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Tram Chim National Park

Fieldtrip Report

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Fieldtrip synthesis of Tram Chim National Park

Introduction

Tram Chim National Park covers an area of 7,588 ha in the Tam Nong District of Dong Thap Province, Vietnam. In 1994, Tram Chim was declared a National Reserve and later recognized as a National Park in 1999 (Beilfuss and Brazen, 1994; Duong Minh et al., 2014). This is Vietnam's fourth Ramsar site and the 2,000th site to be designated globally. The Park is divided into five separate management zones (A1-A5 – Figure 1), each surrounded by dikes and canals totaling 53 km in length.

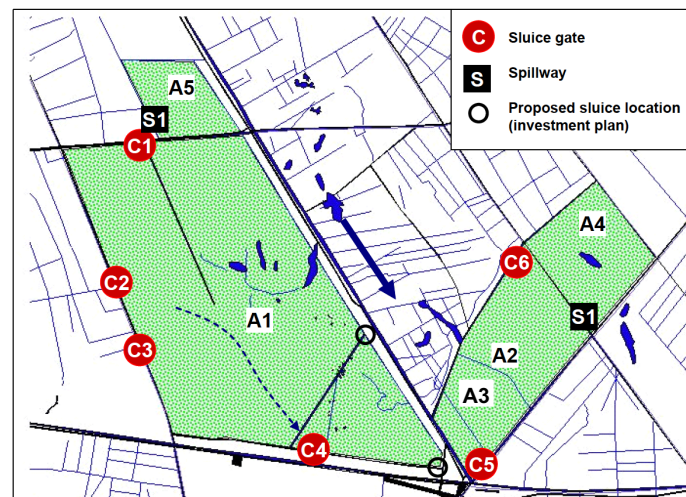


Figure 1. Tram Chim National Park ((Shulman and Truyen, 2006).

Ecosystem of Tram Chim National Park

Wet seasons

Peak flow for the water level occurs between the months of September and November every year and the flow is slowed by layers of thick grass and reed vegetation. This causes the deposition of the majority of sediments drawn from upstream, so that by the time the flow reaches the Tram Chim park area, low sediment concentrations are maintained naturally.

Dry seasons

Flood water tends to recede during the dry season which lies between the months of January and April. At the end of the dry season, some low-lying areas remain flooded due to water logging and this primarily occurs in areas where surface water recedes below the top layer of surface soil. Top soils remains saturated with water due to the soil's capillary action. The area's thick vegetation layer acts as a mulch for reducing evapotranspiration. Moreover, ridges of sandy highland remain completely dry.

Biodiversity of Tram Chim National Park :

The biodiversity in the park complements itself each other to maintain a delicate ecological balance. *Eleocharis spp.*, *Ischaemum rugosum*, *Panicum repens*, *Oryza rufipogon* (wild rice), lotus, and melaleuca are some of the plant species found in the area. It's an ideal habitat for hundreds of vertebrates, including 40 species of fish, and 147 species of birds, including the red-headed Sarus Crane (*Grus antigone*) - a rare migratory bird found in the area primarily during the dry season. The Cotton Pygmy Goose (*Nettapus coromandelianus*),

Greater Painted-Snipe (*Rostratula benghalensis*), and the Pheasant-Tailed Jacana (*Hydrophasianus chirurgus*) are some of the other species of birds found at the national park (MRC, 2010; Shulman and Truyen, 2006; Thinh, 2003).

Purpose of the National Park's Management

The proposed Tram Chim National Park management strategy is to re-establish more natural hydrological conditions within the Park. To achieve this goal, the hydrology and water balance of Tram Chim National Park needs to be managed, and the distribution of native vegetation need to be maintained. Current management of the water levels within National Park is strongly influenced by the desire to prevent fires starting within the Melaleuca forested areas, or fires in grasslands spreading into Melaleuca. However, management practices must also take into account the lower water levels required for feeding the Sarus Cranes within the park.

Water level management and fire management

The current water level within the national park may not reflect those experienced historically. The current water level is generally kept high in order to prevent fire. According to the management of National Park staff, the water level proposed by the researchers is no longer appropriate (personal communication, 2017).

Water level management and biodiversity protection

The vegetation of Tram Chim National Park comprises a mixture of seasonally inundated grassland, regenerating Melaleuca forest and open swamp. The hydrological conditions influence the biodiversity within Tram Chim National Park. The water level fluctuations are dependent upon magnitude, duration, and the frequency of precipitation and flooding events. A report from UNDP mention that Melaleuca forests have a wide water level tolerance. *Panicum* species have a wide tolerance to different water levels; these species can grow well in both dry or wet conditions. However, the report also mentions that grass species like *Eleocharis spp.*, *Ischaemum spp.* and types of wild rice have a narrower tolerance for water level fluctuation. Due to the variable tolerances of the native plant life, water level management is a sensitive issue in Tram Chim national park (Shulman and Truyen, 2006).

