

A late end for the meltwater inflow to the Caspian Sea at 4 cal. ka BP

Leroy S.A.G.

Institute for the Environment, Brunel University, Uxbridge UB8 3PH, West London, UK,
suzanne.leroy@brunel.ac.uk

The causes for water level fluctuations of the Caspian Sea are still poorly understood, even for the most recent times. This makes it very difficult to predict how the recent level rise (> 2.5 m from 1977 to 2005) will evolve in the near future (Arpe and Leroy, 2007).

Owing to a recent effort in the taxonomy of dinoflagellate cysts endemic to the region, it becomes possible to unify the taxonomy of studies by different palynologists and attempt to define the ecological range of these taxa, some totally new (Marret et al., 2004).

Pollen, spores, dinoflagellate cysts and other microfossils have been analysed on five sediment cores (1.4 to 9.8 m-long) taken in the south and middle basins of the Caspian Sea by a French-Russian INCO-Copernicus joint project (Leroy et al. 2006 and 2007). The chronology based on calibrated radiocarbon dates indicates that the longest sequence reaches down to 15 cal. ka BP. The pollen and spores assemblages show fluctuations between steppe and desert, as well as in some outstanding zones a bias by strong river inflow. The dinocyst assemblages change between slightly brackish (abundance of *Pyxidinosopsis psilata* and *Spiniferites cruciformis*) and more brackish (dominance of *Impagidinium caspiense*) conditions (Marret et al., 2004). During the second part of the Holocene, important inflow modifications of the main rivers (Uzboy and Volga) as well as salinity changes of the Caspian Sea, have been reconstructed.

A major change is suggested at ca 4 cal. ka BP with the end of a high level phase in the south and the middle basins (Leroy et al., in prep.). Amongst other hypotheses, this change in sediment and water sources could be caused by the end of a poorly recognised late and abundant flow of the Uzboy River, a river carrying to the Caspian Sea either meltwater from higher latitudes or water from the Amu-Daria. Implications for the Black Sea are explored.

References

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