Supplementary material

Characterising sediments of a tropical sediment-starved continental shelf using cluster analysis of physical and geochemical variables

Lynda C. Radke^{A,C}, Jin Li^A, Grant Douglas^B, Rachel Przeslawski^A, Scott Nichol^A, Justy Siwabessy^A, Zhi Huang^A, Janice Trafford^A, Tony Watson^A and Tanya Whiteway^A

^ACoastal, Marine and Climate Change Group, Geoscience Australia, GPO Box 378,

Canberra, ACT 2601, Australia.

^BCSIRO Land and Water, Private Bag 5, Wembley WA 6913, Australia.

^cCorresponding author. Email: lynda.radke@ga.gov.au



Fig. S1. Number of arthropod infauna per grab v. number of non-arthropod infauna.



Principal Components plot showing K-means clusters

These two components explain 39.39 % of the point variability.

Fig. S2. The k-means clustering of a matrix of Euclidean distance among sample stations based on seabed environmental data.



Fig. S3. Chondrite-normalised REE (rare earth elements) geochemistry of (a) average coarse (<2 mm) and fine sediment ($<0.075 \mu$ m) from the Daly and Victoria River catchments (data from de Caritat and Cooper^{[11}) and (b–e) the sediment clusters (averages). A brown pellet analysis is also shown (b) for comparison. Patterns from A1, G, A5, A7, A6, A2 and B and the brown pellets are similar to river sediments with particle sizes <2 mm. However, the brown pellet analysis and A1 had pronounced Ce anomalies that were not evident in the river sediments. Patterns from A3 and F differed from the river sediments in having potentially lower Ho concentrations, whereas C, A4, D and E had sawtooth patterns pointing to potential detection limit problems. (TS, total sulfur.)



Fig. S4. Cross-plots of Fe v. Al. The positions of a brown pellet (calcirudite) analysis and bulk (<2 mm) and fine sediment (<0.075 μ m) from the Daly and Victoria River catchments (data from de Caritat and Cooper^[1]) are also shown.

References

[1] P. de Caritat, M. Cooper, *National Geochemical Survey of Australia: The Geochemical Atlas of Australia, Record 2011/20* **2011** (Geoscience Australia: Canberra, ACT).