

SECTION I: PROJECT INFORMATION

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| Implementing Organization | Wildfowl & Wetlands Trust (WWT) |
| Grant Title | Enhancing wetland resilience for improved biodiversity and livelihoods in Cambodia |
| Project Location | Boeung Prek Lapouv Protected Landscape, Takeo Province |
| Country | Cambodia |
| Reporting dates (DD/MM/YY-DD/MM/YY) | 17/02/21-22/10/21 |

SECTION II: PROJECT PROGRESS SUMMARY

Description of the implementation status of the planned activities. If changes compared to the original project planning were necessary (delays, changes of a specific activity), please describe and justify them for each activity. Quantify results when possible, e.g. number of workshops held, number of participants in an event (gender disaggregated), size of restoration area in hectares, or number of trees planted (500 words maximum).

Covid-19 in Cambodia restricted travel to the project sites and prevented WWT staff meeting contractors / local community members between February and May (as reported in the mid-project report). However these restrictions eased in the latter half of the project.

Objective 1: Protect and restore the main wetland habitats at BPL

1a) Restore inundated forests

At the start of the project, WWT sought advice from Conservation International on tree / shrub species and a composition appropriate for the wetland. Our staff then met members of the local community to discuss the establishment of a permanent nursery at the project site to provide the seedlings not only for this restoration activity but also future projects at the wetland. Community members collected 1,600 seedlings of six different native inundated forest species and nurtured these in the nursery. Unfortunately, not all the desired species could be sourced from within the Protected Area nor in surrounding areas, so 1,200 trees and shrubs were ordered from the Tonle Sap Lake area.

At the end of June, prior to the onset of the wet season, WWT staff and five community members planted the seedlings in a 5ha site located in the northern section of the Core Conservation Zone. The location of the planting site had been negotiated with local partners and the community, then formally approved by the Ministry of Environment (MoE). The site included a former area of gallery forest historically known as a popular waterbird roost.

Seedlings were planted in a randomised pattern to facilitate a landscape aesthetic similar to that of a natural forest. A brief check on the seedlings in late September revealed only a few had died. Beyond this grant, our team will check the health of the planted trees in February 2022 at the end of the wet season, then again in June. Any failed trees will be replaced with spare seedlings grown in the nursery.

Flooded forest restoration is an identified key Ecosystem-based Adaptation action in the BPL Climate Change Vulnerability Assessment, and in time the forest will become an important fish nursery.



Photograph 1. The community nursery



Photograph 2. Transporting seedlings to the restoration site



Photograph 3. Community members planting seedlings



Photograph 4. Community members and WWT staff at the restoration site

1b) Trial *Eleocharis* regeneration methods

The process to agree a location for the trial involved substantial negotiations between WWT and the local community, rangers, partners and MoE in the first half of the project period. Ongoing land ownership disputes at BPL made this process difficult. By April, the final location and methods were agreed and approved by MoE. Prior to the commencement of on-site activities, WWT also had to raise awareness among local communities about this activity to avoid being mistaken for illegal land encroachment.

WWT hired an experienced local community member to oversee the contract selection process, then supervise the on-site work of the chosen contractor. This was necessary because our staff could not visit the project site frequently due to travel restrictions.

From late June to September, the contractor successfully:

- Infilled 800m of an unused ditch surrounding the water management control plot to raise groundwater levels inside the plot (Figure 2, Task E);
- Ploughed an 8 ha area of poor quality grassland inside the 16 ha water management control plot to investigate the effect of this treatment (Figure 2, Task A); and
- Impounded an 8 ha area of grassland by constructing a 2m wide x 4m high bund to retain water for longer at the end of the wet season (Figure 2, Task B).

Through vegetation surveys the regeneration of *Eleocharis* is now being monitored in these areas, the outcome of which will be known in 2-3 years' time. Through this project, a lot of practical wetland restoration knowledge has been learnt, bringing benefits to future restoration works.

