SOUTHAMPTON NATURAL HISTORY GUIDE

The Community Programme

project
for the Southampton Schools
Conservation Corps.

sponsored by
NACRO·C·P· Southampton

1987

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Special Thanks to:

Manpower Services Commission: Leisure Services Department(Parks)- Mr W. P. Wellington: British Trust for Conservation Volunteers: Hampshire County Council Planning Dept. - Roger Prescott: Hampshire and Isle of Wight Naturalists' Trust - Dr Bob Page: Southamton City Engineers Dept: Southampton Schools Conservation Corps: Mr Paul Bowman: John Buckley Bsc: Andrew Welch Bsc.

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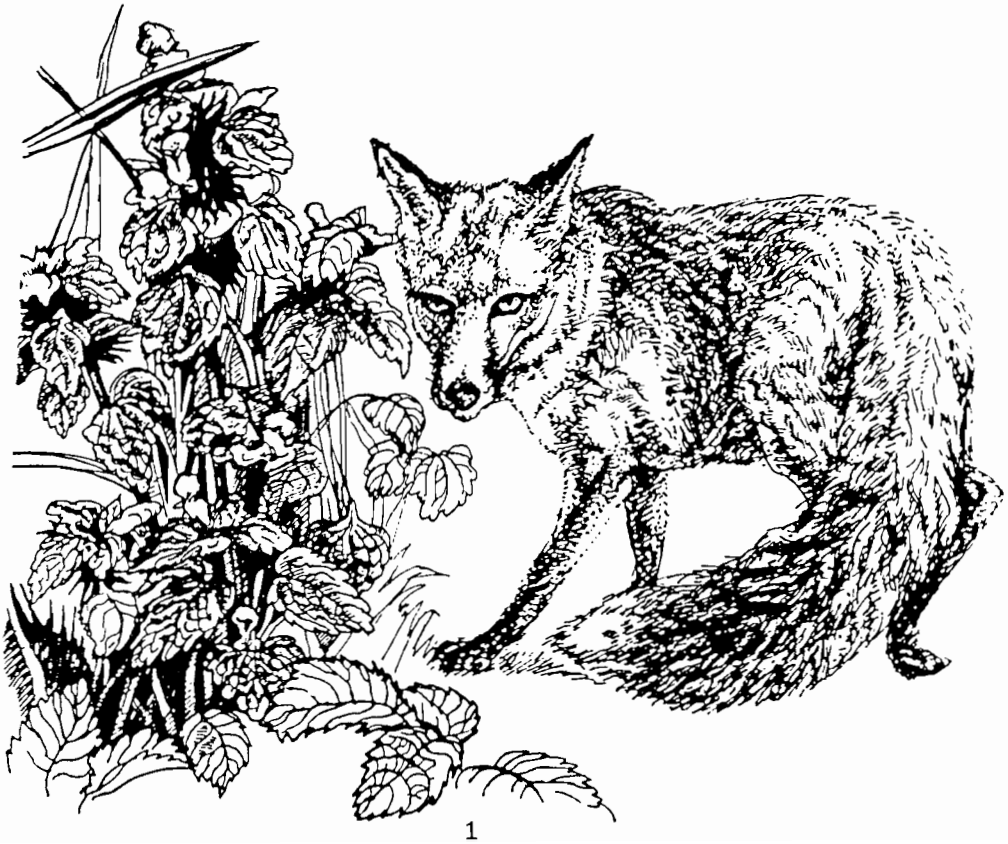
We owe an extra special 'Thank-you' to Mrs Pat Loxton, Secretary for 'The Schools' Conservation Corps', to Roger Ferry, Scheme Manager and to David Irish, Assistant Manager for their invaluable guidance and encouragement throughout the year.



