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**A CONTRIBUTION TO KNOWLEDGE
OF THE GROUND BEETLES
(INSECTA, COLEOPTERA: CARABIDAE) OF WOLIN ISLAND**

Abstract

In the course of a one-year investigation (17.04–13.09 2007) 2,144 specimens of carabid beetles belonging to 86 species were collected. Of these, 30 species had not previously been recorded on Wolin Island, and *Bembidion (Phyla) obtusum* Audinet-Serville, 1821 is new to the Polish Baltic Sea coast.

All faunistic data on the ground beetles (Coleoptera: Carabidae) were recorded on Wolin Island. A total of 145 species are listed in the table (Tab. 1). The data are based on our own new material (86 species) as well as published materials.

Two of the carabid species noted are legally protected in Poland: *Carabus convexus* and *C. glabratus*.

Some rare species noted are listed on the *Red List of Declining or Endangered Animals in Poland*: *Bembidion obtusum* – CR; *Oodes helopioides* and *Masoreus wetterhallii* – NT; *Carabus convexus*, *Acupalpus exiguus* and *Amara quenseli silvicola* – VU; and *Broscus cephalotes* – DD.

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The presence of some previously recorded species was not confirmed: 9 species known from 160 years ago (*Amara montivaga*, *Agonum thoreyi*, *Asaphidion pallipes*, *Bembidion fumigatum*, *Bembidion stephensi*, *Carabus marginalis*, *Demetrias imperialis*, *Demetrias monostigma* and *Harpalus neglectus*), 2 species from about 100 years ago (*Bembidion transparens* and *Nebria livida*), one species from 70 years ago (*Amara municipalis*) and one from 40 years ago (*Bembidion assimile*).

The probability of occurrence of *Ophonus ardosiacus*, *Ophonus rupicola*, *Harpalus honestus* and *Bembidion quadripustulatum* is highly questionable, and the report of *Ophonus stictus* is incorrect.

Keywords: epigeic beetles, Carabidae, Wolin Island, fauna

Introduction

Research on various groups of insects in the vicinity of Świnoujście (the islands of Wolin and Usedom) has been conducted since the mid-nineteenth century. At the beginning of the 21st century studies of the fauna and ecology of ground beetles of forests (Leśniak 2003) and littoral biocenoses (Wolender, Zych 2005) appeared. A critical study of the data in the older literature was carried out by Wolender and Zych (2006). On the island of Wolin the presence of a total of 107 species was shown.

A monograph by Wolender (2013) reports on 131 species from protected areas of the Baltic Coast, including 60 species from Wolin Island. These include 10 species previously unknown on the island. The total number of species known on Wolin Island reached 117.

In 2007 a faunistic inventory was conducted of the north-western part of Wolin Island, the intended construction site of a gas import terminal. The results of this study constitute a contribution to further knowledge of the ground beetle fauna of Wolin Island.

Study area

Wolin is an offshore island with an area of 265 km², surrounded by the Bay of Szczecin to the south and bordering on the Baltic Sea to the north (Fig. 1). In

terms of physical geography it is situated in the sub-province of Pobrzeże Południowobałtyckie, the macroregion of Pobrzeże Szczecińskie, and the mesoregion of Usedom and Wolin (Kondracki 2002).

Wolin Island is separated from the mainland (to the east) by the narrow Dziwna Strait and from the island of Usedom by the Świna River. The coastline facing the sea is uniform, but on the other sides it is highly varied, with peninsulas and numerous smaller offshore islets and underwater shoals.

The study area was situated to the east of Świnoujście (Fig. 1) and part of it was intended for the construction of the terminal. The area lies outside of zones with valuable natural features. It is an area subject to human impact in the form of pressure from port areas and tourism. It covers an area of about 47 ha and is approximately rectangular in shape (Fig. 1). It is an undeveloped area intended for use related to the port and the marine economy.

The area is varied in terms of habitats and dominated by habitats arranged in strips, with different habitats running parallel to the seashore. Hence beginning with the shore we can identify successive habitats taking the form of strips.

