

Special Session SS-3-7

- **Title**

Water Ecological Restoration in Water Shortage Regions

- **Organiser**

Organisation: The Society for Ecological Rehabilitation of Beijing

Representative: Junguo Liu

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- **Co-organiser**

None

- **Potential Presenter**

1. Presenter: Junguo Liu

Affiliation: Rresearcher

Organisation: North China University of Water Resources and Electric Power

2. Presenter: Lian Yu

Affiliation: Professor

Organisation: China University of Mining & Technology, Beijing

3. Presenter: Bangmin Dong

Affiliation: Senior engineer

Organisation: Anhui Leike Environmental Technology Co., Ltd

- **Alignment with Congress**

3. 3. Building Resilience for Disaster Prevention and Mitigation

- **Session description**

In view of the problems of incomplete domestic ecological restoration theory and immature technical system, the project has created a progressive ecological restoration theory integrating "environmental governance - ecological restoration - natural recovery", conquered the river "bypass" restoration technology based on wetland park, developed the technology of reclaimed water replenishment and allocation, and established the theoretical and technical system of "water quantity - water quality" water shortage assessment, It has solved the world problem that water shortage of water quality is difficult to calculate quantitatively. It has carried out in-depth research and practical exploration in the space-time evolution of water resources, the assessment of water quality and water shortage, and the ecological restoration of rivers, and achieved systematic innovation results. It has created the three-dimensional water resource shortage theory and the gradual ecological restoration theory, and the research work has had an important impact in the

field of water resources at home and abroad. The workshop will discuss the practice of water ecological restoration in water shortage regions, including water quality and water quantity. Let the audience understand the theory and practice of ecological restoration through the discussion of domestic sewage purification cases in Beijing and ecological restoration cases in inland rivers and lakes. Taking the design, construction and operation and maintenance of the domestic sewage treatment system of Hope Home, located in Tianzhu Town, Shunyi District, Beijing, as an example, this paper introduces the process flow of domestic sewage treatment by using distributed devices, as well as the mid-cycle utilization after treatment - supplying ecological water for Tianzhu Rural Wetland Park. The three features of this ecological purification system are mainly introduced, one is the GRP buried sewage treatment device, the second is the advanced technology of microbial removal of total nitrogen, and the third is the concept of combining sewage treatment with regional ecological construction.