

# THE NATURAL HISTORY OF SLAPTON LEY NATURE RESERVE

## III. THE FLOWERING PLANTS AND FERNS

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A description of the vegetation of Slapton Ley Nature Reserve, near Kingsbridge, Devon, Great Britain, is given together with a species list of ferns and flowering plants.

### INTRODUCTION

SLAPTON LEY Nature Reserve contains a large variety of habitats and plant communities. Its total area is 463 acres (188 ha), of which 106 acres (43 ha) are woodland, 84 acres (34 ha) are shingle, 242 acres (98 ha) are freshwater habitats (swamp, marsh or open water) and the remainder is fields, banks and low cliffs.

Where true soils exist they are always of the brown earth type, often shallow and acid (pH 5-6.5) and derive from beds of Lower Devonian Dartmouth slate, Mead-foot slates or Permo-triassic breccia.

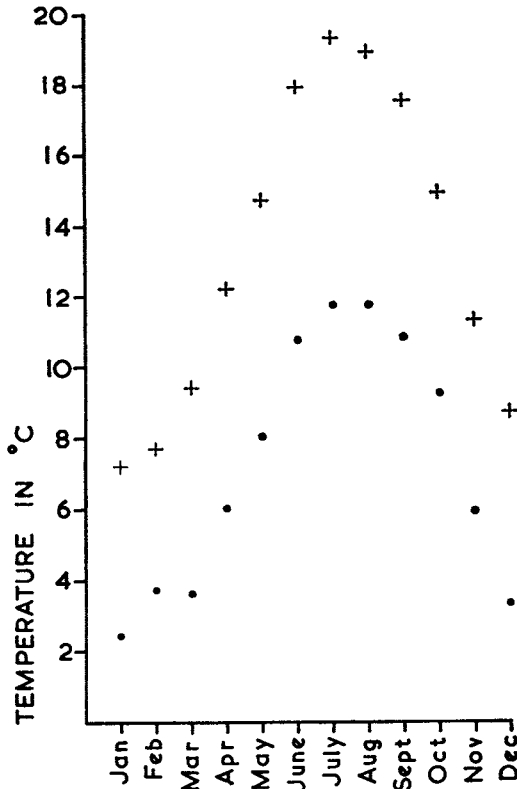


FIG. 1.

Mean monthly maximum (+) and minimum (·) temperatures for 1961-1965 at Slapton Ley Field Centre.

Table 1. *Monthly mean maximum and minimum temperatures at Slapton Ley Field Centre and Kew Observatory for the years 1961-1965.*

|                 | Monthly Mean Minimum temperatures. °C. |      | Monthly Mean Maximum temperatures. °C. |      |
|-----------------|--|------|--|------|
|                 | Slapton                                | Kew  | Slapton                                | Kew  |
| January .. ..   | 2.4                                    | 1.7  | 7.2                                    | 5.4  |
| February .. ..  | 3.7                                    | 2.7  | 7.7                                    | 6.6  |
| March .. ..     | 3.6                                    | 3.1  | 9.4                                    | 9.5  |
| April .. ..     | 6.0                                    | 6.3  | 12.2                                   | 13.1 |
| May .. ..       | 8.0                                    | 8.7  | 14.7                                   | 16.4 |
| June .. ..      | 10.7                                   | 11.2 | 17.9                                   | 19.9 |
| July .. ..      | 11.7                                   | 12.8 | 19.3                                   | 20.8 |
| August .. ..    | 11.7                                   | 12.7 | 18.9                                   | 20.3 |
| September .. .. | 10.8                                   | 10.9 | 17.5                                   | 18.3 |
| October .. ..   | 9.2                                    | 8.2  | 14.9                                   | 14.7 |
| November .. ..  | 5.9                                    | 5.5  | 11.3                                   | 9.8  |
| December .. ..  | 3.3                                    | 2.7  | 8.7                                    | 6.3  |

The climate is generally mild, wet and windy. Monthly mean maximum and minimum temperatures at the Field Centre for the years 1961-1965 inclusive are shown in Table 1 and Figure 1. It can be seen that there is only a difference of 16.9 C°. (30 F°.) between the hottest and coldest months (July and January). A comparison with the corresponding figures for Kew may be useful.\* The highest maximum 25.0° C. (77° F.): on 1 and 2 July 1961, 21 and 22 July, and 5 August 1964; and lowest minimum -5.6° C. (21° F.): on 12, 13 and 14 January 1963, at Slapton compared with 31.7° C. (89° F.) on 1 July 1961, and -9.7° C. (15° F.) on 25 January 1963, at Kew.

For the five years 1961-1965 the annual average number of air frosts was 37 at Kew and 21 at Slapton. In the same period grass minimum temperatures lower than

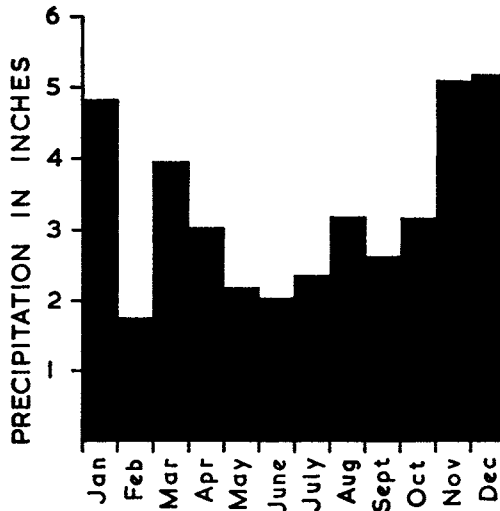


FIG. 2.  
Mean monthly precipitation for 1961-1965 at Slapton Ley Field Centre.

\* Data for Kew from the *Monthly Weather Report*, with the permission of the Controller of Her Majesty's Stationery Office.

Table 2. Monthly mean precipitation at Slapton Ley Field Centre for 1961-1965.

|                   | Mean Precipitation |     |
|-------------------|--------------------|-----|
|                   | in.                | mm. |
| January .. .. .   | 4.81               | 122 |
| February .. .. .  | 1.75               | 44  |
| March .. .. .     | 3.95               | 100 |
| April .. .. .     | 3.02               | 77  |
| May .. .. .       | 2.17               | 55  |
| June .. .. .      | 2.01               | 51  |
| July .. .. .      | 2.35               | 60  |
| August .. .. .    | 3.18               | 81  |
| September .. .. . | 2.62               | 67  |
| October .. .. .   | 3.16               | 80  |
| November .. .. .  | 5.09               | 129 |
| December .. .. .  | 5.16               | 131 |

0° C. (32° F.) occurred on 100 nights per year at Kew and on 55 nights per year at Slapton. The usual frost-free summer period is 7½ months at Slapton and frosts do not normally occur after early April.

The average rainfall for each month during the same period, 1961-1965, is shown in Table 2 and Figure 2. The distribution of rain shows little seasonal variation although there is a tendency towards a wet period in winter and a drier phase in early summer. The average annual rainfall for this five-year period at Kew (23.24 inches, 590 mm.) is three-fifths that at Slapton (39.16 inches, 994 mm.).

Westerly winds prevail, blowing on average on 172 days per year at 0900 hrs. G.M.T., the time of recording, as shown in Figure 3. Winds of Beaufort Force 5

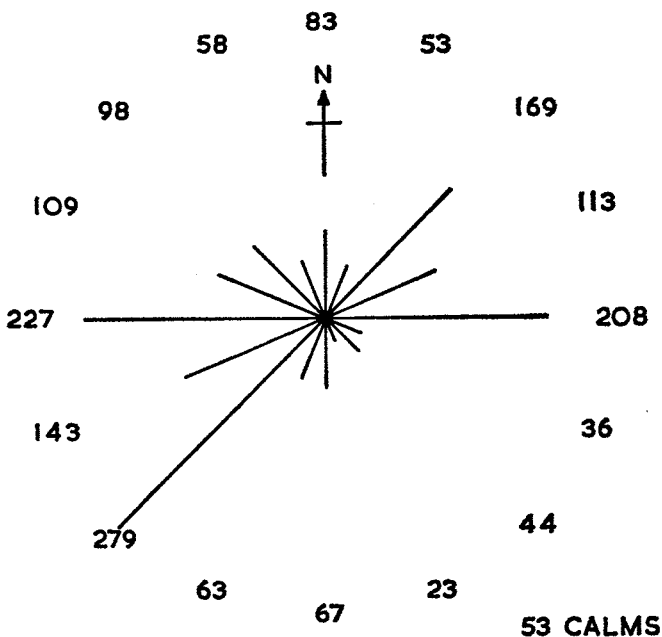


FIG. 3. Daily wind directions for 1961-1965 at Slapton Ley Field Centre.

and above are recorded at this time on 59 days per year; of such winds just under half are onshore (i.e. from NE to SSE) and carry sufficient salt spray to damage vegetation within the Reserve. Leaves of *Urtica dioica* (stinging nettle), *Pteridium aquilinum* (bracken) and *Sambucus nigra* (elder) may be "burned" and many trees and shrubs in exposed positions show evidence of wind-pruning.

The main effect on the vegetation of the mild and moist climate is to extend the growing season of many plants. For instance, *Silene dioica* (red campion) and *Heracleum sphondylium* (hogweed) can be found in full leaf and flower throughout the year, and even in winter the landscape is green. Stock can be grazed out of doors all through the year, lawns require mowing even in February, and trees and shrubs carry a rich epiphytic flora.

A factor of considerable ecological significance within the Reserve is that it was used in 1943 by the Americans as part of a training area for the Normandy landings. This involved building and demolishing bridges, constructing roads and slit-trenches, and damage by tanks and onshore shelling. All these activities had a profound effect on the vegetation of the Reserve.

#### DESCRIPTION

In the description of the vegetation of the Reserve which follows, the working units used are those of Mercer (1966), viz:

##### I. *Shingle Ridge*:

- A. Seaward face.
- B. Crest (Western Boundary is Road).
- C. Backslope (To Ley Winter Water Mark).

##### II. *Slapton Ley*:

- D. Higher Ley.
  - 1. Outer shore. } (All "shores" defined as Winter Water Mark to Summer
  - 2. Inner shore. } wading depth.)
- E. Lower Ley:
  - 1. Outer shore.
  - 2. Southgrounds shore.
  - 3. Ireland Bay shore (within reed bed).
  - 4. Inner shore.
  - 5. Stokeley Bay shore.
  - 6. Torcross west shore.

##### III. *Marshes*:

- F. Higher Ley Marshes.
  - 1. Slapton Wood Marsh and Carr.
  - 2. Little Marsh.
- G. Lower Ley Marshes.
  - 1. France Valley Marsh.
  - 2. Stokeley Marsh.

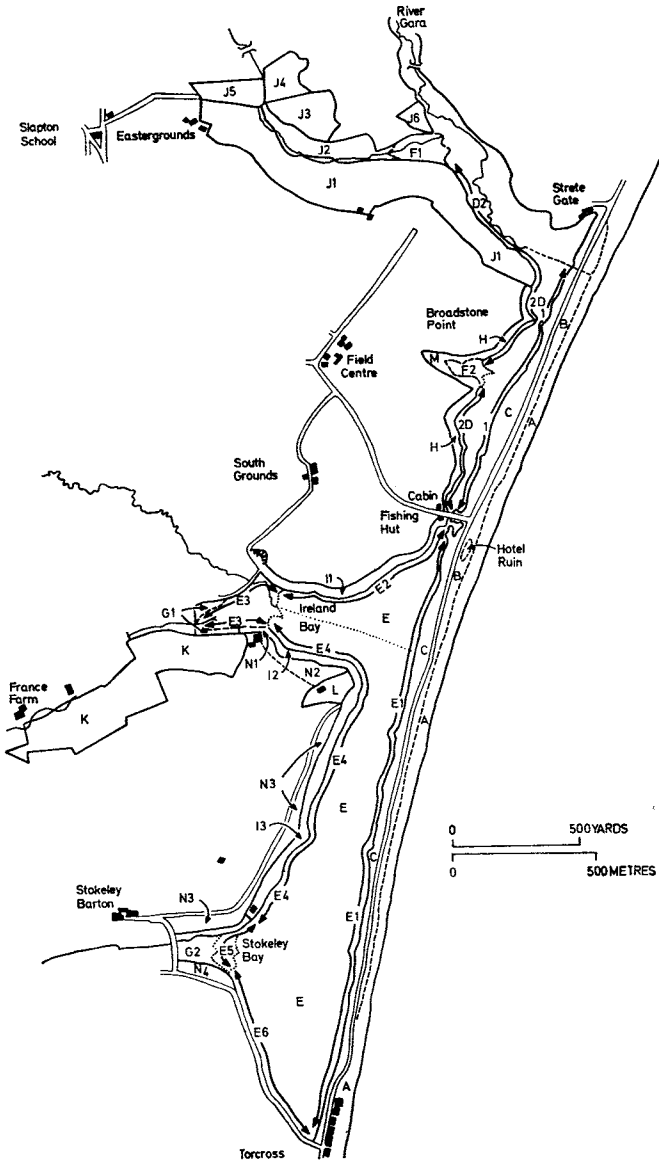


FIG. 4

Location and delimitation of units of the Reserve. Vegetation boundaries and transitions shown by pecked lines. Shoreline units indicated by long arrows parallel with WWM, units E.1 and E.2 extend north to Slapton Bridge, E.1 including the pool immediately south-east of the bridge. The boundary between N.1 and I.2 is taken to be the small stream running north from Ireland Farm ruins. *Crown Copyright reserved.*

IV. *Leyside Fringes* (Winter Water Mark to Cliff Top):

- H. Middlegrounds Cliff.
- I. Lower Ley Cliff.
  1. Southgrounds Cliff.
  2. Hartshorn Cliff.
  3. Inner Shore Cliff.

V. *Woodland*:

## J. Slapton Wood Complex.

1. Main Wood.
2. Valley Bottom Scrub.
3. Loworthy Brake.
4. Square Brake.
5. Eastergrounds Brake.
6. Gara Valley Triangle.