Habitat 1. A white dune largely covered with common osier *Salix viminalis* (L.) Hull., *Leymus arenarius* (L.) Hochst and *Carex arenaria* (L.).

Habitat 2. A grey dune with *Calluna vulgaris* (L.) Hull and in places *Leymus arenarius* L. and *Carex arenaria* L.

Habitat 3. A wet depression with an alder carr, a riparian alder forest and highly transformed fragments of forest with English oak (*Quercus robur* (L.)), silver birch (*Betula pendula* Roth) and willow (*Salix* L.).

Habitat 4. A pine forest aged 40–50 years, with bilberry (*Vaccinium myrtillus* L.) and honeysuckle (*Lonicera* L.).

Habitat 5. A depression with a low peat bog and a willow thicket deep in the depression.

Habitat 6. *Empetro nigri-Pinetum* up to 100 years old, strongly dominated by crowberry (*Empetrum nigrum* L.), with an admixture of bilberry (*Vaccinium myrtillus* L.), honeysuckle (*Lonicera* L.) and common heather (*Calluna vulgaris* L.).

Habitat 7. *Spergulo vernalis-Corynephorretum* of human origin with an admixture of common heather (*Calluna vulgaris* L.). It was situated near *Empetro nigri-Pinetum*.

Habitat 8. A pine forest about 20 years old which was part of a timber forest.

Figure 1. Map of the area with numbered sites where traps were set up

Research methods

The study was carried out at 8 sites from 17 April to 13 September 2007. Barber traps were used to catch ground beetles. This is a standard, widely used method in this type of study (Thiele 1977). A single trap consisted of a transparent plastic 500 ml cup, 1/3 filled with ethylene glycol solution at a concentration of 25%. The cup opening, which was the entrance to the trap, was 10 cm in diameter. The traps were arranged in a line, about 10 m apart.

At each site 8 traps were set up, but the traps were habitually destroyed, particularly on the white dune. During the study the number of traps remaining intact ranged from 2 (the white dune) to 8 (the pine forest).

Results

In the material examined (2,144 specimens) 86 species of the family Carabidae (Tab. 1) were recorded. Of these, 30 species had not previously been reported on Wolin Island.

Of these species 18 are very common and occur in large numbers all over the country: *Amara bifrons*, *Amara communis*, *Amara ingenua*, *Amara plebeja*, *Anisodactylus binotatus*, *Badister lacertosus*, *Bembidion femoratum*, *Bembidion guttula*, *Clivina fossor*, *Dromius quadrimaculatum*, *Dyschirius globosus*, *Oxytetranychus obscurus*, *Pterostichus minor*, *Pterostichus vernalis*, *Stenolophus mixtus*, *Syntomus foveatus* and *Trechus quadristriatus*. Another 4 species are common stenobionts of swamps and peat bogs: *Acupalpus flavicollis*, *Agonum piceum*, *Badister peltatus* and *Paradromius linearis*.

Two of the ground beetle species recorded have partial legal protection in Poland: *Carabus convexus* and *C. glabratus* (Dziennik Ustaw [Journal of Laws] 2014).

Species whose level of vulnerability and occurrence places them on the 'Red List for Declining or Endangered Animals in Poland' (Pawłowski et al. 2002) have the following conservation status: CR (critically endangered) – *Bembidion obtusum*; NT (near threatened) – *Oodes helopioides* and *Masoreus wetterhallii*; VU (vulnerable) – *Carabus convexus*, *Acupalpus exiguus* and *Amara quenseli silvicola*; and DD (data deficient) – *Broscus cephalotes*. Of these species *Bembidion obtusum*, *Acupalpus exiguus* and *Amara quenseli silvicola* had not previously been found on Wolin Island.

Together with the literature data, the total list of ground beetles on Wolin Island reached 145 species.

From a faunistic perspective, among the species caught the following are particularly worthy of attention:

Bembidion (Phyla) obtusum Audinet-Serville, 1821 – a european hygrophilous stenobiontic species. It colonizes open land, including farmland, preferring moist, clayey soils. In Poland it occurs rarely and in only a few places (Burakowski et al. 1973). 17.05.2007, depression with a low peat bog, 1 ex.

