



WICOS (Implementation of the water quality monitoring in the **Western Istrian Coastal Sea) is an Adriatic New Neighbourhood Programme-INTERREG/CARDS-PHARE Project, with main objectives:**

- **Scientific support to the implementation of a strategy for the environmental protection and sustainable development of the sensitive coastal Adriatic Sea areas (CAOS)**
- **Estimation of long-term changes in the Adriatic ecosystem**
- **Evaluation of the relative importance of climatic fluctuations and oceanographic conditions variability vs. the anthropogenic impact of eutrophication.**

Since the observed area is Northern Adriatic, WICOS could easily be retained as continuation of the REQUISITE project, measuring the same parameters and having a complete view in the Northern Adriatic ecosystem. As in REQUISITE, our partner is Struttura Oceanografica Daphne; ARPA-ER, Cesenatico, Italy.

The WICOS project started in August 2008 and will last for one year.

BULLETIN FOR JUNE 2009

The bulletin was primarily edited in accordance to measurements, and observations of the scientific and technical staff of Center for Marine Research (CMR) of the Ruđer Bošković Institute.

The description of the state in the marine ecosystem refers to the profile of seven stations 1 Nm distant from the western Istrian coast (WIC), as required by the program WICOS. In the

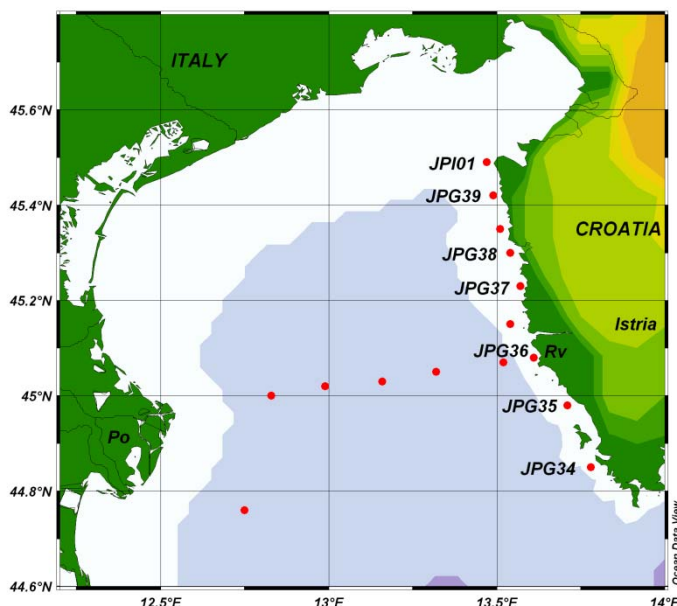


Figure 1.

case that the sampling along the Rovinj-Po River Delta (RV-Po) was performed in the next few days to the measurement along the WIC, all data obtained were compared and described in the bulletins.

The monitoring of the RV-Po profile is realized within the Croatian National Monitoring Program (Projekt "Jadran"), for which are available time series data from 1965 and is representative for the waters along the northern Adriatic. The profile includes 14 stations up to the limit of Italian territorial waters, of which at seven are performed complete measurements of all oceanographic parameters.

The measurement cruises were carried out using the oceanographic vessel "Vila Velebita" of the CMR.

