Table 1 Lithostratigraphic descriptions of the sediment cores and data of 14C sediment samples

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| Depth (m) | Description | Depth (m) | Material | Conventional 14C age (yr BP) | Calendar age (yr BP) |
| Core Y61 (37°21′34.24″ N，119°57′26.18″ E, ground altitude: 6.32 m) (From Zhuang et al., 1983 and 1994) |
| 0.00-3.75 | Yellowish median-fine sand with rubble and debris, overlying brown clayey silt |  |  |  |  |
| 3.75-4.75 | Greenish grey- blackish grey fine sand and coarse silt |  |  |  |  |
| 4.75-5.62 | Light grey fine sand |  |  |  |  |
| 5.62-7.12 | Greenish light grey sandy silt | 7.12 | Shell | 3815±65 | 3769 |
| 7.12-7.92 | Yellowish grey and light grey sandy silt | 7.92 | Shell | 5800±120 | 6208 |
| 7.92-9.42 | Coarse sand with gravel overlying brown yellow and light yellow silty clay with grinding round gravel |  |  |  |  |
| Core ZK303 (36°58′35.89″ N，119°29′03.76″ E, ground altitude: 4.53 m) (From Xue and Ding, 2008) |
| 0.00-3.07 | Clayey silt |  |  |  |  |
| 3.07-5.75 | Silt |  |  |  |  |
| 5.75-7.00 | Grey fine sand with fine gravel of 0.94% |  |  |  |  |
| 7.00-8.15 | Yellowish grey fine sand and silty very fine sand |  |  |  |  |
| 8.15-12.00 | Fine gravel with silt and fine sand |  |  |  |  |
| Core ZK305 (37°02′29.99″ N，118°56′27.49″ E, ground altitude: 6.89 m) (From Xue and Ding, 2008) |
| 0.00-1.90 | Clayey silt with silt and very fine sand |  |  |  |  |
| 1.90-7.23 | Silt and clayey silt with fine sand |  |  |  |  |
| 7.23-7.95 | Blackish brown clayey silt with debris of plant root  |  |  |  |  |
| 7.95-13.13 | Yellowish brown silt with calcium nodules |  |  |  |  |
| Core HN73 (37°39′13.32″ N，117°53′27.32″ E, ground altitude: 6.39 m) (From Yang and Wang, 1990) |
| 0.00-4.00 | Sandy silt |  |  |  |  |
| 4.00-6.00 | Clayey sand |  |  |  |  |
| 6.00-26.00 | Mud with shell fragments |  |  |  |  |
| Core YS1 (38°06′06.00″ N，117°28′12.00″ E, ground altitude: 4.50 m) (From Xu et al., 2011 and 2015) |
| 0.00-7.70 | Yellowish light brown clay with silt mixing humus layer | 3.55 | Peat | 2622±222 | 2617 |
| 6.62 | Peat | 6803±118 | 7501 |
| 7.70-11.40 | Yellowish grey clay with peat layer | 8.67 | Peat | 7119±100 | 7763 |
| 11.07 | Peat | 8186±103 | 8808 |
| 11.40-13.70 | Yellowish grey clayey silt |  |  |  |  |
| Core BDK1 (38°19′53.44″ N，117°24′47.98″ E, ground altitude: 3.40 m) (From Wang et al., 2007) |
| 0.00-1.50 | Black soil |  |  |  |  |
| 1.50-4.20 | Shell fragments caused by storm | 4.2 | Organic clay | 6040±185 | 6905 |
| 4.20-7.80 | Muddy swamp |  |  |  |  |
| 7.80-15.5 | Clay with silt and silty clay | 15.5 | Peat | 8060±110 | 8942 |
| Core GZ2 (38°27′03.00″ N，117°05′34.00″ E, ground altitude: 3.50 m) (From Xu et al., 2011 and 2015) |
| 0.00-1.30 | Silt and clayey silt |  |  |  |  |
| 1.30-2.30 | Clay |  |  |  |  |
| 2.30-4.00 | Silt and clayey silt |  |  |  |  |
| 4.00-6.00 | Clay | 4.55 | Paleosol | 4910±180 | 5481 |
| 6.00-7.50 | Silt |  |  |  |  |
| 7.50-10.0 | Clay | 9.93 | Peat | 6720±110 | 7437 |
| 10.0-12.5 | Fine sand and silt and clayey silt and clay | 11.93 | Peat | 7460±150 | 8080 |
| 12.5-17.0 | Silt | 12.53 | Peat | 7560±130 | 8169 |
| 17.0-19.8 | Clay |  |  |  |  |
| 19.8-25.6 | Fine sand with freshwater shell |  |  |  |  |
| Core Y61-1 (37°21′32.40″ N，119°57′43.40″ E, ground altitude: 5.73 m)  |
| 0.00-1.08 | Yellowish brown clayey silt |  |  |  |  |
| 1.08-3.10 | Light yellowish median-coarse silt with yellowish brown clay and gravels and water table at 1.26 m |  |  |  |  |
| 3.10-3.90 | Dark grey clay with rich organic matter |  |  |  |  |
| 3.90-4.20 | Coarse silt |  |  |  |  |
| Core ZK303-1 (37°02′17.20″ N，118°56′41.40″ E, ground altitude: 6.12 m)  |
| 0.00-2.50 | Light yellowish very fine sand |  |  |  |  |
| 2.50-3.20 | Yellowish dry very fine sand |  |  |  |  |
| 3.20-3.60 | Yellowish brown silt mixing grey white concretion |  |  |  |  |
| 3.60-4.00 | Grey yellowish fine sand mixing dark red iron oxide |  |  |  |  |
| 4.00-4.50 | Greenish grey fine sand |  |  |  |  |
| 4.50-5.20 | Greenish dark fine sand with plant debris |  |  |  |  |
| 5.20-5.90 | Greenish dark fine sand with a small amount of shell fragment | 5.80 | Organic sediment | 4990±30 | 5711 |
| Core HN73-1 (37°33′29.16″ N，117°48′37.72″ E, ground altitude: 7.93 m)  |
| 0.00-1.50 | Roadbed |  |  |  |  |
| 1.50-2.92 | Yellowish sandy silt with a small amount of fine sand |  |  |  |  |
| 2.92-5.02 | Light yellowish clayey sand |  |  |  |  |
| 5.02-6.30 | Dark grey clay |  |  |  |  |
| 6.30-7.00 | Yellowish mix of mud and sand with thin layer of very fine sand |  |  |  |  |
| Core YS1-1 (37°56′41.83″ N，117°19′09.73″ E, ground altitude: 10.14 m)  |
| 0.00-1.10 | Yellowish brown clay with thin fine sand |  |  |  |  |
| 1.10-2.35 | Dark yellowish silty clay |  |  |  |  |
| 2.35-3.93 | Brown clayey silt |  |  |  |  |
| 3.93-5.01 | Dark brown silt |  |  |  |  |
| 5.01-5.26 | Dark peat |  |  |  |  |
| 5.26-6.60 | Greenish grey silty mud |  |  |  |  |