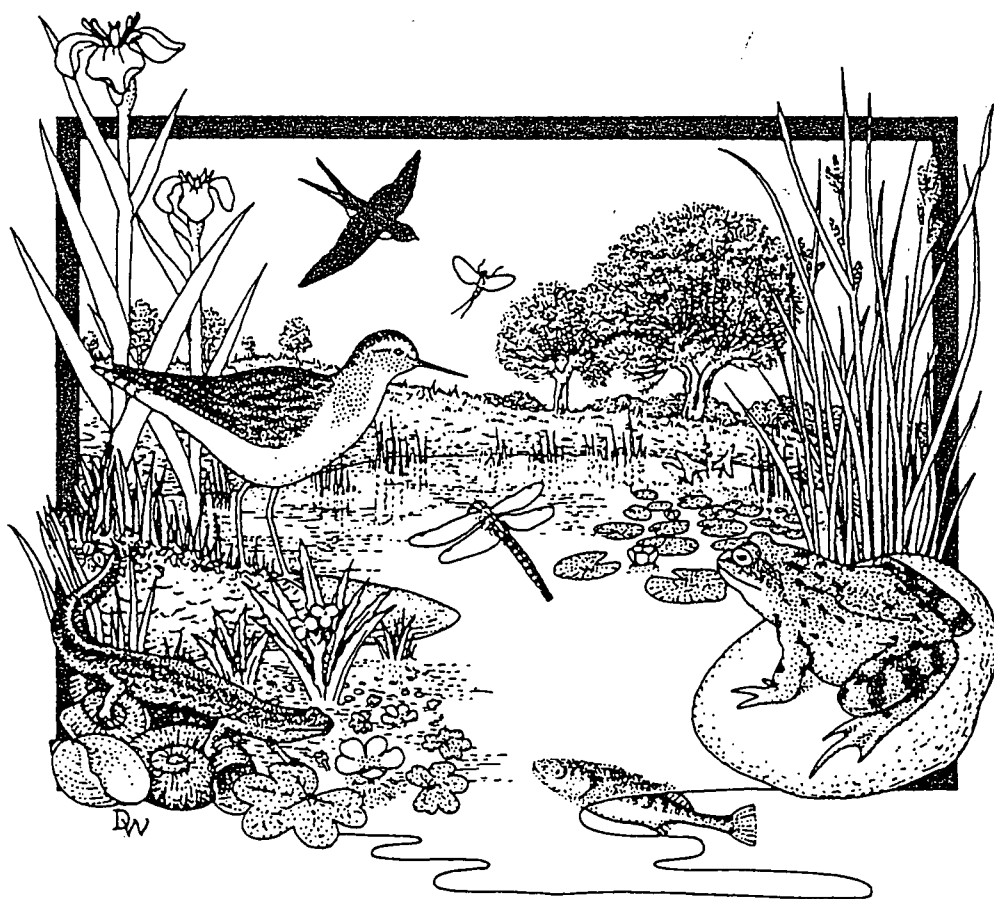


2021

**AN AQUATIC MACROINVERTEBRATE SURVEY OF DITCHES ON
WESTCOURT MARSHES, KENT**

A Report by Pond Action for RPS Clouston



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AN AQUATIC MACROINVERTEBRATE SURVEY OF DITCHES ON WESTCOURT MARSHES, KENT

1. INTRODUCTION

This report describes the results of surveys of aquatic macroinvertebrates in thirteen sections of grazing ditches on Westcourt Farm. The aim of the survey was to comment on the presence of diagnostic/uncommon species and compile lists of species found in the sample area, in accordance with RPS requirements.

2. METHODS

On 30 July 1992, 13 sites along ditches on Westcourt Marshes were sampled for aquatic macroinvertebrates. The sites chosen were those identified by RPS Clouston (see Map 1). At each site a 20m length of ditch was sampled.

Aquatic macroinvertebrates were collected using a standard (1mm mesh) pond net to sweep all discernible microhabitats (areas which were distinct in terms of vegetation, substrate, bank type, depth etc.). Effort was concentrated on those microhabitats which appeared to be richest in macroinvertebrate taxa. In addition, a short time was spent searching by hand under stones and debris, among roots etc.

