

Status of *Canis aureus* Linnaeus in Cultural Forest in Maha Sarakham Province, Thailand

สถานภาพของสุนัขจิ้งจอกในป่าวัฒนธรรมจังหวัดมหาสารคาม ประเทศไทย

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Abstract

As a result of human disturbance, a significant number of lush forests in Thailand have been fragmented into small isolated patches. This fragmentation directly affects the fauna population in the forests and may result in their inevitable extinction; limited forest resources may be incapable of sustaining their continued existence. The objective of this study was to investigate the status of the Asiatic Jackal, *Canis aureus* Linnaeus, 1758. The study was conducted in the two small cultural forests of Ban Nong Klang Kok and Ban Lao Jan, located in Na Doon district, Maha Sarakham province, Northeastern Thailand. The line transect method was used to observe the jackal's voice, tract and holes. Asiatic jackals were found in both cultural forests and their populations ranged from 2 to 3 families with a density of 3 to 4 individuals per km² in Ban Lao Jan and Ban Nong Klang Kok, respectively. The findings suggest that the two cultural forests targeted provide suitable habitats and adequate resources for the Asiatic Jackal. Further study, particularly on genetic structure, is needed to assess whether these isolated populations can maintain genetic diversity.

บทคัดย่อ

พื้นที่ป่าไม้ในประเทศไทยส่วนใหญ่ถูกแบ่งเป็นผืนป่าขนาดเล็กเนื่องจากการรบกวนของมนุษย์ ทำให้ประชากรสัตว์ที่มีอยู่ถูกแบ่งและมีโอกาสทำให้ประชากรท้องถิ่นของสัตว์ป่าสูญหายไป ถ้าทรัพยากรในพื้นที่ขนาดเล็กนั้นไม่เพียงพอในการดำรงชีวิต การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อ ศึกษาสถานภาพของประชากร และการกระจายของสุนัขจิ้งจอกในพื้นที่ป่าวัฒนธรรม 2 แห่ง คือ ป่าบ้านหนองกลางโคก และป่าบ้านเหล่าจัน ในอำเภอนาดูน จังหวัดมหาสารคาม โดยการสำรวจรอยเท้า เสียงร้อง และโพรงใต้ดินของสุนัขจิ้งจอกตามแนวเส้นทางสำรวจ ผลการศึกษาพบสุนัขจิ้งจอกอาศัยอยู่ในป่าทั้งสองแห่ง ซึ่งมีประชากร 2 และ 3 ครอบครัว และมีความหนาแน่นของประชากร 4 และ 3 ตัวต่อตารางกิโลเมตร ในป่าบ้านหนองกลางโคกและบ้านเหล่าจัน ตามลำดับ แสดงให้เห็นว่าในป่าวัฒนธรรม ทั้งสองแห่งเป็นแหล่งอาศัยที่เหมาะสมและมีทรัพยากรเพียงพอต่อการดำรงชีวิตของสุนัขจิ้งจอก ดังนั้นควรมีการศึกษาเพิ่มเติมในกลุ่มประชากรของสุนัขจิ้งจอกในพื้นที่ดังกล่าว โดยเฉพาะอย่างยิ่ง การศึกษาพันธุศาสตร์ประชากรเพื่อตรวจสอบระดับความหลากหลายทางพันธุกรรม และหาแนวทางในการจัดการต่อไปในอนาคต

Keywords: *Canis aureus*, status, population and distribution, cultural forest

คำสำคัญ: สุนัขจิ้งจอก สถานภาพ ประชากรและการกระจาย ป่าวัฒนธรรม

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Introduction

The Asiatic jackal or golden jackal (*Canis aureus* Linnaeus, 1758) is a widely distributed species (Figure 1) often found from East Africa through the Middle East to South Asia. It feeds on several types of food and is found in a variety of habitats that include the savannah, woodlands (Moehlman, 1983; Fuller et al., 1989) and farmland (Pouche et al., 1987; Jaeger et al., 2001). It reportedly has been seen at elevations as high as 3,500 m above sea level (Admasu, 2004) and its distribution in a wide range of habitats indicates that it is capable of adapting to many different environmental conditions.

Asiatic jackals in Thailand have been found in some of the country's protected forests such as Khao Nang wildlife research centre (Conforti, 1996; Simchareon, 1998) Thung Yai and Huai Kha Khaeng wildlife sanctuary in western Thailand (Robinson et al., 1995).

The cultural forests of Ban Lao Jan and Ban Nong Klang Khok are dry dipterocarp forests. The dominant plant species are *Dipterocarpus tuberculatus* Roxb., *Shorea obtusa* Wall. ex Blume, *S. siamensis* Miq., *Canarium subulatum* Guillaumin and *Buchanania lanzan* Spreng. (Figure 2) (Wongpakam et al., Unpublished data). Local people use the cultural forests in many ways. The forests are often the source of non-timber products such as medicinal plants, vegetables and mushrooms. These cultural forests still maintain their diversity at relatively high levels.

There is no scientific report, to the best of our knowledge that discusses the Asiatic jackal in a non-protected area such as a cultural forest. This is the first report on the populations of Asiatic jackal in non-protected cultural forests in northeastern Thailand.

