

LONG TERM CHANGES OF MARINE VEGETATION NEAR ROVINJ
(NORTH ADRIATIC)

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ABSTRACT: Changes in marine vegetation which occurred in Rovinj area in past decennium are discussed. Generally, a considerable drop of plant biomass is noted.

RÉSUMÉ: On a discutés les changements de la végétation sous-marine dans la période passée de dix ans. Généralement, la diminution de la biomasse végétale est notée.

In the North Adriatic, the community of photophilic seaweeds is represented in the rocky midlittoral zone mostly by *Fucus virsoides*, and in the upper infralittoral by *Cystoseira* associations. The sandy bottoms are often occupied by phanerogam *Cymodocea nodosa*. The biomass of dense *Cystoseiretum* can exceed 5-10 kg wet weight per sq.m., and that of *Cymodocea* is usually 250-500 g per sq.m.

The changes of algal vegetation near Rovinj, which could be attributed to pollution, were signaled by several authors (1, 2, 3). Our recent observations which were made at skin and SCUBA diving revealed advanced decrease of marine vegetation in the area when compared with the data which were obtained hardly a decennium ago (Table I.). Conspicuous changes in marine flora were stated at many localities in this area, which is influenced only locally by the inflow of domestic and industrial sewages. Hence, the regression seems to be partly related to regional environmental conditions in the North Adriatic aquatorium.

The successive regression process can be summarized in following:

- Stage 1: Decrease of biomass and covering rates of pilot species, slight changes in species composition.
- Stage 2: Specific changes of flora and extinction of pilot species; usually a drop of plant biomass occurs.
- Stage 3: Denudation of sea bottom which is caused by grazing or other reasons.

Table I.: Biomass of selected algal and seaweed species

Locality	Pilot species	Biomass (g w.weight/m ²)	
		Old data (author)	Data from 1976
Faborsa	<i>Fucus virsoides</i>	3000 (3,6)	200
Valdibora	<i>Fucus virsoides</i>	2760 (6)	125-2000
Valdibora	<i>Ulva rigida</i>	324-660 (*)	2480
Katarina	<i>Ulva rigida</i>	380-800 (4)	1946
Banjole	<i>Cystoseira abrotanifolia</i>	4330 (5)	2780
Faborsa	<i>Cystoseira barbata</i>	3000 (4)	480
Škaraba	<i>Cystoseira barbata</i>	1920 (4)	0
Škaraba	<i>Cystoseira spicata</i>	1700-4900 (4)	216-547
Barabiga	<i>Scytosiphon lomentaria</i>	419 (*)	780
Škaraba	<i>Halopteris scoparia</i>	100-270 (4)	540-1100
Katarina	<i>Halopteris scoparia</i>	1650-4000 (4)	717
Figarola	<i>Cymodocea nodosa</i>	300 (*)	0

(*) unpublished results

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