Samples were sorted on site in large white trays. Macroinvertebrates were identified in the field where possible. Species which were not identified immediately were preserved in 70% industrial methylated spirits or stored in water (flatworms) and returned to the laboratory for microscopic examination. A total of thirty minutes was spent on collection and sorting at each survey point.

The remaining macroinvertebrates were identified later in the laboratory, using standard keys (see References).

At site C a second sample (C2) was taken in order to estimate consistency of sampling effort between the two surveyors collecting the samples. The results of this show that sampling efficiency was relatively constant. The number of species common to both samples C1 and C2 was about 50%, which is typical for this type of survey work.

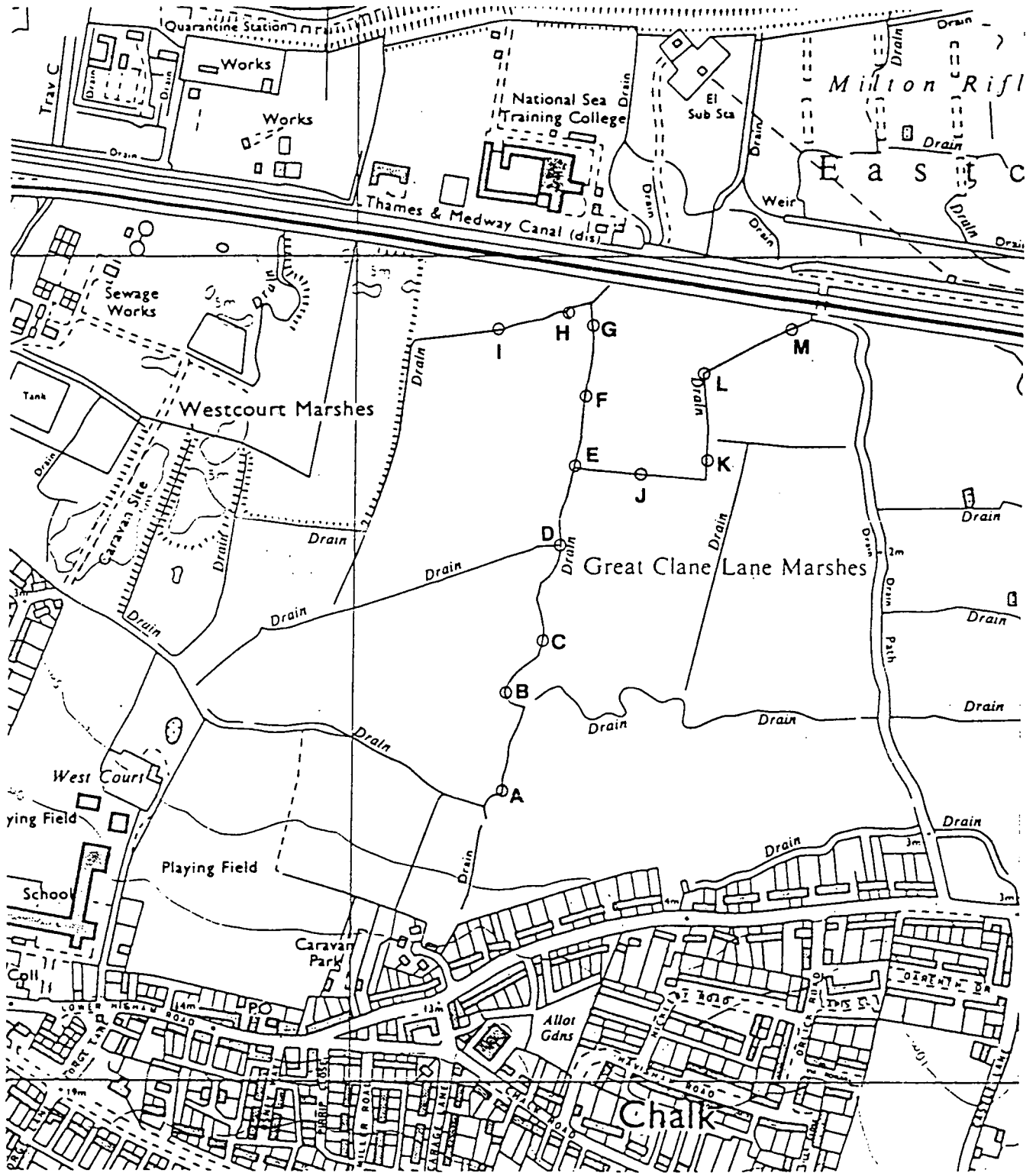
3. RESULTS

The species recorded are listed in Appendix Table 1. This table highlights species which are:

- (i) Listed in the British Red Data Books.
- (ii) Nationally Notable a or b.
- (iii) Typical of brackish and/or coastal water bodies.
- (iv) Indicative of south-east coast grazing marshes (Drake, 1987 and pers. comm.).

Brief descriptions of the distribution and habitat preferences of RDB and Nationally Notable species are given in Appendix 2.

A total of 102 species were recorded during the survey (see Table 1). These included one RDB2 species (the weevil *Bagous cylindrus*), one RDB3 species (the water beetle *Hydrochus ignicollis*), three Nationally Notable species and 20 Nationally Notable b species (see Appendix Table 1). Five species were typical of brackish or coastal water bodies. Twelve species were indicative of south-east coast grazing marshes (though not necessarily confined to the south-east).



MAP 1. The location of macroinvertebrate sampling sites on ditches on the Westcourt Marshes, Kent.

TABLE 1.

NUMBERS OF SPECIES IN MAJOR INVERTEBRATE GROUPS RECORDED IN DITCHES ON THE WESTCOURT MARSHES, KENT: 30 JULY 1992

SITE	A	B	C1	C2	D	E	F	G	H	I	J	K	L	M	TOTAL
FLATWORMS (TRICLADIDA)	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
WATER SNAILS (GASTROPODA)	1	3	2	2	4	4	3	3	1	2	4	3	4	3	8
LEECHES (HIRUDINEA)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
WATER SPIDERS (ARANEAE)	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1
SHRIMPS AND SLATERS (MALACOSTRACA)	2	2	2	2	1	1	1	2	1	1	1	1	1	0	3
MAYFLIES (EPHEMEROPTERA)	1	1	1	1	1	1	0	1	0	0	1	0	0	0	1
DRAGONFLIES & DAMSELFLIES (ODONATA)	1	2	1	0	3	1	0	2	3	0	2	1	1	2	6
WATER BUGS (HETEROPTERA)	10	3	5	8	6	14	0	8	7	6	11	6	4	5	21
WATER BEETLES (COLEOPTERA)	30	13	24	20	21	19	21	24	25	25	16	22	21	20	60
TOTAL SPECIES	46	30	36	34	38	41	25	41	38	35	36	35	33	33	102

Diptera were recorded where possible and one species of note was found, the meniscus midge *Dixella attica* (Nationally Notable a).

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APPENDIX TABLE 1. AQUATIC MACROINVERTEBRATE SPECIES RECORDED IN DITCHES ON THE WESTCOURT MARSHES, KENT: 30 JULY 1992

Status		Habitat	
2	Red Data Book 2 (vulnerable)	c	Coastal and/or brackish water
3	Red Data Book 3 (rare)	g	Species indicative of (though not necessarily exclusive to) south-east coast grazing marshes
a	Nationally Notable a (or unclassified)	-	Species not typical of grazing marshes or coastal habitats
b	Nationally Notable b		
-	Common species		

SITE/SAMPLE	Status	Habitat	Number of samples in which species recorded										
				A	B	C	C2	D	E	F	G	H	I
FLATWORMS (TRICLADIDA)													
Planariidae													
Polycelis nigra	-	-	2										
WATER SNAILS (GASTROPODA)													
Hydrobiidae													
Potamopyrgus jenkinsi	-	-	6										
Lymnaeidae													
Lymnaea peregra	+	+	14										
Lymnaea truncatula	-	-	1										
Physidae													
Physa acuta	-	-	2										
Planorbidae													
Anisus leucostoma	-	-	1										
Armiger crista	-	-	10										
Gyraulus laevis	-	-	1										
Planorbis planorbis	-	-	4										
LEECHES (HIRUDINEA)													
Glossiphoniidae													
Glossiphonia heteroclita	-	-	1										
WATER SPIDERS (ARANEAE)													
Agelinidae													
Argyroneta aquatica	-	-	12										
SHRIMPS AND SLATERS (MALACOSTRACA)													
Asellidae													
Asellus meridianus	+	+	10										