Bembidion (Philochthus) mannerheimii (C.R. Sahlberg 1827) – an euro-siberian paludophilous hygrophilous stenobiontic species. It lives in litter in broadleaved forests and in peat bogs. In Poland it occurs fairly rarely and in only a few places (Aleksandrovich 2004). 17.05.2007, depression with a low peat bog, 2 exx.

Acupalpus (Acupalpus) exiguus (Dejean, 1829) – a euro-siberian paludophilous hygrophilous stenobiontic species. It occurs in Poland rarely and in only a few places, colonizing lowland peat bogs and swampland (Burakowski et al. 1974). 17.05.2007, 14.06.2007, depression with a low peat bog, 2 exx.; 17.05.2007, a riparian alder forest, 1 ex.

Amara (Amara) littorea C.G. Thomson, 1857 – European and Central Asian mesoxerophilous stenobiotic species. Its distribution in Poland is little known; it occurs rarely and in only a few places, inhabits open land and prefers sandy soil (Burakowski et al. 1974). 29.04.2007, 12.07.2007, pine forest, 2 ex.

Amara (Paracelia) quenseli silvicola (Zimmermann, 1832) – a boreal mesoxerophilous subspecies of a Holarctic species. It lives on dry, sandy soils, on seaside dunes, and inland mainly in moraine areas and shifting sands, occurring rarely and in only a few places (Burakowski et al. 1974). 14.06.2007 – 4 exx., 12.07.2007 – 1 ex., *Spergulo vernalis-Corynephorum* of human origin; 14.06.2007 – 1 ex. white dune.

Badister (Badister) meridionalis Puel, 1925 – a european-mediterranean mesohygrophilous species. Its distribution and ecological requirements are not well known. In Poland it occurs rarely and in only a few places (Burakowski et al. 1974). 12.08.2007 – 1 ex., grey dune.

Dicheirotichus (Trichocellus) placidus (Gyllenhal, 1827) – a euro-siberian paludophilous hygrophilous stenobiontic species. Encountered in Poland rarely and in single numbers, occurs mainly in broadleaved forests on fairly moist soils (Burakowski et al. 1974). 17.05.2007, depression with a low peat bog, 3 exx.

Calathus (Neocalathus) cinctus Motschulsky, 1850. Europe apart from the north, the Caucasus, and Turkey. Its distribution is little known due to being mistaken for the common *Calathus melanocephalus* (Linnaeus, 1758). Known in Poland on the Baltic Coast (Aleksandrowicz et al. 2008), the Pomeranian Lakeland (Stachowiak, Wilcz 2001), the Masurian Lake District (Kosewska et al. 2007), and the Małopolska Upland (Schwerk et al. 2006). A mesoxerophilous, psammophilous open land species colonizing dunes, dry meadows and farmland. 12.07.2007 – 1 ex., 12.08.2007 – 2 exx., *Spergulo vernalis-Corynephoretum* of human origin; 12.07.2007 – 2 exx., white dune.

Bradycellus (Bradycellus) verbasci (Duftschmid, 1812) – an euro-siberian paludophilous hygrophilous stenobiontic species. Its distribution in Poland is little known. Encountered fairly rarely in Poland, at widely dispersed locations (Burakowski et al. 1974). Its ecological preferences are unknown. 14.06.2007, depression with a low peat bog, 1 ex.

Pterostichus (Pseudomaseus) rhaeticus Heer, 1837 17.05.2007, depression with a low peat bog, 1 ex. and a riparian alder forest, 1 ex.

Another two species had previously been reported from the island (Tab. 1), but are rare in Poland.

Licinus (Licinus) depressus (Paykull, 1790) – an euro-siberian and central asian xerophilous species. It is found fairly rarely and usually in single numbers. It colonizes sandy or clayey soils with little vegetation (Burakowski et al. 1974). 17.05, 14.06, 12.07.2007 – 1+1+1 ex., pine forest, 14.06.2007 – 1 ex, grey dune.

