

THE DISTRIBUTION OF ZOSTERA AND RUPPIA IN THE FLEET

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Marine algae, Zostera and Ruppia, occur in rich abundance in the Fleet for much of the year; only in winter and early spring are there large tracts of bare substratum. The distribution of Zostera over the period autumn (October) 1968 to summer (August) 1969, taken from the author's original survey (Whittaker, 1972; 1980), is shown in Fig.15 and discussed further below. A more recent picture, mapped by J Fair (Swanherd, Fox Strangways Estates) in summer 1980, is shown for comparison in Fig.16. In the former the distribution of Ruppia is included under the Zostera community, in Fig.16, an attempt is made to distinguish the two distributions.

ZOSTERA

This marine angiosperm, locally known as "eelgrass", is represented in the Fleet by two species, the more common Zostera angustifolia (Hornem) Rchb., and Z. noltii Hornem. The true Z. marina L. does not appear to be present, but it does occur in Portland Harbour and Weymouth Bay. The Taxonomy of Zostera spp. is difficult (Dandy, 1958, and Clapham, Tutin & Warburg, 1962) and has been the subject of much confusion and dispute. Some authorities, for instance, still regard Z. angustifolia as merely an ecological variant of Z. marina, living in lower salinities and shallower water. Certainly the Fleet populations of Zostera have never been properly studied, a discrepancy the Fleet Study Group is trying to rectify, and it may ultimately be proved that three species, not two, are indeed present. The identifications given in Whittaker (1972; 1980) were however made by botanists (see acknowledgements), and were thought to be accurate at the time.

Zostera angustifolia - forms extensive meadows over the bed of the Fleet from Lynch Cove in the southeast to near Abbotsbury in the northeast (see Figs 15, 16) although it is not yet known for certain that this species occurs throughout West Fleet. It is not found south of Lynch Cove, nor in the channels of Littlesea, water depth and unstable substratum through tidal scour being responsible. It is also replaced to a great extent in the westernmost part of the lagoon by Z. noltii. The last twenty years has seen the largest extent of this plant since its recolonisation after the decimation caused by the wasting disease in the 1930's. Germination begins usually in late February and March and by August it has grown to its maximum extent and is flowering; epiphytic algae cover the leaves. Except for some coves which are clogged with drifted "flannel weed" (see Burrows, *ibid*) "silk weed" and Ulva, the Zostera community constitutes the main environment for a whole range of invertebrates over almost the whole of West Fleet and much of East Fleet.

During late autumn and in winter the foliage dies back and is driven ashore by the wind to accumulate in some of the coves. The yearly decay of Zostera appears to be associated with the great thicknesses of organic silt which floor much of the Fleet above bedrock. Z. angustifolia grows in no more than 1.0-1.5m of water and except on the tidal flats of Littlesea, which dry out at low water, the plant is always immersed in water.

Zostera noltii - this slender and shorter-leaved species occurs in the lower salinities of West Fleet, in water depths that never exceed 1.0 m. Its absolute distribution within the lagoon still needs clarification, but it is certainly much rarer than Z. angustifolia. Furthermore, there is some difficulty in separating it from Ruppia, except when the two are in flower. Long thought to be the main source of food for the swan populations of the Abbotsbury Swannery, Zostera spp. are in fact very rare in the Abbotsbury Embayment, where green algae, in particular "silk weed" (Chaetomorpha spp), occur in great abundance (Figs 15 & 16) instead.