CHESSEL BAY

Chessel Bay is a stretch of estuarine shore and adjoining land situated on the eastern bank of the River Itchen below the Northam Bridge. It constitutes a fairly important open space as it is the last natural stretch of the River Itchen bank below Woodmill, and consequently for the greater part, there is no sea wall or other protection here. The bay is situated on a wide meander of the river and being on the outside of the curve has become a natural sediment trap. The bay may be divided into 3 main areas

i) The mud flats which are totally covered at high tide.
ii) The land above the highwater mark.
iii) A transition zone between these two, showing evidence of being influenced by the other two ecosystems.

The study was extended to include an area of sea wall and 'wasteland' in the southern end of the bay.

ZONE A

This is an area of mixed woodland, lying between the shore proper and the railway line. The zone lies on a slope, which is fairly steep in places, and a distinct bank separates this zone from the shore. The high water mark rarely, if ever breaches this bank so this zone is naturally protected from flooding and has consequently developed as a dry woodland. The major tree here is Oak (Quercus robur), however Beech (Fagus sylvatica) is locally dominant towards the south of this zone. At the northern end the Oak woodland breaks down, being replaced firstly by Plum (Prunus) and Bramble, and then by rough grassland. Within the Oak stand other trees are present, including Rowan (Sorbus acuparia), Hazel (Corylus avellana), Hawthorn (Crataegus monogyna) and Holly (Ilex aquifoluim). Most species of this zone show signs of being well established and are regenerating.

Undergrowth below the tree layer is variable. Unfortunately some areas are almost totally bare, principally as a result of trampling where paths are ill defined. Other areas show a healthy undergrowth with dense patches of Bracken, Bramble and Grass. The variety of undergrowth has allowed a fair number of wild flowers to grow in what may be considered a small area. A number of true woodland species occur, including; Wood Sage (Teucrium Scorodonia), Wood Anemone (Anemone nemorosa) Wood Spurge (Euphorbia amygdalioides), Cow Wheat (Melampyrium pratense) and Winter Heliotrope (Petasites fragrans). A number of 'wasteland' species are also present, especially in the north within the grassland, these include Red Campion (Silene dioca) and Perforate St. John's-wort (Hypericium perforatum).

ZONE B:

This zone acts as a buffer between the wood and the tidal waters. It is situated at the foot of the woodland zone, below the major slope and is therefore occasionally covered by water at high tide. The vegetation here is a reflection of the influence by both the woodland and estuarine ecosystems. An extension of the woodland is made by a few trees which can tolerate the saline

water, with Crack Willow (Salix fragilis) dominating. But a greater area is covered by Rushes, e.g. Sea Rush (Juncus maritimus), Soft Rush (J gerardii), Sea Club Rush (Scirpus maritimus) and sedge:- Greater Pond Sedge (Carex riporia). The rushes and Willows have stabilised areas of loose sediments allowing a host of water loving and coastal wild flowers to grow, such as: Sea Aster (Aster tripoluim), Spear - Leaved Orache (Atriplex hastata), Sea Beet (Beta maritima), and Triffid Bur-marigold (Bidens tripartita).

ZONE C:

Where the railway line runs close to the shore a section of wall has been built for protection purposes. The wall has become colonised by plants,showing a peculiar mixture of hardy wasteland species and some associated with coastal location. The vegetation forms small clumps, made up of larger plants such as Sallow (Salix cinerea) and Bramble (Rubus fruticosus). Other plants grow amongst these, including Least Lettuce (Lactuva saligna), members of the umbelliferae family (Daucus carota, Pimpinella saxifrage), Common Dog-violet (Viola nuniana) and Sea Milkwort (Glaux maritima).

ZONE D and E

The southern end of the bay may be divided into two zones.

Zone D is a small area, just above the high water level but well below Zone E. The area appears to have been a ditch which is now overgrown but still remains fairly wet. The zone is wooded, consisting mostly of mature trees. Oak (Quercus robur) predominates but Field Maple (Acer campestre) is also present. The undergrowth is mostly dense, impenetrable bramble but some areas are grass. The grass extends a small way beyond the trees and wild flowers such as Sea Campion (Silene maritima) grow here.

