



The Impact of RSPO Membership on Avoiding Biodiversity Losses in Oil Palm Landscapes

A science-for-policy brief by the SEnSOR programme

Study aim

In this study, we investigated the impact of RSPO membership on avoiding biodiversity losses, by looking at the role of **High Conservation Value areas (HCVs)**. We asked two important questions:

Question 1: Are HCVs large enough and of good enough quality to support biodiversity?

In the first year of the SEnSOR programme, we determined key characteristics of forest patches that are important for supporting biodiversity in oil palm landscapes (see Lucey *et al.* 2017). In this study, we tested whether HCVs within 70 plantations on Borneo met these criteria.

Question 2: Do HCVs improve connectivity in oil palm landscapes?

In well-connected agricultural landscapes, areas of remaining rainforest are linked by forest patches or corridors. Maintaining connectivity is important for conserving biodiversity because it allows species to move easily across these landscapes, supports networks of individuals, and prevents them from becoming confined within isolated areas of forest. In this study, we examined the connectivity benefits of HCVs in oil palm landscapes.

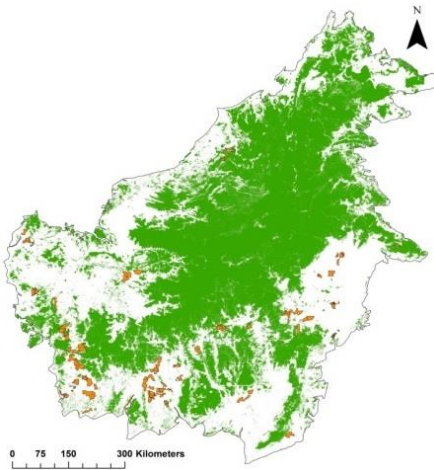


Figure 1. Map of Borneo showing the location of 70 oil palm plantations digitized as part of this study (orange). All HCVs within these plantations were also digitized. Forest cover in 2015 (green) is taken from Gaveau *et al.* (2016).

Methods

To answer **Question 1**, all HCVs were digitized from New Planting Procedure (NPP) assessment reports for oil palm plantations on Borneo (Fig. 1). The size and core area of HCV ‘patches’ were calculated, and the amount of remaining forest cover within HCVs was computed using forest cover estimates from Gaveau *et al.* (2016).

To answer **Question 2**, the location of HCVs in relation to remaining forest cover surrounding the plantation was determined. Computer models were then used to measure the connectivity benefits of HCVs within these oil palm landscapes, and to assess the connectivity benefits of reforested HCVs.

Findings



Continuous rainforest in Danum Valley conservation area, Sabah, Borneo. Photo credit: S A Scriven.

Question 1: Are HCVs large enough and of good enough quality to support biodiversity?

- Lucey *et al.* (2017) found that forest patches with a **core area of >200 ha** could support **60-70%** of biodiversity in continuous forest.
- In this study, **almost half** of all plantations contained **at least one** large HCV patch, and if fully forested, these large HCVs with core areas >200 ha would support substantial biodiversity.
- However, typically **HCVs contain only 21% forest cover**, ranging from 0% up to 78% in some plantations. Therefore, the biodiversity benefits of HCVs vary widely across plantations.

Question 2: Do HCVs improve connectivity in oil palm landscapes?

- HCVs currently provide **only a very small connectivity benefit** for most forest species because of low levels of forest cover. But if HCVs were fully reforested they could **substantially improve connectivity** for many species with intermediate dispersal capability, such as rainforest butterflies, or understory birds.
- The connectivity benefits of HCVs also **depend on how much other forest remains** in the wider landscape. If HCVs are too isolated, they have few connectivity benefits.
- Small HCVs can provide some connectivity benefit, even if they cannot permanently support biodiversity, as they act as **'stepping stones'** linking other areas of forest.



A CITES protected rainforest butterfly, which may benefit from both well-connected and forested HCVs in oil palm landscapes. Photo credit: Ch'ien C. Lee www.wildborneo.com

Recommendations

1. To minimise biodiversity losses in oil palm landscapes, high-quality **forest habitat within HCVs should be restored** (e.g. by enrichment planting).
2. **Digitized maps** of HCVs should be made publicly available, to provide opportunities for HCVs in adjacent oil palm plantations to be better connected.

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Cover photo: HCV area in Sabah. Photo credit: S A Scriven.