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# Coleoptera from marine habitats

by Guy HAGHEBAERT

## Abstract

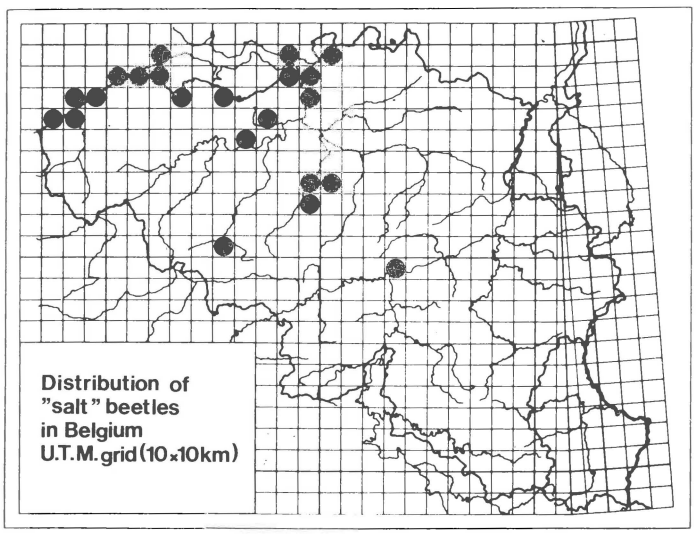
Coleoptera occupy three rather distinct seashore habitats: the intertidal zone, sandy beaches and salt-mudflats. In our fauna, about 70 species are coastdwellers. More than 50% belong to the *Carabidae* and *Staphylinidae*, the latter being predominant.
The species are classified in three major groups following ecological factors: halobiontic, halophilous and haloxene species. Most typically coastbeetles are found beneath wrack and algae, a small group are carnivorous and phytophagous and only one species is known to be parasitic.
Most of the species are very local or rare and only a few can be recognized as common.
**Key-words:** Coleoptera-marine habitats-chorology-Belgium.

## Résumé

Les coléoptères habittent trois biotopes côtières quelque peu différents: la zone intertidale, les plages sablonneuse et les plaines salantes et boueuses.
Environ 70 espèces des habitants du litoral sont indigènes pour notre faune. Plus de 50% sont des Carabidae et surtout des Staphylinidae. Ces espèces sont classées, suivant des facteurs écologiques, en trois groupes principaux: espèces halobionte, halophiles et haloxenes. La plupart des coléoptères du littoral se trouvent sous les alluvions, un petit groupe est carnivore et phytophage et une espèce seulement est connue comme parasite.
La plupart de ces espèces sont très localisées ou rares et quelques unes sont considerées comme communes.
**Mots-clés:** coléoptères-biotropes maritimes-choroloie-Belgique.

## Introduction

The relative large number of coast Coleoptera are according to ecological factors classified in three major groups: halobiontic, halophilous and haloxene species. Haloxene species are only occasionally coastdwellers, they have normally other habitats. The real coastbeetles are halobiontic and halophilous species. Halobiontic organisms need salt, while halophilous species may also live in saltless situations.
Most strictly marine beetles spend their whole life cycle within the intertidal zone. In contrast, the *Diptera* - also successful in marine environments - are mostly aerial and short-lived as adults. The major problems faced by insects in the intertidal zone are to obtain an adequate supply of oxygen when they are submerged and to maintain their position on the shore despite waves and tidal movements.
The beaches and salt-mud marshes are marked by two master habitat factors: they are covered by the higher seatide and found only there where the sea is quiet enough for the seasilt to rest. In this way the soil varies from pure sand, clayeysand to pure clay. These conditions are extreme so that these habitats bear a characteristic halophilous vegetation and a typical insectfauna, mostly Coleoptera and Diptera.
Thanks to the dominating habitat factors, climatic and biotic influences are of minor importance, so that the salt vegetation and entomofauna in North-western Europe have a rather uniform character.
The lenght of the Belgian coast is only 67 km and in this way the shortest of all european coastborders. The zone of dunes, covering an area of about 5000 ha is only in small places kept undamaged.
The most important sites at our coast are the Westhoek situated near the French border where dunes are dominating, the outlet of the river the Yzer and the Zwin plain at Knokke near the Dutch border.
The two Belgian natural reserves the Yzermonding at Nieuwpoort and the Zwin at Knokke are of a very different kind eventhough they both show a specific character, they however are inhabited by a very interesting Coleoptera fauna.
The influence of the Northsea tides at the outlet of the Yzer is very important: about three quarters of the area are under water when it is high tide. Otherwise, the difference between low and high tide is hardly visible in the Zwin. Only in case of springtide the entire plain is overflowed. While the Zwin is overflowed by the sea, the water at the outlet of the Yzer can be qualified as brackish, which gives a big difference in the content of salt.
Coast Coleoptera have been found in the following inland regions: Sint Jan-in-Eremo (O. Vl.), Durme area (O. Vl.) Land van Saeftinge, Scheldemonding (Ant.) and a few small biotops in the centre of the country (see map). Belgium most important brackish watersaltings are "Het Schor Ouden Doel" (Doel- Linkeroever) and corresponding with "het Verdronken land van Saef-




