Preface

Wetland conservation is aimed at protecting and preserving areas of land including marshes, swamps, bogs, and fens that are covered by water seasonally or permanently due to a variety of threats from both natural and anthropogenic hazards. Some examples of these hazards include habitat loss, pollution, and invasive species. Wetland vary widely in their salinity levels, climate zones, and surrounding geography and play a crucial role in maintaining biodiversity, ecosystem services, and support human communities. Wetlands cover at least six percent of the Earth and have become a focal issue for conservation due to the ecosystem services they provide. More than three billion people, around half the world's population, obtain their basic water needs from inland freshwater wetlands. They provide essential habitats for fish and various wildlife species, playing a vital role in purifying polluted waters and mitigating the damaging effects of floods and storms. Furthermore, they offer a diverse range of recreational activities, including fishing, hunting, photography, and wildlife observation.

Wetlands can help mitigate the impacts of flooding in areas due to their function of floodwater storage. According to Vermont Department of Environmental Conservation, numerous wetlands, particularly those situated in floodplains, possess the ability to temporarily hold excess floodwaters when there are high runoff conditions. While wetlands have been likened to natural sponges in the past, their role is better compared to that of natural reservoirs. They store floodwaters that spill over riverbanks or accumulate in low-lying areas. As floodwaters gradually subside, these wetlands slowly release the stored water from their soils. This function of retaining some of the floodwaters and regulating the pace at which water re-enters the stream can effectively decrease the intensity of downstream flooding and erosion. Wetlands also aid in water filtration by removing excess nutrients, slowing the water allowing particulates to settle out of the water which can then be absorbed into plant roots. Their vegetation and soil trap sediments and pollutants, while beneficial microbes in the wetland break down harmful substances. In this manner, these invertebrates are capable of removing as much as 90% of bacteria from the water. [i]

In the present book, ten typical literatures about the protection of wetlands published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on the protection of wetlands. We hope this book can demonstrate advances in the protection of wetlands as well as give references to the researchers, students and other related people.

[i] https://en.wikipedia.org/wiki/Wetland_conservation