



## CPA Pilots Oosterschelde

The intertidal areas of the Oosterschelde are subject to structural erosion. This structural erosion is known as the "sand demand" of the Oosterschelde. The erosion amounts 50 hectares a year of area loss. The sand demand directly affects the natural values of this natura 2000 area and has a longer term effect on flood defense (see figures 1,2,3).

Scientific study (van Zanten et al., 2008) revealed that replenishment of the loss of sediment by nourishment or reduction of erosion are potential measures. But these measures need testing before conduction on a large scale as little is known on the costs of construction, life span, ecological effects and possible side effects on recreation or fisheries. Therefore a program for testing several potential measures is developed.

The pilots of the Oosterschelde are aimed at replenish the loss of sediment or reduction of the erosion process and thereby aim at two goals:

- ▶ Conservation of the foraging grounds for the waders
- ▶ Conservation of the wave reducing foreland of the dikes

## The Ideas

- ▶ Sand nourishment (Galgeplaat)
- ▶ Shellfish Reefs (De Val and Slikken van Viane)
- ▶ EcoBeach, (Roompot)
- ▶ Hanging beaches in combination with Sand Nourishment (Schelphoek).



## Status

### Sand nourishment Galgeplaat

In 2008 20 ha of the shoal Galgeplaat were restored with 130.000m<sup>3</sup> of sand. Main goal is to study if this nourishment is able to feed the surrounding shoal with sediment and how long this will take before it is colonized by the invertebrates.

The pilot will be monitored for a period of 3 years. Each year a progress report is issued. (available in Dutch and English)

### Status

Now, one and a half year after construction the first results look promising: The nourishment is relatively stable and sediment that became mobile has fed the shoal in North easterly direction. The invertebrates slowly recolonize the sand.

### Shellfish reef

#### Project

A promising idea is the reducing of the intertidal erosion, creating a reef in the wave zone of an intertidal flat to fixate the flat edges. The reef can be made of traditional materials (stone, cement, etc.), but the pacific oyster might do the job as well. Pacific oysters form natural reefs that trap sediment and have the capacity to grow with sea level rise.

#### Aim

This reef will reduce the direct wave attack and will prevent erosion.

### Status

The challenge is to provide the oysters with a surface they can settle on. In the shellfish reef experiment baskets with oyster shells are placed on two locations to find out if the oyster larvae prefer such a surface to grow on. A small testing of the baskets was started in 2009. In July 2010 the baskets will be placed on the definite test site.

### Hanging beaches at Schelphoek

#### Project

The hanging beaches consist of a series of hard constructions embedded in the flats (see picture below). These hard edges are applied on the isolines of flats e.g. every 25 to 30 centimetres.

#### Aim

The construction doesn't prevent erosion directly, but retains the sand. It can be made of stone or sand compacted with cement. This results in a landscape with a stairwaylike relief and ensures foraging possibilities for birds (waders) as well as the wave reducing function for the dike.

### Status

A pilot is planned to test if the hanging beach structure is capable of retaining the sand in the intertidal flat. This pilot will be conducted in 2011.