tinge", "Het Groot Buitenschoor" at Zandvliet and het "Galgenschoor" at Lillo situated north of Antwerp on the right side of the Scheldebanks. The soil in these regions is more or less rich in salt.

## Biological notes

Species of the Carabidae genus *Dyschirius* live together with their larvae, in most cases, in association with *Bledius* and *Heterocerus,* on which they prey. There are 19 *Bledius,* 3 *Trogophloeus,* 2 *Platystethus* and 7 *Heterocerus* species known, occurring together with *Dyschirius.*
*Dyschirius obscurus* is found together with *Bledius fergussoni, B. fuscipes, B. opacus, B. subterraneus, B. tricornis and Heterocerus hispidulus.*
*Dyschirius salinus is found with Bledius fergussoni, B. diota, B. furcatus, B. opacus, B. germanicus, B. tricornis, B. unicornis, Trogophloeus schneideri, Heterocerus flexuosus* and *H. maritimus.*
*Dyschirius impunctipennis* is found with *Bledius fergussoni, B. fuscipes, B. opacus, B. pallipes* and *B. terebrans.*
*Dyschirius chalceus* is found with *Bledius diota, B. furcatus, B. germanicus, B. tricornis, Trogophloeus schneideri* and *Heterocerus flexuosus.*
About 1% of the 30.000 described Staphylinid beetles are known to be confined in seashore habitats, where most of the species occur beneath wrack. Certain species are quite difficult to identify. Others of which the biology is badly known and which are captured in small numbers and in few localities, may be the reasons why these species are absent in many faunistical inventories. In this contribution five staphylinid species are mentioned for the first time in Belgium.
*Micralymma marina,* living on the wave breakers in the intertidal zone, prey on marine *Chironomidae* larvae which live together in algae between the rocks.
*Bledius* species feed on algae that grow just beneath the soilsurface. These are greenalgae (*Oocystis* sp.) and blue- greenalgae (*Oscillatoria, Anabaena* sp.). The tunnels - made by the adults - are used by the larvae as breeding-place. These also feed on algae, collected and placed in the burrows by the females of certain species. Several species of Aleocharinae are known to be parasitic. Only one belgian seashore species Aleochara algarum parasites on puparia of certain Diptera: *Orygma luctuosum* (MEIGEN) (Sepsidae), *Coelopa frigida* (FABRICIUS) and *Coelopa pilipes* (HALIDAY) (Coelopidae).
In Belgium, all the coastal *Hydraenidae* and *Heteroceridae* species live either in saltmarsh areas in wet mud or on clayey or sandy soil on the banks of pools, feeding on vegetable matter.
Most of the typically coastbeetles occur on the beaches together with their larvae in or beneath wrack of green and brown algae. Among those are found many *Bembidion*, most Staphylinidae, some *Cercyon, Ptenidium punctatum, Brachygluta helferi, Phaleria cadaverina* and *Saprinus maritimus.* The great number of species in the wrackbeds shows that the wrackbeds are microbiotops with a specialized character.
The sanddunes are the habitat of *Aegealia arenaria, Phylan gibbus, Anthicus bimaculatus, Psylliodes marcida* and *Otiorrhynchus atroapterus,* living on dung, plantroots and vegetable detritus.
A small group of phytophagous coastspecies live exclusively on halophytous plants: *Psylliodes marcida* on *Cakile maritima* and *Crambe maritima,* and *Apion limonii* on *Statice limonium.*
In this contribution the group with haloxene species is not mentioned. Also a number of sablicolous species (*Cicindela maritima, Polyphylla fullo, Geotrupes niger,* a.o.) ar not discussed because they are not strictly committed with the seashore.
The result of this study is based on the entomological collections of the K.B.I.N. and on recent fieldwork.