## K. France Wood.

## L. Hartshorn Plantation.

VI. *Grassland and Arable*:

## M. Little Marsh Field.

## N. Stokeley Fields.

1. Ireland Field.
2. Hartshorn Fields.
3. America Road and Fields.
4. Peasdish.

The location of these units is shown in Figure 4.

I. *SHINGLE RIDGE*A. *Seaward Face*.

This is a very unstable habitat. It is disturbed too frequently by winter storms for the establishment of permanent vegetation. In summer, annual species such as *Senecio vulgaris* (groundsel), *Anagallis arvensis* (scarlet pimpernel) and *Atriplex* spp. (orache) grow on the strand-lines together with such species as *Glaucium flavum* (yellow horned-poppy), *Rumex crispus* (curled dock) and *Taraxacum officinale* (dandelion) which behave as annuals under these conditions. Perennial pioneer species, *Agropyron junceiforme* (sea couch grass), *Calystegia soldanella* (sea bindweed), *Euphorbia paralias* (sea spurge) and *Tripleurospermum maritimum* (scentless mayweed), spread down from the shingle crest to the seaward face and persist from one year to the next if no severe winter storms occur.

B. *Crest*.

The sea exerts a powerful influence on the vegetation of the shingle crest, through salt spray and occasionally by moving and adding shingle and washing away humus. These effects decrease in severity further from the sea and consequently a linear zonation develops in the distribution of species on the crest.

There is a zone of open vegetation at the seaward edge, consisting of *Euphorbia paralias*, *Agropyron junceiforme*, *Tripleurospermum maritimum* and *Calystegia soldanella* with *Glaucium flavum*. Inland from this zone these species are less abundant and patches of *Ononis repens* (restharrow), *Lotus corniculatus* (birdsfoot trefoil) and *Silene maritima* (sea campion) occur.

Further from the sea these patches are larger and other species, particularly *Festuca rubra* (creeping fescue), *Leontodon* spp. (hawkbit), *Hypochaeris radicata* (cat's ear), *Crepis vesicaria* (beaked hawk's-beard) and *Daucus carota* (wild carrot), invade the centres of the patches. Ultimately the patches coalesce and a continuous *Festuca rubra*-dominated turf develops at the inland edge.

At the southern Slapton parish boundary there is a drop of four feet in the height

of the ridge. South of this point the lower part of the ridge is washed by the sea more frequently; there is therefore very little turf developed.

"Slapton Sands" is popular with holiday-makers. The effect of the driving and parking of motor vehicles on the grass is to erode the turf, and to enlarge existing bare patches. Trampling and picnicking also depress the growth of *Festuca rubra* and encourage rosette plants such as *Plantago coronopus* (buck's-horn plantain), *Plantago lanceolata* (ribwort), *Bellis perennis* (daisy) and *Raphanus maritimus* (sea radish). There is a length of 134 metres beginning at the northern boundary of the Reserve where concrete posts prevent the access of vehicles. In this area the turf at the landward edge is re-establishing itself. There is a similarly protected area 805 metres long, immediately south of the southern Slapton parish boundary but this seems to be too low for the development of a permanent turf.

At the side of the road, in places where the turf has been worn, leaving hard-packed shingle, for example just north of the Monument, or where the shingle is mixed with road-tar, groups of ruderal species occur, notably *Matricaria matricarioides* (pineapple weed), *Polygonum aviculare* (knotgrass), *Plantago major* (great plantain), and *Plantago lanceolata*.

Among the ruins of the Royal Sands Hotel, 300 metres south of the Monument, are many species which do not otherwise occur on the shingle. Some, such as the cultivated rose, are survivors from the Hotel garden; others, such as *Foeniculum vulgare* (fennel) and *Sambucus nigra*, gain protection from the salt spray by the mounds of rubble, while *Parietaria diffusa* (pellitory-of-the-wall), *Cymbalaria muralis* (ivy-leaved toadflax), etc., grow on the weathered mortar. It is likely that the zone of turf surrounding the ruins is the remnant of the Hotel lawns.

### C. Backslope.

The vegetation is affected by wind and the nearness of the sea but to a lesser extent than that of the crest. A small bank at the side of the road prevents car-parking. Human influence is therefore much less and is limited to local trampling on footpaths. Alongside the Higher Ley there is a narrow strip of dense scrub of small trees and shrubs, notably *Prunus spinosa* (blackthorn) and *Sambucus nigra* with *Hedera helix* (ivy) and *Urtica dioica* beneath them. The grassland between this and the road is principally *Festuca rubra* and *Agrostis tenuis* (common bent-grass) with a high proportion of *Anthoxanthum odoratum* (sweet vernal-grass) and *Dactylis glomerata* (cock's-foot). *Echium vulgare* (viper's bugloss), *Linaria vulgaris* (toadflax), *Senecio jacobaea* (ragwort), *Hieracium pilosella* (mouse-ear hawkweed), *Armeria maritima* (thrift) and *Silene maritima* become prominent in areas where the stabilized shingle has been disturbed. Nearer Slapton Bridge there is a mosaic of communities of *Ulex spp.* (gorse) and *Rubus fruticosus agg.* (bramble) clumps dissected by numerous interconnecting paths. *Ulex gallii* (dwarf furze) is present in greater quantity than *Ulex europaeus* (gorse).

The narrow strip of dense scrub containing *Sambucus nigra*, *Prunus spinosa* and an apple tree, *Malus sylvestris*, with young trees of *Fraxinus excelsior* (ash) and *Acer pseudoplatanus* (sycamore), continues beside the Lower Ley but peters out before reaching Torcross. Cores obtained with an increment borer suggest that none of these trees is more than 25 years old; they are thus post-American occupation. At the southern end the scrub gives way to *Phragmites communis* (reed), *Rubus fruticosus*, *Urtica dioica*, *Stachys palustris* (marsh woundwort), *Artemisia vulgaris* (mugwort)

and *Parietaria diffusa*, each of which forms almost pure stands in some places. In this area *Calystegia sepium ssp. sepium* (larger bindweed) twines over the other plants, especially the *Phragmites*, forming an almost impenetrable jungle.

South of Slapton Bridge, to the point where prominent ridges in the backslope reach the road near the southern Slapton parish boundary, *Pteridium aquilinum* is abundant with *Hedera*, *Glechoma hederacea* (ground ivy) and *Endymion non-scriptus* (bluebell). *Ballota nigra* (black horehound), *Lamium purpureum* (red dead-nettle) and *Phyllitis scolopendrium* (hart's-tongue fern) are associated with a derelict lime-kiln, in what were the grounds of the Royal Sands Hotel. *Raphanus maritimus* is particularly abundant in this area.

South of the ridges protecting the bracken community there is grassland essentially similar to that on the northern part of the backslope, but with *Anthoxanthum*, *Agrostis tenuis*, *Rumex acetosella* (sheep's sorrel) and mosses and lichens less abundant, while *Holcus lanatus* (Yorkshire fog) is more common. The ridges themselves carry extensive growths of mosses and lichens in a sparse turf.

Between Torcross car park and the Ley outflow culvert most of the shingle crest and backslope is occupied by houses and the road. The narrow strip which remains carries *Rubus fruticosus* and *Urtica dioica* together with plants such as *Polygonum cuspidatum*, *Rhus typhina* (sumac), *Aster novi-belgii* (michaelmas daisy), *Oxalis articulata*, and *Symphytum* × *uplandicum* (blue comfrey) thrown out of gardens.

## II. SLAPTON LEY

### D. Higher Ley.

This unit is a *Phragmites* reed-swamp with a large area of *Typha angustifolia* (lesser reedmace) at the southern end. Steep-sided islands carrying willow carr are a prominent feature. In the drier places among the willows are *Hedera*, *Rubus fruticosus*, *Dryopteris dilatata* (broad buckler-fern) and *Pteridium*. *Angelica sylvestris* (wild angelica) and *Carex paniculata* (panicked sedge) occur on the edges of the islands, the latter sometimes forming free-floating tussocks. Aquatic species such as *Elodea canadensis* (Canadian pondweed) and *Callitriche spp.* (starwort) grow in the deep channels between the islands, while *Mentha aquatica* (water mint) sometimes forms floating mats in still water.

#### D1. Higher Ley, outer shore.

Here also the dominant plant is *Phragmites* except on those parts of the upper shore which are shaded by overhanging scrub. In such places there are scattered plants of *Hedera*, *Urtica*, *Silene dioica*, *Cirsium arvense* (creeping thistle), *Arctium minus* (lesser burdock) and *Lapsana communis* (nipplewort). On the lower part of the shore *Phragmites* is dominant everywhere and the solid mass of rhizomes makes it possible in summer to wade into the swamp to a distance of several metres from winter water mark. The only species associated with the *Phragmites* on this lower part of the shore are *Elodea canadensis*, *Callitriche spp.* and *Lemna minor* (duckweed).

It should be noted that "shores", as defined above, consist of two components, an upper part which is out of water in normal summers, and a lower which is not.

#### D2. Higher Ley, inner shore.

The vegetation here is similar to that of the outer shore, consisting of *Phragmites* except where shading is excessive. At points where cattle have access to water, trampling suppresses *Phragmites* and, if not too severe, encourages *Mentha aquatica*, *Callitriche*, *Veronica beccabunga* (brooklime) and *Caltha palustris* (kingcup). Soil is



washed from the fields at these points by heavy rain and accumulates on the shore, encouraging the growth of marsh plants and arable weeds.

#### E. Lower Ley.

This lake is deeper than the greater part of the Higher Ley and therefore reed-swamp is confined to the edges. *Phragmites* is the most abundant species of the swamp with stands of *Typha angustifolia*, *Schoenoplectus* spp. (bulrush) and occasional clumps of *Sparganium erectum* (bur-reed) and *Butomus umbellatus* (flowering rush). Thirteen species of entirely submerged hydrophytes are recorded from the deeper open water. These include *Elodea canadensis*, *Potamogeton crispus* (curled pondweed), *Potamogeton pusillus* (small pondweed), *Potamogeton pectinatus* (fennel-leaved pondweed) and *Elatine hexandra*. Between the deep water and the reed-beds there is a zone, developed particularly well in the more sheltered parts of the western side, of *Polygonum amphibium* (amphibious bistort) and *Nymphaea alba* (white water-lily). Free-floating plants (e.g. *Lemna minor*) are restricted to the still water amongst the reeds. The small body of water by Slapton Bridge, known as the "Graveyard", is normally continuous with the Lower Ley but in dry summers may become separated and occasionally dries out completely.

#### E1. Lower Ley, outer shore.

As the water-level falls during summer a layer of organic material is left on the shores of the Lower Ley. It consists of rotting vegetation, dung of swans and cattle and a scum of dead planktonic algae. Where the shore is open this rich source of nutrients is utilized by plants growing onto the shore from above and by annual species such as *Chenopodium* spp. (goosefoot) and *Polygonum* spp. This is also the habitat of *Corrigiola litoralis* (strapwort).

Most of the outer shore is occupied by the fringing reed-swamp with small patches of *Iris pseudacorus* (yellow flag) on the lower shore. The substrate of the outer shore is marine shingle.

#### E2. Lower Ley, Southgrounds shore.

The aspect of this shore is such that wave action is too severe for the establishment of *Phragmites* and chunks of living rhizome washed onto this shore fail to grow. The shore of slaty gravel is open for most of its length but there is an accumulation of silt, about 150 m. from the Fishing Hut, on which grow *Eleocharis palustris* (common spike-rush) and *Carex hirta* (hammer sedge). This shore appears to provide conditions which are ideal for growth of *Corrigiola* and its associates.

#### E3. Ireland Bay shore.

The north and south-facing parts of this shore support *Phragmites* swamp which is continuous across Ireland Bay and into France Valley Marsh. The east-facing part is the steep edge of an old causeway, and thus gradation from swamp through marsh to dry land communities occurs within a metre or so.

#### E4. Lower Ley, inner shore.

The Ireland Bay section of this shore is slaty and open but very shaded, so that there is little vegetation other than shade-tolerant weed species.

Below Hartshorn Plantation there is a small area of *Phragmites* with *Schoenoplectus*, *Eleocharis* and *Polygonum amphibium*. Immediately south of this the shore is again slaty for a short distance and *Corrigiola* is abundant with *Chenopodium* spp. and terrestrial species of *Polygonum*. Southwards again there is more silt and extensive swards of *Littorella uniflora* (shore-weed), *Hydrocotyle vulgaris* (pennywort), *Eleocharis*, and

occasional *Baldellia ranunculoides* (lesser water-plantain). The southernmost part of the shore is *Phragmites*-dominated reed-swamp but richer in associated species than is usual within the Reserve, with *Lythrum salicaria* (purple loosestrife), *Scirpus maritimus* (sea club-rush), *Phalaris arundinacea* (reed-grass), *Sparganium erectum*, *Butomus*, *Iris*, small plants of *Salix aurita* (eared willow), and areas of *Schoenoplectus* and *Typha angustifolia*.

#### E5. Stokeley Bay shore.

The northern and southern parts both support *Phragmites* swamp continuous with that of the lower part of Stokeley Marsh.

#### E6. Torcross West shore.

This is a sheltered, somewhat silty shore with *Phragmites* reed-swamp along the greater part of its length. Under the overhanging trees on the northern part *Phragmites* is less vigorous and there is a narrow strip of almost bare shore on which water-fowl rest and where only a few scattered plants of *Chenopodium spp.* grow.

### III. MARSHES

#### F. Higher Ley Marshes.

##### F1. Slapton Wood Marsh and Carr (including Gara Valley Marsh).

This consists of a mixture of *Phragmites* swamp and willow carr, accessible only with great difficulty even in mid-summer because of the very soft ground. There is much bare mud, particularly beneath the trees where only scattered shade-tolerant plants occur. Regeneration of the willows does not appear to be taking place and the existing trees carry a rich epiphytic flora of mosses and lichens. The general appearance of the area is of a *Phragmites* bed with isolated clumps of willows and a line of trees on the bank of the River Gara. At the northernmost end of this unit *Phragmites* gives way to *Phalaris*. This is the only unit of the Reserve from which *Berula erecta* (narrow-leaved water-parsnip) has been recorded. *Oenanthe crocata* (hemlock water dropwort) is abundant.

