

# THE USE OF SIDE SCAN SONAR IMAGES IN A STUDY ON THE EFFECTS OF MUSSEL SEED FISHERIES ON SUBTIDAL MUSSEL BEDS IN THE WESTERN WADDEN SEA

F. Fey, K. Kersting en B. Brinkman

## Introduction

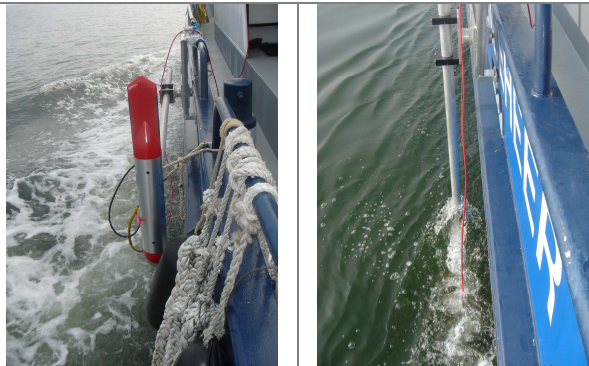
Studies on subtidal mussel beds are laborious as the object of study is situated under water. As mussel beds are generally rather patchy many samples with sampling gear have to be taken to get an idea of the outward appearance of the bed.

In a study on effects of mussel seed fisheries on the development of subtidal mussel beds (PRODUS dp 3: subtidal nature values), Side Scan Sonar-imaging is used to reveal bed structure, mussel distribution and mussel bed contours in research plots. This poster demonstrates an example of the use of Side Scan Sonar images and the conclusions which can be drawn from these images.

## Materials and methods

For a study on the effects of mussel seed fisheries on the development of subtidal mussel beds a Imagenex SportScan7 was used to provide acoustic images of the outward appearance of a mussel bed. The instrument (TowFish) is fixed to a hollow aluminum pipe (3 meter). The cable is fed through the hollow pipe and connected to the SportScan7 tail unit with the electronics. The aluminum pipe is fixed in a clamp that can rotate in the plane parallel to the side of the ship.

Fig. 1 SportSan7 in use. The clamp is mounted in an aluminium triangle that can be fixed to the railing of the ship. During travelling to the experimental spots the aluminium pipe is turned horizontally outside the water.

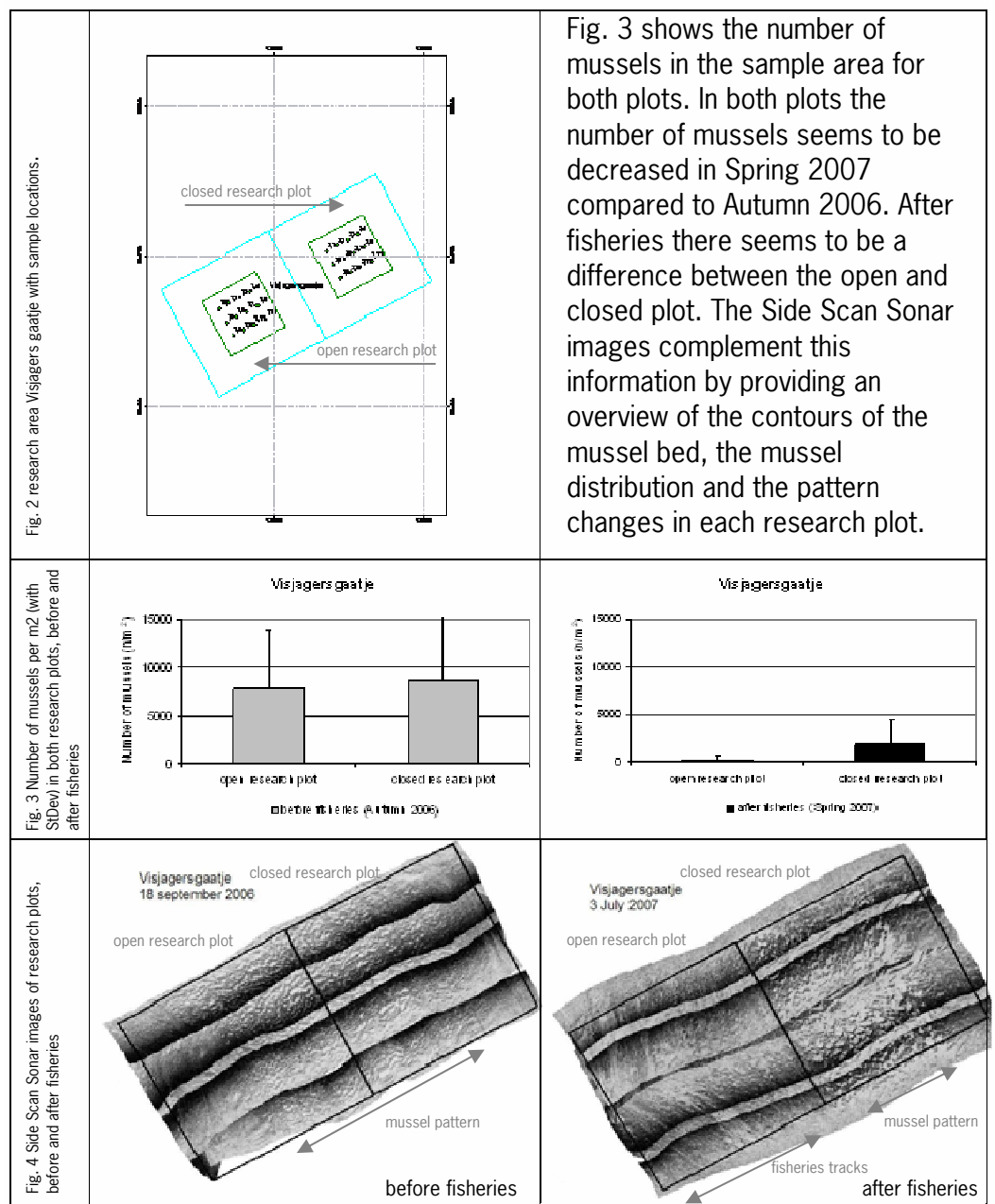


a. SportSan7 mounted on m.s. Phoca in idle position.

b. SportSan7 in operation on the m.s. Phoca (Wadden-Unit, LNV)

In this example we focus on the area Visjagersgaatje (fig. 2), which is located in the Dutch western Wadden Sea. The research area located on Visjagersgaatje is situated on a mussel seed bed, with mussels from the spatfall of 2006. The research area consists of two adjacent research plots of 4 ha each (200\*200m) of which one was closed for mussel fisheries. Side Scan Sonar images were compared with samples taken with a Box-corer (fig. 3-4). Of each research plot the number of mussels per m<sup>2</sup>, calculated from the samples, is compared with the outward appearance visible on the acoustic images.

## Example Visjagersgaatje



## Conclusion

In combination with quantitative sampling, Side Scan Sonar images are useful to improve insight in bed structure, mussel distribution and the contours of subtidal mussel beds. In effect studies these are important parameters that can not be visualized with quantitative sampling alone.

