

# Bird Diversity Study in Plantation

*"Biodiversity for Busy Managers" is a new initiative of Wild Asia to develop useful and practical resources for those on the frontline of land developments. The idea is to inspire and guide managers and planners to address and tackle key biodiversity issues that apply to land developers. We are not aiming to reinvent what's already out there - but we hope to provide that critical link to the land developers and planners on the frontline of land developments.*

Malaysia is the second largest palm oil producer in the world after Indonesia. Our dependence on agricultural revenue has seen much of our landscape converted into oil palm plantations, causing much concern over the loss of natural forests, biodiversity and lands for indigenous communities.



Amidst the public outcry by environmental NGOs, the Roundtable for Sustainable Palm Oil (RSPO) was established to regulate practice and encourage sustainability in oil palm plantations via a set of Principles and Criteria (P&C).

One of the guidelines of the P&C requires that oil palm plantations maintain healthy biodiversity. As the equilibrium of ecosystems is altered by development, it is important to monitor impacts and make efforts to protect the ecosystem, restoring balance and maintaining the ecosystem functions and services.

Bird biodiversity is a relatively easily-measured indicator of biodiversity in a certain area. A recently-concluded survey of bird diversity in an oil plantation near Bintulu, Sarawak found that there was a positive correlation between numbers of birds and proximity to secondary forest. The plantation is in a remote area of secondary lowland dipterocarp forest fragments. The study also found that riparian buffer zones and pesticide-free zones in the plantation had a positive effect on bird diversity.

The two-month study was conducted on a plantation owned by Keresa Plantations Sdn Bhd by Ms. Muriel Gervais, a French ecologist working on an internship programme with Wild Asia. The survey took place between July and August 2010. "I decided on the topic of the study after I arrived on the plantation. I spent the first three weeks getting myself used to the new situation. In particular, I had to familiarise myself with the birdlife, which is quite different from what I am used to in France. I wanted to look at how avian biodiversity varies in different habitat types within the plantation.

Specifically I wanted to look at how far forest birds penetrate into the plantation, and at whether buffer zones and riparian zones have any effect on biodiversity." Ms. Gervais explained. Ms. Gervais carried out regular transect counts of birds in seven selected sites within the plantation, noting numbers of each species seen or heard. The sites were chosen to reflect varying distances from the nearest block of natural habitat (secondary dipterocarp forest), the presence or absence of riparian vegetation along waterways, and whether or not pesticides were regularly applied within the site.

Below is the summarized result of the survey conducted according to areas;

Location	Count
Less than 300m from forest	15 species, 82 individuals
More than 100m from forest without riparian zones	12 species; 50 individuals
Riparian vegetation	14 species, 67 individuals
Pesticide-free zones	11 species, 64 individuals
Pesticide-affected zones	11 species, 50 individuals

Ecologist John Howes, who is widely experienced in bird diversity surveys in South-east Asian oil palm plantations, welcomed the report, although he made several cautionary comments. He pointed out that differences in bird diversity of the different sites were small and possibly not statistically significant.



Furthermore, he noted that no true forest-dependent species were recorded during the survey. "All the species noted as present were forest edge or open country species, and all are relatively common and widespread throughout the region", he said. "As such, there were no 'high value' species recorded. Biodiversity is not just about quantity. Quality is also important. We must ensure that specialist species which are highly dependent on specific habitat types are safeguarded, and to do that, there must be an effective 'Protected Area' system which secures all representative natural habitat types. These species almost certainly will not be helped by the presence of small fragments of forest within plantations."

Nevertheless, Mr Howes was broadly positive. "What the results suggest confirms our own experience that the more natural areas there are within your estate, the more you can do to enhance biodiversity. Furthermore, the range of interesting species increases the closer you are to biodiversity-rich natural areas. It also suggests that even small steps taken to enhance habitat within an estate, such as the establishment of riparian vegetation, can be effective in enhancing bird life in the area." He added, "Of course, there are many other benefits of riparian buffer zones beside the positive effects on biodiversity, such as preserving water quality and minimizing soil and pesticide run-off."

Ms. Gervais added, "Plantations need to maintain or create a variety of natural area types. For example, not all buffer zones should have the same plant composition. Some may have mature older trees, or dead trees, others may be younger and have more scrub-type vegetation. Open areas and wetlands provide habitat for non-forest birds. Also, reduction in pesticide and herbicide use will likely have a positive impact on bird diversity."



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Biodiversity surveys such as this can be carried out by environmental experts to identify key species, map locations and areas, suggest solutions and guide implementation towards a more sustainable development of oil palm plantations. The presence of natural areas, whether they are forest patches, riparian zones along streams or around ponds, anywhere where there are buffer areas, even when these are not particularly mature can contribute to a healthier ecosystem. The step forward for oil palm companies is to recognize the importance of biodiversity, to take ownership of their backyards and to reduce their impacts on the environment.

Write to [info@wildasia.org](mailto:info@wildasia.org) if you are interested in having a copy of the full report, "Keresia Plantations: a bird assessment in an oil palm plantation".

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**Biodiversity for Busy Managers** is an initiative by the Malaysian Palm Oil Council and Wild Asia to develop useful and practical resources for those on the front line of land development. The idea is to inform managers and planners about the key biodiversity issues that apply to oil palm plantation development, and provide practical know-how to mitigate negative impacts on biodiversity in plantations. For more information, visit: [www.wildasia.org](http://www.wildasia.org)