##### F2. Little Marsh.

The centre of this small marsh has several very large tussocks of *Carex paniculata* with *Dryopteris dilatata* and *Angelica sylvestris* between them. Several bushes of *Salix cinerea spp. atrocinerea* (common willow) and a tree of *Acer pseudoplatanus* are to be seen. Round the edges there is a richer helophyte community with comparatively little *Phragmites*.

#### G. Lower Ley Marshes.

##### G1. France Wood Marsh.

This unit is continuous with the Ireland Bay reed-swamp and, although the marsh extends further into France Valley at its western end, the narrow raised pathway which crosses it forms the Reserve boundary.

*Phragmites*, with a few stunted Sallows, occupies the centre of the marsh with *Iris*, *Caltha*, *Equisetum fluviatile* (water horsetail), *Apium nodiflorum* (fool's watercress), *Carex riparia* (great pond-sedge) and *C. acutiformis* (lesser pond-sedge) in the shallower margins.

##### G2. Stokeley Marsh.

This has a very rich marsh flora, probably as the result of organic pollution of the inflow stream and disturbance by drainage operations within the marsh. The

western edge abuts on a raised roadway at the side of which are many dry-land species. The marsh is *Phragmites*-dominated but *Conium maculatum* (hemlock), *Eupatorium cannabinum* (hemp agrimony) and *Oenanthe crocata* are noteworthy because of their relative abundance.

#### IV. LEYSIDE FRINGES

These are all on the western side of the Leys and consist of low cliffs, usually with a narrow gentler slope between them and the shore. At the top of the cliffs there is a strip of field varying in width from a few metres to 15 metres. The species present in the fields depend on past and present use. There is little permanent pasture; some fields carry temporary leys, others fodder crops (kale, swede turnips, rape) grazed *in situ*, cereals (mostly barley), potatoes and occasionally sugar beet. At the edges of the fields there is, usually, a tangle of bracken, bramble and shrubs except at points where stock have access to the Leys for watering. This bramble/bracken scrub, with bushes of *Prunus spinosa* (blackthorn), continues down the cliff face to the winter watermark except in those places which are either too shaded or too steep. Badger setts occur in several places and an abundance of *Sambucus nigra* and *Urtica dioica* is characteristic of these sites.

In several places along the fringes, there are mature trees, mostly *Ulmus glabra* (elm) and *Acer pseudoplatanus*, under which a woodland ground flora has developed.

There are occasional old slate walls at the foot of the cliffs.

#### H. Middlegrounds cliff

This is divided into two parts by the Little Marsh; to the north there are steep cliffs with small oaks, *Quercus robur*, particularly near Slapton wood. In this region also the edges of the fields have been disturbed by wartime digging of slit trenches. South of the Little Marsh, the cliff is low or absent except just at Slapton bridge.

#### I. Lower Ley Cliffs

##### I1, I2, I3. Southgrounds, Hartshorn and Inner shore Cliffs

Again these carry the communities described above (IV).

In front of the Fishing Hut at Slapton bridge there is a wide grassy area between the cliff foot and the water channel. This is occasionally scythed, and rowing boats are drawn up onto it for maintenance and during the winter. As rough grassland it is rich in species.

#### V. WOODLAND

##### J. Slapton Wood.

##### J1. Main Wood.

A high proportion of the trees are alien. *Castanea sativa* (sweet chestnut), *Acer pseudoplatanus*, *Fagus sylvatica* (beech) and *Larix decidua* (larch) have been planted in this steep wood. It has not been managed for many years; there is much fallen timber, there are many epiphytes and the field layer is undisturbed.

The wood occupies a steep north to north-east facing slope. The soil is acid, particularly on the top part of the slope. There are some relatively base rich springs and flushes along the main ride and on the lower slopes. The characteristic flora of these includes *Chrysosplenium oppositifolium* (golden saxifrage).

Conditions are generally much more humid towards the bottom of the valley

and at the western end many species of bryophytes and lichens occur on the trees. The ground and rotting logs may be covered with bryophytes, e.g. *Hookeria lucens*, *Mnium undulatum*, *M. punctatum* and *Conocephalum conicum*.

Ferns, especially *Athyrium filix-femina* (lady fern), *Dryopteris borreri* (male fern), *D. dilatata* and *Polystichum setiferum* (soft shield fern) are generally abundant and individuals reach a considerable size.

The majority of the trees of this wood are over-mature and, especially at the eastern end, damaged by American shelling. There is little regeneration except of *Acer pseudoplatanus* whose saplings form occasional dense thickets. *Castanea sativa* is the commonest tree but there are many oaks, *Quercus spp.*, with some stands of *Ulmus*, *Fraxinus excelsior* and *Larix decidua*. *Fagus sylvatica* dominates at the western end.

The sparse shrub layer includes *Ilex aquifolium* (holly), *Corylus avellana* (hazel) and *Sorbus aucuparia* (rowan). *Hedera helix* is widespread and abundant, both creeping along the ground and forming large masses amongst the branches of the trees. This increases their instability. *Hedera* is virtually the only plant found under *Ilex*. *Endymion non-scriptus* is the most conspicuous member of the field layer in spring but there are a few large patches of *Luzula sylvatica* (greater woodrush) and one area of *Vinca minor* (lesser periwinkle).

Except at the eastern end where the canopy is very open, bracken and bramble occur in quantity only along the top margin of the wood. They are more sparse along the rides and in other lighter areas.

#### J2. Valley Bottom Scrub.

This area has not been planted. It is very wet beside the stream with a drier slope below Loworthy Brake. There is a dense growth of nettles and brambles with a complete ground cover of *Chrysosplenium oppositifolium* in the wet part. Some willows and suckering elms are also present and this unit gradually merges into the carr (III, F1).

#### J3. Loworthy Brake

This younger wood faces south and is much drier and lighter than Slapton Wood (J1). The principal trees are *Pinus sylvestris* (pine), *Fagus sylvatica* and *Castanea sativa*, each forming more or less pure stands in the northern, western and eastern parts respectively. Under *Fagus* and *Castanea* there is much loose litter and a very sparse ground flora. On the upper part of the slope beneath scattered pines, there are brambles and some bracken.

There is much more regeneration of trees than in Slapton Wood. *Fagus*, *Castanea*, *Abies alba* (fir), *Quercus* and *Ilex* seedlings and saplings are present.

*Corydalis claviculata* (climbing fumitory) occurs in the Brake—its only site in the Reserve.

#### J4. Square Brake.

A tall, almost impenetrable scrub of *Prunus spinosa* and *Euonymus europaeus* (spindle) has developed on this abandoned steep field. There are a few larger trees near the bottom, and along the upper margin there is a planted shelter belt of pines. It is shaded on the east by the trees of Loworthy Brake (J3). The ground flora is thin, except around the margins.

#### J5. Eastergrounds Brake.

This is another small area of thorny thicket (*Fraxinus* and *Prunus spinosa*) with large trees at the northern edge.

Few plants grow beneath the scrub except near the northern boundary, near the field and in the southern part near Eastergrounds stream. The eastern end carries bracken and bramble scrub.

J6. *Gara Valley Triangle*

This small oak/chestnut wood is on a very steep slope and contains a dense growth of brambles and bracken.

K. *France Wood*

France wood is long and narrow and occupies the lower part of a side of the valley. It faces north-west with a narrow strip of field between it and the valley bottom.

Within the present wood there are old field boundaries and a few very large field-grown beeches, suggesting that the area has not always been wooded.

The principal trees are *Castanea* and *Quercus* with *Fraxinus*, *Ulmus*, *Carpinus betulus* (hornbeam), and *Acer*, some *Abies* and *Pinus* in the south-western corner. There is little natural regeneration except of *Acer* whose saplings form dense stands in some areas. The woodland is now being managed to maintain its mixed character. Quarter acre plots are being cleared and replanted on a hundred-year plan, in which time the present wood will have been entirely replaced and will contain stands of all intermediate ages. (*Fagus*, *Alnus glutinosa* (alder), *Larix*, *Picea abies* (Norway spruce), *Quercus*, *Prunus padus* (bird cherry) and *Populus gileadensis* (balm of Gilead), have been planted.) *Fraxinus* is seen to regenerate freely in the cleared plots.

Although France wood is generally less damp than Slapton wood, the ground flora is very lush with large areas of *Allium ursinum* (mostly at the eastern end) and *Endymion* (*Allium* does not occur in Slapton wood). *Mercurialis perennis* (dog's mercury) and ferns are also abundant and there are extensive areas of brambles. *Luzula sylvatica*, although abundant in Slapton wood (J1), is very rare in France wood. Previous inhabitants of the now derelict Ireland farm and of France farm, which are just outside the boundaries of the wood, may have been responsible for the introduction of *Ligustrum ovalifolium* (privet), *Symphoricarpos rivularis* (snowberry), *Galanthus nivalis* (snowdrop), and *Ribes sylvestris* (red currant).

L. *Hartshorn Plantation*

This small wood is in a very exposed position and the trees have suffered extensive injury from American shelling.

The trees in the bottom half are mostly *Acer* with some *Fagus* and *Quercus*, with a varied field layer dominated by *Endymion*. The upper part of the unit is occupied by the damaged remains of a pinewood; here the canopy is very open and there are dense areas of brambles and bracken. (Brambles have been cleared and *Pinus sylvestris* planted in the upper part during 1968.)

VI. GRASSLAND AND ARABLE

M. *Little Marsh Field*

This small, low lying, very sheltered field becomes waterlogged in winter. It is usually under cultivation and the flora consists of weeds associated with the crop and of hedge plants.

N. *Stokeley Fields*N1. *Ireland Field*

This rough, ungrazed pasture lies between France wood and the marshy valley bottom. It consists of large tussocks of grasses, mostly *Dactylis glomerata*, and is being invaded by woodland species—bracken, brambles and elm, *Ulmus* × *hollandica*,—forming an incipient scrub. There is one well-grown specimen of *Salix alba* (white willow) at the edge of the marsh.

N2. *Hartshorn Fields*

These are arable, usually carrying barley. There is a rather poor weed flora in winter and spring, and amongst the stubble in autumn. Shrubs and marginal species occur along the boundaries.

N3. *America Road and Fields*

The "road" is a rough unmetalled track with a ditch and a low bank on the upper side. The fields usually grow barley and have a rich stubble flora of ephemeral weeds. There is some gorse near Hartshorn plantation and there are several large elms on the transverse field boundaries.

N4. *Peasdish*

This small, low lying field is usually cultivated and the weed flora again varies with the type of crop being grown. The field is surrounded by hedges with shrubs and marginal species. There is a strip of rough grassland between the railings at the side of the main road and the field and here several interesting species occur. The narrow zone between the field and Stokeley marsh has old trees with an interesting epiphytic bryophyte flora. Near the field there is a woodland ground flora but, probably because of a change in the level of the ley, the outer trees have their bases in water and *Phragmites* grows beneath them.

## THE FLORA

This list is based on records in the card-index at Slapton Ley Field Centre and on fieldwork by the authors. Unless otherwise stated, all plants were present in 1968. No doubt there are omissions from this list and further records will be welcomed.

Nomenclature is according to Clapham, Tutin and Warburg (1962).

## LIST OF SPECIES

\*Introduced Species.

## PTERIDOPHYTA

## EQUISETACEAE

*Equisetum* L.

*E. fluviatile* L.

E5; F1; G1, 2.

Widespread in marshes and at the edges of reed swamps.

*E. arvense* L. × *E. fluviatile* L. = *E.* × *litorale*

Kühlew. ex Rupr.

G2.

Rare.

*E. arvense* L.

E4; H; I3; M.

Water horsetail

Occasional in disturbed ground.

## POLYPODIACEAE

*Pteridium* Scop.

*P. aquilinum* (L.) Kuhn

Bracken

C; D on islands; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L; M; N1, 2, 3, 4.

Abundant except under dense shade and in wet ground.

*Blechnum* L.

*B. spicant* (L.) Roth

Hard fern

J1, 2, 3, 5; K.

Occasional in the woods.

*Phyllitis* Hill

*P. scolopendrium* (L.) Newm. Hart's-tongue fern  
B; C; F1; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L;  
M; N3, 4.

Widely distributed in shady places and on  
hedge banks.

*Asplenium* L.

*A. adiantum-nigrum* L. Black spleenwort  
H; I1, 3.

Rare within the Reserve. Common on old  
stone walls in Slapton village.

*A. trichomanes* L. Maidenhair spleenwort  
E3; I3.

Very rare within the Reserve. Common on old  
stone walls in Slapton village.

*Athyrium* Roth

*A. filix-femina* (L.) Roth Lady-fern  
D on islands; F1; H; J1, 2, 3, 4, 5, 6. K; L.  
Widespread in shaded places, locally abundant  
in the woods.

*Dryopteris* Adans.

*D. filix-mas* (L.) Schott Male fern  
E3; H; I1, 2; J2, 5, 6; K; L; M; N3, 4.

Widely distributed in less densely shaded sites  
than *D. borrieri*.

*D. borrieri* Newm.

D on islands; F1; H; J1, 2, 3, 4, 5, 6; K.  
Locally abundant.

*D. dilatata* (Hoffm.) A. Gray

Broad buckler-fern

D on islands; F1, 2; H; I2, 3; J1, 2, 3, 4, 5, 6;  
K; L; N4.

Common.

*D. aemula* (Ait.) O. Kuntze

Hay-scented buckler-fern

J1, 2; K.

Very rare, in shady places.

*Polystichum* Roth

*P. setiferum* (Forsk.) Woynar

Soft shield-fern

F1; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L; M;  
N3, 4.