APPENDIX TABLE 1. (continued) AQUATIC MACROINVERTEBRATE SPECIES RECORDED IN DITCHES ON THE WESTCOURT MARSHES, KENT: 30 JULY 1992

SITE/SAMPLE	Status	Habitat	Number of samples in which species recorded										
				A	B	C1	C2	D	E	F	G	H	I
SHRIMPS AND SLATERS (MALACOSTRACA)													
Gammaridae													
Crangonyx pseudogracilis	-	-	4										
Gammarus duebeni	-	c	4										
MAYFLIES (EPHEMEROPTERA)													
Baetidae													
Cloeon dipterum	-	-	8										
DRAGONFLIES & DAMSELFLIES (ODONATA)													
Coenagrionidae													
Coenagrion puella/ pulchellum	-	-	1										
Enallagma cyathigerum	-	-	1										
Ischnura elegans	-	-	5										
Aeshnidae													
Aeshna cyanea	-	-	3										
Libellulidae													
Sympetrum sanguineum	b	-	2										
Sympetrum striolatum	-	-	7										
WATER BUGS (HETEROPTERA)													
Hebridae													
Hebrus pusillus	b	-	2										
Hydrometridae													
Hydrometra stagnorum	-	-	1										
Veliidae													
Microvelia reticulata	-	-	1										
Gerridae													
Gerris gibbifer	-	-	2										
Gerris lacustris	-	-	4										
Gerris odontogaster	-	-	2										
Gerris thoracicus	-	-	5										
Nepidae													
Nepa cinerea	-	-	7										
Naucoridae													
Ilyocoris cimicoides	-	-	10										

APPENDIX TABLE 1. (continued) AQUATIC MACROINVERTEBRATE SPECIES RECORDED IN DITCHES ON THE WESTCOURT MARSHES, KENT: 30 JULY 1992

	SITE/SAMPLE													Status	Habitat	Number of samples in which species recorded	
	A	B	C1	C2	D	E	F	G	H	I	J	K	L				M
WATER BUGS (HETEROPTERA) (continued)																	
Notonectidae																	
Notonecta glauca	+	-	+	+	-	+	-	-	+	-	+	+	+	-	-	-	8
Notonecta marmorea	+	-	-	+	-	+	-	-	-	-	-	+	-	-	-	c	4
Pleidae																	
Plea leachi	-	-	-	-	+	-	-	-	+	-	+	+	-	+	-	-	5
Corixidae																	
Corixa panzeri	-	-	-	-	-	+	-	-	+	-	+	-	-	-	-	-	3
Corixa punctata	-	-	+	+	-	+	-	+	-	-	+	-	-	-	-	-	5
Hesperocorixa linnei	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	-	13
Hesperocorixa sahlbergi	+	-	+	+	+	+	-	+	+	-	+	-	+	+	-	-	10
Sigara dorsalis	-	-	-	-	-	+	-	+	-	-	+	-	-	+	-	-	4
Sigara fossarum	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	1
Sigara lateralis	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	2
Sigara nigrolineata	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	2
Sigara stagnalis	-	-	-	-	-	+	-	-	-	-	+	-	-	-	-	c	2
WATER BEETLES (COLEOPTERA)																	
Haliplidae																	
Haliplus apicalis	-	-	-	+	-	+	-	+	+	-	-	-	+	+	b	g	6
Haliplus fluviatilis	-	-	-	+	+	+	-	-	-	-	+	-	-	-	-	-	4
Haliplus immaculatus	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	-	2
Haliplus lineatocollis	+	+	-	+	+	+	-	+	+	+	+	+	+	+	-	-	13
Haliplus ruficollis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	14
Peltodytes caesus	-	-	-	-	-	-	-	-	+	-	-	-	-	+	b	-	2
Noteridae																	
Noterus clavicornis	+	-	+	+	+	+	+	+	+	+	+	+	+	+	-	-	13
Dytiscidae																	
Agabus bipustulatus	+	-	-	+	+	-	+	+	+	-	-	+	+	+	-	-	9
Agabus sturmii	+	+	+	+	+	-	-	+	-	-	-	+	-	-	-	-	7
Coelambus impressopunctatus	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	1
Colymbetes fuscus	+	-	+	+	-	-	+	-	+	-	-	-	+	-	-	-	6
Copelatus haemorrhoidalis	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	2
Dytiscus circumflexus	-	-	-	-	+	-	-	-	-	-	-	-	-	-	b	g	1
Dytiscus marginalis	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	3
Hydaticus seminiger	+	-	+	-	-	-	-	+	-	-	-	-	-	-	b	-	3
Hydroporus angustatus	+	-	+	+	+	-	-	+	-	+	-	+	+	-	-	-	8
Hydroporus erythrocephalus	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Hydroporus palustris	+	+	+	+	+	-	-	-	+	+	+	+	+	+	-	-	11
Hydroporus planus	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	2

