CONCLUSIONS

• Thirty years after initial major fire:
  - Tree population 100% recovered; aboveground biomass 60% recovered, species richness 75% recovered at 1.8 ha, but for larger area can be lower, but species composition shifted from medium wood species to light wood species
  - Implication to conservation measures: Naturally regeneration is possible after fire disturbance, but depends on the source of seed availability in the neighborhood, more active ecological restoration is needed to recover species composition especially where whole landscapes are depleted

INTRODUCTION

Temporal and spatial aspects of forest recovery after anthropogenic disturbance in Indonesia remain poorly known. Most published work used paired-plot rather than time-series data due to limited long-term permanent plot observation established in mixed Dipterocarp forest of Indonesia; as well as more discussing on impact of fires event to biodiversity (van Nieuwstadt 2001; Silk 2002; Eichhorn 2006). Specific effects of disturbance remain visible in forest structure and species composition long after a closed-canopy status is regained (Newbold et al. 2014; Winter 2012). Canopy structure and basal area recover in 56 years after selective logging (Priatna et al. 2004). Species richness recover in 150 years after clear felling (Riswan et al. 1984). Aboveground biomass recovery was estimated to take 80 years and biodiversity, assessed across plant and faunal groups may take 120-150 years (Martín et al. 2013). The objectives of the research are: (1) to understand the recovery process of forest composition structure after repeated fire events, (2) to understand the biomass recovery due to repeated fire event and (3) to get information regarding the restoration implication.