Sarus Crane

The Sarus Crane is listed as endangered on the IUCN Red List and visits annually from the end of January through mid-May. Under earlier management efforts, water was permanently stocked in the park in order to suppress fire. However, the wildlife in Tram Chim is adapted to a six-month dry season and a six-month wet season, and year-round water stocking was interrupting this natural rhythm. As a result, habitats dwindled and species disappeared. Importantly, the Purple Spikerush (*Eleocharis atropurpurea*), the main food source of the Sarus Crane, was reduced significantly due to this regime, thereby reducing the number of these birds at the site ("WWF receives award for contribution to the conservation of Vietnam's Tram Chim National Park," 2012).

Tram Chim Management Recommendations

Aesthetic value should be the focus of solid waste disposal in Tram Chim National Park. Otherwise, littering and improper waste disposal could result into bigger problems, such as effects on water quality. Manual pick-up, especially for plastic bottles, should be considered as a present-day solution. Some rules and interventions should be introduced for and

eliminating rubbish in the park. Regular checks for intake of garbage into the park for all tourists is recommended, as is skimming plastics off of the surface of the canals during boat tours. The integrity of the natural habitat must not be altered in order to maintain the endemic and migratory biodiversity within the biome.

There is also a need for new infrastructure and management practices. Current infrastructure only controls or maintains water level inside the river. This helps in avoiding both forest fires and keeps water level at an optimum level for species like the cranes to eat their food. Infrastructure to control water levels inside the canals and wetlands is also recommended. While maintenance of gates in the different zones is carried out, this will need to be expanded if infrastructure is to be expanded. Education programs are also needed for involving school students in wetland preservation, especially within Vietnam. This will empower and educate youth and generate preservation ethics, both in those who visit the park as tourists, as well as in leaders of future.

There is also a lack of planning at the local stakeholders' level. Illegal logging / fishing is a continuing problem. This leads to destruction of the park's natural habitat, inhibiting the native flora and fauna's ability to proliferate. Proper management of water is needed to avoid forest fires. The park is experiencing an over population of human inhabitants which is not advisable, as those inhabitants are dependent upon forest goods for their livelihoods. Ecotourism can and should be managed more efficiently; currently, there is no limitation on the number of people entering the park in one go. This creates traffic into the river and may lead to some unwanted accidents. Also, additional signage in both Vietnamese and English language could enhance the tourist experience within the park.

Can Tho University

The University has recommended an assessment of water in the Mekong Delta be implemented to track the change of water levels or any change in temperature. This can help us to understand the influence of climate change on the impacts on water quality. Salinity assessment and sediment analysis should also be taken into consideration. For the current infrastructure, they have proposed to build more gates and dykes in the Delta to maintain the water level and avoid flood conditions, which can affect crops in the region. The University also proposes to develop appropriate crops for the region, taking changing climate scenarios into account.

Discussion points related to Salinity Control Gate at Ben Tre

From the perspective of future assessment activities, water level monitoring and salinity monitoring should be implemented at the gate. A river flow assessment, including an assessment of should also be conducted here. It may also be necessary to carry out an assessment of the type of crops currently grown in the area, analyze any pattern to their distribution, and assesses local biodiversity in the region adjacent to croplands. Manual filters such as screens could be added into the rivers to improve the river water quality and avoid the suspended solid to destroy the gate, however, the impact of removing sediment from downstream areas needs to be taken into account. In terms of planning in relation to the salinity control gate, additional gates are currently being planned and constructed. Controlling the number of openings of the gates could be helpful for salinity management of river water.

Conclusions

Located in the Mekong Delta, Tram Chim National Park is a precious asset not only for the Mekong Delta but also for the international community. With this potential, Tram Chim National Park needs more contribution from the local people, government, NGO and the international community. Based on our observation, the proposed Tram Chim National Park management strategy is to re-establish more natural hydrological conditions within the Park as well as to prevent the forest fire in the area. Therefore, the infrastructure, management practice and planning must consider those two things.

Can Tho University which located in the Mekong Delta can be the leader for the research and planning carried out in the Mekong Delta. Several research has been conducted by Can Tho University dealing with Mekong Delta. One of major issue in the Mekong Delta is the of saline water intrusion. Saline control gate is needed to perform a good agricultural practice. On the other hand, the river biodiversity need to be conserved.

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