Objective 2: Protect endangered and flagship bird species such as the Sarus crane

2a) Deliver habitat enhancements to *Eleocharis* grassland

Similar to Objective 1b), negotiations were held and the final locations to enhance grassland approved by MoE. Additional consultations were held with local people to ensure the waterways being 'blocked' did not in any way impede the movement of local people around the wetland.

From late June to September, the contractor successfully:

- Blocked 24 unused ditch sections to reduce the loss of water from grassland areas and raise groundwater levels over an approximate 10 ha area (Figure 2, Task D); and
- Lowered the ground level by 10cm in an 8 ha area to promote wetter ground conditions for *Eleocharis* grass species to establish (Figure 2, Task C).

Similar to 1b), the impact of these enhancements is being monitored. Additional surveys include groundwater and surface water levels, and sarus crane usage.

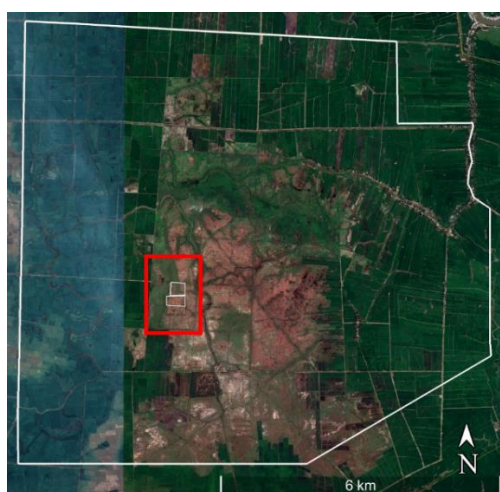


Figure 1. Location of the restoration area (red box) inside BPL (white line = boundary)

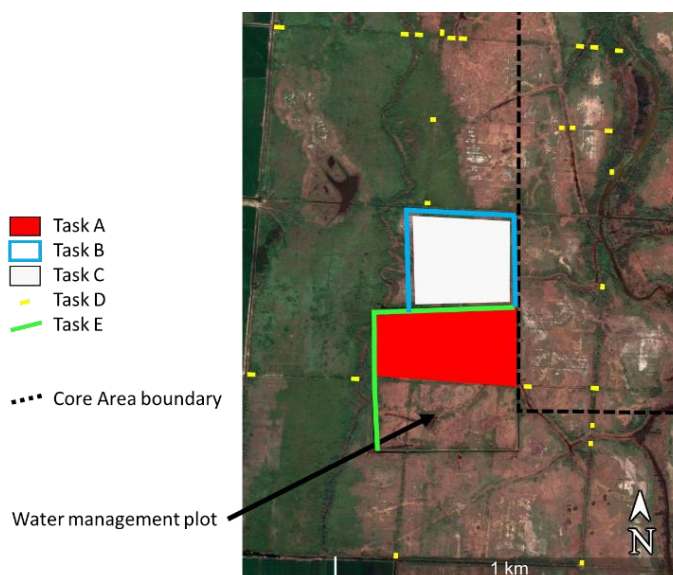


Figure 2. Location of the restoration works

The restored *Eleocharis* grassland will now benefit from the higher groundwater levels, helping to mitigate against the predicted reduction in precipitation due to climate change.



Photograph 5. Land being ploughed inside the water control plot (Task A)



Photograph 6. Contractor infilling redundant ditches (Task D)



Photograph 7. Construction of the bund to retain water (Task B)



Photograph 8. Area enhanced through lowering the ground level (Task D)



Photograph 9. Aerial photograph showing the area enhanced by ground lowering (foreground), surrounded by the new bund, and area ploughed inside the existing water control plot (background)

2b) Monitor and prevent threats to wetland biodiversity

The law enforcement team and Field Monitoring Team (FMT) conducted a total of 172 patrols within the project period along the main canal and key habitats of BPL. Patrol routes were mapped, and monthly reports produced, using SMART and GIS software and then circulated to all relevant partners.

During these patrols, 37 instances of human activities inside the no-entry core area were recorded. Most instances were to collect wetland resources, fishing, and use shortcut trails. On each occasion, the enforcement team explained the rules and regulations of the core area to the people encountered.

