		
			Solea solea (Linnaeus, 1758)	Common sole, Dover sole	7		
		Pleuronectidae	*Limanda limanda* (Linnaeus, 1758)	Dab	1		
			Platichthys flesus (Linnaeus, 1758)	Flounder	3	1	
			Pleuronectes platessa Linnaeus, 1758	Plaice	1		
			Hippoglossoides platessoides (Fabricius, 1780)	Rough dab, long rough dab	2	1	
		Scophthalmidae	*Scophthalmus rhombus* (Linnaeus, 1758)	Brill	1		
			Lepidorhombus whiffiagonis (Walbaum, 1792)	Megrim	1		
	Gobiiformes	Gobiidae	*Crystallogobius linearis* (Düben, 1845)	Crystal goby	1		
			Aphia minuta (Risso, 1810)	Transparent goby	1		
			Gobius niger Linnaeus, 1758	Black goby	1		
			Gobius paganellus Linnaeus, 1758	Rock goby	1		
			Lesueurigobius friesii (Malm, 1874)	Fries's goby	1		
			Pomatoschistus minutus (Pallas, 1770)	Sand goby	4		
	Atheriniformes	Atherinidae	*Atherina presbyter* Cuvier, 1829	Sand smelt	1		
	Callionymiformes	Callionymidae	*Callionymus lyra* Linnaeus, 1758	Common dragonet	3		
			Callionymus maculatus Rafinesque, 1810	Spotted dragonet	1		
	Carangiformes	Carangidae	*Trachurus trachurus* (Linnaeus, 1758)	Atlantic horse mackerel, scad	1		

Species names according to World Register of Marine Species (WoRMS) and FishBase, accessed May 2024

Table 2. Summary of taxonomic errors, discrepancies and problematic taxa for FRRT14

	Laboratory identification	APEM Ltd. Identification
Taxonomic errors		
F2902	*Limanda limanda*	*Hippoglossoides platessoides* (Fabricius, 1780)
F2903	*Sprattus sprattus*	*Clupea harengus* Linnaeus, 1758
F2905	*Pleuronectes platessa*	*Platichthys flesus* (Linnaeus, 1758)
Taxonomic discrepancies (unaccepted synonyms)		
F2902	*Crenilabrus melops*	*Symphodus melops* (Linnaeus, 1758)
Taxonomic discrepancies (synonyms/spelling)		
F2901	*Dicentrachus labrax*	*Dicentrarchus labrax* (Linnaeus, 1758)
F2901	*Merlanguis merlangus*	*Merlangius merlangus* (Linnaeus, 1758)
F2902	*Merlanguis merlangus*	*Merlangius merlangus* (Linnaeus, 1758)
F2902	*Chelidonichthys lucernus*	*Chelidonichthys lucerna* (Linnaeus, 1758)
F2905	*Trisopterus lusus*	*Trisopterus luscus* (Linnaeus, 1758)
Taxonomic discrepancies (other)		
F2901	Juvenile herring?	Unidentified, specimen too damaged

Taxonomic errors and problematic taxa

This section describes those submitted specimens that were found to have been identified incorrectly or noted as problematic taxa in the original submission. The key identification features to separate these and similar taxa are given.

Hippoglossoides platessoides (Fabricius, 1780)

Specimen has a lateral line with only a weak curve over the pectoral fin and jaws extending rearwards level with the middle of the lower eye (Figure 1). *Limanda limanda* has a lateral line with a strong curve over the pectoral fin and small jaws, terminating to the right of the eyes and relatively smaller scales than *H. platessoides* (Figure 2).

Figure 1. Submitted specimen of *Hippoglossoides platessoides*

Figure 2. Specimen of *Limanda limanda* (specimen from previous fish ring test FRT1310)

Clupea harengus Linnaeus, 1758

The origin of the dorsal fin in the specimen is before the pelvic fins (Figure 3), whereas in *Sprattus sprattus* it is in line with or slightly behind the base of the pelvic fins (see Figure 4). This is not always clear, especially in smaller individuals. *Clupea harengus* also has a larger eye for a given body size and live specimens have a deeper blue colour compared to *S. sprattus*.

