



Paleoclimate Proxy Sites Mediterranean Westerlies and Indian Monsoon

1. Lago di Pergusa (Sadori and Narcisi 001)
2. Central Italy lakes (Magri et al 1997;
3. Lake Vrana (Schmidt et al 2000)
4. Rezina (Willis 1992a; Abbott et al in prep)
5. Gramousti (Willis 1992b)
6. Pylos (Zangger et al 1997)
7. Kournas (Curtis et al in prep)
8. Kaz Gölü (Bottema 1997)
9. Konya (Eastwood et al 1999)
10. Eski Açıgöl (Roberts et al 2001)
11. Abant Lake (Bottema 1997)
12. Yeniçaga (Bottema 1997)
13. Sögütlü Lake (Bottema 1997)
14. Lake Van (Lemcke and Sturm 1997; Wick, Lemcke, Sturm 2003)
15. Lake Huleh (Baruch and Bottema 1999)
16. Soreq Cave (Bar-Matthews et al 1999)
17. Dead Sea (Frumkin et al 1994)
18. Ghab (Yasuda et al 2000)
19. Bouara Lake (Bottema 1997)
20. Lake Zeribar (Wright and Stevens 2003)
21. Lake Mirabad (Griffiths, Schwalb, and Stevens 2001)
22. Oman (Fleitmann et al 2003);
23. Gulf of Oman (Cullen et al 2000)
24. North Arabian Sea (von Rad et al 1999; Staubwasser et al 2003)
25. Karawar (Ben-Taleb et al 1997)
26. Sambhar, Lunkaransar, Pachpadra (Kajale and Deotare 1997; Enzel et al 1999)
27. Lake Abhé (Gasse 1977)
28. Ziway-Shala (Gasse 2000)
29. Lake Turkana (Johnson and Odada 1996)
30. Kilimanjaro (Thompson et al 2003)
31. Kajemarum Oasis (Street-Perrot et al 2000)
32. Bahr-eGhazal (Servant, Servant-Vildary 1980; Gasse 2000)
33. Karadashinskii Swamp (Kremenetski 1995)X
34. Polesye Swamp (Zernickaja 1996)X
35. Razdorskaya (Kremenetski 1997; Shislina and Kremenetski 1995)X
36. middle Volga (Kremenetski et al 1999)
37. Kalmuk (Kremenetski, Chichagova, and Shishlina 1999)
38. Kaharabulak swamp (Shislina and Kremenetski 1995)
39. Arkhyz (Kvavadze and Efrimov 1996)
40. Manzala Lagoon (Krom et al 2002; Stanley et al 2003)
41. Red Sea (Arz et al 2003)

Bibliography

Arz H. W., F. Lamy, J. Pätzold, P. J. Müller, M. Prins, Mediterranean Moisture Source for an Early-Holocene Humid Period in the Northern Red Sea, *Science* **300**, 5616, 118-120 (2003). [41]

Bar-Matthews, M. and A. Ayalon, Late Quaternary Paleoclimate in the Eastern Mediterranean Region from Stable Isotope Analysis of Speleothems at Soreq Cave, Israel, *Quaternary Research*, **47**, 155–168 (1997). [16]

Bar-Matthews, M., A. Ayalon, and A. Kaufman, Middle to Late Holocene Paleoclimate in the Eastern Mediterranean Region from Stable Isotopic Composition of Speleothems from Soreq Cave, Israel, *Water, Environment and Society in Times of Climatic Change*, edited by A. S. Issar and N. Brown, pp. 203–214. Kluwer, Amsterdam (1998). [16]

Bar-Matthews, M., A. Ayalon, A. Kaufman, and G. Wasserburg, The Eastern Mediterranean Paleoclimate as a Reflection of Regional Events: Soreq Cave, Israel, *Earth and Planetary Science Letters*, **166**, 85–95 (1999). [16]

Baruch, U. and S. Bottema, A new pollen diagram from lake Hula. In: H. Kawanabe, G.W. Coulter and A.C. Roosevelt, eds., *Ancient Lakes: their cultural and biological diversity*. Kenboi Production, Belgium (1999). [15]

Bentaleb, I., C. Caratini, M. Fontugne, M.-T. Morzadec-Kerfourn, J.-P. Pascal, C. Tissot, Monsoon Regime Variability during the Late Holocene in Southwestern India, in: N. Dalfes, G. Kukla, H. Weiss, eds, *Third Millennium BC Climate Change and Old World Collapse*. Berlin, Springer, pp. 475-488. (1997). [25]

