



International Workshop and Expedition on Yellow River Delta Coastal Wetland Protection and Restoration

1. Summary

The International Workshop and Expedition on Yellow River Delta Coastal Wetland Protection and Restoration was held on July 3-20, which brought international experts from China, the Netherlands and Italy to share knowledge on coastal wetland protection and restoration under intensified climate change and human impacts.

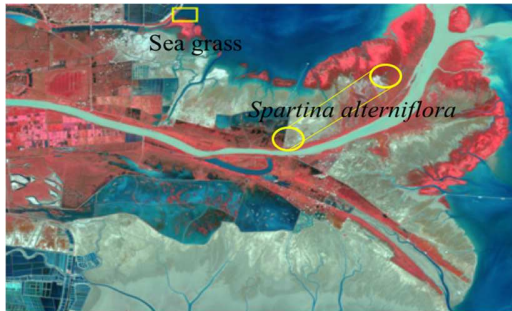
The delegation consisting of Prof. Carlo Gaultieri from University of Naples Federico II, Profs. Jianbin Shi and Dongdong Shao (YRD Wing Coordinator) and a group of students from Beijing Normal University visited the Key Laboratory of Eco-Environmental Restoration of Dongying City on July 3-4.



They visited the Yellow River Estuary Station of the Yellow River Delta National Nature Reserve Administration Bureau on July 5, and held round-table discussions with the Nature Reserve staff on various conservation and restoration issues.



Field expedition to the Yellow River Delta was followed on July 8-12, among which the invasive area of *Spartina alterniflora*, a notorious exotic herbaceous plant, and restoration sites of seagrass were the focal area of expedition.



Spartina alterniflora



seagrass

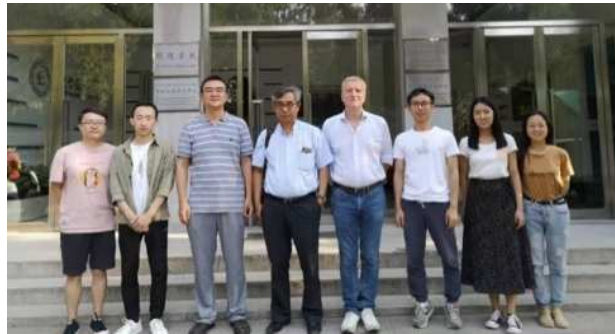


The International Workshop on Yellow River Delta Coastal Wetland Protection and Restoration kicked off on July 15 after the delegation returned from the field. A host of guest lectures and student presentations were organized during July 15-19, with wide-ranging topics on estuarine morphological evolution, mixing in environmental flow and eco-hydrological processes of coastal wetlands, etc. Special sessions on deltaic morphological evolution and its modelling were arranged during the workshop.



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Through the International Workshop and Expedition, we have strengthened existing collaboration within the Wing, and forged new partnership with international and domestic experts and practitioners. We plan to make this international workshop an annual and brand event from the YRD Wing for the years to come, with the aim to guide the adaptation and mitigation efforts of the YRD Wing and also increase its international awareness.



2. Program

Date: July 3-4, 2019

Venue: Key Laboratory of Eco-Environmental Restoration of Dongying City, Dongying City, Shandong Province

Time	Activities
July 3	Visit Key Laboratory of Eco-Environmental Restoration of Dongying City
July 4	Group discussion on collaborative issues

Date: July 5-14, 2019

Venue: Yellow River Estuary Station, Yellow River Delta National Natural Reserve Administration Bureau, Dongying City, Shandong Province

Time	Activities
July 5	Round table discussion with staff of the Yellow River Delta National Natural Reserve Administration Bureau
July 8-9	Visit the restored site of seagrass
July 10-12	Visit the invasive site of <i>Spartina alterniflora</i>

Date: July 15, 2019 (Student presentations)

Venue: No.105 meeting room, School of Environment, Beijing Normal University (BNU)

Time	Activities	Speaker
14:00 -15:00	Effects of artificial flood pulses on the expansion of <i>Spartina alterniflora</i> at the active Yellow River Delta lobe	Shuai Fu
15:00-16:00	Effects of tidal creeks on the expansion of <i>Spartina alterniflora</i> at the abandoned Qingshuigou lobe of the Yellow River Delta	Limin Sun
16:00 -17:00	Stability of food web of the seagrass system in the Yellow River Estuary under hydrodynamic disturbances	Xinyan Wang
17:00 -18:00	Effects of dam regulation on the hydrological alteration and morphological evolution of the Volta River Delta	Mawusi AMENUVOR (International student from Ghana)

Date: July 16, 2019 (Invited presentations)

Venue: Gingko Hall, Xijiao Hotel, Beijing



Time	Activities	Speaker
09:40-11:20	Modelling Response of Tidal Basins to Relative Sea-level Rise	Zheng Bing Wang (Deltares, Netherlands)
14:00-15:30	Mixing in Environmental Flows: Theory, Field Measurements, Physical and Numerical Modelling	Carlo Gualtieri (University of Naples Federico II, Italy)
15:30-17:00	Mechanisms and Numerical Simulation of Eco-hydrological Processes in Coastal Ecosystems	Tao Sun (Beijing Normal University)

Date: July 17, 2019 (Workshop)

Venue: No.102 meeting room, School of Environment, Beijing Normal University (BNU)

Time	Activities	Chair
14:00 -17:00	Effects of unsteady river discharges on the deltaic morphological evolution on different spatio-temporal scales	Dongdong Shao

Date: July 18, 2019 (Student presentations)

Venue: No.105 meeting room, School of Environment, Beijing Normal University (BNU)