Masoreus (Masoreus) wetterhallii (Gyllenhal, 1813) – a western and central Palearctic mesoxerophilous species. It inhabits open land on sandy soil with sparse xerophilous vegetation. It is encountered fairly rarely in Poland at widely dispersed locations (Burakowski et al. 1974). 12.07.2007 – 1 ex., *Spergulo vernalis-Corynephoretum* of human origin, 12.08.2007, 1 ex., white dune.

Discussion

Analysis of the literature data shows that 8 species were last reported on the island about 150 years ago (Tab. 1). These are species reported by Habelmann (1854, 1861): *Agonum thoreyi*, *Asaphidion pallipes*, *Demetrias imperialis*, *Demetrias monostigma*, *Harpalus neglectus*, *Amara montivaga*, *Bembidion fumigatum* and *Bembidion stephensi*. Most of them are currently known from the Baltic

Coast (Burakowski et al. 1973, 1974); only *Amara montivaga* and *Bembidion stephensi* were not later reported from the Coast District.

160 years have passed since Pfeil (1854) last reported the occurrence of *Carabus marginalis* on the island. Since then *Carabus marginalis* had not been registered on the Baltic coast. This shrinking of the species' range in Europe was noted by Arndt and Trautner (2004). In Poland numerous populations of *Carabus marginalis* are currently known only in Tuchola Forest (Stachowiak 1998; Stachowiak, Wilcz 2001) and in the Masurian Lake District (Kosewska et al. 2007; Tarwacki 2010; Marczak, Aleksandrowicz 2012).

Nebria livida, reported for the island of Wolin by Riesen (1908) 100 years ago, is currently known on the Eastern Coast District (Jaskuła, Ruta 2003 (2002)).

About 100 years ago Netolitzky and Vogel (1917) reported *Bembidion transpa-rens* for Wolin Island. This rare species was not later registered in Poland.

Last reported by Horion (1941), *Amara municipalis* is currently known from the Central (Александрович, Радавец 2015) and Eastern (Aleksandrowicz 2004) Coast District.

Bembidion assimile, reported for Wolin Island 40 years ago in *Katalog Fauny Polski* [Catalogue of Polish Fauna] (Burakowski et al. 1973), is currently known from the Central Coast District (Александрович, Радавец 2015).

According to Stachowiak, the presence on Wolin Island and in the north of Poland in general of *Ophonus ardosiacus*, *Ophonus rupicola*, *Harpalus honestus* and *Bembidion quadripustulatum*, listed in publications by Wolender (Wolender, Zych 2005, 2006; Wolender 2013), is very doubtful, and that of *Ophonus stictus* is improbable for biogeographical regions. There are no specimens constituting evidence.

Recapitulation and conclusions

During the one-year study (17.04–13.09.2007), 2,144 ground beetle specimens belonging to 86 species were collected. Of these, 30 species had not previously been reported from the island of Wolin, and *Bembidion (Phyla) obtusum* Audinet-Serville, 1821 is new to the Baltic Coast.

The following species included on the 'Red List for Declining or Endangered Animals in Poland' were registered: *Bembidion obtusum* – CR; *Oodes helopioides* and *Masoreus wetterhallii* – NT; *Carabus convexus*, *Acupalpus exiguus* and *Amara quenseli silvicola* – VU; and *Broscus cephalotes* – DD. Two ground

beetle species with partial legal protection in Poland were noted: *Carabus convexus* and *C. glabratus*.

The current list of ground beetles of Wolin Island, including the literature data, consists of 145 species.

The presence of 9 species known from 160 years ago was not confirmed (*Amara montivaga*, *Agonum thoreyi*, *Asaphidion pallipes*, *Bembidion fumigatum*, *Bembidion stephensi*, *Carabus marginalis*, *Demetrias imperialis*, *Demetrias monostigma* and *Harpalus neglectus*), as well as two species from about 100 years ago (*Bembidion transparens* and *Nebria livida*), one from 70 years ago (*Amara municipalis*) and one from 40 years ago (*Bembidion assimile*).

The occurrence of *Ophonus ardosiacus*, *Ophonus rupicola*, *Harpalus honestus* and *Bembidion quadripustulatum* is very doubtful, and the recording of *Ophonus stictus* was erroneous.

