

# AN OVERVIEW OF CAVES AND CAVING IN THAILAND

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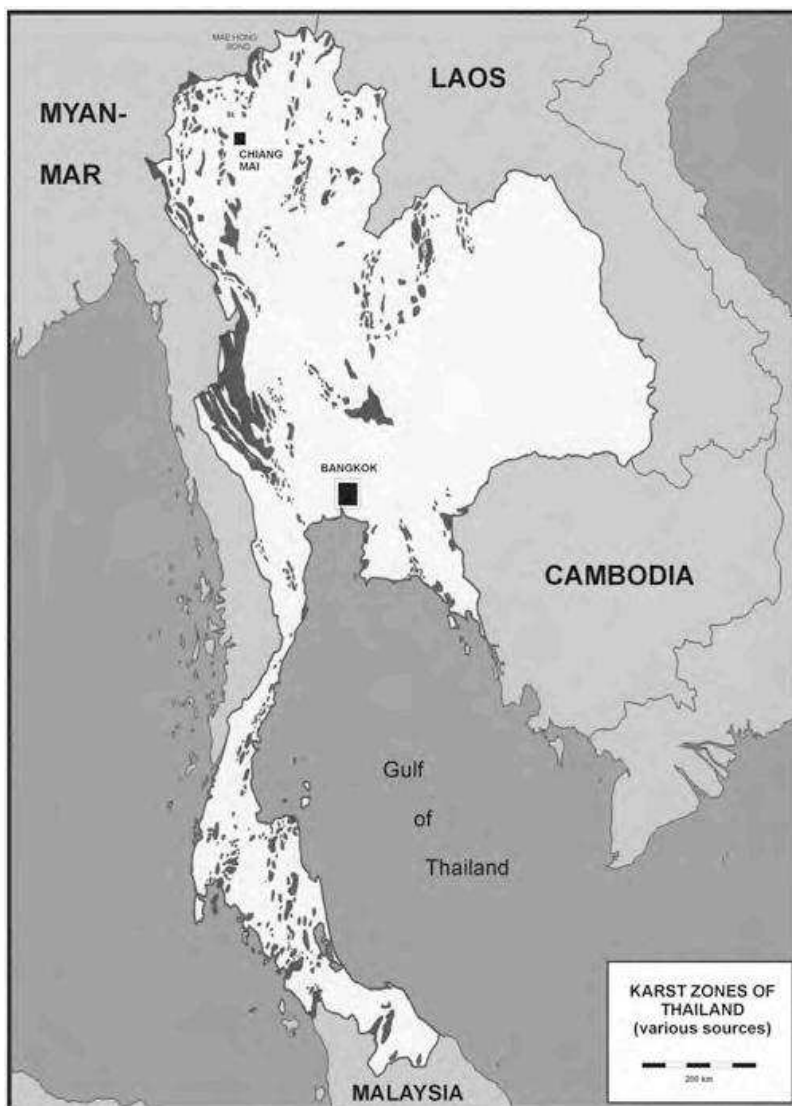
## Abstract

Karst is widespread in Thailand and covers 18% of the land area, formed on limestones deposited from the Ordovician to Jurassic periods with Permian limestones occurring most extensively. Also, the Khorat Plateau in northeast Thailand contains some sandstone pseudokarst. The exploration and documentation of Thai caves has been particularly active since the early 1980s. These exploration activities have resulted in rapid increases in speleological knowledge during this period. Currently 5200 sites have been recorded in a database of Thai caves. In total there are 19 caves longer than 3km and 28 caves with a vertical range greater than 120m. The longest surveyed cave in Thailand is Tham Phra Wang Daeng at 13.75km and the cave with the largest vertical range is Tham Pha Phueng at 476m. Cave exploration is still active in a number of karst areas around Thailand, while other karst areas remain virtually unexplored with regard to speleology. Surveys of the cave biodiversity have resulted in over 450 species being recorded, of which 200 were discoveries new to science. Significant archeological discoveries in caves include human remains in southern Thailand dated to 25,000 BP, and log coffin burials in northern and western Thailand dated to 1700 BP. Surely, many more exciting discoveries await intrepid cave explorers in Thailand.

