

AYER Hitam Forest Reserve in Puchong, Selangor, faces growing pressure stemming from illegal access, development at its edges, and limited management resources over the past two decades, say Universiti Putra Malaysia's forestry experts.

UPM Forestry Department dean Prof Dr Azlizam Aziz said a major shift occurred in 2008 when authorities opened parts of the 1,182ha forest reserve to the public, including a 2.8km loop trail in Bukit Wawasan.

He said while the move encouraged recreation, it also added pressure to an already stressed ecosystem.

According to UPM's assessment, around 4ha of forest area has already been degraded due to uncontrolled access, trampling, soil compaction and clearing for unofficial paths.

Prof Azlizam said the forest was currently managed by UPM under a 99-year agreement granted in 1996, which mandates the university using the area specifically for forestry-related education, research and extension programmes.

He said development pressure had also led to forest loss in some areas, citing examples where between 22ha and 55ha were taken for infrastructure such as reservoirs.

Prof Azlizam said the lack of a proper buffer zone between forest and housing had intensified human-wildlife conflict involving monkeys, wild boar and snakes, and increased the risk of zoonotic disease transmission.

He said ideally, the buffer

# Illegal entry, development taking toll on research forest

zone should be located outside the forest reserve boundary, not within it, so that it functions as a true protective barrier.

"Land surrounding a forest should ideally be allocated through local plans to serve as a buffer zone.

"The buffer should be outside the forest perimeter, not carved out from within the reserve itself," he said, adding that a proper buffer zone would ideally be about 20m wide.

He said development in some areas had reached close to forest boundaries, which made conservation and enforcement more challenging.

Prof Azlizam said while planning guidelines clearly required buffer zones for certain land uses such as industrial areas, the approach for green or forest areas was less clearly defined.

He said monitoring and enforcement were carried out by only seven to eight full-time rangers from UPM, which he described as insufficient for the size and challenges posed by the forest.

"Based on a rough calculation, operations and staffing costs since UPM took over under the 1996 agreement have reached at least RM17mil."

Additional expenses on facilities such as laboratories, halls, campsites, research plots and education infrastructure was estimated at around RM19mil.

Prof Azlizam clarified that while the forest was historically



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estimated to cover about 4,000ha, the reduction to its current size occurred due to phased development projects between 1994 and 2014.

"It is important to note that this fragmentation happened primarily outside the boundaries of the 1,182ha currently managed by UPM.

"Since the agreement was signed, UPM has remained committed to preserving the integrity of its assigned area, ensuring that no development takes place within the permanent forest reserve under our care," he stressed.

UPM Forest Conservation Unit head Mohd Farhan Shahrin said illegal trails had existed for more than 20 years, forming a network of about 40km across the forest.



Bukit Wawasan is the only area accessible to the public within Ayer Hitam Forest Reserve in Puchong. — Filepic

"We estimate that about 70 illegal hikers enter the forest each weekday, increasing to about 200 per day on weekends.

"During peak seasons such as public holidays and festive periods, the forest faces a massive influx of unauthorised individuals," he told *StarMetro*.

Mohd Farhan said at least six invasive species, including fish and frogs such as the American bullfrog, had been detected along the forest boundary.

"Immediate restoration action is needed to protect native habitats.

"Research equipment such as camera traps, hydrological stations and long-term plot markers have been damaged or stolen, disrupting research plots that have been monitored for

more than 30 years, as well as carbon and restoration projects.

"Irresponsible visitors had also littered, damaged tree nurseries that are part of international forest research projects, and put up unofficial signs.

"Stronger enforcement, public education and community cooperation are needed," he added.

Mohd Farhan said the forest provided critical data for carbon management and climate change studies at the urban-forest edge.

"The loss of data makes it harder to predict impact on people and wildlife.

"We need to integrate human factors into long-term forest monitoring," he added. — **By MEGAT SYAHAR**