The data presented here are related to the research paper entitled “A below-the-present late Holocene relative sea level and the glacial isostatic adjustment during the Holocene in the Malay Peninsula” (Tam et al., 2018) [1]. The diatoms and pollen data are collected from surface sediments of the Merang wetlands, Kuala Terengganu, Malaysia, and are presented as percentages of total diatoms or total land pollen respectively. Ground elevations of the sampling sites are levelled to the national datum and expressed as elevations above or below mean sea level. These diatom and pollen data can be used for indicative meaning calibration of sea-level index points and for the development of diatom-based or pollen-based tidal level transfer functions. These data have been used for calibrating the indicative meanings for sea-level index points in the reconstruction of Holocene sea-level history of the Peninsular Malaysia.
**Value of the data**

- This is the first diatom and pollen data set from surface sediments collected from the Malay Peninsula since Kamaludin [2] and Zong and Kamaludin [3]. This data set can help establish the microfossil-elevation relationship in tropical mangrove environments. More specifically, this data set can help quantify the indicative meaning of a sea-level index point collected from such environments.
- As the elevations of the sampling sites are leveled to the national datum, this data set can be merged with any other similar data sets to form a larger data set that shows the elevational relationship between microfossil diatom/pollen and tidal water levels.
- This data set can assist the reconstruction of past sea-level history and coastal change in tropical regions.

1. **Data**

The data set covers an elevational range between −0.20 and 1.30 m, i.e. between local mean low waters and mean high higher waters. Fig. 1a indicates the location of the study site. Fig. 1b shows the sampling locations where the surface sediments were collected. Table A presents the diatom data from each of the sampling point along with the ground elevation. Figure B presents the pollen data from each of the sampling point along with the ground elevation.

2. **Experimental design, materials and methods**

The data set was generated from a study site that lies about 25 km northwest of Kuala Terengganu of the Malay Peninsula (Fig. 1a). The landform of this site is a barrier–estuarine–lagoon system, called the Merang wetland (5°26′32″N; 102°52′58″E; Fig. 1b). Locally it has a microtidal regime and it is...
under a humid tropical climate. Details of the landscape can be found from several recent surveys [4,5]. At present, the barrier on the seaward side of the wetland is about 4–5 km wide and 3–4 m above mean sea level (MSL), mostly covered by farm activity and the distinctive natural vegetation called locally as ‘Gelam’ [6]. This vegetation is characterized by a species of Myrtaceae (*Melaleuca cajuputi*) that tends to grow on mangrove peaty soils and can survive flooding of tidal water [7]. Between the barriers and an estuary, which is about 2 km wide, occupied by large sand bars and multiple tidal channels. Behind the barriers, a former lagoon is fully filled with estuarine and mangrove sediments.

Within the estuary, 43 modern surface sediment samples were collected from a number of locations (Fig. 1b). In each location, several natural representative habitat zones were identified. According to the habitat zones, several modern surface sediments were sampled in each location nearly evenly along an elevational gradient. The ground elevation of each sampling point was obtained by levelling from the sampling point to the local JUPEM (Department of Survey and Mapping) benchmark (Fig. 1b) using a Total Station surveying system. The JUPEM benchmark provides mean sea level elevational information referred to the Peninsula Malaysia vertical datum [4].

The collected modern sediment sub-samples were processed following the procedures of Faegri and Iversen [8] for extraction of pollen grains and preparation of slides. The procedures of Zong and Sawai [9] were adapted for extraction of diatoms and preparation of slides. Under a microscope, over 300 land pollen grains were counted normally for each sample except for a few samples that have very low pollen concentrations. References used for identification include Rao and Lee [10], Huang [11], Somboon [12], Wang [13], Kamaludin [2], Li et al. [14] and Mao et al. [15]. The online data from the Australasian Pollen and Spore Atlas [16] were also consulted. The percentages of each taxon are calculated based on total pollen sum. Similar to the pollen analysis, over 300 diatom valves were counted from each sample. The diatom taxa are grouped into the five categories: marine water, brackish water, freshwater salt tolerant, freshwater and freshwater salt intolerant [9,17,18]. Identification for diatoms was based on [19–22].
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Transparency document. Supporting information

Transparency data associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2018.10.156.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2018.10.156.