APPENDIX TABLE 1. (continued) AQUATIC MACROINVERTEBRATE SPECIES RECORDED IN DITCHES ON THE WESTCOURT MARSHES, KENT: 30 JULY 1992

SITE/SAMPLE	Status	Habitat	Number of samples in which species recorded										
				A	B	C1	C2	D	E	F	G	H	I
WATER BEETLES (COLEOPTERA) (continued)													
Dryopidae													
Dryops luridus	-	-	8										
Curculionidae (aquatic)													
Bagous cylindrus	2	g	9										
Poophagus sisymbrii	-	-	1										
Tanysphrus lemnae	-	-	4										
LEPIDOPTERA													
Pyralidae (not systematically recorded)													
Cataclysta lemnata	-	-	1										
DIPTERA (not systematically recorded)													
Dixidae													
Dixella attica	a	g	1										

APPENDIX TABLE 2. RED DATA BOOK AND NATIONALLY NOTABLE AQUATIC INVERTEBRATES RECORDED IN DITCHES ON WESTCOURT MARSHES, KENT: SUMMARY OF HABITAT AND NATIONAL STATUS.

KEY

RDB2	Listed as 'Vulnerable' in the British Red Data Book (Shirt, 1987) or more recent publications (see References).
RDB3	Listed as 'Rare' in the British Red Data Book (Shirt, 1987) or more recent publications (see References).
Nationally Notable a	Recorded from between 15 and 30 10km squares
Nationally Notable b	Recorded from between 31 and 100 10km squares

RDB2

Bagous cylindrus: CURCULIONIDAE: COLEOPTERA

A weevil: An indicative species of the Thames marshes. The preferred habitat is dykes, ditches and ponds. The species is under threat from loss of suitable habitat due to land drainage, agricultural intensification and development.

Shirt, 1987.

RDB3

Hydrochus ignicollis: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: the species appears to be confined to ancient lowland fen or, occasionally, to sites of old fenland.

Foster, 1987.

Hydrophilus piceus: HYDROPHILIDAE: COLEOPTERA

The Great Siver Water Beetle: a species of large coastal fen drainage systems. More northerly populations of the species have died out in recent times. The species can withstand quite heavy ditch management but threats include habitat loss due to total drainage and development.

Foster, 1987.

Shirt, 1987.

Nationally Notable a

Limnoxenus niger: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: a species of fen drains. The species is undergoing a sharp decline, particularly in the north of its range.

Foster, 1987.

Friday, 1988.

APPENDIX TABLE 2. (continued) RED DATA BOOK AND NATIONALLY NOTABLE AQUATIC INVERTEBRATES RECORDED IN DITCHES ON WESTCOURT MARSHES, KENT: SUMMARY OF HABITAT AND NATIONAL STATUS.

Nationally Notable a

Ochthebius exaratus: HYDRAENIDAE: COLEOPTERA

Principally a species inhabiting mud by coastal ponds.

Friday, 1988.

Dixella attica: DIXIDAE: DIPTERA

A meniscus midge: an uncommon species with a range of known habitats including mildly brackish ditches. The species has been suggested to be an indicator of good habitat quality.

Disney, 1975.

Drake, 1987

Nationally Notable b

Gyraulus laevis: PLANORBIDAE: GASTROPODA

The Smooth Ramshorn: a species more normally associated with exposed gravels in new gravel-pit lakes in the south of England, though more catholic in habitat in the northern part of its range.

