Sunda pangolin entering wildlife trade via M'sia

No evidence of Covid-19: Study

KOTA KINABALU: There is no evidence of coronavirus in Sunda pangolins entering the wildlife trade via Malaysia, a study revealed.

Disease emergence and re-emergence events, such as Nipah, SARS, Ebola, MERS and now Covid- 19, over the past two decades have impacted human health, domestic animal health and the global economy.

The USAID-funded Predict programme, a component of the Emerging Pandemic Threats programme, was established in 2009 to discover novel zoonotic viruses in wildlife before they become human epidemics and identify the factors that drive their emergence, amplification, and spread.

In Malaysia this important work has been carried out through a long-term collaboration between EcoHealth Alliance and Conservation Medicine, the Department of Wildlife and National Parks (Perhilitan), the Ministry of Health, the Department of Veterinary Service, Sabah Wildlife Department (SWD), Sabah State Health Department, Danau Girang Field Centre (DGFC), Universiti Malaysia Sabah (UMS) and Universiti Putra Malaysia to help develop personnel and laboratory capacity and establish sustainable disease surveillance systems for wildlife, and livestock and people with high levels of exposure to wildlife.

As part of this ongoing collaboration, in 2016 EcoHealth Alliance's Malaysian Field Manager Jimmy Lee, started a Master's programme at UMS, tracking the origins of confiscated pangolins through DNA analysis, as well as looking to find zoonotic pathogens these animals may carry with them as they're smuggled around the world, to assess the risk the illegal pangolin trade poses to human health and to better inform both conservation planning and efforts to tackle wildlife trafficking.

"UMS is pleased to be actively involved in this global effort, working together with local and international researchers' augurs well for the high-impact research that is much needed in this area. The smuggling of this species needs to stop," said Director of Hospital UMS and Lee's Supervisor Prof Helen Lasimbang.

Prof Vijay Kumar, a molecular geneticist at the Biotechnology Research Institute, UMS, and one of Lee's Co-Supervisor concurred, saying it is important that potential zoonotic pathogenic viruses in wildlife species such as pangolins and bats be identified before they become pandemics.

Wildlife rescue ranger releasing a confiscated pangolin back into the wild.

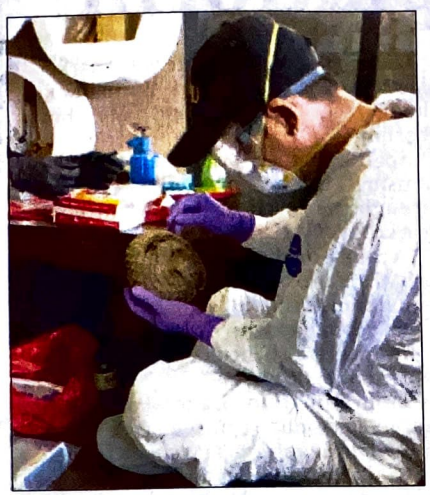
The critically endangered pangolin is one of the most trafficked mammals in the world; their scales are used in traditional medicines, while pangolin meat is deemed an expensive delicacy.

Malaysia is a hotspot for the pangolin trade; just in one case in February 2019, close to 30,000kg of pangolins were seized in Sabah alone. The seizure included 1,800 boxes (with 2-3 pangolins in each box) of frozen pangolins stuffed inside refrigerated containers, 572 frozen pangolins in freezers, 61 'live' pangolins in cages and 361kg of pangolin scales. These scales alone would have required the capture and killing of around 630 pangolins.

To make matters worse for these critically endangered animals, in February 2020, as Covid-19 began to spread around the world, reports started to surface linking this new disease to pangolins with some suggesting they are a potential host for the virus, leading to calls by Chinese authorities to cull captive pangolins.

While scientists detected SARS-CoV-2, the virus that caused Covid-19, in pangolins these were captive animals confiscated from the wildlife trade in China, no one knew if wild pangolins carried the virus.

Over the past 10 years through the Predict project, EcoHealth Alliance, Perhilitan and SWD have worked closely to analyse wild, rescued, and seized illegally-trafficked pangolins for viruses that could potentially cause the next pandemic sampling 334 pangolins in Malaysia.



Wildlife Health Unit ranger sampling a confiscated pangolin before it is released back into the wild.

These pangolin samples collected from animals, before or just after they entered the illegal wildlife trade, were screened for the viral families most associated with recent disease emergence and re-emergence events in the last two decades: paramyxoviridae like Nipah virus, filoviridae like Ebola, orthomyxoviridae like Avian influenza, coronaviridae like SARS-CoV-2, and flaviviridae like Dengue.

Samples collected from the 334 pangolins yielded no positive results for viruses from the five families deemed of particular threat to humans.

"SWD's collaborative efforts with EcoHealth Alliance through the Predict Project and other programmes have netted some interesting results, identifying novel viruses within Sabah's wildlife, and improving our understanding of zoonotic viruses in general.

"Further collaborative efforts with EcoHealth Alliance and other local stakeholders help enhance Sabah's readiness to respond to disease emergence events and build capacity for disease surveillance of novel viruses," said Dr Sen Nathan, Assistant Director of SWD.

A paper published in the EcoHealth journal on 23/11/20 from this collaboration argues that this contrast to the findings in China is a result of the point in the supply chain at which samples were taken.

The wildlife trade transports pangolins from Malaysia up through Southeast Asia were animals are often housed together in groups from different geographic regions, and often with other species, creating plenty of opportunity for viral transmission among and within species.

"We concluded that the detections of SARS-CoV-2-related viruses in pangolins are most likely a result of their exposure to infected people, wildlife, or other animals after they entered the illegal wildlife trade," said Jimmy Lee, EcoHealth Alliance Field Manager in Malaysia.

"These findings suggest that wild pangolins pose no threat to human health, they highlight the importance of carefully ending the trade of wildlife and improving biosecurity at wet markets to avoid having wild animals co-mingling with farmed animals and humans," said Tom Hughes, EcoHealth Alliance Project Coordinator in Malaysia and Director of Conservation Medicine.

Sunda pangolins are considered a totally protected species under the Sabah Wildlife Conservation Enactment 1997 and Wildlife Conservation Act 2010. It is illegal to kill, hunt, or sell them.

The exact number of Sunda pangolins in Malaysia remains unknown. The species faces significant threats to its survival in nature and requires active conservation efforts to ensure its enduring existence for future generations.

"This work shows us how scientists working with government agencies can add real value to law enforcement operations. Pangolins are endangered globally, so each animal is precious. By testing seized pangolins for viruses we've been able to expand our understanding of the origins of the most significant pandemic of this century, and also we hope benefit pangolin conservation" Dr Peter Daszak, President of EcoHealth Alliance.

Work for this study was jointly funded by Usaid's Emerging Pandemic Threats Predict programme and the Usaid's Infectious Disease Emergence and Economics of Altered Landscapes Project.