

## **GSA Annual Meeting in Indianapolis, Indiana, USA - 2018**

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Paper No. 187-4

Presentation Time: 9:00 AM-6:30 PM

# **BIOSTRATIGRAPHIC CORRELATION OF ISOLATED LATE TRIASSIC (NORIAN/WAREPAN) MURIHIKU SUPERGROUP OUTCROPS IN SOUTHERN SOUTH ISLAND, NEW ZEALAND**

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The Late Triassic timescale in New Zealand is primarily based on index fossils such as *Halobia* and *Monotis*. In the southern South Island, significant ground cover of marine sedimentary rocks has resulted in tentative age assignments of isolated outcrops, based on the index fossils present. Here, we present the results of biostratigraphic age assignments for six outcrops associated with the geologic units previously defined in South Island, New Zealand during the Late Triassic Period (Norian Stage—global timescale; Warepan Stage—New Zealand timescale). Bulk samples were collected from six new collection sites in the Hokonui Hills, from outcrops representing the Murihiku Supergroup with lithologies of fossiliferous marine volcanoclastic sedimentary rocks, mostly siltstones and sandstones being sampled. These sites yielded fossils from multiple taxa, including mollusks, echinoderms, and brachiopods, and is interpreted to represent deposition along a clastic ramp between storm wave base and fair-weather wave base. Abundant biostratigraphic index taxa were recovered from the bulk samples, primarily from the flat clams, *Halobia* and *Monotis*. *Monotis* were found only in the southernmost outcrop, while *Halobia* were identified in the northernmost five outcrops, with specimens belonging to *H.*

*hochstetteri*, *H. lilliei*, *H. austriaca*, *H. styriaca*, and *H. hoernesii*. The observed species are biostratigraphically significant for correlating both the New Zealand timescale and the global timescale for the Late Triassic, and the identification of the index species and their ranges provide evidence for an early Norian age for the lower five bulk samples and a Late Norian age for the stratigraphically highest bulk sample, which confirms previous reports. The results presented here support a fairly straightforward structural model of the sedimentary packages being younger to the south for the late Triassic–early Jurassic units. This work suggests that paleoecological research on the noncarbonate, high-latitude deposits of this region can be readily compared to low-latitude carbonate deposits using biostratigraphic correlation of bivalves.

Session No. 187--Booth# 236

**T124. Integrated Biostratigraphy (Posters)**

**Tuesday, 6 November 2018: 9:00 AM-6:30 PM**

**Halls J-K (Indiana Convention Center)**

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