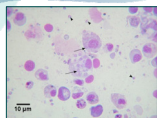


Checklist for aquatic alien species in the Belgian part of the North Sea and adjacent estuaries

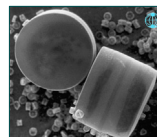
Single-cell organisms



© Susan Bower, Fisheries and Oceans Canada

Bonamia ostraera - 1979

Algae



© Mona Hoppenrath

Antithamnionella spirographidis - 1983

Antithamnionella ternifolia - 1995

Codium fragile - 1998

Coscinodiscus wailesii (picture) - 1977

Odontella sinensis - 1904

Polysiphonia harveyi - 2000

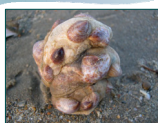
Polysiphonia senticulosa - 2001

Sargassum (Bactrophyucus) Teretia muticum - 1972

Thalassiosira punctigera - 1993

Undaria pinnatifida (picture) - 1999

Molluscs



© Filip Nuytens

Crassostrea gigas - 1981

Crepidula fornicata (picture) - 1911

Ensis directus - 1987

Mercenaria mercenaria (picture) - 1933

Mya arenaria - before 1600

Mytilopsis leucophaeta - 1835

Petricola pholadiformis - 1899

Potamopyrgus antipodarum - 1927

Psilothero megotara - cryptogenic

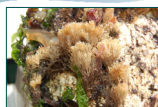
Rangia cuneata - 2005

Teredo navalis - cryptogenic



© FAO - Randy Newman

Bryozoans



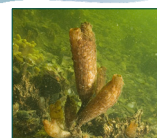
© Hans De Blauwe

Bugula simplex - 2000

Bugula stolonifera (picture) - 1997

Tricellaria inopinata - 2000

Sea squirts



© Peter H. van Bragt

Aplidium glabrum - ?

Botrylloides violaceus - 2004

Diplosoma listerianum - 2005

Molgula manhattensis - 1976

Styela clava (picture) - 1986

Fish



© FAO

Micropogonias undulata - 1998

Vascular plants



© Carl Van Colen

Spartina townsendii var. *anglica* - 1920-1930

Cnidarians



© Andrew Cohen, SFEI

Cordylophora caspia - 1905

Garveia franciscana - 1962

Haliplanella lineata (picture) - 1998

Mnemiopsis leidyi - 2007

Nemopsis bachei - 1996

Worms



© Leslie Harris, NHMLAC

Anguillicola crassus - 1985

Ficopomatus enigmaticus (picture) - 1952

Marenzelleria wreni - 1996

Tubificoides heterochaetus - 1953

Arthropods



© Andrew Cohen, SFEI

Acartia (Acanthacartia) tonsa - 1967

Balanus amphitrite (picture) - 1996

Balanus improvisus - 1895

Callinectes sapidus (picture) - 1981

Caprella mutica - 1998

Chelicorophium curvispinum - 1981

Elminius modestus - 1950

Eriocheir sinensis (picture) - 1933

Eurytemora americana - 1969

Gammarus tigrinus - 1995

Hemigrapsus penicillatus - 2003

Hemigrapsus sanguineus - 2006

Hemimysis anomala - 1999

Incisocallope aestuarii - 1991

Megabalanus coccopoma - 1997

Megabalanus tintinnabulum - 1998

Melita nitida - 2003

Monocorophium sextonae - 2000

Mytilicola intestinalis - 1952

Orchestia cavimana - 1900

Palaemon macrrodactylus (picture) - 2004

Rhithropanopeus harrisi - 1985

Telmatogiton japonicus - 2005

Species included in the list:

- ✓ All known non-indigenous species from the marine and brackish waters in the study area with established populations, starting from 1492 (=baseline)
- ✓ Cryptogenic species from the study area
- ✓ Species introduced intentionally or unintentionally by man

Species not on the list:

- ✓ Vagrant species
- ✓ Fresh water species
- ✓ Species arriving in the study area by natural dispersion, e.g. as a consequence of climate change

Available at:

www.vliz.be/NL/cijfers_beleid/Niet_inheemse

(only in Dutch)

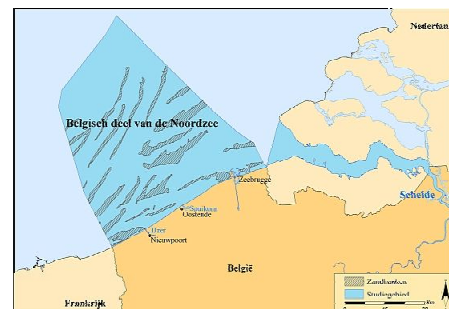
Species information brochures



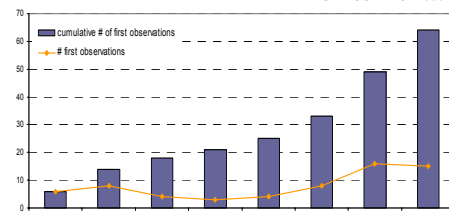
VLIZ alien species consortium

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- ✓ **Flemish Government; Agriculture and Fisheries; Institute for Agricultural and Fisheries Research; Fisheries Research Domain (ILVO)**
Kristian Hostens, Jan Wittoeck, Karl Van Ginderdeuren

Study area



Since 1492...



- ✓ Strong increase in 'first observations' from 1970's onwards
- ✓ Doubling of 'first observations' from 32 to 64 between 1990 and 2009
- ✓ At this moment (May 2009): total of 64 observed alien species in the Belgian part of the North Sea and adjacent estuaries