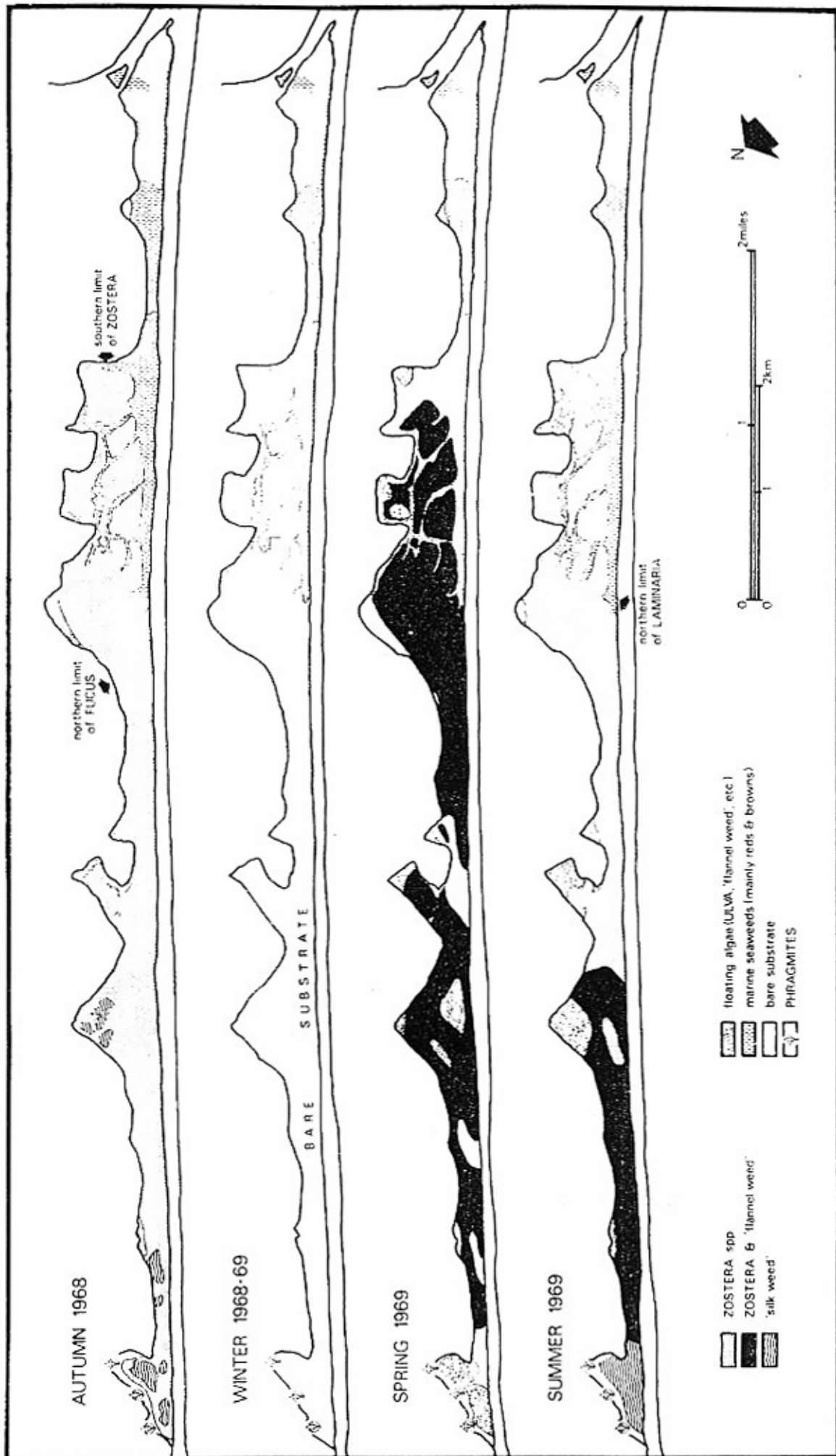
RUPPIA

In Fig.16 J Fair has shown the distribution of Ruppia in the Fleet in 1980. He reports (pers. comm.) that it occurs only in West Fleet from Works Cove in the southeast to below Shipmoor Point in the northwest. It is associated mainly with Zostera, then with green algae, before it disappears by the Abbotsbury Embayment. There is some evidence that in the last decade, Zostera and Ruppia, mapped in 1968 (Fig.15) as occurring in the Embayment and certainly at Shipmoor Point, has actually died out, possibly as a result of overfeeding by the bird population, but this is conjectural.

Known locally as "wigeon grass", Ruppia appears to be represented in the Fleet by the species R. spiralis L. ex Dum., although R. maritima L. may ultimately prove to be present. As with Zostera, a detailed survey of its distribution is needed.

ACKNOWLEDGEMENTS

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AUTUMN 1968

WINTER 1968-69

SPRING 1969








SUMMER 1969

northern limit of FUCUS

southern limit of ZOSTERA

BARE SUBSTRATE

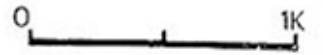
northern limit of LAMINARIA

-  ZOSTERA spp
-  ZOSTERA & 'lammal weed'
-  'silk weed'
-  floating algae (ULVA, 'lammal weed', etc.)
-  marine seaweeds (mainly reds & browns)
-  bare substrate
-  PHRAGMITES



SUMMER 1980

Fig 16



WEST FLEET

EAST FLEET

-  ZOSTERA
-  ZOSTERA & RUPPIA
-  RUPPIA & green-algae
-  Green-algae