## Distribution of the species

CARABIDAE

*Dyschirius chalceus* (ERICHSON, 1837)
Halobiontic species only found once in Belgium: Sint Jan-in-Eremo, 7.VII.1949 (G. FAGEL, coll. K.B.I.N.).

*Dyschirius impunctipennis* (DAWSON, 1854)
Halophilous species known from de Yzermonding (Nieuwpoort), Westende and Oostende.

*Dyschirius obscurus* (GYLLENHAL, 1827)
Halophilous. Known from De Panne and the Yzermonding (Nieuwpoort).

*Dyschirius salinus* (SCHAUM, 1843)
Halobiontic species known from De Panne, the Yzermonding (Nieuwpoort) and the Zwin (Knokke).

*Bembidion (Philochthus) aeneum* (GERMAR, 1824)
Halobiontic species known from the Zwin (Knokke) and inland mudflats at the Antwerp and Durme area.

*Bembidion (Notaphemphanes) ephippium* (MARSHAM, 1802)
A halobiontic species known from the Zwin (Knokke), the Yzermonding (Nieuwpoort), Oostende and the Scheldebekken.

*Bembidion (Diplocampa) fumigatum* (DUFTSCHMID, 1812)
Halophilous species with a large distribution in low Belgium.

*Bembidion (Philochthus) iricolor* (BEDEL, 1879)
Halobiontic species only known from the Scheldebekken area.

*Bembidion (Cillenus) laterale* (SAMOUELLE, 1819)
Halobiontic species with a scarce distribution on the Belgian coast: Yzermonding (Nieuwpoort) (found in mudflats in large numbers) and Scheldebekken area.

*Bembidion (Peryphus) maritimum* (STEPHENS, 1839)
Halophilous species, common on the Belgian coast, inland mudflats and Scheldebekken.

*Bembidion (Emphanes) minimum* (FABRICIUS, 1792)
A common halophilous species with a large distribution in Belgium.

*Bembidion (Actedium) pallidipenne* (ILLIGER, 1801)
Halophilous species known from the whole Belgian coast area.

*Tachys scutellaris* (STEPHENS, 1828)
Scarce in Belgium: De Panne, the Zwin (Knokke) and the Scheldebekken area.

*Pogonus chalceus* (MARSHAM, 1802)
Halobiontic species from Europe. Not rare at the Belgian coast and at the Scheldebekken area.

*Pogonus littoralis* (DUFTSCHMID, 1812)
Coast species from south and western-Europe and the Black sea. Known from the Yzermonding (Nieuwpoort), Oostende and the Zwin (Knokke).

*Pogonus luridipennis* (GERMAR, 1822)
Halobiontic species from the coasts of Europe, North-Africa and Western-Siberia. Known from the Zwin (Knokke), Oostende and the Yzermonding (Nieuwpoort).

*Amara (Curtonotus) convexiuscula* (MARSHAM, 1802)
A species known from the whole coast area and inland salt- mudmarshes (Scheldebekken, Durme region).

*Anisodactylus poeciloides* (STEPHENS, 1828)
Halophilous species from Europe and North-Africa. Not rare on our coast and inland mudflats (Scheldebekken, Durme region).

*Dicheirotrichus gustavii* (CROTCH, 1871)
A common halobiontic species on the coast. Also at inland mudflats (Scheldebekken), and some scarce records from low- Belgium.

*Dicheirotrichus obsoletus* (DEJEAN, 1829)
A halobiontic species, common on our coast, Scheldebekken and Durme area.

HYDROPHILIDAE

*Cercyon depressus* (STEPHENS, 1829)
Widespread at seashores but scarce in Belgium: Wenduine, 21.VII.1922 (L. FRENNET, coll. K.B.I.N.), Hoboken (P. ROELOFS, col. K.B.I.N.).

*Cercyon littoralis* (GYLLENHAL, 1808)
A halobiontic species, at the whole Belgian coast area very abundant.

*Enochrus bicolor* (FABRICIUS, 1792)
In brackish water near coasts where it tolerates lower salinities: Heist, Knokke, Oostende, Zandvliet, Antwerpen, Sint Ghislain.

HYDRAENIDAE

*Ochthebius auriculatus* (REY, 1885)
A rare halobiontic species, also occuring in pools far from the coast. Only known from Nieuwpoort and the Zwin (Knokke).

