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A sea-level plateau during Marine Isotope Stage 2 evidenced by the Bonaparte Gulf sediments, northwestern Australia, and glacial isostatic adjustment modeling

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Marine Isotope Stage 2 (MIS 2) is the latest glacial period and includes the Last Glacial Maximum, which is known as the period when global ice volume reached its maximum and global temperature lower than today. An advantage of MIS 2 is the availability of radiocarbon dating to make it possible to compare sea-level data with other paleoclimatic proxies. However, the number and accuracy of sea-level records during MIS 2 is currently lacking. Here we present the history of MIS 2 sea-level and ice-sheet change as recorded in the Bonaparte Gulf, northwestern Australia, by reconstructing relative sea level and then modeling glacial isostatic adjustment. The isostatically-corrected global sea-level history indicates that sea-level plateaued around 23 cal kyr BP prior reaching its minimum (∼19 cal kyr BP). These large changes in ice volume over such a short time indicates that the continental ice sheets never reached their isostatic equilibrium during the Last Glacial Maximum.