

2002-2005 Diving for the Environment: Mediterranean Underwater Biodiversity Project



Environmental monitoring in collaboration with the industry of underwater tourism

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Stalian Ministry
of the Environment
and Land and Sea

Protection









Biodiversity has a value as an indicator of environmental health. Monitoring is the first step towards natural resource management. The goal of "Diving for the Environment" was to obtain data on the state of the marine biodiversity along the Italian coasts, by the collaboration of recreational scuba divers. On a specially formulated questionnaire, volunteers reported the presence of 61 marine taxa encountered during recreational dives. This research was patronaged by the Italian Ministry of the Environment and supported by ASTOI (Association of Italian Tour Operators), A.DI.SUB (Association of Italian Scuba Diving Agency – IDEA, PADI, PSS, SNSI, SSI) and the popular scientific magazine Quark. During the 4-year study, 3825 divers have completed 18,757 questionnaires, corresponding to 13,539 diving hours. In the Ligurian and Northern Tyrrhenian seas, data showed a north-south gradient, where the best situations were in the southernmost areas. This condition could be related to the high anthropogenic stress in urban and industrial zones. Divers were willing to take part in monitoring and contributed in scientific terms by collecting considerable amounts of data over short time periods, and in economic terms by decreasing costs. The greatest limitation was the difficulty in obtaining a uniformly distributed sample across time and space.

QUESTIONNAIRE

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The questionnaire was the tool of reference used by recreational divers taking part in the project. It consisted of two parts:

- recording data section (A^{1}/A^{2}). Recorded information included diver's data (name, address), details on the dive (site, date, depth, time), sightings and abundance of organisms encountered during the dive.

- images for the identification of the organisms to be recorded (B). We designated 61 Mediterranean benthic taxa that might be easily identified by recreational scuba divers.

Dive training organizations produced the questionnaires and distributed them to diving centers. Volunteers were assisted during data collection in the field by dive guides and instructors who had previously received training on project objectives and methodology.

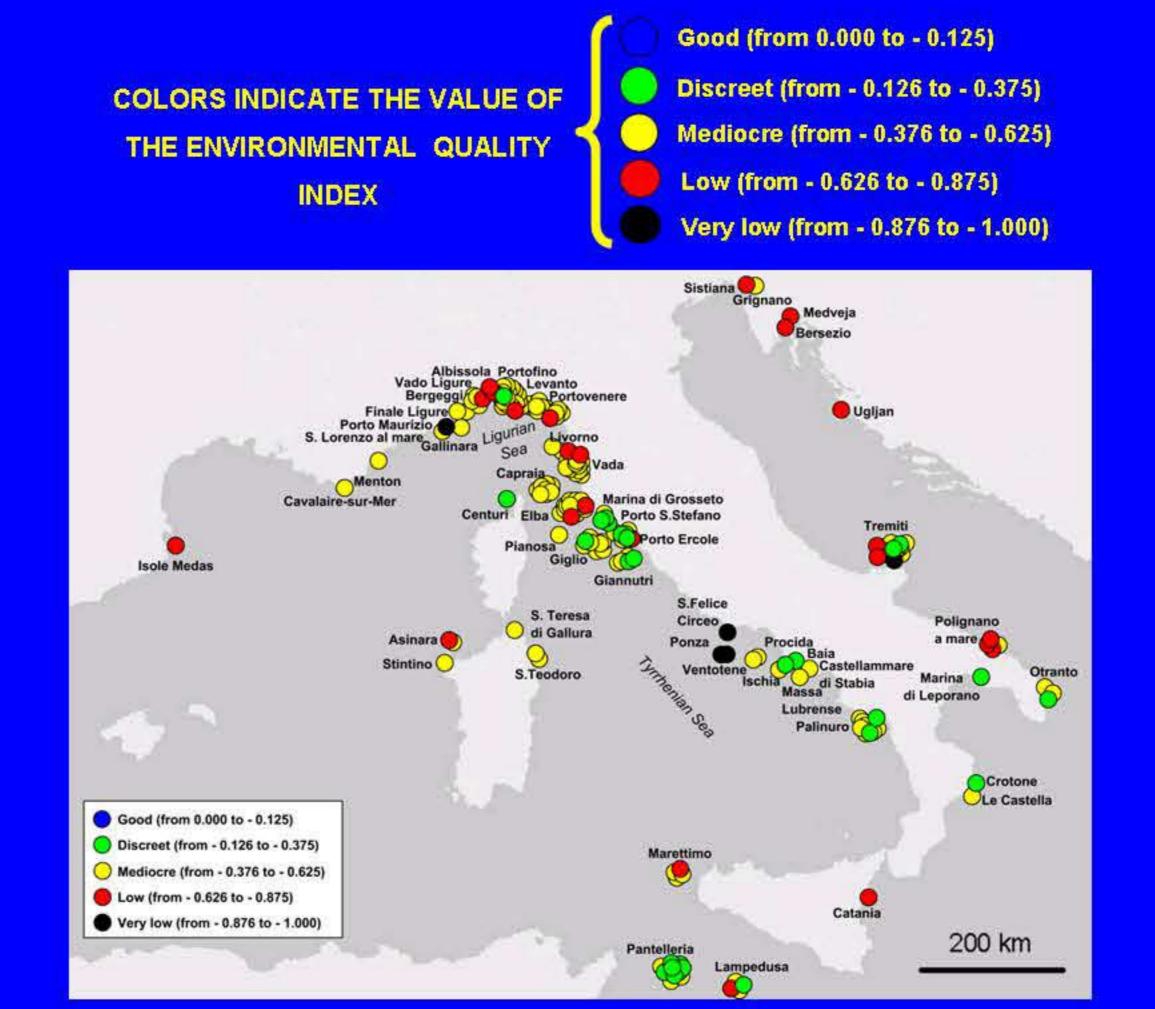
Completed questionnaires were sent to Department of Biology of the University of Bologna, where a database for project results had been set up. Data were processed and reports were prepared with an update on the project and its main results. The reports were mailed to divers who had contributed the most questionnaires.