*Ochthebius exaratus* (MULSANT, 1844)
Also a rare halobiontic species, only known from Nieuwpoort, Zandvliet, Calloo, Furnes.

*Ochthebius marinus* (PAYKULL, 1798)
Though it is clearly halophilic, it apparently tolerates very low salinities, and may occasionally also taken in fresh water far from the coast: Nieuwpoort, Oostende, Knokke and Eupen.

*Ochthebius nanus* (STEPHENS, 1829)
Halophilous species known from England, the Netherlands and Belgium: Oostende, Nieuwpoort, Westende, Antwerpen, Hoboken, Overmeire, Audergem.

PTILIIDAE

*Ptenidium punctatum* (GYLLENHAL, 1827)
Scarce in Belgium, but sometimes in large numbers in wrack: Nieuwpoort, Lillo.

DYTISCIDAE

*Coelambus lautus* (SCHAUM, 1843)
A scarce halophilous species known from Knokke-Heist (Hoekevaart) and Lillo (Groot Buitenschoor).

*Coelambus parallelogrammus* (AHRENS, 1812)
Halophilous species known from De Panne, Zeebrugge, Heist, Lillo and Bosvoorde.

LEIODIDAE

*Leiodes ciliaris* (SCHMIDT, 1841)
Lives on mushrooms that grown on the roots of dunegrasses. Only found once in Belgium: De Panne, 28.VIII.1937 (E. DERENNE coll. K.B.I.N.).

STAPHYLINIDAE

*Omalium riparium* (THOMSON 1856)
The most common littoral Omalium species in Europe. Lives beneath wrack and carrion at the beach: Den Haan, Heist.

*Omalium rugulipenne* (RYE, 1864)
A rare halobiontic species known from Nieuwpoort and Westende.

*Micralymma marina* (STROM, 1783)
Amphi-atlantic species with a large distribution in Europe, North-America and Canada. Only three records in Belgium: Nieuwpoort, Raversijde and Mariakerke.

*Bledius (Elbidus) bicornis* (GERMAR, 1822)
A very local halobiontic staphylinid only known from Nieuwpoort: 10.VII.1924 (F. GUILLEAUME, coll. K.B.I.N.).

*Bledius (Elbidus) diota* (SCHIODTE, 1866)
Known from the coast and inland salt flats: Knokke (Zwin), Hamme St. Anna (Durme region), Ath.

*Bledius (Cotysops) fergussoni* (JOY, 1912)
Known from the whole coast area and not rare at inland salt- flats. The most common coast frequenting Bledius species.

*Bledius (s.str.) germanicus* (WAGNER, 1935)
A widespread but scarce species from our coast and inland mudflats: Zeebrugge, Zwin (Knokke), Sint Joris, Gistel, Sint Jan-in-Eremo, Zelzate.

*Bledius (s.str.) unicornis* (GERMAR, 1825)
Very local at the Belgian coast: Nieuwpoort (Yzermonding), Knokke, (Zwin).

*Carpelimus (Taenosoma) foveolatus* (SAHLBERG, 1832)
Halophilous species with a large distribution, but scarce at the coast and inland mudflats.

*Carpelimus (Taenosoma) ganglbaueri* (BERNHAUER, 1901)
Also a halophilous species with a large distribution, but scarce at the coast and inland mudflats.

*Carpelimus (Taenosoma) halophilus* (KIESENWETTER, 1844)
A halobiontic species known from Nieuwpoort, Blankenberge, Lillo, Jette, St. Servais.

*Anotylus maritimus* (THOMSON, 1861)
A halobiontic species, not rare at the Belgian coast: De Panne, Middelkerke, Oostende, Blankenberge, Heist and Knokke.

*Philonthus (s.str.) salinus* (KIESENWETTER, 1844)
One old (doubtfull) record in Belgium: Knokke-Zwin, 26.VI.1911, 1 female (KOLLER leg. coll. K.B.I.N.).

*Cafius xantholoma* (GRAVENHORST, 1806)
The most common of al coast staphylinids. Known from the whole Belgian coastarea.

*Heterothops binotatus* (GRAVENHORST, 1802)
This exclusively maritime species is known from the two border sites of Belgium: Dunkerque (F.-departement du Nord) and Vlissingen (N.-Zeeuws Vlaanderen). May be expected at our coast !

