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Anthropogenic impact on the Swartvlei lake system in the Wilderness area (South Africa) as reflected in a sediment core

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Swartvlei is one of the most thoroughly investigated lacustrine coastal systems in South Africa. However, studies focussing on anthropogenic impacts on sediment deposition in the most recent past (i.e. the last 30-40 years) are rare. A 96 cm long sediment core, covering the past two centuries, provides evidence for intense changes over the last few decades probably related to anthropogenic activities, such as farming, water abstraction etc. A decrease in marine influence is observed starting somewhat earlier but was potentially supported by human management activities. The development of the age-depth model turned out to be a serious issue, as old marine carbon affected samples impacted the robustness of the chronology, hence further investigations are required in most coastal geoarchives from South Africa. A multi-dating approach using several methods is suggested as errors in the chronology distinctly impact paleoenvironmental reconstructions (timing, flux rates etc.). In this context initial paleomagnetic secular variation data are presented, which needs further exploration and inclusion in the future.