References

[1] C.-Y. Tam, Y. Zong, b H. Kamaludin, b I. Hamlee, b J. Habibah, H. Xiong, et al., A below-the-present late Holocene relative sea level and the glacial isostatic adjustment during the Holocene in the Malay Peninsula, Quat. Sci. Rev. 201 (2018) 206–222.
[2] b H. Kamaludin, Holocene Sea Level Changes in Kelang and Kuantan, Peninsula Malaysia (Ph.D. thesis), University of Durham, UK, 2001.
[3] Y. Zong, b H. Kamaludin, Diatom assemblages from two mangrove tidal flats in Peninsular Malaysia, Diatom Res. 19 (2004) 329–344.
[4] b H. Kamaludin, A. Suzannah, Y. Zong, Late Holocene relative low sea level at Merang, Terengganu, Bull. Geol. Soc. Malays. 62 (2016) 23–29.
[5] D.J. Mallinson, S.J. Culver, D.R. Corbett, P.R. Parham, N.A.M. Shazili, R. Yaacob, Holocene coastal response to monsoons and relative sea-level changes in northeast peninsular Malaysia, J. Asian Earth Sci. 91 (2014) 194–205.
[6] M. Masitah, A.R. Shamsul Bahri, M.S. Jamilah, S. Ismail, Historical observation of Gelam (Melaleuca cajuputi Powel) in different ecosystems of Terengganu, Biol. Agric. Healthc. (2014) 1.
[7] Y.F. Ariffin, S. Hamidah, Y.F. Ariffin, The Analysis of Management and Timber Trade System of Gelam (Melaleuca cajuputi) From Peat Swamp Forest in South Kalimantan, J. Wetl. Environ. Manag. 2016 (2016) 2.
[8] K. Faegri, J. Iversen, in: K. Faegri, P.E. Kaland, K. Krzywinski (Eds.), Textbook of Pollen Analysis, 4th ed. by, Wiley, New York, 1989.
[9] Y. Zong, Y. Sawai, Diatoms, Handbook of Sea-Level Research, John Wiley & Sons, Ltd, Chichester, UK (2015) 233–248.
[10] A. Yao, Y. Lee, Studies on Singapore Pollen, University of Hawai'i Press, Hawai'i, USA, 1970.
[11] T.-C. Huang, Pollen Flora of Taiwan. Taipei, Taiwan UP vi, 297p Keys Geog 2, 1972.
[12] J.R.P. Somboon, Palynological study of mangrove and marine sediments of the Gulf of Thailand, J. Southeast Asian Earth Sci. 4 (1990) 85–97.
[13] E. Wang, Pollen Flora of China, Science Press, Beijing, 1995.
[14] Y. Li, L. Zhou, H. Cui, Pollen indicators of human activity, Chin. Sci. Bull. 53 (2008) 1281.
[15] L. Mao, D.J. Batten, T. Fujiaki, Z. Li, L. Dai, C. Weng, Key to mangrove pollen and spores of southern China: an aid to palynological interpretation of Quaternary deposits in the South China Sea, Rev. Palaeobot. Palynol. 176 (2012) 41–67.
[16] APSA-Members, The Australian Pollen and Spore Atlas V1.0, Australian National University, Canberra, Australia, 2007 (http://apsa.anu.edu.au/).
[17] P.C. Vos, H. de Wolf, Diatoms as a tool for reconstructing sedimentary environments in coastal wetlands: methodological aspects, Hydrobiologia 269-270 (1993) 285–296.
[18] L. Denys, A Check-List of the Diatoms in the Holocene Deposits of the Western Belgian Coastal Plain with a Survey of Their Apparent Ecological Requirements, Belgian Geological Survey, Berchem, Belgium (1991) 41 (Professional Paper 246).
[19] A. Van de Werff, H. Huis, Diatomeenflora van Nederland. 10 parts published privately 1958–1974.
[20] B. Hartley, An Atlas of British Diatoms, Balogh Scientific Books, Biopress Ltd, Bristol, UK, 1996.
[21] D. Jin, X. Cheng, Z. Lin, X. Liu, Marine Diatoms in China, China Ocean Press, Beijing, China, 1982 (in Chinese).
[22] Z. Cheng, Y. Gao, M. Dickman, Colour plates of the diatoms, China, Beijing, 1996, p. 120.