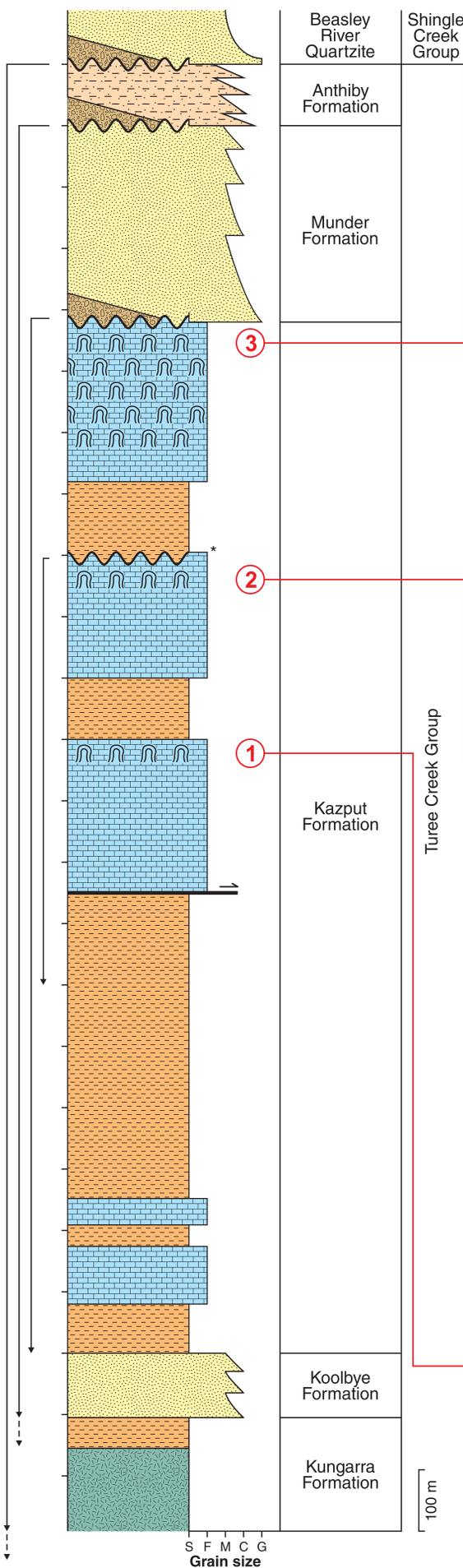
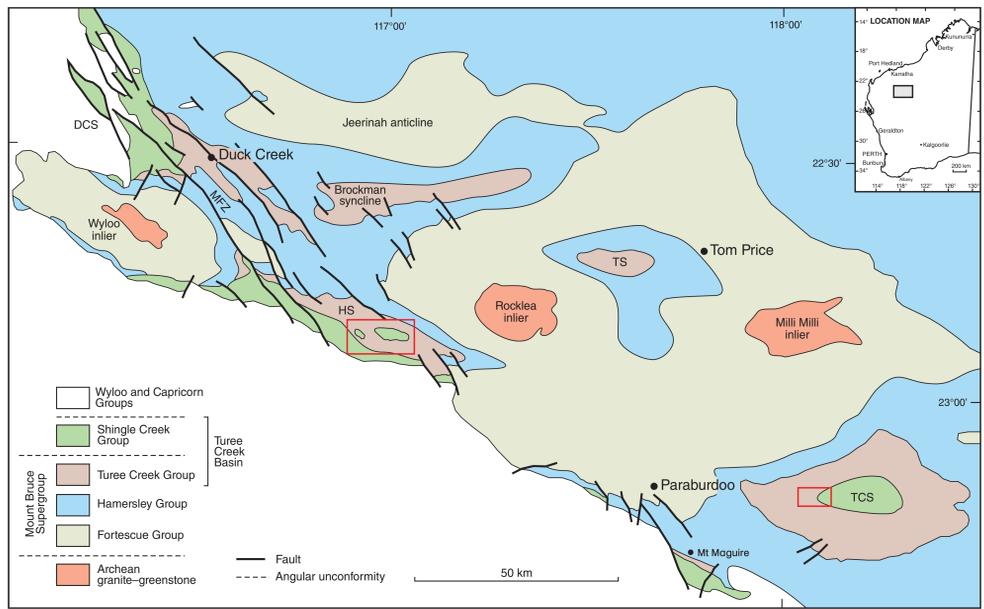