*Quedius (s.str.) simplicifrons* (FAIRMAIRE, 1861)
One recent record from Belgium: Oostende (halve Maan), 6.VII. 1983, 2 females from the var. *rufulus* (Blümml, 1898) (R. SEGERS in litt.).

*Diglotta mersa* (HALIDAY, 1837) belg. n.sp.
Known from the whole coast area, local but sometimes in large numbers; Nieuwpoort, Oostende, Blankenberge, Heist. The species mentioned by SEGERS (l.c.), as *Diglotta* submarina (FAIRMAIRE & LABOULBENE, 1856) from Heist 1935 (P. ROELOFS leg., coll. K.B.I.N.), belongs after verification to D. *mersa*.

*Phytosus balticus* (KRAATZ, 1859)
Halobiontic species that occures on beaches in wrack together with other species of the genus. De Panne, Nieuwpoort, Heist.

*Phytosus nigriventris* (CHEVROLAT, 1843) belg. n.sp.
Only found once in Belgium: Wenduine 21.VII.1922 (L. FRENNET, coll. K.B.I.N.).

*Phytosus spinifer* (CURTIS, 1838)
Known from De Panne, Westende and Nieuwpoort.

*Pseudopasilia testacea* (BRISOUT, 1863) belg. n.sp.
Halobiontic species, only found once in Belgium: Nieuwpoort VIII.1929 (F. GUILLEAUME, coll. K.B.I.N.).

*Brundinia meridionalis* (MULSANT & REY, 1853)
Halophilous species, not strictly committed with the seashore. Known from Zandvliet, Sint-Jan-in-Eremo and Boekhoute.

*Tomoglossa luteicornis ERICHSON, 1837)*
Halophilous species from salt-, mudflats and duneareas. Only found once in Belgium: Ukkel 1.VII.1945 (G. FAGEL, coll.K.B.I.N.).

*Atheta (Halobrecta) algae* (HARDY, 1851) belg. n.sp.
In wrack on beaches. Nieuwpoort, Middelkerke, Oostende.

*Atheta (Halobrecta) flavipes* (THOMSON, 1861) belg. n.sp.
Same habitat like above. Only found once in Belgium: Blankenberge, 21.VIII.1886 (F. GUILLEAUME, coll. K.B.I.N.).

*Atheta (Actophylla) marina* (MULSANT & REY, 1853).
On beaches and inland mudlfats: Oostende, Nieuwpoort, Sint Joris, Lillo, Zandvliet.

*Atheta (Thinobaena) vestita* (GRAVENHORST, 1806)
A halobiontic species, scarce in Belgium: Nieuwpoort, Knokke- Zwin, Lillo, Zandvliet.

*Aleochara (Emplenota) algarum* (FAUVEL, 1862)
Halobiontic species from the intertidal zone, rare in Belgium: De Panne, Nieuwpoort, Lillo.

*Aleochara (Emplenota) grisea* (KRAATZ, 1856)
Halobiontic species only found once in Belgium: Nieuwpoort, 14.IX.1929 (G. VREURICK, coll. K.B.I.N.).

*Aleochara (Emplenota) obscurella* (GRAVENHORST, 1806)
The most common of al marine Aleochara species in Belgium. Known from the whole coast area.

PSELAPHIDAE

*Brachygluta helferi* (SCHMIDT-GOEBL, 1836)
A halobiontic species known from Nieuwpoort, Blankenberge, Knokke, Watervliet and Hoboken.

HISTERIDAE

*Saprinus (Baeckmanniolus) maritimus* (STEPHENS, 1830)
Halobiontic species from the north-sea-coasts. Not rare at the whole Belgian coast area.

SCARABAEIDAE

*Aegealia arenaria* (FABRICIUS, 1787)
A common coprophagous species in our coast dunes.

HETEROCERIDAE

*Heterocerus flexuosus* (STEPHENS, 1828)
A halobiontic species, known from Nieuwpoort, Knokke (Zwin) and Zandvliet.

*Heterocerus maritimus* (GUERIN-MENEVILLE, 1844)
Also a halobiontic species only known from Nieuwpoort: VII. 1935 (G. FAGEL, coll. K.B.I.N.).

*Heterocerus obsoletus* (CURTIS, 1828).
Halophilous species known from Nieuwpoort, Oostende, Assenede, Zelzate and Deurne.

TENEBRIONIDAE

*Phylan gibbus* (FABRICIUS, 1775)
Halobiontic species from the coasts of western and the south of northern Europe. Common in the Belgian dunes.

