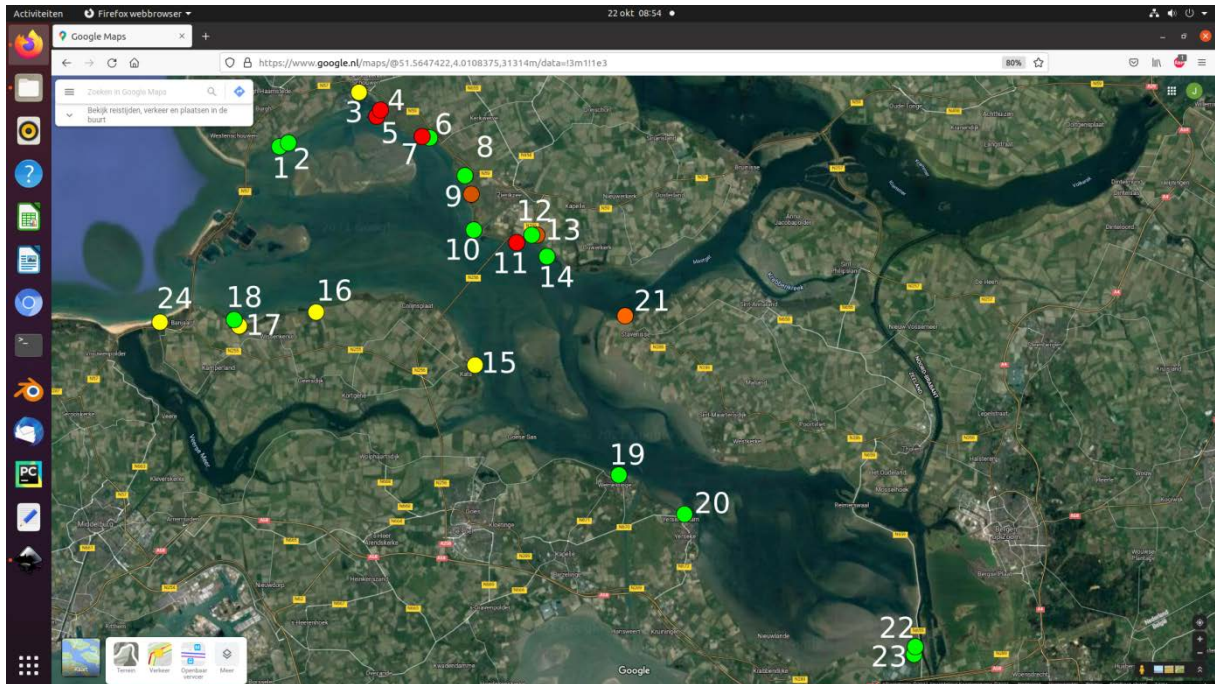


### 3.2.3 Case Oosterschelde

#### Introduction

Contrary to the Westerschelde there are no sources for nurdles from producers or from transfer inside the estuary. The only source here is the North Sea. The image of the nurdle division can therefore be used as a comparison to the situation in the North Sea part of the Westerschelde.

