

## **An uncertainty-focused database approach to extract spatiotemporal trends from qualitative and discontinuous lake-status histories – Supplementary Material**

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### **References for Table 1**

1. Thomas, D.S.G., Bailey, R., Shaw, P.A., Durcan, J.A., Singarayer, J.S., 2009. Late Quaternary highstands at Lake Chilwa, Malawi: Frequency, timing and possible forcing mechanisms in the last 44 ka. *Quat. Sci. Rev.* 28, 526-539.
2. Owen, R.B., Crossley, R., 1990. Recent sedimentation in lakes Chilwa and Chiuta, Malawi. *Palaeoecol. Afr.* 20, 109-117.
3. Gasse, F., Cortijo, E., Disnar, J. R., Ferry, L., Gibert, E., Kissel, C., Laggoun-Défarge, F., Lallier-Vergès, E., Miskovsky, J. C., Ratsimbazafy, B., Ranaivo, F., Tucholka, P., Saos, J. L., Siffedine, A., Taieb, M., Van Campo, E., and Williamson, D., 1994. A 36 kyr environmental record in the southern tropics: Lake Tritrivakely. *Comptes Rendus de l'Académie des Sciences (Paris) Série 2* 318, 1513-1519.
4. Williamson, D., Jelinowska, A., Kissel, C., Tucholka, P., Gibert, E., Gasse, F., Massault, M., Taieb, M., Van Campo, E., and Wieckowski, K., 1998. Rock magnetic proxies of erosion/oxidation cycles in Late Quaternary maar lake sediments (Lake Tritrivakely Madagascar): paleoenvironmental implications. *Earth Planet. Sci. Lett.* 155, 205-219.
5. Gasse, F., Van Campo, E., 1998. A 40,000-yr pollen and diatom record from Lake Tritrivakely, Madagascar, in the southern tropics. *Quat. Res.*, 49(3), 299-311.
6. Gasse, F., Van Campo, E., 2001. Late Quaternary environmental changes from a pollen and diatom record in the southern tropics (Lake Tritrivakely, Madagascar). *Palaeogeogr., Palaeoclimatol., Palaeoecol.* 167(3), 287-308.
7. Siteo, S.R., Risberg, J., Norström, E., Westerberg, L.O., 2017. Late Holocene sea-level changes and paleoclimate recorded in Lake Lungué, southern Mozambique. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 485, 305-315.
8. Stager, J.C., 1988. Environmental Changes at Lake Cheshi, Zambia since 40,000 Years B.P. *Quat. Res.* 29, 54-65.
10. Livingstone, D.A., 1971. A 22 000-year pollen record from the plateau of Zambia. *Limnol. Oceanogr.* 16, 349-356.
11. Haberyan, K.A., 2018. A 22,000 yr diatom record from the plateau of Zambia. *Quat. Res.* 89, 33-42.
12. Holmgren, K., Risberg, J., Freudendahl, J., Achimo, M., Ekblom, A., Mugabe, J., Norström, E., Siteo, S.R., 2012. Water-level variations in Lake Nhauhache, Mozambique, during the last 2,300 years. *J. Paleolimnol.* 48, 311-322.
13. Ekblom, A., Gillson, L., Risberg, J., Holmgren, K., Chidoub, Z., 2012. Rainfall variability and vegetation dynamics of the lower Limpopo Valley, Southern Africa, 500 AD to present. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 363-364, 69-78.

14. Gillson, L., Ekblom, A., 2009. Untangling anthropogenic and climatic influence on riverine forest in the Kruger National Park, South Africa. *Veg. Hist. Archaeobot.* 18, 171-185.
15. Neumann, F.H., Stager, J.C., Scott, L., Venter, H.J.T., Weyhenmeyer, C., 2008. Holocene vegetation and climate records from Lake Sibaya, KwaZulu-Natal (South Africa). *Rev. Palaeobot. Palynol.* 152, 113-128.
16. Stager, J.C., Ryves, D.B., King, C., Madson, J., Hazzard, M., Neumann, F.H., Maud, R., 2013. Late Holocene precipitation variability in the summer rainfall region of South Africa. *Quat. Sci. Rev.* 67, 105-120.
17. Kirsten, K.L., Meadows, M.E., 2016. Late-Holocene palaeolimnological and climate dynamics at Princessvlei, South Africa: Evidence from diatoms. *Holocene* 26, 1371-1381.
18. Neumann, F.H., Scott, L., Bamford, M.K., 2011. Climate change and human disturbance of Fynbos vegetation during the late Holocene at Princess Vlei, Western Cape, South Africa. *Holocene* 21, 1137-1149.
19. Norström, E., Öberg, H., Siteo, S.R., Ekblom, A., Westerberg, L.-O., Risberg, J., 2018. Vegetation dynamics within the savanna biome in southern Mozambique during the late Holocene. *Holocene* 28, 277-292.
20. Norström, E., Norén, G., Smittenberg, R.H., Massuanganhe, E.A., Ekblom, A., 2018b. Leaf wax  $\delta D$  inferring variable medieval hydroclimate and early initiation of Little Ice Age (LIA) dryness in southern Mozambique. *Glob. Planet. Change* 170, 221-233.
21. Ekblom, A., Stabell, B., 2008. Paleohydrology of Lake Nhaucati (southern Mozambique), 400 AD to present. *J. Paleolimnol.* 40, 1127-1141.
22. Kirsten, K.L., Kasper, T., Cawthra, H.C., Strobel, P., Quick, L.J., Meadows, M.E., Haberzettl, T., 2020. Holocene variability in climate and oceanic conditions in the winter rainfall zone of South Africa—Inferred from a high resolution diatom record from Verlorenvlei. *J. Quat. Sci.* 1-10.
23. Richardson, J. L., Richardson, A. E., 1972. History of an African Rift Lake and Its Climatic Implications. *Ecol. Monogr.* 42, 499-534.
24. Richardson, J. L., Dussinger, R. A., 1986. Paleolimnology of mid-elevation lakes in the Kenya Rift Valley. *Hydrobiologia* 143, 167-174 (1986).
25. Verschuren, D., Laird, K. R., Cumming, B. F., 2000. Rainfall and drought in equatorial east Africa during the past 1,100 years. *Nature* 403, 410-414.
26. Verschuren, D., 2001. Reconstructing fluctuations of a shallow East African lake during the past 1800 yrs from sediment stratigraphy in a submerged crater basin. *J. Paleolimnol.* 25, 297-311.
27. Van der Meeren, T., Ito, E., Laird, K.R., Cumming, B.F., Verschuren, D., 2019. Ecohydrological evolution of Lake Naivasha (central Rift Valley, Kenya) during the past 1650 years, as recorded by ostracod assemblages and stable-isotope geochemistry. *Quat. Sci. Rev.* 223, 105906.
28. Washbourn-Kamau, C. K., 1975. Late Quaternary Shorelines of Lake Naivasha, Kenya. *Azania Archaeol. Res. Africa* 10, 77-92.

