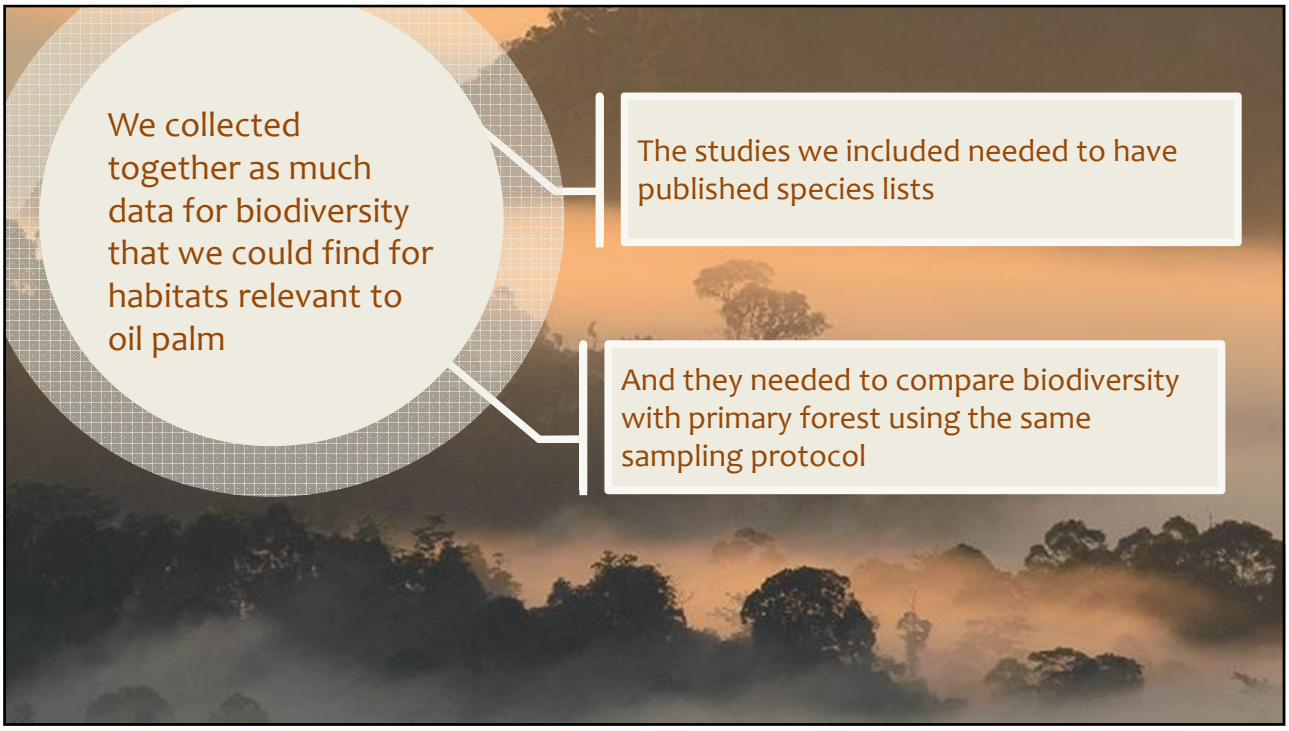
SEARRP
South East Asia Rainforest Research Partnership

