# Reculver

Country Park Management Plan 2012 – 2017

Appendices Vol.2



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# Visitor Satisfaction Consultation Report



# RECULVER COUNTRY PARK, RECULVER

VISITOR SATISFACTION CONSULTATION REPORT

# **SUMMER 2007**

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- 4.1 Questionnaire survey analysis
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### 1.0 Method

The one-to-one Visitor Survey of 100 respondents was conducted on the grounds of Reculver Country Park between 12.00 pm and 5.00 pm on Sunday 5<sup>th</sup> August, 10.00 am and 5.00 pm on Friday 10<sup>th</sup> August and 10.00 am and 5.00 pm on Friday 17<sup>th</sup> August 2007.

The survey was conducted following a route through the park, interviewing all willing respondents on a 'next-to-pass' basis.

### 2.0 Results

### 2.1 Mode of transport and distances travelled

Most people travelled to Reculver by car (76%), by bicycle (12%) or on foot (8%).

Most of the visitors travelled from the surrounding areas of Canterbury (14%), Reculver (7%), Herne Bay (6%) and Ramsgate (6%). A significant number of visitors were holiday makers (10%), staying on the local caravan park opposite the site, also visited the park. The remaining visitors had travelled from Dover (4%) Whitstable (3%) and outside Kent i.e.. London (3%).

The majority of visitors came to the Country Park to enjoy the scenery (75%) and the wildlife (43%) of this SSSI site. A large number came for relaxation (48%), and enjoyed time at the park with their families (45%) and had lunch on the site (42%) Many people use the site for exercise (40%), Cycling (17%) and walking their dog(s) (13%).

### 2.2 Advertisement and awareness

Most of the visitors were aware of the Kentish coastline attractions of the White Cliffs of Dover (90%) and Dover Castle (98%). Visitors were also familiar with

Pegwell Bay (65%) Richborough Castle (34%) Stodmarsh Nature Reserve (41%) and Blean Woods (39%). However many were not familiar with Samphire Hoe or Fowlmead Country Park.

73% of the visitors knew the site due to local knowledge. Some people visited due to information from tourist guides (12%), and to a lesser extent with information from the internet (4%).

A vast majority of visitors (98%) were not aware of the events at the site, and were disappointed that they did not have access to the interior of the Towers.

### 2.3. Patterns of use

24% of visitors come at least once every 2-6 months, or less often (20%). 28%

of visitors questioned were visiting the site for the first time. 7% of visitors come daily to the site.

28% of visitors visit the site between 30 minutes and an hour, 42% stay for between 2-4 hours and 24% stay for more than an hour but less than two hours.

5% of visitors stay for more than 4 hours; these are generally fishermen who tend to stay all day. 42% of visitors questioned spend lunchtime at the site.

### 2.4 Visitor opinion

Most visitors were more than happy with the standard of maintenance of the site and the facilities provided. 1% complained about the cleanliness of the site, and 15% thought that the signage could be improved to include directions to the toilets and more historical and wildlife information.

Most visitors have been visiting this site for a long time and are happy with the layout of the site and would not want to see any changes. There are some concerns with the use of the site at night time as broken bottles and empty cans

Are often to be found around the Towers, however these are quickly cleared up by the KWT's volunteers and don't appear to be a problem.

15% of visitors felt that the signage was inadequate and directions to the toilets were not immediately visible. Visitors would also like more historical information.

Some visitors feel that there are not enough, or large enough dog litterbins, and these do not appear to be emptied as regularly as they should be. With the large number of dogs on the site (218 dogs were counted on one Sunday) there is an obvious need more bins as they get filled up quite quickly.

91% of visitors were unaware of the events on the site and would like to see more advance information regarding these.

Other comments for improvements were as follows:

More rubbish bins available

The Internet site needs to be easier to navigate for information

Parking at weekends and bank holidays difficult

Parking available for large vehicles – i.e. motor-homes

Cycle routes need signage

More historical data available on interpretation panels Re: 'Dam busters ' &

Barnes Wallace's bouncing bomb

Water fountains with fresh water available

Activities/ play areas for small children, swings etc.

Free parking available

Some park staff available

Wheelchair access difficult

Rubbish bins emptied more frequently

More directional signs for toilet facilities

More toilets

More toilets – specifically at the Bishopsgate end of site

More signs for toilets

More benches available especially around Towers

More benches available between the Towers and Bishopsgate area

Mobile rangers

Sports facilities – football pitch for games

Rubbish cleared from the beach below the Towers

Access to the Towers

Signs indicating presence of KWT and their events

Safety issues with children climbing the walls by the towers

More secure fencing below towers

A cycle lane

Better maintenance of fences and gates

Camping facilities.... Ordinance survey maps out of date – show such

facilities

More wildlife information

Advertising of events available on site in advance

Control of small motorbikes using the site

More retail services; ice cream. water and local produce available

More information about the area on interpretation panels

### 2.5 Visitor details

There were almost equal numbers of male visitors (46%) to female visitors (54%)

during the consultation.

1% of visitors on the day questioned were disabled.

98% of the visitors where White British, 2% were White other and 1% was Black African and 1% was Indian.

The majority of visitors answering the survey were aged between 31-40 (32%),

23% were aged over 60, 11% were aged between 51 and 60, 10% were aged between 21-20, 2% were 16-20 and 5% were 15 or under.

### 3.0 Action for improvement

Improve site interpretation and information signs providing historical data about the site

Provide more toilets at the Bishopsgate end of the Park

Advertise the events

Place more benches on site particularly near the Towers

Provide more rubbish and dog litterbins

Remove car park charges

Open the towers to visitors

Have dog-free zones in the picnic areas, or where children are playing.

# 4.0 Appendices

- i) Questionnaire survey analysis
- ii) Questionnaire sample

## Reculver Country Park Questionnaire Survey

100 respondents

The survey was carried out during good weather following a route from the Reculver Towers through the car park, in the Kent Wildlife Trust museum and along the coastal walk and back.

The Questionnaires were conducted on 12.00 pm and 5.00 pm on Sunday 5<sup>th</sup> August, 10.00 am and 5.00 pm on Friday 10<sup>th</sup> August and 10.00 am and 5.00 pm on Friday 17<sup>th</sup> August 2007.

# Q.1 Where have you travelled from today?

r	T	
Tonbridge	1%	1
Hoath	2%	2
Dover	4%	4
Faversham	1%	1
Croydon	1%	1
Reculver	7%	7
Folkestone	1%	1
Sittingbourne	2%	2
Deal	1%	1
Sturry	1%	1
Westgate	1%	1
Marden	1%	1
Beltinge	1%	1
Bexley Heath	1%	1
Rochester	1%	1
Medway	1%	1
Ramsgate	6%	6
Herne	2%	2
Maidstone	1%	1
Beckingham	1%	1
Whitstable	3%	3
Margate	3%	3
Birchington	1%	1
Upstreet	1%	1
Bearstead	1%	1
Chatham	3%	3
Tunbridge Wells	1%	1
Canterbury	14%	14
Reculver Caravan Park	10%	10
Herne Bay	6%	6
Woolwich	1%	1
London	3%	3
Essex	1%	1
Potters Bar	1%	1
Gravesend	2%	2
Northampton	1%	1
Scotland	1%	1
Colchester	1%	1
Wales	1%	1
	1%	1
Islington		1
Germany	1%	
France	2%	2

### Q. 2. Are you aware of the following visitor sites in Kent?

White Cliffs	90	90%
Dover Castle	96	96%
Pegwell Bay	65	65%
Richborough Castle	34	34%
Stodmarsh/ Grove Ferry	41	41%
Blean Woods	39	39%
Samphire Hoe	25	25%
Fowlmead Country Park	8	8%

# Q.3. How did you find out about the existence of Reculver Country Park?

Leaflet/poster	1	1%
Newspaper	0	0%
Local knowledge	73	73%
Event	0	0%
Internet	4	4%
Driving past	4	4%
Library	0	0%
Tourist guide	12	12%
Other	7	7%

### Others:

Came with a school trip
Came on visits as a child on holiday
Historical interest
Saw the Roman Ruin site on a map
Staying on the caravan park on site
From a book on walks for children
En route to Dover after Scout event in London

## Q. 4. How do you usually travel to the site?

Train	0	0%
Bicycle	12	12%
Bus	1	1
On foot	8	8%
Car	76	76%
Motorbike/Scooter	1	1%
Other	1	1%

Other: Group Mini Bus

V.W Van Coach

## Q. 5 How often do you visit the site?

Daily	7	7%
At least once per week	8	8%
At least once per month	10	10%
Once every 2-6 months	24	24%
Less often	20	20%
First time	28	28%
Other	4	4%

**Other:** Annual visitor

Second visit

First visit in 6 years

First visit since childhood

## Q. 6 How much time do you normally spend in this park?

Less than 30 mins	3	3%
30 mins – 1 hour	28	28%
More than 1 but less than 2 hours	24	24%
2-4 hours	42	42%
More than 4 hours	5	5%

### Q. 7. Please specify your reason(s) for visiting

To enjoy the scenery	75	75%
Relaxation/contemplation	48	48%
Family	45	45%
Other	13	13%
Exercise	40	40%
To spend lunchtime	42	42%
To observe wildlife	43	43%
Cycling	17	17%
Dog walking	13	13%
Meeting people	1	1%
Sport	12	12%
Event	0	0%

### **Types of Sport enjoyed:**

Fishing x 4
Ball games x 6

### Other reasons for visiting:

Flying kites X 4
Fossil hunting x 1
Explore site
Nostalgia x 2
Touring coast
Pleasure

Re living childhood memories

Local pub

Interest in local history, (Barnes Wallace & bouncing bomb)

# Q. 8. Please indicate whether the following aspects of the site are satisfactory or unsatisfactory.

	Satisfactory		Satisfactory Unsatisfactory		No reply	/
Safety	100	100%				
Cleanliness	99	99%	1	1%		
Facilities	85	85%			13	13%
Maintenance	100	100%				
Access	98	98%	2	2%		
Signage	85	85%	15	15%		
Layout	100	100%	0			
Events	9	9%			91	91%

### Q. 9 Please suggest improvements for any of the above qualities or indicate any further facilities that you think should be made available at the site.

Larger dog litterbins

More dog litter bins

Dog litterbins emptied more often

More rubbish bins available

The Internet site needs to be easier to navigate for information

Parking at weekends and bank holidays difficult

Parking available for large vehicles – i.e. motor-homes

Cycle routes need signage

More historical data available on interpretation panels Re: 'Dam busters ' &

Barnes Wallace's bouncing bomb

Water fountains with fresh water available

Activities/ play areas for small children, swings etc.

Free parking available

Some park staff available

Wheelchair access difficult

Rubbish bins emptied more frequently

More directional signs for toilet facilities

More toilets

More toilets – specifically at the Bishopsgate end of site

More signs for toilets

More benches available especially around Towers

More benches available between the Towers and Bishopsgate area

Mobile rangers

Sports facilities – football pitch for games

Rubbish cleared from the beach below he Towers

Access to the Towers

Signs indicating presence of KWT

Safety issues with children climbing the walls by the towers

More secure fencing below towers

A cycle lane

Better maintenance of fences and gates

Camping facilities.... Ordinance survey maps out of date – show such facilities

More wildlife information

Advertising of events available on site in advance

Control of small motorbikes using the site

More retail services; ice cream. water and local produce available

More information about the area on interpretation panels

### Q.10 Gender

Male	46	46%
Female	54	54%

### Q. 11 Age

15 or under	5	5%
16-20	2	2%
21-30	10	10%
31-40	32	32%
41-50	17	17%
51-60	11	11%
Over 60	23	23%

### Q. 12 Do you have any special requirements (e.g. limited mobility) or registered disabilities which may affect your visit to Reculver Country Park?

Yes	1	1%
No	99	99%
No reply	0	0%

# Q. 13 What is your ethnic origin?

White British	96	96%
White Other	2	2%
Bangladeshi	0	0%
Indian	1	1%
Pakistani	0	0%
Chinese	0	0%
Pakistani	0	0%
Black Caribbean	0	0%
Black African	1	1%
Mixed race White and Black Caribbean	0	0%
Mixed race White and Black African	0	0%
Mixed race White and Asian	0	0%
Other	2	2%

# Biodiversity



Countryside and Rights of way Act 2000. Section 74: List of habitats and species of principal importance in England know to occur at Reculver Country Park.

### Habitats of principal Importance.

Maritime cliff and slopes

Mudflats

Sublittoral sands and gravels,

### **Species of Principal Importance.**

Skylark

Linnet

Corn Bunting

Turtle Dove Red

Song Thrush

Spotted Flycatcher

Tree sparrow

Grey partridge

Starling

House Sparrow

Fulmar

Kestrel

Ringed Plover

Stock Dove

Cuckoo

Green Woodpecker

Sand Martin

**Swallow** 

Meadow Pipit

Willow warbler

# **BISHOPSTONE & RECULVER - BUGLIFE SURVEY RESULTS 2007**

Species name	English name	Taxonomy 1	Taxonomy 2	Status	Grade [	Date
Aspidapion radiolus (Marsham)		Coleoptera	Apionidae	2.4.40	2.440	11/06/2006
Malvapion malvae (Fabricius)		Coleoptera	Apionidae		† †	11/06/2006
Oxystoma pomonae (Fabricius)		Coleoptera	Apionidae			11/06/2006
Protapion trifolii (Linnaeus)		Coleoptera	Apionidae			11/06/2006
Pseudapion rufirostre (Fabricius)		Coleoptera	Apionidae			11/06/2006
Involvulus caeruleus (De Geer)		Coleoptera	Attelabidae			11/06/2006
Neocoenorrhinus aequatus (Linnaeus)		Coleoptera	Attelabidae			11/05/1998
Neocoenorrhinus aequatus (Linnaeus)		Coleoptera	Attelabidae			11/06/2006
Bruchidius varius (Olivier)		Coleoptera	Bruchidae			11/06/2006
Bruchus loti Paykull		Coleoptera	Bruchidae			11/06/2006
Cantharis lateralis Linnaeus		Coleoptera	Cantharidae			11/06/2006
Cantharis rustica Fallén		Coleoptera	Cantharidae	common		11/06/2006
Rhagonycha fulva (Scopoli)		Coleoptera	Cantharidae	common		11/08/1984
				common		
Bembidion maritimum		Coleoptera	Carabidae	common		25/06/2006
Bembidion maritimum		Coleoptera	Carabidae	common	1 1	25/06/2006
Notiophilus biguttatus		Coleoptera	Carabidae	common	1	25/06/2006
Tetrops praeusta (Linnaeus)		Coleoptera	Cerambycidae			11/06/2006
Aphthona euphorbiae (Schrank)		Coleoptera	Chrysomelidae			11/06/2006
Longitarsus flavicornis (Stephens)		Coleoptera	Chrysomelidae			11/08/1984
Phyllotreta atra (Fabricius)		Coleoptera	Chrysomelidae			11/06/2006
Phyllotreta nigripes (Fabricius)		Coleoptera	Chrysomelidae			11/06/2006
Phyllotreta undulata Kutschera		Coleoptera	Chrysomelidae			11/06/2006
Adalia bipunctata (Linnaeus)		Coleoptera	Coccinellidae			11/05/1998
Propylea quattuordecimpunctata (Linnaeus)		Coleoptera	Coccinellidae			11/08/1984
Propylea quattuordecimpunctata (Linnaeus)		Coleoptera	Coccinellidae			11/05/1998
Tytthaspis sedecimpunctata (Linnaeus)		Coleoptera	Coccinellidae			11/06/2006
Ceutorhynchus assimilis (Paykull)		Coleoptera	Curculionidae			11/08/1984
Ceutorhynchus assimilis (Paykull)		Coleoptera	Curculionidae			11/06/2006
Ceutorhynchus pyrrhorhynchus (Marsham)		Coleoptera	Curculionidae			11/06/2006
Gymnetron pascuorum (Gyllenhal)		Coleoptera	Curculionidae			11/06/2006
Phyllobius roboretanus Gredler		Coleoptera	Curculionidae			11/06/2006
Sitona ononidis Sharp		Coleoptera	Curculionidae			11/06/2006
Agabus sturmii (Gyllenhal)		Coleoptera	Dytiscidae	common		11/08/1984
Colymbetes fuscus (Linnaeus)		Coleoptera	Dytiscidae	common		11/08/1984
Hydroporus palustris (Linnaeus)		Coleoptera	Dytiscidae	common		11/08/1984
Haliplus lineatocollis (Marsham)		Coleoptera	Haliplidae			11/08/1984
Aridius bifasciatus (Reitter)		Coleoptera	Lathridiidae			11/08/1984
Cortinicara gibbosa (Herbst)		Coleoptera	Lathridiidae			11/06/2006
Malachius viridis Fabricius		Coleoptera	Melyridae			11/06/2006
Oedemera nobilis (Scopoli)		Coleoptera	Oedemeridae			11/06/2006
Olibrus liquidus Erichson		Coleoptera	Phalacridae			11/06/2006
Anaspis maculata Fourcroy		Coleoptera	Scraptiidae			11/05/1998
Chiloporata longitarsis (Erichson)		Coleoptera	Staphylinidae	common		11/06/2006
Lagria hirta (Linnaeus)		Coleoptera	Tenebrionidae	local		11/08/1984
Forficula auricularia Linnaeus		Dermaptera	Forficulidae	common		11/08/1984
Cerodontha denticornis Panzer		Diptera	Agromyzidae			11/08/1984
Anthomyia procellaris Rondani		Diptera	Anthomyiidae			11/06/2006
Botanophila fugax (Meigen)		Diptera	Anthomyiidae			11/05/1998
Delia platura (Meigen)		Diptera	Anthomyiidae			11/05/1998
Delia radicum (Linnaeus)		Diptera	Anthomyiidae			11/05/1998
Dioctria rufipes (De Geer)		Diptera	Asilidae			11/06/2006
Dysmachus trigonus (Meigen)		Diptera	Asilidae		† †	11/06/2006
Epitriptus cingulatus (Fabricius)		Diptera	Asilidae		+ +	11/08/1984
Leptogaster cylindrica (De Geer)		Diptera	Asilidae		+ +	11/08/1984
Lopioguotor dymnarida (De Oddi)		Diptora	, tollidae	1		. 1/00/1004

