V-64-5: Factors Affecting the Annual Survival of a Group-living Tropical Passerine

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Tropical passerines generally have higher survival rates than those in northern temperate regions, while birds that live in groups are likely to have even higher rates relative to those that live singly or in pairs. However, relatively little is known about the factors which affect survival of tropical passerines, particularly those that breed cooperatively. We examined variation in apparent adult survival of the cooperatively breeding Puff-throated Bulbul (Alophoixus pallidus) in an evergreen forest in northeastern Thailand. We determined whether there was evidence for major temporal differences in annual survival, seasonal survival (breeding vs. non-breeding) as well as variation related to sex. Using an information theoretic approach based on both mark-recapture and resighting data collected over six years, annual survival was 0.85 ± 0.02 and essentially constant. However, survivorship was lower during the breeding season than during the non-breeding season, presumably related to energetic demands and/or predation risks during reproduction. Survival of males and females appeared to be similar. The mean life expectancy of males and females was 6.70 ± 7.73 years and 5.87 ± 4.88 years, respectively and the average for the population was 6.2 ± 4.4 years. This annual survival rate is high compared to estimates from other tropical and temperate passerines possibly due to the relatively stable climatic conditions of our study area and Puff-throated Bulbul being a generalist able to exploit a wide range of fruits and invertebrates in space and time.

V-64-6: Interactions between Natural and Human Disturbance; Cyclone Larry, Birds, and Fragmented Lowland Rainforests

James Moloney

We have much to learn about interactions between natural and anthropogenic disturbance on biological communities. In March 2006, Cyclone Larry crossed the North-eastern Australian coast, causing widespread damage to already fragmented lowland rainforests. A prior study examining the avifauna of patches provided an opportunity to a) examine the impacts of a severe cyclone on a tropical bird community, and b) compare the impacts and recovery between continuous and fragmented habitats. Three unfragmented sites, 3 large fragments (>25 ha) and 3 small fragments (<25 ha) were surveyed prior to the cyclone, and 6-8 weeks, 5 months, 12 months post-cyclone, and 2 years post-cyclone. Birds were sampled by strip transect, and hemispherical photographs were used with visual estimates to quantify vegetation structure. Vegetation was largely defoliated and canopy cover was reduced to below 10%. Overall bird diversity and abundance decreased, with frugivores virtually disappearing from all sites after the cyclone. Insectivores were less impacted, but the diversity of rainforest specialist insectivores dropped significantly, and remaining insectivores tended towards mixed flocking, possibly due either to predator avoidance or to limited food resources. Although all sites lost bird species after the cyclone, fragments did not lose proportionately more species than unfragmented sites. In other words, there is little evidence at this stage of an interaction between the human and natural disturbances.

V-64-7: Incorporating Altered Fire Frequency Scenarios in Species Distribution Models Improves Climate Change Predictions for Tropical Savanna Birds

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Biodiversity conservation in the face of changing climate requires reliable predictions of species distributions. Distribution models need to include variables that strongly influence species persistence. Species will be affected by climate change directly by altering the amount and location of suitable climatic space, and indirectly by climate driven modification of habitat. While climate is a good predictor of species distributions, biotic and abiotic landscape factors also influence distribution. Very few studies of climate change effects on biodiversity have included key landscape factors in distribution modelling, despite recognition that landscape alteration through processes such as fire and land clearing changes fauna patterning. For birds in Australian tropical savannas, change in fire regimes is a critical conservation issue, linked to species decline. While species may show gradual shifts in distribution due to changes in temperature and rainfall, species are likely to show a more immediate response to changes in fire as a result of climatic changes. This study examines species' responses to changes in fire by projecting species distribution modelling algorithms built using Maxent onto scenarios with increased fire frequency. We accounted for important static landscape elements by including remnant vegetation and soil spatial layers. This study identified that increased fire frequency alters the predictions for birds by changing the amount of suitable habitat. Climate change combined with increased fire frequency will reduce

available habitat; more than simply using climate predictions alone. Our results demonstrate the importance of including landscape factors into distribution modelling when generating species predictions. Understanding the impacts of landscape factors on bird distributions, in particular fire, is a critical step in conservation planning and adaptation of land management for combating biodiversity loss due to climate change.

V-64-8: Ecological Strategy of the Javan Green Peafowl (Pavo muticus muticus) Linneaus 1758 Against to Pressure of Their Population and Habitat

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The javan green peafowl (Pavo muticus muticus) have high pressure to the population and the habitat. Baluran, Alas Purwo, Meru Betiri national park, teak plantation and intercropping area of KPH Sumedang (Buah Dua), and pine forest and sub mountain forest of Cikuray mountain are samples cases of the javan green peafowl distribution. Those places were chosen as case study on the population and habitat type selection. The populations were analyzed by demographic analysis and the habitats were analyzed with habitat used. The paper was aimed to gain the knowledge of strategic population and habitat selection of javan green peafowl on defend from the high pressure to the bird living. The result shown that, the individual number of population is in small size population 29 - 44 individual. The age structure of the javan green peafowl population indicated that tend to opposite pyramidal, where adult birds more abundance than sub adult or juvenile. The sex ratio indicated that the peafowl life in polygamous system 1 male : 4 female -7 female. The javan green peafowl live in social groups. The bird prefers habitat forest patchily with open area which is growth by grasses and shrubs. The javan green peafowl are edge forest species. The green peafowl's are searching food more at open area as feeding site. The green peafowl as herbivorous bird and ground animal feed much on leaf, seed of grasses and leaf and fruit of shrubs. They are choice luxuriant tree or shady place for sheltering during the hot days. The birds select certain trees are tall tree or emergent tree for roosting and not for the tree there any open area. Nesting site of the bird is open area where shrubs are growing. The javan green peafowl prefer habitat such as savanna, grazing area surrounded by forest and intercropping teak forest plantation.

V-64-10: Bird Species Diversity in Pondok Ambung Research Station, Tanjung Puting National Park, Central Kalimantan

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Tanjung Puting National Park (TNTP) which is located in Central Kalimantan Province is registered as an Important Bird Area. One of the research stations which is being developed in Tanjung Puting National Park is Pondok Ambung. The aims of this study were to identify bird species and to compare bird diversity in four types of habitats: swamp forest, lowland secondary forest, heath forest, and after- fire forest.This study was conducted from July 29th to September 5th 2009. Bird data was collected by using MacKinnon species list and point count method. A total of 107 bird species comprising 38 families were recorded. Twenty- two species are categorized as protected by Indonesian government regulation No.7 of 1999, while 4 species are having the status of IUCN (Endangered and Vulnerable), and 15 species are included in CITES (Appendices I and II). The highest diversity was found in swamp forests (H'=2.87). However, the results of t test indicated that there was no significant difference in bird species diversities between habitat types. It is suggested that lack of significance in bird diversity among habitat types might be due to the small sample size, or proximity among those habitat types.

Open session: Plant ecology and systematics (#66)

(July 23 pm; Wantilan front)

Organized by: **Gillian Dean and Kuswata Kartawinata**

This symposium was developed from the myriad of abstracts concerning plant biology in the tropics, and includes research from Asia, Africa and South America. The symposium begins with four talks looking at plant diversity and adaptation to specific habitats, as well as evolution. The next three talks will address the effects of climate change on plants and their ecosystems. Finally, loss of diversity due to changing land use, forest regeneration and influence of microclimate on conservation efforts will be examined. Therefore, this symposium will cover a broad range of topics that are pertinent to the current status of forests worldwide and their benefits to mankind.

V-66-1: Tree Recruitment Patterns Across an 85,000 sq.km Western Amazonian River Basin