#### Deposits



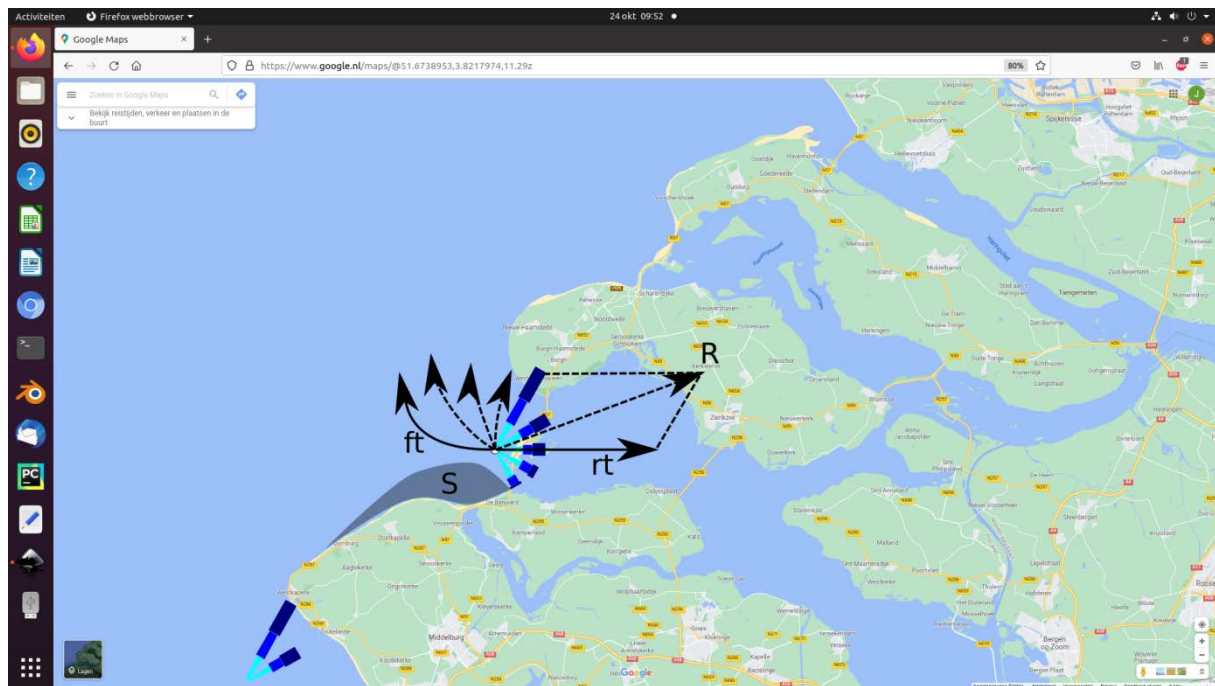
24 locations were visited. The results are in the Annex. Apart from the nurdles (and Bio Beads) some attention was given to plastics spilled by the fisheries and a water purification plant because they can give more information on the distribution pattern of the nurdles.

#### Source North Sea

It is assumed that the flow of nurdles is diffuse and originates from the east coast of the UK. With the prevailing winds from the south west part of the surge barrier is lying in a 'nurdle shade' (S). This is indicated in the illustration hereafter.

#### Wind and water system

In the illustration the wind and water system is schematized. When the tide rises (rt) nurdles are transported to the north bank (R). The sandbank (Roggenplaat) visible in the deposits illustration above will facilitate this process.



For the wind rose the average 1991-2020 October month was used, KNMI

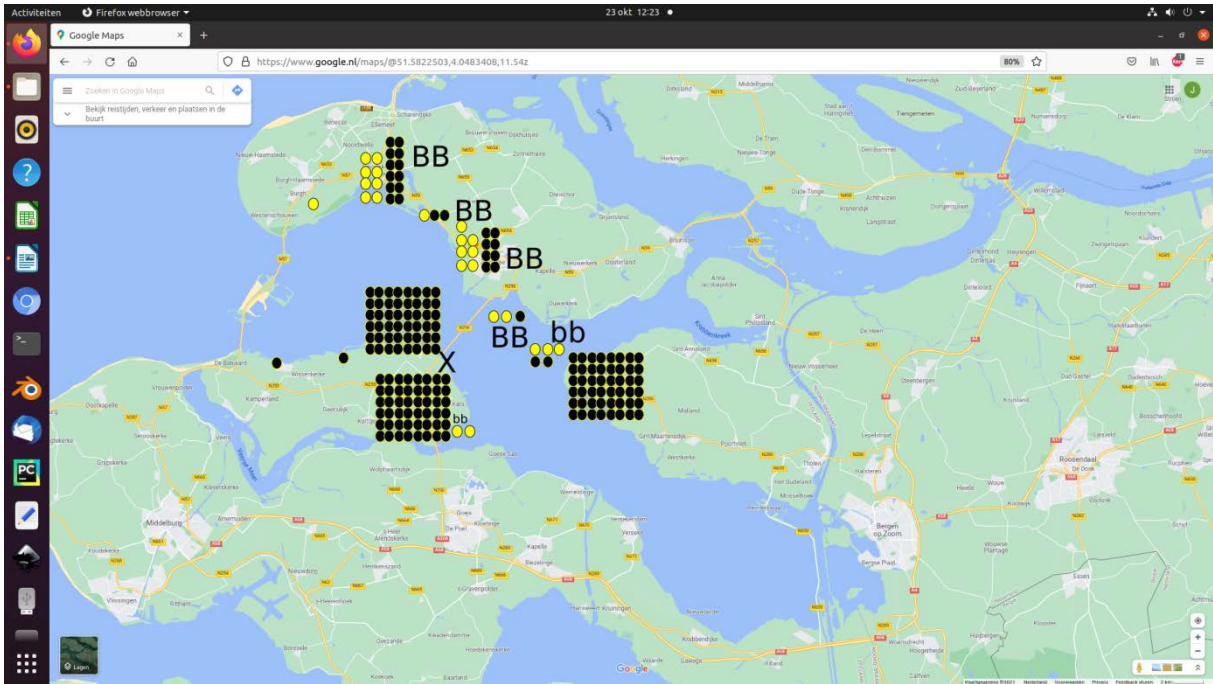
With falling tide (ft) part of the nurdles will keep flowing along the coast and part of them will wash up on the beach north of the barrier. With a storm from the north west they are picked up again and will end up somewhere in the Oosterschelde.