Widespread in shaded places, locally frequent  
in the woods.

*P. aculeatum* (L.) Roth Hard shield-fern  
J1, 5; K.

Very rare, in woods.

*Polypodium* L.

*P. vulgare* agg. Polypody

F1; I3; J1, 2, 5, 6; K; N4.

Frequent as an epiphyte in woods and growing  
on walls. Apparently only *P. vulgare* L. and  
*P. interjectum* Shivas occur. The distribution of  
the two species has not been fully determined  
but *P. vulgare* L. occurs in F1; H; I3; J1, 6;  
K; L; N4, while *P. interjectum* Shivas has been  
recorded in H; J1, 2, 3, 4, 5, 6; L.

GYMNOSPERMAE

PINACEAE

*Abies* Mill.

\**A. alba* Mill. Silver fir  
J1, 3, 4, 6; K.

Planted. Regenerating in Loworthy Brake.

*Picea* A. Dietr.

\**P. abies* (L.) Karst. Norway spruce  
J1, 3.

Uncommon.

*Larix* Mill.

\**L. decidua* Mill. European larch  
J1, 3; K.

Occasional.

*Pinus* L.

*P. sylvestris* L. Scots pine  
J1, 3, 4; K; L.

Planted as shelter belts in the past.

\**P. pinaster* Ait Maritime pine  
L.

Occasional:

\**P. pinea* L. Stone pine  
J3.

Occasional.

RANUNCULACEAE

*Caltha* L.

*C. palustris* L. Kingcup  
D, D2; F1, 2; G1, 2.

Occasional. Wettest parts of the marshes.

*Anemone* L.

*A. nemorosa* L. Wood anemone  
J1, 2, 4; K.

Locally frequent.

*Clematis* L.

*C. vitalba* L. Traveller's joy  
B; C; E6.

One patch in each unit.

*Ranunculus* L.

*R. acris* L. Meadow buttercup  
E6; G1, 2; I1; N2.

Not common.

*R. repens* L.

Creeping buttercup  
B; C; D on islands, D2; E, E2, 3, 4, 6; F1;  
G1, 2; H; I1, 3; J1, 2, 3, 4, 5; K; L; M;

N1, 2, 3, 4.

Widespread and abundant.

*R. bulbosus* L.

Bulbous buttercup  
B; C; N1  
Uncommon within the Reserve.

*R. sardous* Crantz

Hairy buttercup  
I1.

A rare weed of arable fields.

*R. parviflorus* L. Small flowered buttercup  
B; M.

Locally frequent on the northern half of the  
shingle crest, otherwise rare in arable fields.

*R. flammula* L. Lesser spearwort  
D2.  
Rare.

*R. tripartitus* DC. Three-lobed water-crowfoot  
E1.  
Occasional.

*R. circinatus* Sibth.  
E.  
Rare.

*R. trichophyllus* Chaix  
D2; E, E2, 4; I3.  
Locally abundant, often forming a turf on mud when the water recedes in summer.

*R. peltatus* Schrank ssp. *peltatus*  
D; E, E2; F1.  
Abundant in the "Graveyard", occasional elsewhere.

*R. baudotii* Godr.  
E, E1, 4.  
Occasional.

*R. ficaria* L. Lesser celandine  
D2; F1; H; I1, 2, 3; J1, 2, 3, 4, 5; K; L; N1, 4.  
Common in woods and hedgebanks.

*Aquilegia* L.  
\**A. species* Columbine  
E6.  
A few plants of garden origin.

#### NYMFACEAE

*Nymphaea* L.  
*N. alba* L. ssp. *alba* White water-lily  
E.  
Extensive patches in the Lower Ley.

#### CERATOPHYLLACEAE

*Ceratophyllum* L.  
*C. demersum* L. Horn-wort  
D; E.  
Uncommon.

*C. submersum* L. Horn-wort  
E.  
Very rare.

#### PAPAVERACEAE

*Papaver* L.  
*P. rhoeas* L. Field poppy  
B; E2.  
An occasional plant of disturbed ground.

*P. dubium* L. Long-headed poppy  
B; H.  
More frequent than *P. rhoeas*.

*Glaucium* Mill.  
*G. flavum* Crantz Yellow horned-poppy  
A; B; C.  
Common on open shingle.

#### FUMARIACEAE

*Corydalis* Vent.  
*C. claviculata* (L.) DC. White climbing fumitory

J3.  
Very rare. A few plants occur each year.

*Fumaria* L.  
*F. muralis* Sond. ex Koch ssp. *boraei* (Jord.)  
Pugsf. Fumitory  
E6; H; I1; M; N3.  
An infrequent weed.

#### CRUCIFERAE

*Brassica* L.  
*B. nigra* (L.) Koch Black mustard  
N3.  
Rare.

*Raphanus* L.  
*R. maritimus* Sm. Sea radish  
A; B; C; E1, 2, 4; I1, 3.  
Frequent on the shingle and Lower Ley shores.

*Crambe* L.  
*C. maritima* L. Seakale  
B; C.  
Very rare. Only two plants, neither of which appears to set seed.

*Cakile* Mill.  
*C. maritima* Scop. Sea rocket  
B.

A single plant observed on the shingle in 1962 only.

*Lepidium* L.  
*L. campestre* (L.) R. Br. Pepperwort  
H.  
Rare.

*L. heterophyllum* Benth. Smith's cress  
C.

Locally frequent.  
*Coronopus* Zinn  
*C. didymus* (L.) Sm. Lesser swine-cress  
E1, 2, 3, 6; H; I1.  
Common.

*Thlaspi* L.  
*T. arvense* L. Field penny-cress  
H; I1.  
Occasional weed of arable land, abundant in some years.

*Capsella* Medic.  
*C. bursa-pastoris* (L.) Medic. Shepherd's purse  
B; E2, 4; H; I1; N3, 4.  
Common.

*Cochlearia* L.  
*C. danica* L. Danish scurvy-grass  
B; C.  
Abundant on shingle in spring.

*Armoracia* Gilib.  
\**A. rusticana* Gaertn., Mey. & Scherb. Horse-radish  
C; E1.



Frequent near the "Graveyard".

*Cardamine* L.

*C. pratensis* L. Lady's smock

D on islands.

Very rare within the Reserve.

*C. flexuosa* With. Wood bitter-cress

D on islands; E6; F1; I1; J1, 2, 4, 5; M.

Generally distributed, in damp places.

*C. hirsuta* L. Hairy bitter-cress

H; I1, 3; K; N4.

Uncommon.

*Barbarea* R. Br.

*B. vulgaris* R. Br. Yellow rocket

N3.

Uncommon.

*Rorippa* Scop.

*R. microphylla* (Boenn.) Hyland.

One-rowed watercress

D on islands; E3, 5, 6; G1, 2.

Local. *R. nasturtium-aquaticum* (L.) Hayek has not been recorded.

*R. islandica* (Oeder) Borbás

Marsh yellow-cress

E2; I1.

First recorded 1965 since when it has become locally frequent.

*Alliaria* Scop.

*A. petiolata* (Bieb.) Cavara & Grande  
Garlic mustard

K.

Infrequent.

*Sisymbrium* L.

*S. officinale* (L.) Scop. Hedge mustard

C; E1, 6; H; I1; M; N3.

Not common.

RESEDACEAE

*Reseda* L.

*R. luteola* L. Dyer's rocket

B.

Rare

VIOLACEAE

*Viola* L.

*V. odorata* L. Sweet violet

C; E6; I1.

Uncommon.

*V. riviniana* Rchb. Common violet

H; J1, 4; K; L.

Locally frequent.

*V. reichenbachiana* Jord. ex Bor.  
Pale wood violet

J1, 4, 5.

Uncommon.

*V. tricolor* L. ssp. *tricolor* Wild pansy

H; N3.

Uncommon.

HYPERICACEAE

*Hypericum* L.

*H. androsaemum* L. Tutsan

J1, 3, 6.

Rare.

*H. perforatum* L. Common St. John's wort

B; C; E6; H; I1.

Frequent.

*H. tetrapterum* Fr.

Square-stemmed St. John's wort

G2.

Uncommon.

*H. pulchrum* L. Slender St. John's wort

J3.

Infrequent, at the wood margin.

ELATINACEAE

*Elatine* L.

*E. hexandra* (Lapierre) DC.

E.

Two areas in the Lower Ley.

CARYOPHYLLACEAE

*Silene* L.

*S. dioica* (L.) Clairv. Red campion

B; C; E4, 6; G2; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L; M; N1, 2, 3, 4.

Widespread and abundant.

*S. alba* (Mill.) E. H. L. Krause

White campion

C; J1; K.

An uncommon plant.

*S. vulgaris* (Moench) Garcke

Bladder campion

B; C.

Very rare on shingle, more frequent on roadsides near the Reserve.

*S. maritima* With. Sea campion

A; B; C.

A characteristic shingle plant.

*S. vulgaris* × *maritima*

B; C.

Very rare

*S. gallica* L. var. *anglica* (L.) Clapham

Small-flowered catchfly

H; I1; M; N3.

Abundant as a weed of arable land.

*Lychnis* L.

*L. flos-cuculi* L. Ragged robin

F2; G1.

Infrequent.

*Cerastium* L.

*C. holosteoides* Fr.

Common mouse-ear chickweed

B; C; G2; H; I1, 2, 3; N3, 4.

- Widely distributed, common.  
*C. glomeratum* Thuill. Sticky mouse-ear chickweed  
 B; H; K; M.  
 Uncommon.  
*Stellaria* L.  
*S. media* (L.) Vill. Chickweed  
 B; C; D2; E1, 2, 3, 4, 5, 6; F1; H; I1; J1, 2, 5;  
 K; M; N1, 3, 4.  
 Very common and widespread.  
*S. holostea* L. Greater stitchwort  
 H; I1, 3; J1, 4; N2.  
 Occasional in hedge banks.  
*S. graminea* L. Lesser stitchwort  
 C; G1, 2; H; I1, 2, 3; K; M; N1, 3.  
 Much more plentiful than *S. holostea*.  
*S. alsine* Grimm Bog stitchwort  
 E3; F2; G1.  
 Rare, in damp ground.  
*Moenchia* Ehrh.  
*M. erecta* (L.) Gaertn., Mey. & Scherb. Upright chickweed  
 B.  
 Very rare.  
*Sagina* L.  
*S. procumbens* L. Procumbent pearlwort  
 B; C; E3, 6.  
 Infrequent, on slaty shores.  
*S. nodosa* (L.) Fenzl Knotted pearl-wort  
 E4.  
 Very rare.  
*Moehringia* L.  
*M. trinervia* (L.) Clairv. Three-nerved sandwort  
 J1, 4, 5; K.  
 Occasional, in woods.  
*Arenaria* L.  
*A. serpyllifolia* agg.  
 E4.  
*A. leptoclados* (Rchb.) Guss. Lesser thyme-leaved sandwort  
 C; E2, 6.  
 Apparently the commoner species.  
*A. serpyllifolia* L. Thyme-leaved sandwort  
 E6.  
*Spergula* L.  
*S. arvensis* L. Corn spurrey  
 E4; H; I1; M; N3.  
 Common on arable land.  
*Corrigiola* L.  
*C. litoralis* L. Strapwort  
 E1, 2, 4.  
 Locally abundant on slaty parts of the summer  
 shore of the Lower Ley.

## CHENOPODIACEAE

*Chenopodium* L.

- \**C. bonus-henricus* L. Good King Henry  
 E1; G1.  
 Very rare.  
*C. polyspermum* L. All-seed  
 E1, 2, 4, 5, 6; N3.  
 Locally abundant.  
*C. album* L. Fat hen  
 C; E1, 4, 6; H; I1, 3; N3.  
 Common.  
*C. murale* L. Nettle-leaved goosefoot  
 E2, 4; N3.  
 Occasional.  
*C. rubrum* L. Red goosefoot  
 E1, 2, 4, 6; I3.  
 Very frequent.  
 The summer shore of the Lower Ley is rich in  
 species of *Chenopodium*.

*Beta* L.

- B. vulgaris* L. ssp. *maritima* (L.) Thell. Beet  
 A; B; C.

Common on shingle.

*Atriplex* L.

- A. hastata* L. Hastate orache  
 A; E5.

Infrequent.

- A. glabriuscula* Edmonst. Babington's orache  
 A; B; C; E3, 6; H.

The commonest of the three recorded species.

- A. patula* L. Common orache  
 A; E1.

Rare.

## MALVACEAE

*Malva* L.

- M. moschata* L. Musk mallow  
 C.

Very rare, near Slapton Bridge.

- M. sylvestris* L. Common mallow  
 B; C; E2; I1.

Occasional.

- M. neglecta* Wallr. Dwarf mallow  
 C; E2.

Rare.

*Lavatera* L.

- L. arborea* L. Tree mallow  
 B; C.

On the ruins of the Royal Sands Hotel and  
 near Torcross. Perhaps of garden origin in  
 both sites.

## LINACEAE

*Linum* L.

- L. bienne* Mill. Pale flax  
 I1.

Occasional in undergrazed pasture.

- L. catharticum* L. Purging flax  
 M.

Rare.

GERANIACEAE

- Geranium* L.  
*G. pyrenaicum* Burm. f. Mountain cranesbill  
 K.  
 One plant, 1968.  
*G. dissectum* L. Cut-leaved cranesbill  
 H; I1; N2, 3.  
 Uncommon.  
*G. molle* L. Dove's-foot cranesbill  
 B; C; I1; N4.  
 Rather rare.  
*G. robertianum* L. Herb Robert  
 B; C; E3, 6; G2; H; I1, 2, 3; J1, 2, 3, 4, 5, 6;  
 K; L; M; N1, 2, 3, 4.  
 Widespread and common.  
*Erodium* L'Hérit.  
*E. maritimum* (L.) L'Hérit. Sea storksbill  
 B.  
 Rare.  
*E. moschatum* (L.) L'Hérit. Musk storksbill  
 E2.  
 Rare. Occasional in open ground near the  
 Reserve.  
*E. cicutarium* (L.) L'Hérit. Common storksbill  
 B; E2; I1.  
 Occasional on the shingle, rare in other  
 localities.

