

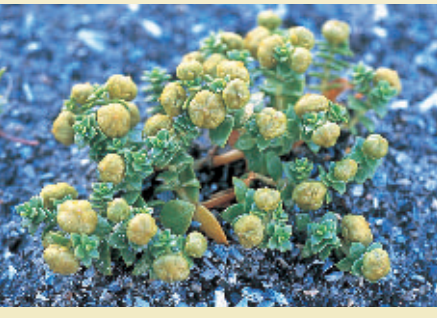
# Welcome TO 'THE BAY OF HEIST' NATURE RESERVE

photos: Michel Decker - Koen Maréchal



## Nature our concern

ment of plants like *sea rocket*, *prickly saltwort*, *sea sandwort* or *Babington's orache* is the first step towards the formation of a new dune. This vegetation acts as a sand trap, which gives new species like *sea couch* a chance to establish themselves.



Sea sandwort

*Sea couch* is a very special type of grass: it tolerates salt water and does not stop growing when covered with sand. Because of this sand-fixing ability *sea couch* is a vital link in natural dune formation. When these 'embryonic dunes' or 'low *sea couch* dunes' subsist and continue to grow, fresh water, originating from precipitation, starts to accumulate in the sandy dune. Once the dune has grown to such an extent that the plant roots are out of the reach of the salty seawater, the vitality of *sea couch* decreases, thus enabling another type of grass — *marram* — to grow. However, this depends on there being a sufficient supply of fresh sand, which is no longer the case in the larger part of 'The Bay of Heist'. Where dead stalks of *sea couch* or *marram* are covered with sand, fungi like the charming *Psathyrella ammophila* grow. Here also scanty, low, mossy and herbaceous vegetation may develop: the grey dune. Besides typically low flora such as *biting stonecrop*, *little mouse-ear*, *dark-green mouse-ear*,



Caterpillars of the cinnabar Twisted moss Sea buckthorn

## MORE INFORMATION

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The Nature Division of the Ministry of the Flemish Community is responsible for the preparation and implementation of Flemish nature policies and the management of nature reserves owned by the Flemish Region. The Nature Division also provides financial assistance for the purchase and management of land by recognised nature associations.

## SITUATION



- 1 Fonteinjes
- 2 'The Bay of Heist'
- 3 Sashul
- 4 Vuurtorenweiden
- 5 Keiputten van Heist
- 6 Palingpotweiden
- 7 Willemspark
- 8 Park 58
- 9 Golf course
- 10 Blinkaartbos (Brabantse Panne)
- 11 Inner dunes of the old Hazegraspolder
- 12 Zwinbosjes
- 13 Zwin
- 14 Dievegat
- 15 Reygaertsvliet (De Vrede)
- 16 Verdronken zware polder

## REGULATIONS

In every Flemish nature reserve it is forbidden to disturb the peace, to practise sports or play games, to trap or kill animals (including fish and worms) or to destroy nests. This nature reserve is managed by the Nature division of AMINAL in accordance with Flemish and European legislation on nature conservation. The main rules governing public access to the nature reserve are displayed at the entrances. The flora and fauna in 'The Bay of Heist' nature reserve are very fragile. In order to protect this valuable wildlife, we ask visitors to abide by the following code of conduct:

- DO NOT PICK OR DAMAGE PLANTS
- DO NOT DISTURB ANIMALS
- KEEP TO THE PATHS
- DO NOT LIGHT FIRES
- DO NOT DROP LITTER
- DO NOT DIG HOLES
- DOGS ARE NOT ADMITTED
- MOTOR VEHICLES PROHIBITED
- DO NOT SET UP WINDSHIELDS OR PARASOLS

During the breeding season (1 April-31 July), visitors must keep to the central footpath and the boardwalk along the groynes. Outside the breeding season walkers are free to roam anywhere in the nature reserve, with the exception of the bird resting zones (\*). The footpaths and resting zones are shown on the map.



The Bay of Heist is a Flemish nature reserve. Because of the presence of 22 October 1997 a Ministerial Decree designated 'The Bay of Heist' as a Flemish nature reserve. Because of the presence of Government decree designated most of the beach a 'protected dune area' under the Dunes Decree, then on 22 October 1997 a Ministerial Decree designated 'The Bay of Heist' as a Flemish nature reserve. Because of the presence of very rare biotic communities — the only examples of their kind anywhere on the Flemish coast, or indeed even on an international scale — 'The Bay of Heist' was designated a special conservation area under the European Directive on the conservation of natural habitats and wild fauna and flora.

## DUNE FORMATION IN ACTION

Pioneer salt marsh vegetation: annual seabite and glasswort



Halophytic salt marsh vegetation developed in this muddy and higher up, *sea meadow grass*, *cord-grass* and *sea purslane*. When, in the autumn of 2001, as a consequence of storm tides, a new tidalway or 'mud' broke through the central sand ridge, a large part of the salt marsh was rubbed off and reduced to a bare, wet foreshore or 'kille'. However, this was by no means the end of the evolution, as dune formation has started again in this sub-area.