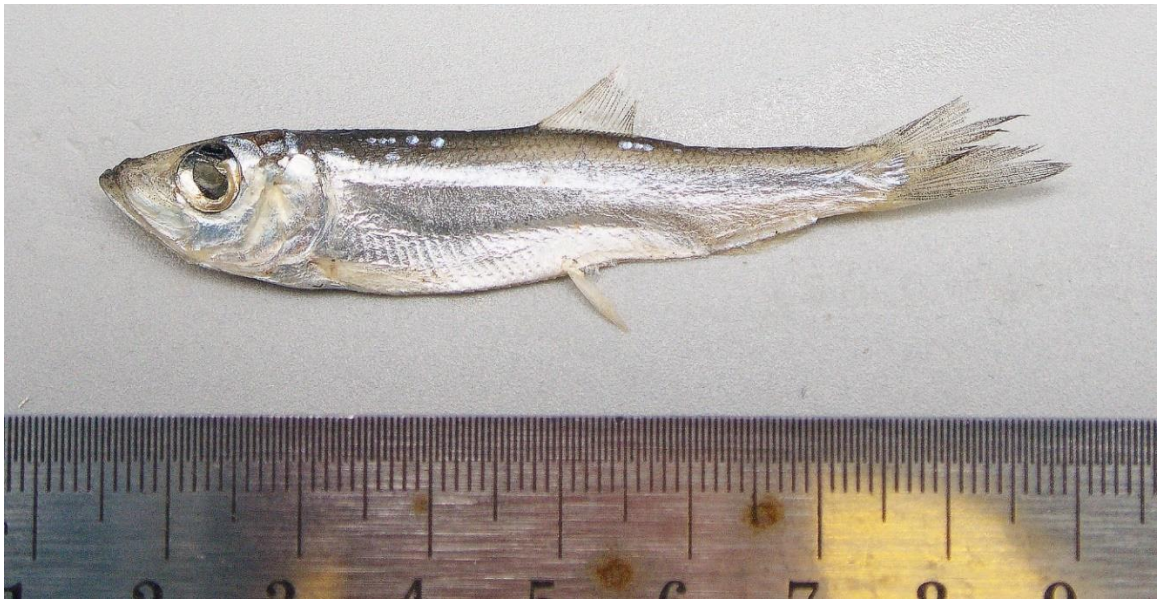

Figure 3. Submitted specimen of *Clupea harengus*

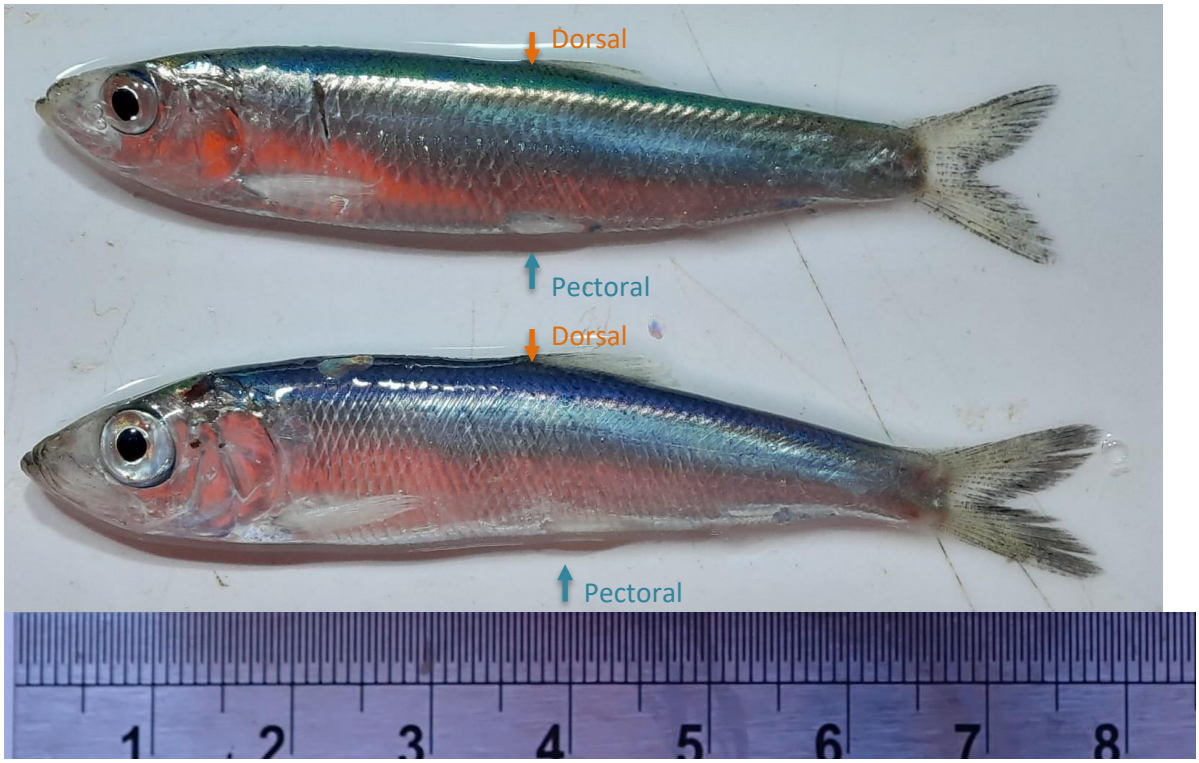

Figure 4. Specimens of *Sprattus sprattus* (top) and *Clupea harengus* (bottom) showing relative positions of dorsal and pectoral fins (adapted from FRRT13)

Platichthys flesus (Linnaeus, 1758)

The submitted specimen has a row of sharp prickles along the base of both the dorsal and anal fins (Figure 5). *Pleuronectes