The list presented includes about half of the ground beetle species known from the Baltic Coast (Burakowski et al. 1973, 1974, 2000). Further research will undoubtedly enhance knowledge of the diversity of the ground beetles of Wolin Island.

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Table 1. Species composition of the ground beetles of Wolin Island according to our own and literature data

Species	Number of specimens caught	Last record in the literature	Status
<i>Abax parallelepipedus</i> (Piller et Mitterpacher, 1783)	450	Wolender 2013	
<i>Acupalpus exiguus</i> (Dejean, 1829)	3		VU
<i>Acupalpus flavicollis</i> (Sturm, 1825)	2		
<i>Acupalpus meridianus</i> (Linnaeus, 1761)		Wolender Zych 2006	
<i>Agonum fuliginosum</i> (Panzer, 1809)	4	Leśniak 2003	
<i>Agonum lugens</i> (Duftschmid, 1812)		Wolender 2013	
<i>Agonum piceum</i> (Linnaeus, 1758)	2		
<i>Agonum sexpunctatum</i> (Linnaeus, 1758)		Wolender Zych 2005	
<i>Agonum thoreyi</i> Dejean, 1828		Habelmann 1854	
<i>Amara aenea</i> (De Geer, 1774)		Wolender 2013	
<i>Amara apricaria</i> (Paykull, 1790)		Wolender 2013	
<i>Amara bifrons</i> (Gyllenhal, 1810)	4		
<i>Amara brunnea</i> (Gyllenhal, 1810)	1	Wolender 2013	
<i>Amara communis</i> (Panzer, 1797)	6		
<i>Amara consularis</i> (Duftschmid, 1812)		Wolender 2013	
<i>Amara equestris</i> (Duftschmid, 1812)		Wolender 2013	
<i>Amara eurynota</i> (Panzer, 1797)		Wolender 2013	
<i>Amara famelica</i> Zimmermann, 1831	1	Wolender 2013	
<i>Amara familiaris</i> (Duftschmid, 1812)	5	Wolender 2013	
<i>Amara ingenua</i> (Duftschmid, 1812)	1		
<i>Amara littorea</i> C.G. Thomson, 1857	2		
<i>Amara lunicollis</i> Schiodte, 1837	2	Leśniak 2003	
<i>Amara montivaga</i> Sturm, 1825		Habelmann 1861	
<i>Amara municipalis</i> (Duftschmid, 1812)		Horion 1941	
<i>Amara ovata</i> (Fabricius, 1792)		Wolender 2013	
<i>Amara plebeja</i> (Gyllenhal, 1810)	1		
<i>Amara quenseli silvicola</i> (Zimmermann, 1831)	6		VU
<i>Amara similata</i> (Gyllenhal, 1810)		Wolender 2013	
<i>Anchomenus dorsalis</i> (Pontoppidan, 1763)		Wolender 2013	
<i>Anisodactylus binotatus</i> (Fabricius, 1787)	1	Burakowski et al. 1974	
<i>Asaphidion pallipes</i> (Duftschmid, 1812)		Habelmann 1854	
<i>Badister bullatus</i> (Schränk, 1798)	3	Wolender 2013	
<i>Badister lacertosus</i> Sturm, 1815	12		
<i>Badister meridionalis</i> Puel, 1925	1		
<i>Badister peltatus</i> (Panzer, 1797)	1		
<i>Badister unipustulatus</i> Bonelli, 1813		Wolender 2013	
<i>Bembidion assimile</i> (Gyllenhal, 1810)		Burakowski et al. 1974	
<i>Bembidion femoratum</i> Sturm, 1825	1		