29. Bergner, A. G. N., Trauth, M. H., Bookhagen, B. 2003. Paleoprecipitation estimates for the Lake Naivasha basin (Kenya) during the last 175 k.y. using a lake-balance model. *Glob. Planet. Change* 36, 117-136.
30. Bergner, A.G.N., Trauth, M.H., 2004. Comparison of the hydrological and hydrochemical evolution of Lake Naivasha (Kenya) during three highstands between 175 and 60 kyr BP. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 215, 17-36.
31. Marshall, M.H., Lamb, H.F., Davies, S.J., Leng, M.J., Kubsza, Z., Umer, M., Bryant, C., 2009. Climatic change in northern Ethiopia during the past 17,000 years: A diatom and stable isotope record from Lake Ashenge. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 279, 114-127.
32. Stuiver, M., Deevey, E.S., Gralenski, L.J., 1960. *Yale natural radiocarbon measurements V 2*, 49-61.
33. Stager, J.C., Westwood, J., Grzesik, D., Cumming, B.F., 2005. A 5500-year environmental history of Lake Nabugabo, Uganda. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 218, 347-354.
34. Bessems, I., Verschuren, D., Russell, J.M., Hus, J., Mees, F., Cumming, B.F., 2008. Palaeolimnological evidence for widespread late 18th century drought across equatorial East Africa. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 259, 107-120.
35. Muzuka, A.N.N., Ryner, M., Holmgren, K., 2004. 12,000-Year, preliminary results of the stable nitrogen and carbon isotope record from the Empakai Crater lake sediments, Northern Tanzania. *J. African Earth Sci.* 40, 293-303.
36. Ryner, M., Gasse, F., Rumes, B., Verschuren, D., 2007. Climatic and hydrological instability in semi-arid equatorial East Africa during the late Glacial to Holocene transition: A multi-proxy reconstruction of aquatic ecosystem response in northern Tanzania. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 248, 440-458.
37. Ryner, M., Holmgren, K., Taylor, D., 2008. A record of vegetation dynamics and lake level changes from Lake Emakat, northern Tanzania, during the last c. 1200 years. *J. Paleolimnol.* 40, 583-601.
38. Stager, J.C. 1984. The diatom record of Lake Victoria (East Africa): The last 17,000 years. In: Mann (ed.) *Proceedings of the Seventh International Diatom Symposium*, Philadelphia, Strauss & Cramer, pp. 455-476
39. Stager, J.C., Cumming, B.F., Meeker, L.D., 2003. A 10,000-year high-resolution diatom record from Pilkington Bay, Lake Victoria, East Africa. *Quat. Res.* 59, 172-181.
40. Stager, J.C., Mayewski, P.A., Meeker, L.D., 2002. Cooling cycles, Heinrich event 1, and the desiccation of Lake Victoria. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 183, 169-178.
41. Stager, J.C., Cumming, B., Meeker, L., 1997. A High-Resolution 11,400-Yr Diatom Record from Lake Victoria, East Africa. *Quat. Res.* 47, 81-89.
42. Stager, J.C., Ryves, D., Cumming, B.F., David Meeker, L., Beer, J., 2005b. Solar variability and the levels of Lake Victoria, East Africa, during the last millenium. *J. Paleolimnol.* 33, 243-251.
43. Stager, J.C., Reinthal, P.N., Livingstone, D.A., 1986. A 25,000?year history for Lake Victoria, East Africa, and some comments on its significance for the evolution of cichlid fishes. *Freshw. Biol.* 16, 15-19.

44. Beuning, K.R.M., Kelts, K., Russell, J., Wolfe, B.B., 2002. Reassessment of Lake Victoria-Upper Nile River paleohydrology from oxygen isotope records of lake-sediment cellulose. *Geology* 30, 559-562.
45. Johnson, O., Scholz, C.A., Talbot, M.R., Kelts, K., Ricketts, R.D, Ngobi, G., Beuning, K., Ssemmanda, I., McGill, J.W. 1996. Late Pleistocene Desiccation of Lake Victoria and Rapid Evolution of Cichlid Fishes. *Science* 273, 1091-3.
46. Johnson, T.C., Chan, Y., Beuning, K.R.M., Kelts, K., Ngobi, G., Verschuren, D. 1998. Biogenic silica profiles in Holocene cores from Lake Victoria: implications for lake level history and initiation of the Victoria Nile. In: Lehman (ed.) *Environmental change and response in East African lakes*. Kluwer, Dordrecht, pp. 75-89.
47. Johnson, T.C., Kelts, K., Odada, E., 2000. The Holocene History of Lake Victoria 29, 2-11.
48. Kendall, R.L., 1969. An Ecological History of the Lake Victoria Basin. *Ecol. Monogr.* 39, 121-176.
49. Sene, K.J., Plinston, D.T. 1994. A review and update of the hydrology of Lake Victoria in East Africa. *Hydrol. Sci. J.* 39, 47-63.
50. Truckle, P.H., 1976. Geology and late Cainozoic lake sediments of the Suguta Trough, Kenya. *Nature* 263, 380-383.
51. Garcin, Y., Junginger, A., Melnick, D., Olago, D.O., Strecker, M.R., Trauth, M.H., 2009. Late Pleistocene-Holocene rise and collapse of Lake Suguta, northern Kenya Rift. *Quat. Sci. Rev.* 28, 911-925.
52. Junginger, A., Roller, S., Olaka, L.A., Trauth, M.H., 2014. The effects of solar irradiation changes on the migration of the Congo Air Boundary and water levels of paleo-Lake Suguta, Northern Kenya Rift, during the African Humid Period (15-5ka BP). *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 396, 1-16.
53. Payne, B.R., 1970. Water balance of Lake Chala and its relation to groundwater from tritium and stable isotope data. *J. Hydrol.* 11, 47-58.
54. Verschuren, D., Sinninghe Damsté, J.S., Moernaut, J., Kristen, I., Blaauw, M., Fagot, M., Haug, G.H., 2009. Half-precessional dynamics of monsoon rainfall near the East African Equator. *Nature* 462, 637-641.
55. Moernaut, J., Verschuren, D., Charlet, F., Kristen, I., Fagot, M., De Batist, M., 2010. The seismic-stratigraphic record of lake-level fluctuations in Lake Challa: Hydrological stability and change in equatorial East Africa over the last 140 kyr. *Earth Planet. Sci. Lett.* 290, 214-223.
56. Wolff, C., Haug, G.H., Timmermann, A., Damste, J.S.S., Brauer, A., Sigman, D.M., Cane, M.A., Verschuren, D., 2011. Reduced Interannual Rainfall Variability in East Africa During the Last Ice Age. *Science* 333, 743-747.
57. Blaauw, M., van Geel, B., Kristen, I., Plessen, B., Lyaruu, A., Engstrom, D.R., van der Plicht, J., Verschuren, D., 2011. High-resolution <sup>14</sup>C dating of a 25,000-year lake-sediment record from equatorial East Africa. *Quat. Sci. Rev.* 30, 3043-3059.
58. Washbourn-Kamau, C.K., 1971. Late Quaternary lakes in the Nakuru-Elmenteita Basin, Kenya. *Geogr. J.* 137, 522-535.