Unfortunately, five cases of illegal encroachment occurred and around 70 hectares of natural habitat were ploughed. As a result 10 villagers received warnings. Some of this land has now been brought back under government control, whilst legal action is underway (by the government) to regain the remaining land.

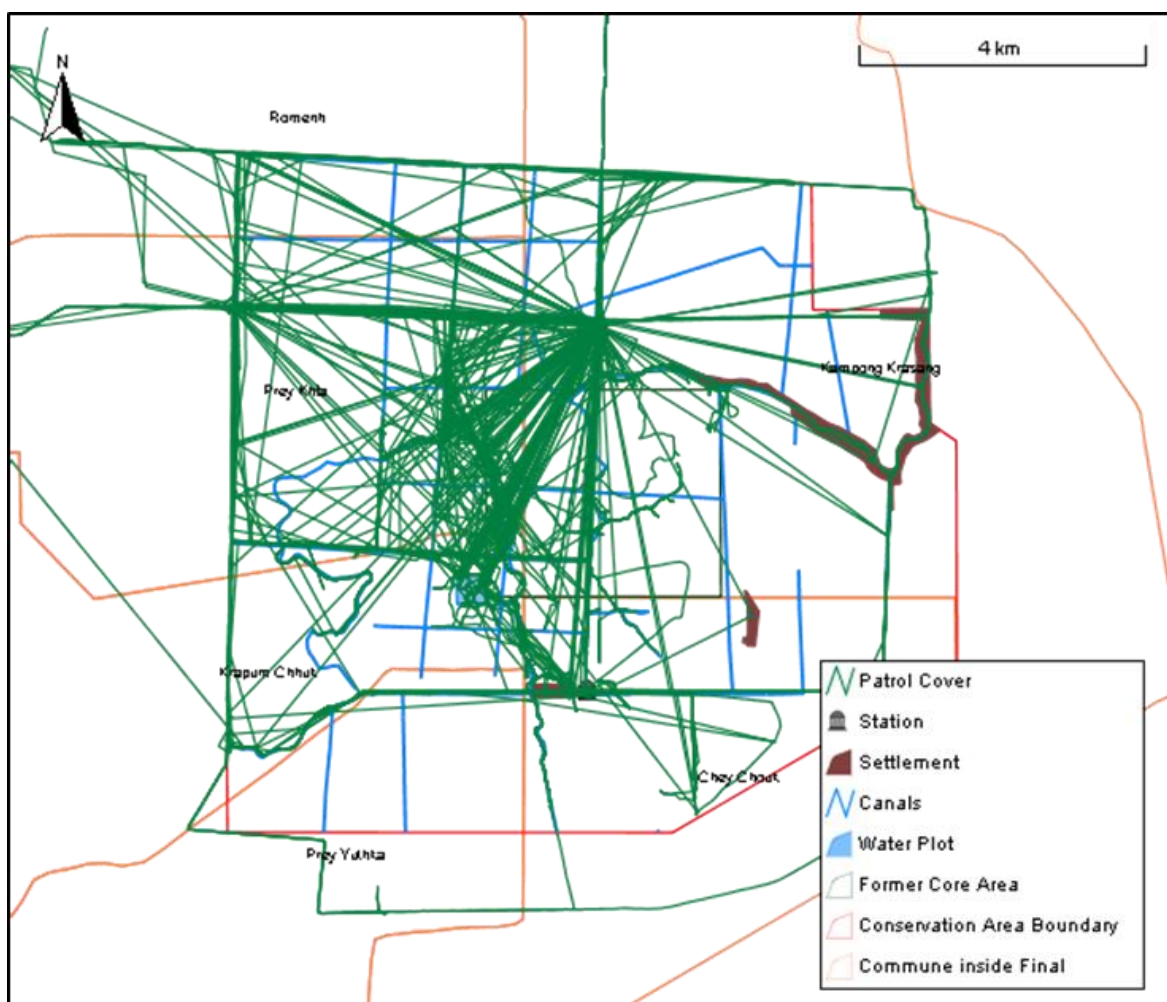


Figure 3. Law enforcement and biodiversity monitoring patrol routes during the reporting period

