

## THE MARINE FAUNA OF LUNDY — ICHTHYOPLANKTON (FISH PLANKTON)

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### INTRODUCTION

The eggs, larvae (still carrying a yolk sac) and post-larvae (loss of yolk sac until they leave the plankton) of fish spend some time drifting or swimming in the surface waters of the open sea as members of the plankton and are thus dispersed by surface currents. The fish species present in the plankton around Lundy therefore reflect not only the fish species present around the island but also the water masses in which they occur; the plankton of open oceanic waters being different from that of coastal areas. The waters around Lundy are regarded as the delimiting zone between the neritic waters of the Mid and Upper Bristol Channel and the more oceanic waters of the Celtic Sea (The Institute of Marine Environmental Research; 1973, 1974 and 1975).

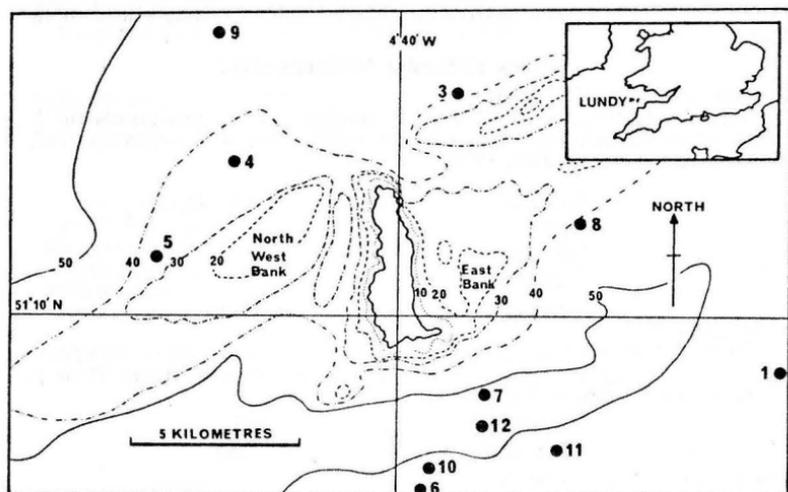


Fig. 1. Collecting sites around Lundy. Dates on which samples were collected are as follows: 1, 18.8.77; 2, 3.1.78; 3, 9.3.78; 4, 26.4.78; 5, 7.7.78; 6, 17.7.78; 7, 19.8.78; 8, 4.10.78; 9, 10.4.79; 10, 25.6.79; 11, 9.7.79; 12, 17.7.79; 13, 23.7.79.

### METHODS

The samples were taken with a 2 metre diameter Plymouth ring trawl (length 6 metres) operated from the R.V. 'Ocean Crest'. Each haul lasted 30 minutes. Further samples were taken with a 0.5 metre diameter standard zooplankton net towed for 10-15 minutes. The maximum net depths attained were measured using Kelvin sounding tubes and warp angles used to confirm these results. Fig. 1 gives the positions and dates of each haul taken between August 1977 and August 1979.

### GENERAL OBSERVATIONS

Fifty-three species were recorded at the egg, larval and post-larval stages. Any adults caught in the net have not been included in the results since they do not constitute part of the true plankton. The net depths recorded were between

17 and 60 metres and the majority of the samples were taken in a depth of water greater than 30 metres. Temporal variations in the ichthyoplankton distribution may have been missed since only one sample was taken at each station per month.

#### THE LIST

(e = eggs, l = larvae and postlarvae)

Phylum	CHORDATA
Class	OSTEICHTHYES
Infraclass	TELEOSTEI
Order	CLUPEIFORMES
Suborder	CLUPEOIDEI
Family	CLUPEIDAE

***Sprattus sprattus* Linnaeus, 1758**

#### SPRAT (l)

The sprat usually dominated the samples. They were particularly abundant from April until July. The highest catch of any individual species was for the sprats (on 26.4.78, 265 individuals were caught). They were always prominent members of the ichthyoplankton throughout their spawning season between March and October.

***Sardina pilchardus* Wilbaum, 1792**

#### SARDINE/PILCHARD (e, l)

Spawned later in the season than *S. sprattus* and was only prominent from July until September. Their eggs were recorded in July and August but only in appreciable numbers in July, 1979.