59. Butzer, K.W., Isaac, G.L., Richardson, J.L., Washbourn-Kamau, C.K., 1972. Radiocarbon dating of East African lake levels. *Science* 175, 1069-1076.
60. Vareschi, E., 1982. The ecology of Lake Nakuru (Kenya) - III. Abiotic factors and primary production. *Oecologia* 55, 81-101.
61. Cohen, A.S., Dussinger, R., Richardson, J., 1983. Lacustrine paleochemical interpretations based on Eastern and Southern african ostracodes. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 43, 129-151.
62. Dühnforth, M., Bergner, A.G.N., Trauth, M.H., 2006. Early Holocene water budget of the Nakuru-Elementeita basin, Central Kenya Rift. *J. Paleolimnol.* 36, 281-294.
63. De Cort, G., Bessems, I., Keppens, E., Mees, F., Cumming, B., Verschuren, D., 2013. Late-Holocene and recent hydroclimatic variability in the central Kenya Rift Valley: The sediment record of hypersaline lakes Bogoria, Nakuru and Elementeita. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 388, 69-80.
64. Russell, J.M., Verschuren, D., Eggermont, H., 2007. Spatial complexity of \Little Ice Age\ climate in East Africa: sedimentary records from two crater lake basins in western Uganda. *Holocene* 17, 183-193.
65. Lamb, H.F., Leng, M.J., Telford, R.J., Ayenew, T., Umer, M., 2007. Oxygen and carbon isotope composition of authigenic carbonate from an Ethiopian lake: a climate record of the last 2000 years. *Holocene* 17, 517-526.
66. Ghinassi, M., D'Oriano, F., Benvenuti, M., Awramik, S., Bartolini, C., Fedi, M., Ferrari, G., Papini, M., Saggi, M., Talbot, M., 2012. Shoreline fluctuations of Lake Hayk (northern Ethiopia) during the last 3500 years: Geomorphological, sedimentary, and isotope records. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 365-366, 209-226.
67. Ghinassi, M., D'oriano, F., Benvenuti, M., Fedi, M., Awramik, S., 2015. Lacustrine Facies In Response To Millennial-Century-Scale Climate Changes (Lake Hayk, Northern Ethiopia). *J. Sediment. Res.* 85, 381-398.
68. Ssemmanda, I., Ryves, D.B., Bennike, O., Appleby, P.G., 2005. Vegetation history in western Uganda during the last 1200 years: a sediment-based reconstruction from two crater lakes. *Holocene* 15, 119-132.
69. Bessems, I., 2007. Late-Holocene climate reconstruction in equatorial East Africa: sedimentology and stable-isotope geochemistry of lake deposits. Unpubl. PhD thesis. Ghent University.
70. Ryves, D.B., Mills, K., Bennike, O., Brodersen, K.P., Lamb, A.L., Leng, M.J., Russell, J.M., Ssemmanda, I., 2011. Environmental change over the last millennium recorded in two contrasting crater lakes in western Uganda, eastern Africa (Lakes Kasenda and Wandakara). *Quat. Sci. Rev.* 30, 555-569.
71. Mills, K., Ryves, D.B., 2012. Diatom-based models for inferring past water chemistry in western Ugandan crater lakes. *J. Paleolimnol.* 48, 383-399.
72. Mills, K., Ryves, D.B., Anderson, N.J., Bryant, C.L., Tyler, J.J., 2014. Expressions of climate perturbations in western ugandan crater lake sediment records during the last 1000 years. *Clim. Past* 10, 1581-1601.
73. Lamb, H.F., Bates, C.R., Coombes, P. V., Marshall, M.H., Umer, M., Davies, S.J., Dejen, E., 2007b. Late Pleistocene desiccation of Lake Tana, source of the Blue Nile. *Quat. Sci. Rev.* 26, 287-299.

74. Marshall, M.H., Lamb, H.F., Huws, D., Davies, S.J., Bates, R., Bloemendal, J., Boyle, J., Leng, M.J., Umer, M., Bryant, C., 2011. Late Pleistocene and Holocene drought events at Lake Tana, the source of the Blue Nile. *Glob. Planet. Change* 78, 147-161.
75. Costa, K., Russell, J., Konecky, B., Lamb, H., 2014. Isotopic reconstruction of the African Humid Period and Congo Air Boundary migration at Lake Tana, Ethiopia. *Quat. Sci. Rev.* 83, 58-67.
76. Gasse, F., 1977. Evolution of Lake Abhé (Ethiopia and TFAI), from 70,000 b.p. *Nature* 265, 42-45.
77. Gasse, F., Street, F.A., 1978. Late Quaternary lake-level fluctuations and environments of the northern Rift Valley and Afar Region (Ethiopia and Djibouti). *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 24, 279-325.
78. Gillespie, R., Street-Perrott, F.A., Switsur, R., 1983. Post-glacial arid episodes in Ethiopia have implications for climate prediction. *Nature* 306, 680-683.
79. Chalié, F. and Gasse, F., 2002. Late Glacial-Holocene diatom record of water chemistry and lake level change from the tropical East African Rift Lake Abiyata (Ethiopia), *Palaeogeogr. Palaeoclimatol. Palaeoecol.*, 187(3-4), 259-283.
80. Legesse, D., Gasse, F., Radakovitch, O., Vallet-Coulomb, C., Bonnefille, R., Verschuren, D., Gibert, E., Barker, P., 2002. Environmental changes in a tropical lake (Lake Abiyata, Ethiopia) during recent centuries. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 187, 233-258.
81. Öberg, H., Andersen, T.J., Westerberg, L.-O., Risberg, J., Holmgren, K., 2012. A diatom record of recent environmental change in Lake Duluti, northern Tanzania. *J. Paleolimnol.* 48, 401-416.
82. Öberg, H., Norström, E., Malmström Ryner, M., Holmgren, K., Westerberg, L.-O., Risberg, J., Eddudóttir, S.D., Andersen, T.J., Muzuka, A., 2013. Environmental variability in northern Tanzania from AD 1000 to 1800, as inferred from diatoms and pollen in Lake Duluti. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 374, 230-241.
83. Telford, R.J., Lamb, H.F., 1999. Groundwater-Mediated Response to Holocene Climatic Change Recorded by the Diatom Stratigraphy of an Ethiopian Crater Lake. *Quat. Res.* 52, 63-75.
84. Lamb, A.L., Leng, M.J., Lamb, H.F., Mohammed, M.U., 2000. A 9000-year oxygen and carbon isotope record of hydrological change in a small Ethiopian crater lake. *Holocene* 10, 167-177.
85. Lamb, A.L., Leng, M.J., Mohammed, M.U., Lamb, H.F., 2004. Holocene climate and vegetation change in the Main Ethiopian Rift Valley, inferred from the composition (C/N and  $\delta^{13}C$ ) of lacustrine organic matter. *Quat. Sci. Rev.* 23, 881-891.
86. Lamb, A.L., Leng, M.J., Sloane, H.J., Telford, R.J., 2005. A comparison of the palaeoclimate signals from diatom oxygen isotope ratios and carbonate oxygen isotope ratios from a low latitude crater lake. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 223, 290-302.
87. Damnati, B., Taieb, M., 1996. L'évolution hydrologique du lac Sonachi (Kenya), à l'Holocène (7400-0 ans BP). *C.R. Acad. Sci. Paris*, t. 322, série II a, 141-148.
88. Verschuren, D., 1999. Influence of depth and mixing regime on sedimentation in a small, fluctuating tropical soda lake. *Limnol. Oceanogr.* 44(4), 1103-1113.