*Phaleria cadaverina* (FABRICIUS, 1792)
A halobiontic species, known from the whole coast area but not very frequent. In wrack and carrion on beeches.

ANTHICIDAE

*Anthicus bimaculatus* (ILLYGER, 1801)
On the roots of duneplants at the coast and inland dunes: Oostende, Knokke, Kalmthout and Duffel.

CHRYSOMELIDAE

*Psylliodes marcida* (ILLIGER, 1807)
A halobiontic species known from the whole coast area.

CURCULIONIDAE

*Otiorrhynchus (Arammichnus) atroapterus* (DEGEER, 1775)
Known from the whole Belgian coast-dune area.

APIONIDAE

*Apion (Pseudaplemonus) limonii* (KIRBY, 1808)
A local halobiontic species known from De Panne, Nieuwpoort (Yzermonding) and Knokke (Zwin).

| | Halobiontic sp. | Halophilous sp. | Supralitoral zone | Intertidal zone | Beaches | Mudflats | Dunes | Adephagous sp. | Phytophagous sp. | Coprophilous sp. | Necrophilous sp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DYSCHIRIUS CHALCEUS | ★ | | | | | ★ | ★ | ★ | | | |
| DYSCHIRIUS IMPUNCTIPENNIS | | ★ | | | | ★ | ★ | ★ | | | |
| DYSCHIRIUS OBSCURUS | | ★ | | | ★ | | | ★ | | | |
| DYSCHIRIUS SALINUS | ★ | | | | | ★ | ★ | ☆ | | | |
| BEMBIDION AENEUM | ★ | | | | ★ | | | ☆ | | | |
| BEMBIDION EPPHIPIUM | ★ | | | | ★ | | | ★ | | | |
| BEMBIDION FUMIGATUM | | ★ | | | ★ | ★ | ★ | ★ | | | |
| BEMBIDION IRICOLOR | ★ | | | | ★ | ★ | | ☆ | | | |
| BEMBIDION LATERALE | ★ | | | ★ | ★ | ★ | | ☆ | | | |
| BEMBIDION MARITIMUM | | ★ | | | | ★ | | ★ | | | |
| BEMBIDION PALLIDIPENNE | | ★ | | | ★ | ★ | ★ | ☆ | | | |
| TACHYS SCUTELLARIS | ★ | | | ★ | ★ | ★ | | ★ | | | |
| POGONUS CHALCEUS | ★ | | | | ★ | ★ | ★ | ★ | | | |
| POGONUS LITORALIS | ★ | | | | ★ | ★ | ★ | ★ | | | |
| POGONUS LURIDIPENNIS | ★ | | | | ★ | ★ | ★ | ★ | | | |
| AMARA CONVEXIUSCULA | | ★ | | | ★ | | ★ | ★ | | | |
| ANISODACTYLUS POECILOIDES | | ★ | | | ★ | | | ★ | | | |
| DICHEIROTRICHUS GUSTAVII | ★ | | | | ★ | | | ★ | ★ | | |
| DICHEIROTRICHUS OBSOLETUS | ★ | | | | ★ | | | ★ | | | |
| COELAMBUS PARALLELLOGRAMMUS | | ★ | | | | ★ | ★ | ★ | | | |

| | Halobiontic sp. | Halophilous sp. | Supralitoral zone | Intertidal zone | Beaches | Mudflats | Dunes | Adephagous sp. | Phytophagous sp. | Coprophilous sp. | Necrophilous sp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| COELAMBUS LAUTUS | | ★ | | | | ★ | ★ | ★ | | | |
| OMALIUM RIPARIUM | ★ | | | | ★ | | | | ★ | | |
| OMALIUM RUGULIPENNE | ★ | | | | ★ | | | | | | |
| MICRALYMMA MARINA | ★ | | ★ | ★ | | | | ★ | | | |
| BLEDIUS BICORNIS | ★ | | | | | ★ | | | ★ | | |
| BLEDIUS DICTA | | ★ | | | | ★ | | | ★ | | |
| BLEDIUS FERGUSSONI | | ★ | | | ★ | ★ | ★ | | ★ | | |
| BLEDIUS GERMANICUS | | ★ | | | ★ | ★ | | | ★ | | |
| BLEDIUS UNICORNIS | ★ | | | | | ★ | | | ★ | | |
| CARPELIMUS FOVEOLATUS | | ★ | | | ★ | ★ | | | ★ | | |
| CARPELIMUS GANGLBAUERI | | ★ | | | | ★ | | | ★ | | |
| CARPELIMUS HALOPHILUS | | ★ | | | ★ | ★ | | | ★ | | |
| OXYTELUS MARITIMUS | ★ | | | | ★ | | | | | | |
| PHILONTHUS SALINUS | | ★ | | | ★ | ★ | | ★ | | | |
| CAPIUS XANTHOLOMA | ★ | | | | ★ | | | ★ | | | |
| QUEDIUS SIMPLICIFRONS | | ★ | | | | ★ | | ★ | | | |
| DIGLOTTA MERSA | ★ | | ★ | ★ | ★ | | | | ★ | | |
| PHYTOSUS BALTICUS | ★ | | | ★ | ★ | | | | ★ | | |
| PHYTOSUS NIGRIVENTRIS | ★ | | | ★ | ★ | | | | ★ | | |
| PHYTOSUS SPINIFER | ★ | | | ★ | ★ | | | | ★ | | |