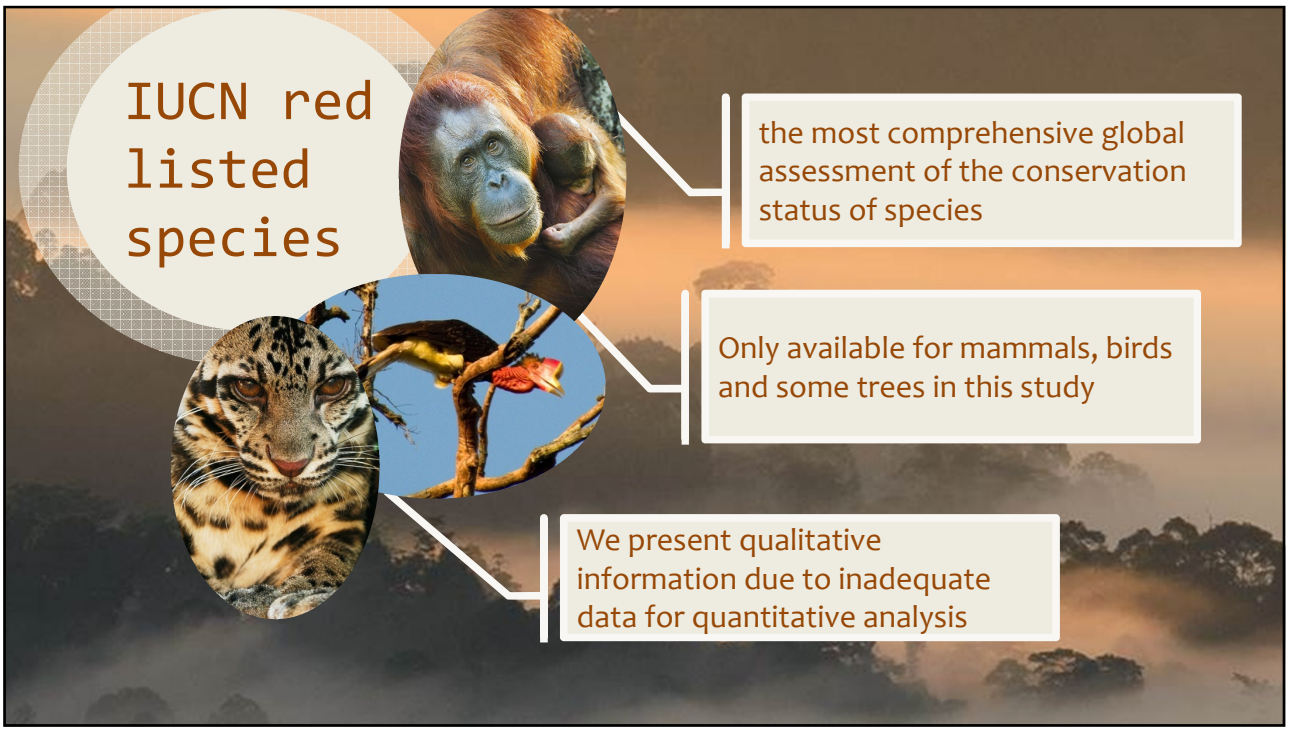
SEnSOR
Socially and Environmentally Sustainable Oil Palm Research

