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Capisaan Cave System: A ‘critical habitat’ with vast eco-tourism potential

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Dr. Jayson Q. Caranza, an assistant professor at the Nueva Vizcaya State University, dips in an underground river inside the Capisaan Cave System that is home to awe-inspiring rock formations.

With its astonishing karst and mineral formations, the Capisaan Cave System in Kasibu, Nueva Vizcaya, is considered one of the best spelunking destinations in the country. It continues to fetch cave explorers from all over, boosting local tourism in the province.

The Capisaan Cave System and the forest over karst formations around it are teeming with wildlife, including native and endemic species of plants and animals, making it an excellent critical habitat candidate, said Dr. Jayson Q. Caranza, an assistant professor at the Nueva Vizcaya State University.



Dr. Jayson Q. Caranza and members of his team take cave fish specimen during their study last year.

He said varying degrees of disturbance can be observed inside and outside the Capisaan cave.

Caranza spoke during a webinar on October 14 dubbed “#Connected to the Wild Biodiversity Research Series.” It featured different biodiversity researches funded and supported by the United States Agency for International Development (USAID) under its Protect Wildlife Project. It was held in partnership with the Department of Environment and Natural Resources (DENR).

Caranza, who has a post-graduate degree in Environmental Science, presented his findings and recommendation in the study , “Recreational Value, Sensitivity and Disturbance Assessment of the Capisaan Cave System, Nueva Vizcaya, Philippines.”

Importance of caves



Black-naped monarch is among the bird species in the forest around the cave.

The webinar highlighted the importance of caves, that are considered as unique ecosystems within an ecosystem.

Caves are provided adequate protection by national and local laws in the Philippines. The DENR, which implements Republic Act 9072, or the Cave Act, conducts cave assessment and classifies caves according to their values.

Of the more than 2,500 caves in the country, 616 have been officially classified.

Two segments of the Capisaan caves have been classified as Class I, while one segment was classified as Class II.

Class I caves are those with delicate and fragile geological formations.

This means they have threatened species, archeological and paleontological values and extremely hazardous conditions.

Their allowable use include mapping, photography, educational and scientific purposes.

Class II caves have areas which have sections with hazardous conditions and contain sensitive geological, biological, archeological, cultural, historical and biological values or high quality ecosystem.

Some of its sections may be restricted and open only to experienced cavers or guided educational tours.

Biodiversity

In his study, Caranza recorded a total of 91 plant species in Capasaan's different cave openings. There were plenty of trees along with shrubs and other vegetation.

"Majority of the plants were native to the Philippines, 10 were endemic to the [country], with two introduced species," he said.

Citrus orchards, agricultural crops and or rice paddies are also noticeable near cave openings, while tropical piper betel plantations are creeping in the Capisaan karst landscape

The cave itself is teeming with wildlife. Spiders, insects and even small crabs can be found inside the cave along with snakes, frogs and lizards, he said.

'Accidental' fishes

Fishes like common carp, catfish, mudfish, wild guppy and orange carp are inside the cave.

"The occurrence of these fishes in the Capisaan cave system was considered accidental, brought mainly by the water tributaries running on rice fields before draining into the cave," Caranza said.

“The orange carp was probably aquarium or pond escapees that were swept by flood,” he added.

Keystone species

More importantly, there are several species of bats dwelling in the cave with four different bat species in its different sections.

In the forest over karst, a total of 61 species of birds were recorded.

Birds of different species, a total of 931, were counted during a survey conducted by Caranza and his team.

Of these, 36 are endemic and eight are threatened as listed either by the International Union for Conservation of Nature (IUCN) or the DENR.

Bats and birds are natural farmers and considered keystone species that can help the ecosystem thrive with their presence.

Cave management

DENR Assistant Secretary Ricardo Calderon said the cave management issues and concerns in the Capisaan Cave System reflect the condition of other caves in the country which are often threatened by ecotourism and various development initiatives.

“Our priorities are caves within protected areas. We are developing management plans for caves within protected areas for the purpose of regulating tourism,” Calderon, the concurrent director of the Biodiversity Management Bureau (BMB), told the BusinessMirror in a telephone interview on October 31.

He said only upon proper cave assessment can an effective management plan of caves be developed by the DENR-BMB and other stakeholders.

“Historically, caves are close to our hearts. In Bulacan, for instance, our guerrillas have hidden in a cave in Bulacan for their safety. But their importance as an ecosystem is most significant because they are home to bats,” he said.