89. Verschuren, D., Cocquyt, C., Tibby, J., Roberts, C.N., Leavitt, P.R., 1999. Long-term dynamics of algal and invertebrate communities in a small, fluctuating tropical soda lake. *Limnol. Oceanogr.* 44(5), 1216-1231.
90. Hecky, R.E., Degens, E.T., 1973. Late Pleistocene-Holocene chemical stratigraphy and paleolimnology of the rift valley lakes of Central Africa. Woods Hole Oceanogr. Inst., WHOI-73-28, unpublished manuscript.
91. Harvey, T.J., 1976. The Paleolimnology of Lake Mobutu Sese Seko, Uganda-Zaire : the Last 28,000 Years. Ph.D. thesis, Duke University, Durham, North Carolina, 113 pp.
92. Stoffers, P., A. Singer, 1979. Clay minerals in Lake Mobutu Sese Seko (Lake Albert) - their diagenetic changes as an indicator of the paleoclimate. *Geologische Rundschau* 68: 1009-1024.
93. Beuning, K.R.M., Talbot, M.R., Kelts, K., 1997. A revised 30,000-year paleoclimatic and paleohydrologic history of Lake Albert, East Africa. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 136, 259-279.
94. Lehman, J.T., 1998. Environmental change and response in East African lakes. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 236.
95. Velpuri, N.M., Senay, G.B., Asante, K.O., 2012. A multi-source satellite data approach for modelling Lake Turkana water level: Calibration and validation using satellite altimetry data. *Hydrol. Earth Syst. Sci.* 16, 1-18.
96. Owen, R.B., Barthelme, J.W., Renaut, R.W., Vincens, A., 1982. Palaeolimnology and archaeology of Holocene deposits north-east of Lake Turkana, Kenya. *Nature* 298, 523-529.
97. Bloszies, C., Forman, S.L., Wright, D.K., 2015. Water level history for Lake Turkana, Kenya in the past 15,000 years and a variable transition from the African Humid Period to Holocene aridity. *Glob. Planet. Change* 132, 64-76.
98. Morrissey, A., Scholz, C.A., 2014. Paleohydrology of Lake Turkana and its influence on the Nile River system. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 403, 88-100.
99. Garcin, Y., Melnick, D., Strecker, M.R., Olago, D., Tiercelin, J.J., 2012. East African mid-Holocene wet-dry transition recorded in palaeo-shorelines of Lake Turkana, northern Kenya Rift. *Earth Planet. Sci. Lett.* 331-332, 322-334.
100. Forman, S.L., Wright, D.K., Bloszies, C., 2014. Variations in water level for Lake Turkana in the past 8500 years near Mt. Porr, Kenya and the transition from the African Humid Period to Holocene aridity. *Quat. Sci. Rev.* 97, 84-101.
101. Robbins, L.H., 1972. Archeology in the Turkana District, Kenya. *Science.* 176, 359-366.
103. Brown, F.H., Fuller, C.R., 2008. Stratigraphy and tephra of the Kibish Formation, southwestern Ethiopia. *J. Hum. Evol.* 55, 366-403.
104. Phillipson, D.W., 1977. The later prehistory of Eastern and Southern Africa. Heinemann, London.
105. Nicholson, S.E., 1998. Historical fluctuations of Lake Victoria and other lakes in the northern Rift Valley of East Africa. In: Lehman, J. (Ed.), *Environmental Change and Response in East African Lakes*. Kluwer Academic Publishers, pp. 7-35.

106. Halfman, J.D., Johnson, T.C., 1988. High-resolution record of cyclic climatic change during the past 4 ka from Lake Turkana, Kenya. *Geology* 16, 496.
107. Halfman, J., Jacobson, D., Cannella, C., Haberyan, K., Finney, B., 1992. Fossil diatoms and the mid to late holocene paleolimnology of Lake Turkana, Kenya: a reconnaissance study. *J. Paleolimnol.* 7, 23-35.
108. Halfman, J.D., Johnson, T.C., Finney, B.P., 1994. New AMS dates, stratigraphic correlations and decadal climatic cycles for the past 4 ka at Lake Turkana, Kenya. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 111, 83-98.
109. Johnson, T.C., Halfman, J.D., Showers, W.J., 1991. Paleoclimate of the past 4000 years at Lake Turkana, Kenya, based on the isotopic composition of authigenic calcite. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 85, 189-198.
110. Ricketts, R.D., Johnson, T.C., 1996. Climate change in the Turkana basin as deduced from a 4000 year long  $\delta^{18}O$  record. *Earth Planet. Sci. Lett.* 142, 7-17.
111. Mohammed, M.U., Bonnefille, R., Johnson, T.C., 1996. Pollen and isotopic records in Late Holocene sediments from Lake Turkana, Kenya. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 119, 371-383.
112. Bloszies, C., Forman, S.L., 2015. Potential relation between equatorial sea surface temperatures and historic water level variability for Lake Turkana, Kenya. *J. Hydrol.* 520, 489-501.
113. Butzer, K.W., 1971. Recent history of an Ethiopian delta: the Omo River and the level of Lake Rudolf. University of Chicago, Dept. of Geography, Chicago.
114. Avery, S., 2010. Hydrological impacts of Ethiopia's Omo Basin on Kenya's Lake Turkana water levels and fisheries. African Development Bank, Tunis.
115. Hillaire-Marcel, C., Carro, O., Casanova, J., 1986.  $^{14}C$  and  $^{13}C$  dating of Pleistocene and Holocene stromatolites from East African paleolakes. *Quat. Res.* 25, 312-329.
116. Hillaire-Marcel, C., Casanova, J., 1987. Isotopic hydrology and paleohydrology of the Madagi (Kenya)-Natron (Tanzania) basin during the late quaternary. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 58, 155-181.
117. Barker, P., Gasse, F., Roberts, N., Taieb, M., 1991. Taphonomy and diagenesis in diatom assemblages; a Late Pleistocene palaeoecological study from Lake Magadi, Kenya. *Hydrobiologia* 214, 267-272.
118. Taieb, M., Barker, P., Bonnefille, R., Damnati, B., Gasse, F., Goetz, C., Hillaire-Marcel, C., Icole, M., Massault, M., Roberts, N., Vincens, A., Williamson, D., 1991. Histoire paleohydrologique du lac Magadi (Kenya) au Pleistocene superieur. *C.R. Acad. Sc. Paris.*
119. Roberts, N., Taieb, M., Barker, P., Damnati, B., Icole, M., Williamson, D., 1993. Timing of the Younger Dryas event in East Africa from lake level changes. *Nature* 366, 146-148.
120. Williamson, D., Taieb, M., Damnati, B., Icole, M., Thouveny, N., 1993. Equatorial extension of the younger Dryas event: rock magnetic evidence from Lake Magadi (Kenya). *Glob. Planet. Change* 7, 235-242.



121. Damnati, B., Taieb, M., 1995. Solar and ENSO signatures in laminated deposits from lake Magadi (Kenya) during the Pleistocene/Holocene transition. *J. African Earth Sci.* 21, 373-382.
122. Hughes, L., 2008. Mining the Maasai Reserve: The Story of Magadi. *J. East. African Stud.* 2, 134-164.
123. Bishop, W.W., 1969. Pleistocene stratigraphy of Uganda. *Geol. Surv. Uganda Mem.* X, 1-115.
124. Brooks, A.S., Smith, C.C., 1987. Ishango revisited: new age determinations and cultural interpretations. *Afr. Archaeol. Rev.*, 5, 65-78.
125. Musisi, J.H., 1991. The Neogene-Quaternary geology of the Lake-George-Edward Basin. Unpublished PhD thesis, Vrije Universiteit Brussel, Belgium.
126. de Heinzelin, J., Verniers, J., 1996. Realm of the upper Semliki (eastern Zaire): an essay on historical geology. *Ann. Kon. Mus. Midd.-Afr.* 102, 3-83.
127. Laerdal, T., Talbot, M.R., Russell, J.M., 2002. Late Quaternary sedimentation and climate in the lakes Edward and George area, Uganda-Congo. In: Odada, E.O., Olago, D.O. (eds.), *The East African Great Lakes: limnology, palaeolimnology, biodiversity*. Kluwer Academic, Dordrecht, pp. 429-470.
128. Russell, J.M., Johnson, T.C., Kelts, K.R., Lærdal, T., Talbot, M.R., 2003. An 11 000-year lithostratigraphic and paleohydrologic record from Equatorial Africa: Lake Edward, Uganda-Congo. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 193, 25-49.
129. Russell, J.M., Johnson, T.C., 2005. A high-resolution geochemical record from Lake Edward, Uganda Congo and the timing and causes of tropical African drought during the late Holocene. *Quat. Sci. Rev.* 24, 1375-1389.
130. Russell, J.M., Johnson, T.C., 2007. Little ice age drought in equatorial Africa: Intertropical convergence zone migrations and El Niño-Southern oscillation variability. *Geology* 35, 21-24.
131. Williams, M.A.J., Bishop, P.M., Dakin, F.M., Gillespie, R., 1977. Late Quaternary lake levels in southern Afar and the adjacent Ethiopian Rift. *Nature* 267, 690-693.
132. Williams, M.A.J., Williams, F.M., Bishop, P.M., 1981. Late Quaternary history of Lake Besaka, Ethiopia. *Paleoecol. Afr.* 13, 93-104.
133. Ashley, G.M., Mworio, J.M., Muasya, A.M., Owen, R.B., Driese, S.G., Hover, V.C., Renaut, R.W., Goman, M.F., Mathai, S., Blatt, S.H., 2004. Sedimentation and recent history of a freshwater wetland in a semi-arid environment: Loboï Swamp, Kenya, East Africa. *Sedimentology* 51, 1301-1321.
134. Driese, S.G., Ashley, G.M., Li, Z.H., Hover, V.C., Owen, R.B., 2004. Possible late Holocene equatorial palaeoclimate record based upon soils spanning the Medieval Warm Period and Little Ice Age, Loboï Plain, Kenya. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 213, 231-250.
135. Clark, J.D., Haynes, C.V., Mawby, J.E., Gautier, A., 1970. Interim report on palaeoanthropological investigations in the Malawi Rift. *Quaternaria* 13, 305-354.
136. Haberyan, K.A., 1987. Fossil diatoms and the paleolimnology of Lake Rukwa, Tanzania. *Freshw. Biol.* 17, 429-436.
137. Talbot, M.R., Livingstone, D.A., 1989. Hydrogen index and carbon isotopes of lacustrine organic matter as lake level indicators. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 70, 121-137.

