

**Distribution of nutrients in the Eastern Adriatic coastal sea
- Post Algal Bloom -**

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This paper describes the distribution of nutrients (phosphate, nitrate, nitrite, ammonium and silicate) in water samples from 20 sampling stations on the eastern Adriatic coast (Figure 1) collected during August 1989 (post non-seasonal algal bloom).

During summer 1989, like in 1988, large quantities of organic substances and mucous aggregations were recorded along the coast of northern and middle Adriatic. Vertical stratification of sea water was nominated as a principal cause of bloom. The low horizontal movement retained nutrients in the area that extends from the Po Delta, and the nutrients could not be exported and remained to be biologically used and recycled (DEGOBBIS, 1989).

Due to basic hydrographic parameters during the summer 1989, pronounced stratification of water column occurred in the study area along with the minimum horizontal current. Less saline water in the surface layer was flowing out of the Adriatic and intermediate water of the Mediterranean origin was flowing in to replace that surface water (BULJAN *et al.*).

During this period (August 1989) values of salinity exceeded 38.50 in the bottom layer of the northern Adriatic. Changes of ecological conditions such as migration of some marine organisms from the middle Adriatic (net zooplankton and copepods) were found in the northern Adriatic in this period.

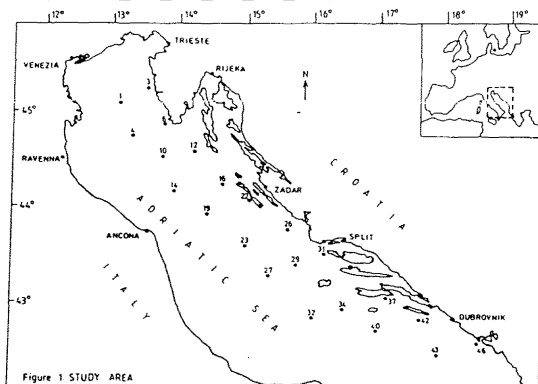
Values of nutrients, except nitrate, were very poor (Table 1) throughout the area in this period due to prevailing processes of assimilation with consumption of nutrients by phytoplankton.

Considerable quantities of nitrate were recorded throughout the area even an order of magnitude higher than the "normal" values. This nitrate enrichment could be attributed to process of regeneration of these salts from organic matter and degradation of large quantities of organic matter mucous aggregations by bacterial activity. This effect can be confirmed by very high bacterial biomass throughout the investigated area.

Cycles of nutrients in the eastern Adriatic Sea are defined not only by oceanographic and meteorological factors but to a considerable extent, by biological cycles of the organic matter in the sea.

Table 1. Means concentration of nutrients in mmol m⁻³ on investigated area

PARAMETER STATIONS	NO ₃ - N	NO ₂ - N	NH ₃ - N	PO ₄ - P	SiO ₃ - Si	O ₂	pH
S - 1	3.98	0.118	1.58	0.068	2.74	5.20	8.14
S - 3	3.89	0.096	1.31	0.067	0.47	5.64	8.14
S - 4	5.62	0.162	0.75	0.048	1.70	4.84	8.17
S - 6	5.80	0.155	1.30	0.051	2.58	4.66	8.15
S - 10	3.12	0.158	0.73	0.055	0.98	4.86	8.19
S - 12	3.26	0.105	0.94	0.044	0.17	5.21	8.20
S - 14	4.37	0.085	0.95	0.051	0.59	5.00	8.20
S - 16	5.37	0.105	1.30	0.060	0.69	5.26	8.19
S - 19	7.90	0.098	1.09	0.046	1.50	4.98	8.19
S - 22	8.11	0.092	0.88	0.046	0.56	4.82	8.19
S - 23	9.17	0.094	0.93	0.061	0.71	4.88	8.21
S - 26	8.20	0.080	0.42	0.036	0.46	4.66	8.22
S - 27	9.53	0.113	0.60	0.049	0.89	4.94	8.21
S - 31	5.30	0.142	0.48	0.070	0.64	5.75	8.23
S - 32	3.51	0.112	0.79	0.063	1.43	5.19	8.23
S - 37	1.29	0.100	0.49	0.074	0.46	5.45	8.23
S - 40	1.98	0.080	0.50	0.059	1.02	5.11	8.23
S - 42	3.05	0.085	0.66	0.057	1.24	5.09	8.23
S - 43	2.66	0.087	0.57	0.052	0.87	5.05	8.24
S - 46	1.27	0.105	1.65	0.055	0.69	5.24	8.23



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