Bottema, S., Third Millennium Climate Change in the Near East Based upon Pollen Evidence, *Third Millennium B.C. Climate Change and Old World Collapse*, edited by N. Dalfes, G. Kukla, and H. Weiss, pp. 489-515. NATO ASI Series I, no. 49. Springer, Berlin (1997). [11, 12, 13]

Chauhan, O. S., et al., Late-Quaternary variations in clay minerals along the SW continental margin of India: evidence of climatic variations, *Geo-Marine Letters*, **20**, 118-122 (2000)

Cullen, H. M., P. B. deMenocal, S. Hemming, G. Hemming, F. H. Brown, T. Guilderson, and F. Sirocko, Climate Change and the Collapse of the Akkadian Empire: Evidence from the Deep Sea, *Geology* **28**, 79-382 (2000). [23]

deMenocal, P.B., Cultural responses to climate change during the Late Holocene, *Science* **292**: 667-673 (2001). [23]

Eastwood, W.J., N. Roberts, H. Lamb, J.C. Tibby, Holocene environmental change in southwest Turkey: a paleoecological record of lake and catchment-related records, *Quaternary Science Reviews* **18**, 671-696, (1999) [9]

Enzel, Y., L. L. Ely, S. Mishra, R. Ramesh, R. Amit, B. Lazar, S. N. Rajaguru, V. R. Baker, and A. Sandler, High Resolution Holocene Environmental Changes in the Thar Desert, Northwestern India, *Science*, **284**, 125-128 (1999). [26]

Fleitmann, D. S. J. Burns, M. Mudelsee, U. Neff, J. Kramers, A. Mangini, A. Matter, Holocene Forcing of the Indian Monsoon Recorded in a Stalagmite from Southern Oman *Science*, **300**, 1737-1739 (2003). [22]

Frumkin, A., Carmi, I. Zak, M. Margaritz, Middle Holocene Environmental Change from Salt Caves of Mount Sedom, Israel, in: O. Bar-Yosef and R. Kra, eds., *Late Quaternary Chronology and Paleoenvironments of the Eastern Mediterranean*, *Radiocarbon*, Tucson, University of Arizona (1994). [17]

- Gasse, F., Evolution of Lake Abhé from 70,000 B.P., *Nature* **2**, 42-45 (1977) [27]
- Gasse, F., Hydrological changes in the African tropics since the Last Glacial Maximum *Quaternary Science Reviews* **19**, 189-211 (2000) [28].
- Gasse, F. and E. van Campo, Abrupt post-glacial climate events *Earth and Planetary Science Letters* **126**, 435-456 (1994). [24]
- Griffiths, H.I., A. Schwalb and L. Stevens, Environment change in southwest Iran: the Holocene ostracod fauna of Lake Mirabad, *The Holocene* **11.1**, 757-764.[[21]
- Johnson, T. C., and E. O. Odada, editors, *The Limnology, Climatology and Paleoclimatology of the East African Lakes*. Gordon and Breach, New York (1996).[29]
- Kajale, M. D. and B. C. Deotare, Late Quaternary environmental studies on salt lakes in western Rajasthan, India: a summarised view, *Journal of Quaternary Science* **12(5)** 405-412 (1997). [26]
- Kremenetski, C. V., O. A. Chichagova, and N. I. Shishlina, Palaeoecological evidence for Holocene vegetation, climate and landuse change in the low Don basin and Kalmuk area, southern Russia, *Vegetation History and Archaeobotany*, **8(4)**, 233-246 (1999). [37]
- Kremenetski, C. V. and N. G. Patyk-Kara, Holocene vegetation dynamics of the southeast Kola peninsula, Russia, *Holocene* **7**, 473-479 (1997).
- Kremenetzki, C.V., Holocene vegetation and climate history of southwestern Ukraine, *Review of Paleobotany and Palynology* **85**, 289-301.[33]
- Kremenetzki, C.V., The late Holocene Environmental and Climate Shift in Russia and Surrounding Lands in N. Dalfes, G. Kukla, H. Weiss, eds., *Third Millennium BC Climate Change and Old World Collapse*, Berlin, Springer, pp. 351-370 (1997). [35]
- Kremenetski, C.V.T. Bottger, F. W. Junge, and A. G. Tarasov, Late- and postglacial environment of the Buzuluk area, middle Volga region, Russia, *Quaternary Science Reviews*, **18**, 1185-1203 (1999). [36]
- Kremenetski, C.V.O. A. Chichagova, and N. I. Shishlina, Palaeoecological evidence for Holocene vegetation, climate and landuse change in the low Don basin and Kalmuk area, southern Russia, *Vegetation History and Archaeobotany*, **8(4)**, 233-246 (1999). [37]
- Krom, M.D., D. Stanley, R.A. Cliff, J.C. Woodward 2002 Nile River Sediment Fluctuations over the past 7000yr and their key role in sapropel development, *Geology* **30**: 71-74. [38]
- Kvavadze, E. and Y.V. Efrimov, Palynological studies of lake and lake-swamp sediments of the Holocene in the high mountains of Arkhyz (western Caucasus), *Acta Paleobotanica*, **36**, 107-119 (1996).[31]
- Lemcke G., and M. Sturm, $\delta^{18}\text{O}$ and Trace Element Measurements as Proxy for the Reconstruction of Climate Changes at Lake Van (Turkey): Preliminary Results, in: N. Dalfes, G. Kukla, H. Weiss, eds., *Third Millennium BC Climate Change and Old World Collapse*. Berlin, Springer, pp. 653-678 (1997). [14]
- Luckge, A., et al. Monsoonal variability in the northeastern Arabian Sea during the past 5000 years: geochemical evidence from laminated sediments, *Palaeogeography Palaeoclimatology Palaeoecology*, **167**, 273-286 (2001). [24]