138. Delvaux, D., Kervyn, F., Vittori, E., Kajara, R.S.A., Kilembe, E., 1998. Late Quaternary tectonic activity and lake level change in the Rukwa Rift Basin. *J. African Earth Sci.* 26, 397-421.
139. Nicholson, S.E., 1999. Historical and Modern Fluctuations of Lakes Tanganyika and Rukwa and Their Relationship to Rainfall Variability. *Clim. Change* 41, 53-71.
140. Thevenon, F., Williamson, D., Taieb, M., 2002. A 22 kyr BP sedimentological record of Lake Rukwa (8°S, SW Tanzania): Environmental, chronostratigraphic and climatic implications. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 187, 285-294.
141. Barker, P., Telford, R., Gasse, F., Thevenon, F., 2002. Late pleistocene and holocene palaeohydrology of Lake Rukwa, Tanzania, inferred from diatom analysis. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 187, 295-305.
142. Vincens, A., Buchet, G., Williamson, D., Taieb, M., 2005. A 23,000 yr pollen record from Lake Rukwa (8°S, SW Tanzania): New data on vegetation dynamics and climate in Central Eastern Africa. *Rev. Palaeobot. Palynol.* 137, 147-162.
143. Coetzee, J.A., 1964. Evidence for a Considerable Depression of the Vegetation Belts during the Upper Pleistocene on the East African Mountains. *Nature* 204, 564-566.
144. Coetzee, J.A., 1967. Pollen analytical studies in East and Southern Africa. *Palaeoecol. Afr.* 3, 1-146.
145. Huang, Y., Street-Perrott, F.A., Perrott, R.A., Metzger, P., Eglinton, G., 1999. Glacial-interglacial environmental changes inferred from molecular and compound-specific  $\delta^{13}C$  analyses of sediments from Sacred Lake, Mt. Kenya. *Geochim. Cosmochim. Acta* 63, 1383-1404.
146. Olago, D.O., Street-Perrott, F.A., Perrott, R.A., Ivanovich, M., Harkness, D.D., 1999. Late Quaternary glacial-interglacial cycle of climatic and environmental change on Mount Kenya, Kenya. *J. African Earth Sci.* 29, 593-618.
147. Olago, D.O., Street-Perrott, F.A., Perrott, R.A., Ivanovich, M., Harkness, D.D., Odada, E.O., 2000. Long-term temporal characteristics of palaeomonsoon dynamics in equatorial Africa. *Glob. Planet. Change* 26, 159-171.
148. Olago, D., Street-Perrott, F., Perrott, R., Ivanovich, M., Harkness, D., 2001. EU/Th and  $^{14}C$  isotope dating of lake sediments from Sacred Lake and Lake Nkunga, Kenya. *African J. Sci. Technol.* 2, 36-46.
149. Loomis, S.E., Russell, J.M., Ladd, B., Street-Perrott, F.A., Sinninghe Damsté, J.S., 2012. Calibration and application of the branched GDGT temperature proxy on East African lake sediments. *Earth Planet. Sci. Lett.* 357-358, 277-288.
150. Konecky, B., Russell, J., Huang, Y., Vuille, M., Cohen, L., Street-Perrott, F.A., 2014. Impact of monsoons, temperature, and CO<sub>2</sub> on the rainfall and ecosystems of Mt. Kenya during the Common Era. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 396, 17-25.
151. Williams, R.E.G., Johnson, A.S., 1976. Birmingham University Radiocarbon Dates X. *Radiocarbon* 18, 249-267.
152. Tiercelin, J.J., Vincens, A. (eds.), 1987. Le demi-graben de Baringo-Bogoria, Rift Gregory, Kenya: 30,000 ans d'histoire hydrologique et sedimentaire. *Bull. Centres Rech. Explor. Prod. Elf-Aquitaine*, 11, 249-540.

153. Renaut, R.W., Owen, R.B., 2000. Lake Baringo, Kenya Rift Valley, and its Pleistocene Precursors. In: Gierlowski-Kordesch, E.H., Kelts, K.R. (Eds.), *Lake Basins through Space and Time: AAPG Studies in Geology*.
154. Kiage, L.M., Liu, K.B., 2009. Paleoenvironmental changes in the lake Baringo Basin, Kenya, East Africa since AD 1650: Evidence from the paleorecord. *Prof. Geogr.* 61, 438-458.
155. Kiage, L.M., Liu, K.B., 2009b. Palynological evidence of climate change and land degradation in the Lake Baringo area, Kenya, East Africa, since AD 1650. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 279, 60-72.
156. Obando, J.A., Onywere, S., Shisanya, C., Ndubi, A., Masiga, D., Irura, Z., Mariita, N., Maragia, H., 2016. Impact of Short-Term Flooding on Livelihoods in the Kenya Rift Valley Lakes, *Geomorphology and Society, Advances in Geographical and Environmental Sciences*. Springer Japan.
157. Greenwood, P.H., 1976. Lake George, Uganda. *Philos. Trans. R. Soc. B Biol. Sci.* 274, 375-391.
158. Viner, A.B., 1977. The sediments of Lake George (Uganda), IV: Vertical distribution of chemical features in relation to ecological history and nutrient recycling. *Arch. Hydrobiol.* 80, 40-69.
159. Livingstone, D.A., 1965. Sedimentation and the history of water level change in Lake Tanganyika. *Limnol. Oceanogr.* 10, 607-610.
160. Stoffers, P., Hecky, R.E., 1978. Late Pleistocene-Holocene Evolution of the Kivu-Tanganyika Basin. In: Matter, A., Tucker, M.E. (Eds.), *Modern and Ancient Lake Sediments*. Blackwell Publishing Ltd., Oxford, UK, pp. 43-55.
161. Haberyan, K.A., Hecky, R.E., 1987. The late pleistocene and holocene stratigraphy and paleolimnology of Lakes Kiva and Tanganyika. *Paleoecology* 61, 169-197.
162. Gasse, F., Lédée, V., Massault, M., Fontes, J.-C., 1989. Water-level fluctuations of Lake Tanganyika in phase with oceanic changes during the last glaciation and deglaciation. *Nature* 342, 57-59.
163. Casanova, J., Hillaire-Marcel, C., 1992. Late holocene hydrological history of Lake Tanganyika, East Africa, from isotopic data on fossil stromatolites. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 91, 35-48.
164. Cohen, A.S., Talbot, M.R., Awramik, S.M., Dettman, D.L., Abell, P., 1997. Lake level and paleoenvironmental history of Lake Tanganyika, Africa, as inferred from late Holocene and modern stromatolites. *Geol. Soc. Am. Bull.* 109, 444-460.
165. Alin, S.R., Cohen, A.S., 2003. Lake-level history of Lake Tanganyika, East Africa, for the past 2500 years based on ostracode-inferred water-depth reconstruction. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 199, 31-49.
166. Scholz, C., King, J., Ellis, G., Swart, P.K., Stager, J.C., Colman, S.M., 2003. Paleolimnology of Lake Tanganyika, East Africa, over the past 100 kyr. *J. Paleolimnol.* 30, 139-150.
167. Cohen, A.S., Palacios-Fest, M.R., Msaky, E.S., Alin, S.R., McKee, B., O'Reilly, C.M., Dettman, D.L., Nkotagu, H., Lezzar, K.E., 2005. Paleolimnological investigations of anthropogenic environmental change in Lake Tanganyika: IX. Summary of paleorecords of environmental change and catchment deforestation at Lake Tanganyika and impacts on the Lake Tanganyika ecosystem. *J. Paleolimnol.* 34, 125-145.

