

Policy Brief

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Photo by Pete Martin

The Non-use Values of Wild Elephants in the Five Provinces Border Forests of Thailand

The Wild Elephants of the Five Provinces Border Forests

The Five Provinces Bordering Forests (FPBF), which is part of the Eastern Forest Complex (EFCOM) of Thailand, consists of three national parks, namely, Khao Chamao-Khao Wong National Park, Khao Kitchakud National Park, and Khao Sip Ha Chan National Park. Two wildlife sanctuaries form part of the FPBF-EFCOM: the Khao Ang Rue Nai Wildlife Sanctuary and the Khao Soi Dao Wildlife Sanctuary. The FPBF has a total area of 208,591 hectares; 83 per cent of which is covered by the two wildlife sanctuaries. Most of the FPBF is composed of dry evergreen forest. What makes FPBF unique is the fact that 96,000 hectares of lowland forest with elevation between 55 and 330 metres above mean sea level still remain when almost all lowland forests in other parts of the country have been converted to agriculture (Figure 1). This area is also recognised as one of the most important wild elephant habitats in Thailand.

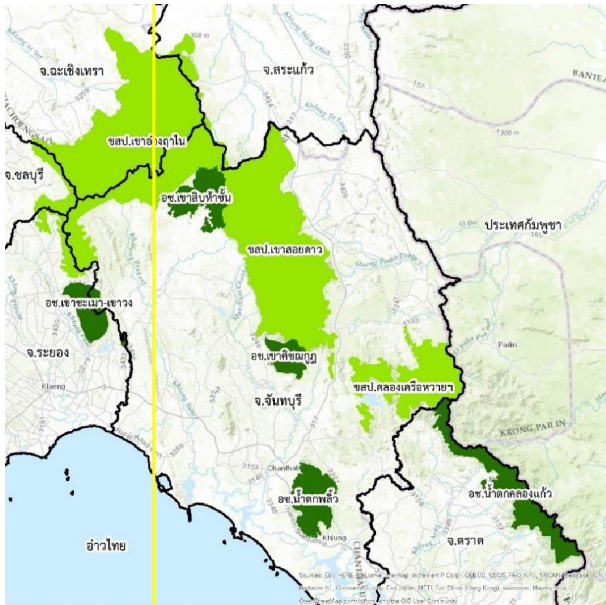


Figure 1. Location of the FPBF-EFCOM

70 million cubic metres in order to meet the EEC’s growing water demands. However, building the reservoir would mean that around 1,116 hectares of forests will be flooded and will segment the wild elephants’ habitat into two sides—on the left side and the right side of the flooded area.

As such, this study was conducted to emphasise an important ecological function of the KSHC-NP that has been overlooked—its role as a habitat of wild elephants. Specifically, the study aims to estimate the non-use value of wild elephants and their habitat. Should the decision to invest in the WTR be reconsidered, such values could be incorporated into the economic analysis of the planned construction to represent the benefits gained from the ecosystem services of KSHC-NP if the construction area would be left undisturbed and the benefits forgone if the WTR is constructed. This will ensure that the costs and benefits of the investments are reflected more accurately. In addition, identifying the non-use value of elephants can be a critical first step in developing a fund to support elephant conservation and habitat management.

Non-use Value and Why it Matters

The total economic value of wildlife species consists of both recreational use and non-use (existence and bequest) values, which can be measured by eliciting willingness-to-pay (WTP) to preserve a particular species (Loomis and Richardson, 2009). Although Thais may have some idea that wild elephants still live in the remaining forests of the country, their understanding would be more on the benefits that humans derive from domesticated elephants. Little is known about the status of wild elephants and about the other dimensions of its benefits. In addition, some people may be aware of human-elephant conflict (HEC) from news stories that show elephants damaging crops and property or being involved in collisions with cars on the roads around the forests.