Species	Number of specimens caught	Last record in the literature	Status
<i>Bembidion fumigatum</i> (Duftschmid, 1812)		Habelmann 1861	EN
<i>Bembidion guttula</i> (Fabricius, 1792)	1		
<i>Bembidion mannerheimii</i> (C.R. Sahlberg, 1827)	6		
<i>Bembidion obtusum</i> Audinet-Serville, 1821	1		CR
<i>Bembidion quadripustulatum</i> Audinet-Serville, 1821		Wolender 2013	?
<i>Bembidion stephensi</i> Crotch, 1866		Habelmann 1861	
<i>Bembidion transparens</i> (Gebler, 1829)		Netolitzky Vogel 1917	
<i>Blethisa multipunctata</i> (Linnaeus, 1758)		Wolender Zych 2005	VU
<i>Bradycellus harpalinus</i> (Audinet-Serville, 1821)	1	Habelmann 1861	
<i>Bradycellus verbasci</i> (Duftschmid, 1812)	1		
<i>Broscus cephalotes</i> (Linnaeus, 1758)	1	Wolender Zych 2006	DD
<i>Calathus cinctus</i> Motschulsky, 1850	4		
<i>Calathus erratus</i> (Sahlberg, 1827)	207	Wolender 2013	
<i>Calathus fuscipes</i> (Goeze, 1777)	8	Wolender 2013	
<i>Calathus melanocephalus</i> (Linnaeus, 1758)		Wolender Zych 2005	
<i>Calathus micropterus</i> (Duftschmid, 1812)	5	Wolender 2013	
<i>Calathus mollis</i> (Marsham, 1802)	1	Wolender Zych 2005	
<i>Calathus rotundicollis</i> Dejean, 1828	2	Wolender 2013	
<i>Carabus arcensis arcensis</i> Herbst, 1784	13	Wolender Zych 2006	
<i>Carabus cancellatus</i> Illiger, 1798		Wolender 2013	
<i>Carabus convexus</i> Fabricius, 1775	40	Wolender 2013	NT OP
<i>Carabus glabratus</i> Paykull, 1790		Wolender 2013	OP
<i>Carabus granulatus</i> Linnaeus, 1758	194	Wolender 2013	
<i>Carabus hortensis</i> Linnaeus, 1758	33	Wolender 2013	
<i>Carabus intricatus</i> Linnaeus, 1761		Wolender 2013	LC OP
<i>Carabus marginalis</i> Fabricius, 1794		Pfeil 1854	VU OP
<i>Carabus nemoralis</i> O.F. Müller, 1764		Wolender 2013	
<i>Carabus violaceus</i> Linnaeus, 1758	193	Wolender 2013	
<i>Cicindela hybrida</i> Linnaeus, 1758	1	Wolender Zych 2006	
<i>Cicindela maritima maritima</i> Dejean, 1822		Wolender Zych 2006	
<i>Clivina fossor</i> (Linnaeus, 1758)	4		
<i>Cychrus caraboides</i> (Linnaeus, 1758)	87	Wolender 2013	
<i>Cymindis humeralis</i> (Geoffroy, 1785)		Leśniak 2003	
<i>Demetrias imperialis</i> (Germar, 1824)		Habelmann 1861	VU
<i>Demetrias monostigma</i> Samouelle, 1819		Habelmann 1854	
<i>Dicheirotichus placidus</i> (Gyllenhal, 1827)	3		
<i>Dromius quadrimaculatus</i> (Linnaeus, 1758)	1		
<i>Dyschirius globosus</i> Herbst, 1784	1		
<i>Elaphrus cupreus</i> Duftschmid, 1812	4	Wolender 2013	
<i>Harpalus affinis</i> (Schränk, 1781)	1	Wolender Zych 2005	
<i>Harpalus autumnalis</i> (Duftschmid, 1812)		Leśniak 2003	

