

International Conference on

## ENVIRONMENTAL MICROBIOLOGY AND MICROBIAL ECOLOGY

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## ECOLOGY AND ECOSYSTEMS

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**Coastal regime shifts: Responses of community structure, multi-functionality of coastal wetlands to *Spartina alterniflora* invasion****Xu Ma**

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*Spartina alterniflora* invasion is a part of global change. The landwards and seawards invasion in coastal wetlands may lead to the reduction of the *Suaeda salsa* and sea grass habitat. The landscape pattern, community structure, species diversity and multi-functionality of ecosystem were changed greatly in the typical estuarine wetland-Yellow River Delta, China. There were significant differences in patches' structure and ecosystem functions from the sea to the land, and there was a significant difference of community structure, species diversity and ecosystem function between the inner and outer regions of patches. Due to density-structured effect, the community structure, species diversity and ecosystem multi-functionality represent gradient differences. The evaluation framework and index system of the impacts of *Spartina alterniflora* on ecosystem multi-functionality were studied, including biological and soil carbon sequestration, N mineralization, phosphorus retention index, primary productivity, decomposition, sedimentary and so on. *Spartina alterniflora* habitat has a significant contribution to the conservation of species diversity and ecosystem multi-functionality. It is possibly a new idea or perspective of evaluating the impact of *Spartina alterniflora* invasion from the perspective of ecosystem multi-functionality.

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