Although the FPBF-EFCOM is recognised as a protected area, the current policy emphasises on promoting economic activities in the Eastern Economic Corridor (EEC) of Chachoengsao, Chonburi, and Rayong provinces. This means that the environmental conditions of the FBFP forests may be compromised as a result. One important concern in the FPBF is the planned construction of the Wang Tanod Reservoir (WTR) in Khao Sip Ha Chan National Park (KSHC-NP). The planned WTR will have a maximum holding capacity of 99.5 million cubic metres and will provide water supply of



What is not known and has been little studied, however, is the non-use value or the value humans attach to wild elephants that is not conditioned by any present or future direct or indirect benefit. Non-use values are not something that can be traded in the market nor can they be attached with any preference observable by people. Thus, the only approach to estimate this value is to use people's responses to carefully constructed survey questions such that these answers can reveal the values that respondents attach to the subject that is being valued (Bateman et al., 2002). In a contingent valuation method survey, a public good is described, and then the respondents are asked questions to elicit their WTP for the public good through a payment vehicle such as taxes or contributions to a trust fund. In this study, the public good is presented as a number of proposed measures to improve the habitat of the wild elephant to help conserve the elephants while also managing/reducing HEC such as:

- Increase in the number of sources of water supply within the protected area;
- Proper management of alien invasive species;
- Increase in food supply for wild elephants within the protected areas;
- Increase in the number of mineral salt licks within the protected areas; and
- Changes in the type of crops planted along the border of the protected area into crops that are not palatable to the elephants.

In trying to reduce HEC, the benefits gained by local communities living near the protected areas have not been overlooked in the study. The payments from the fund described would be used to compensate for the revenue loss from the damages to crops and properties caused by wild elephant raids. They would also be used to give subsidies to the local communities living adjacent to the protected area such that they can have revenue from alternative sources of income opportunities, such as homestays and wildlife-viewing-ecotourism.

Photo by Zaharil Dzulkafly



The Non-use Values of Wild Elephants in the Five Provinces Border Forests as Reflected in the Willingness to Pay

A total of 400 respondents were interviewed in the study using a single-bound dichotomous choice. The respondents consisted of 245 respondents in Bangkok and 155 respondents in Chantaburi province. They were presented with the details of the hypothetical goods, and the respondents were asked their WTP to support conservation measures to improve the elephant habitat of KHSC-NP through a monthly contribution in the form of a water fee surcharge for a period of one year. The money collected from the contributions would be established as the FPBF-EFCOM Wild Elephants Home Trust Fund. As expected, the percentage of respondents who were willing to pay declined as the value they were asked to pay per month increases (Figure 2).

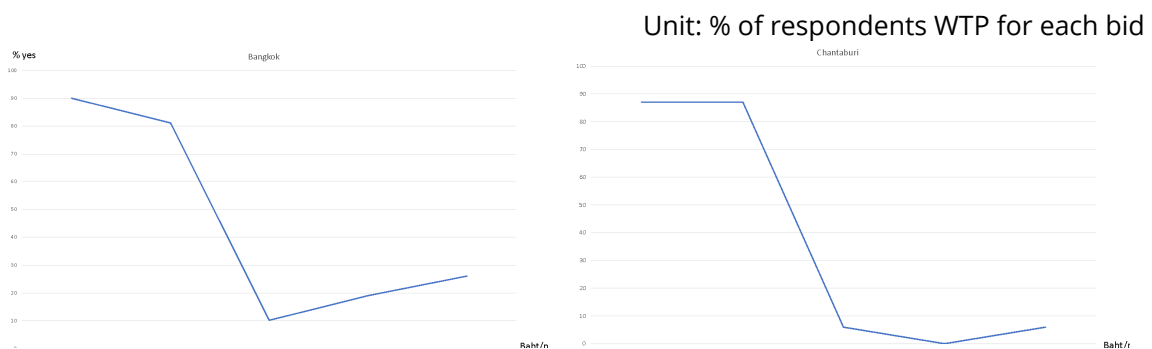


Figure 2. Willingness to pay to support FPBF-EFCOM's wild elephant conservation across bids