OXALIDACEAE

- Oxalis* L.  
*O. acetosella* L. Wood-sorrel  
 E6; F1; J1, 2, 3, 4, 5, 6; K; L.  
 Locally frequent.  
 \**O. articulata* Savigny  
 C; I1.  
 Introduction.

ACERACEAE

- Acer* L.  
 \**A. pseudoplatanus* L. Sycamore  
 B; C; D on islands; E1; F1, 2; H; I1, 2, 3;  
 J1, 2, 3, 4, 5, 6; K; L; N3, 4.  
 Very common in woods, hedges and scrub.

HIPPOCASTANACEAE

- Aesculus* L.  
 \**A. hippocastanum* L. Horse-chestnut  
 K.  
 Very rare. An uncommon tree in south Devon.

ANACARDIACEAE

- Rhus* L.  
 \**R. typhina* L. Sumac  
 E6.  
 One small tree planted at Torcross.

AQUIFOLIACEAE

- Ilex* L.  
*I. aquifolium* L. Holly  
 I1, 3; J1, 2, 3, 4, 5, 6; K; L; M.  
 Frequent and regenerating in woods and scrub.

CELASTRACEAE

- Euonymus* L.  
*E. europaeus* L. Spindle-tree  
 H; J2, 4, 5, 6.  
 A frequent component of dense scrub.

PAPILIONACEAE

- Ulex* L.  
*U. europaeus* L. Gorse  
 C; H; I1; J3, 4; L; N3.  
 Locally common on the shingle backslope,  
 otherwise occasional.  
*U. gallii* Planch. Dwarf furze  
 C; J3, 4.  
 Locally frequent on the shingle backslope,  
 rare elsewhere.  
*U. europaeus* × *gallii*  
 C.  
 At least one plant, north of Slapton Bridge.  
*Ononis* L.  
*O. repens* L. ssp. *repens* Restharrow  
 A; B; C; H.  
 Abundant on the shingle.  
*Medicago* L.  
*M. lupulina* L. Black medick  
 B; C; E4, 6; H; I1.  
 Common.  
*M. arabica* (L.) Huds. Spotted medick  
 B; C; E1; I1.  
 Conspicuous on the shingle in early summer.  
*Trifolium* L.  
*T. ornithopodioides* L. Birdsfoot fenugreek  
 B.  
 Rare.  
*T. dubium* Sibth. Lesser yellow trefoil  
 B; C; H; I1; N3.  
 Occasional in short turf.  
*T. repens* L. White clover  
 B; C; E2, 3, 6; H; I1, 2; M; N3, 4.  
 Widespread and frequent.  
*T. arvense* L. Hare's-foot  
 B; C.  
 Rare.  
*T. scabrum* L. Rough trefoil  
 B.  
 Rare.  
*T. pratense* L. Red clover  
 B; C; E3; H; I1; K; M; N3, 4.  
 Frequent. Often parasitized by *Orobancha minor*  
 Sm. on the shingle.  
*T. subterraneum* L. Subterranean trefoil  
 B.  
 Rare.

- Anthyllis* L.  
*A. vulneraria* L. Ladies' fingers  
 B.  
 Rare.  
*Lotus* L.  
*L. corniculatus* L. Birdsfoot-trefoil  
 A; B; C; E3, 4; N3.  
 Locally abundant on semi-stabilized shingle where it forms large patches.  
*L. pedunculatus* Cav. Large birdsfoot-trefoil  
 C; D2; E3; G2; I1, 3; K; L; N1, 2, 3.  
 Frequent in damp places.  
*L. hispidus* Desf. ex DC. Hairy birdsfoot-trefoil  
 C; H.  
 Very rare.  
*Ornithopus* L.  
*O. perpusillus* L. Birdsfoot  
 C.  
 Rare. In one small area.  
*Vicia* L.  
*V. hirsuta* (L.) S.F. Gray Hairy tare  
 B; C; E3; H; I1; N4.  
 Fairly common.  
*V. tetrasperma* (L.) Schreb. Smooth tare  
 E6.  
 Uncommon.  
*V. cracca* L. Tufted vetch  
 B; C; E3; H; I1, 2; N4.  
 Widespread and frequent.  
*V. septium* L. Bush vetch  
 C; H; I1; N3.  
 Locally frequent.  
*V. sativa* L. ssp. \**sativa* Common vetch  
 G2; I1.  
 Uncommon.  
*V. sativa* L. ssp. *angustifolia* (L.) Gaud. C.  
 Local.  
*Lathyrus* L.  
*L. pratensis* L. Meadow vetchling  
 B; C; E5; H.  
 Locally common.  
*L. japonicus* Willd. Sea pea  
 B.  
 Very rare. One plant only.
- ROSACEAE  
*Filipendula* Mill.  
*F. ulmaria* (L.) Maxim. Meadow-sweet  
 D on islands; E3; F1, 2; J6.  
 Occasional.  
*Rubus* L.  
*R. fruticosus* agg. Bramble  
 B; C; D on islands, D1, 2; E1, 2, 3, 4, 5, 6;  
 F1, 2; G1, 2; H; I1, 2, 3; J1, 2, 3, 4, 5, 6;  
 K; L; M; N1, 2, 3, 4.
- Brambles occur everywhere except in standing water and the darkest parts of the woods. Together with Bracken they often form dense thickets.  
*Potentilla* L.  
*P. sterilis* (L.) Garcke Barren strawberry  
 I1; J2, 4, 5; K; N1.  
 Infrequent.  
*P. anserina* L. Silverweed  
 B; C; E1, 2, 3, 4, 6; G1, 2; H; I1, 2, 3; N3, 4.  
 Widespread and common. Abundant on the summer shore of the Lower Ley, surviving for some weeks under water in autumn.  
*P. reptans* L. Creeping cinquefoil  
 B; C; E2, 3, 4; H; I1; N1, 3, 4.  
 Common.  
*Fragaria* L.  
*F. vesca* L. Wild strawberry  
 J3.  
 Uncommon.  
*Geum* L.  
*G. urbanum* L. Wood avens  
 C; I1, 3; J1, 2, 3, 4, 5; K; L.  
 Frequent in shaded places.  
*Agrimonia* L.  
*A. eupatoria* L. Common agrimony  
 B; C; H; K.  
 Local.  
*Aphanes* L.  
*A. arvensis* agg. Parsley piert  
 E4; N2.  
 A rare weed.  
*Rosa* L.  
*R. canina* agg. Dog rose  
 C; F1; H; I1, 3; M; N4.  
 Widespread and frequent.  
*R. rubiginosa* agg. Sweet briar  
 C; I1.  
 Rare.  
*Prunus* L.  
*P. spinosa* L. Blackthorn  
 C; E1; F1; H; I1, 2, 3; J1, 4, 5, 6; K; L; N3, 4.  
 A very common component of scrub.  
 \**P. laurocerasus* L. Cherry-laurel  
 J1.  
 A single specimen.  
*Crataegus* L.  
*C. monogyna* Jacq. Hawthorn  
 E3; F1; H; I1, 2; J1, 2, 3, 4, 5, 6; K; L; N4.  
 Widespread in woods, hedges and scrub.  
*Sorbus* L.  
*S. aucuparia* L. Rowan  
 J1, 6; K.  
 Rare. In woods.  
*Malus* Mill.

*M. sylvestris* Mill. ssp. *syloestris* Crab apple  
I1.

Very rare.

*M. sylvestris* Mill. ssp. \**mitis* (Wallr.) Mansf.  
C; D one tree on an island; H; N4.

Uncommon.

#### CRASSULACEAE

*Sedum* L.

*S. anglicum* Huds. English stonecrop  
B; C; H.

Locally abundant in short turf.

*S. acre* L. Wall-pepper  
B; C; I1.

Rare.

*Umbilicus* DC.

*U. rupestris* (Salisb.) Dandy Pennywort  
C; F1; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L;  
M; N4.

On old walls and rock faces. In woods, on the  
ground and as an epiphyte. Common.

#### SAXIFRAGACEAE

*Chryso-splenium* L.

*C. oppositifolium* L.

Opposite-leaved golden saxifrage

F1; J1, 2, 4, 5; K.

Common in shaded damp places.

#### GROSSULARIACEAE

*Ribes* L.

*R. sylvestre* (Lam.) Mert. & Koch  
Red currant

J1; K.

A few bushes. Probably introduced.

*R. uva-crispa* L. Gooseberry

J1; K; N4.

Rare.

#### LYTHRACEAE

*Lythrum* L.

*L. salicaria* L. Purple loosestrife  
C; D, D1, 2; E1, 2, 3, 4, 6; F1, 2; G2; H;  
I3; M.

Common.

#### ONAGRACEAE

*Epilobium* L.

*E. hirsutum* L. Great hairy willow-herb  
C; D on islands, D2; E1, 3, 4, 5, 6; F1, 2;  
G1, 2; H; I2, 3; N3.

Locally frequent.

*E. parviflorum* Schreb.  
Small-flowered hairy willow-herb  
E3, 4, 6; F1; G1, 2.

Uncommon.

*E. montanum* L. Broad-leaved willow-herb  
E5, 6; J6; K.

Occasional.

*E. lanceolatum* Seb. & Mauri  
Spear-leaved willow-herb

K; N3.

Rare.

*E. tetragonum* L. ssp. *tetragonum*  
Square-stemmed willow-herb

E3.

Very rare.

*E. tetragonum* L. ssp. *lamyi* (F. Schultz) Léveillé  
N4.

Very rare.

*E. palustre* L. Marsh willow-herb

H.

Rare.

*Chamanerion* Adans.

*C. angustifolium* (L.) Scop.  
Rosebay willow-herb

B; I1.

Very rare indeed.

*Circaea* L.

*C. lutetiana* L.

Common enchanter's nightshade  
F1; I2; J1, 2, 3, 4, 5, 6; K; L; N4.

Locally frequent.

#### HALORAGACEAE

*Myriophyllum* L.

*M. spicatum* L. Spiked water-milfoil  
E.

Locally frequent.

#### CALLITRICHACEAE

*Callitriche* L.

The following records have been made but  
it has not been possible to identify all plants.  
*C. stagnalis* Scop.

D.

*C. platycarpa* Kütz

D2.

*C. obtusangula* Le Gall

F1.

*C. intermedia* Hoffm. ssp. *intermedia*

D2.

*C. intermedia* Hoffm. ssp. *pedunculata* (DC.)  
Clapham

D2.

#### ARALIACEAE

*Hedera* L.

*H. helix* L. Ivy  
B; C; D on islands, D1; E3, 6; F1; H; I1, 2, 3;  
J1, 2, 3, 4, 5, 6; K; L; M; N1, 2, 3, 4.

Very common on trees and walls; also on the  
ground in woods.

## HYDROCOTYLACEAE

- Hydrocotyle* L.  
*H. vulgaris* L. Pennywort  
 D on islands; E3, 4; I3.  
 Locally common.

## UMBELLIFERAE

- Sanicula* L.  
*S. europaea* L. Sanicle  
 J1, 2, 3, 4, 5; K.  
 Occasional in woods.  
*Eryngium* L.  
*E. maritimum* L. Sea holly  
 A; B.  
 Rare, on loose shingle.  
*Chaerophyllum* L.  
*C. temulentum* L. Rough chervil  
 C; H; I1, 3; K; M; N2, 3, 4.  
 Frequent. Hedgebanks and waste places.  
*Anthriscus* Pers.  
*A. sylvestris* (L.) Hoffm. Cow parsley  
 C; I1; M; N4.  
 Occasional.  
*Torilis* Adans.  
*T. japonica* (Houtt.) DC. Upright hedge-parsley

- C; K; N3.  
 Uncommon.  
*Smyrnium* L.  
 \**S. olusatrum* L. Alexanders  
 C; E6; H; I1.  
 Locally abundant.  
*Conium* L.  
*C. maculatum* L. Hemlock  
 C; G2; J4; N3.  
 Occasional, in damp ground.  
*Apium* L.  
*A. nodiflorum* (L.) Lag. Fool's watercress  
 D; E3, 5, 6; F1; G1, 2; I3; J2; K.  
 Locally abundant.  
*Conopodium* Koch  
*C. majus* (Gouan) Loret Pignut  
 H; J1, 3, 4, 5; K; L; M; N4.  
 Occasional, in woods.  
*Pimpinella* L.  
*P. saxifraga* L. Burnet saxifrage  
 C.  
 Very rare.  
*Aegopodium* L.  
*A. podagraria* L. Ground elder  
 G2.  
 Rare.  
*Berula* Koch  
*B. erecta* (Huds.) Coville Narrow-leaved water-parsnip  
 F1.  
 Very rare.  
*Crithmum* L.

- C. maritimum* L. Rock samphire  
 A; B.  
 A few very large plants on loose shingle.  
*Oenanthe* L.  
*O. crocata* L. Hemlock water dropwort  
 D, D1, 2; E5, 6; F1, 2; G2; H; I1, 2, 3;  
 J1, 2, 4, 5; N4.  
 Abundant in ditches and beside streams.  
*Foeniculum* Mill.  
*F. vulgare* Mill. Fennel  
 B; C; H; I1.  
 Occasional.  
*Angelica* L.  
*A. sylvestris* L. Wild angelica  
 D on islands; E3, 5; F1, 2; G1, 2; H; I1;  
 J2, 4, 5; N1, 4.  
 Common.  
*Heracleum* L.  
*H. sphondylium* L. Hogweed  
 B; C; D on islands, D1; E4, 6; G2; H; I1, 2, 3;  
 J1, 2, 4, 5; K; L; M; N1, 2, 3, 4.  
 Widespread and abundant.  
*Daucus* L.  
*D. carota* L. ssp. *carota* Wild carrot  
 B; C; N2.  
 Frequent on shingle.  
*D. carota* L. ssp. *gummifer* Hook. f.  
 B.  
 Rare.