Disphas Remoratus Meigen	Philonicus albiceps (Meigen)	Diptera	Asilidae	11/08/1984
Caliphora wicha Robineau-Dewoldy	Dilophus febrilis (Linnaeus)	Diptera	Bibionidae	11/05/1998
Chamarota curvipennis (Latreille)         Optera         Chamarota curvipennis (Latreille)         11/08/1984           Camarota curvipennis (Latreille)         Optera         Chioropidae         17/08/2084           Camarota curvipennis (Latreille)         Optera         Chioropidae         11/08/1984           Marotavaz variegata Melgen         Optera         Chioropidae         11/08/1984           Tricimba lineella (Fallen)         Optera         Chioropidae         11/08/1984           Physocephala rufipes (Fabricus)         Optera         Conopidae         11/08/1984           Sicus ferrugineus (Linnaeus)         Optera         Conopidae         11/08/1984           Olichopou surgustus (Linnaeus)         Optera         Ochiopodidae         11/08/1984           Medietra giocula (Fallen)         Optera         Oblichopodidae         11/08/1984           Medietra giocula (Fallen)         Optera         Oblichopodidae         11/08/1984           Medietra ruccula (Fallen)         Optera         Oblichopodidae         11/08/1984           Roham more vericome (Curtis)         Optera         Oblichopodidae         11/08/1984           Scajaus weideraman (Fallen)         Optera         Oblichopodidae         11/08/1984           Pracuphoprus moneanthus Loew         Optera         Oblichopodidae <td>Dilophus femoratus Meigen</td> <td>Diptera</td> <td>Bibionidae</td> <td>11/05/1998</td>	Dilophus femoratus Meigen	Diptera	Bibionidae	11/05/1998
Camarata curvipennis (Larielle) Conioscinella mimula Collin Diptera Chloropidae 11708/12000 Conioscinella mimula Collin Diptera Chloropidae 11708/1308 Moromyza variegatai Meigen Diptera Chloropidae 11708/1308 Triaumatomyai glabra (Meigen) Diptera Chloropidae 11708/1308 Physocophala rufipes (Fabricius) Diptera Chloropidae 11708/1308 Physocophala rufipes (Fabricius) Diptera Conopidae 11708/1308 Physocophala rufipes (Fabricius) Diptera Conopidae 11708/1308 Argyra argentelis (Zetterstedt) Diptera Dolichopodidae 11708/1308 Argyra argentelis (Zetterstedt) Diptera Dolichopodidae 11708/1308 Argyra argentelis (Zetterstedt) Diptera Dolichopodidae 11708/1308 Modetera micacea Loew Diptera Dolichopodidae 11708/1308 Modetera micacea Loew Diptera Dolichopodidae 11708/1308 Modetera micacea Loew Diptera Dolichopodidae 11708/1308 Rhaphium brevicorne (Curits) Sciapus wiedemanni (Falien) Diptera Dolichopodidae 11708/1308 Syntormon palipas (Fabricius) Diptera Dolichopodidae 11708/1308 Syntormon palipas (Fabricius) Diptera Dolichopodidae 11708/1308 Diptera Dolichopo	Calliphora vicina Robineau-Desvoidy	Diptera	Calliphoridae	11/06/2006
Conioscinella mimula Collin         Optera         Chioropidae         1108/1984           Meromyza variegata Meigen         Diptera         Chioropidae         1108/1984           Traumatomyja glabra (Meigen)         Diptera         Chioropidae         11708/1984           Tricimba lincella (Fallén)         Diptera         Chioropidae         11708/1984           Physocophala rutipes (Fabricus)         Optera         Conopidae         11708/1984           Sicus ferrugineus (Linneaus)         Optera         Conopidae         11708/1984           Sicus ferrugineus (Linneaus)         Optera         Dolichopodidae         11708/1984           Dolichopoul sugulatus (Linneaus)         Optera         Dolichopodidae         11708/1984           Medetera jacula (Fallén)         Optera         Dolichopodidae         11708/1984           Medetera runcorum Meigen         Optera         Dolichopodidae         11708/1984           Medetera truncorum Meigen         Optera         Dolichopodidae         11708/1984           Sciapus wiedemianni (Fallen)         Optera         Dolichopodidae         11708/1984           Sciapus wiedemianni (Fallen)         Optera         Dolichopodidae         11708/1984           Syntormon pallipes (Fabricus)         Optera         Dolichopodidae         11708/1984 <td>Chamaemyia aridella (Fallén)</td> <td>Diptera</td> <td>Chamaemyiidae</td> <td>11/08/1984</td>	Chamaemyia aridella (Fallén)	Diptera	Chamaemyiidae	11/08/1984
Meromyza variegata Meigen         Optera         Chloropidae         11/08/1984           Triaumatomysi glabra (Meigen)         Diptera         Chloropidae         11/08/1984           Tricimba linealla (Fallén)         Diptera         Chloropidae         11/08/1984           Physocophala rufípes (Fabricius)         Optera         Conopidae         11/08/1984           Sicus ferrugineus (Linnaeus)         Optera         Conopidae         11/08/1984           Argyra argentella (Zetterstedt)         Optera         Dolichopodidae         11/08/1984           Modetera picus (Fallén)         Optera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Optera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Optera         Dolichopodidae         11/08/1984           Rhaphium brevicorne (Curtis)         Diptera         Dolichopodidae         11/08/1984           Sciapus wedemanni (Fallen)         Optera         Dolichopodidae         11/08/1984           Syntomomo palipies (Fabricius)         Optera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Leew         Optera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Leew         Optera         Dolichopodidae         11/08/1984 <td>Camarota curvipennis (Latreille)</td> <td>Diptera</td> <td>Chloropidae</td> <td>17/08/2000</td>	Camarota curvipennis (Latreille)	Diptera	Chloropidae	17/08/2000
Thaumatomyia glabra (Meigen)	Conioscinella mimula Collin	Diptera	Chloropidae	11/08/1984
Tricimba linealia (Falleri)	Meromyza variegata Meigen	Diptera	Chloropidae	11/08/1984
Physocophala rufipes (Fabricius)  Diptera  Conopidae  I1/08/1984  Argyra argentelia (Zetterstedt)  Diptera  Dolichopodidae  I1/08/1984  Dolichopodidae  I1/08/1984  Modetera piacaba (Lowa  Modetera runcorum Meigen  Modetera runcorum Meigen  Diptera  Dolichopodidae  I1/08/1984  Sciapus wiedemanni (Fallén)  Diptera  Dolichopodidae  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Dolichopodidae  I1/08/1984  Scantholorus ornatus (Haliday)  Diptera  Empididae  I1/08/1984  I1/08/1984  Scapomyza qualinya (Meigen)  Diptera  Enhydridae  I1/08/1984  I1/08/1984  Scapomyza qualinya (Haliday)  Diptera  Diptera  Heleomyzidae  I1/08/1984  I1/08/1984  II/08/1984  II/08/1984  II/08/1984  II/08/1984  II/08/1984  II/08/1984  II/08/1984  II/	Thaumatomyia glabra (Meigen)	Diptera	Chloropidae	11/08/1984
Sicus ferrugineus (Linnaeus) Argyra argentella (Zetterstedt) Diptera Dolichopodidae 11/08/1984 Argyra argentella (Zetterstedt) Diptera Dolichopodidae 11/08/1984 Diptera Dolichopodidae 11/08/1984 Medetera micacea Loew Modetera micacea Loew Medetera Dolichopodidae Medetera Micacea Mica	Tricimba lineella (Fallén)	Diptera	Chloropidae	11/05/1998
Argyra argentella (Zettersladt)         Opitera         Dolichopoudidae         11/08/1986           Dolichopus ungulatus (Linnaeus)         Diptera         Dolichopodidae         11/08/2006           Medetera micacea Loew         Optera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Optera         Dolichopodidae         11/08/1984           Rhaphium brevicome (Curtis)         Diptera         Dolichopodidae         11/08/1984           Sciapus wiedemanni (Fallén)         Optera         Dolichopodidae         11/08/1984           Syntomorp Dalipse (Fabricius)         Optera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Optera         Dolichopodidae         11/08/1984           Vanthochlorus ornatus (Haliday)         Optera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Optera         Dolichopodidae         11/08/1986           Vanthochlorus ornatus (Haliday)         Optera         Dolichopodidae         11/08/1986           Teuchophorus monacanthus Loew         Optera         Dolichopodidae         11/08/1986           Vanthochlorus ornatus (Haliday)         Optera         Dolichopodidae         11/08/1986           Vanthochlorus ornatus (Haliday)         Optera         Dolich	Physocephala rufipes (Fabricius)	Diptera	Conopidae	11/08/1984
Dolichopus ungulatus (Linaeus) Dolichopus ungulatus (Linaeus) Dolichopodidae Dolichopodidae 11/08/1984 Medetera riaceaea Loew Dolichopodidae Medetera furucorum Meigen Dolichopodidae Dolichopodidae Dolichopodidae Medetera furucorum Meigen Dolichopodidae Dolichopodidae Dolichopodidae Sciapus wiedemanni (Fallen) Dolichopodidae Dolichopodidae Dolichopodidae Sciapus wiedemanni (Fallen) Dolichopodidae Dolichopodid	Sicus ferrugineus (Linnaeus)	Diptera	Conopidae	11/08/1984
Medetera jacula (Fallén)         Diptera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Diptera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Diptera         Dolichopodidae         11/08/1984           Rhaphium brevicorne (Curtis)         Diptera         Dolichopodidae         11/08/1984           Sciapus wiedemanni (Fallén)         Diptera         Dolichopodidae         11/08/1984           Syntomon pallipse (Fabricius)         Diptera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Diptera         Dolichopodidae         11/08/1984           Xanthochiorus ornatus (Haliday)         Diptera         Drosophilidae         11/08/1984           Drosophila phalerata Meigen         Diptera         Drosophilidae         11/08/1984           Cosaphomyza pallida (Zetterstedt)         Diptera         Drosophilidae         11/06/1988           Empis trigramma Meigen         Diptera         Empididae         11/06/1988           Rhamphomyia tarsata Meigen         Diptera         Empididae         11/06/2006           Scatella paludum (Meigen)         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallón)         Diptera         Ephydridae         11/06/2006 <td>Argyra argentella (Zetterstedt)</td> <td>Diptera</td> <td>Dolichopodidae</td> <td>11/08/1984</td>	Argyra argentella (Zetterstedt)	Diptera	Dolichopodidae	11/08/1984
Medetera jacula (Fallén)         Diptera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Diptera         Dolichopodidae         11/08/1984           Medetera micacea Loew         Diptera         Dolichopodidae         11/08/1984           Rhaphium brevicorne (Curtis)         Diptera         Dolichopodidae         11/08/1984           Sciapus wiedemanni (Fallén)         Diptera         Dolichopodidae         11/08/1984           Syntomon pallipse (Fabricius)         Diptera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Diptera         Dolichopodidae         11/08/1984           Xanthochiorus ornatus (Haliday)         Diptera         Drosophilidae         11/08/1984           Drosophila phalerata Meigen         Diptera         Drosophilidae         11/08/1984           Cosaphomyza pallida (Zetterstedt)         Diptera         Drosophilidae         11/06/1988           Empis trigramma Meigen         Diptera         Empididae         11/06/1988           Rhamphomyia tarsata Meigen         Diptera         Empididae         11/06/2006           Scatella paludum (Meigen)         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallón)         Diptera         Ephydridae         11/06/2006 <td>Dolichopus ungulatus (Linnaeus)</td> <td>Diptera</td> <td>Dolichopodidae</td> <td>11/06/2006</td>	Dolichopus ungulatus (Linnaeus)	Diptera	Dolichopodidae	11/06/2006
Medetera micacea Loew         Diptera         Dolichopodidae         11/08/1984           Medetera truncorum Meigen         Diptera         Dolichopodidae         11/08/1984           Khaphium brevicorne (Curis)         Diptera         Dolichopodidae         11/08/1984           Sciapus wiedemanni (Fallen)         Diptera         Dolichopodidae         11/08/1984           Syntomon pallipes (Fabricius)         Diptera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Diptera         Dolichopodidae         11/08/1984           Xanthochlorus ornatus (Haliday)         Diptera         Dolichopodidae         11/08/1984           Xanthochlorus ornatus (Haliday)         Diptera         Dolichopodidae         11/08/1984           Xanthochlorus ornatus (Haliday)         Diptera         Drosophilade         11/08/1986           Orosophila andalusiaca Strobl         Diptera         Drosophilade         11/08/1908           Captera Papididae         11/08/1908         11/08/1908           Scaptomyza pallida (Zetterstedt)         Diptera         Drosophilidae         11/08/1908           Scaptomyza qualida (Zetterstedt)         Diptera         Empididae         11/08/1908           Csatella stagnalis (Fallen)         Diptera         Empididae         11/08/1908		Diptera	Dolichopodidae	11/08/1984
Medetera truncorum Meigen Diptera Dolichopodidae Diptera Drosophilidae Diptera Drosophilidae Drosophilidae Diptera Dipt	Medetera micacea Loew	Diptera	Dolichopodidae	11/08/1984
Rhaphium brevicome (Curtis)  Sciapus wiedemanni (Fallén)  Diptera Dolichopodidae 11/08/1984 Sciapus wiedemanni (Fallén)  Diptera Dolichopodidae 11/08/1984 Teuchophorus monacanthus Loew  Diptera Dolichopodidae 11/08/1984 Torsophilidae 11/08/1984 Diptera Drosophilidae 11/08/1984 Scaptomyza pallida (Zetterstedt) Diptera Drosophilidae 11/08/1984 Empis trigramma Meigen Diptera Empididae 11/08/1984 Empis trigramma Meigen Diptera Empididae 11/08/1984 Rhamphomyia tarsata Meigen Diptera Empididae 11/06/2006 Scatella paludum (Meigen) Diptera Ephydridae 11/06/2006 Scatella paludum (Meigen) Diptera Ephydridae 11/06/2006 Scatella paludum (Meigen) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Fallén) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Callén) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Callén) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Callén) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Fallén) Diptera Heleomyzidae 11/06/1998 Suillia variegata (Loew) Diptera Heleomyzidae 11/06/1998 Suillia variegata (Loew) Diptera Heleomyzidae 11/06/1998 Suillia variegata (Loew) Diptera Lauxaniidae 11/06/1998 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/06/1998 Sumplecta stictica (Meigen) Diptera Limoniidae 11/06/1998 Sumplecta stictica (Meigen) Diptera Limoniidae 11/06/1998 Symplecta stictica (Meigen) Diptera Limoniidae 11/06/1998 Senbenomyza (Hellén) Diptera Limoniidae 11/0	Medetera truncorum Meigen	Diptera		11/08/1984
Sciapus wiedemanni (Fallén)         Diptera         Dolichopodidae         11/08/1984           Syntomon pallipes (Fabricius)         Diptera         Dolichopodidae         11/08/1984           Xanthochlorus ornatus (Haliday)         Diptera         Dolichopodidae         11/08/1984           Xanthochlorus ornatus (Haliday)         Diptera         Dolichopodidae         11/08/1984           Drosophila andalusiaca Strobi         Diptera         Drosophilidae         11/08/1984           Drosophila palerata Meigen         Diptera         Drosophilidae         11/08/1984           Scaptomyza pallida (Zetterstedt)         Diptera         Empididae         11/08/1984           Empis trigramma Meigen         Diptera         Empididae         11/06/1998           Rhamphornyia tarsata Meigen         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallén)         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallén)         Diptera         Ephydridae         11/06/2006           Fannia lustrator Harris         Diptera         Fannidae         11/06/1998           Suilia bicolor (Zetterstedt)         Diptera         Fannidae         11/06/1998           Suilia bicolor (Zetterstedt)         Diptera         Heleomyzidae         11/06/1998 <td></td> <td>Diptera</td> <td></td> <td>11/08/1984</td>		Diptera		11/08/1984
Syntomon pallipes (Fabricius)         Diptera         Dolichopodidae         11/08/1984           Teuchophorus monacanthus Loew         Diptera         Dolichopodidae         11/08/1984           Azanthochlorus ornatus (Haliday)         Diptera         Drosophila de         11/08/1984           Drosophila phalerata Meigen         Diptera         Drosophilidae         11/06/2006           Scaptomyza pallida (Zetterstedt)         Diptera         Drosophilidae         11/06/1998           Empis trigramma Meigen         Diptera         Empididae         11/06/1998           Rhamphomyia tarsata Meigen         Diptera         Empididae         11/06/2006           Dittichophora calceata (Meigen)         Diptera         Ephydridae         11/06/2006           Scatella patudum (Meigen)         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallén)         Diptera         Ephydridae         11/06/2006           Fannia sustrator Harris         Diptera         Enhydridae         11/06/2006           Fannia sociella (Zetterstedt)         Diptera         Fanniidae         11/06/1908           Suillia bicolor (Zetterstedt)         Diptera         Heleomyzidae         11/06/1908           Suillia variegata (Loew)         Diptera         Heleomyzidae         11/06/1908			· ·	11/08/1984
Teuchophorus monacanthus Loew  Diptera Dolichopodidae Dolichopodidae Dolichopodidae Dolichopodidae Dorsophilidae D			·	11/08/1984
Xanthochlorus ornatus (Haliday)  Diptera  Dolichopodidae  11/08/1984  Drosophila andalusiaca Strobl  Diptera  Drosophila phalerata Meigen  Scaptomyza pallida (Zetterstedt)  Diptera  Drosophilidae  11/08/1984  Scaptomyza pallida (Zetterstedt)  Diptera  Drosophilidae  11/08/1988  Scaptomyza pallida (Zetterstedt)  Diptera  Drosophilidae  11/08/1988  Scaptomyza pallida (Zetterstedt)  Diptera  Empididae  11/08/2006  Scatella paludum (Meigen)  Diptera  Ephydridae  11/08/2006  Scatella paludum (Meigen)  Diptera  Ephydridae  11/08/2006  Scatella stagnalis (Fallen)  Diptera  Ephydridae  11/08/2006  Scatella stagnalis (Fallen)  Diptera  Ephydridae  11/08/2006  Scatella stagnalis (Fallen)  Diptera  Ephydridae  11/08/1988  11/08/1988  Fannia sociella (Zetterstedt)  Diptera  Fanniidae  11/08/1988  Suillila bicolor (Zetterstedt)  Diptera  Ephydridae  11/08/1988  11/08/1988  Fannia sociella (Zetterstedt)  Diptera  Fanniidae  11/08/1988  Suillila variegata (Loew)  Diptera  Heleomyzidae  11/08/1988  Biosomyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1988  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1988  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1988  Diptera  Lauxaniidae  11/08/1989  Diptera  Limoniidae  11/08/1989  Diptera  Li		Diptera	· ·	11/08/1984
Drosophila andalusiaca Strobl Drosophila phalerata Meigen Diptera Drosophila phalerata Meigen Diptera Drosophila phalerata Meigen Diptera Drosophilidae 11/06/1984 Empis trigramma Meigen Diptera Diptera Empididae 11/06/1984 Rhamphomyia tarsata Meigen Diptera Diptera Empididae 11/06/2006 Ditrichophora calceata (Meigen) Diptera Diptera Ephydridae 11/06/2006 Scatella patudm (Meigen) Diptera Ephydridae 11/06/2006 Scatella patudm (Meigen) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Fallén) Diptera Ephydridae 11/06/2006 Scatella stagnalis (Catterstedt) Diptera Fannia sociella (Zetterstedt) Diptera Fannia sociella (Zetterstedt) Diptera Fannia sociella (Zetterstedt) Diptera Heleomyzidae 11/05/1998 Suillia variegata (Loew) Diptera Heleomyzidae 11/05/1998 Suillia variegata (Loew) Diptera Heleomyzidae 11/05/1998 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/06/1998 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/06/2006 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/06/2006 Diptera Lauxaniidae 11/06/2006 Lirmoniidae 11/06/2006 Diptera Limoniidae 11/06/2006 Limonia flavipes (Fabricius) Diptera Limoniidae 11/06/1998 Symplecta stictica (Meigen) Diptera Limoniidae 11/06/1998 Symplecta stictica (Meigen) Diptera Limoniidae 11/06/2006 Di	•			
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Scaptomyza pallida (Zetterstedt)  Diptera  Diptera  Empididae  11/06/1998  Rhamphomyia tarsata Meigen  Diptera  Empididae  11/06/2006  Scatella paludum (Meigen)  Diptera  Ephydridae  11/06/2006  Scatella paludum (Meigen)  Diptera  Ephydridae  11/06/2006  Scatella stagnalis (Fallén)  Diptera  Ephydridae  11/06/2006  Scatella stagnalis (Fallén)  Diptera  Ephydridae  11/06/2006  Scatella stagnalis (Fallén)  Diptera  Ephydridae  11/06/2006  Ephydridae  11/06/2006  Ephydridae  11/06/2006  Ephydridae  11/06/2006  Ephydridae  11/06/1908  Ephydridae  11/06/1908  Ephydridae  11/06/1908  Fannia sociella (Zetterstedt)  Diptera  Ephydridae  11/06/1908  Fannia sociella (Zetterstedt)  Diptera  Ephydridae  11/06/1908  Fannia sociella (Zetterstedt)  Diptera  Heleomyzidae  11/06/1908  Suillia bicolor (Zetterstedt)  Diptera  Heleomyzidae  11/06/1908  Ephydridae  11/06/1908  Ili/06/1908  Suillia variegata (Loew)  Diptera  Heleomyzidae  11/06/1908  Heleomyzidae  11/06/1908  Heleomyzidae  11/06/1908  Ephydridae  11/06/1908  Ili/06/1908  Ephydridae  11/06/1908  Ili/06/1908  Ili/06/1908  Ephydridae  11/06/1908  Ili/06/1908  Ili/06/1908  Ephydridae  11/06/1908  Ili/06/1908  Ili/06	· · · · · · · · · · · · · · · · · · ·	+	· ·	
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Rhamphomyia tarsata Meigen   Diptera   Empididae   11/06/2006   11/0		<u> </u>	· ·	
Ditrichophora calceata (Meigen)  Scatella paludum (Meigen)  Scatella stagnalis (Fallén)  Fannia lustrator Harris  Fannia sociella (Zetterstedt)  Diptera  Fanniidae  11/06/2006  Fannia lustrator Harris  Diptera  Fanniidae  11/06/1998  Fannia sociella (Zetterstedt)  Diptera  Fanniidae  11/06/1998  Suillia bicolor (Zetterstedt)  Diptera  Heleomyzidae  11/06/1998  Suillia variegata (Loew)  Diptera  Heleomyzidae  11/06/1998  Platypalpus annulipes (Meigen)  Diptera  Hybotidae  11/06/1998  Platypalpus annulipes (Meigen)  Diptera  Lauxaniidae  11/06/1998  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/1998  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Limoniidae  11/06/2006  Limoniidae  11/06/2006  Limoniidae  11/06/2006  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/06/2006  Setisquamalonchaea fumosa Egger  Diptera  Lonchopteridae  11/06/2006  11/06/2006  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  11/06/2006  Geomyza florum (Fabricius)  Diptera  Diptera  Diptera  Diptera  Diptera		<u> </u>		11/06/2006
Scatella paludum (Meigen)         Diptera         Ephydridae         11/06/2006           Scatella stagnalis (Fallén)         Diptera         Ephydridae         11/06/2006           Fannia lustrator Harris         Diptera         Fanniidae         11/05/1936           Fannia sociella (Zetterstedt)         Diptera         Fanniidae         11/05/1936           Suillia bicolor (Zetterstedt)         Diptera         Heleomyzidae         11/05/1936           Suillia variegata (Loew)         Diptera         Heleomyzidae         11/05/1936           Suillia variegata (Loew)         Diptera         Heleomyzidae         11/05/1936           Weiosimyza anulipes (Meigen)         Diptera         Lauxaniidae         11/05/1936           Meiosimyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/1936           Sapromyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/2006           Sapromyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/2006           Sapromyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/2006           Bilisia maculata (Meigen)         Diptera         Limoniidae         11/06/2006           Limonia flavipes (Fabricius)         Diptera         Limoniidae         11/06/1936 <td></td> <td></td> <td></td> <td></td>				
Scatella stagnalis (Fallén)         Diptera         Ephydridae         11/06/2006           Fannia lustrator Harris         Diptera         Fannidae         11/06/1936           Fannia sociella (Zetterstedt)         Diptera         Fannidae         11/05/1936           Suillia bicolor (Zetterstedt)         Diptera         Heleomyzidae         11/05/1936           Suillia variegata (Loew)         Diptera         Heleomyzidae         11/05/1936           Platypalpus annulipes (Meigen)         Diptera         Hybotidae         11/05/1936           Meiosimyza affinis (Zetterstedt)         Diptera         Lauxaniidae         11/05/1936           Sapromyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/1936           Sapromyza quadripunctata Linnaeus         Diptera         Lauxaniidae         11/06/2006           Dicranomyia mitis (Meigen)         Diptera         Lauxaniidae         11/06/1936           Dicranomyia mitis (Meigen)         Diptera         Limoniidae         11/06/1936           Limonia flavipes (Fabricius)         Diptera         Limoniidae         11/06/1936           Limonia flavipes (Fabricius)         Diptera         Limoniidae         11/06/1936           Symplecta stictica (Meigen)         Diptera         Limoniidae         11/06/1936				
Fannia lustrator Harris  Diptera Fannia sociella (Zetterstedt)  Diptera Fanniidae  Diptera Fanniidae  Diptera Fanniidae  Diptera Fanniidae  Diptera Fanniidae  Diptera  Heleomyzidae  Diptera  Hybotidae  Diptera  Lauxaniidae  Diptera  Limoniidae  Diptera  Diptera  Limoniidae  Diptera  Diptera  Diptera  Limoniidae  Diptera  Diptera  Diptera  Diptera  Limoniidae  Diptera  Dipt	· · · · · · · · · · · · · · · · · · ·			
Fannia sociella (Zetterstedt)  Diptera  Fanniidae  11/05/1998  Suillia bicolor (Zetterstedt)  Diptera  Heleomyzidae  11/05/1998  Suillia variegata (Loew)  Diptera  Heleomyzidae  11/05/1998  Platypalpus annulipes (Meigen)  Meiosimyza affinis (Zetterstedt)  Diptera  Hybotidae  11/05/1998  Meiosimyza affinis (Zetterstedt)  Diptera  Lauxaniidae  11/08/1998  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1988  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/2006  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Dicranomyia mitis (Meigen)  Diptera  Limoniidae  11/05/1998  Diptera  Limoniidae  11/05/1998  Diptera  Limoniidae  11/05/1998  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/2006  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/1998  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/2006  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/2006  Diptera  Limoniidae		<u> </u>		
Suillia bicolor (Zetterstedt)  Diptera  Heleomyzidae  11/05/1998 Suillia variegata (Loew)  Diptera  Heleomyzidae  11/05/1998 Platypalpus annulipes (Meigen)  Meiosimyza affinis (Zetterstedt)  Diptera  Lauxaniidae  11/05/1998 Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1998 Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/2006 Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/2006  Dicranomya mitis (Meigen)  Diptera  Limoniidae  Diptera  Limoniidae  11/06/2006  Limonia flavipes (Fabricius)  Diptera  Limoniidae  Diptera  Limoniidae  11/05/1998  Diptera  Limoniidae  11/05/1998  Diptera  Limoniidae  11/05/1998  Diptera  Limoniidae  11/06/2006  Diptera  Limoniidae  11/06/2006  Diptera  Limoniidae  11/06/2006  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/2006  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/2006  Diptera  Limoniidae  11/08/1998  Limonioniidae  11/08/2006  Diptera  Limoniidae  11/08/1998  Limoniidae  11/08/2006  Diptera  Limoniidae  11/08/1998  Diptera  Limoniidae  11/08/2006  Diptera  Limoni	Fannia sociella (Zetterstedt)		Fanniidae	_
Suillia variegata (Loew)  Platypalpus annulipes (Meigen)  Meiosimyza affinis (Zetterstedt)  Diptera  Diptera  Hybotidae  11/05/1998  Bapromyza quadripunctata Linnaeus  Diptera  Diptera  Lauxaniidae  11/08/1998  Sapromyza quadripunctata Linnaeus  Diptera  Diptera  Lauxaniidae  11/08/1998  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/2006  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Diptera  Limoniidae  11/05/1998  Limoniidae  Li	` ,			
Platypalpus annulipes (Meigen)  Meiosimyza affinis (Zetterstedt)  Diptera  Diptera  Lauxaniidae  11/05/1998  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/1984  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  17/08/2000  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006  Diptera  Lauxaniidae  11/06/2006  Diptera  Limoniidae  11/06/2006  Limoniidae  11/06/2006  Limoniidae  Limonii	, ,	-		
Meiosimyza affinis (Zetterstedt)  Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/05/1998 Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/08/2006 Sapromyza quadripunctata Linnaeus  Diptera  Lauxaniidae  11/06/2006 Dicranomyia mitis (Meigen)  Diptera  Limoniidae  11/06/2006 Limonia flavipes (Fabricius)  Limonia phragmitidis (Schrank)  Diptera  Limoniidae  11/05/1998 Symplecta stictica (Meigen)  Diptera  Limoniidae  11/05/1998 Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/2006 Setisquamalonchaea fumosa Egger  Diptera  Lonchoptera bifurcata (Fallén)  Diptera  Lonchoptera lutea Panzer  Diptera  Lonchoptera lutea Panzer  Diptera  Lonchopteridae  11/06/2006 Lonchoptera lutea Panzer  Diptera  Muscidae  11/06/2006				
Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/08/1984 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/08/2006 Sapromyza quadripunctata Linnaeus Diptera Lauxaniidae 11/06/2006 Dicranomyia mitis (Meigen) Diptera Limoniidae Limoniidae 11/05/1998 Ilisia maculata (Meigen) Diptera Limoniidae Symplecta stictica (Meigen) Diptera Limoniidae Limoniae Limoniidae Limoniade Limoniade Limoniade Limoniade Limoniade		•	1 -	
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Sapromyza quadripunctata Linnaeus Diptera Limoniidae Li		_		
Dicranomyia mitis (Meigen) Diptera Limoniidae Limoniida				_
Diptera Limoniidae   11/06/2006   Limonia flavipes (Fabricius)   Diptera Limoniidae   11/06/2006   Limonia flavipes (Fabricius)   Diptera Limoniidae   11/05/1998   Limonia phragmitidis (Schrank)   Diptera Limoniidae   11/08/1998   Limoniidae   11/08/1998   Limoniidae   11/08/1998   Limoniidae   11/08/2006   Limoniidae   Limoniidae   11/08/2006   Limoniidae   Limoniidae   11/08/2006   Limoniidae   Limoni		-		
Limonia flavipes (Fabricius)  Limonia phragmitidis (Schrank)  Diptera  Limoniidae  Limoniidae  Diptera  Limoniidae  11/08/1984  Diptera  Limoniidae  11/08/2006  Symplecta stictica (Meigen)  Diptera  Limoniidae  Diptera  Limoniidae  11/08/2006  Limoniidae  11/08/2006  Diptera  Limoniidae  11/08/2006  Limoniidae  11/08/2006  Diptera  Lonchaeidae  11/08/1984  Lonchoptera bifurcata (Fallén)  Diptera  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Diptera  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Diptera  Muscidae  11/08/2006  Diptera  Muscidae  11/08/2006  Diptera  Dipt	, , ,			
Limonia phragmitidis (Schrank)  Symplecta stictica (Meigen)  Setisquamalonchaea fumosa Egger  Limoniidae  Limoniidae  11/08/2006  Setisquamalonchaea fumosa Egger  Lonchoptera Lonchaeidae  Lonchoptera Lonchopteridae  Lonchoptera Lonchopteridae  Lonchoptera Lonchopteridae  Lonchoptera Lonchopteridae  Lonchoptera Lonchopteridae  Lonchoptera Lonchopteridae  Lonchopteridae  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Muscidae  11/05/1998  Phaonia subventa (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Comyza tripunctata Fallén  Diptera  Opomyzidae  11/08/1984	, , ,	-		
Symplecta stictica (Meigen)  Symplecta stictica (Meigen)  Diptera  Diptera  Limoniidae  11/08/1984  Symplecta stictica (Meigen)  Diptera  Limoniidae  11/08/2006  Setisquamalonchaea fumosa Egger  Diptera  Lonchaeidae  11/08/1984  Lonchoptera bifurcata (Fallén)  Diptera  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Lonchopteridae  11/08/2006  Hebecnema vespertina (Fallén)  Diptera  Diptera  Muscidae  11/05/1998  Phaonia subventa (Harris)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  11/06/2006  Diptera  Muscidae  11/06/2006  11/06/2006  Diptera  Muscidae  11/06/2006  11/06/2006  Diptera  Muscidae  11/08/1998  Schoenomyza tripunctata Fallén  Diptera  Opomyzidae  11/08/1984				
Symplecta stictica (Meigen)  Symplecta stictica (Meigen)  Diptera  Diptera  Limoniidae  11/06/2006  Setisquamalonchaea fumosa Egger  Diptera  Lonchaeidae  11/08/1984  Lonchoptera bifurcata (Fallén)  Diptera  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Lonchopteridae  11/06/2006  Lonchoptera lutea Panzer  Diptera  Lonchopteridae  11/06/2006  Hebecnema vespertina (Fallén)  Diptera  Muscidae  11/05/1998  Phaonia subventa (Harris)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Copomyza tripunctata Fallén  Diptera  Diptera  Opomyzidae  11/08/2006  Opomyza florum (Fabricius)				
Symplecta stictica (Meigen)  Setisquamalonchaea fumosa Egger  Diptera  Lonchaeidae  Lonchoptera bifurcata (Fallén)  Lonchoptera lutea Panzer  Diptera  Diptera  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Lonchopteridae  11/06/2006  Hebecnema vespertina (Fallén)  Diptera  Muscidae  11/05/1998  Helina impuncta (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Geomyza tripunctata Fallén  Diptera  Diptera  Opomyzidae  11/08/2006  Opomyza florum (Fabricius)	1 2 1	-		
Setisquamalonchaea fumosa Egger  Diptera  Lonchaeidae  Lonchoptera bifurcata (Fallén)  Diptera  Lonchoptera lutea Panzer  Diptera  Diptera  Lonchopteridae  11/08/2006  Lonchoptera lutea Panzer  Diptera  Diptera  Muscidae  11/05/1998  Helina impuncta (Fallén)  Diptera  Muscidae  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Ceomyza tripunctata Fallén  Diptera  Diptera  Opomyzidae  11/08/1984	1 - 1		Į	
Lonchoptera bifurcata (Fallén)  Lonchoptera lutea Panzer  Diptera  Diptera  Lonchopteridae  11/06/2006  Hebecnema vespertina (Fallén)  Diptera  Muscidae  11/05/1998  Helina impuncta (Fallén)  Diptera  Muscidae  11/05/1998  Phaonia subventa (Harris)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Geomyza tripunctata Fallén  Diptera  Diptera  Opomyzidae  11/08/2006  Diptera  Opomyzidae  11/08/1984	, ,	_ ·		
Lonchoptera lutea Panzer Diptera Lonchopteridae 11/06/2006 Hebecnema vespertina (Fallén) Diptera Muscidae 11/05/1998 Helina impuncta (Fallén) Diptera Muscidae 11/05/1998 Phaonia subventa (Harris) Diptera Muscidae 11/05/1998 Schoenomyza litorella (Fallén) Diptera Muscidae 11/05/1998 Schoenomyza litorella (Fallén) Diptera Muscidae 11/06/2006 Geomyza tripunctata Fallén Diptera Opomyzidae 17/08/2006 Opomyza florum (Fabricius) Diptera Opomyzidae 11/08/1984				17/08/2000
Hebecnema vespertina (Fallén)  Helina impuncta (Fallén)  Diptera  Muscidae  11/05/1998  Phaonia subventa (Harris)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/05/1998  Schoenomyza litorella (Fallén)  Diptera  Muscidae  11/06/2006  Geomyza tripunctata Fallén  Diptera  Opomyzidae  11/08/1984	1 1	Diptera		Į.
Helina impuncta (Fallén)DipteraMuscidae11/05/1998Phaonia subventa (Harris)DipteraMuscidae11/05/1998Schoenomyza litorella (Fallén)DipteraMuscidae11/05/1998Schoenomyza litorella (Fallén)DipteraMuscidae11/06/2006Geomyza tripunctata FallénDipteraOpomyzidae17/08/2006Opomyza florum (Fabricius)DipteraOpomyzidae11/08/1984	<u> </u>			11/05/1998
Phaonia subventa (Harris)DipteraMuscidae11/05/1998Schoenomyza litorella (Fallén)DipteraMuscidae11/05/1998Schoenomyza litorella (Fallén)DipteraMuscidae11/06/2006Geomyza tripunctata FallénDipteraOpomyzidae17/08/2006Opomyza florum (Fabricius)DipteraOpomyzidae11/08/1984	. , ,			11/05/1998
Schoenomyza litorella (Fallén)DipteraMuscidae11/05/1998Schoenomyza litorella (Fallén)DipteraMuscidae11/06/2006Geomyza tripunctata FallénDipteraOpomyzidae17/08/2006Opomyza florum (Fabricius)DipteraOpomyzidae11/08/1984		+ -	Į.	Į.
Schoenomyza litorella (Fallén)DipteraMuscidae11/06/2006Geomyza tripunctata FallénDipteraOpomyzidae17/08/2006Opomyza florum (Fabricius)DipteraOpomyzidae11/08/1984				
Geomyza tripunctata FallénDipteraOpomyzidae17/08/2000Opomyza florum (Fabricius)DipteraOpomyzidae11/08/1984				4
Opomyza florum (Fabricius)   Diptera   Opomyzidae   11/08/1984		-		
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	, ,			11/08/1984