platessa* lacks the sharp prickles along the bases of the dorsal and anal fins and has a row of four to seven bony knobs running along the head from behind the eyes to the lateral line (see Figure 6). *P. platessa* also has a greater number of anal fin rays (48 – 59) compared to *P. flesus* (35 – 46).

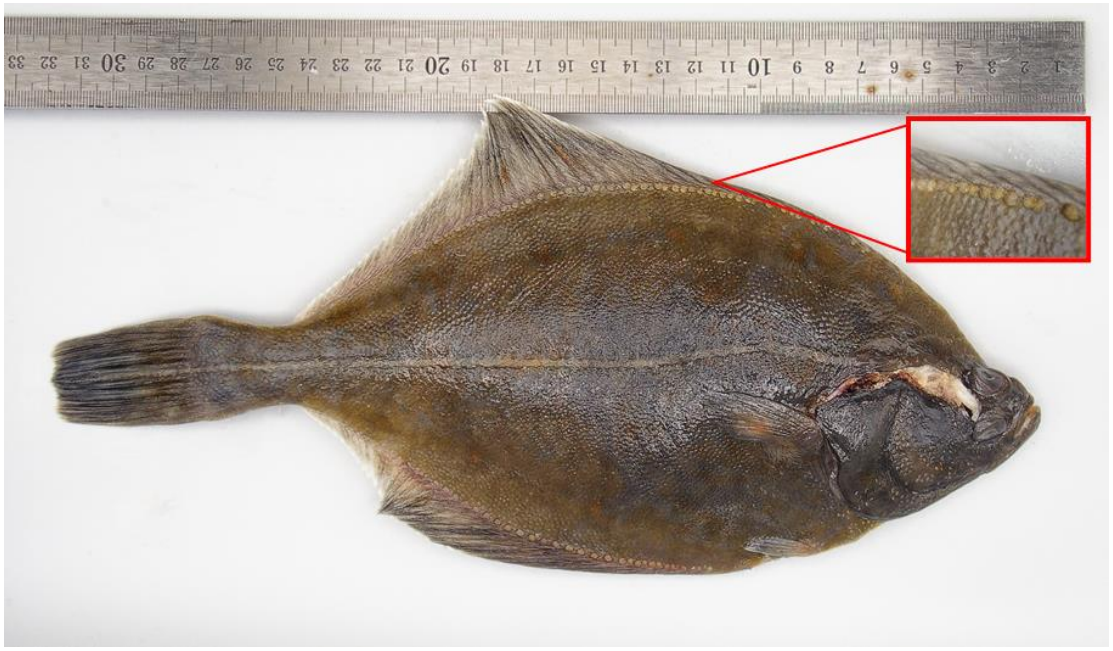

Figure 5. Submitted specimen of *Platichthys flesus* with inset showing close-up of prickles along base of dorsal fin