- Magri, D., Middle and Late Holocene Vegetation and Climate Changes in Peninsular Italy, in: N. Dalfes, G. Kuklas, H. Weiss, eds. *Third Millennium BC Climate Change and Old World Collapse*, Berlin, Springer, pp. 517-530 (1997) [2]
- Naidu, P. D. and B. A. Malmgren, A high-resolution record of late quaternary upwelling along the Oman Margin, Arabian Sea based on planktonic foraminifera, *Paleoceanography*, **11**, 129-140 (1996).[22]
- Neff, U., S.J. Burns, A. Mangini, M. Mudelsee, D. Fleitmann, A. Matter, Strong Coherence between solar variability and the monsoon in Oman between 9 and 6 kyr ago, *Nature*, **411**, 290-293 (2001).[22]
- Phadtare, N. R., Sharp decrease in summer monsoon strength 4000-3500 cal yr BP in the central higher Himalaya of India based on pollen evidence from alpine peat, *Quaternary Research* **53**,122-129 (2000).[26]
- Roberts, N., J.M. Reed, M.J. Leng, C. Kuzuçuoğlu, M. Fontugne, J. Bertaux, H. Woldring, S. Bottema, S. Black, E. Hunt, M. Karabiyikoğlu, The tempo of Holocene climatic change in the eastern Mediterranean region: new high resolution crater-lake sediment data from central Turkey, *The Holocene* **11.6**: 721-736 (2001) [10]
- Sadori, L. and B. Narcisi, The post-glacial record of environmental history from Lago di Pergusqa, Sicily, *The Holocene* **11.6**, 655-672 (2001). [1]
- Sarkar, A., R. Ramesh, S. K. Bhattacharya, and N. B. Price, Palaeomonsoon and palaeoproductivity records of $\delta O-18$, $\delta C-13$ and $CaCO_3$ variations in the northern Indian Ocean sediments, *Proceedings of the Indian Academy of Sciences-Earth and Planetary Sciences*, **109**,157-169 (2000). [24]
- Sarkar, A., et al., High resolution Holocene monsoon record from the eastern Arabian Sea, *Earth and Planetary Science Letters*, **177**, 209-218 (2000). [24]
- Schmidt, R., J. Muller, Ruth Drescher-Schneider, R. Krisai, K. Szeroczynska, A. Baric, Changes in lake level and trophy at Lake Vrana, a large karstic lake on the Island of Cres (Croatia), with respect to palaeoclimate and anthropogenic impacts during the last approx. 16,000 years *Journal of Limnology* **59.2**, 113-130 (2000). [4]
- Servant, M. and S. Servant-Vildary 1980 L'environnement quaternaire du bassin du Tchad, in M.A.J. Williams, H. Faure, eds., *The Sahara and the Nile*. Rotterdam, Balkema. Pp.133-162 (1980). [32]
- Shishlina, N., and C. Kremenetzki, Bronze Age of Kalnykia. Paper presented at First European Archaeology Association Meeting, Santiago de Compostella, Spain.[35]
- Singh, A. D., Late Quaternary oceanographic changes in the eastern Arabian Sea: Evidence from planktic foraminifera and pteropods, *Journal of the Geological Society of India* **52**, 203-212 (1998). [24]
- Stanley, J-D., M.D. Krom, R.A. Cliff, J.C.Woodward, Nile Flow Failure at the end of the Old Kingdom, Egypt: Strontium Isotopic and Petrologic Evidence, *Geoarchaeology* **18.3**, 395-402 (2003). [40]
- Stevens, L.R., H.E. Wright, Jr., E. Ito Proposed changes in seasonality of climate during the Lateglacial and Holocene at Lake Zeribar, Iran, *The Holocene* **11.6**: 747-756 (2001). [20]