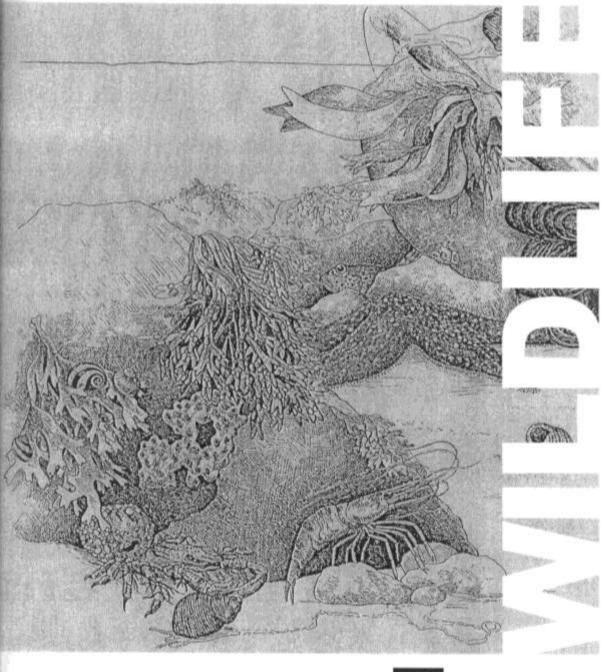
		Opomyzidae	11/06/2006
Rhinophora lepida (Meigen)	Diptera	Rhinophoridae	11/08/1984
Sarcophaga carnaria (Linnaeus)	Diptera	Sarcophagidae	14/08/1984
Sarcophaga dissimilis Meigen	Diptera	Sarcophagidae	14/08/1984
Sarcophaga incisilobata Pandelle	Diptera	Sarcophagidae	14/08/1984
Sarcophaga melanura Meigen	Diptera	Sarcophagidae	14/08/1984
Sarcophaga subvicina Rohdendorf	Diptera	Sarcophagidae	14/08/1984
Chaetosa punctipes (Meigen)	Diptera	Scathophagidae	11/06/2006
Nanna fasciata (Meigen)	Diptera	Scathophagidae	11/05/1998
Scathophaga litorea (Fallén)	Diptera	Scathophagidae	17/08/2000
Scathophaga lutaria (Fabricius)	Diptera	Scathophagidae	11/05/1998
Scathophaga stercoraria (Linnaeus)	Diptera	Scathophagidae	11/06/2006
Pherbellia cinerella (Fallén)	Diptera	Sciomyzidae	11/06/2006
Nemopoda nitidula (Fallén)	Diptera	Sepsidae	11/06/2006
Opacifrons coxata (Stenhammar)	Diptera	Sphaeroceridae	11/08/1984
Opacifrons humida (Haliday)	Diptera	Sphaeroceridae	11/08/1984
Chloromyia formosa (Scopoli)	Diptera	Stratiomyidae	11/08/1984
Chloromyia formosa (Scopoli)	Diptera	Stratiomyidae	11/06/2006
Cheilosia honesta Rondani	Diptera	Syrphidae	11/06/2006
Episyrphus balteatus (De Geer)	Diptera	Syrphidae	11/08/1984
Eristalinus sepulchralis (Linnaeus)	Diptera	Syrphidae	11/08/1984
Eristalis interruptus (Poda)	Diptera	Syrphidae	14/08/1984
Eristalis Interruptus (Foda) Eristalis tenax (Linnaeus)	Diptera	Syrphidae	11/08/1984
Eristalis teriax (Linnaeus)	Diptera	Syrphidae	14/08/1984
Eumerus strigatus (Fallén)	Diptera	Syrphidae	11/08/1984
Eupeodes corollae (Fabricius)			11/06/2006
Melanostoma scalare (Fabricius)	Diptera	Syrphidae	11/06/2006
` ′	Diptera	Syrphidae	
Meliscaeva auricollis (Meigen)	Diptera	Syrphidae	11/05/1998
Merodon equestris (Fabricius)	Diptera	Syrphidae	11/06/2006
Myathropa florea (Linnaeus)	Diptera	Syrphidae	14/08/1984
Platycheirus angustatus (Zetterstedt)	Diptera	Syrphidae	11/05/1998
Platycheirus clypeatus (Meigen)	Diptera	Syrphidae	11/08/1984
Sphaerophoria scripta (Linnaeus)	Diptera	Syrphidae	11/08/1984
Syritta pipiens (Linnaeus)	Diptera	Syrphidae	11/08/1984
Syritta pipiens (Linnaeus)	Diptera	Syrphidae	17/08/2000
Volucella bombylans (Linnaeus)	Diptera	Syrphidae	14/08/1984
Volucella inanis (Linnaeus)	Diptera	Syrphidae	14/08/1984
Volucella pellucens (Linnaeus)	Diptera	Syrphidae	14/08/1984
Volucella zonaria (Poda)	Diptera	Syrphidae	11/08/1984
Volucella zonaria (Poda)	Diptera	Syrphidae	14/08/1984
Xanthogramma citrofasciatum (De Geer)	Diptera	Syrphidae	11/06/2006
Tabanus autumnalis Linnaeus	Diptera	Tabanidae	11/08/1984
Eriothrix rufomaculata (DeGeer)	Diptera	Tachinidae	11/08/1984
Lydella grisescens Robineau-Desvoidy	Diptera	Tachinidae	11/08/1984
Medina collaris (Fallén)	Diptera	Tachinidae	11/05/1998
Thelaira nigripes (Fabricius)	Diptera	Tachinidae	14/08/1984
Acanthiophilus helianthi (Rossi)	Diptera	Tephritidae	11/08/1984
Acanthiophilus helianthi (Rossi)	Diptera	Tephritidae	02/08/1994
Chaetorellia jaceae (Robineau-Desvoidy)	Diptera	Tephritidae	02/08/1994
Chaetorellia jaceae (Robineau-Desvoidy)	Diptera	Tephritidae	17/08/2000
Chaetorellia jaceae (Robineau-Desvoidy)	Diptera	Tephritidae	11/06/2006
Dithryca guttularis (Meigen)	Diptera	Tephritidae	02/08/1994
Euleia heraclei (Linnaeus)	Diptera	Tephritidae	11/05/1998
Euleia heraclei (Linnaeus)	Diptera	Tephritidae	11/06/2006
Myopites inulaedyssentericae Blot	Diptera	Tephritidae	02/08/1994
Sphenella marginata (Fallén)	Diptera	Tephritidae	02/08/1994
Sphenella marginata (Fallén)	Diptera	Tephritidae	17/08/2000

