

**Karstifiable rocks
(potential karst aquifer)**

 Continuous carbonate rocks

WOKAM database;
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Country	MIKAS springs	Coordinates / Nearby City	Spring discharge (Q in l/s,min/av/max) / tapped or not	Criteria* in order / Main justification */ H-historic, A-aesthetic, S-scientific, E-Economic, Ec-ecologic	Data collected by
Philippines 	1. Puerto - Princesa	10° 10' N, 118° 55' E Z = ~ 5 m asl City of Puerto Princesa, Palawan	200 / - / 20,000 Not tapped and used.	S, E, A <i>Spring is an exit of large underground river and connected cave system. It emerges from St. Paul Limestone of Late Oligocene to Early Miocene age. Underground river flows through c. 8km cave and discharges directly into the sea. The linked cave system is over 34km long. During high flow the cave is full of fresh water. As discharge decreases saline water flows into the cave and at the lowest flows the first 5–6 km of the cave is characterized by three distinct water layers with different salinities: the upper layer consists of freshwater, the intermediate of brackish, and the lower one of seawater. The hydrodynamic behaviour of the water flowing inside the cave is rather complex, being simultaneously controlled by allogenic recharge and tide. It is one of the world's longest vadose caves that can be explored upstream from a spring. The cave is visited by c. 300,000 tourists/year and is of high economic value. This is World Heritage Site, while the catchment is in National Park.</i>	John Gunn

MIKAS – Puerto – Princesa



Entrance of the Puerto Princesa Subterranean River along the NW coastline of Palawan (photo: L. Piccini, La Venta Esplorazioni Geografiche).

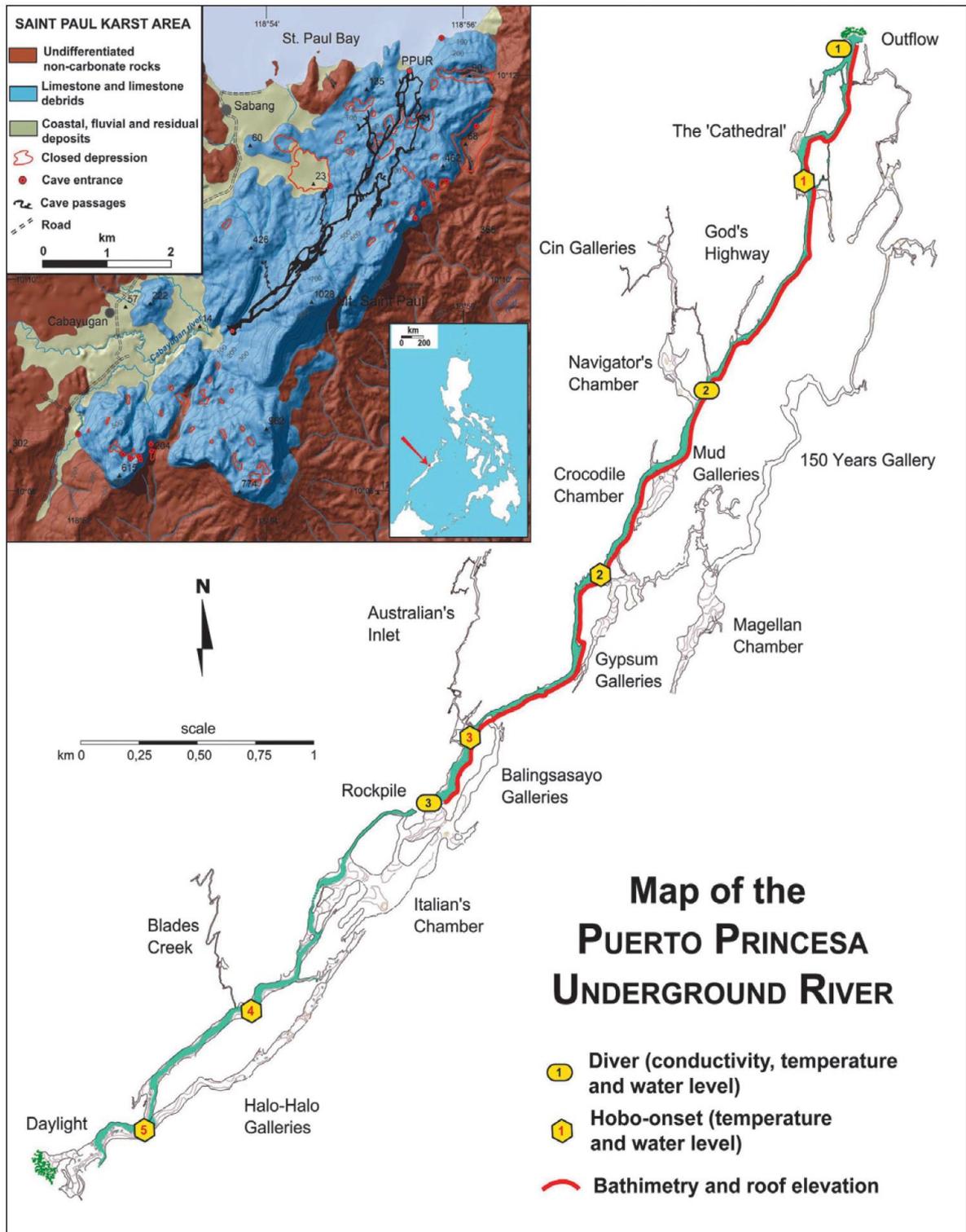


Fig. 1 in Calligaris et al. 2018 (Effect of a strong rainstorm on the hydrodynamics of the Puerto Princesa underground river (Palawan, Philippines). *Acta Carsologica*, 47/1, 53-67). "Index map, geological sketch (modified after Piccini & Landelli 2011), present day extension of the Puerto Princesa Underground River with location of the instruments installed during the 2016 expedition (modified after De Vivo et al. 2013). The river path is seen in blue. All other cave paths are at higher elevations".