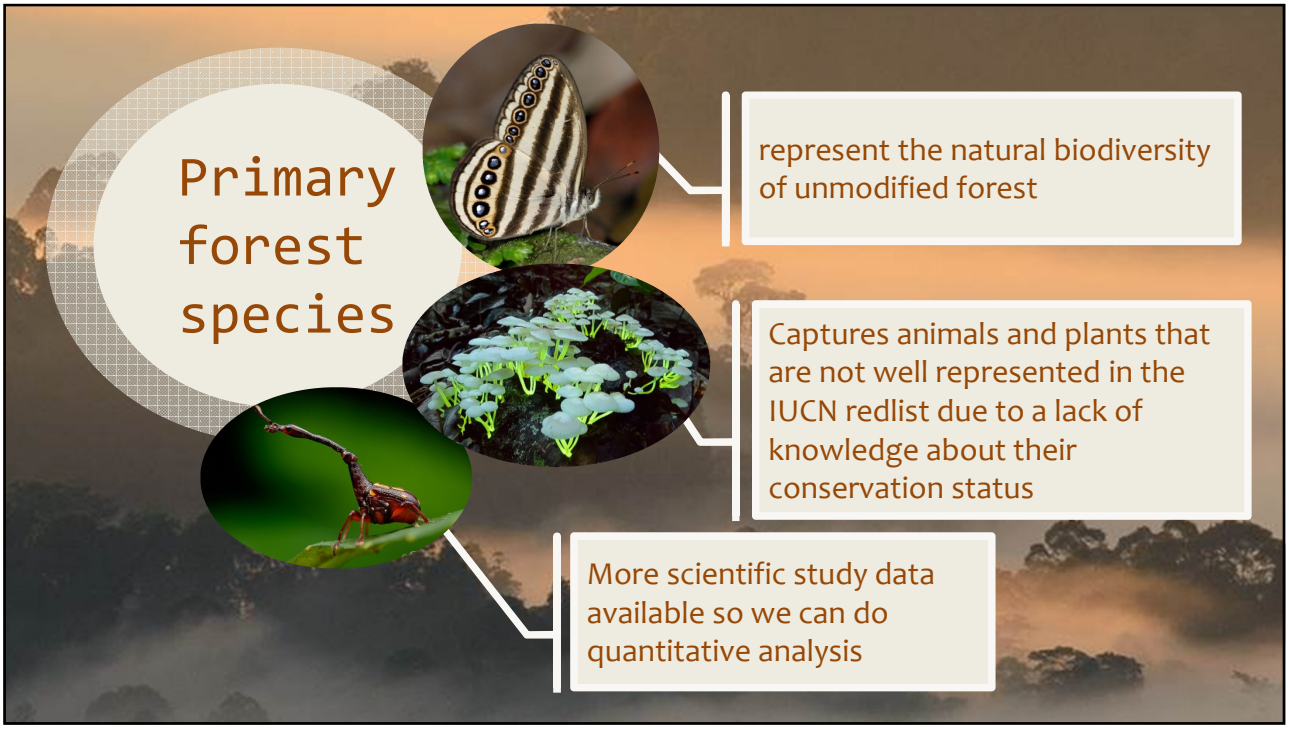
The Potential of Oil Palm Landscapes to Support At Risk Species

Dr Jennifer Lucey, University of York/ SEARRP


Aim of the study:
We have previously reported on the TOTAL levels of biodiversity across landuses relevant to oil palm plantations
But it is not only the number of species, but the kinds of species that change
So we need to know more about the *at risk* species that are supported in different land cover types relevant to oil palm landscapes.

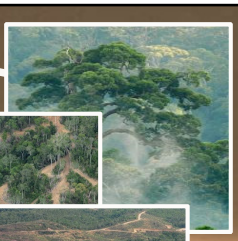

We collected together as much data for biodiversity that we could find for habitats relevant to oil palm
The studies we included needed to have published species lists
And they needed to compare biodiversity with primary forest using the same sampling protocol


IUCN red listed species
the most comprehensive global assessment of the conservation status of species
Only available for mammals, birds and some trees in this study
We present qualitative information due to inadequate data for quantitative analysis

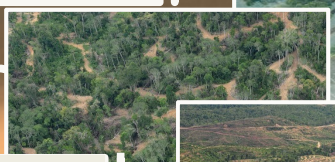

Primary forest species
represent the natural biodiversity of unmodified forest
Captures animals and plants that are not well represented in the IUCN redlist due to a lack of knowledge about their conservation status
More scientific study data available so we can do quantitative analysis