Tephritis vespertina (Loew)		Diptera	Tephritidae			11/08/1984
Tephritis vespertina (Loew)		Diptera	Tephritidae			11/06/2006
Terellia ruficauda (Fabricius)		Diptera	Tephritidae			11/06/2006
Trupanea stellata (Fuessly)		Diptera	Tephritidae			02/08/1994
Trupanea stellata (Fuessly)		Diptera	Tephritidae			17/08/2000
Urophora cardui (Linnaeus)		Diptera	Tephritidae			11/08/1984
Urophora quadrifasciata (Meigen)		Diptera	Tephritidae			02/08/1994
Nephrotoma flavescens (Linnaeus)		Diptera	Tipulidae			11/06/2006
Tipula oleracea Linnaeus		Diptera	Tipulidae			11/06/2006
Tipula vernalis Meigen		Diptera	Tipulidae			11/05/1998
Dorycera graminum (Fabricius)		Diptera	Ulidiidae			11/06/2006
Cymus melanocephalus Fieber		Hemiptera	Berytinidae			11/08/1984
Cymus melanocephalus Fieber		Hemiptera	Berytinidae			11/06/2006
Neophilaenus lineatus (Linnaeus)		Hemiptera	Cercopidae			11/08/1984
Philaenus spumarius (Linnaeus)		Hemiptera	Cercopidae			11/08/1984
Agallia consobrina Curtis		Hemiptera	Cicadellidae			17/08/2000
Cixius nervosus (Linnaeus)		Hemiptera	Cixiidae			11/08/1984
Hesperocorixa sahlbergi (Fieber)		Hemiptera	Corixidae			11/08/1984
Kleidocerys resedae (Panzer)		Hemiptera	Lygaeidae			11/06/2006
Scolopostethus thomsoni Reuter		Hemiptera	Lygaeidae			11/08/1984
Adelphocoris lineolatus (Goeze)		Hemiptera	Miridae			11/08/1984
Calocoris roseomaculatus (DeGeer)		Hemiptera	Miridae			11/08/1984
Calocoris stysi Wagner		Hemiptera	Miridae			11/08/1984
Lopus decolor (Fallén)		Hemiptera	Miridae			11/08/1984
Macrotylus paykulli (Fallén)		Hemiptera	Miridae			11/08/1984
Megalocoleus molliculus (Fallén)		Hemiptera	Miridae			11/08/1984
Miridius quadrivirgatus (Costa)		Hemiptera	Miridae			11/08/1984
Notostira elongata (Geoffroy in Fourcroy)		Hemiptera	Miridae			11/08/1984
Orthops campestris (Linnaeus)		Hemiptera	Miridae			11/08/1984
Orthops campestris (Linnaeus)		Hemiptera	Miridae			11/06/2006
Phytocoris varipes Boheman		Hemiptera	Miridae			11/08/1984
Plagiognathus arbustorum (Fabricius)		Hemiptera	Miridae			11/08/1984
Plagiognathus chrysanthemi (Wolff)		Hemiptera	Miridae			11/08/1984
Stenodema laevigatum (Linnaeus)		Hemiptera	Miridae			11/08/1984
Stenotus binotatus (Fabricius)		Hemiptera	Miridae			11/08/1984
Chorosoma schillingi (Schummel)		Hemiptera	Rhopalidae			11/08/1984
Velia caprai Tamanini		Hemiptera	Veliidae			11/08/1984
Andrena flavipes		Hymenoptera	Andrenidae	local		30/04/2006
Anthophora plumipes		Hymenoptera	Anthophoridae	common		30/04/2006
Melecta albifrons		Hymenoptera	Anthophoridae	local		30/04/2006
Nomada fucata		Hymenoptera	Anthophoridae	Na	3	30/04/2006
Andrena scotica Perkins, R.C.Linnaeus		Hymenoptera	Apidae	common		11/05/1998
Andrena thoracica (Fabricius)		Hymenoptera	Apidae	?		11/08/1984
Andrena thoracica (Fabricius)		Hymenoptera	Apidae	?		14/08/1984
Anthophora quadrimaculata (Panzer)		Hymenoptera	Apidae	Nb		14/08/1984
Apis mellifera Linnaeus	honey bee	Hymenoptera	Apidae	common		11/08/1984
Bombus lapidarius (Linnaeus)	•	Hymenoptera	Apidae	common		17/08/2000
Bombus lapidarius (Linnaeus)		Hymenoptera	Apidae	common		11/06/2006
Bombus pascuorum (Scopoli)		Hymenoptera	Apidae	common		11/08/1984
Colletes daviesanus Smith Fabricius		Hymenoptera	Apidae	?		14/08/1984
Dasypoda hirtipes (Fabricius)		Hymenoptera	Apidae	Nb		11/08/1984
Hylaeus annularis (Kirby)		Hymenoptera	Apidae	?		14/08/1984
Lasioglossum nitidiusculum (Kirby)		Hymenoptera	Apidae	local		14/08/1984
Megachile willughbiella (Kirby)		Hymenoptera	Apidae	common		14/08/1984
Osmia rufa (Linnaeus)		Hymenoptera	Apidae	?		11/06/2006
Argogorytes mystaceus (Linnaeus)		Hymenoptera	Crabronidae	?		11/06/2006
Cerceris arenaria (Linnaeus)		Hymenoptera	Crabronidae	common		11/06/2006
					_	_

Crossocerus elongatulus (Vander Linden)		Hymenoptera	Crabronidae	common		14/08/1984
Crossocerus quadrimaculatus (Fabricius)		Hymenoptera	Crabronidae	common		11/08/1984
Crossocerus tarsatus (Schuckard)		Hymenoptera	Crabronidae	common		14/08/1984
Crossocerus tarsatus (Schuckard)		Hymenoptera	Crabronidae	common		17/08/2000
Diodontus luperus Schuckard		Hymenoptera	Crabronidae	local		11/06/2006
Ectemnius lituratus (Panzer)		Hymenoptera	Crabronidae	local		14/08/1984
Lindenius albilabris (Fabricius)		Hymenoptera	Crabronidae	common		11/08/1984
Mellinus arvensis (Linnaeus)		Hymenoptera	Crabronidae	common		11/08/1984
Mellinus arvensis (Linnaeus)		Hymenoptera	Crabronidae	common		17/08/2000
Philanthus triangulum (Fabricius)	Bee Wolf	Hymenoptera	Crabronidae	RDB2		02/08/1994
Philanthus triangulum (Fabricius)	Bee Wolf	Hymenoptera	Crabronidae	RDB2		17/08/2000
Trypoxylon attenuatum Smith Fabricius		Hymenoptera	Crabronidae	?		14/08/1984
Formica fusca Linnaeus		Hymenoptera	Formicidae	common		17/08/2000
Sphecodes rubicundus		Hymenoptera	Halictidae	Na	3	25/06/2006
Scambus brevicornis (Gravenhorst)		Hymenoptera	Ichneumonidae	common		02/08/1994
Mutilla europaea Linnaeus		Hymenoptera	Mutillidae	Nb		17/08/2000
Priocnemis exaltata (Fabricius)		Hymenoptera	Pompilidae	?		14/08/1984
Alysson lunicornis		Hymenoptera	Sphecidae	Na		no date
Ectemnius ruficornis		Hymenoptera	Sphecidae	Nb		no date
Hoplocampa pectoralis Thomson		Hymenoptera	Tenthredinidae	?		11/05/1998
Tenthredo schaefferi Klug		Hymenoptera	Tenthredinidae	?		14/08/1984
Tyria jacobaeae (Linnaeus)		Lepidoptera	Arctiidae	-		11/08/1984
Thymelicus lineola Ochsenheimer		Lepidoptera	Hesperiidae			11/08/1984
Lycaena phlaeas Linnaeus		Lepidoptera	Lycaenidae			14/08/1984
Polyommatus icarus Rottemburg		Lepidoptera	Lycaenidae			14/08/1984
Polyommatus icarus Rottemburg		Lepidoptera	Lycaenidae			11/06/2006
Autographa gamma (Linnaeus)		Lepidoptera	Noctuidae			11/06/2006
Cynthia cardui Linnaeus		Lepidoptera	Nymphalidae			11/06/2006
Inachis io Linnaeus		Lepidoptera	Nymphalidae			17/08/2000
Colias croceus Geoffroy		Lepidoptera	Pieridae			17/08/2000
Pieris brassicae Linnaeus		Lepidoptera	Pieridae			11/08/1984
Pieris napi Linnaeus		Lepidoptera	Pieridae			17/08/2000
Maniola jurtina Linnaeus		Lepidoptera	Satyridae			11/08/1984
Pararge aegeria Linnaeus		Lepidoptera	Satyridae			14/08/1984
Pyronia tithonus Verity		Lepidoptera	Satyridae			11/08/1984
Pyronia tithonus Verity		Lepidoptera	Satyridae			17/08/2000
Chorthippus parallelus (Zetterstedt)	Meadow Grasshopper	Orthoptera	Acrididae	common		11/08/1984
Meconema thalassinum (DeGeer)	Oak Bush Cricket	Orthoptera	Meconematidae	common		17/08/2000
Leptophyes punctatissima (Bosc)		Orthoptera	Phaneropteridae			17/08/2000
	Speckled Bush Cricket			common		

# RECULVER COUNTRY PARK





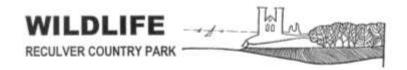








Protecting Wildlife for the Future





Reculver Country Park and the shoreline near the Visitor Centre offer some of the most interesting and varied habitats in Kent to study wildlife. Children and adults alike enjoy the accessible of the rock pools that are cut into the wave cut platform.

The wildlife of the site is supported by the extraordinary geology, which shows several sedimentary rocks named after the site. This and the range of coastal defences, a view of the new wind farm offshore and local history, offer interest to hundred's of schools and members of the public who visit the site each year.

Kent Wildlife Trust works in partnership with Canterbury City Council to manage the country park including the visitor centre, which offers more information about the site. The partnership also holds regular events and offers an education service which includes booked guides and the production of publications like this one, other publications can be seen at the Visitor Centre. The visitor centre offers a range of publications and memorabilia related to Reculver and is manned by local volunteers who often have an intimate knowledge of the local area.

If you are interested in supporting this team please contact Kent Wildlife Trust at Tyland Barn, full address and phone number on the back cover.

We hope this booklet will help you identify some of the wildlife of Reculver in their natural habitat and helps to give you even more enjoyment in looking at nature at this unique site.

### Contents

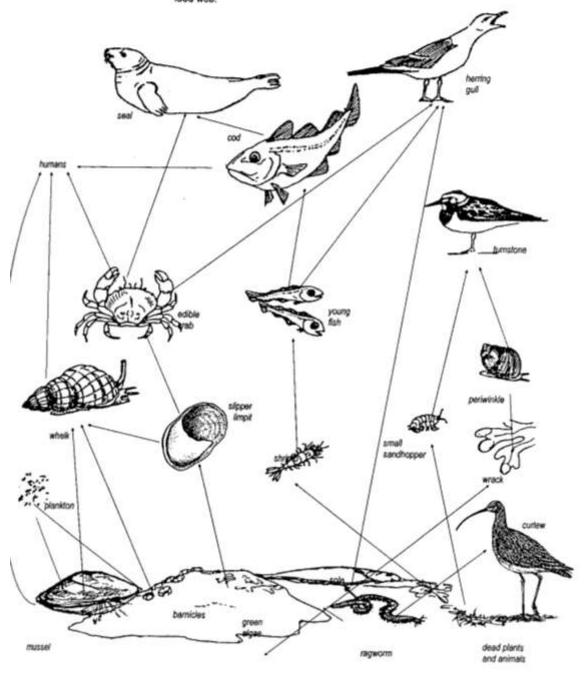
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# Life between the Tides

# The world of the Seashore

The world of the seashore is a network of life, with changes in numbers or feeding habits of one organism affecting many others in the web.

The sun's energy is captured by seaweeds on the shore and tiny phytoplankton in the water. Energy is transformed along a food chain as animals eat either plants, other animals, or dead organisms. As diets vary, so all living things become part of a complex food web.



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# Life beneath the sands

### Lug worm

Worm casts are a common sight on the shore. They are produced by lugworms, which live in 'U'- shaped tubes in sand or mud. Mud is drawn down the tube causing a hollow in the surface. The mud is swallowed, any food in it is digested, and the waste ejected up to the surface where it forms a typical 'worm cast'. Anglers look for the pattern of hollows and casts when digging for bait.

### Cockles, Tellin and Gapers

Many bivalves live out of sight buried beneath the sand and mud. They feed by extending a siphon up to the surface to draw in particles when the tide comes in. A second siphon exhales, getting rid of waste. Sometimes a bubble in the mud betrays their location at low tide.

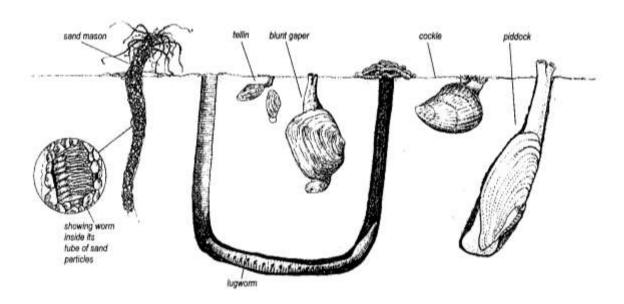
### Sandmason worms

These worms live in a lined tube in the sand. The tube is formed of sand grains and shell fragments cemented together and can be up to 25cm. Long. A small section of the tube protrudes above the surface, and groups of them can be seen on the lower shore at low tide. The worm feeds by extending tentacles from the top of the tube when the tide is in.

### The American piddock

The piddock bores into the stiff clayer sands of the tidal zone. As the layer of sandstone erodes, the holes are seen clearly, sometimes with empty shells still inside them. Similar to our common piddock, this shellfish was introduced when cyster beds were relaid with stock from North America and is now found extensively around the coasts of the Thames estuary.

Other worms found in the sands and rocks include ragworm, which has bristles along each side and a red line down its back., and the very similar green leaf worm. The razor shell is another mollusc which can use its muscular foot to burrow down up to a depth of 1m into the sand.



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# Life on the Rocks & in the Pool

In the spring Nudibranch sea slugs come into the shallow water to lay their eggs. When the tide is out they appear as spongy masses but in the water they extend two hom-like tentacles from the head and rings of feathery gills on their backs. The species shown here feeds on barnacles, but others eat sponges, sea-squirts and sea-mats.

### Barnacles

The acom barnacle can be found at Reculver but has been replaced largely by an introduced Australian species. The latter has only four plates compared with six in the acom barnacle. They are a source of food for dog whelks and sea slugs.

Bamacles are crustaceans - like shrimps and prawns - but are permanently attached as adults to rocks.



At low tide these animals look like blobs of red, green or brown jelly attached to the rocks or stones.

When covered by the sea, anemones look more like flowers. They feed by extending their tentacles to sting and paralyse shrimps or small fish. It's beadlets are visible as blue spots around the base of the ring of tentacles.



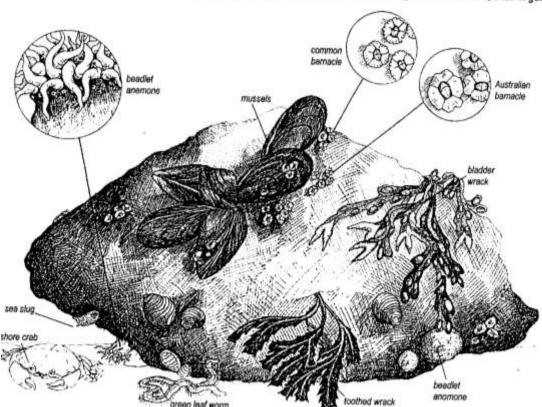
This mollusc has a protective hard shell, shaped like a slipper, hence its name. Limpits areoften found attached to each other in chains with the female at the bottom and the males above.

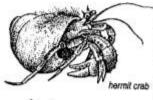
### Mussel

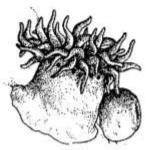
This mollusc is a bivalve. It is one of the commonest shells found on the beach. Double sided, and attaches itself to rocks with threads.

#### Winkle

Winkles can be found all over the shoreline, where they feed on seaweed, often in gullies







beadlet

Life along the Lower Shore sometimes washed up along the strandline

at the high water mark

#### Hornwrack Strand

Although it looks like a seaweed this is a colony of bryozoans, tiny animals which live together in a frond like mass. Each animal is in a seperate compartment only the size of a pin. It feeds by extending filaments, which cause a current of sea water to pass into the animal, from which food and oxygen are extracted.

### Sea mats Lower shore

These are similar colonial bryozoans. Although the individual animals are tiny the colonies are quite easy to find growing in a layer on rocks and seaweeds on the lower shore.

### 'Mermaid's purse' Strand

A black leathery capsule with 'homs' at each comer is the empty egg case of a ray. The 'purses' are mainly from the Thomback ray (Raia clavata) and can be found all around the Kent coast, and here at Reculver. The estuary has a well established breeding ground around the windfarm area. When laid, each case contains one embryo which develops for up to five months before emerging as a young fish.

### Spirorbis spirorbis Lower shore

Inside the tiny white spiral chalky tubes on seaweeds live minute tubeworms. The overall width of the spiral coverings is only about 4mm. The true home of this animal is the lower shore, but it can often be found attached to seaweed or man-made debris that have been washed up on the tideline.

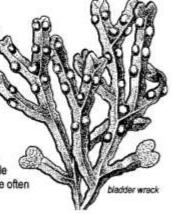
### Sea urchins and starfish Lower shore

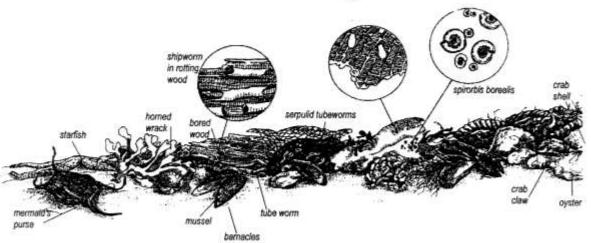
These animals have prickly spines on their skin and rows of tube suckers which they use to pull themselves along and hold onto rocks. Tests, empty shells, of the sea urchin and sea potato occasionally get washed up on the shore. Common starfish have 5 arms, and are sometimes found in the pools. Their arm tips curl up when the starfish moves. Brittle stars are common, but are hard to spot.