Material and Methods

Period and sites

This study was carried out from December 2004 to November 2005 at two cultural forests in Nadoon district, Mahasarakham province (Figure 3). These forests are located in Ban Lao Jan (15° 44' 4.94" N, 103° 12' 54.52" E) which has an area of 0.84 km² and Ban Nong Klang Kok (15° 44' 48.06" N, 103° 11' 19.92" E) which has an area of 1.79 km² (Figure 3).

Field surveys and collection

The line transect method by Krebs (2001) with length of 800 m was used to observe the Asiatic jackal population. Voice, tract and holes were recorded and the data were used to estimate population size following the method by Sharma (1998).

Results and Discussion

The results offer the first report on the status of the Asiatic jackal in cultural forests and indicate that even a small patch of the forest can support populations of the Asiatic jackal. Detection of 2-3 families with a density of 3-4 individuals per km² is higher than those reported from the Indian Thar desert by Sharma (1998), which has a population density of 1-2 individuals per km².

Although the sizes of the cultural forests in the study are relatively small (0.84 and 1.79 km²) compared to protected forests, it was interesting to note that the Asiatic jackal frequently foraged in the agricultural areas near the forests.

This leads to the assumption that the actual home range of the Asiatic jackal could be very large. This may be the reason why this species can survive in such small forests (Table 1).

Although the results indicate a relatively high density in the population of Asiatic jackal in the cultural forests in northeastern Thailand, it is still a concern that the fragmentation of the forest could lead to population fragmentation and may reduce the level of genetic diversity within the population. Thus it is of interest to further study and examine the genetic structure of this species, as this could be important information for conservation planning in the future.

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Figure 1. Asiatic jackal or golden jackal; *Canis aureus* Linnaeus, 1758.



Figure 2. The cultural forest (Dry dipterocarp forest).

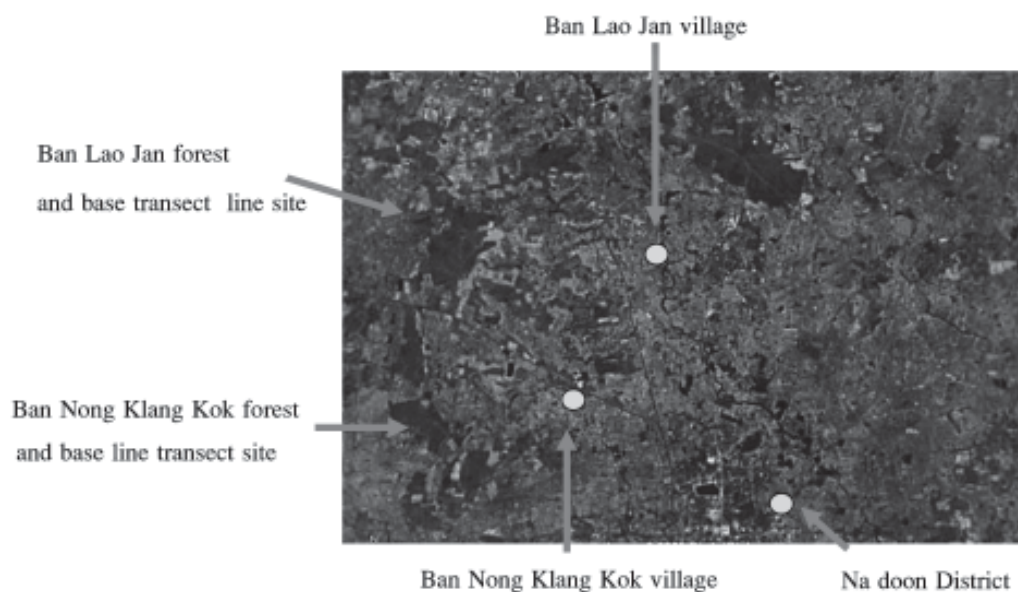


Figure 3. Map of Ban Lao Jan cultural forest and Ban Nong Klang Kok cultural forest, Na Doon District, Maha Sarakham Province, 2005 (Scale 1: 50,000).

Table 1. Characteristics of the study sites and estimated number of the *Canis aureus* in Ban Lao Jan and Ban Nong Klang Kok cultural forests.

Ecological data	Site 1: Ban Lao Jan Forest	Site 2: Ban Nong Klang Kok Forest
Forest size (km ²)	0.84	1.79
Forest type	Dry dipterocarp forest and Secondary forest	Dry dipterocarp forest and Secondary forest
Dominant species of plants	Kung: <i>Dipterocarpus tuberculatus</i> Chik: <i>Shorea obtusa</i> Rang: <i>S. siamensis</i> Ma kok kluean: <i>Canarium subulatum</i>	Chik: <i>Shorea obtusa</i> Kra yom: <i>S. roxburghii</i> Kung: <i>Dipterocarpus tuberculatus</i> Ma muang hua maeng wan: <i>Buchanania lanzan</i>
Use by people	Non-timber product use and livestock grazing	Non-timber product use and livestock grazing
Altitude (m)	161	182
Population	~8	~12
Parents (holes)	~2	~3
Distribution (individuals km ⁻²)	~4	~3