GEOGRAPHICAL DISTRIBUTION of recorded questionnaires



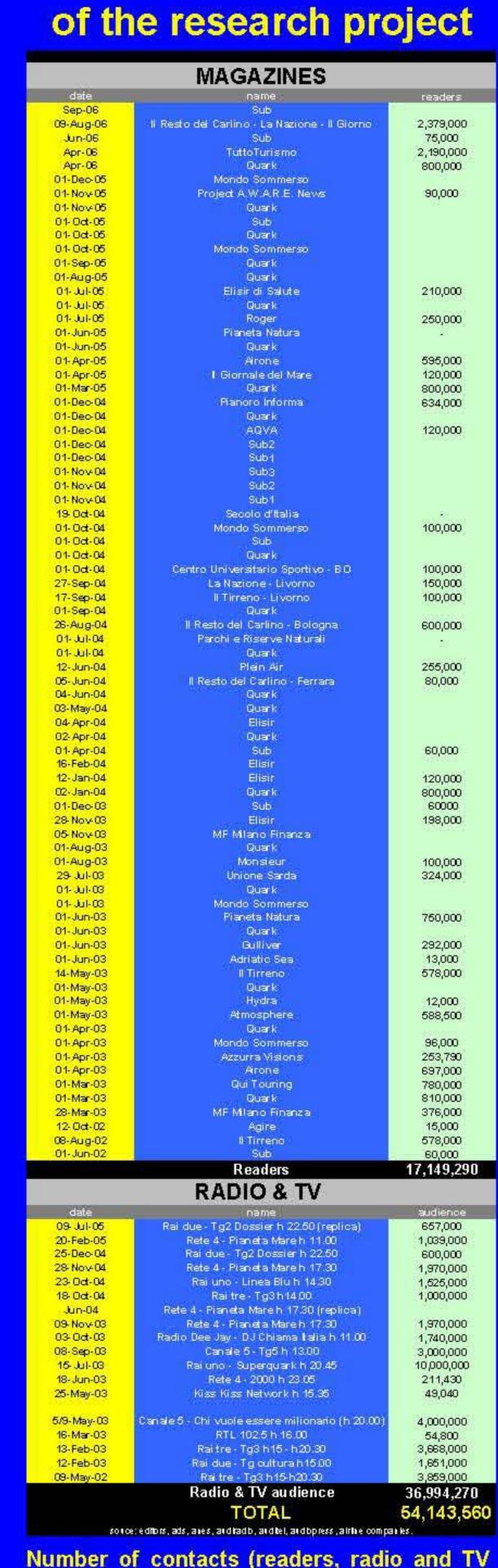
Geographical distribution of recorded questionnaires during the 4-year study. On the geographic scale, the distribution results heterogeneous, with most of the recorded questionnaires coming from the Ligurian and the Northern Tyrrhenian Sea.

ENVIRONMENTAL QUALITY



Average environmental quality index (e.q.i.) for the survey stations on rocky seabed during the 4-year study. Most stations present mediocre e.q.i. In the Ligurian and Northern Tyrrhenian seas, the stations diverging in a negative way show low, or very low e.q.i. and are mainly distributed in the northernmost areas; the stations diverging in a positive way show discreet e.q.i. and are mainly distributed in the southernmost areas.

MASS MEDIA BROADCASTING



audience) produced by Marine Science Group Public Relation Office during the period 2002-2006. Dissemination of information regarding the project through media was an important way to give feedback and satisfaction to volunteer scuba divers and contributing partners.