Time	Activities	Speaker
14:00 -15:00	Effects of unsteady river discharges on the potential habitat at the Yellow River Estuary	Xu Xie
15:00-16:00	Remote sensing of the expansion of <i>Spartina alterniflora</i> at the abandoned Qingshuigou lobe of the Yellow River Delta	Limin Sun
16:00 -17:00	Predicting the evolution of deltaic channel longitudinal profile under river mouth progradation	Weilun Gao

Date: July 19, 2019 (Workshop)

Venue: No.106 meeting room, School of Environment, Beijing Normal University (BNU)

Time	Activities	Chair
14:00 -17:00	Numerical modeling of morphological evolution of deltaic channel	Dongdong Shao



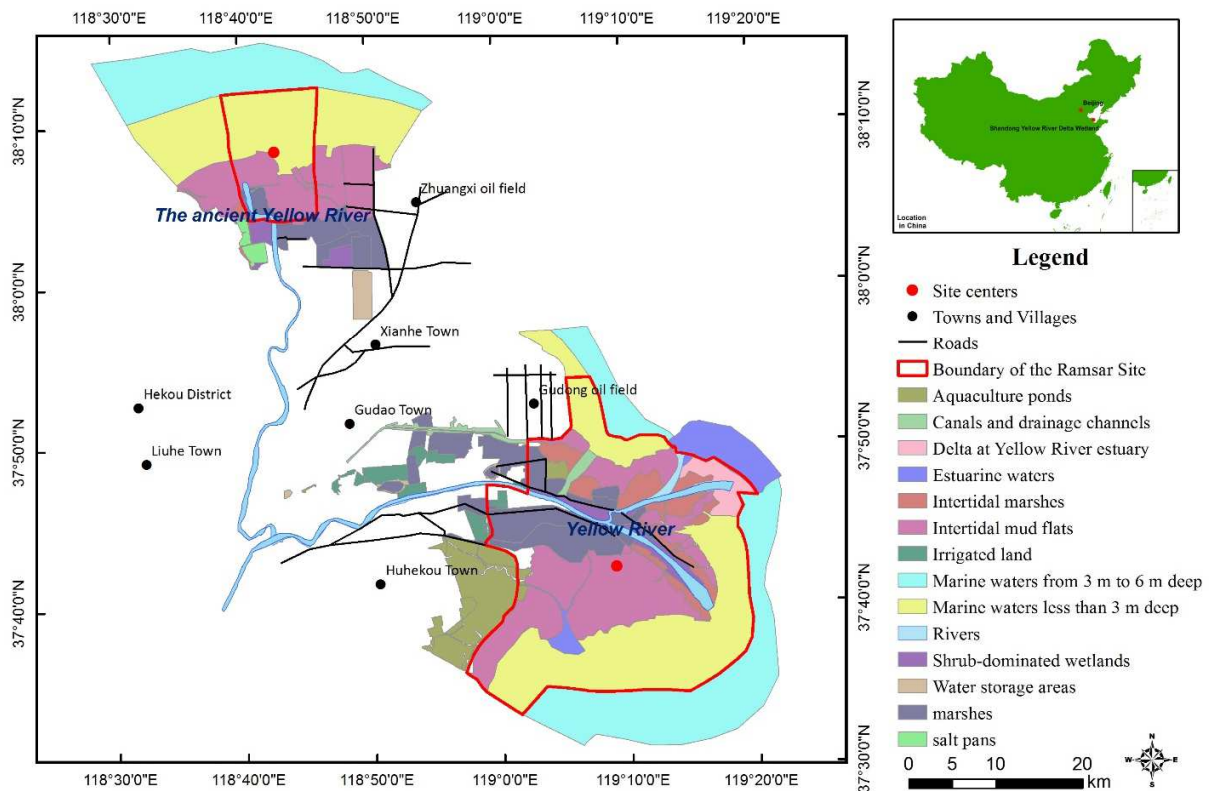
3. Introduction of the YRD

The Yellow River Delta Wetland is an almost naturally intact estuary wetland composed of shallow estuarine waters, tidal flats, marshes, reed swamps, canals and drainage channels, and aquaculture ponds situated at the mouth of the Yellow River Estuary. There are 26751.2 ha shallow sea area, 38890.7 ha marshes, and 26513.5 ha reed swamp in the wetland. The wetland is one of the best examples of an estuarine wetland of the region.

The Yellow River Delta Wetland is formed by the deposition of sediment carried by the Yellow River to the Bohai depression. Due to large amounts of estuarine sediment deposition, the Yellow River extended its reach to the sea by 2.2 km per year, and progradation in the Yellow River Delta occurred at a rate of 32.4 km² annually. This makes the Yellow River Delta Wetland one of the fastest growing wetlands in the world.

Shandong Yellow River Delta Wetland Ramsar Site

(Total area 95,949.9 ha)



The Yellow River Delta National Nature Reserve was established in October 1992 by the State Council of China, which covered 153 000 ha, including core area 58 000 ha, buffer area 13 000 ha and experimental area 82 000 ha. As a wetland-type reserve, it was established to protect the newly



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formed wetland ecosystem, rare and endangered birds. The reserve was divided into two parts: the south part located at the current estuary of Yellow River with a total area of 104 500 ha, and the north part lies in the former estuary with total area of 48 500 ha, which was formed in 1976. In 2014, 95,949.9 ha of wetlands in the Yellow River Delta National Nature Reserve have been accepted as international Ramsar wetlands. The southern area is 81,776.7 ha, accounting for 85.2% of the total area; the northern area is 14,173.2 ha, accounting for 14.8% of the total area.