## EUPHORBACEAE

- Mercurialis* L.  
*M. perennis* L. Dog's mercury  
 F1; I1; J1, 2, 4, 5, 6; K; L; N2.  
 Abundant in the richer areas of the woods.  
*Euphorbia* L.  
*E. helioscopia* L. Sun spurge  
 H; I1.  
*E. pephus* L. Petty spurge  
 E6.  
*E. exigua* L. Dwarf spurge  
 H.  
 The preceding three annual species are  
 occasional weeds of arable land.  
*E. paralias* L. Sea spurge  
 A; B; C.  
 An important colonist of shingle. Common.  
*E. amygdaloides* L. Wood spurge  
 K.  
 Occasional.

## POLYGONACEAE

- Polygonum* L.  
*P. aviculare* L.  
 A; B; C; E1, 2, 3, 4, 6; H; I1, 3; M; N3, 4.  
 Common.  
*P. arenastrum* Bor. Small-leaved knotgrass

- C.  
Rare.  
*P. amphibium* L. Amphibious bistort  
C; D1, 2; E, E1, 2, 3, 4, 5, 6; F1, 2; G2; H;  
I1; M.  
Locally abundant.  
*P. persicaria* L. Red shank  
D2; E1, 2, 6; I1; M; N3.  
Occasional.  
*P. lapathifolium* L. Pale persicaria  
E4, 6; I3; N3.  
Occasional.  
*P. nodosum* Pers. E4; F1; G2; I2, 3; N3, 4.  
Frequent.  
*P. hydropiper* L. Water-pepper  
D2; E2, 3, 4, 5, 6; F2; G2; M; N4.  
Frequent.  
*P. mite* Schrank E1.  
Rare.  
*P. convolvulus* L. Black bindweed  
H; I2; N3.  
Uncommon.  
*\*P. cuspidatum* Sieb. & Zucc. E1, 6.  
Naturalized at Torcross.  
*Rumex* L.  
*R. acetosella* agg. Sheep's sorrel  
C; E4.  
Common.  
*R. acetosella* L. C; I1; J3; M.  
Common.  
*R. acetosa* L. Sorrel  
B; C; H; I1, 2, 3; J1, 3, 4, 6; L; M; N1, 2, 3.  
Widespread and frequent.  
*R. hydrolapathum* Huds. Great water dock  
D, D2; E1, 3, 5, 6; F1; G2.  
Locally abundant.  
*R. crispus* L. Curled dock  
A; B; C; D2; E1, 4; H; I1, 3; K; M; N3.  
Widespread and common.  
*R. obtusifolius* L. Broad-leaved dock  
C; D on islands, D2; E2, 3, 4, 6; F1; G1; H;  
I1, 3; J4, 5; L; M; N1, 2, 3.  
Very common.  
*R. pulcher* L. Fiddle dock  
B; C; I1.  
Occasional.  
*R. sanguineus* L. Red-veined dock  
E6; F1; H; I1, 2; J1; K; L; M; N3, 4.  
Common.  
*R. conglomeratus* Murr. Sharp dock  
B; C; D2; E1, 3, 4, 5, 6; G1; H; I2, 3; N3.  
Common.
- URTICACEAE  
*Parietaria* L.  
*P. diffusa* Mert. & Koch Pellitory-of-the-wall  
B; C; E1, 3, 6; I1, 3.  
On old walls and also locally abundant on the  
summer shore of the Lower Ley.  
*Urtica* L.  
*U. urens* L. Small nettle  
C; E1.  
Rare.  
*U. dioica* L. Stinging nettle  
B; C; D on islands, D1, 2; E1, 2, 3, 4, 5, 6;  
F1, 2; G2; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L;  
M; N1, 2, 3, 4.  
Widespread and abundant.
- ULMACEAE  
*Ulmus* L.  
*U. glabra* Huds. Wych elm  
E6; H; I3; J1, 5; M; N3, 4.  
Frequent.  
*U. × hollandica* Mill. var. *hollandica*  
Dutch elm  
F1; I2; N1.  
Locally common.  
*U. procera* Salisb. English elm  
N3.  
Rare.  
*U. carpiniifolia* Gleditsch var. *cornubiensis* (Weston)  
Rehd. Cornish elm  
N3, 4.  
Uncommon.
- BETULACEAE  
*Betula* L.  
*B. pubescens* Ehrh. Birch  
J1.  
Rare.  
*Alnus* Mill.  
*A. glutinosa* (L.) Gaertn. Alder  
F1; J2.  
Very local.
- CORYLACEAE  
*Carpinus* L.  
*C. betulus* L. Hornbeam  
K.  
Rare.  
*Corylus* L.  
*C. avellana* L. Hazel  
H; I1; J1, 2, 3, 4, 5, 6; K; M.  
Woods and hedges, occasional.
- FAGACEAE  
*Fagus* L.  
*F. sylvatica* L. Beech  
J1, 3, 4, 6; K; L.

Locally abundant.

*Castanea* Mill.

\**C. sativa* Mill. Sweet chestnut

J1, 3, 4, 5; K; L.

Woods, locally abundant.

*Quercus* L.

\**Q. cerris* L. Turkey oak

I2.

Very rare.

\**Q. ilex* L. Evergreen oak

J1, 6; L.

Rare.

*Q. robur* L. Common oak

D on islands; E3; H; I1, 2, 3; J1, 4, 6; K; L;  
N1, 2.

Frequent.

*Q. petraea* (Mattuschka) Liebl. Durmast oak

H; I1, 2, 3; J1, 3, 4, 5, 6; K; L.

Frequent.

#### SALICACEAE

*Populus* L.

\**P. × canadensis* Moench Black Italian poplar

E3, 6; F1; M.

Occasional.

\**P. gileadensis* Rouleau Balm of Gilead

K.

A few recently planted trees.

*Salix* L.

*S. alba* L. White willow

E3.

Very rare.

*S. fragilis* L. Crack willow

G1; N1.

Rare.

*S. viminalis* L. Common osier

C; D1; E4, 6; F1; I1, 3.

Widespread

*S. caprea* L. Goat willow

E4; J1.

Rare.

*S. cinerea* L. ssp. *cinerea* Common sallow

D on islands; E5; G2; K.

Uncommon.

*S. cinerea* ssp. *atrocinerea* (Brot.) Silva & Sobr.

B; D2; E1, 3, 6; F1, 2; G2; I1; M; N3, 4.

Common.

*S. aurita* L. Eared sallow

E4.

Occasional.

#### PLUMBAGINACEAE

*Armeria* Willd.

*A. maritima* (Mill.) Willd. Thrift

B; C.

Locally frequent.

#### PRIMULACEAE

*Primula* L.

*P. vulgaris* Huds. Primrose

C; H; I1, 2, 3; J1, 2, 4, 5, 6; K; L; N4.

Widespread and common.

*Lysimachia* L.

*L. nemorum* L. Yellow pimpernel

J1, 4, 5, 6; K; N4.

Woods, occasional.

*Anagallis* L.

*A. arvensis* L. Scarlet pimpernel

A; B; C; D2; E1, 2, 4, 6; G2; H; I1; K; N3.

Common.

#### BUDDLEJACEAE

*Buddleja* L.

\**B. davidii* Franch.

E6.

A few bushes, of garden origin.

#### OLEACEAE

*Fraxinus* L.

*F. excelsior* L. Ash

B; C; E1; F1; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K;

L; M; N3, 4.

Frequent.

*Ligustrum* L.

\**L. ovalifolium* Hassk. Privet

K.

One extensive stand.

#### APOCYNACEAE

*Vinca* L.

*V. minor* L. Lesser periwinkle

J1.

One large area.

#### GENTIANACEAE

*Centaurium* Hill

*C. erythraea* Rafn. Common centaury

C.

Occasional.

#### MENYANTHACEAE

*Menyanthes* L.

*M. trifoliata* L. Bogbean

E3.

Very rare within the Reserve but abundant immediately west of the causeway at the head of Ireland Bay.

#### BORAGINACEAE

*Cynoglossum* L.

*C. officinale* L. Hound's-tongue

B; C.

Very rare.

*Symphytum* L.

*S. × uplandicum* Nyman Blue comfrey

C; E6.



Locally abundant at Torcross.

*Pentaglottis* Tausch

*P. sempervirens* (L.) Tausch Alkanet  
K.

Rare.

*Myosotis* L.

*M. scorpioides* L. Water forget-me-not  
D, D2; E2.

Occasional.

*M. secunda* A. Murr. Water forget-me-not  
E3.

Rare.

*M. caespitosa* K. F. Schultz Water forget-me-not

E3, 4; F1; I1.

Occasional.

*M. arvensis* (L.) Hill Common forget-me-not

B; C; E3, 4; H; M; N2, 3.

Frequent.

*M. discolor* Pers. Yellow and blue forget-me-not

B; C.

Occasional.

*Echium* L.

*E. vulgare* L. Viper's bugloss  
B; C; I1.

Locally abundant.

CONVOLVULACEAE

*Convolvulus* L.

*C. arvensis* L. Bindweed  
B; C; H; I1; M; N3.

Occasional.

*Calystegia* R. Br.

*C. sepium* (L.) R. Br. ssp. *sepium* Bellbine  
C; D, D1, 2; E1, 2, 3, 4, 5, 6; F1, 2; G1, 2;  
H; I1, 2, 3; J2; M; N1, 3, 4.

Abundant, particularly as a creeper in reedbeds.

*C. soldanella* (L.) R. Br. Sea bindweed  
A; B; C.

Locally frequent on the shingle.

SOLANACEAE

*Solanum* L.

*S. dulcamara* L. Bittersweet  
B; C; D, D1, 2; E1, 2, 3, 4, 5, 6; F1, 2; G1, 2;  
H; I1, 2, 3; J2; N3, 4.

Frequent, especially as a scrambler in reedbeds.

*S. nigrum* L. Black nightshade  
D2; E1, 2, 5, 6; F2; H; I1, M; N3.

Frequent.

*Datura* L.

\**D. stramonium* L. Thorn-apple  
E1.

A few plants between the "Graveyard" and the Lower Ley. Last seen in 1961.

SCROPHULARIACEAE

*Verbascum* L.

*V. thapsus* L. Aaron's rod  
C; E1; I1.

Occasional.

*V. virgatum* Stokes Twiggy mullein  
I1.

Very rare.

*Antirrhinum* L.

*A. orontium* L. Weasel's snout  
H; I1; N3.

An occasional field weed.

*Linaria* Mill.

*L. vulgaris* Mill. Toadflax  
B; C; H; N4.

Locally abundant on the shingle, otherwise uncommon.

*Kickxia* Dum.

*K. spuria* (L.) Dum. Fluellen  
H.

A rare stubble weed.

*K. elatine* (L.) Dum. Fluellen  
E4; H; N3.

Occasional, in open ground.

*Cymbalaria* Hill

*C. muralis* Gaertn., Mey. & Scherb. Ivy-leaved toadflax

B; E3, 6; N3.

On old masonry.

*Scrophularia* L.

*S. nodosa* L. Figwort  
C; E1, 3, 4, 6; F1; G2; I1; J1, 5, 6; K.

Occasional.

*S. aquatica* L. Water betony  
E4, 6; F1; G1, 2; H; I1, 3; K; N3.

Frequent.

*S. scorodonia* L. Balm-leaved figwort  
C; E6.

Rare.

*Digitalis* L.

*D. purpurea* L. Foxglove  
B; C; H; I1, 2, 3; J1, 3, 4; K; L; M.

Common.

*Veronica* L.

*V. beccabungua* L. Brooklime  
E3; G1, 2.

Occasional.

*V. scutellata* L. Marsh speedwell  
G2.

Very rare.

*V. montana* L. Wood speedwell  
F1; I1; J1, 4, 5, 6; K.

Frequent in lighter parts of woods.

*V. chamaedrys* L. Germander speedwell  
E6; I1, 2; K; N1, 3.

Locally common.

*V. serpyllifolia* L. Thyme-leaved speedwell

- E2; I1.  
Uncommon.  
*V. arvensis* L. Wall speedwell  
N4.  
Rare.  
*V. hederifolia* L. Ivy speedwell  
I1, 2, 3; J6.  
Rare.  
\**V. persica* Poir. Buxbaum's speedwell  
C; E6; H; M; N3, 4.  
A widespread weed.  
*V. polita* Fr. Grey speedwell  
E2.  
Rare.  
*V. agrestis* L. Field speedwell  
M.  
Uncommon.  
\**V. filiformis* Sm.  
N3.  
Rare.  
*Euphrasia* L.  
*E. nemorosa* (Pers.) Wallr. Eyebright  
C; I1.  
Occasional.  
*Odontites* Ludw.  
*O. verna* (Bell.) Dum. ssp. *serotina* (Wettst.)  
E. F. Warb. Red bartsia  
E4; H; M; N3.  
Occasional.  
*Parentucellia* Viv.  
*P. viscosa* (L.) Caruel Yellow bartsia  
B; E3, 4.  
Rare.
- OROBANCHACEAE  
*Orobanche* L.  
*O. minor* Sm. Lesser broomrape  
B; C.  
Locally frequent on *Trifolium pratense*.  
*O. maritima* Pugsf. Carrot broomrape  
B.  
Rare.
- VERBENACEAE  
*Verbena* L.  
*V. officinalis* L. Vervain  
C.  
Rare.
- LABIATAE  
*Mentha* L.  
*M. pulegium* L. Penny-royal  
E2, 4.  
Rare.  
*M. arvensis* L. Corn mint  
N3.  
Rare.  
*M. × verticillata* L.
- E4.  
Uncommon.  
*M. aquatica* L. Water mint  
D, D1, 2; E1, 2, 3, 4, 5, 6; F1, 2; G1, 2.  
Abundant in wet places. Some plants in the  
Higher Ley produce floating stems up to  
2 metres in length.  
*M. rotundifolia* (L.) Huds. Apple-scented mint  
I3; N3.  
Rare.  
*Lycopus* L.  
*L. europaeus* L. Gipsy-wort  
D, D2; E1, 2, 3, 4, 5, 6; F1; G2; M.  
Frequent.  
*Thymus* L.  
*T. drucei* Ronn. Thyme  
B; C.  
Locally frequent.  
*Salvia* L.  
*S. horminoides* Pourr. Wild clary  
B.  
Very rare.  
*Prunella* L.  
*P. vulgaris* L. Self-heal  
C; E3, 4; G2; H; I1; J1, 3; K; N3.  
Widespread.  
*Stachys* L.  
*S. arvensis* (L.) L. Field woundwort  
H; I1; N3.  
Occasional.  
*S. palustris* L. Marsh woundwort  
C; D1; E1, 2, 4, 6; F1, 2; G2; H; I1; M; N3.  
Common.  
*S. sylvatica* L. Hedge woundwort  
C; E1, 5, 6; G2; H; I1, 2; K; M; N3, 4.  
Frequent.  
*S. × ambigua* Sm.  
E4.  
Rare.  
*Betonica* L.  
*B. officinalis* L. Betony  
I1.  
Rare.  
*Ballota* L.  
*B. nigra* L. ssp. *foetida* Hayek Black horehound  
C; H.  
Uncommon.  
*Lamium* L.  
*L. amplexicaule* L. Henbit  
I1.  
Rare.  
*L. purpureum* L. Red dead-nettle  
C; E2; I1; N3, 4.  
Occasional.  
*L. album* L. White dead-nettle  
C; H; I1; M.