Extremely Fragile - so handle with great care.

### Oyster Lower shore

A bivalve mollusc with two non identical halves. Oyters have been considered a delicacy since ancient times and Whistable oysters are famous on the North Kent coast. Empty shells are often found all over the beech.





# Strandline items

## Empty shells and crab shells, seaweeds, mermaid's purses,

### Star ascidian Lower shore

A colonial group of small sea squirts which live together in a protective layer of jelly. They form a flower-like pattern in which each 'petal' is one animal. These are grouped around a central opening which is an extended siphon, shared by the colony. With this siphon the animals draw in seawater from which they filter food and oxygen. They may be green, yellow, orange or blue.



### Dead man's fingers Lower shore

The name commonly given to a soft coral which lives on the lower shore. It is not one animal but a whole colony; each animal catches its food with minute tentacles.



cockie

It is occasionally found washed up on the beach or sand flats and is itself sometimes colonised by other marine life. Look closely for sea squirts, another group of colonial animals, which may be attached to the surface. There may even be tiny porcelain crabs sheltering in its folds.

### Long-clawed porcelain crab Lower shore

A tiny animal of the lower shore with a very small shell only 6 mm across. Three pairs of legs can be seen but the fourth is folded under the tail. It has long, fine antennae.



These are normally attached to stones on the lower shore but are often washed up on the beach. The spongy mass may consist of several thousand capsules – each containing many eggs. The animals are carnivorous and only 30 may develop, the remainder being a source of food for the survivors!



### Jellyfish Lower shore

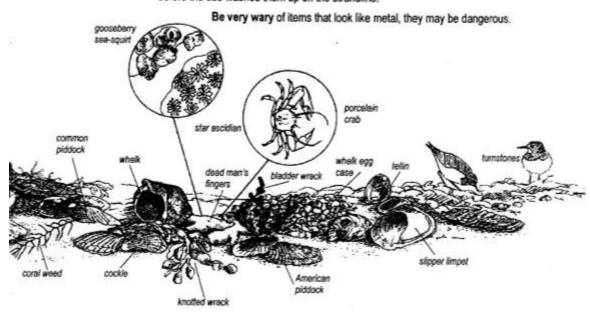
Soft creatures that swim by pulsing movements of their bodies. They catch prey with stinging cells on their tentacles. Sometimes jellyfish are washed up, onto the shore.

Leave well alone, although some are harmless, some have a dangerous sting.

### Cuttlefish Strand

These large soft molluscs have short stubby tentacles with suckers, Their white bone-like porous internal shells are often washed up in the strand line.

Also washed up are natural things like wood, shells, seaweed and man made materials such as plastic bottles and packaging. Some of them may have been in the sea for a very long time before the tide washed them up on the strandline.



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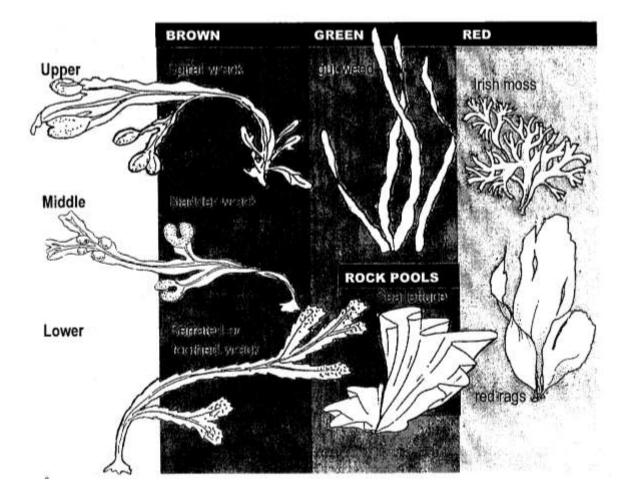
# Seaweeds

Seaweeds all belong to the group of plants known as algae. They have no roots but are attached to rocks, wood, concrete or other seaweeds by a sticky cup or 'holdfast' to prevent them being carried away by the sea.

They absorb minerals from the sea and use sunlight to achieve photosynthesis and produce carbohydrates.

### Colour and shape indicate zones on the beach

Different species occur in zones from the splash zone, through the upper shore, middle and lower shores and the sub-tidal zone. Those highest up the shore include spiral wrack and laver. On the upper shore we find the green Enteromorpha species - tubelike plants sometimes called gut weed, with sea lettuce in pools and wet places. On the middle shore, the brown bladder wrack and serrated or toothed wrack are more commonly found. Red seaweeds are to be found in the deeper water.



# The Birdwatcher's Year

Reculver occupies an excellent situation for bird watching. These include resident species and many more which are visitors in summer or on various passage migration journeys in spring and autumn.

More than 150 species are regularly recorded and, together with the more unusual birds, an annual list of over 200 species are seen. Over 60 species have been recorded as breeding in the area.

Updated sightings of birds seen in Reculver Country Park are listed on the observation board, located in the porch of the visitor centre. Because of its importance as a migration area Reculver is regularly watched and recorded by the Kent Ornithological Society, and the British Trust for Ornithology (BTO) who organise a ringing programme throughout the year.

### Ringed Plover

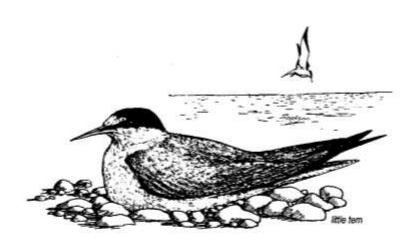
Piovers nest on the open beaches from May, laying four eggs in a shallow scrape. These are usually two broods but the bird is liable to disturbance by people using the beach area. To warn 'intruders' to the nest area the birds will fly or walk away across the beach and call repeatedly. They may feign a damaged wing, whilst calling to lead people away from the site.

### Please respect these nest sites.

Do not remain in the area if the birds show any signs of distress.

### Little terns

Little terns may also be seen on an open area. They will fly and call repeatedly to indicate possible nesting, swooping towards any intruder. These birds are specially protected under the Wildlife and Countryside Act 1981 and should not be disturbed at a nest site.





# January and February

Winter visiting geese, ducks, gulls and waders are in good numbers. Cold severe weather often brings unusual species to rest or shelter close to the shore or on the beach or marshes inside the sea wall.

A flock of Brent geese is usually present.

Eider, wigeon, red-throated diver, and great crested grebe may be seen resting on the sea with teal and mallard on the marshes. Wader numbers are at their peak with turnstone, redshank, grey plover, sanderling feeding on the tide line.

Purple sandpiper can occasionally be seen feeding on the rocks, sea wall or breakwaters, and oystercatchers, grey plover, sanderling, dunlin and ringed plover at a hightide roost on the beach at Coldharbour. Stonechats are seen along the sea wall. Hen harrier and short-eared owl regularly quarter the marshes - particularly towards dusk.



# **March and April**

#### Migration time!

Many winter visitors now depart for their breeding areas.

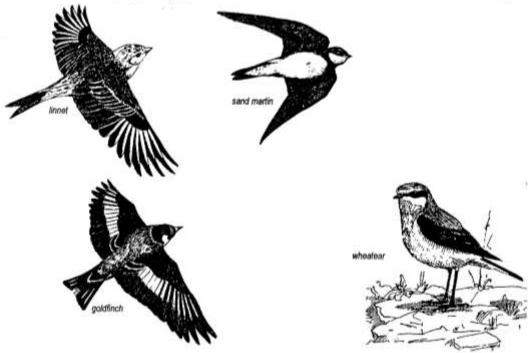
The migration of sea and land birds begins with many arriving from Europe and Africa to occupy breeding locations and many more on passage further north or west.

Brent geese leave for Russia, eider to Scotland and beyond; wheatears arrive en route to the moorlands and heathlands.

Sand martins return to their breeding colonies in the cliffs, closely followed by swallows, house martins, and swifts on their way to various locations. Many yellow wagtails move through on migration but some remain to breed inside the sea wall. Sandwich terms in late March are on passage for Norfolk followed by common term and little term for breeding areas nearby and in the Swale and Medway marshes.

Linnet, chaffinch, greenfinch and goldfinch are often seen in considerable numbers on passage. There have also been sightings of ospreys on occasions







# May and June

Many migrants are still arriving and passing by - warblers, raptors and waders, hobby, whimbrel, greenshank, bar-tailed godwit and common sandpiper are regularly seen.

Strong north-east winds may bring gannets and skuas into view offshore. For others it is the season of nesting, breeding and feeding young. Many of our resident birds will be blackbird and song thrush, blue tit and wren.

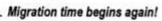


Sandmartins are occupying their nest holes in the Glen and cliffs to form the largest coastal colony in Kent. Fulmars are seen visiting cliff nesting ledges. Ringed plovers nest on the open beaches. Little terns may be seen on the beach. They will display and call to lead you away. Please do not disturb.

Sedge warbler, reed warbler and reed bunting nest in the reedbeds of the dykes. Cuckoo frequently choose these species as foster parents and are regularly seen along the sea wall. Yellow wagtails, meadow pipit and skylark nest in the grassy areas inside the sea

wall and on the cliff tops. Close inshore, common and little tern are fishing - hovering and diving to take small fish from near the surface.

# **July and August**

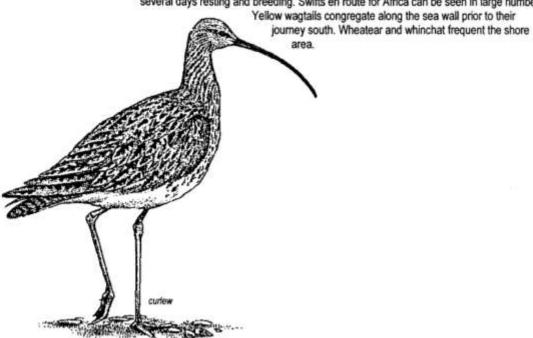


While some birds are still feeding young and raising second broods, many birds which have bred here are preparing for their return journeys.

Some early birds will leave but others will be seen on passage once their journey to the south. Waders begin arriving from their northern breeding grounds.

Common sandpiper, bar-tailed godwit, curlew, whimbrel, sanderling and dunlin are to be seen on the pools and shore line. Sandmartins are still rearing late broods. Goldfinches and linnet feed on ripening seed heads of flowers on the beach.

August sees the beginning of the return passage for the terns with common and Sandwich terns flying offshore. Small parties of black terns may be seen and remain in the area for several days resting and breeding. Swifts en route for Africa can be seen in large numbers.



# September and October

Migration is now in full spate.

Many thousands of swallows and house martins pass through along the coast and our sand martin colony is also preparing to leave.

Chiffchaff, willow warbier, garden warbier and other small birds may be found in around Bishopstone Glen and the bushes in the area around the Towers.

Wader numbers increase - turnstone, sanderling, dunlin are nesting and feeding on the

Short-eared owls may be seen hunting over the marshes. There is a large sea bird passage which includes Sandwich, common and little terns with kittiwake and gannet often seen.

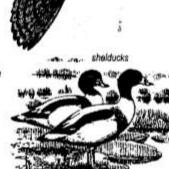
Wheatear and whinchat are on the sea wall, lapwing flocks build up and roost on the marshes, and kingfishers and grey wagtails may be seen near the fish farm and dykes.

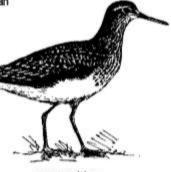
# **November and December**

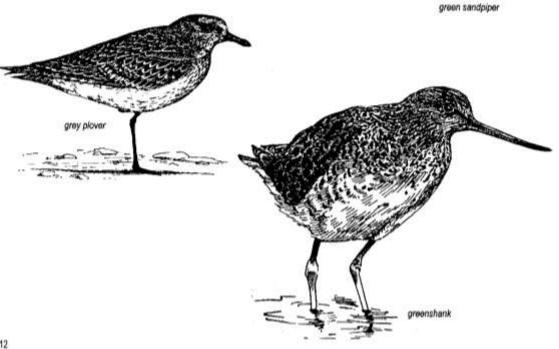
Redwing and fieldfare from Scandinavia and northern Europe arrive to feed on berries and fruits, often continuing on to other areas in mainland Europe.

Flocks of Brent geese from Siberia will be seen on the shore and marsh. Sea passage birds include divers, grebes and red-breasted meganser. Snow bunting from Scotland and beyond arrive on the beach - frequently seen near to Coldharbour. Occasionally shore lark may also be seen. Black redstart may be seen on the sea wall, and in winter, flocks of goldfinch, linnet and greenfinch on the seed heads of beach and marsh plants. Hen harriers occasionally can be seen hunting over the marshes.

A sea watch may produce sightings of gannets, red-throated diver, great crested and rednecked grebe, common scoter on the sea or flying past. Occasionally, guillemot and razorbill are recorded, sometimes being found as oiled casualties on the tideline. Eider duck return and are regularly seen in small groups on the sea. Teal and mallard are in good numbers on the marshes with some some wigeon and shelduck. Pintail, goldeneye and long-tailed duck occasionally may be seen. Wader numbers increase and golden plover will be seen over the marshes.







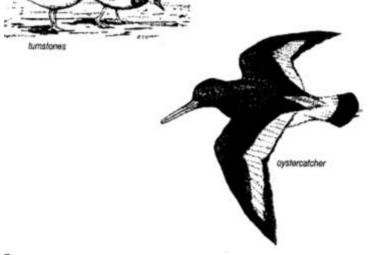
# **Shore feeders**

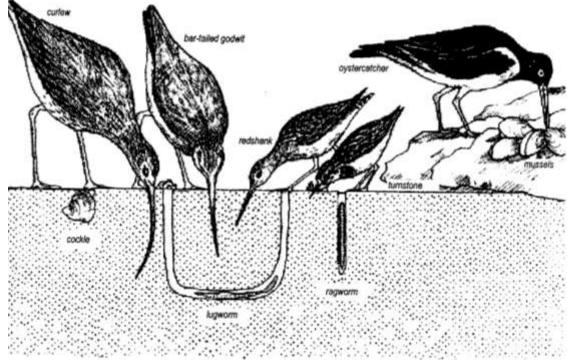


The tidal area provides feeding opportunities for a range of gulls and waders. Gulls have strong beaks for dealing with crabs, shellfish and carrion. Waders have bills which enable them to probe the sand and mud for worms, shrimps and sandhoppers, and for shellfish such as the Baltic tallin.

The length and type of bill enables different levels of sand to be searched, from the surface, under stones, shells and seaweeds by turnstones and sanderling, to the much deeper lugworms and Baltic tellin sought by the curiew with its 16cm. long bill.

Oystercatchers are able to force open mussels and cockles. Gulls may fly up with some shellfish and repeatedly drop them until they crack open on the rocky shore.





# Migration

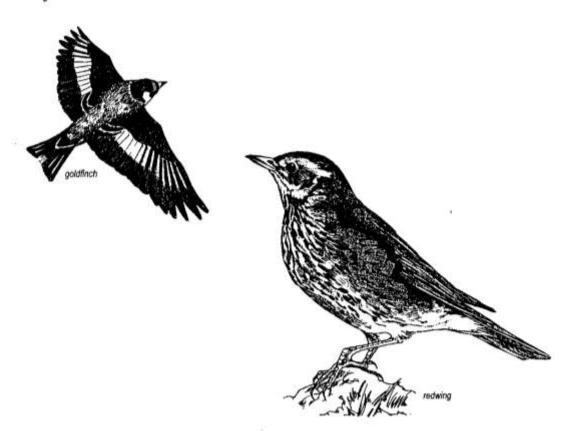
Ringing is carried out by the Kent
Omithologal Society and the British Trust for Omithology
(BTO) licenced members at various sites between
Bishopstone and Minnis Bay. Ringing together with regular bird
watching, has helped to build up a detailed picture of the species that
migrate through the area. For example, although black-headed gulls
and common gulls can be seen during almost any visit to the area,
ringing has shown that large numbers of both species arrive at the coast
during late summer and autumn.

Black-headed gulls reach Reculver from the breeding areas in Scandinavia, Northern Europe and even as far as Central Europe, whilst common gulls ringed during the winter have been recovered during summer in Finland and Norway, some 200 miles inside the Arctic Circle, During September, October and November large numbers of thrushes, starlings and finches are often seen pouring into Kent from the Continent, and ringing has shown their origins.

Blackbirds arrive here from northern Europe and Scandinavia, and starlings from northern Europe as far east in Russia as Moscow. Redwings and song thrushes also arrive from northern Europe during October and November. Ringing has shown that song thrushes often continue their journey to winter in Spain and Portugal, and redwings to southern France and Italy.

One often thinks of birds like wrens, robins and great tits as residents, which, in fact, the British population tends to be. However, during autumn they build up in numbers due to continental migrants, with examples including great tits from Latvia and Belgium, a wren from the Friesian Islands and robins from East Germany and Denmark.

During spring, many species of warblers together with species like whinchats, wheatears and yellow wagtails arrive here in order to breed in this country, before returning in autumn to the wintering areas in Africa.



14

common seagull

# Reculver to Coldharbour

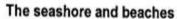
Although this section of the costal area is outside the Local Nature Reserve and SSSI. It still has a wide range of wildlife interests.

# Recuiver Fort and Church

The fort is often overlooked for its considerable wildlife interest. There are fine plant communities, particularly near the walls and paths, which include Alexanders, pellitory- of- the wall, Duke of Argyll's tea plant, an introduction from China which is now naturalised in many coastal areas (The red berries are attractive to birds) plus common mallow and sea beet, together with elderberry and hawthorn. These provide nectar for insects, and bees, hoverflies and ladybirds are common. The area also provides food and shelter for birds, and in autumn it is particularly popular with migrating warblers.

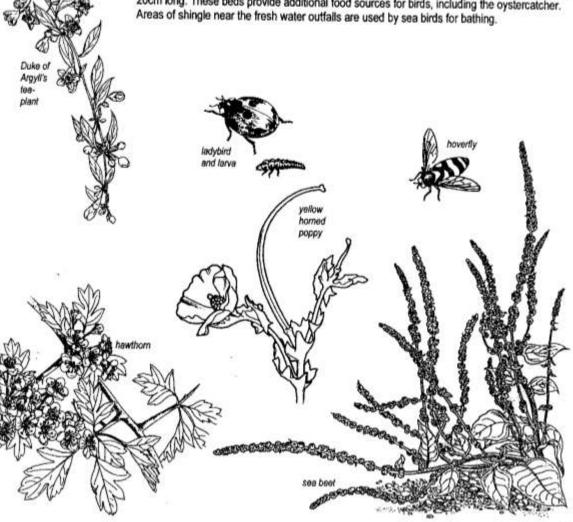
Alexanders are now widely distributed over many coastal areas. This plant was introduced by the Romans as an all purpose spring vegetable. All parts are edible and may be used for wine making, as a cooked vegetable, in salads or as a pickle. The name is associated with its origin in Macedonia - the land of Alexander the Great.

The walls of the Roman fort provide a sheltered area for many plants which in turn are valuable for insects and birds.



This is a shingle shore overlying a layer of clayey sands and hard sandstone, common to this coast. In places, mussel beds on shingle result in a build up of salty sand and mud to create a very soft mix. These areas are rich in marine worms including large ragworms, some more than 20cm long. These beds provide additional food sources for birds, including the oystercatcher. Areas of shingle near the fresh water outfalls are used by sea birds for bathing.





# Inside the sea wall

# to the east of the towers

Between the drainage dykes and the seawall is an area of grassland much colonised by common reed and many flowering plants, including spiny restharrow, dyer's greenweed, sea clover, broad leaved everlasting-pea, marjoram, basil, horseshoe vetch, salsify and various thisties.

This diversity provides opportunity for a wide range of butterflies including small tortoiseshell, peacock, marbled white, large and small white, green veined white, small heath, common blue, and small and large skippers. The migratory red admiral and painted lady are regularly seen and occasionally the clouded yellow is recorded. Moths include six spot burnet, cinnabar and silver 'Y'. The caterpillars of the cinnabar can seen in large numbers devouring the foliage of ragwort in July and August.

Although the former marshland is now under arable cultivation, the area has retained many marshside plants and the dyke system is extensive, with common reed and sea club rush communities.

