

ECOTOURISM DEVELOPMENT at XE BANG FAI CAVE, LAOS

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Introduction

Xe Bang Fai Cave in Hin Nam No National Protected Area (NPA) is a world class cave with great potential for ecotourism. Hin Nam No NPA encompasses part of a limestone karst area in Khammouane Province in central Laos, adjacent to the border with Vietnam (Figure 1). The Xe Bang Fai river has cut a 6.4 kilometre (km) underground course through the limestone mountain, creating one of the largest active river cave passages in the world. The active river passage averages 76 metres (m) in width and 53 m in height, with a maximum width of 200 m and a maximum height of 120 m. In addition to the size of the cave passages, the cave is superbly decorated with speleothems, including many large and beautiful stalagmites, flowstone draperies, gour pools and cave pearls (Pollack et al. 2009).

Exploration and Mapping of the Cave

The first recorded traverse of the river passage through the cave was led by the French explorer Paul Macey in the year 1905. The next recorded exploration and first detailed survey of the cave was by a team of French cave explorers in 1995, after which the area was closed to foreigners for 10 years. A team of North American cave explorers visited the cave in 2008, and documented the cave to a high standard with 'state of the art' surveying and photographic equipment (Pollack et al. 2009). The North American team returned to the cave in early 2015 to finish the exploration and mapping of the cave in collaboration with the Hin Nam No Project, a German development cooperation project with the Lao government. A map of the cave, with 14.7 km of passage in total, is presented in Figure 2. In early 2016, the exploration and survey of a nearby cave, called Tham Nguen, led to a connection, bringing the total length of the Xe Bang Fai Cave system to 16 km.



Ecotourism Development of the Cave

Although the ecotourism potential of the cave has long been recognized, its remote location, difficult access, a lack of services, and low human resource capacity in the area has limited that potential. Ecotourism to the cave began about 10 years ago with a few small groups of kayakers, cavers and other adventurers. The ecotourism company 'Green Discovery Laos' has offered adventure tours to the cave during this period. Photographs of the large cave passages and speleothem formations from the first North American expedition were published on the National Geographic website in 2008, revealing the splendours of the cave to the world. A complete magazine article with more pictures and a detailed map of the cave was published soon after (Pollack et al. 2009). More recently, a book on Xe Bang Fai Cave resulted from the 2008 and 2015 North American expeditions (Bunnell and Kambesis, 2016). French cavers also published a magazine article on the cave, including a map and pictures (Mouret et al. 2010). These articles, photographs and maps have contributed substantially to raising awareness of the significance of Xe Bang Fai cave, and to increasing interest in ecotourism visitation to the cave. The cave was designated as a tourism site by Khammouane Province in 2010.

Since 2011, the Hin Nam No Project has assisted with conservation and ecotourism development of the cave using a co-management approach involving the local villagers. The Hin Nam No Project has provided skills development training to the villagers for providing services to tourists, including village cave guides and village guesthouse and homestay options for accommodation. Project supported developments to facilitate tourism to the cave while minimizing its impacts include constructing defined walkways to the cave entrance and along an upper balcony passage, and building wooden boats for touring the main river passage. In the meantime the Lao government has been working to upgrade the road access to the area.

The villagers now offer guided cave tours of a downstream section of the river passage and an upper balcony passage that overlooks the river passage (see Figure 3). From the downstream entrance to the cave, visitors are taken along the active river passage by boat to a point about 1.75 km into the cave where a major rockfall and rapids obstructs further navigation. On the way back downstream the boats stop on the left bank of the river passage and the visitors are guided on a walk up the balcony passage to a balcony overlooking the active river passage near the downstream cave entrance. This trip allows visitors to see many of the outstanding features of the cave, such as the large river passage, large and beautiful stalagmites and flowstone draperies, bats and swiftlets roosting in the ceiling near the cave entrance, and the spectacular view out the entrance from inside the cave.

