

Botanica Marina
Vol. XXVI, pp. 243-248, 1983

A Note on Two Communities of Seagrasses and Rhizophytic Algae in Bermuda*

G. R. South

Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X9

(Received October 18, 1982)

Abstract

Communities of seagrasses (*Thalassia testudinum* Banks ex König and *Syringodium filiforme* Kütz. in Hohenacker) and rhizophytic algae (*Halimeda incrassata* (Ellis) Lamour., *Penicillus capitatus* Lamarck and *Udotea flabellum* (Ellis et Sol.) Lamour.) were sampled quantitatively from two sites in Bermuda. An intermixture of *Thalassia* and *Syringodium* occurs in the more exposed, sandy site, Whalebone Bay, whereas there is a sharp zonation of *Thalassia* (upper) and *Syringodium* (lower) in the more sheltered, soft-bottomed site, Ferry Reach. *Thalassia* was significantly more numerous (mean 903 shoots m^{-2}) at Whalebone Bay compared with Ferry Reach (mean 394 shoots m^{-2}), although plants were larger at Ferry Reach than at Whalebone Bay and the estimated standing crop was not significantly different between the two sites. *Halimeda incrassata* and *Penicillus capitatus* were important in both beds, but *Udotea flabellum* was sparsely distributed. The rhizophytic algae were more abundant at Ferry Reach than at Whalebone Bay, and there was an inverse relationship between depth and number of *Halimeda* plants. In mixed stands of *Thalassia* and *Syringodium* there was a tendency for exclusion of the rhizophytic algae, and in the pure stand of *Syringodium* at Ferry Reach, rhizophytic algae were absent.

Introduction

Lying in the westerly position of the Sargasso Sea (Morris *et al.* 1977) the Bermuda Islands support the most northerly populations of the tropical seagrasses *Thalassia testudinum* Banks ex König and *Syringodium filiforme* Kütz. in Hohenacker (Den Hartog 1970). There are few published observations on Bermudian seagrass communities (Bernatowicz 1952, Moore 1969, Patriquin 1973, Rupp 1978), and little has been reported on *S. filiforme* (Phillips 1960, Den Hartog 1970, Zieman and Wetzel 1980) and its relationship with *T. testudinum*, with which it occurs throughout its range (Den Hartog 1977). *Syringodium* in Bermuda has been subject to little study, with the exception of the preliminary observations of Rupp (1978).

The calcified rhizophytic algae are well known as important contributors to calcium carbonate deposition in *Thalassia* beds and in seagrass succession (Den Hartog 1977). The importance of species of *Halimeda*, *Penicillus*, *Rhizocephalus* and *Udotea* in sediment production has been stressed (Stockman *et al.* 1967, Chave *et al.* 1972, Hillis-Colinvaux 1974, Neumann and Land 1975, Bach 1979), with Stockman *et al.* (1967), Thorhaug and Roessler (1977) and Bach (1979) reporting on production and standing crop of these algae in Florida seagrass communities. Wefer (1980), using an Alizarin Red-S stain, measured carbonate production in calcified algae in Harrington Sound, Bermuda, and suggested that they renewed their standing stock once every month (*Halimeda*, *Padina*) or every one and a half months (*Penicillus*) during the growing season.

In 1981 a preliminary quantitative study was made of the seagrasses and rhizophytic algae occurring in

* Contribution No. 944 from the Bermuda Biological Station for Research