



The 7th International Palaeontological Congress

FIELD TRIP

Exploring the Lower Jurassic of Southern Africa

PRE001

Exploring the Triassic–Jurassic boundary in southern Africa

(Departs from Bloemfontein – Bram Fischer International Airport)

Fieldtrip leader: Emese Bordy and Jonah Choiniere

Dates: 24–28 November 2026 (5 days, 4 nights)

Approximate cost: R13 000 per person

Minimum pax: 7 (plus driver/guide)

Maximum pax: 14 (plus driver/guide)

Attire: Field-hardy (boots, sun and rain protection, water bottle)

Tour includes: Pick-up and drop-off at Bloemfontein airport. All transportation, accommodation and meals during the trip. Entry costs for all ticketed venues (GGHNP, Moyeni Trackway Site).

Tour excludes: Items of a personal nature, Flights to/from Bloemfontein airport.

Must have:

1. A valid passport with six months validity from November 25 is required. The USA, UK, and most Schengen countries must have a valid passport with six months validity from date of entry and two blank visa pages to enter Lesotho. Participants must check their visa requirements before the trip. We can advise if necessary.
2. Participants must be able to walk reasonable distances over uneven terrain. Most of the sites we will visit are not accessible for wheelchairs.
3. Entrance to the Golden Gate Highlands National Park requires valid photo ID.

Brief description and overview of the trip

This field trip explores the Triassic–Jurassic Boundary (TJB) and Early Jurassic successions of southern Africa, documenting ecosystem recovery following the end-Triassic extinction and environmental change preceding Karoo flood basalt volcanism. Participants will investigate fossil-rich floodplains, calcic vertisols, dinosaur trackways, desert dune systems, and subaqueous volcanic deposits across South Africa and Lesotho, capped with a visit to the newly opened Kgodomodomo Dinosaur Interpretation Centre in Golden Gate Highlands National Park.

DAY 1 – 24 November 2026 (Qhemegha Area, SA)

Our first day takes us to the **Qhemegha Area** in South Africa, where we'll focus on the **Triassic–Jurassic Boundary (TJB)**. This boundary marks a major extinction event in Earth's history, and we'll learn how scientists pinpointed its location in the rock record. We'll start with an introduction to the **Upper Karoo** landscape, getting our bearings and understanding the vast scale of the rock formations we'll be exploring. The second stop focuses on ancient soils, or **palaeosols**, and how fossils are preserved in them. We'll examine these soils from the end of the Triassic period and learn about **floodplain taphonomy**, which is the study of how organisms decay and become fossilized in river floodplains.

DAY 2 – 25 November 2026 (Qhemegha Area, SA)

Today is all about finding fossils! We'll stay in the **Qhemegha Area** and explore the Late Triassic floodplains of the **lower Elliot Formation**. Our first stop is a site rich with **vertebrate bones** and a type of ancient soil called **calcic vertisols**. We'll look for fossil fragments and discuss what these bones tell us about the animals that lived here. Next, we'll shift our focus to the plant life of the Triassic. We'll visit a site with **plant-fossil-rich mudstones**. Here, we'll see incredible impressions of ancient leaves and even fossilized logs, which provide clues about the forests and ecosystems that existed some 220 million years ago.

DAY 3 – 26 November 2026 (Quthing District, Lesotho)

This day is all about crisscrossing the **Triassic–Jurassic Boundary (TJB)** but not in South Africa, but rather in the Kingdom of the Sky, in Lesotho. Our first stop is a road cut at **Alwyns Kop** where we'll see the distinct shift between the lower and upper Elliot Formation. The lower part shows us evidence for ancient meandering river channels, while the upper part reveals a change to a landscape of broad, shallow rivers and lakes. This subtle shift in rock layers marks a major change in the environment.

Next, we visit the **Masitise Cave House**, a fascinating blend of history and science. This home, built into a cave, belonged to the Ellenberger family of missionaries. Inside, you'll see a unique dinosaur footprint preserved on the ceiling of the kitchen! This iconic track, named *Lehahichnus coquinalis*, is a testament to how the local community has long lived with and observed these fossils.

Our final stops are a series of road cuts revealing the dramatic story of the Karoo. We'll see **Clarens Formation** dunes, which prove the region was once a vast desert. Then, we'll see

rare **pillow lavas** from the Drakensberg Group, evidence of ancient volcanic eruptions happening underwater in lakes. The day ends with a visit to the **Upper Moyeni** tracksites, where a suburban road is filled with dinosaur tracks, including some left by massive theropods up to 8 meters tall. We'll also explore the **Lower Moyeni** site, where a protected shelter reveals hundreds of tracks, tail drags, and belly slides from a diverse community of dinosaurs and other animals.

DAY 4- 27 November 2026 (Golden Gate Highlands NP, SA)

Today is a travel and transition day as we head to the breathtaking **Golden Gate Highlands National Park (GGHNP)**. Known for its soaring sandstone cliffs, the park's landscape was carved from the same rock layers we've been studying: the Elliot and Clarens Formations and the **lavas** of the Drakensberg Group. This region holds not only incredible geology but also a rich cultural history, with the Basotho and San people having ancestral ties to the area.

Our main stop is the new **Khulumolomo Dinosaur Centre**. This site museum and research facility showcases the park's immense palaeontological, archaeological, and geological heritage. The name itself comes from a Basotho legend of a giant, people-eating monster, likely inspired by the giant dinosaur footprints found in the region.

DAY 5- 28 November 2026 (Return to Bloemfontein, SA)

Our final day starts at **Rooidraai**, a significant roadside exposure in GGHNP. Here, we'll see a famous fossil site where the world's oldest dinosaur nests and embryos were found. The site contains multiple nests from the Early Jurassic herbivore, *Massospondylus carinatus*. This discovery provides critical evidence for communal nesting and site fidelity in dinosaurs, meaning the mothers returned to the same spot year after year to lay their eggs.

As we travel back to Bloemfontein, we'll synthesize all the information from the past few days. We'll discuss how the different rock layers—from the floodplain deposits and ancient dunes to the volcanic flows—document the dramatic environmental and climatic changes in southern Gondwana during the Triassic-Jurassic. This is a chance to tie all the threads together and reflect on the incredible journey through deep time.