Species	Number of specimens caught	Last record in the literature	Status
<i>Harpalus flavescens</i> (Piller et Mitterpacher, 1783)		Wolender 2013	
<i>Harpalus froelichii</i> Sturm, 1818		Wolender 2013	
<i>Harpalus hirtipes</i> (Panzer, 1796)		Wolender Zych 2005	
<i>Harpalus honestus</i> (Duftschmid, 1812)		Wolender Zych 2006	?
<i>Harpalus laevipes</i> Zetterstedt, 1828		Leśniak 2003	
<i>Harpalus latus</i> (Linnaeus, 1758)	11	Wolender 2013	
<i>Harpalus melancholicus</i> Dejean, 1829		Wolender Zych 2005	
<i>Harpalus neglectus</i> Audinet-Serville, 1821		Habelmann 1854	
<i>Harpalus picipennis</i> (Duftschmid, 1812)		Wolender 2013	
<i>Harpalus progrediens</i> Schauburger, 1922		Leśniak 2003	
<i>Harpalus pumilus</i> Sturm, 1818		Wolender 2013	
<i>Harpalus rubripes</i> (Duftschmid, 1812)	5	Wolender Zych 2005	
<i>Harpalus rufipalpis</i> Sturm, 1818	1	Leśniak 2003	
<i>Harpalus rufipes</i> (Degeer, 1774)	2	Wolender 2013	
<i>Harpalus serripes</i> (Quensel, 1806)		Wolender 2013	
<i>Harpalus signaticornis</i> (Duftschmid, 1812)	2	Wolender 2013	
<i>Harpalus smaragdinus</i> (Duftschmid, 1812)	1	Wolender 2013	
<i>Harpalus solitarius</i> (Dejean, 1829)		Wolender Zych 2005	
<i>Harpalus tardus</i> (Panzer, 1797)	1	Wolender 2013	
<i>Leistus ferrugineus</i> (Linnaeus, 1758)	6	Wolender 2013	
<i>Leistus rufomarginatus</i> (Duftschmid, 1812)	3	Leśniak 2003	
<i>Leistus terminatus</i> (Hellwig, 1793)	5	Wolender 2013	
<i>Licinus depressus</i> (Paykull, 1790)	4	Wolender 2013	
<i>Limodromus assimilis</i> (Paykull, 1790)	94	Wolender 2013	
<i>Loricera pilicornis</i> (Fabricius, 1775)	9	Wolender Zych 2005	
<i>Masoreus wetterhallii</i> (Gyllenhal, 1813)	2	Burakowski et al. 1974	VU
<i>Microlestes maurus</i> (Sturm, 1827)		Wolender Zych 2005	
<i>Microlestes minutulus</i> (Goeze, 1777)		Wolender 2013	
<i>Miscodera arctica</i> (Paykull, 1798)		Leśniak 2003	DD
<i>Nebria brevicollis</i> (Fabricius, 1792)	115	Wolender 2013	
<i>Nebria livida</i> (Linnaeus, 1758)		Riesen 1908	CR
<i>Notiophilus aquaticus</i> (Linnaeus, 1758)	2	Leśniak 2003	
<i>Notiophilus biguttatus</i> (Fabricius, 1779)	1	Leśniak 2003	
<i>Notiophilus germinyi</i> Fauvel in Grenier, 1863	1	Leśniak 2003	
<i>Notiophilus palustris</i> (Duftschmid, 1812)	2	Wolender 2013	
<i>Odacantha melanura</i> (Linnaeus, 1767)		Wolender 2013	VU
<i>Omophron limbatum</i> (Fabricius, 1777)		Wolender Zych 2005	
<i>Oodes helopioides</i> (Fabricius, 1792)	3	Wolender Zych 2006	VU
<i>Ophonus ardosiacus</i> (Luschnik, 1922)		Wolender 2013	?
<i>Ophonus puncticollis</i> (Paykull, 1798)		Wolender 2013	
<i>Ophonus rupicola</i> (Sturm, 1818)		Wolender 2013	?