The dyke flora is limited by agricultural run off and the necessary management of the reed beds to maintain the drainage system but they do support breeding birds such as nesting moorhen and coot, reed and sedge warblers, reed bunting and cuckoos looking for foster parents.

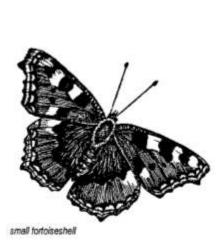
Yellow wagtail, meadow pipit and skylark nest in the grassy areas. In autumn and winter the marsh areas provide good opportunities for views of hunting kestrel, hen harrier and short eared owl.

Several hundred Brent geese winter in the area and may use the marsh area and arable fields for roosting, then feeding on the foreshore.

The banks provide good plant communities and public footpaths along some of the banks provide alternative walking to the promenade area.

# Coldharbour

This area, enclosed between the shingle sea defence and the promenade sea walt, results in a lagoon and saltmarsh complex of interest throughout the year. In winter the ridge is often used by snow bunting and the seaward side is a high tide roost for flocks of oystercatcher, turnstone, ringed plover and other waders.











# broad buckler-ferm

# Bishopstone Glen and Cliffs

This area is of outstanding geological and biological interest, and has been designated a Site of Special Scientific Interest under the Wildlife and Countryside Act 1981.

The special Glen woodland and adjoining clifftop grassland areas are inportant habitats in Kent. The woodland area includes ash, field maple, hawthorn and blackthorn. Young small leaved elm is abundant throughout the Glen with; the older elms have succumbed to Dutch Elm disease. Other woody species include sea buckthorn, broom, gorse and alder buckthorn.

The sheltered damp conditions in the narrow valley provide a suitable environment for the growth of fems, including hart's- tongue, broad buckler and soft shield. In the wetter areas at the head of the Glen are water dropwort and yellow flag. In the lower parts, nearer to the sea, sea club- rush and sea beet are found.

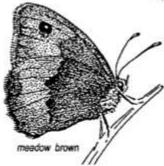
The woodland cover provides food and nesting opportunities for a range of resident and migrant birds, with shelter for many others which are on passage along the coast. Breeding species include lesser whitethroat, sparrowhawk, kestrel, woodpigeon, collared dove, jackdaw, blackcap, green woodpecker, great spotted woopecker, whitethroat, lesser whitethroat and chiffichaff in addition to the more usual thrushes, blackbird and the tit family.

The exposed sands of the cliff and Gien support a strong colony of sand martins which is one of the largest in Kent. Although much reduced by the population crash of this species in 1984, it has now recovered to between 100 and 200 pairs depending on migration conditions. The exposed sand face at the side of the valley is colonised by mining bees and two nationally rare burrowing species of digger wasps. Insect species generally are numerous throughout the area and are the subject of further research.



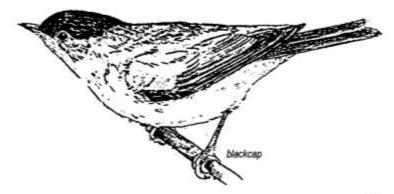
The area of unimproved grassland to the east of the Glen is managed by mowing for hay and there is a wide range of typical plant species including kidney vetch, ladies bedstraw, thrift, yellow oat-grass, early hair-grass, wild carrot, meadow vetchling, grass vetchling, bulbous buttercup and mouse ear hawkweed. Bird's-foot-trefoil and narrow-leaved bird's-foot-trefoil are

The grassland areas on both sides of the Glen is also ideal habitat for ground-nesting birds such as meadow pipits and skylarks, which can be seen in good numbers. It also supports a good number of species of butterflies and moths, with meadow brown, large and small skippers, common blue, small heath, speckled wood and the migrant species, painted lady being regularly seen.









# Acknowledgements

Most of the material in this resource pack has been reproduced from the old displays in the Visitor Centre, at Reculver Country Park. The original text is by Kent Wildlife Trust and has been updated by Chas Matthews, Community Education Officer (E. Kent) with illustrations by Tessa Lovatt-Smith and with additional illustrations by Aubrey Warner. This pack has been produced by Kent Wildlife Trust who manages the Centre on behalf of Canterbury City Council.

# Further Reading

Other Reculver publications can be seen and purchased at the Reculver Visitor Centre. Along with many other items of information relating to the Country Park and the surrounding area.

# **Useful Contacts**

Canterbury City Council 01227 862000 Military Road Canterbury, CT1 1YW

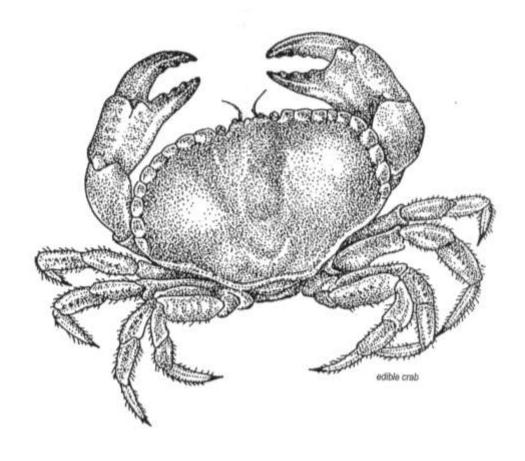
Kent Wildlife Trust 01622 662012 Tyland Barn, Sandling Maidstone, ME14 3BD

Reculver Country Park 01227 740676 Reculver Lane Herne Bay CT6 6SF

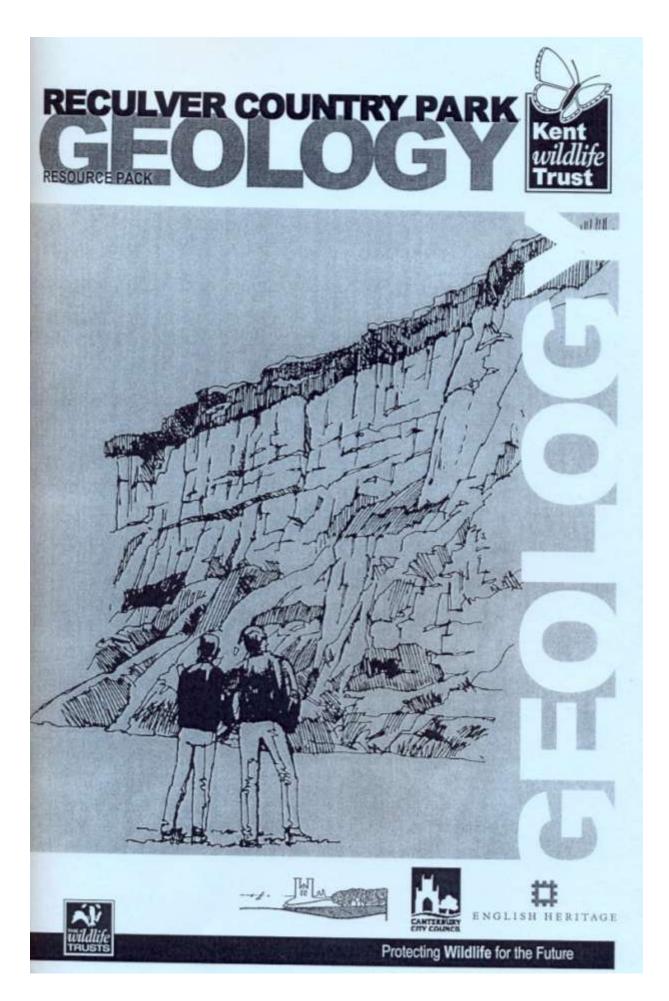
356 Dover Road, Walmer, Deal CT14 7NX

Chas Matthews

4 7NX









# Coastal Protection & Geological Background

According to the Geological Survey of Great Britain, Reculver comprises an early tartiary sequence of beds. This booklet brings together information about the rocks and fossils, with the history of the resultant needs and forms of coastal protection.

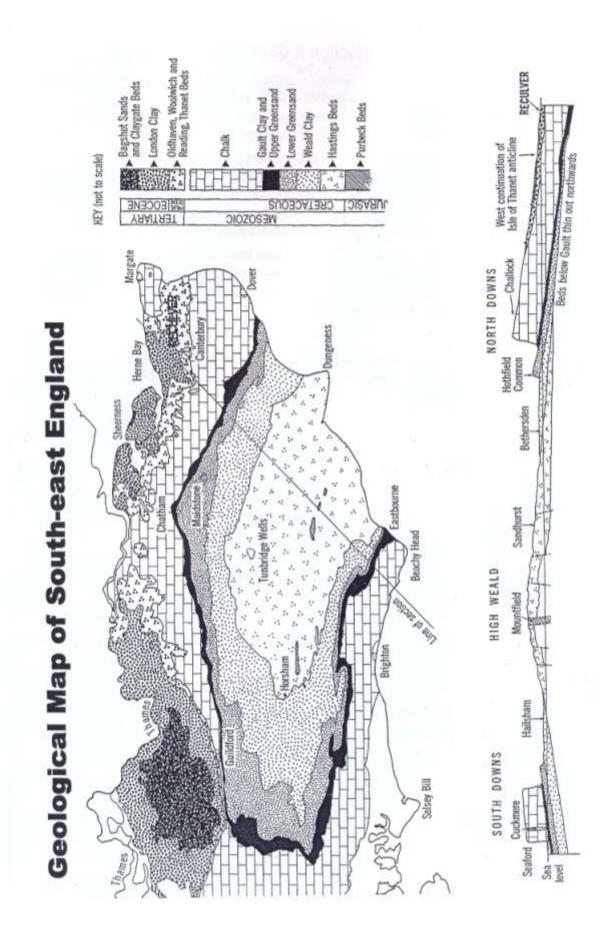
Immediately to the east of the towers the Thanet Beds give way to alluvium infilling by the former Wantsum Channel. Evidence from a British Geological Survey borehole adjacent to Towers sunk in April 1953 shows that the Thanet Beds meet the Cretaceous Upper Chalk 102ft / 31.1m. below the surface, which is 12.5m. a.m.s.l.

These soft sedimentary rocks have been under constant erosion since being uplifted above sea level millions of years ago. The history of occupation is closely linked to the rates of erosion and the many human efforts to preserve their land.

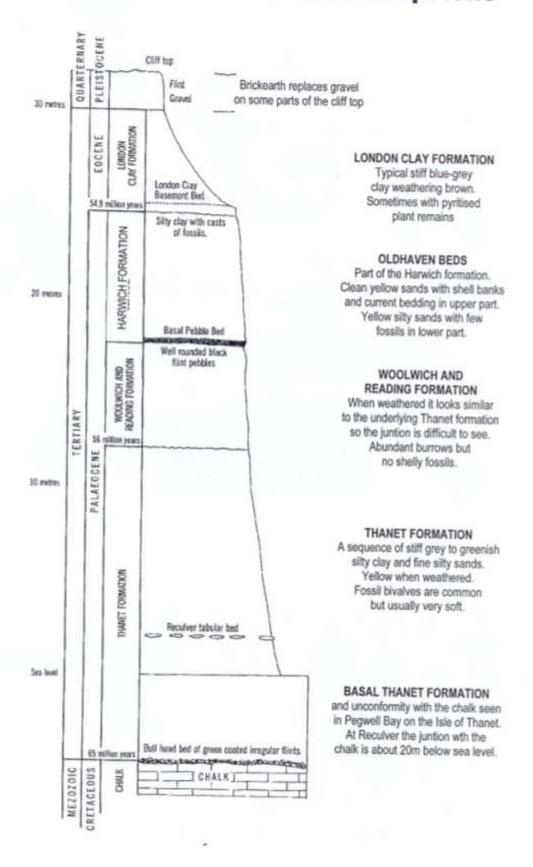
This information pack has been produced by Kent Wildlife Trust who manages the country park and centre on behalf of Canterbury City Council.

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# Rocks exposed in the cliffs between Reculver and Bishopstone



# The Importance of the Site

The cliffs between Reculver and Bishopstone were designated as a Site of Special Scientific Interest in 1951 by the Nature Conservancy Council. Although the SSSI has biological interest its real importance is geological. With the diagram on page 5 for reference, the 3 reasons are as follows:-

The rocks forming the cliffs are soft sands and clay which are rather unstable and liable to erosion. At many other coastal sites they have been protected, graded and grassed over so that their geological interest is lost. For similar reasons inland pits and road cuttings quickly become degraded and useless.

The cliffs expose excellent sections of the Thanet Formation and the Woolwich and Reading Formation and the Oldhaven sands of the Harwich Formation, from which many fossils emerge.

# Fossils at Reculver

The fossils shown in the drawings on page5, are all found in the area between Reculver and Bishopstone Glen. By careful collecting paleontologists have been able to build up a picture of how each animal, now represented by a fossil, related to each other. A possible reconstruction is shown for the Local Thanet Formation on page 8.

Most of the bivalves were suspension feeders living at various depths in the sediment.

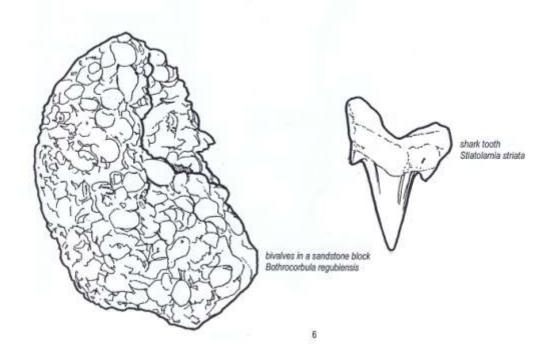
Artica marrisi lived very near the surface. The snail Euspira was carnivorous and probably fed on the bivalves by drilling holes through their shells, much as the modern necklace shells (Natica) do. Other burrowing marine creatures were also abundant.

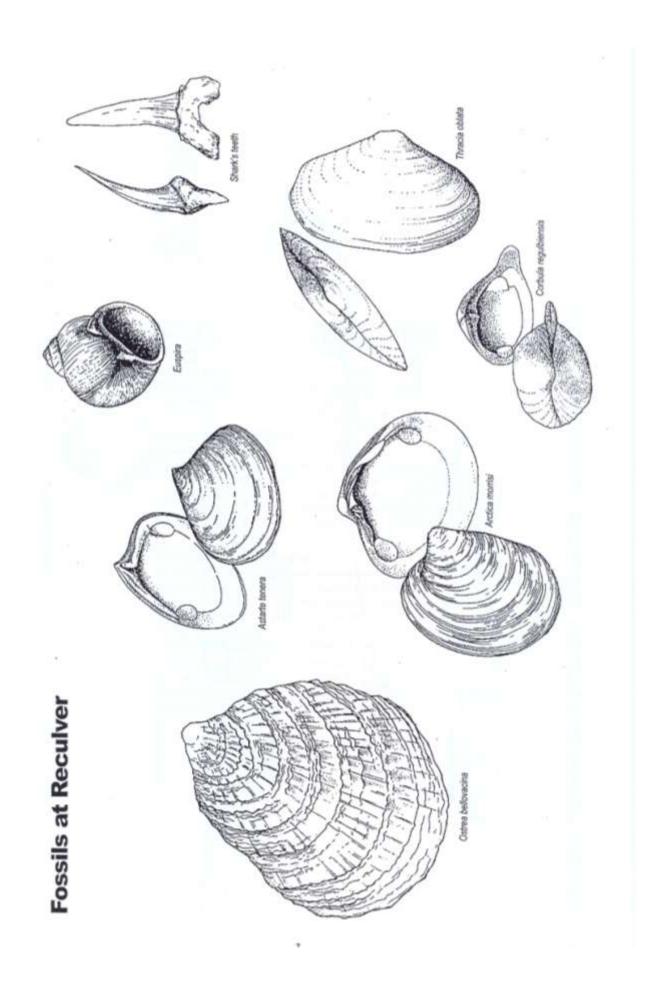
Occasionally fossil wood is found which would have drifted in from adjacent land areas. When this became waterlogged and sank it sometimes provided attachment sites for the oyster Ostrea bellovacina particularly where conditions were less saline (esturine). The shark Striatolamia striata would have been hunting in the waters above.

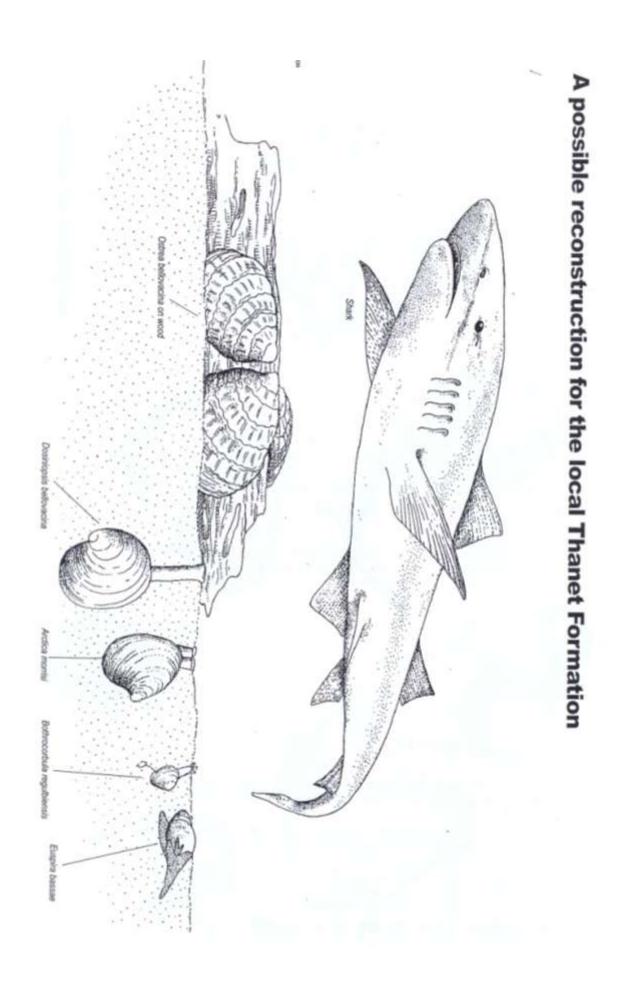
# Please do not dig in the cliffs for fossils:

the sands are particularly liable to collapse without warning.

As the fossils are continually being washed out of the rock beds the best place to look for them is on the beach at low tide. Fossil shells of bivalves are often found embedded in lumps of sandy rock and fossilised burrows of marine creatures can be seen in large boulders on the beach. Tiny shark's teeth are present in large numbers out on the foreshore near to Bishopstone Glen.







# **Coastal Defence**

Traditionally the call for coastal protection has led District Councils to construct concrete ramparts to repel the sea. Once a cliff is protected erosion no longer clears debris from the cliff base and a talus slope gradually obscures the face. Additionally the cliffs may even be graded and grassed over.

From a geological point of view this is disastrous as the section becomes useless for both teaching and research. Coastal protection of this type, carried out in the late 1960s, can be seen at Hillsborough Cliff, west of Bishopstone Glen.

By contrast Canterbury City Council, with advice from the Nature Conservancy Council, has recently carried out a much more imaginative scheme to the east of Bishopstone Glen. This novel approach has set a precedent for coastal protection at similar important geological sites around Britain's coasts. See page 10.

This scheme slows erosion to an acceptable rate rather than halting it completely. Rapid erosion occurs at the cliff base so this has been protected by large boulders which absorb the sea's energy (the rock used comes from Scandanavia and is known as hornblende gneiss). At the cliff top the London Clay has been graded and drained to prevent slippage damage to the properties in Manor Road. However, a thin clay cap has been retained. This is to protect the underlying sands from the erosive effects of excessive surface water.

Further to the east no protection has been carried out as a beach of natural rock and imported shingle provides some protection and, more importantly, land at the cliff top has not been developed.