M.P.Kerney, pers. comm.

Sympetrum sanguineum: LIBELLULIDAE: ODONATA

The Ruddy Darter: a species preferring well vegetated ditches and ponds. The species is declining in eastern England due to habitat loss, though a northerly expansion of its range is occurring.

Hammond, 1983.

Hebrus pusillus: HEBRIDAE: HETEROPTERA

The species chiefly occurs in well vegetated sites in the south of England.

Savage, 1989.

Haliplus apicalis: HALIPLIDAE: COLEOPTERA

A crawling water beetle: a coastal, brackish water species seldom found inland. The species is very local but the rate of decline does not appear to be high.

Foster, 1981.

Drake, 1987.

Peltodytes caesus: HALIPLIDAE: COLEOPTERA

A crawling water beetle: a declining fenland species with a south eastern distribution. The rate of decline of this species indicates that a status higher than Nationally Notable b is warranted.

Foster, 1981.

APPENDIX TABLE 2. (continued) RED DATA BOOK AND NATIONALLY NOTABLE AQUATIC INVERTEBRATES RECORDED IN DITCHES ON WESTCOURT MARSHES, KENT: SUMMARY OF HABITAT AND NATIONAL STATUS.

Nationally Notable b (continued)

Dytiscus circumflexus: DYTISCIDAE: COLEOPTERA

A great diving beetle: mainly a brackish water species (Kent, Essex and Sussex in particular) but also found inland.

Foster, 1985.

Drake, 1987.

Hydaticus seminiger: DYTISCIDAE: COLEOPTERA

A diving beetle: a species of erratic occurrence. Main habitats appear to be deep shaded water, often in fen carr.

Foster, 1985.

Rhantus frontalis: DYTISCIDAE: COLEOPTERA

A diving beetle: scattered records covering most of the country with concentrations in fens in the south.

Foster, 1985.

Rhantus suturalis: DYTISCIDAE: COLEOPTERA

A diving beetle: over most of England. Principally a thermophilic species of shallow detritus ponds and coastal sites.

Foster, 1985

Bilton, D.T. pers. comm.

Gyrinus caspius: GYRINIDAE: COLEOPTERA

A whirlygig beetle: principally a coastal species but with inland records in the north.

Foster, 1985.

Anacaena bipustulata: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: a species of slow running water and larger water bodies. The species is confined to the south of England.

Foster, 1987.

Friday, 1988.

Berosus affinis: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: characteristic of grazing fen ditches but also found elsewhere. 'Even in the deep south, any *Berosus* species makes the day a little more cheerful'.

Foster, 1987.

APPENDIX TABLE 2. (continued) RED DATA BOOK AND NATIONALLY NOTABLE AQUATIC INVERTEBRATES RECORDED IN DITCHES ON WESTCOURT MARSHES, KENT: SUMMARY OF HABITAT AND NATIONAL STATUS.

Nationally notable b (continued)

Cercyon sternalis: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: one of the truly aquatic members of this semi-terrestrial genus. Principally an inhabitant of fen litter and frequent in coastal grazing marshes.

Foster, 1987; Friday, 1988; Drake, 1987.

Enochrus bicolor: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: a species principally of brackish water in the south east of Britain.

Friday, 1988.

Enochrus melanocephalus: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: a species noted for its occurrence in brackish water, but chiefly a coastal species, being found inland in locally warm areas. Mainly recorded from the south of England.

Friday, 1988.
Bilton, D.T. pers. comm.

Helochares lividus: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: common in the south east of England in stagnant water.

Friday, 1988.

Helophorus griseus: HYDROPHILIDAE: COLEOPTERA

A water scavenger beetle: a species of grassy ponds and fens in the south of England.

Friday, 1988.

Limnebius nitidus: HYDRAENIDAE: COLEOPTERA

A species of marsh drains, ponds and rivers, principally in the south of England.

Friday, 1988.

Ochthebius marinus: HYDRAENIDAE: COLEOPTERA

A species of brackish pools occurring locally around most of the English coast.

Friday, 1988.

Ochthebius viridus: HYDRAENIDAE: COLEOPTERA

A species of brackish and heath pools, mainly in the south east of England.

Friday, 1988.