**Keywords:** Caves, exploration, karst, speleology, Thailand

## Introduction

Karst is widespread in Thailand (Figure 1), except in the northeastern region, and covers 18% of the land area (93,000 km<sup>2</sup>), formed on limestones deposited from the Ordovician to Jurassic periods with Permian limestones occurring most extensively. Also, the Mesozoic sandstones of the Khorat Plateau in northeast Thailand contain some pseudokarst. The exploration and documentation of Thai caves has been particularly active since the early 1980s, with the majority of the exploration (to date) being done by European, Australian and American cavers on small scale expeditions and by Western expatriates living in Thailand. While caving is not organized as a sport or pastime in the country, Thai academics are conducting ongoing speleological research in the fields of biology, archeology, paleontology and hydrology. More recently the Department of Mineral Resources has begun exploring and documenting caves, starting in the south of Thailand. These exploration and research activities have resulted in rapid increases in speleological knowledge during this period. Currently 5200 sites have been recorded in a database of Thai caves.



*Figure 1. Karst map of Thailand (according to Pèpe et al 1997 and SGGES World Karst Map)*

### Longest caves

The 10 longest surveyed caves in Thailand are listed in Table 1. The table shows that long caves occur from the north to the south of the country. Seven of the 10 longest caves have been surveyed or had their survey extended since the beginning of this century. Tham Phra Wang Daeng is currently the longest cave in Thailand at 13.75km. A line plot of Tham Phra Wang Daeng overlaid on a topographic map is presented in Figure 2. Consisting mainly of a 10km long, large streamway passage, it makes for a magnificent caving trip. Detailed descriptions of the twenty longest caves in Thailand are given in Ellis (2015).

**Table 1.** *The 10 longest caves in Thailand*

No.	Cave Name	Region	Length (m)	Explored
1	Tham Phra Wang Daeng	North Central	13,789	1997-2004
2	Tham Mae Lana	North	12,720	1986-1992
3	Tham Yai Nam Nao	North Central	10,631	2004-2014
4	Tham Luang	North	10,316	1986-2016
5	Tham Lom system	North	9,277	2015-2017
6	Tham Nam Lang	North	8,550	1986
7	Tham Takobi	North Central	7,346	2000-2003
8	Tham Krachaeng	South	5,633	1993-2000
9	Tham Nam Wang Si Thamma Sokarat	South	5,200	2011-2014
10	Tham Chiang Dao	North	5,170	1985



*Figure 2. The large stream passage of Tham Phra Wang Daeng*  
Photo: Andy Goddard