Flow velocity is up to 2m/s in the barrier. On average about 1 m/s because of the tide. Bft 5 is on average 9.3 m/s. If 5% of the wind is converted into floating speed this is about 0.5 m/s. Flow velocity on the bank is 0 m/s. Roughly these variables are therefore in the same order of magnitude and can be combined in further modelling if wished.

There is a nurdle flow to the south bank also (not illustrated with arrows) but this will be smaller because wind from the north/north-west is less common.

Because a lot of Bio Beads are found, the assumption arose that there might be a source in the Oosterschelde itself. However if the patterns of bio media are illustrated on the map and combined with the map of deposits of the normal nurdles (above) they don't fit.

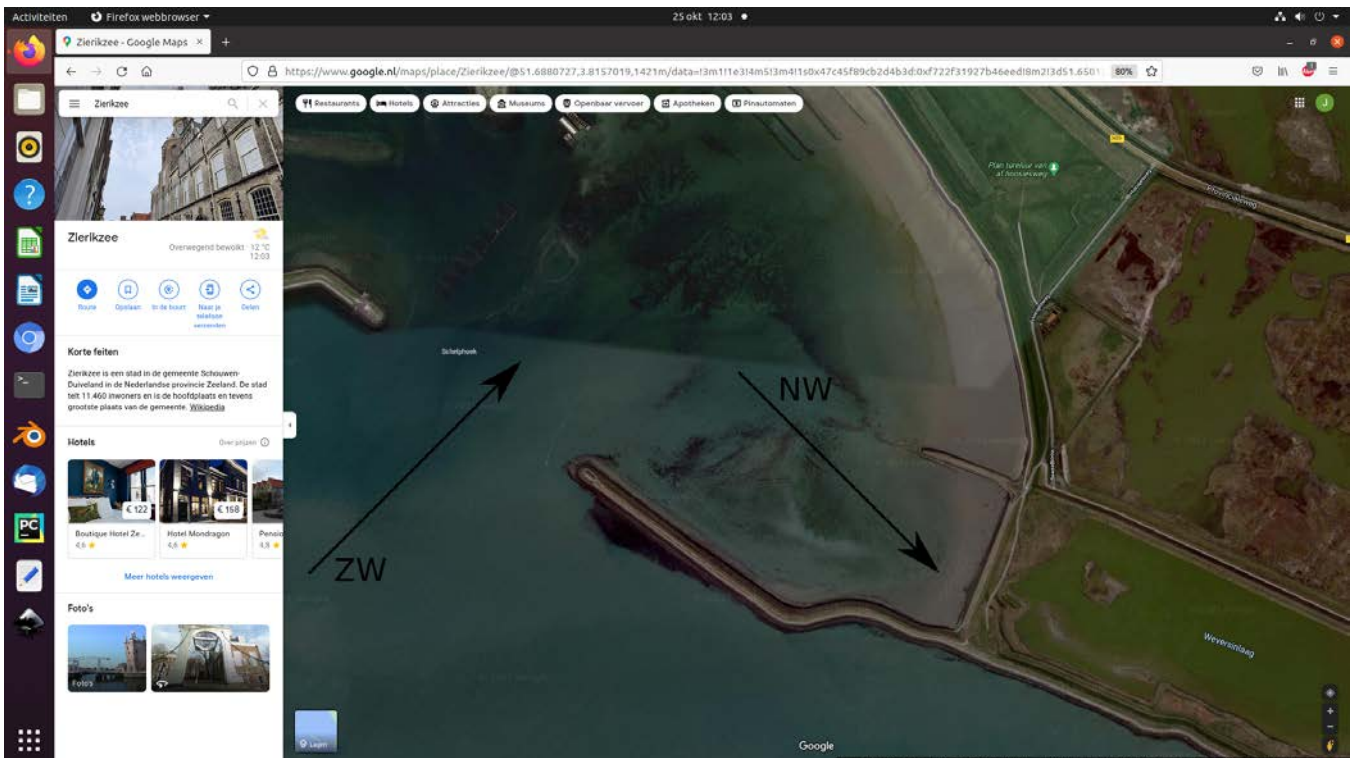
The number of nurdles, Bio Beads and wheel shaped bio media dilute on the way to the end of the estuary. The Kingfish (emission point =X) bio media follow another pattern (see Annex 04/5 for the link). The large numbers found near Colijnsplaat and on Tholen are not part of the data. They were derived from articles in the press.