- Occasional.  
*Galeopsis* L.  
*G. tetrahit* L. Common hemp-nettle  
 E6; J1; M; N3.  
 Occasional weed.  
*Glechoma* L.  
*G. hederacea* L. Ground ivy  
 B; C; E3, 6; G2; H; I1, 2, 3; J1, 2, 4, 5, 6;  
 K; L; M; N1, 2, 3, 4.  
 Common in woods and shaded places.  
*Scutellaria* L.  
*S. galericulata* L. Skull-cap  
 D, D2; E1, 3, 4, 5; F1, 2; G1, 2.  
 Occasional.  
*Teucrium* L.  
*T. scorodonia* L. Wood sage  
 B; C; H; I1, 2, 3; J1, 3, 4, 5, 6; L; N4.  
 Common.  
*Ajuga* L.  
*A. reptans* L. Bugle  
 C; J1, 2, 4, 5; K; N3.  
 Occasional.
- PLANTAGINACEAE  
*Plantago* L.  
*P. major* L. Great plantain  
 B; E1, 3, 5, 6; H; I1; K; M; N3, 4.  
 Frequent.  
*P. lanceolata* L. Ribwort  
 B; C; E3, 4; G1, 2; H; I1, 2; M; N1, 2, 3.  
 Frequent.  
*P. maritima* L. Sea plantain  
 B.  
 Very rare.  
*P. coronopus* L. Buck's-horn plantain  
 B; C.  
 Abundant where turf is trodden.  
*Littorella* Berg.  
*L. uniflora* (L.) Aschers. Shore-weed  
 E, E1, 2, 4.  
 Forming an extensive turf in some places.
- CAMPANULACEAE  
*Jasione* L.  
*J. montana* L. Sheep's-bit  
 C.  
 One plant 1967. The species is frequent on  
 breccia just outside the Reserve.
- RUBIACEAE  
*Sherardia* L.  
*S. arvensis* L. Field madder  
 C; H; I1; N2, 3.  
 Occasional.  
*Galium* L.  
*G. mollugo* L. Hedge bedstraw  
 B; C; D on islands; E5; G2; H; I1, 2, 3; M;  
 N2, 3, 4.  
 Common.
- G. verum* L. Lady's bedstraw  
 B; C.  
 Frequent on fixed shingle.  
*G. × pomeranicum* Retz.  
 B; C.  
 Very rare.  
*G. palustre* L. Marsh bedstraw  
 D, D2; E2, 3, 4, 5; F1, 2; G2; I3; N3.  
 Widespread.  
*G. uliginosum* L. Fen bedstraw  
 F2.  
 Very rare.  
*G. aparine* L. Goosegrass  
 C; D1; E1, 4, 6; F1, 2; G2; H; I1, 2, 3;  
 J1, 2, 3, 4, 5, 6; K; L; M; N1, 2, 3, 4.  
 Widespread and abundant.
- CAPRIFOLIACEAE  
*Sambucus* L.  
*S. nigra* L. Elder  
 B; C; D on islands; D1; F2; H; I1, 2, 3;  
 J1, 2, 3, 4, 5, 6; K; L; M; N1, 2, 3, 4.  
 Common.  
*Symphoricarpos* Duham.  
 \**S. rivularis* Suksdorf Snowberry  
 K.  
 One area.  
*Lonicera* L.  
*L. periclymenum* L. Honeysuckle  
 C; D on islands; H; I1; J1, 2, 3, 4, 5, 6; K; L.  
 Frequent.
- ADOXACEAE  
*Adoxa* L.  
*A. moschatellina* L. Moschatel  
 F1; J1, 2, 4, 5; K; N4.  
 Occasional, woods.
- VALERIANACEAE  
*Valerianella* Mill.  
*V. locusta* (L.) Betcke Corn salad  
 E6.  
 Rare.  
*Centranthus* DC.  
 \**C. ruber* (L.) DC. Red valerian  
 B; N3.  
 Rare in the Reserve, frequent on walls in  
 villages.
- DIPSACACEAE  
*Dipsacus* L.  
*D. fullonum* L. ssp. *fullonum* Wild teasel  
 B; C; E2; I1, 3; N3.  
 Occasional.  
*Knautia* L.  
*K. arvensis* (L.) Coult. Field scabious  
 C.  
 Very rare.

## COMPOSITAE

- Bidens* L.  
*B. cernua* L. Nodding bur-marigold  
 E1, 2, 3, 6; F1.  
 Infrequent.
- B. tripartita* L. Tripartite bur-marigold  
 E1, 2, 3, 4.  
 Infrequent.
- Senecio* L.  
*S. jacobaea* L. Ragwort  
 B; C; E2, 3; H; I1, 2; N3.  
 Locally abundant.
- S. aquaticus* Hill Marsh ragwort  
 E3; F1; H.  
 Occasional.
- S. vulgaris* L. Groundsel  
 A; B; C; E1, 2, 4, 6; H; I1; M; N3, 4.  
 Common.
- Tussilago* L.  
*T. farfara* L. Coltsfoot  
 B; C.  
 Rare.
- Inula* L.  
*I. coryza* DC. Ploughman's spikenard  
 B; C; I1.  
 Rare.
- Pulicaria* Gaertn.  
*P. dysenterica* (L.) Bernh. Fleabane  
 B; C; E1, 3, 4, 5, 6; G1, 2; H; I1, 3; M; N3.  
 Common.
- Gnaphalium* L.  
*G. sylvaticum* L. Wood cudweed  
 E2.  
 Rare.
- G. uliginosum* L. Marsh cudweed  
 C; D2; E1, 2, 3, 4, 6; N3.  
 Frequent.
- Solidago* L.  
 \**S. canadensis* L. Golden-rod  
 E1.  
 Of garden origin.
- Aster* L.  
 \**A. novi-belgii* L. Michaelmas daisy  
 C; E1,6.  
 Of garden origin.
- Bellis* L.  
*B. perennis* L. Daisy  
 B; C; E3, 4; I1; K.  
 Uncommon.
- Eupatorium* L.  
*E. cannabinum* L. Hemp agrimony  
 B; C; D, D2; E1, 3, 4, 6; F1; G2; I3; N3, 4.  
 Frequent.
- Chamaemelum* Mill.  
*C. nobile* (L.) All. Chamomile  
 E2, 3; I1, 3; N3.  
 Locally abundant.
- Achillea* L.  
*A. millefolium* L. Yarrow  
 B; C; D on islands; H; I1, 2, 3; N1, 2, 3.  
 Widespread and common.
- Tripleurospermum* Schultz Bip.  
*T. maritimum* (L.) Koch ssp. *maritimum*  
 Scentless mayweed  
 A; B; C.  
 Frequent on semi-stable shingle.
- Matricaria* L.  
 \**M. matricarioides* (Less.) Porter  
 Pineapple weed  
 B; C; E2, 6; G2; H; I1; N3, 4.  
 Frequent weed.
- Chrysanthemum* L.  
*C. segetum* L. Corn marigold  
 M.  
 Rare.
- C. leucanthemum* L. Marguerite  
 B.  
 Rare.
- C. vulgare* (L.) Bernh. Tansy  
 H.  
 Rare.
- Artemisia* L. Mugwort  
*A. vulgaris* L.  
 B; C; E1, 2, 4, 6; H; I1, 3; M; N3.  
 Locally common.
- A. absinthium* L. Wormwood  
 B; C; E2.  
 Infrequent.
- Carlina* L.  
*C. vulgaris* L. Carlina thistle  
 C.  
 Occasional.
- Arctium* L.  
*A. minus* Bernh., sensu lato Lesser burdock  
 B; C; D1; E5, 6; H; I1, 2, 3; J5; K; L; M;  
 N3, 4.  
 Widespread and common.
- Carduus* L.  
*C. tenuiflorus* Curt. Slender thistle  
 B.  
 Occasional.
- C. nutans* L. Musk thistle  
 B; C; I1; N3.  
 Occasional.
- Cirsium* Mill.  
*C. vulgare* (Savi) Ten. Spear thistle  
 B; C; E2, 4, 5, 6; G2; H; I1, 3; K; M; N3, 4.  
 Common.
- C. palustre* (L.) Scop. Marsh thistle  
 E3; F1, 2; G1, 2; I1, 2, 3; J3, 4, 5, 6; K; N1, 4.  
 Very common.
- C. arvense* (L.) Scop. Creeping thistle  
 A; B; C; D1; E1, 4; G2; H; I1, 2, 3; J4, 6;  
 M; N1, 2, 3, 4.

- Common.  
*Centaurea* L.  
*C. nigra* L. ssp. *nigra* Hardheads  
 B; C; 12.  
 Locally frequent.  
*Lapsana* L.  
*L. communis* L. Nipplewort  
 B; C; D; E3, 4, 5, 6; H; I1, 2; J3; K; L;  
 M; N2, 3, 4.  
 Common.  
*Hypochaeris* L.  
*H. radicata* L. Cat's ear  
 B; C; H; I1; J3.  
 Locally common.  
*Leontodon* L.  
*L. autumnalis* L. Autumnal hawkbit  
 A; B; C; E2; H.  
 Locally common.  
*L. hispidus* L. Rough hawkbit  
 C.  
 Rare.  
*L. taraxacoides* (Vill.) Mérat Hairy hawkbit  
 B; C; E3.  
 Occasional.  
*Picris* L.  
*P. echioides* L. Bristly ox-tongue  
 I1.  
 Rare.  
*Sonchus* L.  
*S. arvensis* L. Field milk-thistle  
 C; N3, 4.  
 Occasional.  
*S. oleraceus* L. Milk-thistle  
 B; C; E2, 5, 6; I1; J5; M; N2, 3, 4.  
 Common.  
*S. asper* (L.) Hill Spiny milk-thistle  
 E1, 4; G2; H; I1; K; L; M; N3.  
 Frequent.  
*Hieracium* L.  
*H. pilosella* L. Mouse-ear hawkweed  
 B; C.  
 Locally abundant.  
*Crepis* L.  
*\*C. vesicaria* L. ssp. *taraxacifolia* (Thuill.) Thell. Beaked hawk's-beard  
 B; C.  
 Locally abundant.  
*C. capillaris* (L.) Wallr. Smooth hawk's-beard  
 B; C; H; M; N3, 4.  
 Locally abundant.  
*Taraxacum* Weber  
*T. officinale* Weber, sensu lato Dandelion  
 A; B; C; E6; G1; H; I1, 2, 3; J4; K; M;  
 N1, 2, 3, 4.  
 Common.  
*T. laevigatum* (Willd.) DC., sensu lato
- B; I1, 3.  
 Occasional.
- MONOCOTYLEDONES  
 ALISMATACEAE  
*Baldellia* Parl.  
*B. ranunculoides* (L.) Parl. Lesser water-plantain  
 E4.  
 Locally frequent.  
*Alisma* L.  
*A. plantago-aquatica* L. Water-plantain  
 D, D1, 2; E, E1, 2, 3, 4, 5; F2.  
 Widespread.
- BUTOMACEAE  
*Butomus* L.  
*B. umbellatus* L. Flowering rush  
 E, E1, 4.  
 Rare.
- HYDROCHARITACEAE  
*Elodea* Michx.  
*\*E. canadensis* Michx. Canadian pondweed  
 D, D1; E, E4.  
 Locally abundant.
- POTAMOGETONACEAE  
*Potamogeton* L.  
*P. pusillus* L.  
 D; E.  
 Occasional.  
*P. crispus* L. Curled pondweed  
 E.  
 Occasional.  
*P. pectinatus* L. Fennel-leaved pondweed  
 E.  
 Rare.
- ZANNICHELLIACEAE  
*Zannichellia* L.  
*Z. palustris* L. Horned pondweed  
 E.  
 Rare. Two patches.
- LILIACEAE  
*Ruscus* L.  
*R. aculeatus* L. Butcher's broom  
 I1, 2, 3; J1, 2, 4, 5, 6; K; L.  
 Frequent.  
*Endymion* Dum.  
*E. non-scriptus* (L.) Garcke Bluebell  
 C; H; I1, 2, 3; J1, 2, 3, 4, 5, 6; K; L; N4.  
 Abundant.  
*Allium* L.  
*\*A. triquetrum* L. Triquetrous garlic  
 H.

One plant.

*A. ursinum* L.