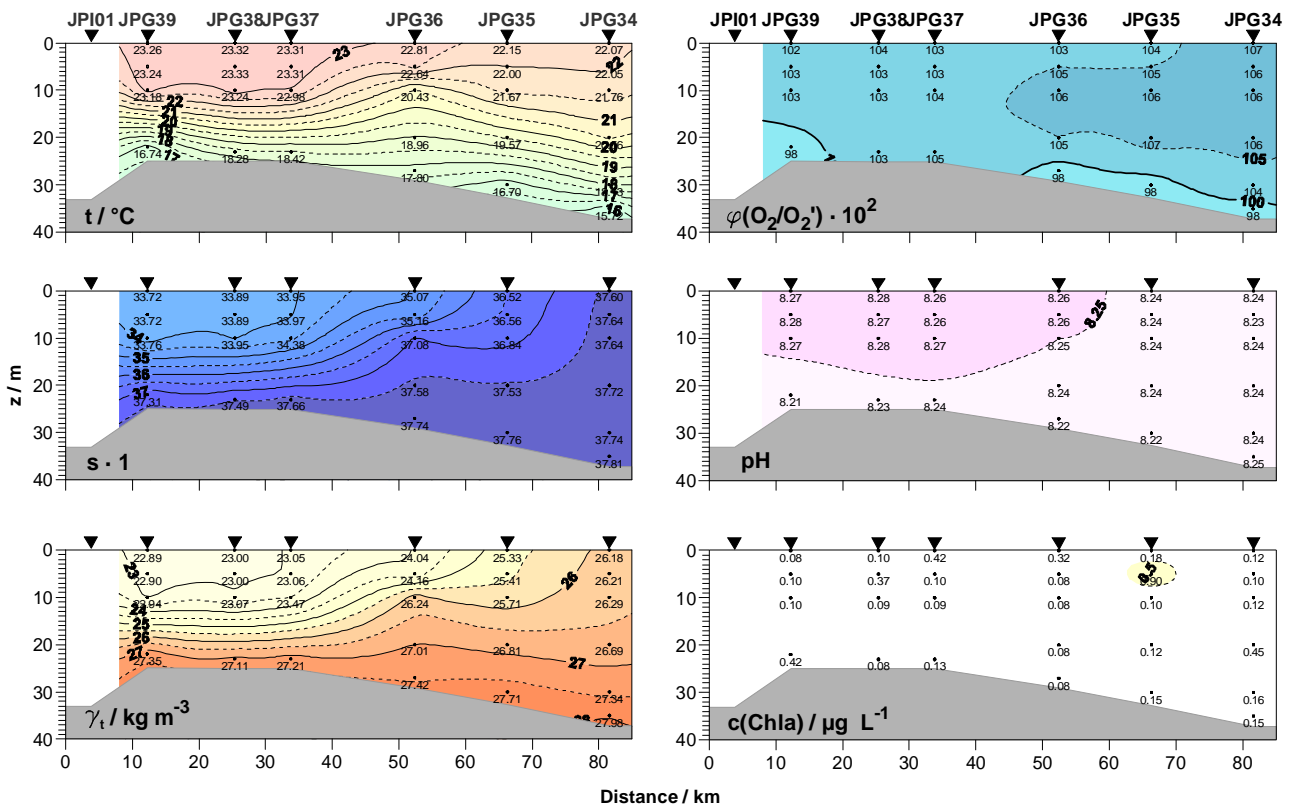
Situation at sea

The sampling along the WIC profile was performed on the 16th of June, while the one at the stations between Rovinj and the Po River Delta (RV-Po) on the 30th (Fig. 1).

The water column on the WIC stations was stratified with values 22,1-23,3 °C at the surface, and 15,7-18,4 °C near the bottom (Fig. 2). The situation on the RV-Po profile was similar with more enhanced gradient (12,9-25,9°C).

On the WIC profile salinity ranged from 33,7-37,6 at surface to 37,3-37,8 near the bottom (Fig. 2), however, in the surface layer at stations west from the RV-Po profile salinity was lower (30,9).

The oxygen saturation level continued to be around 100%, as in the previous months. Chlorophyll *a* concentration was minimal (0,1-0,4 µg/L) throughout the water column in the major part of the WIC profile.



WICO0905 - 16.06.2009.