PILBARA/HAMERSLEY PROJECT

REGIONALLY PERSISTENT STROMATOLITE ASSEMBLAGES OF THE TUREE CREEK GROUP

Systematic description of microbialites from the Turee Creek Group, deposited in the aftermath of the Great Oxidation Event, provides an opportunity to understand links between the atmosphere and biosphere during this important period of Earth history. Recent field investigation of a revised Kazput Formation has revealed previously undescribed microbialites from the western end of the Turee Creek Syncline (TCS), a marked expansion of microbialites known from the Hardey Syncline (HS), and chronologically rapid changes in microbialite Forms within the Turee Creek Group. Microbialite assemblages of the Kazput Formation are distinct and regionally persistent. These assemblages include new microbialite Forms that have proven valuable as temporal markers during a targeted regional mapping program of the Hamersley province.

Three stromatolite assemblages have been recognised during regional mapping of the Kazput Formation in the eastern Hamersley province. Microbialite assemblages 2 and 3 share Forms in common between the Turee Creek Syncline (TCS) and Hardey Syncline (HS) localities (see map to right).



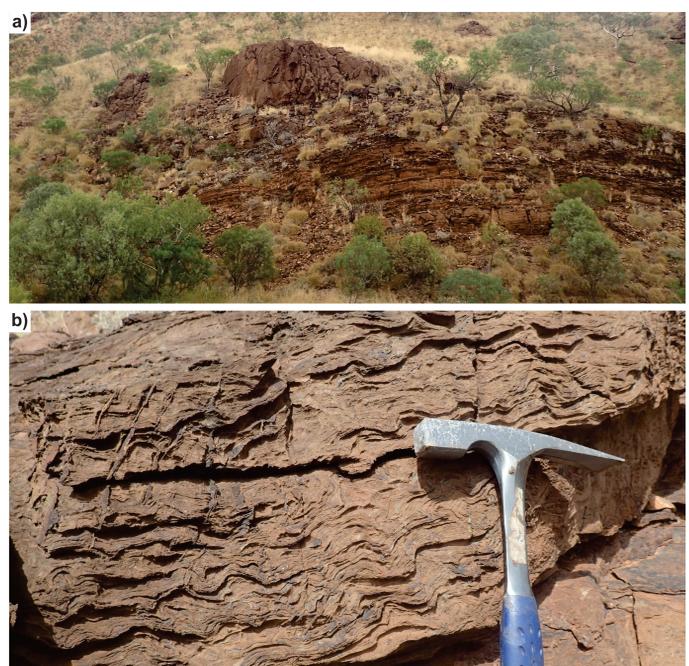
Assemblage 3 (right): **a)** large (10-metre scale relief) microbial mud mound outcrop as exhumed bioherms surrounded by more recessive bedded carbonate. Pictured with David Martin for scale, large bioherms occur in complexes; **b)** linked conical stromatolite Form from the Hardey Syncline; **c)** the same stromatolite Form from the western end of the Turee Creek Syncline, with silicification; **d)** microstructure indicating the presence of an axial zone



Assemblage 2 (right) is dominated by two microbialite forms: **a)** outcrop view of metre-scale laterally linked microbial bioherms. A pseudocolumnar stromatolite Form **(b)**, abundant within this assemblage, is used as a substrate by a second microbialite Form **(c)**



Assemblage 1 (right): **a)** outcrop view of 5-metre scale laterally linked microbial bioherms; **b)** bioherms are formed by Tungussiform stromatolites. Commonly pseudocolumnar, this stromatolite Forms insipient columns locally



Composite section with new stratigraphic nomenclature.
* Base of 'Beasley River Quartzite' of Martindale et al. 2015 Precambrian Research 266 (p. 194-211)

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