Landuses compared

- Primary forest

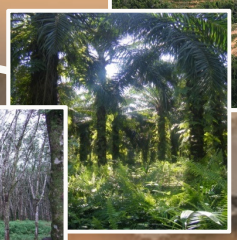


- Logged forest



- Fragmented forest

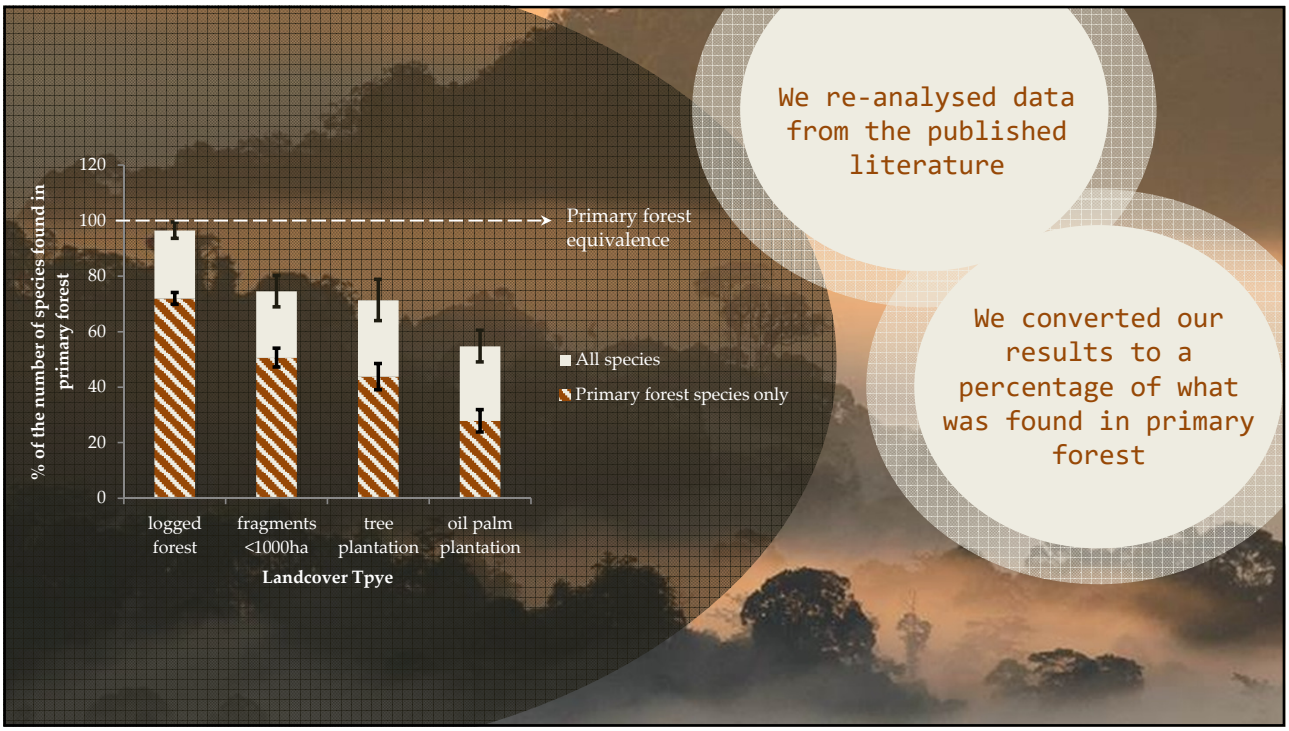
- Oil palm

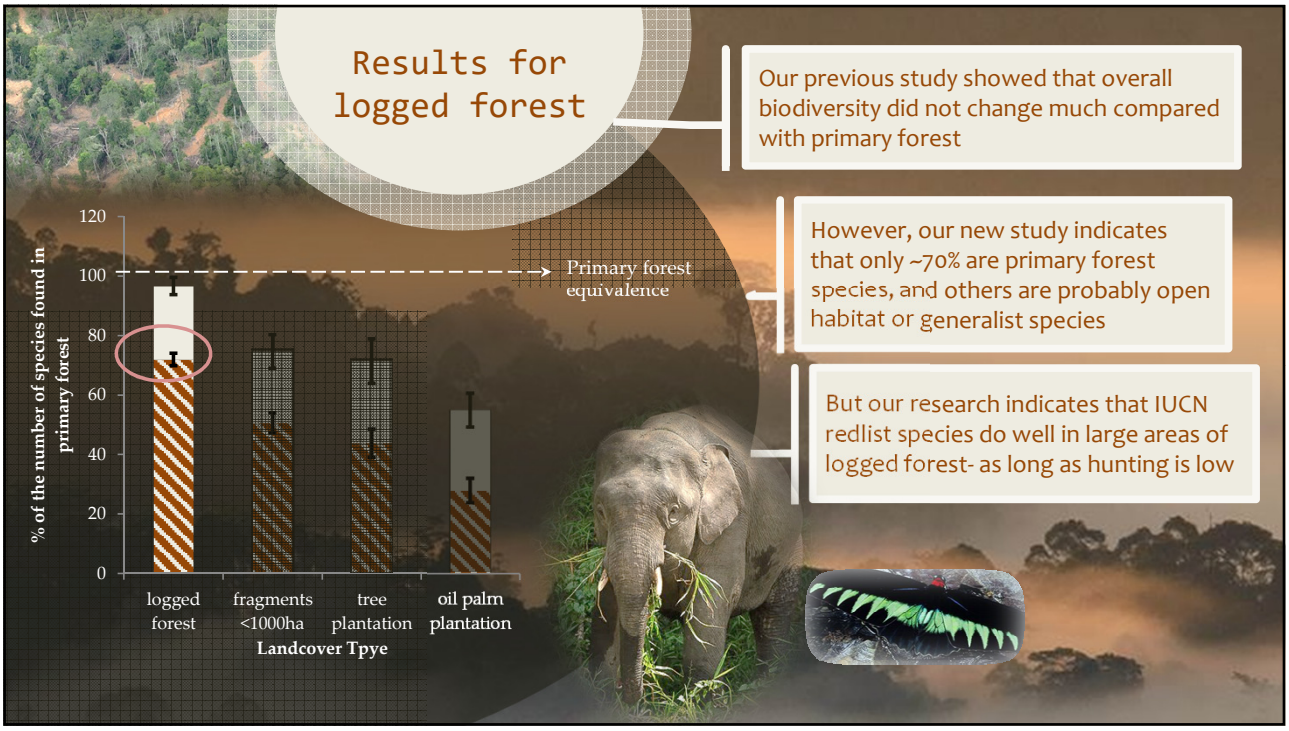


- Rubber and acacia

A word on interpreting the results

- We compare biodiversity at a point in space
- So this study doesn't take into account changes in the types of species across space in the same habitat
- So our results probably under-estimate the number of species in forested landscapes because they are more varied than agricultural landscapes


We re-analysed data from the published literature
We converted our results to a percentage of what was found in primary forest
% of the number of species found in primary forest
120
100
80
60
40
20
0
Primary forest equivalence
All species
Primary forest species only
logged forest
fragments <1000ha
tree plantation
oil palm plantation
Landcover Tpye


