First research into the relationship between Spisula (fishery) and the common scoter

The project ‘Space for birds and fishermen: action assessment for a sustainable fishery of *Spisula subtruncata* in Dutch coastal waters’ was launched last year to investigate the relationship between the Spisula (fishery) and the common scoter. The first research conducted aboard the WR 82 and HA 36 fishing vessels confirmed that this winter common scoters were present in large numbers at the Spisula banks north of the Wadden Islands, but (at that time) not at the banks off the coast of North Holland.

Fishery of *Spisula subtruncata* in the Dutch Wadden Sea. Photo: Loran Kleine Schaars

Spisula history

The Spisula fishery has a weighted history, as this shellfish is a staple in the diet of the protected bird, the common scoter. Fishermen and nature conservationists therefore stood opposed to one another. Spisula appears to be erratic and, following a period of abundance, the species disappeared. However, it is now back in large numbers in Dutch coastal waters.

This new ‘spring’ asks for a new approach, providing a good reason for the Dutch Fishermen’s Association, the Royal Netherlands Institute for Sea Research, Wageningen Marine Research, the Netherlands Society for the Protection of Birds and Meromar Seafoods BV to come together in collaboration. All parties involved greatly value this joint research project because the data can be used to provide a sustainable perspective on the Spisula fishery and improved protection to the common scoter.

Spisula returns
The cut trough clam (*Spisula subtruncata*) was a dominant bivalve species in Dutch coastal waters, but in the year 2000 it apparently rapidly disappeared from the seabed. As a result the Spisula fishery came to a standstill. Then, in 2017 during the annual bivalve survey, the highest biomass of the species since the survey began in 1995 was suddenly recorded.

Due to the recent sharp increase of the Spisula stock, harvesting of this bivalve has regained its appeal for the fisheries sector. The Dutch Fishermen's Association submitted a license application and, since last summer, small-scale fishing of Spisula is once more permitted subject to conditions. However, the government is reluctant to grant licenses due to the risk of overfishing and because the numbers of the common scoter are still below the conservation objective detailed under the Nature Protection Act.

Spisula subtruncata - Cut through shell washed ashore on sandy beach. Photo: J. Need

Sustainable fishery
The common scoter is a protected bird species for which a national conservation objective applies: there must be sufficient carrying capacity (i.e. food source) for 68,500 overwintering birds. The common scoter primarily feeds on bivalves including Spisula. Since the collapse of the Spisula stocks however, target numbers are rarely attained.

This joint research project has been set up to understand the connections between Spisula, the fishery and the common scoter in order to enable a sustainable Spisula fishery. The Dutch Ministry of Agriculture, Nature and Food Quality has granted a subsidy of €980,282.11 for this multi-year project from the European Maritime and Fisheries Fund.

The common scoter is a protected bird species for which a national conservation objective applies. Photo: JPetersen

All aboard

Within the project partners are collaborating to map the interactions between bivalves and the common scoter. The basic tenet for the project is that more understanding about the causes and consequences of population developments of Spisula and the common scoter will provide a more accurate picture of the capacity of the area (and thereby more reliability) for a sustainable bivalve fishery.

The Spisula fishermen from the WR 82, HA 36 and YE 172 fishing vessels are also taking part in the project. During the past months they have contributed ideas and information and assisted with data collection. Researchers also went aboard the HA 36 and WR 82 to collect bivalve samples and to record the occurrence and behavior of birds.

Seabed research

It is known that common scoters also feed on other bivalves such as the razor clam (ensis). The WR 82 recently carried out benthic research at various locations north of the Wadden Islands where many common scoters were present. Results revealed that above Terschelling (where there were several thousand scoters) there were mainly small (-10 cm) razor clam specimens. The higher densities of birds (tens of thousands of individuals) north of Ameland were located right on top of a large Spisula bank. However, during a research journey aboard the HA 36 off the coast of North Holland where many Spisula are known to occur, there were no sightings of common scoters on the sea surface.

Preferences for locations and bivalves

Florian Landstra (Dutch Fishermen's Association): 'It is good to see that the common scoter not only eats Spisula but also smaller specimens of ensis. The ensis fishery has included in the permit conditions that fishing of these small individuals is not permitted. It is also notable that scoters don't touch some apparently accessible Spisula banks. We will now investigate why the common scoters have a preference for particular locations and bivalves. This will include factors such as disturbance by shipping traffic, for example the salvage works resulting from the loss of containers by MSC Zoe.'

Stock assessments of Spisula show that the biomass of this shellfish further increased in 2018. It seems that this is mainly due to the growth of individuals and less as a result of an increase in numbers. Last month young Spisulas were found aboard the HA 36, but it is not yet clear how this relates to the development of the stock. Although it is good that the increase in Spisula biomass has continued, for the future of the fishery it is also important to gain more insight into spatfall rates. In any case it has been decided not to allow any fishing for Spisula in April and May in order to offer spatfall the best chance of survival.