

Wahyu Sigit Rhd: Watching the environment through the dragonfly's eyes

Are dragonflies still easily found in your yard?"The question came from Wahyu Sigit Rhd, 46, the chairman of the Indonesia Dragonfly Society (IDS) in Malang, East Java. Dragonflies soaring over yards and perching on plants used to be a common site for those living in villages in the province. These days the insects are much harder to find.

"Actually, dragonflies can serve as an indicator of environmental change in a region," Sigit says. The insects lay eggs in water or on water plants. The nymphs that emerge are exceptionally sensitive to polluted water. Dragonflies, which eat mosquito larvae, thrive near water and dense vegetation, which produce the oxygen that the insects need to live.

Agriculture also benefits from the insects, which Sigit says prey on pests such as beetles, fruit flies and leaf bugs. However, improper pesticide use can kill off the dragonflies. The public, he adds, knows little of the ecological role played by dragonflies: Scientific literature on the subject is scant and the Indonesian Institute of Sciences (LIPI) has few researchers knowledgeable of the insects.

The dearth of information prompted Sigit to found the IDS in 2010. "It's better to start from simple things first, instead of being caught in major issues of environmental rescue," he said. The IDS plans to use the dragonfly biotic index (DBI) method to survey environmental change in Banyuwangi, East Java, this year. It will be the first time that the DBI method, developed by British entomologist Michael Samways, will be employed in Indonesia outside a conservation area, Sigit claims.

"Samways applied the DBI to South Africa's national park while we choose Banyuwangi, in a zone with a relatively good environment rather than a park, so it's easy to make comparisons with degraded zones," he explained. The surveyed area will include several villages along 2 kilometers of forest waters. Adult dragonflies will be used and the survey team plans to hold several workshops on dragonflies for local residents.

Sigit wants the year-long project to provide researchers with data on the size and distribution of endangered dragonfly populations and information on local vegetation. The IDS is also planning the "Indonesian Dragonfly Jamboree" to be held from May 16 to 18 in Rawa Pening in Salatiga, Central Java.

The event has been organized by IDS; Haliaster, a conservation club at Diponegoro University in Semarang; photography communities; wildlife lovers; and academics from Bali, Banyuwangi, Jakarta, Riau and Sulawesi. "The jamboree will include workshops on [dragonfly] identification basics, science photography, science journal writing and a science photography contest," said Sigit.

A photography workshop will provide detailed documentation on the morphology of the insects. "In this way dragonfly research won't always rely on samples of dead insects," he added. Also on the IDS' agenda are a national seminar and the publication of books on the diversity of dragonflies in Banyuwangi; Karimunjawa, Central Java; and along the Gajah Wong River in Yogyakarta.

"We plan to research the DNA of dragonflies with Suputa, a lecturer from Yogyakarta's Gajah Mada University," he adds. It is an ambitious plan for the man who left a teaching post behind at Santo Albertus Catholic Senior High School in Malang to promote the insects.

Born in Temanggung, Central Java, Sigit has published two books on the subject: *Capung Teman Kita: Pelestarian Pusaka Alam Indonesia (Our Friends The Dragonflies: Conserving Indonesia's Natural Heritage)*, and *Naga Terbang Wendit, Keanekaragaman Capung di Perairan Wendit Malang (Wendit's Dragonflies and Their Diversity in Wendit's Waters, Malang)*. Sigit says that he's had to move from Malang to Yogyakarta to keep pace with the interest from academics and the community.

The existence of Indonesian dragonflies has been internationally welcomed by environment researchers and campaigners from various countries, as evinced when IDS activists joined environmental congresses in Japan in 2012 and in Germany in 2013. At home, public awareness has been increasing, he says: Dragonflies are a recognized bellwether of environmental change, photo documentation projects are on the rise, more schools have been recording data on dragonfly populations and more dissertations have been written about the insects.

"I feel excited when I find new species as only 76 out of around 172 species of dragonflies in Java have been documented," he said. There are 5,680 species of dragonflies around the world, including about 900 that can be found throughout Indonesia, he said.

While the IDS is focused on Java, the group is also looking to develop networks in Kalimantan, Sulawesi and Sumatra. "Dragonflies are just one part of the essence of motivating people to feel concerned about their environment," Sigit says.