1. Map showing the karst areas of Laos and Hin Nam No NPA in central Laos, adjacent to the border with Vietnam.

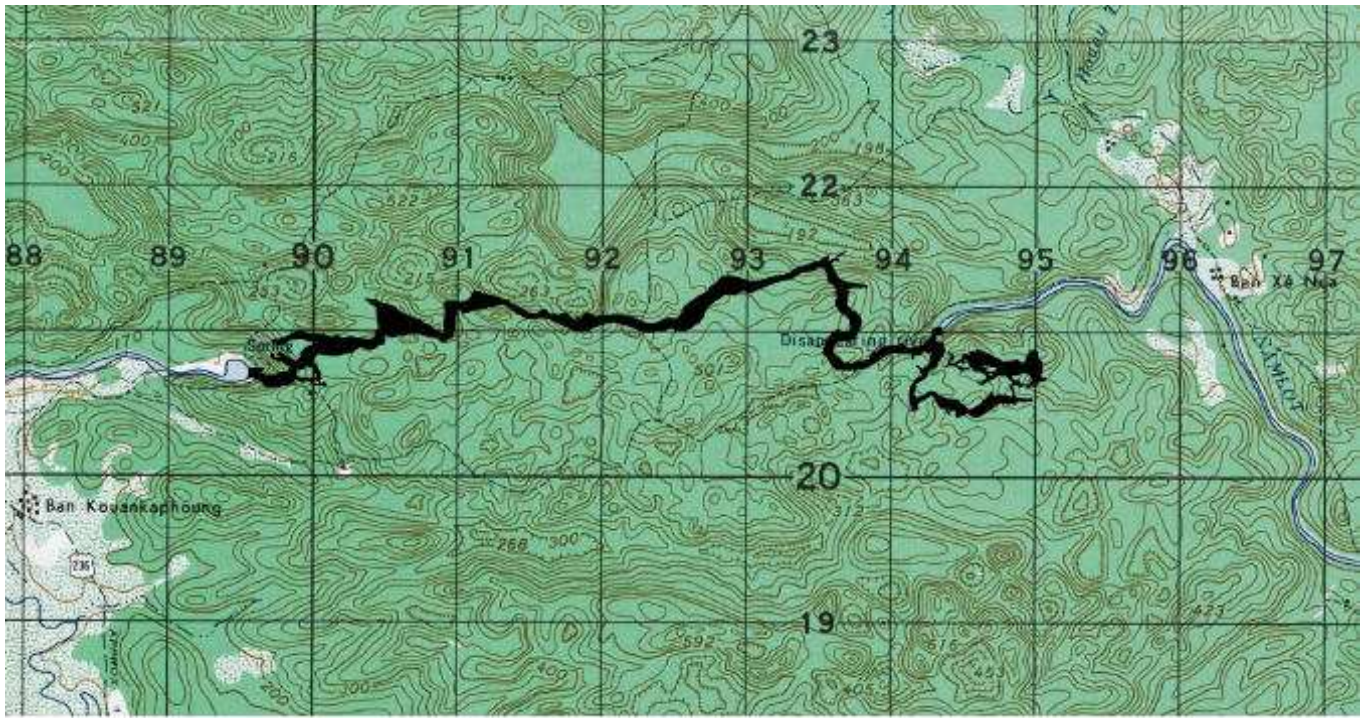


Figure 2. Map of Xe Bang Fai Cave overlaid on a topographic map with a 1km grid.