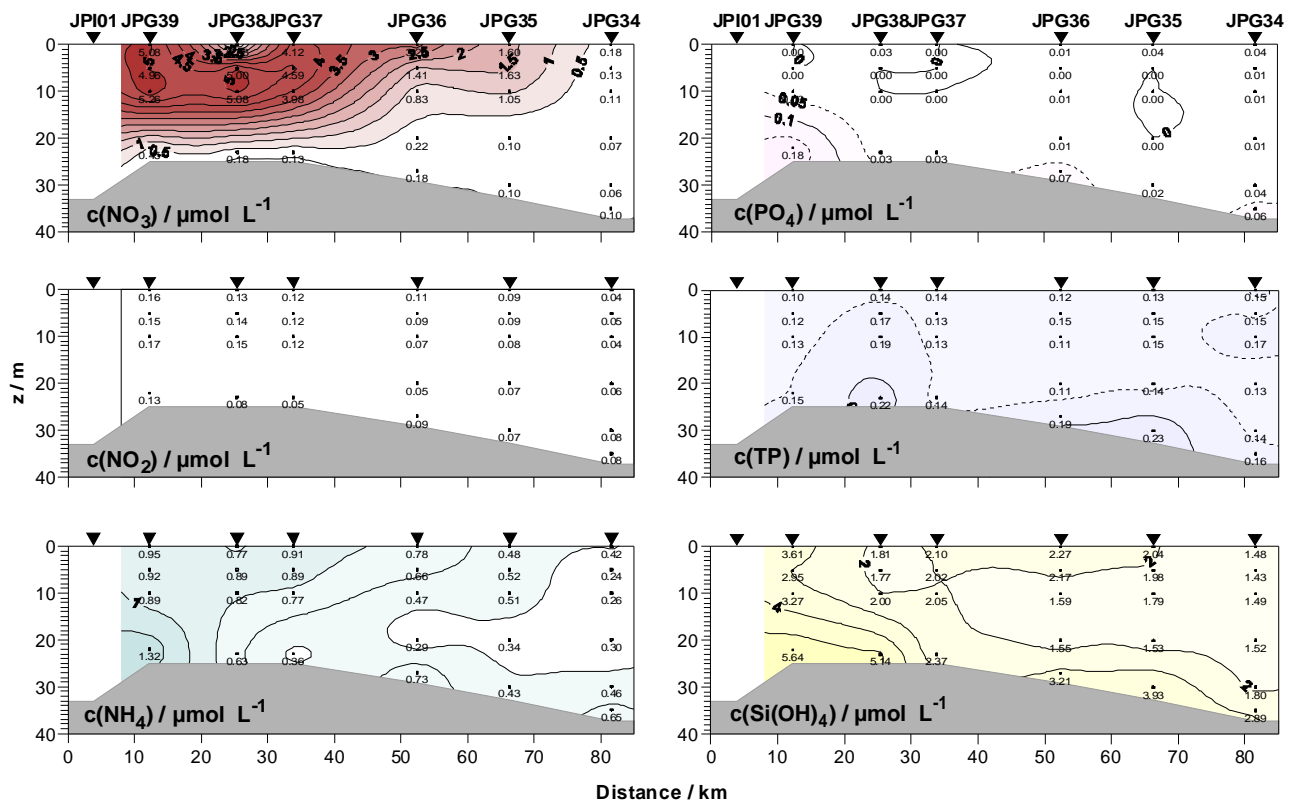
Figure 2.

The nitrate concentration was significantly higher in the upper layers of the water column in the northern and central stations of the WIC profile (up to 5 µmol/L) to decrease by more than an order of magnitude at south. In the bottom layers, under the pycnocline, values were minimal throughout the profile (0,1-0,2 µmol/L). This distribution is much less evident to orthosilicate and indeed no concentration gradients were observed for other nutrients (Fig. 3).

The main source of nitrate observed along the WIC profile were surface offshore waters, as usual in June, which convey by cross currents towards the Istrian coast. This is confirmed due

to the fact that high concentrations were not measured for other nutrients, which were consumed in the process of assimilation of phytoplankton during transport. However, a possible minor contribution of the rivers Isonzo and Mirna, equally rich in nitrate compared to orthophosphate, is not ruled out.

The sea color was generally greenish blue and transparency, as assessed by measurements with the Secchi disc (16-18 m), was better than in April. Along the RV-Po profile there was a gradual decrease of transparency moving toward the Po delta (from 15 to 8 m).



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Figure 3.

Unusual phenomena

Like in the previous months, mucilaginous aggregates were not noted. The presence of marine snow continued to be minimal, even though in slightly more abundant quantities compared to the previous months. Flakes were rare or moderately abundant medium sized <1 cm in the central and western areas of the basin and rare (or moderately abundant) long filaments of about 5-15 cm at the depth of 10-30 m have been noted. There was no sign of jellyfish.