K.

Abundant.

Ramsons

## DIOSCOREACEAE

*Tamus* L.*T. communis* L.

I2; J1, 4, 5; K; L; N4.

Uncommon.

Black bryony

## JUNGACEAE

*Juncus* L.*J. bufonius* L.

Toad rush

C; D2; E2, 3, 4, 5, 6; F1; G1; H; M.

Common.

*J. effusus* L.

Soft rush

D, D2; E3, 4, 5; F1; G1, 2; H; J3.

Common.

*J. acutiflorus* Ehrh. ex Hoffm.

Sharp-flowered rush

E5; G1; H; I2.

Frequent.

*J. articulatus* L.

Jointed rush

E3, 4; G1, 2.

Occasional.

*Luzula* DC.*L. pilosa* (L.) Willd.

Hairy woodrush

J3.

Very rare.

*L. forsteri* (Sm.) DC.

Forster's woodrush

J1, 6.

Rare.

*L. sylvatica* (Huds.) Gaud.

Greater woodrush

J1, 3, 4, 6; K.

Locally abundant, except in France Wood where there are only three small plants.

*L. campestris* (L.) DC.

Field woodrush

C.

Rare.

## AMARYLLIDACEAE

*Galanthus* L.*G. nivalis* L.

Snowdrop

K.

Occasional.

*Narcissus* L.\**N. species*

E6; H.

Some small clumps.

## IRIDACEAE

*Iris* L.*I. foetidissima* L.

Gladdon

J1; K.

Rare.

*I. pseudacorus* L.

Yellow Flag

C; D, D1, 2; E1, 2, 3, 4, 5, 6; F1, 2; G1, 2;

I1; M; N4.

Abundant.

## ORCHIDACEAE

*Spiranthes* Rich.*S. spiralis* (L.) Chevall.

Autumn lady's tresses

B; C.

Very rare. One plant recorded in each area.

*Orchis* L.*O. mascula* (L.) L.

Early purple orchid

J4; K.

Rare.

*Dactylorhiza* (Klinge) Vermeul.*D. praetermissa* (Druce) Vermeul.

Fen orchid

G1, 2.

Rare.

## ARACEAE

*Arum* L.*A. maculatum* L.

Lords-and-ladies

E4; H; I1, 2, 3; J1, 2, 4, 5, 6; K; L. N4.

Common.

## LEMNACEAE

*Lemna* L.*L. trisulca* L.

Ivy duckweed

D; E, E4.

Rare.

*L. minor* L.

Duckweed

D, D1, 2; E, E1, 4, 5; F1.

Common.

## SPARGANIACEAE

*Sparganium* L.*S. erectum* L. var. *erectum*

Bur-reed

D, D2; E, E1, 2, 4, 5; F1; G1, 2; M.

Frequent.

*S. emersum* Rehm.

Unbranched bur-reed

D; F1.

Very rare.

## TYPHACEAE

*Typha* L.*T. latifolia* L.

Great reedmace

D; F2.

Very rare.

*T. angustifolia* L.

Lesser reedmace

D; E, E1, 2, 3, 4, 6; G1.

Locally abundant.

## CYPERACEAE

*Eleocharis* R. Br.*E. palustris* (L.) Roem. & Schult. ssp.

|   |                              |  |                   |
|---|------------------------------|--|-------------------|
| <i>palustris</i>  | Common spike-rush            | <i>P. communis</i> Trin.                                   | Reed              |
| E1, 2, 3, 4, 6.   |                              | C; D, D1, 2; E, E1, 2, 3, 4, 5, 6; F1, 2; G1, 2;           |                   |
| Forms a turf on open muddy parts of these shores.   |                              | H; M; N4.  |                   |
| <i>Scirpus</i> L.   |                              | Very abundant.   |                   |
| <i>S. maritimus</i> L.  | Sea club-rush                | <i>Glyceria</i> R. Br.                                     |                   |
| E4, 5, 6.   |                              | <i>G. fluitans</i> (L.) R. Br.                             | Flote-grass       |
| Rare.   |                              | F1; G2.  |                   |
| <i>Schoenoplectus</i> (Rchb.) Palla   |                              | Occasional.  |                   |
| <i>S. lacustris</i> (L.) Palla and <i>S. tabernaemontani</i> (C. C. Gmel.) Palla                                    | Bulrush and Glaucous bulrush | <i>G. declinata</i> Bréb.                                  |                   |
| E, E1, 4.   |                              | G1.  |                   |
| Occasional. Most stands consist of plants which are apparently intermediate in character between these two species. |                              | Rare.  |                   |
| <i>S. lacustris</i> . E3. One site.   |                              | <i>Festuca</i> L.  |                   |
| <i>S. tabernaemontani</i> . E1. One site.   |                              | <i>F. pratensis</i> Huds.                                  | Meadow fescue     |
| <i>Carex</i> L.   |                              | N3.  |                   |
| <i>C. rostrata</i> Stokes   | Beaked sedge                 | Uncommon.  |                   |
| F2.   |                              | <i>F. arundinacea</i> Schreb.                              | Tall fescue       |
| Occasional.   |                              | B; C; I1; N4.  |                   |
| <i>C. vesicaria</i> L.  | Bladder sedge                | Occasional.  |                   |
| D, D2; E5; F2.  |                              | <i>F. gigantea</i> (L.) Vill.                              | Tall brome        |
| Locally common.   |                              | N4.  |                   |
| <i>C. riparia</i> Curt.   | Great pond-sedge             | Rare.  |                   |
| E3; G1.   |                              | <i>F. rubra</i> L.   | Creeping fescue   |
| <i>C. acutiformis</i> Ehrh.   | Lesser pond-sedge            | B; C; E6; H; I1, 2, 3; M; N1, 2, 3.                        |                   |
| D, D1, 2; G1; H; I3.  |                              | Abundant on shingle, otherwise occasional.                 |                   |
| <i>C. hirta</i> L.  | Hammer sedge                 | <i>F. ovina</i> L.   | Sheep's fescue    |
| E, E2, 4; I1, 3.  |                              | B; C.  |                   |
| Locally common.   |                              | Very rare.   |                   |
| <i>C. paniculata</i> L.   | Panicled sedge               | <i>Lolium</i> L.   |                   |
| D; F1, 2; G1; H.  |                              | <i>L. perenne</i> L. ssp. <i>perenne</i>                   | Rye-grass         |
| Frequent. Forming very large tussocks which, in the Higher Ley, are sometimes floating.                             |                              | B; C; H; I1; M; N3.  |                   |
| <i>C. disticha</i> Huds.  | Brown sedge                  | Frequent.  |                   |
| G1.   |                              | <i>L. perenne</i> L. ssp. <i>multiflorum</i> (Lam.) Husnot | Italian rye-grass |
| Very rare.  |                              | G2; I1; M; N3, 4.  |                   |
| <i>C. divulsa</i> Stokes  | Grey sedge                   | Occasional.  |                   |
| C.  |                              | <i>Vulpia</i> C. C. Gmel.                                  |                   |
| Very rare.  |                              | <i>V. bromoides</i> (L.) S. F. Gray                        | Barren fescue     |
| <i>C. muricata</i> L.   | Prickly sedge                | C.   |                   |
| I1.   |                              | Rare.  |                   |
| Very rare.  |                              | <i>Catapodium</i> Link                                     |                   |
| <i>C. echinata</i> Murr.  | Star sedge                   | <i>C. rigidum</i> (L.) C. E. Hubbard                       | Hard poa          |
| B; C.   |                              | B.   |                   |
| Very rare.  |                              | Rare.  |                   |
| <i>C. remota</i> L.   | Remote sedge                 | <i>C. marinum</i> (L.) C. E. Hubbard                       | Darnel poa        |
| E3; F1; I1; J1, 2; K.   |                              | B.   |                   |
| Occasional.   |                              | Frequent.  |                   |
| <i>C. ovalis</i> Good.  | Oval sedge                   | <i>Poa</i> L.  |                   |
| E5; G1.   |                              | <i>P. annua</i> L.   | Annual poa        |
| Occasional.   |                              | B; C; D2; E1, 2, 3, 5, 6; H; I1, 2, 3; J1, 4, 5;           |                   |
|   |                              | K; L; M; N2, 3, 4.   |                   |
|   |                              | Common.  |                   |
|   |                              | <i>P. nemoralis</i> L.                                     | Wood poa          |
|   |                              | J1; K.   |                   |
|   |                              | Rare.  |                   |
|   |                              | <i>P. pratensis</i> L. ssp. <i>pratensis</i>               | Meadow-grass      |
|   |                              | B; C; H; I1; N3.   |                   |
|   |                              | Occasional.  |                   |

GRAMINEAE

*Phragmites* Adans.

|  |                     |  |
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| <i>P. pratensis</i> L. ssp. <i>angustifolia</i> (L.) Gaud. |                     | Common.  |
| B.   |                     | <i>Holcus</i> L.                               |
| Rare.  |                     | <i>H. lanatus</i> L. Yorkshire fog             |
| <i>P. trivialis</i> L.                                     |                     | B; C; E6; F1; G2; H; I1, 2, 3; J1, 3, 4, 5, 6; |
| E6; G2; J5; K.   |                     | K; L; M; N1, 2, 3, 4.                          |
| Frequent.  |                     | Abundant.                                      |
| <i>Dactylis</i> L.   |                     | <i>H. mollis</i> L. Creeping soft-grass        |
| <i>D. glomerata</i> L.                                     | Cock's-foot         | B; C; H; I2; J1, 3, 6; L; N4.                  |
| B; C; D on islands; H; I1, 2, 3; J6; K; L; M;              |                     | Much less frequent than <i>H. lanatus</i> .    |
| N1, 2, 3, 4.   |                     | <i>Aira</i> L.                                 |
| Abundant.  |                     | <i>A. praecox</i> L. Early hair-grass          |
| <i>Cynosurus</i> L.  |                     | B; C.  |
| <i>C. cristatus</i> L.                                     | Crested dog's-tail  | Local.   |
| B; C; G1; K; N3.   |                     | <i>A. caryophyllea</i> L. Silvery hair-grass   |
| Occasional.  |                     | B; C.  |
| <i>Melica</i> L.   |                     | Local.   |
| <i>M. uniflora</i> Retz.                                   | Wood melick         | <i>Agrostis</i> L.                             |
| K.   |                     | <i>A. canina</i> L. Brown bent-grass           |
| Rare.  |                     | K.   |
| <i>Anisantha</i> C. Koch                                   |                     | Rare.  |
| <i>A. sterilis</i> (L.) Nevski                             | Barren brome        | <i>A. tenuis</i> Sibth. Common bent-grass      |
| B; C; G2; I1; M; N3.                                       |                     | B; C; E3; G1; H; I1; N1, 2, 3, 4.              |
| Occasional.  |                     | Common.  |
| <i>Bromus</i> L.   |                     | <i>A. gigantea</i> Roth Common bent-grass      |
| <i>B. mollis</i> L.  |                     | B; C; E4; G2; H; I1, 2; M; N1, 3, 4.           |
| B; C; H; I1; M; N3.  |                     | Frequent.                                      |
| Occasional.  |                     | <i>A. stolonifera</i> L. Fiorin                |
| <i>Brachypodium</i> Beauv.                                 |                     | B; C; E2, 3, 4; G1; H; I1, 2, 3; J3; K; L; M;  |
| <i>B. sylvaticum</i> (Huds.) Beauv.                        | Slender false-brome | N1, 2, 3, 4.                                   |
| C; E3, 6; G2; H; I1, 2, 3; J1, 2, 4; K; L; M;              |                     | Common.  |
| N1, 3, 4.  |                     | <i>Phleum</i> L.                               |
| Common.  |                     | <i>P. bertolonii</i> DC. Cat's-tail            |
| <i>Agropyron</i> Gaertn.                                   |                     | N3.  |
| <i>A. repens</i> (L.) Beauv.                               | Couch-grass         | Rare.  |
| B; C; E5; H; M; N3, 4.                                     |                     | <i>P. pratense</i> L. Timothy                  |
| Frequent.  |                     | G1; I1; N1, 3.                                 |
| <i>A. junceiforme</i> (A. & D. Löve)                       | A. & D. Löve        | Occasional.                                    |
| Sand couch-grass   |                     | <i>Alopecurus</i> L.                           |
| A; B.  |                     | <i>A. geniculatus</i> L. Marsh foxtail         |
| Pioneer species on shingle.                                |                     | G1.  |
| <i>Hordeum</i> L.  |                     | Rare.  |
| <i>H. murinum</i> L.                                       | Wall barley         | <i>Milium</i> L.                               |
| B; C.  |                     | <i>M. effusum</i> L. Wood millet               |
| Very rare.   |                     | J1, 2, 3, 4.                                   |
| <i>Avena</i> L.  |                     | Occasional.                                    |
| * <i>A. fatua</i> L.                                       | Wild oat            | <i>Anthoxanthum</i> L.                         |
| N1, 3, 4.  |                     | <i>A. odoratum</i> L. Sweet vernal-grass       |
| A weed of cereal crops.                                    |                     | C; G1; J1, 4; M.                               |
| <i>Arrhenatherum</i> Beauv.                                |                     | Common.  |
| <i>A. elatius</i> (L.) Beauv. ex J. & C. Presl             | Oat-grass           | <i>Phalaris</i> L.                             |
| B; C; H; I1, 3; M; N3, 4.                                  |                     | <i>P. arundinacea</i> L. Reed-grass            |
|  |                     | C; D, D1, 2; E1, 2, 3, 4, 5, 6; F1, 2; G2; I1. |
|  |                     | Common on the landward edges of reed swamp.    |



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#### REFERENCES

- CLAPHAM, A. R., TUTIN, T. G. and WARBURG, E. F. (1962). *Flora of the British Isles*. Cambridge.
- MERCER, I. D. (1966). Natural History of Slapton Ley Nature Reserve I. Introduction and Morphological Description. *Field Studies* 2, 385-405.