

**BEHAVIORAL ADAPTATION OF SILVERY LUTUNG
Trachypithecus cristatus (Raffles, 1821) IN COASTAL FOREST
HABITAT OF WEST SUMATRA, INDONESIA**

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**ANIMAL BIOSCIENCE STUDY PROGRAM
FACULTY OF MATHEMATIC AND NATURAL SCIENCE
IPB UNIVERSITY
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RINGKASAN

MUHAMMAD AZHARI AKBAR. Adaptasi Tingkah Laku Lutung Kelabu *Trachypithecus cristatus* (Raffles, 1821) di Habitat Hutan Pesisir Sumatera Barat, Indonesia. Dibimbing oleh RADEN RORO DYAH PERWITASARI, ANIMARDIATUTI, RIZALDI dan YAMATO TSUJI

Memahami tingkah laku primata (aktivitas harian, tingkah laku makan, dan tingkah laku jelajah) memberikan wawasan tentang strategi adaptif primata di habitatnya. Studi ini menganalisis aktivitas lutung kelabu (*Trachypithecus cristatus*) yang berfokus pada perbedaan usia-jenis kelamin dan perubahan musim bulanan dalam aktivitas harian lutung kelabu, dikaitkan dengan hubungan antara ketersediaan sumber daya makanan dan perubahan musim bulanan di habitat pesisir Gunung Padang, Sumatra Barat, Indonesia. Studi ini juga meneliti strategi tingkah laku makan dan mengevaluasi tingkah laku jelajah, serta menyelidiki hubungan antara kategori aktivitas harian, komposisi makanan, dan ketersediaan sumber daya makanan. Studi dilakukan melalui pengamatan langsung pada satu kelompok lutung kelabu (25 individu) menggunakan metode *instantaneous scan sampling* setiap 10 menit selama 15 bulan dari 2018 hingga 2021 (614 jam). Studi ini menghasilkan bahwa kelompok lutung kelabu ini menghabiskan waktu paling banyak untuk beristirahat, yang menunjukkan strategi untuk menghemat energi. Masing-masing kategori aktivitas berfluktuasi setiap bulan, mencerminkan perubahan ketersediaan sumber daya atau faktor lingkungan. Studi ini melihat adanya perbedaan signifikan antar jenis kelamin dan usia yang menunjukkan kebutuhan spesifik anggota kelompok yang berbeda. Lutung juga mengonsumsi buah, bunga, dan bagian tumbuhan lainnya yang menunjukkan kemampuan adaptasi dalam pemilihan makanan. Studi ini juga melihat adanya korelasi positif antara konsumsi daun tua dan buah matang dengan keragaman diet secara keseluruhan, yang menunjukkan interaksi ekologis yang kompleks. Sebaliknya, adanya korelasi negatif antara konsumsi daun muda dengan buah dan bunga, yang menunjukkan preferensi atau kebutuhan terhadap daun muda saat melimpah, yang mempengaruhi konsumsi komponen makanan lainnya. Konsumsi bunga *Spathodea campanulata*, daun muda *Homalanthus populneus*, dan buah mentah *Ficus* spp. menunjukkan pentingnya spesies tumbuhan tersebut dalam habitat lutung, sehingga spesies tumbuhan ini harus menjadi fokus dalam upaya konservasi. Luas jelajah lutung kelabu selama studi dilakukan lebih kecil (8,1 ha) dibandingkan studi lain pada *Trachypithecus* spp., sedangkan jarak jelajah harian lebih panjang (926 ± 385 m). Selama musim dengan ketersediaan sumber daya makanan terbatas, lutung cenderung berjalan lebih jauh untuk menemukan pohon dengan daun muda. Jarak jelajah harian berkorelasi positif dengan persentase waktu istirahat dan berkorelasi negatif dengan persentase waktu makan dan bergerak. Jarak jelajah harian juga berkorelasi positif dengan proporsi makan daun muda dan berkorelasi negatif dengan makan daun tua, buah matang, serta keragaman diet. Secara keseluruhan, perilaku jelajah lutung kelabu terkait dengan strategi berisiko tinggi dengan imbalan tinggi, di mana peningkatan jarak jelajah selama musim kekurangan makanan mencerminkan kebutuhan untuk mencari sumber makanan yang optimal.

Kata kunci: aktivitas harian, komposisi makanan, daerah jelajah, lutung kelabu

SUMMARY

MUHAMMAD AZHARI AKBAR. Behavioral Adaptation of Silvery Lutung, *Trachypithecus cristatus* (Raffles, 1821) in Coastal Forest Habitat of West Sumatra, Indonesia. Supervised by RADEN RORO DYAH PERWITASARI, ANI MARDIATUTI, RIZALDI and YAMATO TSUJI.

Core aspects of fundamental primate behavior studies often include activity budgets, feeding habits, and ranging behavior. Understanding the primate behavior provides insights into their adaptive strategies. This study presents quantitative data on the behavior of wild silvery lutungs (*Trachypithecus cristatus*) inhabiting at Gunung Padang coastal habitat in West Sumatra, Indonesia. It analyzes the activity of these primates with a focus on age-sex differences and monthly changes in their activity budget, emphasizing the relationship between food availability and seasonal changes. Then, this study examines feeding strategies and evaluates ranging behavior, investigating the relationships between activity budgets, dietary composition, and food availability. Gunung Padang, where natural vegetation mixes with plantation, the study utilized direct observation of one group of silvery lutungs (25 individuals) using 10- minute instantaneous scan sampling within 15 months from 2018 to 2021 (614 h). The findings reveal that the group spent nearly half of their daily time resting, suggesting a strategy to conserve energy. The activity budget for each category of activities fluctuated monthly, reflecting changes in resource availability or environmental factors. Notable differences among sex and age classes were observed, which highlight the specific needs and roles of different group members. The lutung also fed on fruits, flowers, and various plant materials which showed they were adaptable in their food selection. A positive correlation between the consumption of mature leaves and ripe fruits with overall dietary diversity, indicating a complex ecological interaction. Conversely, a negative correlation between the consumption of young leaves and both fruits and flowers, suggesting a preference or necessity for young leaves when they are abundant, which affects the consumption of other dietary components. Consumption on flowers of *Spathodea campanulata*, young leaves of *Homalanthus populneus*, and unripe fruits of *Ficus* spp. underscore the importance of certain plants in lutung habitats, suggesting these plants should be a focus in conservation efforts. The annual home range of silvery lutungs was smaller (8.1 ha) compared to other studies on *Trachypithecus* spp., while their daily travel distance was longer (926 ± 385 m). During seasons with limited food availability, the lutungs likely traveled farther to locate trees with young leaves. Daily travel distance was positively correlated with the percentage of resting time and negatively correlated with the percentages of feeding and moving. Daily travel distance also correlated positively with the proportion of young leaf feeding and negatively with mature leaf and ripe fruit feeding, also dietary diversity. Overall, the ranging behavior of silvery lutungs appears to be linked to a highrisk, highreward strategy, with increased travel distances during food-scarce seasons reflecting the need to search for optimal food resources.

Keywords: activity budget, dietary composition, home range, silvery lutung.



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***Trachypithecus cristatus* (Raffles, 1821) IN COASTAL FOREST**
HABITAT OF WEST SUMATRA, INDONESIA

MUHAMMAD AZHARI AKBAR

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as a partial fulfillment requirement for a doctor degree
at Animal Biosciences Study Program

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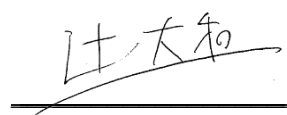
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