# Methods of Protection

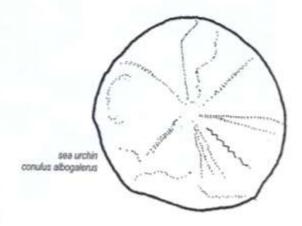
FIGHT THE GOOD FIGHT

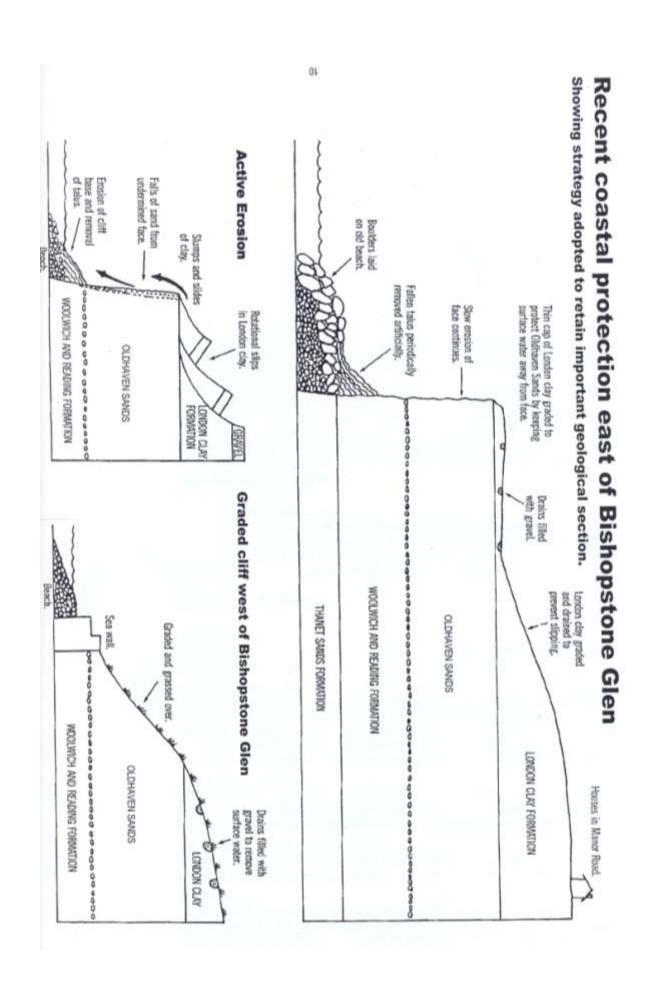
The struggle to preserve useful land from attack by the sea has long been a major preoccupation of people living and working on the North Kent coast. Some examples of the many methods used by man to counter this attack are to be found along the short strip of coast-line at Reculver. These notes describe the engineering features to be found and the area, and try to explain why they look the way they do.

# Stranger on the shore

For generations of engineers there were only two materials available for building sea defences – timber and stone. Good building stone simply does not exist in the South East of England (When they wanted to build Canterbury Cathedral stone had to be imported from France and so timber was widely used). The technique was to build a wooden sea wall by fastening timber planks to stout posts driven into the foreshore. If you look very carefully along the foot of the cliffs between Reculver and Bishopstone Glen you may even find traces of such a defence.

An early photograph of Reculver dating from about 1891 shows the towers having been protected by a layer of stone armoury visible behind the beach, but no sea wall has yet been built; only a natural shingle mound with some low groynes at its foot prevents storm tides from flooding the area.





# All along the watchtower

Stone has great advantages over timber as a sea defence material – it doesn't rot – the perfect material in fact, but for its high cost. When the towers of St Mary's Church needed protecting in 1810 as a vital sea mark, the engineers of the time wanted a permanent solution to the erosion problem, so in addition to the construction of timber groynes they armoured the soft base of the towers with a layer of Ragstone blocks.

# Concrete and clay

The start of the 20th century saw a new phase of coastal engineering with the growth of seaside towns to accommodate the new phenomenon of the holiday maker. Suddenly there was a demand for building promenades and new coast roads where none had existed before. Fortunately there was also a new engineering material available: it was easy to use, plentiful and, said its inventor, as good as Portland stone – concrete. Stone could still be seen in the new defences but now only as a facing rather than as the main constituent. In general these sea walls were more or less vertical, and any shaping would only be there for aesthetic reasons.

# Help me make it through the night

The night of 31st January 1953 saw the worst storm ever to strike the coast of the Channel and the North Sea. Defences which might not have survived such extreme conditions even when first built had since suffered decades of neglect due to the depression and World War I and were swept aside by the force of the storm. Miles of new defences were quickly needed to replace them.

An aerial view of the scene at Reculver, on the North Kent Coast near Herne Bay, showed cattle huddled on a mound as the water closed round them; many miles of land are under water in the area.

# I am the very model

The use of the silicon chip in computers brought a new dimension to the field of coastal engineering. For the first time scientists could recreate wave patterns in the laboratory which exactly matched those found in nature. This in turn meant that they no longer had to wait for a storm to see how a sea wall would behave. Now they could subject models of proposed sea defences to any storm intensity they wanted and do it over and over again to check their results. These experiments showed that a wall which was properly curved in cross section offered more protection than a vertical wall of the same height simply because the curved shape threw the waves back out so to sea.



#### Bend me shake me

Work done in the United Kingdom produced a new shape which was thought to be the most costefficient general design for a sea wall. A front curved wave wall deals with ordinary tides while the higher wall set at the back of an access way deals with the more serious storms. The length of sea wall just to the Herne Bay side of Bishopstone Glen is based on this work.

# Rock of Ages

Just because you've built a sea wall which successfully stops part of a cliff being eaten away doesn't mean that erosion of the rest of the cliff will stop or cease to be a problem. On the contrary the sea will keep on washing away at the unprotected cliff just as it always did; in fact near the end of the wall the rate of cliff erosion will be even faster than before. This happened at the Herne Bay end of the sea wall which runs westward from Reculver: the outflanking problem became so bad that in 1978 the wall itself had to be protected by means of large boulders of Comish granite brought here by road and set in place by crane.

The cliff, originally level with the front of the sea wall, has been eroded back even beyond the sheet steel end wall. A vain attempt has been made to stop further erosion using timber planking, several hundred tons of granite boulders placed there and steel railway tracks to hold it all together.

# If I were a rich man

It is unfair to expect the ratepayers living in the seaside towns to bear all the costs of coastal protection themselves, so generous. Government grants are available to help out. However before any money is handed over the proposed sea wall scheme has to pass a sort of financial health check known as a 'cost benefit analysis'. This means that the cost of the sea wall must be shown to be less than the total value of everything (land, roads, sewers, houses etc.) which it is designed to protect. If it costs more then no money will be made available and the engineer must either forget the idea of protecting that section of coast or produce a cheaper design. This is why a length of cliff to the east of Bishopstone Glen is not defended by the sort of concrete sea wall seen elsewhere along the coastline but by the cheaper alternative of a rock mound or berm. In this case the boulders are of Swedish gneiss, cheaper than the Comish variety, brought here by sea, dumped as close to the cliffs as the barges could get and then manoeuvred into their final position using tracked grabs.

# Still slip, sliding away

The coastline between Bishopstone Gien and Herne Bay is made up of clay cliffs. The clay was deposited here in the Eocene period, some 45 million years ago, and is know as London clay. One important property of London clay is that it doesn't like standing in steep cliffs. Left to itself the cliff will slip and slump until it has reduced itself to a gentle slope of about one in eight. With no human interference the top of the cliffs would eventually be over a hundred metres further inland than they are at present. The herringbone pattern that you see over this area is an interconnecting system of rubble drains built in the 1970s which has so far persuaded the clay not to slip back to one in eight but to remain stable at the much steeper slope of one in four. A large number of clifftop houses have been saved from destruction by the success of this and other less obvious drainage systems.

To the east of Bishopstone Glen the cliffs are sandstone with a band of London clay on top. But the clay left to itself is still trying to slip back to a one in eight slope. In order to protect the houses the area had to be graded and drained, unlike the cliffs to the west, the drainage is below the surface.



# Woodman, spare that tree

When a wave breaks it loses much of its energy and therefore most of its ability to cause flooding or damage. As waves begin to break as soon as they pass over the toe of a beach it makes sense to have as big a beach as possible in front of a sea wall. There is no natural source of beach material in the Reculver area apart from some small pebbles washed out of the unprotected sandstone cliff so the size of the local beaches is increased by artificial nourishment using shingle dredged from the Norfolk bank off the coast of East Anglia.

An extensive system of groynes has also been built to encourage the shingle to stay where it was put. Most of the groynes you see are made from tropical hardwood, greenheart from Guyana and jarah from Malaysia, but conservationists please note – in 1989 some groynes were built using Canadian Douglas fir as an experiment to see how the softer woods stand up to the local coastal environment. The general pattern for the groynes near here is a closed plank structure sticking straight out from the sea wall, but not all. To the east of Reculver you can find groynes deliberately built with wide spaces between the planks and even some zig zag groynes. All were laudable attempts by engineers over the years to try to build a better and more efficient form of sea defence

# What's going on?

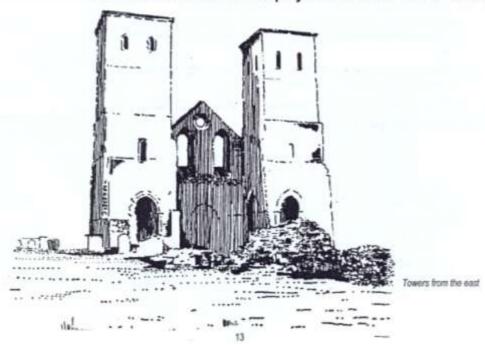
How does anyone know if all the schemes to build sea walls and groynes, create beaches and stabilise cliffs are really doing the jobs they were meant to do?

It is a good question and to provide an answer their performance is monitored by an extensive programme of data collection undertaken by Canterbury City Council. On the foreshore the beaches are surveyed and wave heights measured, the cliffs are heavily instrumented with both piezometers (devices which measure water pressure deep underground) and inclinometers (which can detect subterranean movements of less than 1 millimetre). In addition, the results are being studied by the Universities of Southampton and Strathclyde to see if there are ways of making further improvements to any future schemes.

# Busy doing nothing

Our Country Park cliff section is the only undefended length of coastline for many miles on the west side of Reculver. This unique status came about by accident simply because unlike the rest of the coastline there was nothing here considered worthsaving. The sea is left to eat away at the cliffline just as it always has done, causing the cliff edge to retreat at about one metre a year. Please take care when walking in this area – we'd like you to come back again and again!

# Remember to visit the Displays at Reculver Visitor Centre.



# Northern sea wall project

# RECULVER 1995-6

The National Rivers Authority carried out this work. The main sea wall east of Reculver Towers was built in 1954. Although the wall reverment was in good condition, protected by shingle, the timber groynes were in bad repair.

The new project is an attempt to stop the effect of longshore drift by building 14 rock groynes to the east of the Towers and rock revetment to the west. 180,000 cubic metres (nearly half a million tonnes) of shingle was brought in by dredger at high tide. The rock revetment (30,000 tonnes) is to stop the overlooping by the sea at high tide.

#### It comprises

- 65,000 tonnes of Norwegian syenite, a variety called larvikite, it is a large grained igneous rock formed under pressure
- 6,000 tonnes of a very hard limestone from near Boulogne, France.

The Norwegian stone was brought in 20,000 tonne barges, the French in 3-4,000 tonne barges. They were anchored offshore, and smaller amounts were brought in at high tide. The individual rocks weigh 3-6 tonnes on average, but some are up to 9 tonnes in weight.

Underneath the new groynes are pipes taking water from the drains. A new pipe was built for the shellfish farm, which is one of the few places in Britain with a licence to extract sea water.

Each groyne is slightly different, height and width being dependent on the existing beach level. The rounded end is angled to maximise efficiency.

#### COASTAL PROTECTION WORK 1998/1999

The £1.2 million project, designed by Canterbury City Council engineers and jointly funded by the Ministry of Agriculture, Fisheries and Food, the Environment Agency and English Heritage, was started in September 1998 and completed May 1999.

The contract awarded to Harbour and General Works was to repair the existing concrete wall of the Towers and construct a small rock revetment to protect the wall's toe and reduce the overtopping rate with additional work being carried out to fill voids detected under the ragstone apron in front of "The Towers".

Materials used in the construction included 4,000 square metres of geotextiles, 1,800 cubic metres of concrete, 13 tonnes of reinforcement, 960 square metres of sheet piles and 20,000 tonnes of rock weighing between 1 and 6 tonnes each which were quarried in Northern France.

The contractors worked to a strict timetable so as not to disturb visiting birds to the seashore and were also governed by the weather and the tides.

Now is the time to see if all these defences are doing their job and holding back the sea.



The text has been written by Kent Wildlife Trust people, especially Chas Matthews, Shirley Thompson and Peter Golding with illustrations by Tessa Lovatt-Smith and Aubrey Warner.

Technical data has been supplied by the Architecture and Engineering Dept. of Canterbury City Council.

#### Further Reading

Other Reculver publications such as "Wildlife", "History" and "Still Slip Sliding Away" can be seen and purchased at Reculver Visitor Centre along with many other items of information relating to the Country Park and surrounding area.

#### **Useful Contacts**

Canterbury City Council 01227 862000

Military Road, Canterbury, CT1 1YW

Kent Wildlife Trust

01622 662012

Tyland Barn, Sandling , Maidstone, ME14 3BD

English Heritage

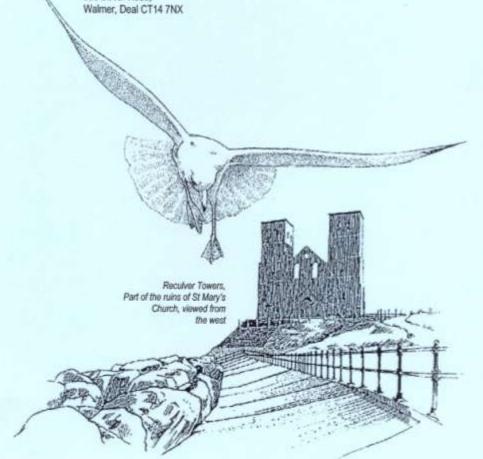
020 7973 3000

23 Savile Row London, W1S 2ET

Reculver Country Park 01227 740676

Reculver Lane, Herne Bay CT6 6SF

Chas Matthews 356 Dover Road,





# SSSI citation



COUNTY: KENT SITE NAME: THANET COAST

DISTRICT: CANTERBURY; THANET

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the

Wildlife and Countryside Act 1981

Local Planning Authority: CANTERBURY CITY COUNCIL, Thanet District

Council

National Grid Reference: TR 132675— Area: 818.7 (ha.) 2023.0 (ac.)

TR 394656

Ordnance Survey Sheet 1:50,000: 179 1:10,000: TR 16 NE, NW;

TR 26 NE, NW; TR 36 NE, NW; TR 37 SE, SW

Date Notified (Under 1949 Act): 1981 (part)

Date Notified (Under 1981 Act): 1984 (part) Date of Last Revision: 1990

1987 (part) 1989 (part)

#### Other Information:

Thanet Coast amalgamates four SSSIs: Bishopstone Cliffs Plumpudding Island and North Thanet Coast previously notified under the 1981 Act, and North Cliff Broadstairs notified under the 1949 Act. The site incorporates large extensions, and part is managed by Canterbury City Council as a Country Park. Parts of this site will also be noted in 'A Geological Conservation Review'.

#### Reasons for Notification:

This site, extending almost uninterrupted from Swalecliffe to Ramsgate, comprises mainly unstable cliff and foreshore (including shingle, sand and mudflats), with smaller areas of saltmarsh, coastal lagoons, coastal gill woodland and cliff-top grassland. There are a number of biological, geological and geomorphological features of interest within the site.

# Biological Interest

The Thanet Coast is particularly noted for its bird populations, supporting both internationally and nationally important numbers of wintering birds, with one species breeding in nationally important numbers. Associated with the various constituent habitats of the site are outstanding assemblages of both terrestrial and marine plant species, including communities of marine algae that are of limited occurrence elsewhere in the British Isles. Invertebrates are also of interest and there are recent records of three nationally rare\*\* and one nationally scarce\* species.

The ornithological interest of the Thanet Coast is centred on the large numbers of waders and wildfowl which use the area in winter and the many species of birds that feed and rest during the spring and autumn passage. Turnstones Arenaria interpres regularly overwinter in numbers of international importance, whilst sanderlings Calidris alba and ringed plovers Charadrius hiaticula and grey plovers Pluvialis squatarola are present in nationally important numbers. A colony of little terns Sterna albifrons, a species specially protected by law and listed on Schedule 1 of the 1981 Wildlife and Countryside Act, breed in nationally important numbers at Plumpudding Island.

The cliff section at Epple Bay is of considerable historic scientific interest, since it is the type locality for one genus and six species of algae. It forms part of the survey area where chalk cliff algal communities were first studied in Britain, and the remaining natural cliff exemplifies this type of vegetation. Botany Bay and White Ness exhibit a variety of geomorphological features such as stacks, promontories, caves and a tunnel and arch formation which are no longer common on Thanet, and which also support a variety of cliff algal communities. Of particular interest are the cave communities of algae of the group *Chrysophyceae*; these communities are not known from the caves in the harder rocks of western Britain. The North Thanet cliff algal communities are complementary to those of the chalk cliffs at Pegwell Bay, within the Sandwich Bay and Hacklinge Marshes SSSI, the only other notable site for chalk cliff algal communities in south-east England.

The littoral and subtidal plant and animal communities of Kent are generally impoverished compared with other parts of Britain; this is principally attributed to the extremes of sea and air temperatures, the turbid sea water and the soft, unstable substrates which are prevalent. However, the foreshore at Fulsam Rock is clean and silt-free, and supports a diverse fauna on the lower shore especially in the laminarian zone, which has a well developed crevice fauna. The algal flora is well developed, and includes species which have not been recorded elsewhere in Kent, such as Chondria dasyphylla, Hecatonema maculans and Griffordia secunda.

The shingle substrate occupying part of the foreshore has given rise, in places, to a distinctive flora with species including yellow horned poppy Glaucium flavum, viper's bugloss Echium vulgare and the nationally scarce\* plants sea kale Crambe maritima and sea pea Lathyrus japonica. The nationally rare\*\* hog's fennel Peucedanum officinale has also been recorded from the shingle at Swalecliffe. Small areas of saltmarsh are dominated by sea purslane Halimione portulacoides with sea aster Aster tripolium and sea worm Artesmia maritima also present, whilst at Plumpudding Island the western coastal lagoon contains abundant growth of the nationally scarce\* aquatic plant, spiral tassel-weed Ruppia cirrhosa.

The exposed cliffs themselves are of interest for terrestrial plants, supporting populations of the nationally rare\*\* hoary stock *Matthiola incana* and sea stock *Matthiola sinuata* as well as the nationally scarce\* wild cabbage *Brassica oleracea* and sea heath *Frankenia laevis*.

Bishopstone Glen is a short steep-sided valley cut through the clays and sands of Bishopstone and is the only feature of its kind on the North Kent Coast. The sheltered head of the Glen is dominated by ash Fraxinus excelsior and field maple Acer campestre woodland which is replaced further down the valley by hawthorn Crataegus monogyna and blackthorn Prunus spinosa scrub. Young smooth-leaved elm Ulmus minor is abundant throughout.

The exposed cliff top east of Bishopstone supports a large area of coastal grassland. It is mown for hay and contains a wide range of species including early hair grass Aira praecox, barren fescue Vulpia bromoides, meadow vetchling Lathyrus pratensis, bulbous buttercup Ranunculus bulbosus and thrift Armeria maritima.

Within this site strips of grassland along the seawalls are dominated by couches Elymus species and fescues Festuca species. Other flowering plants include the nationally rare\*\* hog's fennel, found along the seawall at Plumpudding Island, and some nationally scarce\* species such as slender hare's ear Bupleurum tenuissimum and sea clover Trifolium squamosum. Some of the more common species recorded include spiny restharrow Ononis spinosa and grass vetchling Lathyrus nissolia.

The drift line debris in the vicinity of Swalecliffe supports the only population of the nationally rare\*\* isopod (woodlouse) Eluma purpurescens on mainland Britain, and the cliffs around Bishopstone support two nationally rare\*\* digger wasps Ectemnius ruficornis and Alysson lunicornis. It is likely that further survey may reveal additional rare or scarce invertebrate species in the site. These particular cliffs also support one of the two largest sand martin Riparia riparia colonies in Kent.

#### Geological Interest

The section of coast between Beltinge and Reculver exposes the Thanet Formation, the Woolwich and Reading Beds Formation, the Oldhaven Formation and the London Clay Formation. It is the key on-land Palaeocene site in the London Basin, and is one of Britain's most important palaeobotanical localities.