The mean WTP of the Bangkok respondents was THB 31.61 per household per month or THB 379.35 per household per year. The WTP of Chantaburi respondents, on the other hand, was THB 21.29 per household per month or THB 255.48 per household per year. These values were then multiplied with the number of households in Bangkok and the number of households in the municipal area of Chantaburi. The non-use value here refers to the value that people will be willing to pay to support the proposed habitat conservation measures. Accordingly, the non-use value amounts to THB 1,104 million and THB 25 million, respectively, and a combined value of THB 1,130 million or approximately USD 34 million (Table 1).

Table 1. Willingness to Pay (non-use values) of wild elephants in FPBF

Parameter	Bangkok	Chantaburi
Willingness to pay (THB/household month) ¹	3.61	21.29
Willingness to pay (THB/household/year)	379.35	255.48
Number of households ²	2,912,412.00	98,558.00
Total willingness to pay ³	1,104,823,492.20	25,179,597.00

Notes:

1. The unit in THB per month per household is based on the assumption that there would only be one person per household who would be contributing to the Conservation Trust Fund.
2. Based on the National Statistics Office.
3. The number of households for Chantaburi refers only to those living in the municipal area of the province.

The Path Ahead

Should the decision to invest in WTR be reconsidered, the non-use value of THB 1,130 million or approximately USD 34 million should be used to recalculate the costs and benefit of the construction, as this value gives a better reflection of the benefits forgone. Accordingly, this would increase the WTR project cost estimates, and thus alter the net present value of the original calculation. This could then prompt decision makers to consider other sites for reservoir construction or find ways to alter the design that could avoid and minimise the habitat fragmentation. Beyond that, other practical steps could be done as follows:

There is potential to mobilise funds to undertake wild elephant habitat conservation measures.

The existence of significant non-use value of elephants implies that fund mobilisation schemes could be done to tap contributions from non-users—be they households in Bangkok or the beneficiaries of the water supply from the FPBF-EFCOM. The funds could then be used to compensate local communities and to provide incentives/funding to support elephant habitat conservation. The FPBF-EFCOM could be used as a pilot for this strategy, and then be replicated in other major elephant habitat areas throughout the country.

There are possibilities of turning HEC into opportunities for sustainable livelihoods of local communities.

Well-designed wildlife policies can be conducive to both conservation and economic development goals. Mobilising funds to restore wild elephant habitats and to provide economic incentives to local inhabitants living adjacent to the KSHC-NP could be a policy direction that would earn more public support than the current practice of compensating the locals for crop damages, which does not reflect the market value of the loss and takes time to process.

Cooperation of both the potential contributors and the local communities is contingent upon the presence of “trust”.

The monthly amount that the general public would need to give is not high. For a period of one year, the required amount would be between THB 20 and THB 30, which would not be much of a dent in an individual's economic status. On the other hand, these small contributions can fund significant resources that could be used to support conservation efforts at a scale that makes a difference. However, a well-designed wildlife policy may fail to take off because of the ‘trust issue’. In the study, the respondents were concerned about the management of the trust fund and the possibility of corruption. As such, these concerns must be addressed.

The ACB could offer a follow up and meaningful step forward

In relation to the above, the ASEAN Centre for Biodiversity (ACB) could organise a dialogue workshop with key stakeholders, such as the Department of National Parks, Wildlife and Plant Conservation, the Royal Irrigation Department, the East Water Resources Development and Management Public Company Limited,—a major buyer and distributor of water in the EEC—the EEC Committee, the provincial governors of Chantaburi and Rayong, and the Metropolitan and the Provincial Works Authorities. Such workshop would provide timely and targeted access to the key agencies and a forum for discussing joint ways forward to avoid negative environmental impacts in ways that would not compromise the economic goals of the EEC.



Photo by: Praveen Pandian

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Disclaimer: The content of this article is the sole responsibility of the author and does not necessarily reflect the views of either the ACB or the EU.

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