Zone E is an area of wasteland well above the high water mark and is protected by a sea wall. The area has very thin soil and is made up mostly of rubble. Understandably the area has been colonised by hardy, pioneering, wasteland species, including Black Knapweed (Centaurea nigra), Ribbed Melilot (Melilotus officinalis) and Creeping cinquefoil (Potentilla reptans).

The most important feature of an estuarine ecological system is the mudflats exposed at low tide. Typically the particle size of the sediments decreases away from the shore. Along Zone B the average size of particle is greater than five centimetres, but within a matter of metres the hydrogeomorphological conditions change to deposit sediments of a very fine nature. These sediments are so fine as to adhere forming clay-like deposits up to the low water mark. These stable deposits are normally covered by an unstable layer of silt which is redistributed daily by the changes in tide. Variations in the overall particle size distribution are caused by small streams running to the river from the shore. The course of these is well marked at low tide. The streams allow larger particles to extend to the low water mark. In one case a small ridge has been produced which acts as a very

efficient sediment trap for very fine organic and inorganic material. The organic material which is present throughout the mudflats makes the mud very ecologically productive. The mudflats at Chessel Bay are able to support a range of estuarine wildlife.

The estuarine foodweb is well established allowing a lot of small creatures to flourish. Particularly noticable are members of the 'sandhopper' family (Amphipoda) living in the upper and middle shore, and the common shrimp (Crangon vulgaris). Crabs are especially numerous, with the shore crabs (Corcinus maenas) predominating. Molluscs of various nature are common including: Slipper Limpets (Crepidula fornicata), Common Mussel (Mytilus edulis), Chitons (Lepidochitona cinereus), Common Periwinkle (Littorina littoria), Common Cockle (Carduin edule) and the North American Clam (?). Small fish are numerous, especially Gobys.

The importance of an estuarine site is that it combines the fresh and sea water ecosystems as well as having wildlife peculiar to itself. This is particularly evident in the birds which feed at the site. A number of estuarine species are present, the adapted wading birds find it an ideal site. Attracted by the rich food supply Oyster Catchers and Turnstones are amongst the first to arrive as the tide retreats. These are closely followed by Curlews, Redshanks, Dunlins and Ringed Plovers. The site supports a fairly constant number of birds, unlike other sites where numbers usually increase during the winter months.

Gulls feed and rest in the Bay. Black headed Gulls are by far the most numerous but Herring, Common and Great Black Backed Gulls are present as well. A rare North American Ring Billed Gull was recorded on 14th January 1985. If accepted by the British Birds Rarities Committee it will constitute only the sixth Hampshire record. Kingfishers regularly use the area so do two or three Grey Herons. Grey Wagtails are regular visitors during the winter months. During the spring and autumn passage migrants visit the site, Common Sandpipers and Greenshanks are most noticeable. Unfortunately no breeding birds were found in the woodland.

An additional point of interest was that on 9th July 1984, although the numbers of migrant Lepidoptera were low, a Clouded Yellow butterfly was recorded.

Conclusion

Chessel Shore is a very interesting and important site for wildlife. It contains a wide variety of habitats within a small area, in all eighty-one species of wild flower and fourteen species of tree were recorded. Unfortunately a major problem of the site is litter, being a natural sediment trap, the Bay also acts as a trap for litter coming down the Itchen. Plastics are particularly problematic, and the area is under threat of serious pollution constantly. Another problem is that the paths through the woodland although small tend to be too numerous and in places ill-defined causing wide areas of woodland floor to be unvegetated.

The shore benefits from being inaccessable, especially to motor vehicles and unknown to all but local residents. It is therefore undisturbed compared to other sites. It is especially good for the birds as a result.