The Thanet Beds contain a range of plant organs including as-yet-undescribed fruits and seeds. In addition, this section is the only locality to yield determined wood from the Woolwich Beds and one of only two sites to have yielded plant material from the Oldhaven Beds.

The clays here contain a substantial assemblage with two families, six genera and numerous species unique to this site in the London Clay flora. Three genera Palaeobruguier (mangrove), Shrubsolea (Rutaceae) and Jenkinsella (Ceridiphyllaceae) are unique to this site.

A rich invertebrate and vertebrate fossil fauna also occurs within the site and the section has been extensively studied over many years. The best exposures

currently occur on the foreshore, and many of the best are towards the Spring tide and Low Water mark.

The stretch of coastline between Epple Bay and Ramsgate is the national reference locality for the Santonian stage of the Upper Cretaceous chalk in Britain.

The exposed sections at North Cliff together with the nearby Pegwell Bay complement the Folkestone Warren and Dover to Kingsdown Cliffs SSSIs and include several stratigraphically important marker beds such as Bedwell's Columnar Band and Whitaker's Three Inch Band. The top parts of the Santonian stage are very fossiliferous and the *Marsupites* zone contains a distinctive and famous band of the pyramidal-shaped sea urchin *Echinocorys*.

The North Cliff is also important for Quaternary studies. It provides lithostratigraphic and biostratigraphic evidence for environmental changes during the Middle and late Devensian in SE England. The sequence of sediments exposed in the cliff overlies frost-disturbed chalk and comprises: 1) Middle Devensian Solifluction deposits; 2) Late Devensian loess and brickearths; 3) a series of Lateglacial Solifluction deposits separated by fossil soil horizons considered to represent the Bolling and Allerod Interstadials; 4) Postglacial hillwash.

Foreness Point is a key site for coastal geomorphology and an essential member of the suite of chalk coastal sites. It is a classic cliff-shore platform system and contains the most extensive intertidal chalk shore platform in Britain. It has been studied in greater detail than most other cliff-platform sites and demonstrates particularly well the links between cliff and platform erosion and beach development. Cliff recession, historically at a rate of 0.3 m per year, contributes flint and chalk pebbles to the beaches, which also contain locally important accumulations of sand, much of it organic in origin. The cliffs and platform also show interesting relationships with bedrock structure.

The cliffs at Walpole Bay and Grenham Bay consist of Upper Chalk, cut by a swarm of closely-spaced, vertical extension joints, striking NW-SE. The joints, which are well-developed here, are oblique to the main Thanet fold trend (E-W). They are particularly good examples of fractures formed in the 'Late Cenozoic Stress Domain', that is, structures formed as a result of extension related to late Alpine plate collision.

- \* Nationally scarce species are those which occur in 16-100 10 km squares in Great Britain.
- \*\* Nationally rare species are those which occur in 1-15 10 km squares in Great Britain.

# Management



Local Management Annual Review

English Heritage EH
Canterbury City Council CCC
Kent Wildlife Trust KWT

Site: Reculver Roman Fort and Towers

**Agreement date:** To be completed

**Term:** 3 years

**Date of meeting:** 25<sup>th</sup> August 2009

**Present:** Karen Richardson: Estates Surveyor EH

Roy Porter: Property Curator EH Paul Rees: Technical Manager

EΗ

Dawn Champion: Head of Visitor

Operations Kent EH

Andy Turner: Landscape Manager

EΗ

Anna Palmer: Senior Countryside

Officer CCC

Caroline Cooper: Tourism Manager

CCC

Julie Thomsett: Education Officer

**KWT** 

Anne Partington-Omar: Head of Visitor

Centres KWT

Emily Cornish: Visitor Centre

Manager

#### 1. Public Access and Performance

CCC estimated number of visitors on site in the Country Park to be in the region of 125,000- 150,000 per annum, of whom approx 25 % visit the Visitor Centre and approx 90% walk up to the Towers. The refurbished and extended visitor centre reopened in July 2009 and is open 5 days a week. Visitor numbers are expected to increase.

# 2. Site Security

Two incidents of people climbing the Towers. Holes have been cut in the pigeon netting. Website showing evidence of climbing has now been shut down

Evidence of camp fires/barbeques and metal detecting Kids driving across the site on trail bikes Police were called.

# 3. Education

1700 booked education visits. Numbers expected to increase with new facilities at Visitor Centre

# 4. Signage and Interpretation

The guardianship sign has been vandalised and removed to the visitor centre office. DC has submitted a works request to have the sign repaired and re-fixed in its original location.

## Action: DC to chase works request

The local school is for special needs children who have a number of partially sighted pupils, discussions were had around reproviding a Braille sign when a new guardianship panel is produced. DC said that Braille was not a feature of the current EH signage strategy but that other ways of communication were being explored such as downloadable audio tours. At present there is no EH budget to provide interpretation on site.

CCC has been successful with an Intereg bid for the Country Park and will be developing combined interpretation throughout the Country Park. A local school has produced a mural which is displayed in the new multi purpose room which included Braille.

Action: AP to supply details of any proposed interpretation to DC/KR to pass to English Heritage Properties Presentation Team for comments.

# 5. Events/Publicity

The Towers will be cleaned and open on Sunday 13<sup>th</sup> September for Heritage Open Days. It will be staffed by volunteers supervised by KWT

Discussions were had about opening the Towers on more days during 2010 using volunteers or possibility CCC staff. EH agreed that a small admission charge to cover costs would be acceptable. It was agreed that subject to any works taking place at the towers to trial opening for booked tours next summer. KWT thought that 5 people would be necessary to man each opening time.

Action: PR to arrange Tower cleaning prior to 13th September

# 6. Maintenance and Repair/capital works

There had been an EH £50,000 consolidation budget during 2009/2010. It had originally been expected to spend this on consolidating the stonework however it had been spent on carrying out essential work to the stone apron. The voids had been filled and the stones cleaned.

A new bid for £50,000 is being made to carry out consolidation to the Western front, it will be known if this is successful early in the New Year. If successful it will be necessary to scaffold the Towers

during the summer months. The site will be fenced and made as secure as possible against vandals.

It was acknowledged then if the work was not carried out then it may be necessary to fence off parts of the site if there is a risk of falling masonry.

AT asked if a bat survey had been carried out and it was thought not.

Post meeting note: Evidence of bats were found in the Tower

## 7. Consents

SMC needed for new interpretation panels.

Action: AP to send details of proposed locations to RP

# 8. Health and safety/DDA

No incidents reported

DC explained the daily checklist monitoring that EH expects to see on site.

Post meeting note KR to request a site Risk Assessment

# 9. Grounds/landscape maintenance

It was noted that a new path/slide? had opened up on the south side of the roman walls. The grounds maintenance plan to be looked at to agree what works to be carried out at the eastern gateway.

#### 10. Management Plan

A conservation plan for the site is in place.

#### 11. Finance/MPA

AP to revisit Maintained Property Agreement regarding comments by CCC legal team. CCC expressed a desire to have a full MPA not a grounds maintenance contract.

#### 12. AOB

Only 2 volunteers for HOD,

**Action**: AP and DC to issue press release

Poor reaction to joint guidebook with Richborough, comments from visitors that it is 98% Richborough.

Roy Porter expressed EH thanks to Kent Wildlife Trust

The meeting ended with a tour of the new extension and visitor centre and of the site.

# Ancient Monument Schedule





#### ENGLISH HERITAGE





Chief Planning Officer Canterbury City Council Council Offices Military Road Canterbury Kent CT1 1YW

Ref. : MPP23/ AA 56319/1

Date : 31st March 1999

MONUMENT NAME

Reculver Saxon Shore fort, Anglo-Saxon monastery and associated remains CANTERBURY

DISTRICT COUNTY

: KENT

MONUMENT NUMBER : 31399

Dear Sir/Madam

ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979, AS AMENDED

The above-named monument is already included in the Schedule compiled and maintained by the Secretary of State under Section 1 of the Ancient Monuments and Archaeological Areas Act 1979, as amended. I am requested to inform you that the scheduled area of the monument has now been revised to that shown outlined in black and highlighted in red on the enclosed map extract. The monument, as revised, has been included in the Schedule. Please ensure that papers that refer to the former scheduled area of this monument are destroyed.

Please amend your records accordingly.

Yours faithfully

Julie Franks

Scheduling Section English Heritage

Encs: map extract, Schedule entry (where required)

WAY DEPARTMENT FILEREF - 6 APR 1999 ACKID

REPLIED

2) SAVILE ROW, LONDON, WIX 1AB Tiliphote 0177 973 3000 Euclinik 0171 973 3001

FILE REFERENCE: AA 56319/1

# SCHEDULE ENTRY COPY

ENTRY IN THE SCHEDULE OF MONUMENTS COMPILED AND MAINTAINED BY THE SECRETARY OF STATE UNDER SECTION 1 OF THE ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979 AS AMENDED.

MONUMENT: Reculver Saxon Shore fort, Anglo-Saxon monastery and associated

PARISH: CANTERBURY

DISTRICT: CANTERBURY

COUNTY: KENT

NATIONAL MONUMENT NO: 31399

NATIONAL GRID REFERENCE(S): TR22776928

# DESCRIPTION OF THE MONUMENT

The monument includes the surviving part of a Saxon Shore fort, an earlier, temporary Roman military camp and Iron Age farmstead, and a later Anglo-Saxon monastery and medieval parish church, situated on a low sandy cliff on the Month Kent coast, around 3km east of Herne Bay. Natural coastal processes have significantly altered the original setting of the monument. During the Roman period the sea was around 1.4km to the north and Reculver occupied the southern tip of a promontory at the north western end of the Wantsum Channel. This was an estuarine waterway which separated the Isle of Thanet from the Kent mainland. To the south, the promontory overlooked a sheltered anchorage enjoying easy access to the open sea. Coastal erosion has destroyed the north eastern part of the Saxon Shore fort and later monastery.

Investigations carried out in the 19th and 20th centuries have shown the monument to have undergone several phases of development and reuse. Below ground traces of an Early Iron Age farmstead represent the earliest, settlement, dating to around 500 BC. The strategic importance of the promontory is illustrated by the construction of a temporary Roman military camp in the first century AD. The camp defences survive as a pair of now buried, infilled ditches, originally surrounding a timber-reinforced, earthern rampart, enclosing an area of around 0.5ha. Analysis of pottery fragments has indicated that the camp was in use during the Roman invasion of Britain in AD 43. Coastal erosion has severely damaged areas to the west and north east of the monument in which evidence for a subsequent, Early Roman civilian settlement has been found and these are not included in the scheduling. The Saxon Shore fort was constructed during the early third century AD. It took the form of a NNE-SSW aligned, square enclosure of around 3.2ha, the features. The core of the enclosing curtain wall, which is mainly flint with ashlar bonding, survives to a height of up to 2.7m. This was originally around Implication of the core of the

(Continued ..)

AUTHORISED BY: A R Middleton On behalf of the Secretary of State for Culture, Media and Sport under batch no: 10592

Continued from previous page ...

NATIONAL MONUMENT NO: 31399

DESCRIPTION OF THE MONUMENT (Continued)

Surrounding the wall are a pair of now infilled, 10m wide ditches, separated from each other and the curtain wall by up to 10m wide berms. There were originally four gateway entrances through the centre of each side of the defences. The gateways were flanked by single square gatehouse towers, and the foundations of the eastern gatehouse have been exposed and consolidated for public display. Inside the fort are buried traces of a regular layout of roads flanked by masonry and timber structures. Buildings, including the commandant's house, the headquarters building and a bath house, have been identified. The Notitia Dignitatum, a contemporary list of Late Roman military and civilian commands, names the Reculver garrison as the Cohors I Baetasiorum, and tiles stamped CIB have been discovered amongst the foundations. Evidence from the excavations suggests that the Saxon Shore fort had fallen into disuse by the beginning of the fifth century AD. Historical records indicate that the Anglo-Saxon monastery was founded in around AD 669, when Eghert, King of Kent granted Reculver to Bassa for the foundation of a minster church. The religious house utilized the existing Roman defences, and the church was built near the centre of the earlier fort, probably around the site of an early wayside preaching cross, the base of which was found during 1927 investigations at the eastern end of the nave. The cross base, now at Canterbury Cathedral along with other fragments of Saxon masonry from the church, has been dated to the early seventh century AD. The church survives in the form of buried foundations marked out in modern concrete, and standing ruins up to around 2m high, incorporated within the later medieval parish church. This early walling reused Roman tiles, bricks and rubble masonry. The earliest monastic church had a rectangular nave and apsidal chancel flanked by twin projecting rooms, or porticus. Eighth century additions include north and south aisles. Documentary evidence suggests that the site had ceased to function

the monument. The now disused medieval parish church, flanked to the south by part of its surrounding walled graveyard, was partly demolished in 1805. The original form of the church is recorded in 18th century illustrations and descriptions. Substantial remodelling of the western end in the early 12th century included the construction of tall twin towers. The towers, without their original wooden steeples, still stand on the cliff edge. The chancel was enlarged during the 13th century. In 1809, the ruined church was bought, repaired and underpinned by Trinity Bouse, and the twin towers are still used as a navigation mark for shipping. The standing ruins have been the subject of modern restoration and repair.

Subsequent land use, including the construction of a number of houses and buildings in the 19th and 20th centuries, World War II activites and the use of part of the monument as a caravan park, will have caused some disturbance, although many of the modern buildings have now been demolished. The walled interior of the Saxon Shore fort and the church are now in the care of the Secretary of State.

A number of features are excluded from the scheduling; these are Beach

(Continued ..)

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NATIONAL MONUMENT NO: 31399

DESCRIPTION OF THE MONUMENT (Continued)

Cottage, the King Ethelbert Inn and its associated outbuildings, all modern signs, fences, gates, bollards, railings, fixtures and fittings and childrens play equipment, all telegraph poles and lighting, and the modern surfaces of all paths, tracks, paving and hardstanding; the ground beneath all these features is, however, included.

#### ASSESSMENT OF IMPORTANCE

Saxon Shore forts were heavily defended later Roman military installations located exclusively in south east England. They were all constructed during the third century AD, probably between c.AD 225 and AD 285. They were built to provide protection against the sea-borne Saxon raiders who began to threaten the coast towards the end of the second century AD, and all Saxon Shore forts are situated on or very close to river estuaries or on the coast, between the Wash and the Isle of Wight. Saxon Shore forts are also found on the coasts of France and Belgium. The most distinctive feature of Saxon Shore forts are their defences which comprised massive stone walls, normally backed by an inner earth mound, and wholly or partially surrounded by one or two ditches. Wall walks and parapets originally crowned all walls, and the straight walls of all sites were punctuated by corner and interval towers and/or projecting bastions. Unlike other Roman military sites there is a lack of standardisation among Saxon Shore forts in respect of size and design of component features, and they vary in shape from square to polygonal or oval. Recognition of this class of monument was partially due to the survival of a fourth century AD Roman manuscript, the Notitia Dignitatum, which is a handbook of the civil and military organisation of the Roman Empire. lists nine forts which were commanded by an officer who bore the title 'Officer of the Saxon Shore of Britain' (COMES LITORIS SAXONICI PER BRITANNIAM). Saxon Shore forts are rare nationally with a limited distribution. small group of Roman military monuments which are important in representing army strategy and government policy, Saxon Shore forts are of particular significance to our understanding of the period and all examples are considered to be of national importance.

From the time of St Augustine's mission to re-establish Christianity in AD 597, monasticism formed an important part of both religious and secular life in the British Isles. Settlements of religious communities, including monasteries, were built to house monks, canons (priests) and sometimes lay-brothers living a common life of religious observance under some form of systematic discipline. The main components of the earliest monasteries might include two or three small timber or stone churches, a cemetery and a number of associated domestic buildings, contained within an enclosure or vallum. Those sites which have been excavated indicate no standard layout of buildings. The earliest sites were not markedly dissimilar from contemporary secular settlements, although their ecclesiastical role may be indicated by the presence of luxury items, such as stone sculpture, coloured glass, (Continued ..)

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Continued from previous page ...

NATIONAL MONUMENT NO: 31399

ASSESSMENT OF IMPORTANCE (Continued)

inscriptions and high quality metalwork and pottery. Later foundations in the 10th and 11th centuries generally had one major stone church and a cemetery, and a more regular layout of buildings, often ranged around a cloister. Documentary sources indicate the existence of 65 early monasteries. The original number of sites is likely to have been slightly higher and would have included sites for which no documentary reference survives. Of these, less than 15 and at present he linked to a specific site. As a rare monument type, than 15 can at present be linked to a specific site. As a rare monument type, and one which made a major contribution to the development of Anglo-Saxon England, all pre-Conquest monasteries for men exhibiting survival of archaeological remains are worthy of protection. The Saxon Shore fort and pre-Conquest monastery at Reculver, despite some damage caused by coastal erosion, survive comparatively well, in close association with features dating from the Iron Age to the later medieval association with reatures dating from the Iron age to the later medieval period. Part excavation has shown that the monument contains important archaeological and environmental evidence. The Saxon Shore fort, along with the example at Brancaster in Norfolk, is believed to be one of the earliest constructed on the English coast, and its reuse of the site of the earlier Roman invasion camp reflects the stategic importance of Reculver harbour. Little the stategic importance of Reculver harbour. the fort at Brancaster, it is unusual in that it lacks the corner and interval towers found in the other Saxon Shore forts. The pre-Conquest monastery at Reculver represents a particularly rare example of a Mid-Saxon religious house, and its siting within the earlier Saxon Shore fort illustrates the early Christian practice of reusing important Roman or prehistoric enclosures.

#### MAP EXTRACT

The site of the monument is shown on the attached map extract outlined in black and highlighted in red.

# SCHEDULING HISTORY

Records show that the monument was included in the Schedule on 5th January 1927 as:

COUNTY/NUMBER: Kent 27 NAME: Reculver Roman fort

Monument placed in Guardianship on 27th January 1925 as:

COUNTY/NUMBER: Kent 27

NAME: Reculver church towers and Roman fort

Scheduling amended on 8th December 1980 to:

COUNTY/NUMBER: Kent 27 NAME: Reculver Roman Fort and Towers

Scheduling amended on 31st October 1988 to:

COUNTY/NUMBER: Kent 27

(Continued ..)

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batch no: 10592

Continued from previous page ..

NATIONAL MONUMENT NO: 31399

SCHEDULING HISTORY (Continued)

NAME: Reculver Roman fort and towers

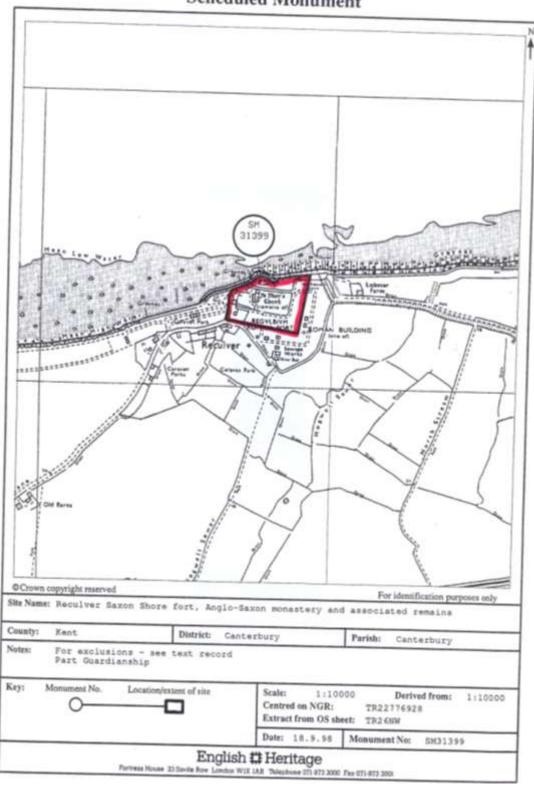
The reference of this monument is now: NATIONAL MONUMENT NUMBER: 31399

NAME: Reculver Saxon Shore fort, Anglo-Saxon monastery and associated remains

SCHEDULING REVISED ON 19th March 1999

AUTHORISED BY: A R Middleton On behalf of the Secretary of State for Culture, Media and Sport under batch no: 10592

# Scheduled Monument



# Public Rights of Way



