

How the clear blue Med is washed up and dead

December 5 2004

As millions of holidaymakers will testify, the Mediterranean is uniquely clear – and blue – unlike the cloudy grey of many coastal waters. But how many of its grateful bathers realise that the Med is so crystal clear because it's the ocean equivalent of the Sahara desert?

A Leeds-led team of international scientists studying the fragile marine ecosystem of the Eastern Mediterranean has found that the reason the waters are so transparent is an acute shortage of phosphates – vital elements at the bottom of the marine food chain.

Currents through the Straits of Sicily are 'washing' nutrient-rich waters out of the Mediterranean, and bringing in fresh surface water which has no nutrients. Without these fertilisers, plankton cannot grow, depriving bacteria of the food they need to process the extra nitrates in the water, and release them into the atmosphere as nitrogen. Thus the seas of the Mediterranean have a build-up of nitrates – around twice as much, proportionately, as the other oceans of the world – but few plants and nutrients to cloud the water.

Leeds earth and biosphere institute director Professor Michael Krom said: "Many of the great ancient civilisations have developed on the shores of the Eastern Mediterranean, and more recently it has become home to millions of people and the holiday destination for millions more."

"But despite all these people, the waters have remained clear deep blue, rather than the murky grey associated with highly populated areas whose

waste products normally increase nutrient levels in the seas into which they flow.”

Professor Krom’s team, drawn from seven countries, has finally provided the link between the ‘blueness’ of the Mediterranean, and its high imbalance of phosphates and nitrates. “The oceans are the life support system of the planet, and so understanding the elements controlling plant growth in the oceans is a big deal,” said Professor Krom.

The research results will be fed into the Mediterranean forecasting system, which is developing the world’s first ‘weather forecast’ for ocean waters.

Source: University of Leeds

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