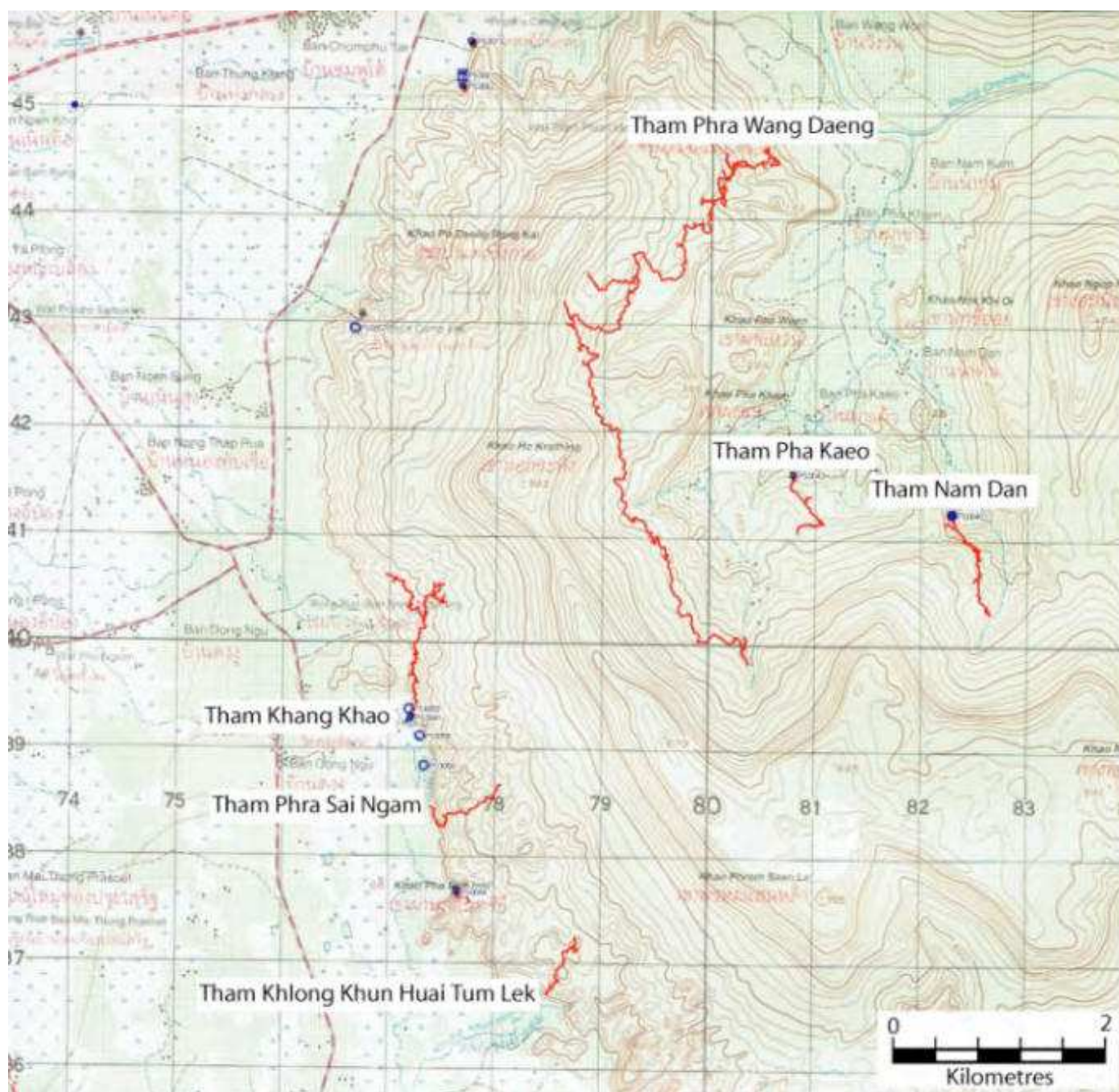


Figure 3. Topographic map with a line plot of Tham Phra Wang Daeng and other nearby caves

## Deepest caves

The five deepest surveyed caves in Thailand are listed in Table 2. Thailand is not known for deep caves, with only three caves having a vertical range greater than 200m. Most of the deepest caves are found in the north of Thailand, with several deep water-filled springs such as Tham Sra Kaeo occurring in the southern region.

Tham Pha Phueng is currently the deepest cave in Thailand with a vertical range of 476m. A vertical section map of Tham Pha Phueng is presented (Figure 4). The cave initially descends at 12° to 20° for about 700m in mostly large passage, leading to the top of a very deep pit. At this point the cave becomes more sporting with the 127m deep Fitch Pitch being the biggest descended pitch in Thailand. Detailed descriptions of the twenty deepest caves in Thailand are given in Ellis (2015)

**Table 2.** *The five deepest caves in Thailand*

No.	Cave Name	Region	Depth (m)	Explored
1	Tham Pha Phueng	North	476	2005-2014
2	Tham Pha Daeng	North	246	2005-2013
3	Tham Sra Kaeo	South	240	1993-2007
4	Tham Ban Luang	North	199	1984
5	Tham Ya Wua Yai/Tham Phet	South	190	1987-2016