Species	Number of specimens caught	Last record in the literature	Status
<i>Ophonus stictus</i> Stephens, 1828		Wolender Zych 2005	???
<i>Oxytelus obscurus</i> (Herbst, 1784)	17		
<i>Panagaeus bipustulatus</i> (Fabricius, 1775)	4	Wolender 2013	
<i>Paradromius linearis</i> (Olivier, 1795)	1		
<i>Paradromius longiceps</i> (Dejean, 1826)		Wolender Zych 2005	
<i>Patrobus atrorufus</i> (Strom, 1768)	4	Wolender Zych 2005	
<i>Platynus livens</i> (Gyllenhal, 1810)	3	Wolender 2013	
<i>Poecilus cupreus</i> (Linnaeus, 1758)	1	Wolender Zych 2005	
<i>Poecilus lepidus</i> (Leske, 1785)		Wolender 2013	
<i>Poecilus versicolor</i> (Sturm, 1824)	1	Wolender 2013	
<i>Pterostichus diligens</i> (Sturm, 1824)	33	Wolender 2013	
<i>Pterostichus melanarius</i> (Illiger, 1798)	40	Wolender 2013	
<i>Pterostichus minor</i> (Gyllenhal, 1827)	10		
<i>Pterostichus niger</i> (Schaller, 1783)	228	Wolender 2013	
<i>Pterostichus nigrata</i> (Paykull, 1790)	52	Wolender 2013	
<i>Pterostichus oblongopunctatus</i> (Fabricius, 1787)	118	Leśniak 2003	
<i>Pterostichus quadrifoveolatus</i> Letzner, 1852		Wolender 2013	
<i>Pterostichus rhaeticus</i> (Heer, 1838)	3		
<i>Pterostichus strenuus</i> (Panzer, 1797)	13	Leśniak 2003	
<i>Pterostichus vernalis</i> (Panzer, 1796)	1		
<i>Stenolophus mixtus</i> (Herbst, 1784)	16		
<i>Stomis pumicatus</i> (Panzer, 1796)	5	Leśniak 2003	
<i>Syntomus foveatus</i> (Fourcroy, 1785)	1		
<i>Syntomus truncatellus</i> (Linnaeus, 1761)		Wolender Zych 2006	
<i>Trechus quadristriatus</i> (Schränk, 1781)	1		

Abbreviations:

LP – legal protection

CR – critically endangered

EN – endangered

NT – near threatened

VU – vulnerable

DD – data deficient

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PRZYSZYNEK DO POZNANIA FAUNY BIEGACZOWATYCH (INSECTA, COLEOPTERA: CARABIDAE) WYSPIY WOLIN

Streszczenie

W toku rocznych badań (17.04–13.09 2007) zgromadzono 2144 okazy biegaczowatych, należących do 86 gatunków. Spośród nich 30 gatunków nie było wcześniej notowanych na wyspie Wolin, a *Bembidion (Phyla) obtusum* Audinet-Serville, 1821 jest nowy dla Półwyspu Bałtyku.

Z Czerwonej listy zwierząt ginących i zagrożonych w Polsce były zarejestrowane: *Bembidion obtusum* CR; *Oodes helopioides*, *Masoreus wetterhallii* NT; *Carabus convexus*, *Acupalpus exiguus*, *Amara quenseli silvicola* VU; *Broscus cephalotes* DD. Odnotowano gatunki biegaczowatych objętych częściową ochroną prawną w Polsce: *Carabus convexus* oraz *C. glabratus*.

Aktualna lista biegaczowatych wyspy Wolin razem z danymi piśmiennictwa sięgnęła 145 gatunków.

Nie udało się potwierdzić obecności 9 gatunków znanych sprzed 160 lat (*Amara montivaga*, *Agonum thoreyi*, *Asaphidion pallipes*, *Bembidion fumigatum*, *Bembidion stephensi*, *Carabus marginalis*, *Demetrias imperialis*, *Demetrias monostigma*, *Harpalus neglectus*), 2 gatunków – sprzed około 100 lat (*Bembidion transparens*, *Nebria livida*), 1 gatunku sprzed 70 lat (*Amara municipalis*) oraz 1 gatunku sprzed 40 lat (*Bembidion assimile*).

Prawdopodobieństwo występowania *Ophonus ardosiacus*, *Ophonus rupicola*, *Harpalus honestus*, *Bembidion quadripustulatum* jest bardzo wątpliwe, a *Ophonus stictus* mylnie. Przedstawiona lista obejmuje około połowy gatunków biegaczowatych, znanych z Półwyspu Bałtyku (Burakowski i in. 1973, 1974, 2000). Dalsze badania bez wątpienia wzbogacą wiedzę na temat różnorodności biegaczowatych wyspy Wolin.

Słowa kluczowe: chrząszcze epigeiczne, Carabidae, wyspa Wolin, fauna

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