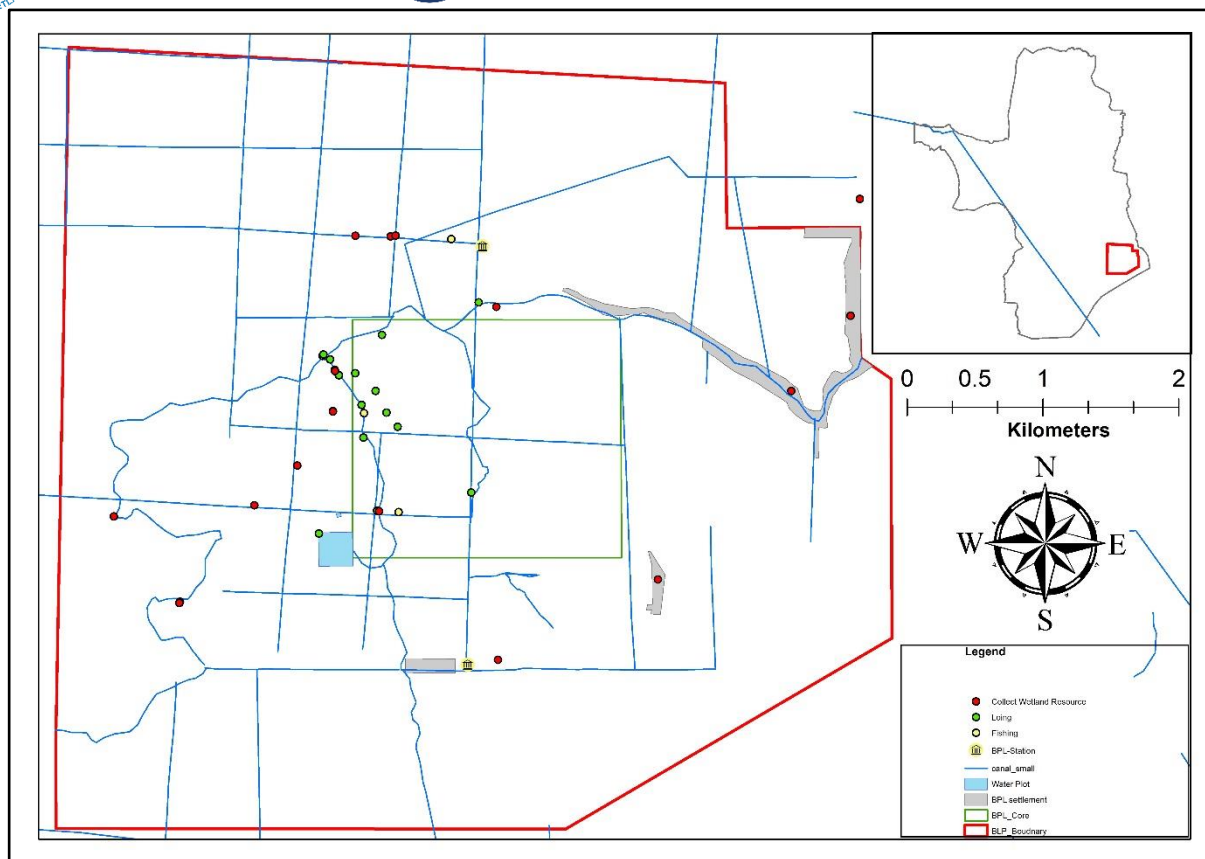


Figure 4. Locations of human activities recorded during the reporting period

Objective 3: Develop irrigation and infrastructure for better water management

Conduct hydrology assessment

Following a month-long tendering process, WWT appointed a Cambodian-based hydrology consultant to conduct the assessment. Desktop components completed in July were then followed by field surveys in August and September with full permission granted by the MoE. WWT staff accompanied the consultant's field team to learn survey techniques such as flow measurement and levelling.