168. Felton, A.A., Russell, J.M., Cohen, A.S., Baker, M.E., Chesley, J.T., Lezzar, K.E., McGlue, M.M., Pigati, J.S., Quade, J., Curt Stager, J., Tiercelin, J.J., 2007. Paleolimnological evidence for the onset and termination of glacial aridity from Lake Tanganyika, Tropical East Africa. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 252, 405-423.
169. Stager, J.C., Cocquyt, C., Bonnefille, R., Weyhenmeyer, C., Bowerman, N., 2009. A late Holocene paleoclimatic history of Lake Tanganyika, East Africa. *Quat. Res.* 72, 47-56.
170. Tierney, J.E., Russell, J.M., Huang, Y., 2010. A molecular perspective on Late Quaternary climate and vegetation change in the Lake Tanganyika basin, East Africa. *Quat. Sci. Rev.* 29, 787-800.
171. Greenway, P., Vesey-Fitzgerald, D.F., 1969. The vegetation of Lake Manyara National Park. *J. Ecol.* 57, 127-149.
172. Holdship, S.A., 1976. The paleolimnology of Lake Manyara, Tanzania: a diatom analysis of a 56 meter sediment core. MSc thesis, Duke University, Durham, USA.
173. Barker, P., 1992. Differential diatom dissolution in Late Quaternary sediments from Lake Manyara, Tanzania: an experimental approach. *J. Paleolimnol.* 7, 235-251.
174. Casanova, J., Hillaire-Marcel, C., 1992b. Chronology and paleohydrology of late Quaternary high lake levels in the Manyara basin (Tanzania) from isotopic data ( $^{18}\text{O}$ ,  $^{13}\text{C}$ ,  $^{14}\text{C}$ , Th U) on fossil stromatolites. *Quat. Res.* 38, 205-226.
175. Barker, P., Gasse, F., 2003. New evidence for a reduced water balance in East Africa during the Last Glacial Maximum: Implication for model-data comparison. *Quat. Sci. Rev.* 22, 823-837.
176. Williamson, D., Jackson, M.J., Banerjee, S.K., Marvin, J., Merdaci, O., Thouveny, N., Decobert, M., Gibert-Massault, E., Massault, M., Mazaudier, D., Taieb, M., 1999. Magnetic signatures of hydrological change in a tropical maar-lake (Lake Massoko, Tanzania): Preliminary results. *Phys. Chem. Earth, Part A Solid Earth Geod.* 24, 799-803.
177. Barker, P., Telford, R., Merdaci, O., Williamson, D., Taieb, M., Vincens, A., Gibert, E., 2000. The sensitivity of a Tanzanian crater lake to catastrophic tephra input and four millennia of climate change 10, 303-310.
178. Gibert, E., Bergonzini, L., Massault, M., Williamson, D., 2002. AMS- $^{14}\text{C}$  chronology of 40.0 cal ka BP continuous deposits from a crater lake (Lake Massoko, Tanzania) modern water balance and environmental implications. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 187, 307-322.
179. Barker, P., Williamson, D., Gasse, F., Gibert, E., 2003. Climatic and volcanic forcing revealed in a 50,000-year diatom record from Lake Massoko, Tanzania. *Quat. Res.* 60, 368-376.
180. Delalande, M., Bergonzini, L., Beal, F., Garcin, Y., Majule, A., Williamson, D., 2005. Contribution to the detection of Lake Masoko (Tanzania) groundwater outflow: isotopic evidence ( $^{18}\text{O}$ , D). *IAHS Publ.* 50, 867-880.
181. Garcin, Y., Williamson, D., Taieb, M., Vincens, A., Mathé, P.E., Majule, A., 2006. Centennial to millennial changes in maar-lake deposition during the last 45,000 years in tropical Southern Africa (Lake Masoko, Tanzania). *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 239, 334-354.
182. Garcin, Y., Vincens, A., Williamson, D., Guiot, J., Buchet, G., 2006b. Wet phases in tropical southern Africa during the last glacial period. *Geophys. Res. Lett.* 33, 1-4.