“Bats are natural pollinators. They help the forest grow,” said Calderon, a forestry expert.

By conserving caves, he said, the spread of zoonotic diseases can also be avoided.

“Close contacts with bats through ecotourism exposes tourists to the risk of acquiring diseases,” he said.

Varying vulnerability

According to Caranza, different parts of caves, specifically long cave systems like the Capisaan, have different physical formations and have varying levels of vulnerability and sensitivity to disturbances.

Situated in Barangay Capisaan, one of the 30 barangays in Kasibu, Nueva Vizcaya, the Capisaan Cave System is the fifth-longest cave system in the country.

It has a total passage length of 4.2 km, and has nine known entrances, including the main entrances Lion, Alayan and Sabrina, and three entrances in Barangay Malukbo.

The Capisaan karst system landscape has an area of 1,515.96 hectares and has an elevation of 700 to 1,200 meters above sea level.

Caves as protected area

Southeast Asia has around seven Asean Heritage Parks with cave ecosystems, proof that caves are important like other ecosystems in the region, and are being supported to ensure their protection and conservation while deriving economic benefits from them through various activities that include ecotourism.

These are Gunung Mulu National Park, Kinabalu National Park, and Taman Negara National Park in Malaysia; Nam Ha National Protected Area in Lao PDR; Hoang Lien Sa Pa National Park in Vietnam; Bantimurung Bulusaraung National Park in Indonesia; and the Mount Kitanglad Range Natural Park in the Philippines.

Theresa Mundita S. Lim, executive director of the Asean Centre for Biodiversity which implements the AHP Programme, told the BusinessMirror that AHPs represent the cream of the crop of protected areas.

“They represent important ecosystems that do not only support the rich biodiversity in the region, but also livelihoods and other economically and culturally important values to the people of Asean,” she said via Messenger on November 1.

According to Lim, these days one can also no longer ignore the importance of AHPs in keeping diseases at bay by providing a safe haven for natural reservoirs to contain potentially pathogenic microbes from spilling over.

Ecotourism potential

“Karst landscapes are very special with cave systems offering huge ecotourism potential. More often they are subjected to deforestation, over-exploitation and, sometimes, mismanagement,” Caranza said in the introduction of his study.

The recreational uses of caves, he said, is affected by the quality of the derived services and resources that a cave offers, particularly the richness and vulnerability of its resources and the level of disturbance, it sustained over time.

Knowing the cave’s level of sensitivity and disturbance is vital for the efficient creation and execution of protection and management policies at the local level since each cave is different from one another, he said.

Open to tourists

The Capisaan Cave System was opened to tourists in 1992. Since then, Caranza said it has undergone infrastructural changes due to the exploration, initial development and its promotion for tourism.

“At the moment, it is included in the forest land use plan of the municipality. It has a recognized cave and tour guide association,” he reported.

Currently managed through a multistakeholder approach between the government and the nongovernment group, the Capisaan Cave System has been declared as a local conservation area of the Kasibu town.

Economic benefits

Ecotourism in the area has since improved the economic condition of the community.

This is evident with the increased number of cave guiding jobs as alternative livelihood, particularly in Kasibu town, Caranza said.

Based on his analysis, the annual tourism receipt of Kasibu town from the Capisaan Cave System alone can fetch up to P12 million a year.

Threats

However, he said changes in land-use and land cover of Capisaan were also evident in the increase in built-up and agricultural areas over time.

Farming rice, vegetables and other crops are creeping around the cave system.

He said that gawed or betel plantations are growing in the area. This compounds the problem brought by poor management of the tourism activities in the Capisaan Cave

Findings and recommendation

While the cave has an active subterranean river to support life, it is also prone to flooding and threatened by various human activities.

Caranza noted that agricultural development around the cave system, particularly tropical betel farming, must be controlled or it will continue to worsen and cause irreversible damage to the cave and threaten its diverse animal and plant wildlife.

He added that significant disturbance in areas where tourism is allowed is evident, with damage to rock formations and graffiti in some parts inside the cave.

Worse, with garbage found inside the cave, he recommended proper solid waste management.

“Either they were swept by floodwater or brought by tourists,” he said.

He added that there is a need to conduct a study to determine the carrying capacity of the Capisaan Cave System, and limit the disturbance to prevent further damage.

Experts agree that caves, being unique ecosystems, need special care to remain healthy and to be able to serve their natural ecosystem functions more than anything else.

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