The main outputs from the assessment:

- Updated hydrological map for BPL and surrounding areas including locations of major water control structures;
- Channel cross sections for future hydrological modelling;
- Recommendations on water quality monitoring locations and flow measurement points;
- Water balance calculations for different habitat types at BPL;
- Levelled (in AHD) water level gauges and groundwater dipwell tubes; and
- A comparison of hydrological changes at BPL since 2007.

The report has significantly improved our understanding of the site's hydrology. We can now better target our conservation action and area a step closer to a water resource strategy, an important action identified in the Climate Change Adaptation report for BPL.

Objective 4: Improve awareness, knowledge and capacity of the communities on climate resilience in BPL

Deliver environmental education and awareness programme

Three primary schools (Kdol Chrum, Sangkom Mean Chhey, and Bontey Tley) were targeted by supporting teachers to provide relevant educational content in the school term. Initial meetings were organised, and a teaching work plan developed together with appropriate materials (Photograph 10).

Teachers and students (292 in grades 4, 5, and 6, including 144 girls) joined this year's sarus crane and environmental education programme. By the end of March 2021, the teachers at Kdol Chrum and Bontey Tley had finished 4 of the 10 planned lessons, and those at Sangkom Mean Chhey had finished 6. Due to the Covid situation, these schools were closed and remained so throughout the reporting period, preventing full delivery of the teaching work plan.

Due to the three target schools being located in a remote area with poor internet connection and mobile network coverage, online teaching could not be organized for the students. The priority therefore changed to training teachers and on 27 July 2021, an online training event for 14 teachers from the three schools was delivered (Figure 5). The training improved teachers' knowledge on (1), Biodiversity and Ecosystem, (2), sarus crane and its habitats, (3), Wetland protected landscape, and (4), Threats including environmental pollution and climate change. Afterwards, teachers felt more confident to deliver environmental education topics in the following school season.

Community awareness activities. Due to Covid restrictions, village meetings could not be held. As an alternative, audio messages were developed for mobile (loud speaker) broadcasting.

Broadcasts, led by the Deputy BPL protected landscape director, commenced in June at 4 villages (Sangkom Meanchey, Kdul Chrum, Dey Lerk, and Banteay Sleak village), in Borey Chulsa District Takeo Province. It is estimated over 1,000 families heard the messages.

In July, the same broadcast was played at five other villages (Derm Kroch, Chambak Em and Prolay Meas village, Rominh Commune, and Banteay Tlay and Keo Kampleung village), in Prey Khla Commune, Koh Andeth district. It is estimated over 900 families in these villages heard the messages.

The core messages included: (1) the importance of the wetland protected area, (2) prevention of illegal activities within the protected area, (3) encouragement of local people to get involved in wetland and bird conservation, and (4) wetland wise use principles and the importance of habitats for birds, especially the sarus crane.