Cormorant

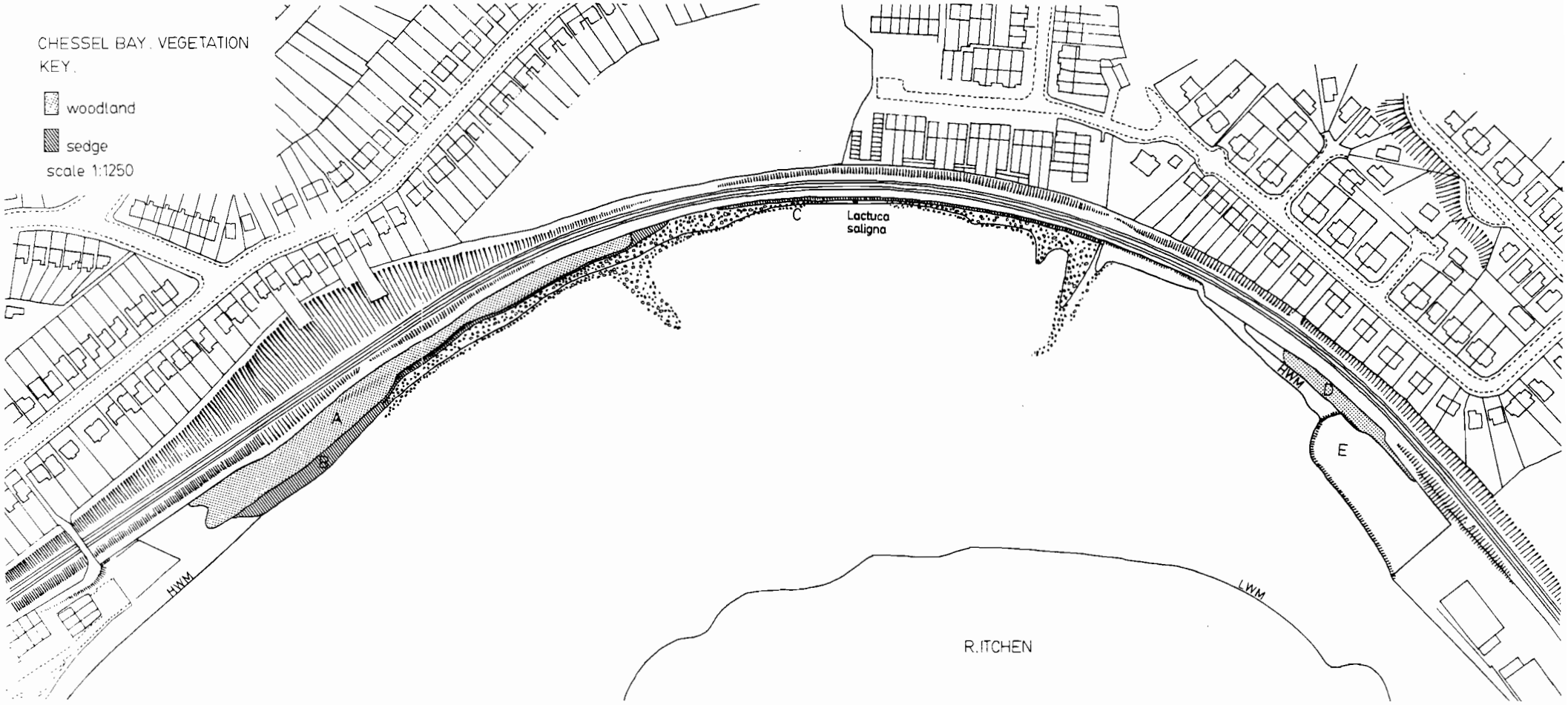
Chessel Bay: Herbs

Achillea millefolium	Yarrow
Agrimonia eupatoria	Agrimony
Anagallis arvensis	Scarlet Pimpernel
Anemone nemorosa	Wood Anemone
Artemisia vulgaris	Mugwort
Aster tripolium	Sea Aster
Atriplex hastata	Spear-leaved Orache
Betonica officinalis	Betony
Bidens tripartita	Trifid Bur-marigold
Buddleja davidii	Buddleia
Capsella bursa-pastoris	Shepherd's-purse
Centaurea nigra	Common Knapweed
Chenopodium album	Fat-hen
Cirsium arvense	Creeping Thistle
Crepis vesicaria sub sp. taraxacifolia	Beaked Hawk's-beard
Crocosmia x crocosmiflora	Montbretia
Daucus carota	Wild Carrot
Endymion non-scriptus	Bluebell
Epilobium angustifolium	Rosebay Willowherb
Epilobium hirsutum	Great Willowherb
Equisetum arvense	Field Horsetail
Erica cinerea	Bell Heather
Euphorbia amygdaloides	Wood Spurge
Euphorbia helioscopia	Sun Spurge
Geranium dissectum	Cut-leaved Crane's-bill
Glaux maritima	Sea-milkwort
Hedera helix	Ivy
Heracleum sphondylium	Hogweed
Hieracium sp.	Few-leaved Hawkweed
Hypericum perforatum	Perforate St. John's-wort
Iris pseudocorus	Yellow Iris
Knautia arvensis	Field Scabious
Lactuca saligna	Least Lettuce
Lamium purpureum	Red Dead-nettle
Lathyrus latifolius	Broad-leaved Everlasting-pea
Linaria vulgaris	Common Toadflax
Lonicera periclymenum	Honeysuckle
Lysimachia vulgaris	Yellow Loosestrife
Melampyrum pratense	Common Cow-wheat
Melilotus officinalis	Ribbed Melilot
Petasites fragrans	Winter Heliotrope
Pimpinella saxifraga	Burnet-saxifrage
Plantago lanceolata	Ribwort Plantain