183. Garcin, Y., Williamson, D., Bergonzini, L., Radakovitch, O., Vincens, A., Buchet, G., Guiot, J., Brewer, S., Mathé, P.E., Majule, A., 2007. Solar and anthropogenic imprints on Lake Masoko (southern Tanzania) during the last 500 years. *J. Paleolimnol.* 37, 475-490.
184. Garcin, Y., Vincens, A., Williamson, D., Buchet, G., Guiot, J., 2007b. Abrupt resumption of the African Monsoon at the Younger Dryas-Holocene climatic transition. *Quat. Sci. Rev.* 26, 690-704.
185. Young, J.A.T. and Renaut, R.W., 1979. A radiocarbon date from Lake Bogoria, Kenya Rift Valley. *Nature* 278, 243-245.
186. Tiercelin, J.J., Renaut R.W., Delibrias G., LeFournier J., Bieda S., 1981. Late Pleistocene and Holocene lake level fluctuations in the Lake Bogoria basin, northern Kenya rift valley. *Palaeoecol. Afr.* 13, 105-120.
187. Carbonel, P., Grosdidier, E., Peypouquet, J.P., Tiercelin, J.J., 1983. Les Ostracodes, témoins de l'évolution hydrologique d'un lac de Rift. Exemple du lac Bogoria, Rift Gregory, Kenya. *Bull. Centres Rech. Explor. Prod. Elf-Aquitaine* 7(1), 301-13.
188. Vincens, A., Casanova, J., Tiercelin, J.J., 1986. Palaeolimnology of Lake Bogoria (Kenya) during the 4500 BP high lacustrine phase. In: Frostick, L.E., Renaut, R.W., Reid I., Tiercelin, J.J. (eds.), *Sedimentation in the African Rifts*. Geol. Soc. London Spec. Publ., 25, 323-330.
189. Vincens, A., 1986. Diagramme pollinique d'un sondage Pleistocene superieur-Holocene du Lac Bogoria (Kenya). *Rev. Palaeobot. Palynol.* 47, 169-192.
190. Hickley, P., Boar, R.R., Mavuti, K.M., 2003. Bathymetry of Lake Bogoria, Kenya. *J. East African Nat. Hist.* 92, 107-117.
191. Onyando, J.O., Musila, F., Awer, M., 2005. The use of GIS and remote sensing techniques to analyse water balance of Lake Bogoria under limited data conditions. *J. Civ. Eng. Res. Pract.* 2, 53-65.
192. McCall, J., 2010. Lake Bogoria, Kenya: Hot and warm springs, geysers and Holocene stromatolites. *Earth-Science Rev.* 103, 71-79.
193. De Cort, G., Verschuren, D., Ryken, E., Wolff, C., Renaut, R.W., Creutz, M., Van der Meeren, T., Haug, G., Olago, D.O., Mees, F., 2018. Multi-basin depositional framework for moisture-balance reconstruction during the last 1300 years at Lake Bogoria, central Kenya Rift Valley. *Sedimentology* 38, 42-49.
194. Grove, A.T., Street, A.F., Goudie, A.S., 1975. Former Lake Levels and Climatic Change in the Rift Valley of Southern Ethiopia. *Geogr. J.* 141, 177-194.
195. Foerster, V., Junginger, A., Langkamp, O., Gebru, T., Asrat, A., Umer, M., Lamb, H.F., Wennrich, V., Rethemeyer, J., Nowaczyk, N., Trauth, M.H., Schaebitz, F., 2012. Climatic change recorded in the sediments of the Chew Bahir basin, southern Ethiopia, during the last 45,000 years. *Quat. Int.* 274, 25-37.
196. Bannert, O., Brinckmann, J., Kading, K. C., Knetsch, G., Kursten, M., Mayrhofer, H., 1970. Zur Geologie der Danakil Senke. *Geol. Rundsch.*, 59(2): 409-443.
197. Gasse, F., Fontes, J., Rognon, P., 1974. Variations hydrologiques et extension des lacs Holocenes du desert Danakil. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 15, 109-148.

198. Delibrias, G., Guillier, M., Labeyrie, J., 1974. GIF natural radiocarbon measurements VIII 16, 15-94.
199. Bonatti, E., Gasperini, E., Vigliotti, L., Lupi, L., Vaselli, O., 2017. Lake Afrera, a structural depression in the Northern Afar Rift (Red Sea). *Heliyon* 3.
200. Wüest, A., Piepke, G., Halfman, J., 1996. Combined effects of dissolved solids and temperature on the density stratification of Lake Malawi. In: Johnson, T., Odada, E. (Eds.), *The Limnology, Climatology and Paleoclimatology of the East African Lakes*. Gordon and Breach, Amsterdam, pp. 183-202.
201. Johnson, T.C., Barry, S.L., Chan, Y., Wilkinson, P., 2001. Decadal record of climate variability spanning the past 700 yr in the Southern Tropics of East Africa. *Geology* 29, 83.
202. Beadle, L., 1981. *The inland waters of tropical Africa. An introduction to tropical limnology*. Longman, London.
203. Specht, T., Rosendahl, B., 1989. Architecture of the Lake Malawi Rift, East Africa. *J. African Earth Sci.* 8, 355-382.
204. Scholz, C.A., Cohen, A.S., Johnson, T.C., King, J., Talbot, M.R., Brown, E.T., 2011. Scientific drilling in the Great Rift Valley: The 2005 Lake Malawi Scientific Drilling Project - An overview of the past 145,000 years of climate variability in Southern Hemisphere East Africa. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 303, 3-19.
205. Filippi, M., Talbot, M., 2005. The palaeolimnology of northern Lake Malawi over the last 25ka based upon the elemental and stable isotopic composition of sedimentary organic matter. *Quat. Sci. Rev.* 24, 1303-1328.
206. Scholz, C.A., Rosendahl, B.R., 1988. Low lake stands in Lake Malawi and Tanganyika East Africa, delineated with multifold seismic data. *Science*. 240, 1645-1648.
207. Scholz, C.A., Finney, B.P., 1994. Late Quaternary sequence stratigraphy of Lake Malawi (Nyasa), Africa. *Sedimentology* 41, 163-179.
208. Owen, R.B., Crossley, R., Johnson, T.C., Tweddle, D., Kornfield, I., Davison, S., Eccles, D.H., Engstrom, D.E., 1990. Major Low Levels of Lake Malawi and their Implications for Speciation Rates in Cichlid Fishes. *Proc. R. Soc. B Biol. Sci.* 240, 519-553.
209. Barry, S., Filippi, M., Talbot, M., Johnson, T., 2002. Sedimentology and geochronology of late Pleistocene and Holocene sediments from northern Lake Malawi. In: *The East African Great Lakes: Limnology, Palaeolimnology and Biodiversity*. Kluwer Academic Publishers, pp. 369-391.
210. Gasse, F., Barker, P., Johnson, T., 2002. A 24,000 yr diatom record from the northern basin of Lake Malawi. In: Odada, E., Olago, D. (Eds.), *The East African Great Lakes: Limnology, Palaeolimnology and Biodiversity*. Kluwer Academic Publishers, pp. 393-414.
211. Finney, B.P., Johnson, T.C., 1991. Sedimentation in Lake Malawi (East Africa) during the past 10,000 years: a continuous paleoclimatic record from the southern tropics. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 85, 351-366.
212. Van Bocxlaer, B., Salenbien, W., Praet, N., Verniers, J., 2012. Stratigraphy and paleoenvironments of the early to middle Holocene Chipalamawamba Beds (Malawi Basin, Africa). *Biogeosciences* 9, 4497-4512.

