Why is the maturity of a fish important?

In order to manage a stock effectively it is very important to understand the dynamics of that stock. Three critical pieces of information required to manage any fishery properly are:

- Location of spawning areas
- Timing of spawning seasons
- Estimation of size at maturity

This information can be obtained by studying the spawning patterns of a stock. This type of data was vital in the Irish Sea cod recovery programme (the closure of the Irish Sea box from February to May of this year). This area represents a large spawning ground for the Irish Sea cod and the closure was to protect the spawning adults.

How can you tell the maturity stage of a fish?

Fish ovaries are found in the gut cavity of the female. The ovaries go through a series of stages which can be identified visually by size, colour and whether the eggs are transparent or opaque. The description of the ovary is known as a maturity index.

A typical spawning cycle is shown overleaf.

Stage 1: Ovary is small and transparent.
Stage 2: Ovary begins maturing process by increasing in size and changes to a red/pink colour.
Stage 3: Ovary begins to change colour, gets larger and becomes covered in light blood vessels.
Stage 4: Ovary begins to distend the body and becomes covered in thick blood vessels. Eggs are visible.
Stage 5 & 6: Ovary contains hydrated eggs (i.e. have taken on water, making them transparent). Spawning occurs in batches.
Stage 7: All viable eggs have been released. Ovary becomes grey/white and wrinkled in appearance.
Stage 8: Resting – Ovary begins recovery process by reducing in size and returning to a red/pink colour.

The Fisheries Science Services Team
In order to ensure the sustainable harvesting of the fisheries resources, it is essential that management is underpinned by sound marine science that is clear, transparent, timely, impartial and inclusive.

The Marine Institute's Fisheries Science Service Team works closely with the fishing industry to provide this marine science through.

- Research Vessel Surveys (Acoustic, Groundfish, Egg and Larval Fish, Underwater TV)
- Surveys on Commercial Vessels
- Market Sampling of Landings
- Discard Sampling at Sea
- Analysis of Logbook Data
- Studies on the Biology of Fish
- Working with the Regional Advisory Councils (RAC's)
- Articles in the trade press
- Working with our international scientific colleagues
- Regular meetings with Industry Representatives and DCMNR
- Regular Meetings with EU

This information is essential to our understanding of the current state of the fisheries resources and the ecosystem in which they live.

More detailed information, as well as similar leaflets on related issues are available from

Marine Institute, Fisheries Science Services (FSS), Rinville, Oranmore, Co. Galway, Ireland. Phone: + 353(0) 91 387200

Or your local Port Based Technician in

Clogherhead	(041) 9889788
Dunmore East	(051) 385011
Castletownbere	(027) 71937
Ros a Mhíl	(091) 572584
Killybegs	(074) 9741871

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A Deeper Understanding...

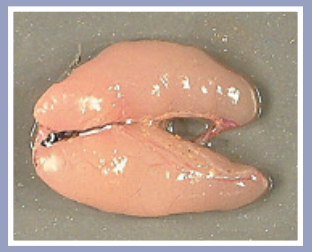
Maturity & Spawning in Fish

Fisheries Science Services

Assessing, researching and advising on the sustainable exploitation of living marine resources in a healthy ecosystem

