

Alien macrobenthic species in the Sea Scheldt and its tidal tributaries (Belgium)

Piesschaert F., Soors, J., De Regge, N., Speybroeck, J. & E. Van den Bergh - INBO

The Sea Scheldt comprises the brackish (Belgian-Dutch border to Burcht) and fresh water part (Burcht to Ghent) of the macrotidal Scheldt estuary. The port of Antwerp is situated in the brackish part of the river. Brackish harbour regions are considered particularly susceptible to introductions, because the diversity of native species is usually low and the import rate of new species (e.g. by ballast water) is high. Canals, inland navigation and active introduction are other possible ways for colonisation. Although there is no specific research program for exotic species in the Sea Scheldt and its tidal tributaries, they are regularly encountered during the monitoring campaigns for benthic infauna, as by-catch in the monitoring campaigns for migratory fish, on artificial substrates used for monitoring glass eel migration or on buoys.



Buoys (left) and glass eel substrate (right), two examples of artificial substrates sheltering many exotic species

The table shows a non exhaustive list of 27 alien macro-benthic species that we encountered in the intertidal or sub-tidal zone since 1993. The tanaid *Sinelobus stanfordi* was found for the first time in Europe. The isopod *Synidotea laevidorsalis* is new for NW-Europe. The Oligochaet *Monopylephorus limosus* and the Turbellarian *Dendrocoelum romanodanubiale* are recent adds to the list but still need to be confirmed. Other exotic species such as the bivalve *Rangia cuneata* and the crab *Callinectes sapidus* have been reported by other researchers. Most alien species in the Sea Scheldt originate from the NW-Atlantic, but the NW-pacific and Ponto-Caspian region are also important source areas.

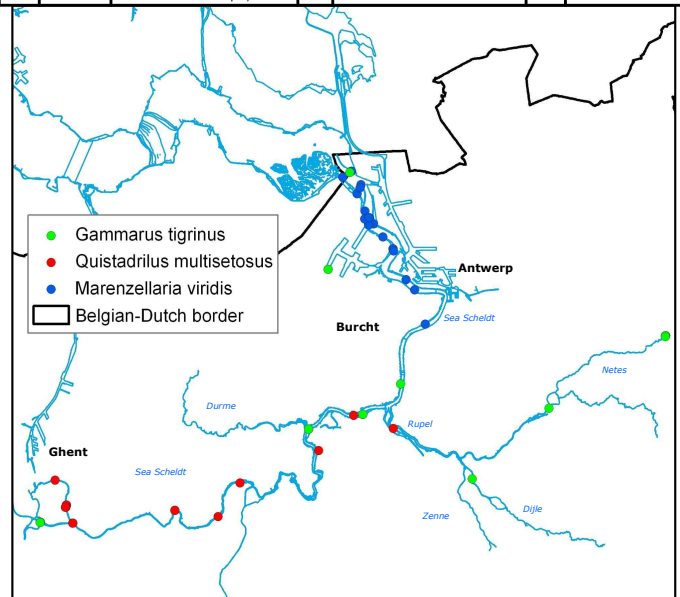


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		Species	Salinity zone	Occurrence	First record Sea Scheldt	Natural distribution		
1	Amelida	Hirudinea	<i>Dugesia tigrina</i>	F	single catch near Melle (Kwatrecht)	2008	N-America	
2			<i>Psammoryctides moravicus</i>	F	rare (Kwatrecht, Heusden)	2008	Ponto-Caspian	
3		Oligochaeta	<i>Quistadrilus multisetosus</i>	F	common, mainly in the upper most part of the estuary but also found near Rupel mouth	1996	N-America	
4		Polychaeta	<i>Marenzelleria viridis</i> (=viridis)	B/F	not uncommon in brackish zone but at low densities	1995	NW-Atlantic	
5	Arthropoda	Diptera	<i>Dohrniphora cornuta</i>	F	single catch in at that time heavily polluted Rupel, species of sewage, compost, ...	2005	subtropical	
6	Amphipoda		<i>Corophium curvispinum</i>	B	single catch on buoy close to Belgian-Dutch border	1998	Ponto-Caspian	
7			<i>Crangonyx pseudogracilis</i>	B/F	local	2007	N-America	
8			<i>Dikerogammarus villosus</i> (Ponto-Caspian killer shrimp)	B	single catch on buoy	1999	Ponto-Caspian	
9			<i>Gammarus tigrinus</i>	B/F	very common; in very large densities on glass eel substratum	2005	W-Atlantic	
10			<i>Incisallophe aestuarius</i>	B	single catch on buoy near Galgeschoor	2002	N-America	
11			<i>Melita nitida</i>	B	local, also on buoys	2000	N-America	
12		Decapoda		<i>Orchestia cavimana</i>	B/F	probably common	1927	Ponto-Caspian
13				<i>Atyaephyra desmarestii</i>	F	single catch on glass eel substratum	2007	Mediterranean
14				<i>Eriocheir sinensis</i> (Chinese mitten crab)	B/F	very common throughout Sea Scheldt, sometimes in large numbers, frequent by-catch in fykes	1933	NW-Pacific
15				<i>Hemigrapsus takanoi</i> (Brush-clawed shore crab)	B	probably common	2007	NW-Pacific
16		<i>Palaemon macrodactylus</i>	B	local	2003	NW-Pacific		
17		<i>Rhithropanopeus harrisi</i> (White-tipped mud crab)	B	common, also on buoys	1985	NW-Atlantic		
18	Isopoda		<i>Synidotea laevidorsalis</i>	B	local	2005	E-Asia	
19	Tanaidae		<i>Sinelobus stanfordi</i>	B	single catch on harbour dock wall, but more widespread	2007	southern hemisphere	
20	Mollusca	Bivalvia	<i>Corbicula fluminea</i> (Asian clam)	F	single catch at Uitbergen	2008	S and E-Asia, Africa	
21			<i>Dreissena polymorpha</i> (Zebra mussel)	F	local	2008	Ponto-Caspian	
22			<i>Mya arenaria</i> (Soft-shelled clam)	B	common in brackish zone	?	NW-Atlantic	
23			<i>Mytilopsis leucophaeta</i> (Dark false mussel)	B	single catch on buoy	1835	NW-Atlantic	
24			<i>Petricola pholadiformis</i> (American piddock)	B	two catches at Groot Butenschoor	1995	NW-Atlantic	
25	Gastropoda		<i>Physella acuta</i> (European physa)	F	common?	2007	S-Europe, Africa	
26			<i>Potamopyrgus antipodarum</i> (New Zealand mudsnail)	B/F	two catches on harbour dock wall and on plastic bottle; probably widespread	1927	New-Zealand	
27			<i>Ferrissia fragilis</i> (N-American freshwater limpet)	F	local	2007	N-America	



Distribution patterns of a brackish (*M. viridis*), fresh water (*Q. multisetosus*) and indifferent (*G. tigrinus*) species (only based on own catches)