Results for logged forest
Our previous study showed that overall biodiversity did not change much compared with primary forest
However, our new study indicates that only ~70% are primary forest species, and others are probably open habitat or generalist species
But our research indicates that IUCN redlist species do well in large areas of logged forest- as long as hunting is low
% of the number of species found in primary forest
120
100
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Primary forest equivalence
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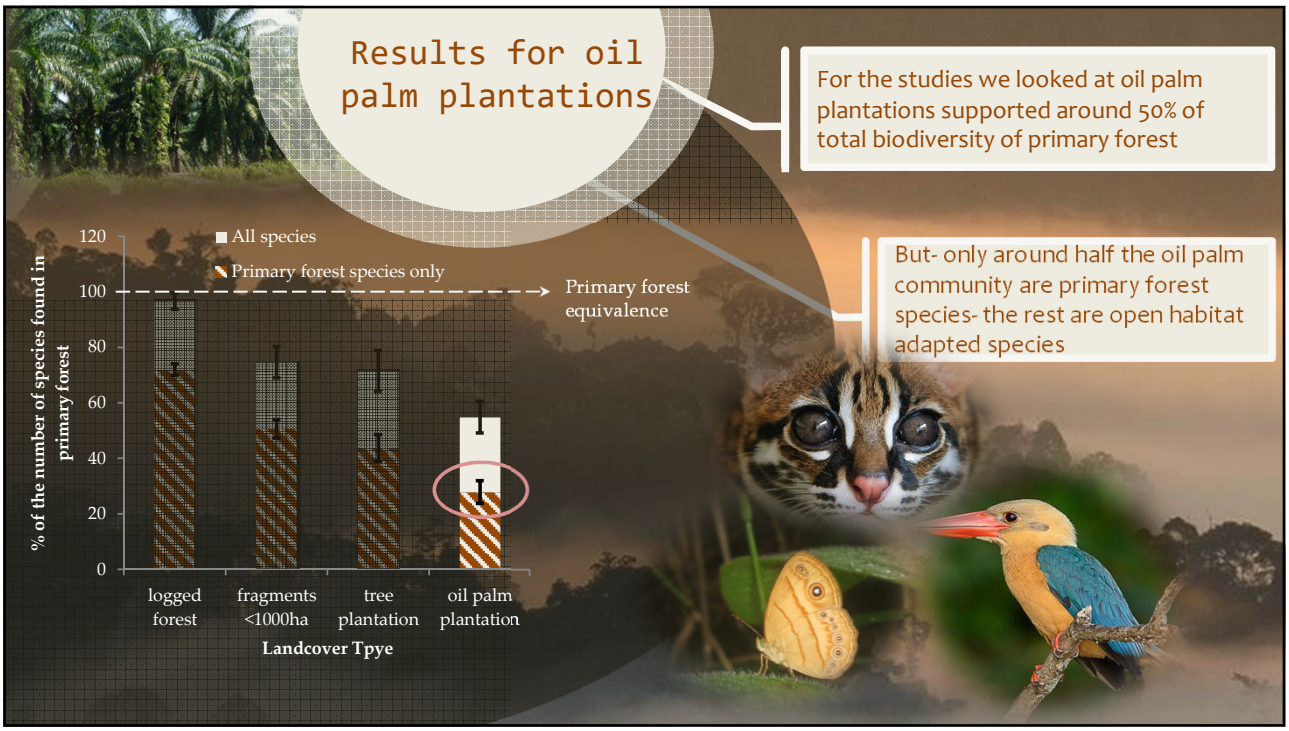
Results for oil palm plantations
For the studies we looked at oil palm plantations supported around 50% of total biodiversity of primary forest
But- only around half the oil palm community are primary forest species- the rest are open habitat adapted species
All species
Primary forest species only
Primary forest equivalence
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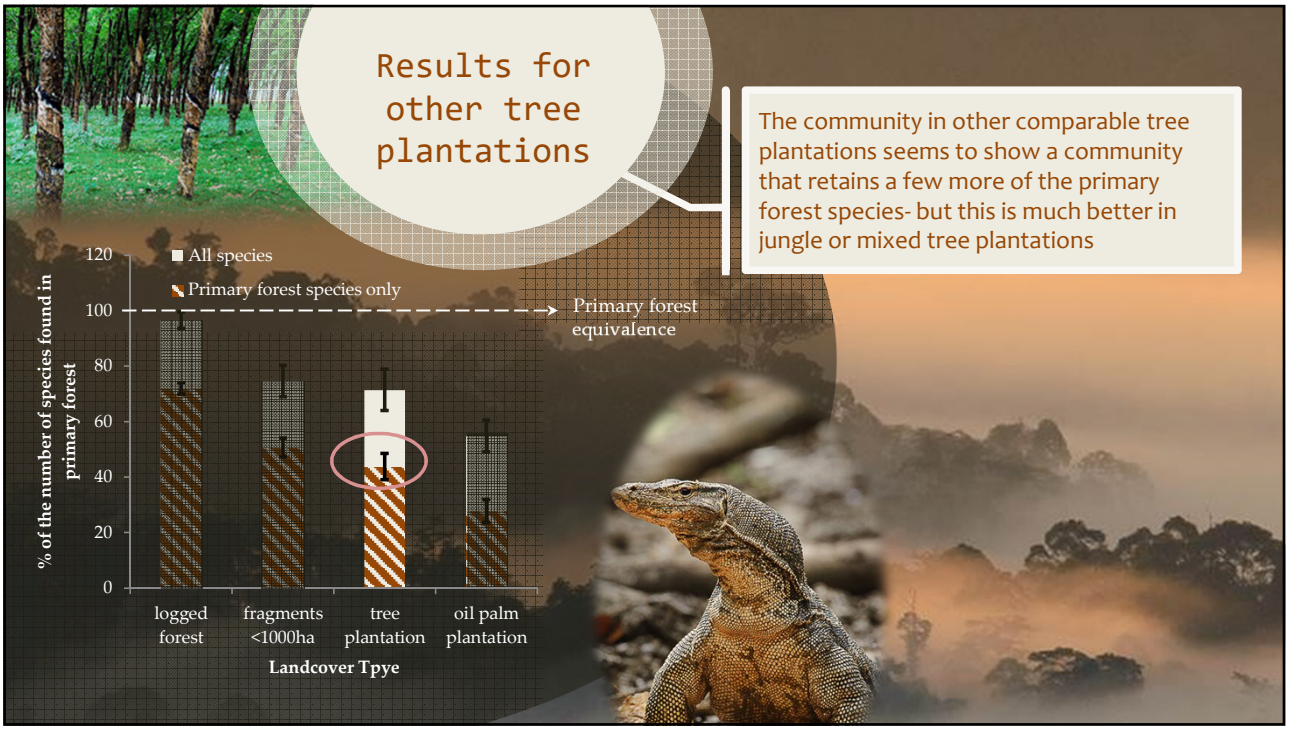
Landcover Tpye