213. Johnson, T.C., McCave, I.N., 2008. Transport mechanism and paleoclimatic significance of terrigenous silt deposited in varved sediments of an African rift lake. *Limnol. Oceanogr.* 53, 1622-1632.
214. Chapman, L.J., Chapman, C.A., Crisman, T.L., Nordlie, F.G., 1998. Dissolved oxygen and thermal regimes of a Ugandan crater lake. *Hydrobiologia* 385, 201-211.
215. Saulnier-Talbot, É., Chapman, L.J., Efitre, J., Simpson, K.G., Gregory-Eaves, I., 2018. Long-Term Hydrologic Fluctuations and Dynamics of Primary Producers in a Tropical Crater Lake. *Front. Ecol. Evol.* 6.
216. Lancaster I.N., 1979. Evidence for a widespread late Pleistocene humid period in the Kalahari. *Nature* 279, 145-146
217. Brook, G.A., Haberyan, K.A., Filippis, S., 1992. Evidence of a shallow lake at Tsodilo Hills, Botswana, 17,500 to 15,000 yr BP: further confirmation of a widespread late Pleistocene humid period in the Kalahari Desert. *Palaeoecol. Africa* 23, 165-175.
218. Thomas, D.S.G., Brook, G., Shaw, P., Bateman, M., Appleton, C., Nash, D., McLaren, S., Davies, F., 2003. Late Pleistocene wetting and drying in the NW Kalahari: an integrated study from the Tsodilo Hills, Botswana. *Quat. Int.* 104, 53-67.
219. Helgren, D.M., Brooks, A.S., 1983. Geoarchaeology at Gi, a middle stone age and later stone age site in the Northwest Kalahari. *J. Archaeol. Sci.* 10, 181-197.
220. Brooks, A.S., Hare, P.E., Kokis, J.E., Miller, G.H., Ernst, R.D., Wendorf, F., 1990. Dating pleistocene archeological sites by protein diagenesis in ostrich eggshell. *Science* 248, 60-64.
221. Butzer, K.W., Fock, G.J., Stuckenrath, R., Zilch, A., 1973. Paleohydrology of late Pleistocene lake Alexandersfontein, Kimberley, South Africa. *Nature* 243, 328-330.
222. Shaw, P.A., 1985. Late quaternary landforms and environmental change in northwest Botswana: The evidence of Lake Ngami and the Mababe Depression. *Trans. Inst. Br. Geogr.*
223. Shaw, P.A., Bateman, M.D., Thomas, D.S.G., Davies, F., 2003. Holocene fluctuations of Lake Ngami, Middle Kalahari: Chronology and responses to climatic change. *Quat. Int.* 111(1), 23-35.
224. Huntsman-Mapila, P., Ringrose, S., Mackay, A.W., Downey, W.S., Modisi, M., Coetzee, S.H., Tiercelin, J.-J., Kampunzu, A.B., Vanderpost, C., 2006. Use of the geochemical and biological sedimentary record in establishing palaeo-environments and climate change in the Lake Ngami basin, NW Botswana. *Quat. Int.* 148, 51-64.
225. Burrough, S.L., Thomas, D.S.G., Shaw, P. a., Bailey, R.M., 2007. Multiphase Quaternary highstands at Lake Ngami, Kalahari, northern Botswana. *Palaeogeogr. Palaeoclimatol. Palaeoecol.* 253, 280-299.
226. Cooke, H.J., T. Verstappen, H., 1984. The landforms of the western Makgadikgadi basin in northern Botswana, with a consideration of the chronology of the evolution of Lake Palaeo-Makgadikgadi. *Z. Geomorphol.* 28, 1-19.
227. Ringrose, S., Huntsman-Mapila, P., Kampunzu, A.B., Downey, W., Coetzee, S., Vink, B., Matheson, W., Vanderpost, C., 2005. Sedimentological and geochemical evidence for palaeo-environmental change in the Makgadikgadi subbasin, in relation to the MOZ rift depression, Botswana. *Palaeogeogr., Palaeoclimatol., Palaeoecol.* 217, 265-287.

228. Shaw, P.A., Davies, F.B.M., Stokes, S., Thomas, D.S.G., Holmgren, K., 1997. Palaeoecology and age of a Quaternary high lake level in the Makgadikgadi Basin of the Middle Kalahari, Botswana. *S. Afr. J. Sci.* 93, 273-276.
229. Burrough, S.L., Thomas, D.S.G., Bailey, R.M., 2009. Mega-Lake in the Kalahari: A Late Pleistocene record of the Palaeolake Makgadikgadi system. *Quat. Sci. Rev.* 28, 1392-1411.
230. Schmidt, M., Fuchs, M., Henderson, A.C.G., Kossler, A., Leng, M.J., Mackay, A.W., Shemang, E., Riedel, F., 2017. Paleolimnological features of a mega-lake phase in the Makgadikgadi Basin (Kalahari, Botswana) during Marine Isotope Stage 5 inferred from diatoms. *J. Paleolimnol.* 58, 373-390.
231. Shaw, P., Thomas, D.S.G., 1988. Lake Caprivi: a late Quaternary link between the Zambezi and middle Kalahari drainage systems. *Zeitschrift für Geomorphologie* 32, 329-337.
232. Shaw, P., Thomas, D.S.G., 1993. Geomorphological Processes, Environmental Change and Landscape Sensitivity in the Kalahari Region of Southern Africa., In: Thomas, D.S.G., Allison, R.J. (Eds.), *Landscape Sensitivity*. John Wiley and Sons Ltd, pp. 83-95.
233. Burrough, S.L., Thomas, D.S.G., 2008. Late Quaternary lake-level fluctuations in the Mababe Depression: Middle Kalahari palaeolakes and the role of Zambezi inflows. *Quat. Res.* 69, 388-403
234. Buch, M.W., Zöller, L., 1992. Pedostratigraphy and thermoluminescence-chronology of the western margin- (lunette-) dunes of Etosha Pan/Northern Namibia. *Würzburger Geographische Arbeiten* 84, 361-384.
235. Hipondoka, M.H.T., Mauz, B., Kempf, J., Packman, S., Chiverrell, R.C., Bloemendal, J., 2014. Chronology of sand ridges and the Late Quaternary evolution of the Etosha Pan, Namibia. *Geomorphology* 204, 553-563.
236. Brook, G.A., Marais, E., Srivastava, P., Jordan, T., 2007. Timing of lake-level changes in Etosha Pan, Namibia, since the middle Holocene from OSL ages of relict shorelines in the Okondeka region. *Quat. Int.* 175, 29-40.
237. Brook, G.A., Railsback, L.B., Marais, E., 2011. Reassessment of carbonate ages by dating both carbonate and organic material from an Etosha Pan (Namibia) stromatolite: Evidence of humid phases during the last 20ka. *Quat. Int.* 229, 24-37.
238. Brook, G.A., Cherkinsky, A., Bruce Railsback, L., Marais, E., Hipondoka, M.H.T., 2013. <sup>14</sup>C dating of organic residue and carbonate from stromatolites in Etosha Pan, Namibia: <sup>14</sup>C reservoir effect, correction of published ages, and evidence of >8-m-deep lake during the Late Pleistocene. *Radiocarbon* 55, 1156-1163.
239. Shaw, P.A., Cooke, H.J. 1986. Geomorphic evidence for the late Quaternary palaeoclimates of the middle Kalahari of northern Botswana. *Catena* 13, 349-359.
240. Vogel, J.C., Visser, E. 1981. Pretoria radiocarbon dates II. *Radiocarbon*, 23, 43-80.
241. Teller, J.T., Lancaster, N. 1986 Lacustrine sediments at Narabeb in the central Namib Desert, Namibia. *Palaeogeogr., Palaeoclimatol., Palaeoecol.* 56, 177-195.
242. Teller, J.T., Rutter, N., Lancaster, N. 1990. Sedimentology and paleohydrology of Late Quaternary lake deposits in the northern Namib Sand Sea, Namibia. *Quat. Sci. Rev.* 9, 343-364.



243. Stone, A.E.C., Thomas, D.S.G., Viles, H.A. 2010. Late Quaternary palaeohydrological changes in the northern Namib Sand Sea: New chronologies using OSL dating of interdigitated aeolian and water-lain interdune deposits. *Palaeogeogr., Palaeoclimatol., Palaeoecol.* 288, 35-53.
244. Schüller, I., Belz, L., Wilkes, H., Wehrmann, A. 2018. Late Quaternary shift in southern African rainfall zones: Sedimentary and geochemical data from Kalahari pans. *Zeitschrift für Geomorphologie*, 61, 339-362.
245. Holmgren, K., Shaw, P. 1997. Palaeoenvironmental reconstruction from near-surface pan sediments: An example from Lebatse Pan, southeast Kalahari, Botswana. *Geografiska Annaler, Series A: Physical Geography*, 79, 83-93.
246. Beaumont, P.B., Van Zinderen Bakker Sr, E.M., Vogel, J.C. 1984. Environmental changes since 32 000 BP at Kathu Pan, northern Cape. Late Cainozoic palaeoclimates of the Southern Hemisphere. *Proc. SASQUA symposium, Swaziland, 1983*, pp. 329-338.
247. Telfer, M.W., Thomas, D.S.G., Parker, A.G., Walkington, H., Finch, A.A., 2009. Optically Stimulated Luminescence (OSL) dating and palaeoenvironmental studies of pan (playa) sediment from Witpan, South Africa. *Palaeogeogr., Palaeoclimatol., Palaeoecol.* 273, 50-60.