Superorder	PARACANTHOPTERYGII
Order	GADIFORMES
Suborder	GADOIDEI
Family	GADIDAE

***Merlangius merlangus* Linnaeus, 1758**

#### WHITING (e, l)

With *Trisopterus* spp. this species was the dominant gadoid. Its eggs were recorded from January until July reaching a maximum in April. Their post-larvae were abundant in June and July.

***Trisopterus luscus* Linnaeus, 1758**

***Trisopterus minutus* Linnaeus, 1758**

#### BIB (POUT) *T. luscus* (e, l)

#### POOR COD *T. minutus* (e, l)

These two species often comprised the highest percentage of total eggs. They were caught from February onwards but reached a peak in April (1978 and 1979).

***Trisopterus esmarkii* Nilsson, 1855**

#### NORWAY POUT (e, l)

This species is usually regarded as a member of the Northern fauna. It was caught in March and April. Hardisty and Huggins (1975), recorded their adults as far up the Bristol Channel as Oldbury-on-Severn.

***Pollachius virens* Linnaeus, 1758 and**

***Pollachius pollachius* Linnaeus, 1758**

#### POLLACK *P. Pollachius* (e, l)

#### SAITHE or COALFISH *P. virens* (e, l)

These species had a similar seasonal cycle to the above-mentioned gadoids. They reached a peak in April but were less abundant than *M. merlangus* or *Trisopterus* spp.

**Gadus morhua** Linnaeus, 1758

**COD, (e, l)**

Recorded in March and April, 1979, when they were particularly abundant at the egg phase. The adults are regarded as cold water spawners so their presence as eggs and postlarvae was unexpected. Ripe females were caught, however, at a similar time in Carmarthen Bay (pers. obs.).

**Ciliata mustela** Linnaeus, 1758

**Ciliata septentrionalis** Collett, 1875

**FIVE-BEARDED ROCKLING** *C. mustela* (e, l)

**NORTHERN ROCKLING** *C. septentrionalis* (e, l)

Recorded from April to July predominantly as eggs. Surface hauls with the zooplankton net (0.5 m diameter) produced the best results. For instance on the 26th April, 1978, 54 eggs were caught in the haul suggesting that the rockling eggs were predominantly in the upper water layers.

**Gaidropsaris vulgaris** Cloquet, 1824

**THREE-BEARDED ROCKLING** (l)

Recorded in July as fairly mature postlarvae (or young juveniles).

**Rhinonemus cimbrius** Linnaeus, 1766

**FOUR-BEARDED ROCKLING** (l)

Only one specimen was recorded in July, 1979. The eggs identified as *Ciliata* spp., however, may include this species' eggs as well.

**Molva molva** Linnaeus, 1758

**LING** (e, l)

Doubtful identifications. Adult ling are deep water species and the presence of their post larvae in shallow waters was doubtful. The egg identifications could have been of another gadoid but the postlarvae were apparently that of *M. molva*. Recorded in July, 1978.

**Raniceps raninus** Linnaeus, 1758

**TADPOLE-FISH** (l)

One specimen was recorded on 17.7.78.

Family MERLUCCIIDAE

**Merluccius merluccius** Linnaeus, 1758

**HAKE** (l)

Three specimens were caught, 17.7.78.

Superorder ACANTHOPTERYGII

Order ATHERINIFORMES

Suborder EXOCOETODEI

Family BELONIDAE

**Belone belone** Linnaeus, 1758

**GARFISH (GARPIKE)** (l)

Only one specimen was recorded on the 18.9.78. It was well developed, approximately 42 mm long.

Order GASTEROSTEIFORMES

Suborder SYNGNATHODEI

Family SYNGNATHIDAE

**Syngathus rostellatus** Nilsson, 1855

**NILSSON'S (LESSER) PIPEFISH** (l)

Recorded in small numbers from July until November.

Order            SCORPAENIFORMES  
Suborder        SCORPAENOIDEI  
Family           TRIGLIDAE

A number of eggs were tentatively identified as that of triglids but early blastula stages were difficult to determine.