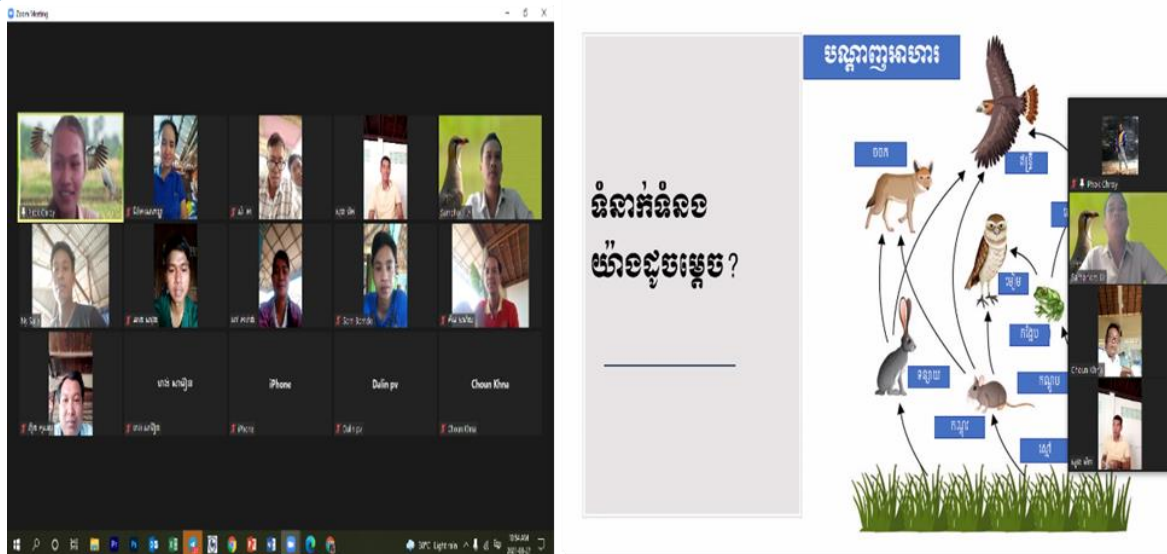


Figure 5. Teacher online training event



Photograph 10. Teaching supplies and material provided to the three target schools



Photograph 11. Mobile broadcasting targeting the villages

Objective 5: Share experience and best practice from BPL at national, regional and international levels

Document outcomes and learning from BPL and disseminate through national and regional fora/events

The core project activities concluded in the last few months - the elevation and hydrology survey in October - and there have been no obvious opportunities in this short period of time to share our experience with external audiences other than project partners. We are in discussion with Wetland Link International - Asia about presenting the grassland and forest restoration activities at the 8th conference in November 2021.

We are very keen to disseminate the project outcomes and will seek out opportunities in the coming months e.g. IBBRI Meeting in 2022.

Promote project outcomes through WWT communications channels and IUCN platforms as required.

A 500 word webstory was drafted in May for IUCN. Due to limited progress and project achievements at that stage, a decision was made to delay until project end to compile a more comprehensive and interesting webstory. This will be submitted to IUCN in the coming weeks.

WWT will post a similar length webstory on its own supporter communication channels in November.

SECTION III: ENVIRONMENTAL AND SOCIAL SAFEGUARDS

Summarize the implementation of any required action related to social or environmental safeguards that your project may have triggered. If during project development you were required to develop safeguard documents or plans, then please refer to these specifically. Please identify and describe any additional safeguard issues or concerns that have arisen during the implementation of the project to date. Please describe any grievance that were received during the reporting period and how they were resolved.

Safeguard 1. EIA and EMP

In the early stages of the project WWT held extensive consultations (Section 16) with Birdlife Cambodia and the vice chief of DoFWC office (Department of Freshwater Wetland Conservation) on the grassland trials and enhancement plans. This resulted in some minor changes to the designs and locations.

E-copies of the safeguarding documents were provided to Birdlife Cambodia, NatureLife and the vice chief of DoFWC office in late February 2021 (Section 17).

The mitigation measures / actions listed in Sections 12, 13 and 14 were imbedded into the contract issued for the grassland habitat enhancements and grassland trials. Permission from the landowner (MoE) was received for all project activities (Section 15).

Safeguard 1. EIA and EMP & Safeguard 2. Process Framework for Involuntary Restrictions

To explain the project activities and publicise the grievance mechanism, a Khmer leaflet was prepared and printed. The leaflet was approved by the vice chief of DoFWC office.

Due to Covid-related travel restrictions, WWT hired an experienced local community member to distribute the leaflets to villages and six communes and post them at Community Information Points. (Safeguard 1: Section 17 and 18; Safeguard 2: Section E).

WWT held a virtual meeting in May with the district government and community council to talk through the project. The WWT-hired local community member chaired this meeting and attended in person. Rationale was provided for the project and work locations / types shown. No objections were raised at the meeting.

SECTION IV: COMMUNICATIONS

Share links to any media/communications pieces covering your project activities. If the communication is not electronic (newspaper article, print publication), please send a PDF version/scanned copy. Photos can be uploaded to https://drive.google.com/drive/folders/10i9-Vgc9Bo0G4WHH_NtH5-UPkoFSGOdV?usp=sharing. In the folder for your implementation country, kindly make a new folder for your organization and upload photos with photographer credits as captions.

No specific communications within the reporting period. As reported above, a webstory will be posted in November. Project photographs, including originals of those in this report, are now in the shared Google drive.