Results for other tree plantations
The community in other comparable tree plantations seems to show a community that retains a few more of the primary forest species- but this is much better in jungle or mixed tree plantations
All species
Primary forest species only
Primary forest equivalence
% of the number of species found in primary forest
120
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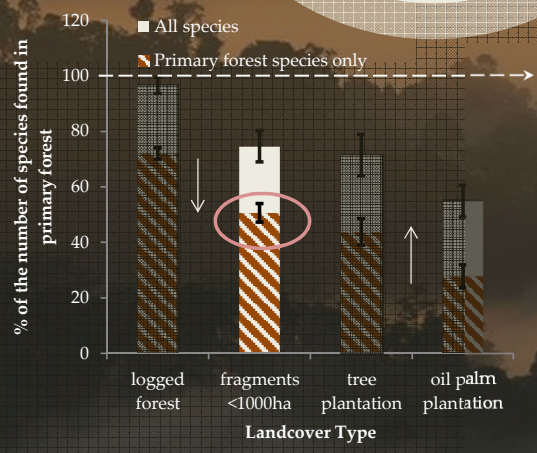
fragments <1000ha
tree plantation
oil palm plantation
Landcover Tpye

Results for fragmented forest

Fragmented forest supports more primary forest species than oil palm, but less than continuous tracts of forest



So how do we better conserve biodiversity?

Sustainable plantations need to avoid further fragmentation – our results show that large tracts are vital for *at risk* species

HCV areas need to be large if they are going to be effective for protecting *at risk* species

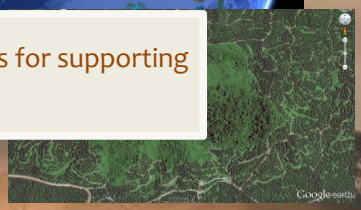
Another consideration is connectivity- smaller areas might still help to protect species if they are well connected- especially for more mobile species

What's next?

Mapping RSPO plantations HCVs within the landscape

Combining computer modelling and fieldwork techniques

Testing the size of HCVs for supporting biodiversity



Investigating whether HCVs improve connectivity in the landscape

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Funders and Supporting institutions

RSPO Roundtable on Sustainable Palm Oil

NERC Science of the Environment

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Find the full report at
www.sensorproject.net/outputs

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