*Eutrigla gurnardus* Linnaeus, 1758

GREY GURNARD (I)

Recorded from July until September.

*Trigla lucerna* Linnaeus, 1758

TUB (SAPHIRINE) GURNARD (I)

Not as common as *E. gurnardus*, but with a similar spawning season.

Order            SCORPAENIFORMES  
Suborder        SCORPAENOIDEI  
Family           COTTIDAE

*Taurulus bubalis* Euphrasen, 1786

SEA SCORPION (LONG-SPINED SEA SCORPION) (I)

Recorded from April until July in 1978 and 1979.

Family           CYCLOPTERIDAE (LIPARIDAE)

*Liparis montagai* Donovan, 1805

MONTAGU'S SEA SNAIL (I)

Recorded in April, 1978, when two specimens were caught, Generally regarded as a coastal species with eggs attached to rocks.

Order            PERCIFORMES  
Suborder        PERCOIDEI  
Family           MULLIDAE

*Mullus surmuletus* Linnaeus, 1758

RED MULLET (I)

Three specimens were caught on the 19.8.78 and one on the 23.7.79.

Family           CEPOLIDAE

*Cepola rubescus* Linnaeus, 1766

RED-BAND FISH (I)

Recorded in 1976 (Kennington). Single specimens were caught in August and September of that year.

Suborder        LABROIDEI  
Family           LABRIDAE

Wrasses are common members of the fish fauna within the Channel and are particularly prominent along the South-West coastline. Their postlarvae, therefore, were expected. All the postlarvae reached a peak in July and August but were present a month on either side of this. None of the species was particularly dominant.

*Labrus mixtus*, Linnaeus, 1758

CUCKOO WRASSE (I)

*Labrus bergylta* Ascarius, 1767

BALLAN WRASSE (I)

*Ctenolabrus rupestris* Linnaeus, 1758

GOLDSINNY (I)

**Centrolabrus exoletus** Linnaeus, 1758

ROCK COCK (SMALL-MOUTHED WRASSE) (1)

Suborder TRACHINOIDEI  
Family TRACHINIDAE

**Trachinus vipera** Cuvier, 1829

LESSER WEAVER (e, 1)

Fairly common from July until September. Their eggs are similar to that of the sole family and may have been incorrectly identified.

**Trachinus draco** Linnaeus, 1758

GREATER WEEVER (1)

Only one specimen was recorded on the 19.8.78.

Suborder BLENNIOIDEI  
Family BLENNIIDAE

**Blennius pholis** Linnaeus, 1758

SHANNY (1)

This species was the most abundant blenny for most of the season. Its eggs (as with all blennies) are attached to the underside of coastal rocks. The post-larvae apparently remain close inshore and were rarely recorded any distance from Lundy. They were present from June until September but reached a peak in July.

**Blennius gattorugine** Linnaeus, 1758

TOMPOT BLENNY (1)

Present in large numbers in July 1978 and 1979 and must, therefore, compete with *B. pholis*.

**Coryphoblennius galerita** Linnaeus, 1758

MONTAGU'S BLENNY (1)

Only one specimen was recorded on 17.7.78. It must be noted that the identification was taken from Russell (1976) which itself is doubtful.

Family STICHAEIDAE

**Chirolophis ascanni** Walbaum, 1792

YARRELL'S BLENNY (1)

One specimen of Yarrell's blenny was caught on 10.4.79. The adult fish have been recorded off Devon and Cornwall but they are usually considered as a deep water species.

Suborder AMMODYTOIDEI  
Family AMMODYTIDAE

Present from April until October as postlarvae.

**Hyperoplus lanceolatus** Lesauvage, 1824

GREATER SAND EEL (1)

**Hyperoplus immaculatus** Corbin, 1950

SAND EEL (1)

**Ammodytes tobianus** Linnaeus, 1758

SAND EEL (1)

**Gymnamodytes semisquamatus** Jourdain, 1879

SMOOTH SAND EEL (1)

Suborder CALLIONYMOIDEI  
Family CALLIONYMIDAE

**Callionymus lyra** Linnaeus, 1758

**DRAGONET (l)**

The dragonet is very common in the Channel and, therefore, the high numbers of postlarvae recorded were expected. Russell (1976) indicated that they can be the dominant members of the ichthyoplankton but this was not the case off Lundy. They reached a peak in July, 1978 and 1979 and were present from July until October.