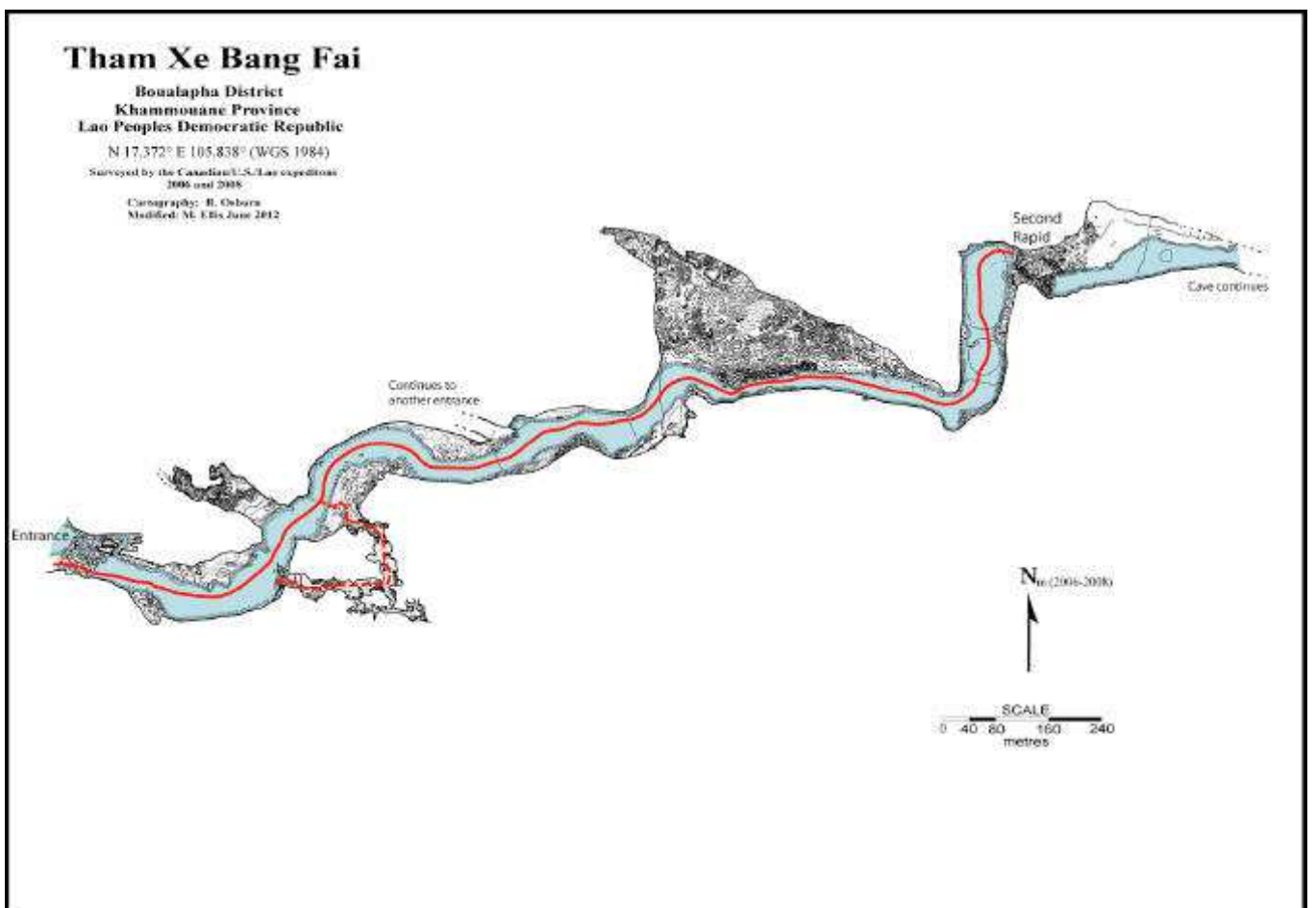


Figure 3. Map showing the downstream section of Xe Bang Fai Cave with the boat route indicated by the solid line along the river and the balcony walk indicated by the dashed line.

Adventure-seeking visitors with a good level of physical fitness and agility can kayak all the way through the active river passage (and back) using inflatable or hard shell kayaks (see Figure 2). The kayaks must be portaged around three major rockfall / rapids in the downstream section of the cave, and a further five rapids in the upper section of the cave must be portaged going in the upstream direction, but can be 'run' when kayaking downstream. As long as the kayakers stay on the river or close to the riverbank and near the water level they have minimal impact on the cave passage or speleothem formations. This trip is offered on a commercial basis by Green Discovery Laos, or can be organized with village guides if you have your own kayaks and equipment. Improved access to the river upstream of the cave now allows a two-day kayak trip through the upper karst valley and downstream through the cave.

Publicity about the cave, along with improved access and services has resulted in a rapid increase in visitor numbers in recent years, as shown in Table 1. The cave can only be visited for tourism during the dry season, from November to May.

Table 1. Visitor numbers to the Xe Bang Fai Cave in recent years.

Dry Season (years)	Number of Visitors
2011-2012	93
2012-2013	332
2013-2014	465
2014-2015	1743
2015-2016	2781

For the 2015-2016 dry season, the visitor number comprises 2391 Lao nationals and 390 foreigners (14% of the total). It is good to see that Lao people are enjoying and appreciating the cave, and there is still plenty of potential for foreign visitor numbers to increase. Revenue from cave tours is shared between the local villagers and Hin Nam No NPA in a benefit sharing arrangement. The ecotourism service providers in the nearby village earned a seasonal average of \$255 each for providing tourism services, which is a 20% increase in their average annual household income.

World Heritage and Ecotourism at Xe Bang Fai Cave

The Lao government has recently placed Hin Nam No NPA on the World Heritage tentative list, a first step towards the nomination of Hin Nam No as a UNESCO Natural World Heritage site, under criteria for geoheritage (criterion viii) and biodiversity (criterion x). Xe Bang Fai cave is the most significant and distinctive geomorphic feature in Hin Nam No NPA. Thus, it would be one of the key features for claiming the outstanding universal value of Hin Nam No under criterion viii. In addition, the biodiversity and endemic species living in the cave contribute significantly to the overall biodiversity of Hin Nam No, which would be the basis of claiming outstanding universal value under criterion x. On the other hand, the Xe Bang Fai Cave is the most prominent tourist attraction in Hin Nam No, and is seen as a promising source of income for the

sustainable financing and management of Hin Nam No NPA, and for improving the livelihoods of the local villagers.

Listing a property as a Natural World Heritage site requires that it be deemed of outstanding universal value, and meet strict conditions of integrity, which is defined as a measure of the wholeness and intactness of the natural heritage and its attributes. Therefore, a careful balance is required between the infrastructure required to facilitate tourism to the cave and the need to minimize alteration or disturbance to the natural features and environment in and around the cave (Williams 2008). In a World Heritage site, this balance must err on the side of precaution and conservation. These principles have been used to guide the ecotourism development of the cave, so as to preserve the integrity, and not to jeopardize the possible listing of Hin Nam No as Laos' first Natural World Heritage site (Bolger 2013). The prospective listing of Hin Nam No as a UNESCO Natural World Heritage site will enhance the profile as well as the management of the NPA, including the cave.

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Top: This spectacular series of rimstone terraces is one of the many scenic views enjoyed by visitors in the downstream section of the cave

Bottom: Phil Whitfield with the Dragon Eggs, seen by visitors in the Balcony Passage

Photos: Dave Bunnell



Top: The view towards the downstream entrance from the end of the Balcony Passage, which visitors explore on foot. From here they must retrace their steps.

Bottom: Cavers in the passage above the Dragon Balcony, in a view 180 degrees from that above.

Photos: Dave Bunnell