

Genetic test crucial for animal protection

When cases of illegal trading in endangered species drew public attention a few years ago, the Eijkman Institute for Molecular Biology became a bridge between genetic research and law enforcement.

The institute received samples of animal body parts that the Forestry Ministry had seized from poachers. Later, the institute identified them using forensic DNA tests.

Through molecular analysis, the institute could identify the body parts of the protected endangered species to be used as evidence to prosecute the poachers.

“The advanced molecular biology technique really overcame difficulties we faced in providing evidence for law enforcement,” Herawati Sudoyo, the Eijkman Institute for Molecular Biology’s deputy chairman, said recently.

Speaking at a discussion titled “Capacity Building in Wildlife Conservation and Forensic Genetics” held jointly by the institute and the Research and Technology Ministry, Herawati said forensic genetics for investigation into wildlife-related crimes was one of the most outstanding achievements of the Eijkman Institute in the last few years.

A string of activities in barcoding animals – such as fish, larvae, birds, insects and marine organisms – using special markers including the mitochondrial DNA and Y STR are part of early initiatives taken by the institute on the wildlife conservation using forensic genetics.

“This is the role of the Eijkman Institute to develop molecular genetic markers for species and sub-species identification by scrutinizing genetic patterns among geographically isolated populations, defining sub-species level for conservation management purposes, and revising traditional species and sub-species designation,” said Herawati.

Ross McEwing, the TRACE Wildlife Forensics Network’s technical director, said forensic genetics was the key to wildlife investigation as it could identify both species and the population origin of species or their parts as well as establishing a database of individuals for enforcement purposes. “We have seen a growing awareness among countries of the need for forensic genetics to save wildlife,” he said.

Citing examples, McEwing said wildlife forensic DNA testing in Malaysia had increased by 80 percent with 1,205 forensic samples processed. Vietnam has requested training courses for wildlife enforcement officers. All captive tigers in the country have been sampled for a DNA sampling/database. It also has requested assistance in establishing wildlife DNA forensics.

Noviar Andayani, a scientist from the Wildlife Conservation Society (WCS) Indonesia Program, also said her institution had been looking more into genetic management of endangered species.