**Callionymus reticulatus** Valenciennes, 1834

**[NO COMMON NAME] (l)**

Only two specimens were recorded but their presence was of importance since their adults are usually regarded as more Southern species. This is the first record of the species from the South-West approaches. Both specimens were caught in July.

Suborder           **GOBIOIDEI**

Family             **GOBIIDAE**

**Pomatoschistus minutus** Pallas, 1770

**SAND (COMMON or FRECKLED) GOBY (l)**

Of all the identifications made for the gobies that of *P. minutus* was the most definite because of the fin rays and the prominent dorsal chromatophore between the dorsal and caudal fins. It was the dominant goby species but was never caught in appreciable numbers. Recorded from April until November i.e. a prolonged spawning season.

**Pomatoschistus norvegicus** Collett, 1902

**[NO COMMON NAME] (l)**

Their season was very similar to that of *P. minutus* and some of the identifications may have been of this species.

**Gobius paganellus** Linnaeus, 1758

**ROCK GOBY (l)**

**Pomatoschistus microps** Kroyer, 1840

**COMMON GOBY (l)**

These two species were probably present in the hauls and were most likely the other gobies not obviously *P. minutus*.

Suborder           **SCOMBROIDEI**

Family             **SCOMBRIDAE**

**Scomber scombrus** Linnaeus, 1758

**MACKEREL (l)**

Formed a high percentage of the later spawning groups and became important in July and August. Occasionally very high numbers were caught, for instance on the 17th July 1978, 125 specimens in a single haul. The lack of eggs suggested that spawning was to the west, off North Cornwall and in the South-Western Approaches (Corbin, 1947).

Suborder           **PERCOIDEI**

Family             **CARANGIDAE**

**Trachurus trachurus** Linnaeus, 1758

**HORSE MACKEREL (SCAD) (l)**

Recorded in August and September. On 18.9.78 nine specimens were caught suggesting appreciable spawning in the area.

Order               **PLEURONECTIFORMES**

Suborder           **PLEURONECTOIDEI**

Family             **PLEURONECTIDAE**

**Pleuronectes platessa** Linnaeus, 1758

**PLAICE (e)**

The adults are abundant in the Channel, particularly off Trevoze Head. The general paucity of eggs, therefore, was unexpected. No postlarvae were recorded and presumably spawning is further to the west.

**Limanda limanda** Linnaeus, 1758

DAB (e, l)

This species spawn a few months later than the plaice. Their postlarvae were fairly common and were caught from April until July. The net depth was important, however, since they keep to the bottom very early on in their post-larval development.

**Microstomus kitt** Walbaum, 1792

LEMON SOLE (e, l)

This species was not caught in large numbers and were found further eastwards. Caught in July and August.

Family BOTHIDAE

**Arnoglossus laterna** Walbaum, 1792

SCALDFISH (e, l)

Present from July until October. The recorded number, for example, 8 on the 17th July, 1978 and 9 on the 18th September, 1978, suggested an appreciable spawning population within the area.

**Scophthalmus maximus** Linnaeus, 1758

TURBOT (e, l)

The postlarvae reached a peak in July and August.

**Scophthalmus rhombus** Linnaeus, 1758

BRILL (e)

Eggs were recorded in July only.

Sudorder SOLEOIDEI

Family SOLEIDAE

**Buglossidium luteum** Risso, 1810

SOLENETTE (e, l)

The most commonly caught sole. Its eggs often formed the highest percentage of the total number of eggs in July and August. The fewer postlarvae caught was probably indicative of their benthic nature.

**Microchirus variegatus** Donovan, 1802

THICKBACK SOLE (e, l)

Their eggs were fairly abundant from June until August but few postlarvae were recorded.

**Pegusa lascaris** Risso, 1810

SAND (FRENCH) SOLE (e, l)

This species possibly spawned later than either *B. luteum* or *M. variegatus* but were not abundant.

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