'Zwin' — joined up with the sea during the summer of 2001 reserve. This elongated tidal channel — known in Dutch as a sand ridge in and out of the basin-shaped central part of the high tide, the sea flowed with varying intensity behind this seaward side. This sand ridge increased in height considerably between 1998 and the autumn of 2001. During the spring sand ridge stretches out straight across the beach, from east to west, with intertidal beach to the landward as well as the which is continuously being fashioned by sea and wind. A

## SHORELINE, TIDEWAYS AND SALT MARSHES

## 'THE BAY OF HEIST' NATURE RESERVE

A deposit belt of seaweed clusters, shells, bird carcasses, driftwood and lumps of peat forms along the high-water line. On most Flemish beaches this 'floodmark' is cleared away, but not at 'The Bay of Heist'. This is quite fortunate, as these floodmarks, after being covered up with sand, provide a seabed for the germination of seeds of (often annual) pioneer plant species which are washed ashore. The establish-

# FLEMISH NATURE RESERVE 'THE BAY OF HEIST'

*rue-leaved saxifrage* and *striated catchfly*, stronger plants also develop in the dune, such as *sea holly*, *sea spurge* – a southern species which is here at the northernmost point of its distribution range – *pale goat's beard*, *beaked hawk's beard* and the maritime variety of *perennial sow-thistle*.



Annual seablite      Sea aster

At storm and spring tide seawater penetrates far into the dune, and between two high tides a salt crust may occur on the soil of these small tidal inlets. Elsewhere one might find rust spots, indicating a seepage of freshwater from the dune. In this particular environment – with alternating fresh- and saltwater, humidity and drought – a special salt-tolerant vegetation thrives, with species such as *buck's-horn plantain*, *Danish scurvy-grass*, *sea plantain*, *sea arrow-grass*, *wild celery*, *lesser sea spurrey*, *common centaury*, *knotted pearlwort*, *sea milkwort*, *hard-grass*, *sea fern-grass*, and the most eye-catching insect-tempter of late summer, *sea aster*.

## BIRDS OF THE BAY

Each type of vegetation attracts very specific animals. The dunes are the breeding place and habitat of several endangered songbird species, such as the *crested lark*, the *meadow pipit* – regularly demonstrating its parachute-like flight – and the *Northern wheatear*, a nice small Turdididae which breeds in rabbit-holes. The *partridge* (dune) and the *shore lark* (high-water mark and salt marsh) find an ideal biotope here; and where the top of the beach is littered with a layer of shells, the *Kentish plover*, the *great ringed plover* and *little tern* feel on top of the world. The rarity of this type of habitat is also the reason why these species are endangered at international level and deserve to get a chance in 'The Bay of Heist', where they have all started to breed in varying numbers. The *Kentish plovers* find their food in the muddy 'zwins' and in the surf. During the winter half-year they migrate to warmer climes and are replaced by *sanderling*, *dunlin* and *grey plover*. The *dark-bellied Brent goose* is a regular winter visitor. Bird species with a year-round presence are the *oystercatcher*, *common redshank* and *common shelduck*. Like the *Northern wheatear*, the common shelduck breeds in rabbit burrows. Whereas plovers find their food (small crustaceans and insects) by sight, the *oystercatcher* uses its long beak to probe sand and silt for bivalve molluscs such as cockles and shells or lugworms.



Little tern      Kentish plover

## A LIVING BEACH

The dunes, mud flats and salt marshes and the transition zone between salt marshes and dunes are not the only very special areas of 'The Bay of Heist'. The wet portion of the beach and the lowest part that is flooded by the sea for most of the year also support a very particular fauna. Large colonies of *Pygospio elegans*, *Spio filicornis* and *Spiophanes bombyx* thrive at the low-water line. This part of the beach and the shallow sea adjoining 'The Bay of Heist' are an important spawning and nursery area for many fish species

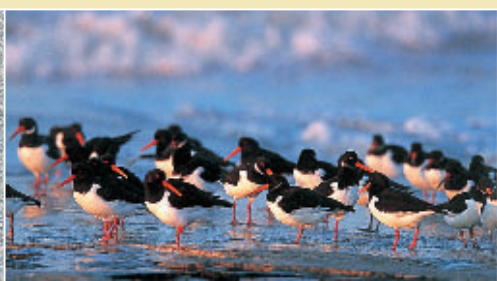
such as *sandeel*, *plaice* and *flounder*, which only occur in comparable densities in the neighbourhood of Bray-Dunes (France). The *common brown shrimp*, *Corophium* (amphipod) and various even rarer species of shrimp also occur in large numbers. This abundant food supply attracts a lot of water- and seabirds, such as the *common tern*, *sandwich tern* and *little tern* in summer, the *great crested grebe*, *common eider* and *red-breasted merganser* during the winter half-year, and the *great cormorant* all year round. The *common seal* and the *grey seal* are regularly seen off 'The Bay of Heist', and the *common seal* occasionally takes a rest along the coastline.

## MANAGEMENT

The management plan for 'The Bay of Heist' nature reserve was drawn up by the Department of Biology of the University of Ghent and approved by ministerial decree of 13 July 2000. Up to now nature management has been restricted to the maintenance of tranquillity, the prevention of damage to vegetation, the removal of brushwood branches along the eastern groyne and the elimination of *white melilot*, an invasive green manure crop. The narrow-leaved *ragwort*, another exotic plant, originating from Southern Africa, is now being removed. In the future, ecological engineering measures could be taken to preserve some biotopes containing extremely rare animal species. The management of 'The Bay of Heist' will have to continuously adapt to a very dynamic natural environment, the beach!



Lugworm



Oystercatchers