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Paleoenvironmental and ecological changes during the Eocene-Oligocene transition based on foraminifera from the Cap Bon Peninsula in North East Tunisia

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1 **Paleoenvironmental and ecological changes during the Eocene-Oligocene**
2 **transition based on foraminifera from the Cap Bon Peninsula in North East**
3 **Tunisia**

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15 **ABSTRACT**

16 Biostratigraphic analysis of the Eocene-Oligocene transition (E-O) at the Menzel Bou
17 Zelfa and Jhaff composite section in the Cap Bon Peninsula (North East Tunisia) allowed us
18 to recognize a continuous planktic foraminiferal biozonation: E14 *Globigerinatheka*
19 *semiinvoluta* Zone, E15 *Globigerinatheka index* Zone, E16 *Hantkenina alabamensis* Zone
20 and O1 *Pseudohastigerina nagewichiensis* Zone. A quantitative study of benthic and
21 planktic foraminifera assemblages was carried out and the richness and diversity of
22 foraminifera allowed us to reconstruct the paleoenvironmental evolution from marine to
23 terrestrial environments. From the Eocene E14 Zone, the foraminiferal association
24 characterizes a relatively warm climate with considerable oxygen content and a dominance of
25 keeled and spinose planktic foraminifera, which became extinct at the E/O boundary, possibly
26 due to cooling of the planktic environment. Nevertheless, the small benthic foraminifera do
27 not show an extinction event at the Eocene/Oligocene (E/O) boundary, indicating that the
28 benthic environment was not significantly affected. In the basal Oligocene O1 Zone, the
29 benthic environment changes to a shallower setting due to cooling of the climate. These
30 changes generated a remarkable dominance of globular forms in the planktic environment.
31 Small benthic foraminifera apparently have a gradual extinction event, or more likely a
32 gradual pattern of local disappearances, that could have been caused by the Oi1 glaciation.

33 **Keywords:** Foraminifera, Eocene/Oligocene, Extinction, Paleoenvironment, Tunisia.
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