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Lights out threat

LAST STRONGHOLD:

River pollution, felling of 'berembang' trees in Kg Kuantan contribute to fireflies' decline

KUALA SELANGOR

UNLESS concerted effort is made to preserve the country's firefly population and habitat, Malaysia could lose its status as being home to one of the world's largest firefly colonies.

Fireflies in Kampung Kuantan here, acknowledged as being the habitat to one of the world's biggest populations of the natural wonders, face the threat of being wiped out. This is despite efforts to sustain the creatures' population and habitat.

Environmental experts said the effects could be seen in other states, such as Penang, Perak and Terengganu.

Sungai Dua and Sungai Prai on mainland Penang, once known as firefly sanctuaries, have been devoid of fireflies for the last 10 years because of the increasing presence of factories.

In Kemaman, Terengganu, the firefly population at Sungai Yak Yah, a tributary of Sungai Cukai, has depleted by half, following a flood-mitigation project at the main river two years ago.

However, it is Kampung Kuantan, regarded as fireflies' last stronghold, which garners the most concern.

A study by the Forest Research Institute Malaysia (FRIM), from 20017 to 2013, showed that more than a third of the firefly population in the area had disappeared.

The numbers, said FRIM entomologist Veronica Khoo, were expected to deplete further.

The study showed a 38 per cent reduction in the *Pteroptyx tener* population within that period, from nine sites along Sungai Selangor that were monitored on a monthly basis during the new moon phase.

Malaysian Nature Society head of communications Andrew Sebastian concurred with the findings.

"It is difficult to determine the percentage of the firefly population, but there has been a significant decrease.

"Based on my visits over the years, around a third is now gone, compared with 20 years ago," he told the *New Straits Times*.

He said more research was needed to find out the most effective way to protect fireflies' breeding habitats and source of food, which is sap from the *berembang* tree.

"The river is getting more polluted. Garbage can be seen floating in it.

"Pesticide use, open burning and the felling of *berembang* trees for agricultural development are among the threats to the species."

Kampung Kuantan Firefly Park boatman Aman Shah, 35, who has been plying the river since 1996, said there was little that could be done to stop the felling of trees, as some of the land by the riverside was privately owned.

"However, seeing that it could result in the extinction of fireflies and put many people who depend on the ecotourism industry out of their jobs, the villagers here have sought help from the authorities.

"Thankfully, the authorities have put a stop to land clearing."

He said he was thankful that despite the decrease in the firefly population, the number of tourists had not dropped.

"We are lucky that tourists are still coming, but repeat tourists have noticed the difference."

Belinda Murphy, from Kelana Jaya, noticed the said difference on her second trip to Kampung Kuantan.

"Nine years ago, when I first came, there were many *berembang* trees and they were filled with fireflies.

"They were like Christmas trees."

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INFOGRAPHIC: NST

About fireflies

Fireflies belong to the beetle group, and the species found in Kampung Kuantan, known as one of the largest congregating firefly colonies in the world, is scientifically known as *Pteroptyx tener*.

Tourists visiting breeding sites are advised against using flashlights and other artificial means to mimic mating signals and lure out fireflies.

This, say experts, disrupts the mating, feeding and resting patterns of the fireflies, and causes them to fly out into areas beyond their safe zones.

Exhausted fireflies, after circling boats and tourists in a futile search for mates, fall into the water and are eaten by fish.

Conservation efforts

The Forest Research Institute of Malaysia is actively replanting suitable vegetation, such as berembang, sago and nipah, to rehabilitate and revive the insects' breeding habitats, but replanting efforts are hampered by pollution and unseasonal heavy rain.

The institute is also involved in creating awareness among the local community and government on the life cycle and habitat of fireflies, and the steps needed to conserve its population.

In July 2009, sections of the riverbank in Kampung Kuantan were gazetted a Protection Zone under Section 48 of the Selangor Waters Management Authority Enactment 1999 to protect the firefly congregation area.

In the Kuala Selangor District Plan (2005 to 2012), a 20km area downstream of Kampung Kuantan was designated a firefly sanctuary with 50m buffer zones along the river.

Tenaga Nasional Bhd has adopted Kampung Kuantan and spearheaded the Firefly Conservation Project.

Monitoring methods

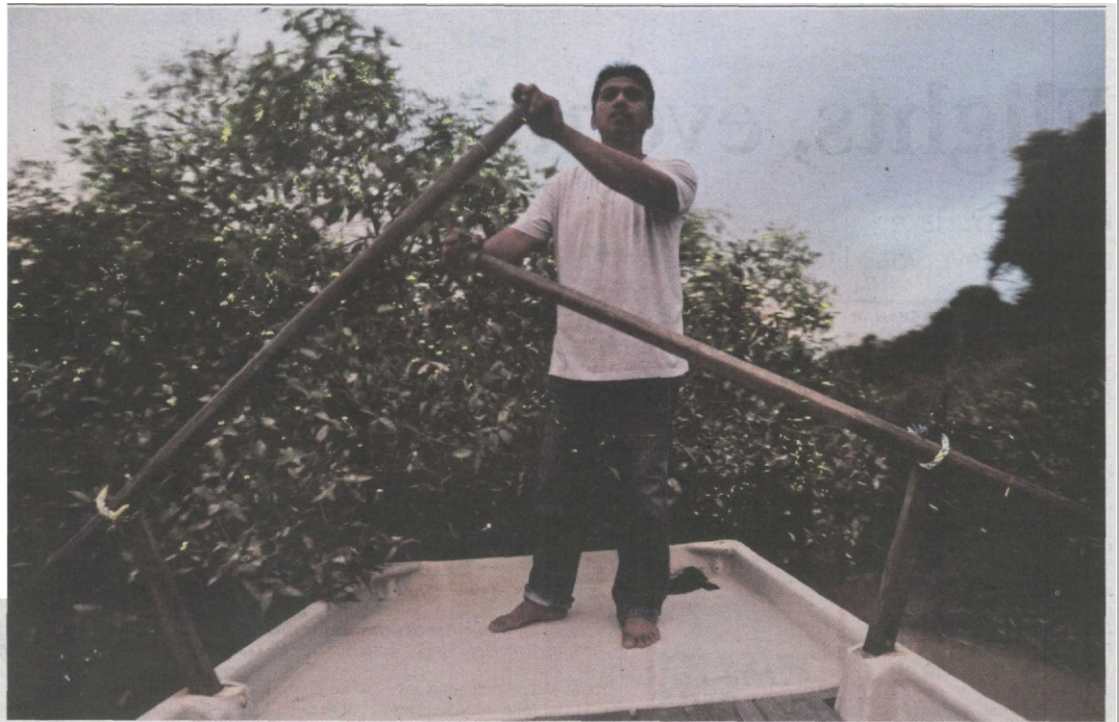
Malaysia is among the first countries to adopt digital night photography as a non-destructive technique in its firefly-monitoring programme.

The method involves using SLR cameras with zoom lens, adapted to high ISO settings and wide apertures, and positioned across breeding sites. Firefly flashes are then captured at short exposures.

The bright spots in the resulting images represent the firefly flashes, and these spots are calculated with the aid of an image-analysis software.

The tabulated figures then serve as an index for the abundance of the adult firefly population.

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A boatman plying the river in Kampung Kuantan, Kuala Selangor. The firefly population in the area is under threat, and tourists have taken notice. Pix by Muhammad Sulaiman