# **Inshore Fisheries: Bivalve Molluscs**

### **Scallops**

Due to a rapid growth rate and high market value, the scallop fishery is of high economic importance. Fishing for scallops has been established in Northern Ireland since 1935 with Queen scallop fishing not becoming commercial until the 1970's.

Due to the different behaviour of King and Queen scallops, with King scallops burying into the sediment whilst Queen scallops are active swimmers, the fishing technique changes to encompass this. King scallops are fished using dredges with 8 or 9 metal teeth set vertically along the front edge of the dredge. The teeth rake up the scallops which are caught by the mesh bag positioned behind the tooth bar. Groups of dredges are hung from a tow bar which has wheels on either end so it can move over the seabed.

As Queen scallops tend to swim when disturbed, fishermen can make use of this by using skid dredges or otter trawls. Unlike scallop dredges, skid dredges have no teeth, but instead have a tickler chain which disturbs the Queen scallops causing them to swim into the water column where they are caught by the net attached behind the tickler chain.

#### Management

All vessels fishing scallops have to submit shellfish landings to the Department of Agriculture and Rural Development. Information submitted includes port of landing, length of vessel, live weight and value. In addition, all vessels over 10m which harvest scallops have to have a vessel monitoring system on board.

In 2008 new regulations came out under the Conservation of Scallop Regulations (Northern Ireland) 2008 which replace the Conservation of Scallops Regulations (Northern Ireland) 1997 and The Inshore Fishing (Daily Closed Time for Scallops) Regulations (Northern Ireland) 2000. Under the new regulations scallops can only be fished between 6am and 8pm on Monday-Friday. No scallop fishing is permitted by any means during the weekend. In addition the number of dredges allowed has been reduced from 8 to 6 and the maximum tow bar length is 5.5m. The minimum landing size for scallops is set at 110mm.



Landings of scallops into all Northern Ireland ports from 2008-2010

#### Science

Since 1985 AFBI have carried out an annual scallop survey which has surveyed 6 sites around the Northern Ireland coast. Throughout these surveys information has been gathered on catch per unit effort (CPUE), scallop age composition, weight, height and length of individual shells. This work will carry out a comparison of results obtained throughout the period of the AFBI scallop surveys to investigate if there have been any fluctuations in abundance.

The information provided by fishermen through the shellfish landings will be compared to that collected during the AFBI survey to give an overview of the stock and to examine seasonal changes in the scallop stock.

## Cockles

*Cerastoderma edule* also known as the common cockle is a bivalve with a thick oval equivalve shell reaching lengths of up to 5cm. The shell, which is off-white, yellow or brown, has 22-28 radiating ribs crossed by concentric ridges. Also due to reduced growth throughout the winter, prominent growth lines on the shell can be used for aging. This species is abundant around the British and Irish coasts and lives in clean sand, muddy sand, mud or muddy gravel from the middle intertidal to lower intertidal and sometimes subtidal. Although they burrow into the substrate (to about 5cm) cockles are easily dislodged by storms and can be washed away during gales thus leading to high winter mortalities.



A pilot cockle fishery was initiated by DARD in Belfast Lough in 2008 to establish the feasibility of a larger commercial fishery. The licensed fishery was effectively situated between the main Dredged Channel within Belfast Lough and the SPA to the East of the Kinnegar outfall pipe. This fishery was operated by two small 12 meter and under vessels one of which operated a suction dredge and the other a standard cockle dredge. Between them the two boats removed 128 tonnes of cockles. In 2009 this site was closed and a second site to the West of the Kinnegar outfall pipe was proposed. The 2009 fishery was operated by thirteen small 12 meter and under vessels which operated either suction dredges, hydraulic dredges or dry dredges. Each boat was allocated a quota of 8 tonnes of cockles for the season and designated two specific tides between the 5th and the 23rd of October, over which this could be fished. This ensured that only two vessels were fishing at any given time. A total of 66 tonnes of cockles was landed throughout the duration of the 2009 fishing season. In 2010 no cockle took place in inner Belfast Lough.

### Science

To determine if a fishery should be opened a survey must be carried out beforehand to estimate the tonnage of cockles available to the fishery. This survey will examine the number of mature cockles m<sup>2</sup>, the length/age frequency of cockles from each area, the estimated biomass of cockles. This information is then used to determine the total fishable stock and suitable fishing areas. The survey will also monitor the position and number of any juvenile cockles. Particle size analysis will be carried out over an extended period to monitor any long terms effects which suction dredging may have on the substrate.

Through working with fishermen and using historical data for the lough, other areas within Belfast Lough will be examined as possible recruitment sites for juveniles.