BB = Bio Beads > 1000, bb>100, bb>10; yellow = wheel shaped bio media, black = Kingfish bio media

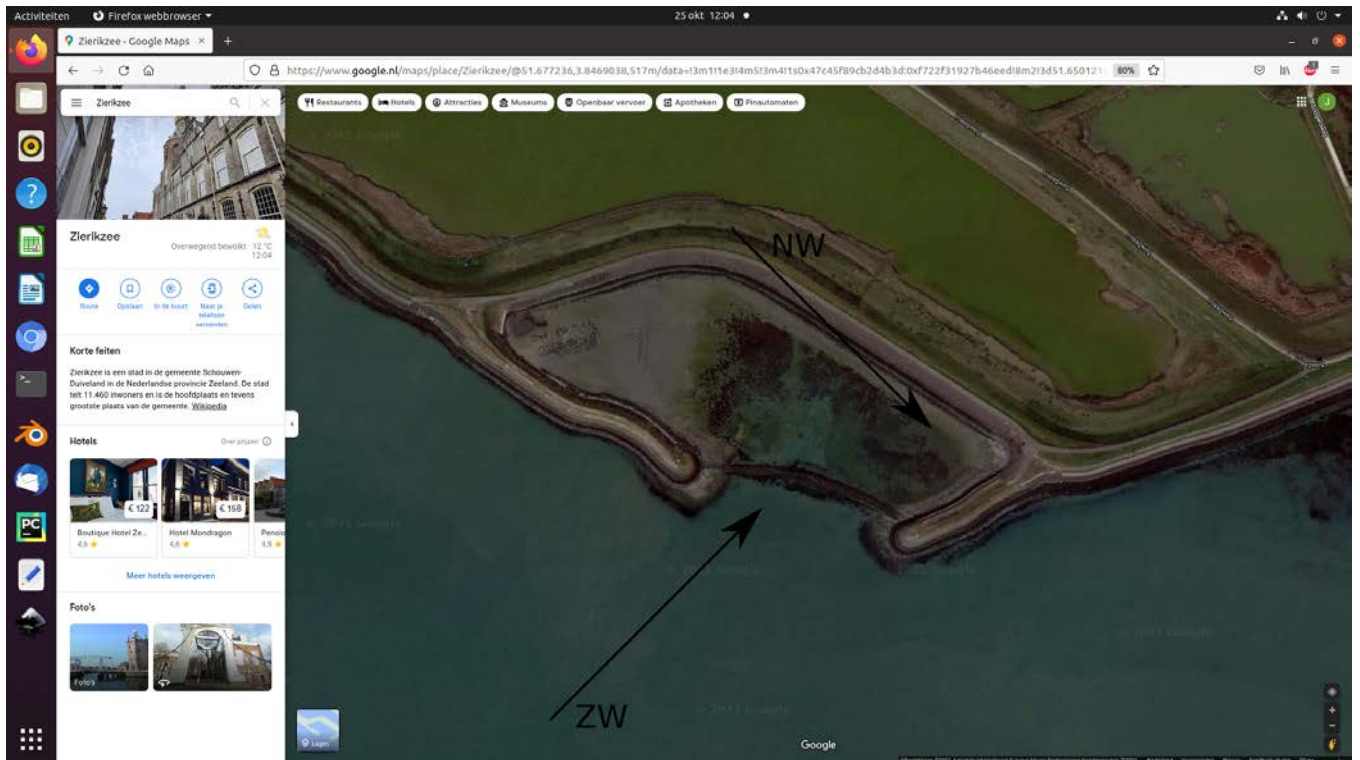
## Catching?