Street-Perrot, F.-A., Ivanovich, D. Kroon, R.A. Perrott, Drought and dust deposition in the West African Sahel: A 5500-year record from Kajemarum Oasis, northeastern Nigeria, *Holocene* **10**, 293-302 (2000). [31]

Staubwasser, M., Sirocko, P. M. Grootes, and M. Segl, Climate change at the 4.2 ka BP termination of the Indus valley civilization and Holocene south Asian monsoon variability, *Geophysical Research Letters* **30.8**, 425-1429, 2003 [16]

Thompson, L.G., E.Mosley-Thompson, M.E. Davis, K.A. Henderson, H. H. Brecher, V.S. Zagorodnov, T. A. Mashiotta, P.-N. Lin, V.N. Mikhalenko, D.R. Hardy, J. Beer, Kilimanjaro Ice Core Records: Evidence of Holocene Climate Change in Tropical Africa, *Science* **298**, 589-593. [30]

von Rad, U., et al., Multiple monsoon-controlled breakdown of oxygen-minimum conditions during the past 30,000 years documented in laminated sediments off Pakistan, *Palaeogeography Palaeoclimatology Palaeoecology* **152**, 129-161 (2000). [24]

von Rad, U., et al. A 5000-yr record of climate change in varved sediments from the oxygen minimum zone off Pakistan, northeastern Arabian sea, *Quaternary Research*, **51**, 39-53 (1999). [24]

von Rad, U. and M. Tahir, Late Quaternary sedimentation on the outer Indus shelf and slope (Pakistan): Evidence from high-resolution seismic data and coring, *Marine Geology*, **138**, 193-236 (1997). [24]

Wick, L., G. Lemcke and M. Sturm, Evidence of late Glacial and Holocene climatic change and human impact in eastern Anatolia: high resolution pollen, charcoal, isotopic, and geochemical records from the laminated sediments of Lake Van, Turkey, *The Holocene* 2003 in press. [8]

Willis, K. 1992 a The Late Quaternary Vegetational History of Northwest Greece, I: Lake Gramousti, *New Phytologist*, **121**, 101-117 [3]

Willis, K.J., 1992 The Late Quaternary Vegetational History of Northwest Greece, II: Rezina Marsh, *New Phytologist*, **121**, 119-138. [4]

Woldring, H., S. Bottema, B. Aytuğ, Late Quaternary Vegetation History of Abant, H. Demiriz and H. Ozhatay, eds., OPTIMA, Proc. Fifth Meeting at Istanbul, Istanbul, pp. 467-471 (1997). [11]

Yasuda, Y., H. Kitagawa, T. Nakagawa, The earliest record of major anthropogenic deforestation in the Ghab Valley, northwest Syria: a palynological study, *Quaternary International* **73/74**, 127-136 (2000). [18]

Zannger, E., M.E.Timpson, S.B.Yazvenko, F.Kuhnke, J.Knauss, The Pylos regional archaeological project, part II: landscape evolution and site preservation. *Hesperia* **66.4**, 549-641 (1997). [6]

Zernickaja, V.P., The paleogeography of Belorussian Polesie in the late glacial period and in the Holocene (Paleogeografia białoruskiego Polesia w późnym glacja i holocenie), *Przegląd-Geograficzny* **68**, 137-149 (1996). [34]