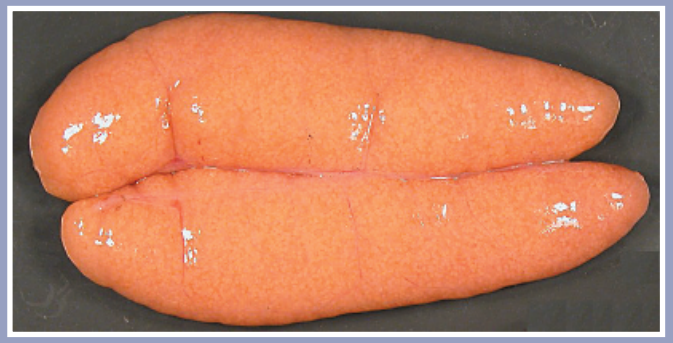
Marine Institute
Foras na Mara

A TYPICAL FISH SPAWNING CYCLE



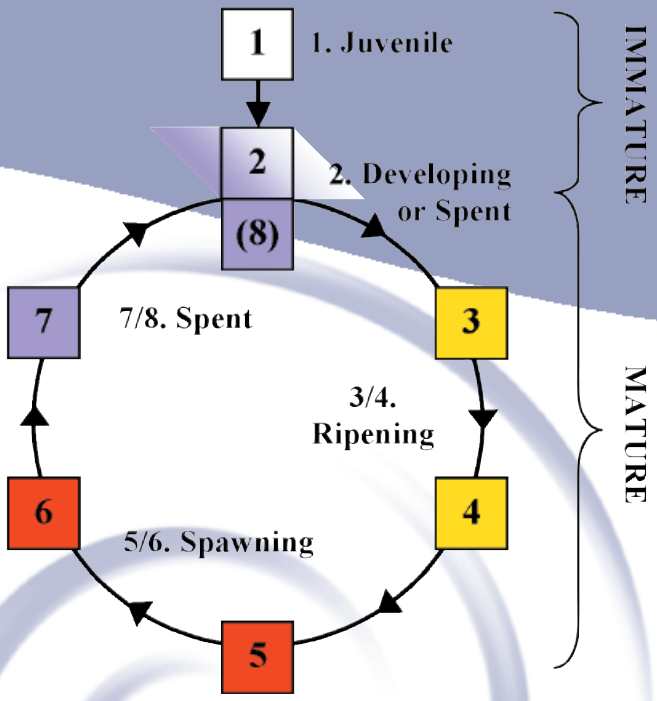
Stage 1: Immature

Stage 2: Developing

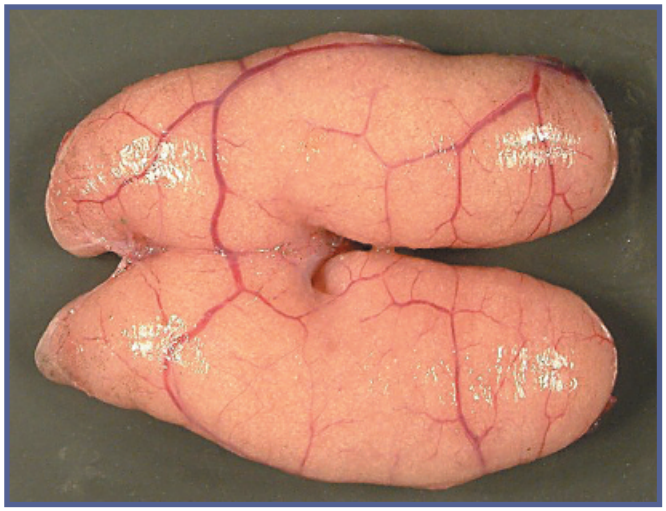


Stage 3: Maturing

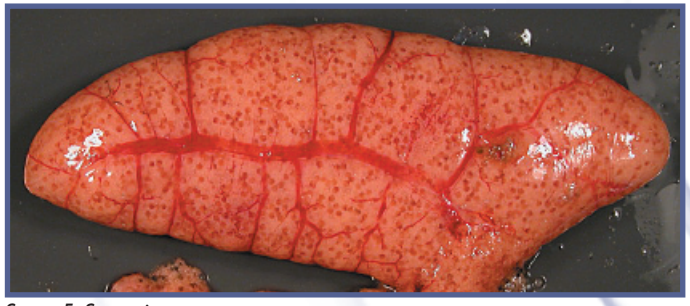
Stage 8: Resting



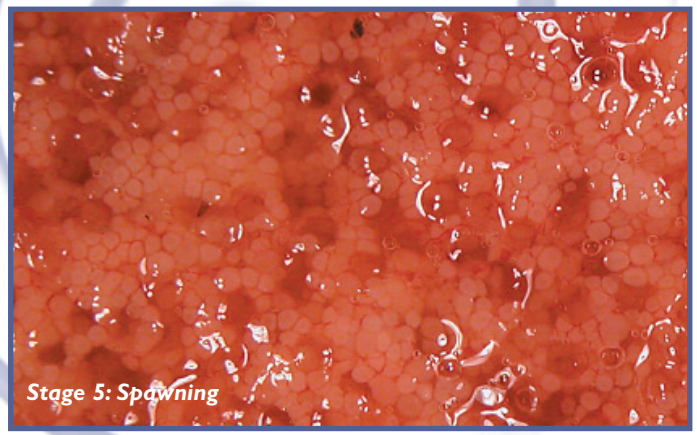
Stage 7: Spent



Stage 4: Mature



Stage 5: Spawning



Stage 5: Spawning