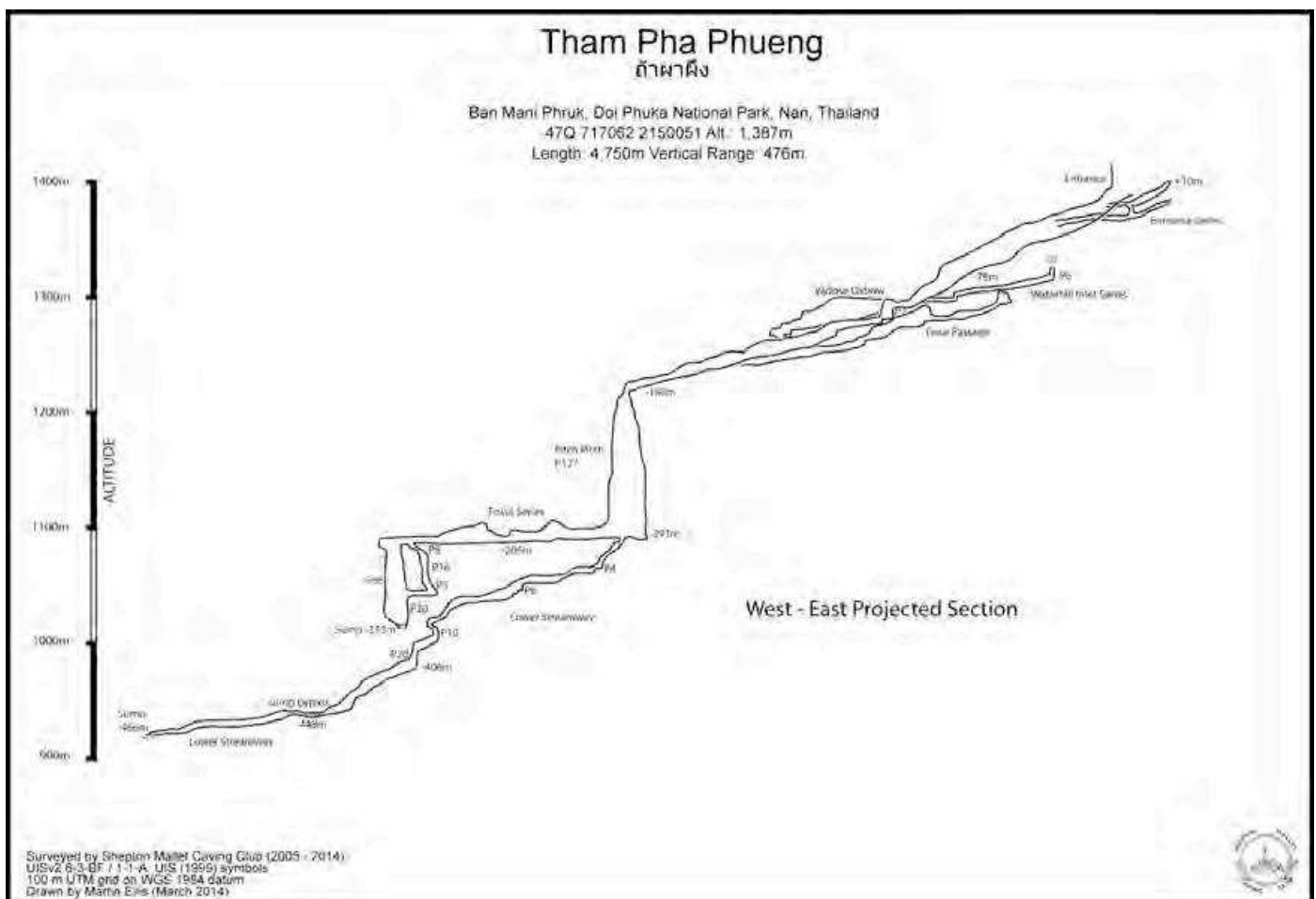


Figure 4. Vertical section map of Tham Pha Phueng

Surveys of cave biodiversity have recorded 466 species in Thailand (Table 3), with 43% of the species being described as new taxa. These new taxa include 5 species of bat, 13 species of scaled reptiles (lizards and snakes), 8 species of cave-adapted fish, and a wide range of invertebrate species.

*Table 3. Biodiversity recorded from caves in Thailand*

<b>Taxonomic Group</b>	<b>Species</b>	<b>New Taxa</b>
Mammals	93	5
Birds	12	0
Reptiles	35	13
Amphibians	7	1
Fish	18	8
Invertebrates	312	173
<b>Total</b>	<b>466</b>	<b>200</b>



*Figure 5. A cave gecko, Cyrtidactylus auribalteatus, from Tham Phra Wang Daeng.  
Photo: Phil Collett*





*Figure 6. Log coffin burial site in a cave in northwestern Thailand  
Photo: Terry Bolger*

### **Cave archeology**

Significant archeological discoveries in caves include human remains from Tham Moh Khiew in southern Thailand dated to 25,000 BP, the oldest remains of modern humans from Thailand. In northern and western Thailand log coffin burials dated to 1700 BP are found in a number of caves and rock shelters, often in very inaccessible places. The culture related to the log coffin cave burials is still a mystery.

### **Concluding Remarks**

While the speleological knowledge of Thailand's caves has increased rapidly over the last 35 years, surely many more exciting discoveries await intrepid cave explorers in Thailand. For those wanting to know more about Thailand's cave heritage, a wealth of information is available in the reading list below, and on the Caves & Caving in Thailand website: [www.thailandcaves.shepton.org.uk](http://www.thailandcaves.shepton.org.uk)

### **Reading List**

- Coates, K. J. (2009) "Mystery of the log coffin culture". *Archaeology* 62(5), September/October 2009 pp49-54
- Dunkley, J. R., Ellis, M. and Bolger, T. (in press) "Unusual caves and karst-like features in sandstone and conglomerate in Thailand". *Helictite* 44
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