The situation on the hotspots Schelphoek, Kerkerwe and de Val is similar.

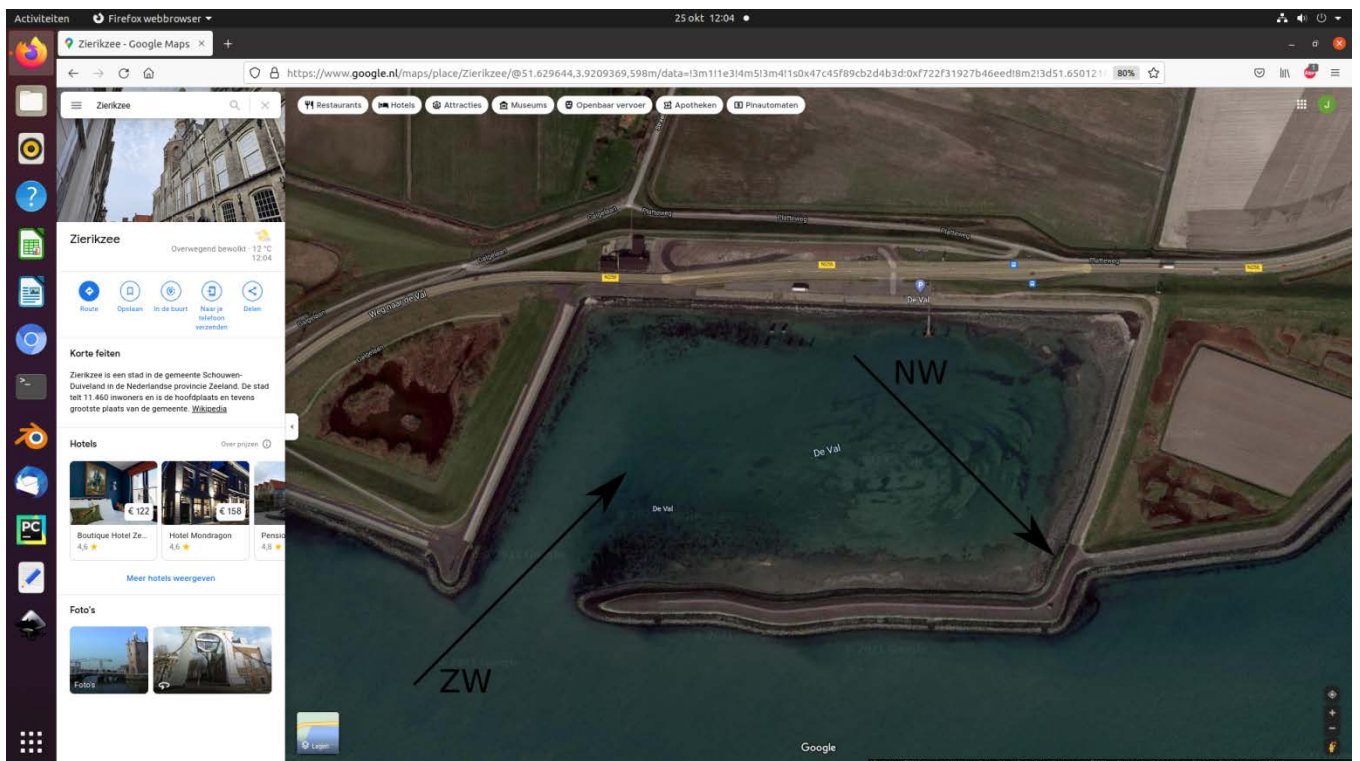


Schelphoek





## Kerkerwe



## De Val

Plastic enters easily with prevailing winds, leaving with north west storms is not possible. It is not very difficult to catch plastic along the banks this way. It is smarter to prevent it from reaching the water.

## Conclusions

Concentration of nurdles and Bio Beads diminishes towards the end of the estuary.

Because of prevailing winds, the sand bank (Roggenplaat) and the nurdle shade, the number of nurdles on the north bank is higher than on the south bank.

Nurdles are found on the same locations as where part of the bins are situated ('Doe mee, Verlos de Zee'). These are meant to collect plastic which is gathered by volunteers. Nurdles always come together with other plastic and accumulate on the same locations.

The Oosterschelde is a National Park. A large part of the plastic that is found in the Oosterschelde is caused by 'the fisheries': these two don't match.