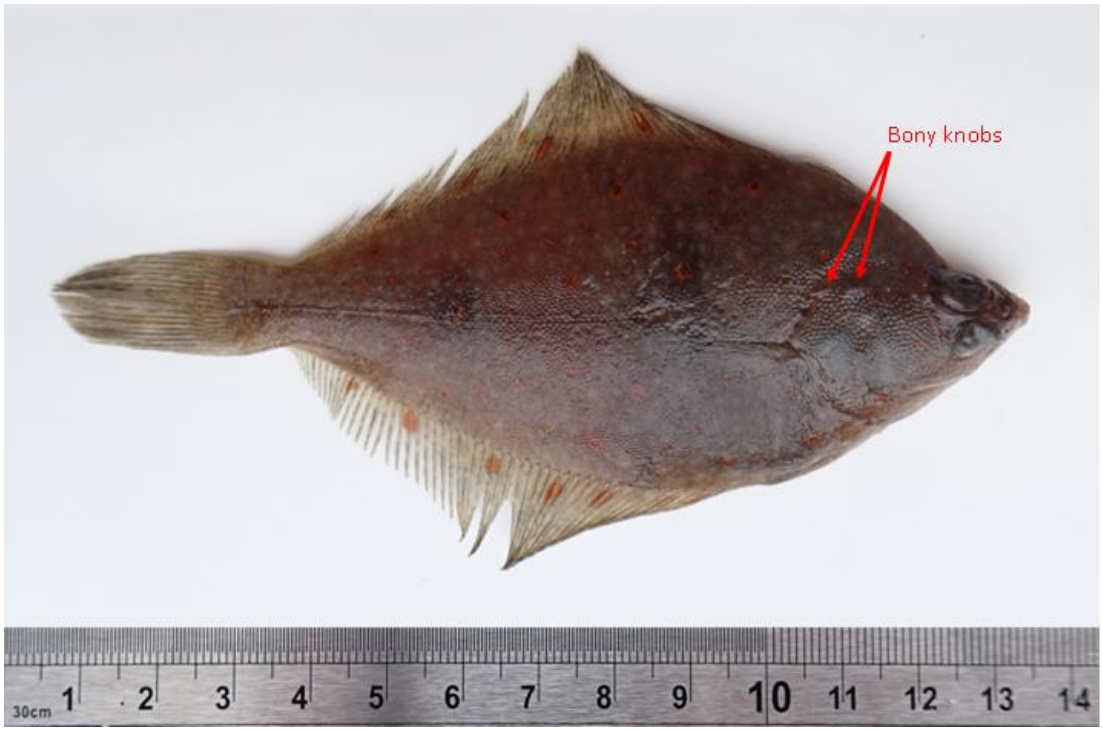

Figure 6. Specimen of *Pleuronectes platessa* (specimen from previous fish ring test FRT1508)

Taxonomic discrepancies

This section provides further information on those submitted specimens for which other taxonomic irregularities (e.g. spelling mistakes, synonyms) were noted.

Synonyms

The World Register of Marine Species (WoRMS) and FishBase, accessed May 2024, were used for currently valid species names. One specimen was submitted with an unaccepted synonym*: Symphodus melops* (Linnaeus, 1758), submitted as *Crenilabrus melops*.

Authority errors

Only 14 specimen names were submitted with an authority. The authority and year were correct for those submitted. Authority errors are not counted as taxonomic discrepancies.

Synonyms/spelling

Five specimens (four species) were submitted with slight spelling errors or synonyms.

Other discrepancies

One specimen was submitted as an unidentified problem taxon with the common name 'juvenile herring?'. This specimen does appear to be a clupeid, but it was too severely damaged to positively identify using visual/microscopic features (see Figure 7).