| | Halobiontic sp. | Halophilous sp. | Supralitoral zone | Intertidal zone | Beaches | Mudflats | Dunes | Adephagous sp. | Phytophagous sp. | Coprophilous sp. | Necrophilous sp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PSEUDOPASILIA TESTACEA | ★ | | | | ★ | | | | | | |
| BRUNDINIA MERIDIONALIS | | ★ | | | ★ | ★ | ★ | | | | |
| TOMOGLOSSA LUTEICORNIS | | ★ | | | ★ | ★ | ★ | | | | |
| HALOBRECTA ALGAE | ★ | | | | ★ | | | | | | |
| HALOBRECTA FLAVIPES | ★ | | | | ★ | | | | | | |
| ATHETA MARINA | ★ | | | | ★ | ★ | | | | | |
| ATHETA VESTITA | ★ | | | | ★ | ★ | | | | | |
| ALEOCHARA ALGARUM | ★ | | | ★ | ★ | | | | | | |
| ALEOCHARA GRISEA | ★ | | | | ★ | | | | | | |
| ALEOCHARA OBSCURELLA | ★ | | | | ★ | | | | | | |
| CERCYON LITTORALIS | ★ | | | | ★ | ★ | | | ☆ | | |
| CERCYON DEPRESSUS | ★ | | | | ★ | ★ | | | ★ | | |
| ENOCHRUS BICOLOR | ★ | | | | | ★ | ★ | | ★ | | |
| OCHTHEBIUS MARINUS | | ★ | | | | ★ | ★ | | ☆ | | |
| OCHTHEBIUS AURICULATUS | ★ | | | | | ★ | | | ★ | | |
| OCHTHEBIUS NANUS | | ★ | | | | ★ | | | ★ | | |
| OCHTHEBIUS EXARATUS | ★ | | | | | ★ | | | ★ | | |
| SAPRINUS MARITIMUS | ★ | | | | ★ | | | | | ★ | |
| LEIODES CILIARIS | | ★ | | | | | ★ | | ★ | | |
| BRACHYGLUTA HELFERI | ★ | | | | ★ | | | | ★ | | |

| | Halobiontic sp. | Halophilous sp. | Supralitoral zone | Intertidal zone | Beaches | Mudflats | Dunes | Adephagous sp. | Phytophagous sp. | Coprophilous sp. | Necrophilous sp. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PTENIDIUM PUNCTATUM | ★ | | | | ★ | | | | ★ | | |
| HETEROCERUS FLEXUOSUS | ★ | | | | ★ | ★ | | | ★ | | |
| HETEROCERUS MARITIMUS | ★ | | | | ★ | ★ | | | ☆ | | |
| HETEROCERUS OBSOLETUS | | ★ | | | | | ★ | | ★ | | |
| PHALERIA CADAVERINA | ★ | | | | ★ | | | | | | ★ |
| PHYLAN GIBBUS | ★ | | | | | | ★ | | ★ | | |
| ANTHICUS BIMACULATUS | | ★ | | | | | ★ | | ★ | | |
| AEGEALIA ARENARIA | ★ | | | | | | ★ | | | ★ | |
| PSYLLIODES MARCIDA | ★ | | | | | | ★ | | ★ | | |
| OTIORRHYNCHUS ATROAPTERUS | ★ | | | | | | ★ | | ★ | | |
| APION LIMONII | ★ | | | | | ★ | | | ★ | | |

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