Plantago major	Greater Plantain
Plantago maritima	Sea Plantain
Potentilla reptans	Creeping Cinquefoil
Raphanus raphanistrum	Wild Radish
Rosa arvensis	Field Rose
Rosa canina	Dog Rose
Rubus fruticosus	Bramble
Rumex crispus	Curled Dock
Ruscus aculeatus	Butcher's-broom
Senecio jacobaea	Common Ragwort

Senecio squalidus	Oxford Ragwort
Senecio vulgaris	Groundsel
Silene dioica	Red Campion
Sinapis arvensis	Charlock
Sisymbrium officinale	Hedge Mustard
Solanum dulcamara	Bittersweet
Solanum nigrum	Black Nightshade
Solidago canadensis	Canadian Goldenrod
Solidgao virgaurea	Goldenrod
Sonchus arvensis	Perennial Sow-thistle
Sonchus oleraceus	Smooth Sow-thistle
Stellaria holostea	Greater Stitchwort
Taraxacum officinale	Dandelion
Teucrium scorodonia	Wood Sage
Trifolium pratense	Red Clover
Trifolium repens	White Clover
Tussilago farfara	Colt's-foot
Veronica persica	Common Field-speedwell
Vicia cracca	Tufted Vetch
Viola riviniana	Common Dog-violet

Chessel Bay: Trees and Shrubs

Acer campestre	Field Maple
Alnus glutinosa	Alder
Betula pendula	Silver Birch
Crataegus monogyna	Hawthorn
Fagus sylvatica	Beech
Ilex aquifolium	Holly
Prunus sp.	Cherry
Prunus sp.	Plum
Prunus spinosa	Blackthorn
Quercus robur	Pedunculate Oak
Salix fragilis	Crack Willow
Sambucus nigra	Elder
Sarothamnus scoparius	Broom
Sorbus aucuparia	Rowan
Symphoricarpos rivularis	Snowberry
Ulex europaeus	Gorse
Ulmus procera	English Elm


CHESSEL BAY. VEGETATION KEY.
woodland
sedge
scale 1:1250
Lactuca saligna
A
B
C
D
E
HWM
HWM
LWM
R.ITCHEN