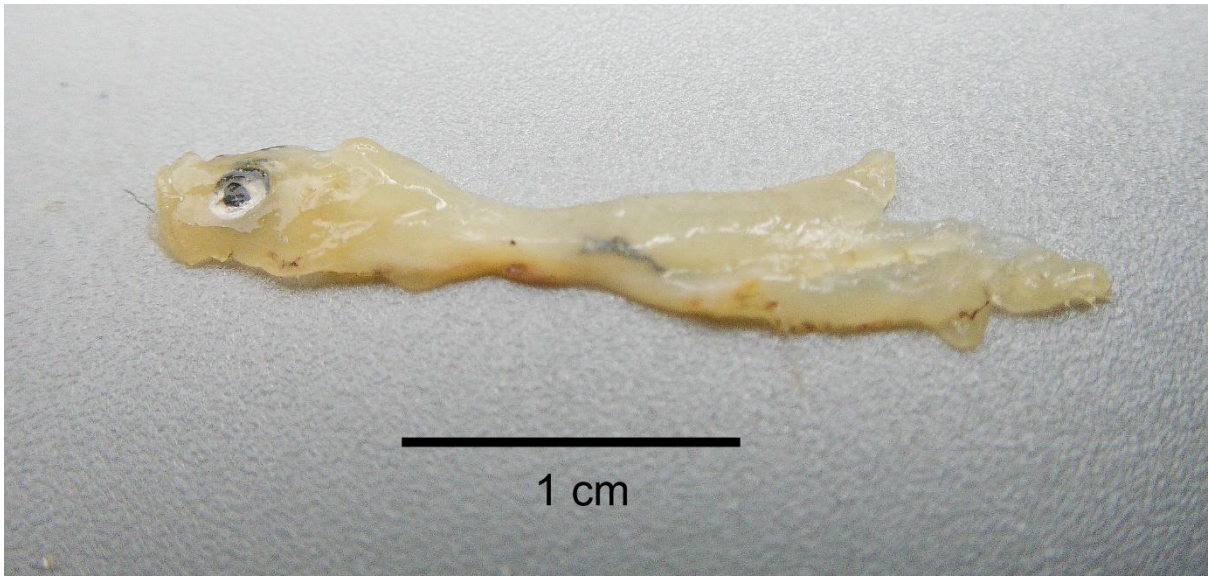

Figure 7. Unidentified problem taxon

Species of interest

This year we received a specimen of *Cepola macrophthalma* (Linnaeus, 1758) collected from the Irish Sea (Figure 8). This species occurs around southern and western coasts of the UK but is not often caught. The specimen was in good condition, with an elongated tapering body with a characteristic red-orange colour. The fins are yellow with a distinct red band towards the anterior end of the dorsal fin.

Figure 8. Submitted specimen of *Cepola macrophthalma*

Acknowledgements

We would like to thank all participants for contributing a wide array of species to this year's ring test.

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APPENDIX

FRRT14 individual summary reports for participating laboratories with specimen details as provided by participants and taxonomic errors, discrepancies and comments (updated) given by APEM

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2901

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2901_01	*Pomatoschistus minututus*	-	-
RRT14_F2901_02	*Pomatoschistus minututus*	-	-
RRT14_F2901_03	*Dicentrachus labrax*	*Dicentrarchus labrax* (Linnaeus, 1758)	TD - spelling error
RRT14_F2901_04	*Agonus cataphractus*	-	-
RRT14_F2901_05	*Mullus surmuletus*	-	-
RRT14_F2901_06	*Arnoglossus laterna*	-	-
RRT14_F2901_07	*Callionymus lyra*	-	-
RRT14_F2901_08	*Buglossidium luteum*	-	-
RRT14_F2901_09	*Eutrigla gurnardus*	-	-
RRT14_F2901_10	*Syngnathus acus*	-	-
RRT14_F2901_11	*Solea solea*	-	-
RRT14_F2901_12	*Solea solea*	-	-
RRT14_F2901_13	*Trisopterus luscus*	-	-
RRT14_F2901_14	*Merlanguis merlangus*	*Merlangius merlangus* (Linnaeus, 1758)	TD - spelling error
RRT14_F2901_15	Juvenile Herring?*	Not identified	Specimen too damaged to ID

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2902

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2902_01	*Platichthys flesus*	-	-
RRT14_F2902_02	*Scyliorhinus canicula*	-	-
RRT14_F2902_03	*Pleuronectes platessa*	-	-
RRT14_F2902_04	*Raja clavata*	-	-
RRT14_F2902_05	*Limanda limanda*	*Hippoglossoides platessoides* (Fabricius, 1780)	TE – lateral line not strongly curved over pectoral fin, jaws extend to middle of lower eye
RRT14_F2902_06	*Echiichthys vipera*	-	-
RRT14_F2902_07	*Agonus cataphractus*	-	-
RRT14_F2902_08	*Clupea harengus*	-	-
RRT14_F2902_09	*Solea solea*	-	-
RRT14_F2902_10	*Trisopterus luscus*	-	-
RRT14_F2902_11	*Merlanguis merlangus*	*Merlangius merlangus* (Linnaeus, 1758)	TD - spelling error
RRT14_F2902_12	*Syngnathus rostellatus*	-	-
RRT14_F2902_13	*Chelidonichthys lucernus*	*Chelidonichthys lucerna* (Linnaeus, 1758)	TD – spelling error
RRT14_F2902_14	*Callionymus lyra*	-	-
RRT14_F2902_15	*Crenilabrus melops*	*Symphodus melops* (Linnaeus, 1758)	TD - Synonym

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2903

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2903_01	*Labrus bergylta*	-	-
RRT14_F2903_02	*Pollachius virens*	-	-
RRT14_F2903_03	*Gobius paganellus*	-	-
RRT14_F2903_04	*Platichthys flesus*	-	-
RRT14_F2903_05	*Solea solea*	-	-
RRT14_F2903_06	*Mullus barbatus*	-	-
RRT14_F2903_07	*Eutrigla gurnardus*	-	-
RRT14_F2903_08	*Merlangius merlangus*	-	-
RRT14_F2903_09	*Echiichthys vipera*	-	-
RRT14_F2903_10	*Aphia minuta*	-	Specimen in poor condition
RRT14_F2903_11	*Sprattus sprattus*	*Clupea harengus* Linnaeus, 1758	TE - origin of the dorsal fin before the pelvic fins, large eye in relation to body size
RRT14_F2903_12	*Trachurus trachurus*	-	-
RRT14_F2903_13	*Gobius niger*	-	-
RRT14_F2903_14	*Syngnathus acus*	-	-
RRT14_F2903_15	*Symphodus melops*	-	-

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2905

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2905_01	*Solea solea*	-	-
RRT14_F2905_02	*Eutrigla gurnardus*	-	-
RRT14_F2905_03	*Arnoglossus laterna*	-	-
RRT14_F2905_04	*Syngnathus acus*	-	-
RRT14_F2905_05	*Mullus surmuletus*	-	-
RRT14_F2905_06	*Pleuronectes platessa*	*Platichthys flesus* (Linnaeus, 1758)	TE - row of sharp prickles along the base of both the dorsal and anal fins, lacks row of bony knobs on head
RRT14_F2905_07	*Crystallogobius linearis*	-	-
RRT14_F2905_08	*Chelidonichthys cuculus*	-	-
RRT14_F2905_09	*Dicentrarchus labrax*	-	-
RRT14_F2905_10	*Pomatoschistus minutus*	-	-
RRT14_F2905_11	*Callionymus lyra*	-	-
RRT14_F2905_12	*Buglossidium luteum*	-	-
RRT14_F2905_13	*Merlanguis merlangus*	-	-
RRT14_F2905_14	*Trisopterus lusus*	*Trisopterus luscus* (Linnaeus, 1758)	TD - spelling error
RRT14_F2905_15	-	-	No specimen submitted

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2907

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2907_01	*Eutrigla gurnardus*	-	-
RRT14_F2907_02	*Dicentrarchus labrax*	-	-
RRT14_F2907_03	*Salmo salar*	-	-
RRT14_F2907_04	*Syngnathus rostellatus*	-	-
RRT14_F2907_05	*Spinachia spinachia*	-	-
RRT14_F2907_06	*Atherina presbyter*	-	-
RRT14_F2907_07	*Osmerus eperlanus*	-	-
RRT14_F2907_08	*Limanda limanda*	-	-
RRT14_F2907_09	*Agonus cataphractus*	-	-
RRT14_F2907_10	*Nerophis lumbriciformis*	-	-
RRT14_F2907_11	*Scophthalmus rhombus*	-	-
RRT14_F2907_12	*Chelidonichthys lucerna*	-	-
RRT14_F2907_13	*Solea solea*	-	-
RRT14_F2907_14	*Ammodytes tobianus*	-	-
RRT14_F2907_15	*Pomatoschistus minutus*	-	-

EXERCISE DETAILS
Fish Reverse Ring Test (F-RT14)
Return Deadline - 06/01/23
Laboratory Code - F2912

Key to codes:
TE - Taxonomic error
TD - Taxonomic discrepancy
* - Problem taxa indicated

Specimen No.	Laboratory identification (scientific name; common name)	APEM identification (if different)	Code / Comments
RRT14_F2912_01	*Raja brachyura*	-	-
RRT14_F2912_02	*Scyliorhinus stellaris*	-	-
RRT14_F2912_03	*Conger conger*	-	-
RRT14_F2912_04	*Solea solea*	-	-
RRT14_F2912_05	*Raja montagui*	-	-
RRT14_F2912_06	*Squalus acanthias*	-	-
RRT14_F2912_07	*Melanogrammus aeglefinus*	-	-
RRT14_F2912_08	*Callionymus maculatus*	-	-
RRT14_F2912_09	*Lepidorhombus whiffiagonis*	-	-
RRT14_F2912_10	*Hippoglossoides platessoides*	-	-
RRT14_F2912_11	*Cepola macrophthalma*	-	-
RRT14_F2912_12	*Argentina sphyraena*	-	-
RRT14_F2912_13	*Enchelyopus cimbrius*	-	-
RRT14_F2912_14	*Trisopterus luscus*	-	-
RRT14_F2912_15	*Lesueurigobius friesii*	-	-