

Presentation given at the
WCS Workshop on Land Change Modeling for REDD

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Wildlife Conservation Society - Bronx Zoo
Bronx, New York, USA

Hosted by

Clark Labs and the Wildlife Conservation Society



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**Lao PDR
Program**
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WCS in Lao PDR

New York – 29/10/2010





WCS in Lao PDR

- Context of Lao PDR**
- Overview of WCS activities**
- Focus on Nam-Et Phou Louey**
- REDD program**



Context of Lao PDR Geography

Population: 6 millions

Only 21 people / km²

High population growth rate: 3.1%

Population of neighbouring countries

Vietnam: 86 millions

Thailand: 67 millions

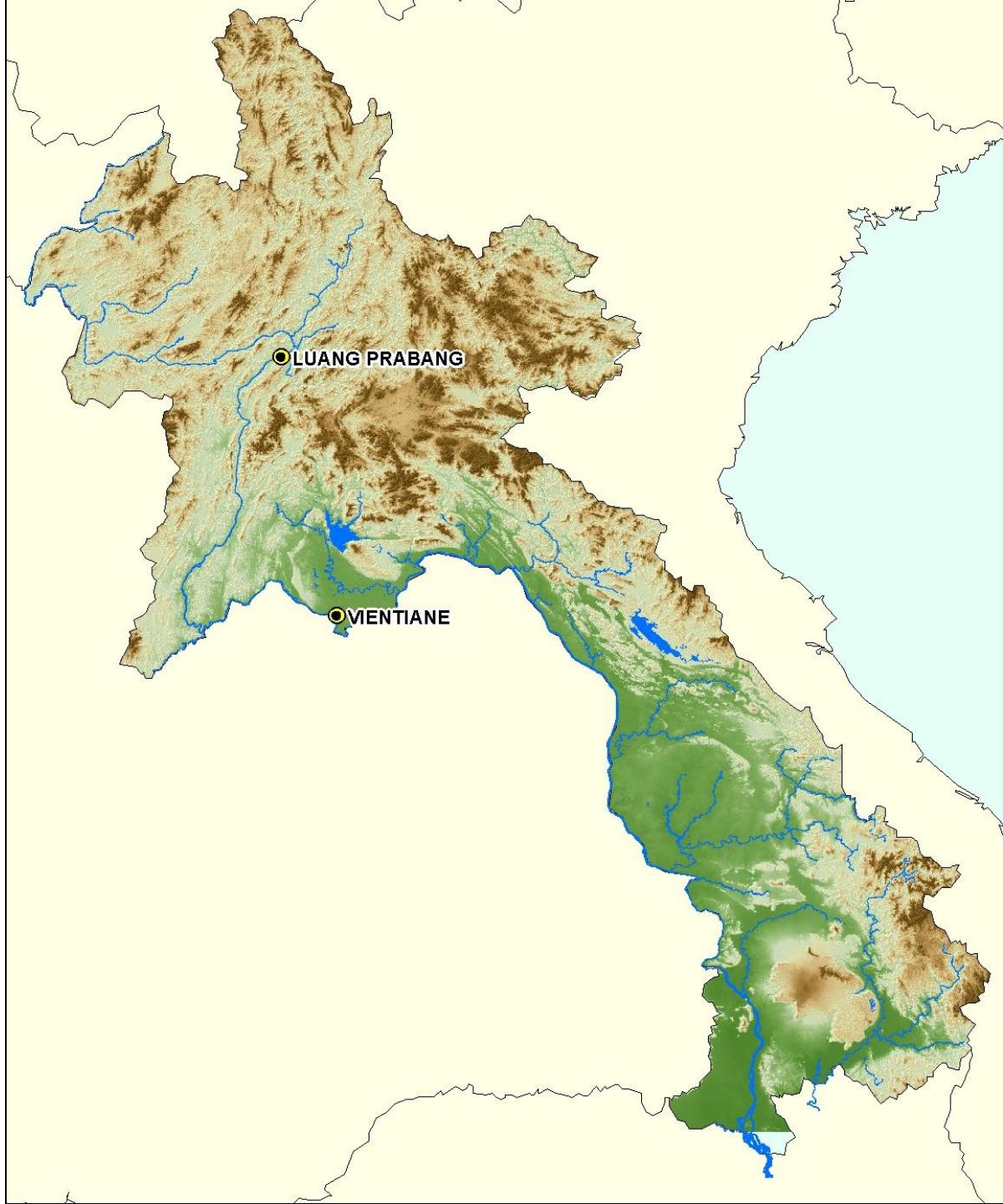
Cambodia: 14 millions



Context of Lao PDR Geography

Mostly mountainous

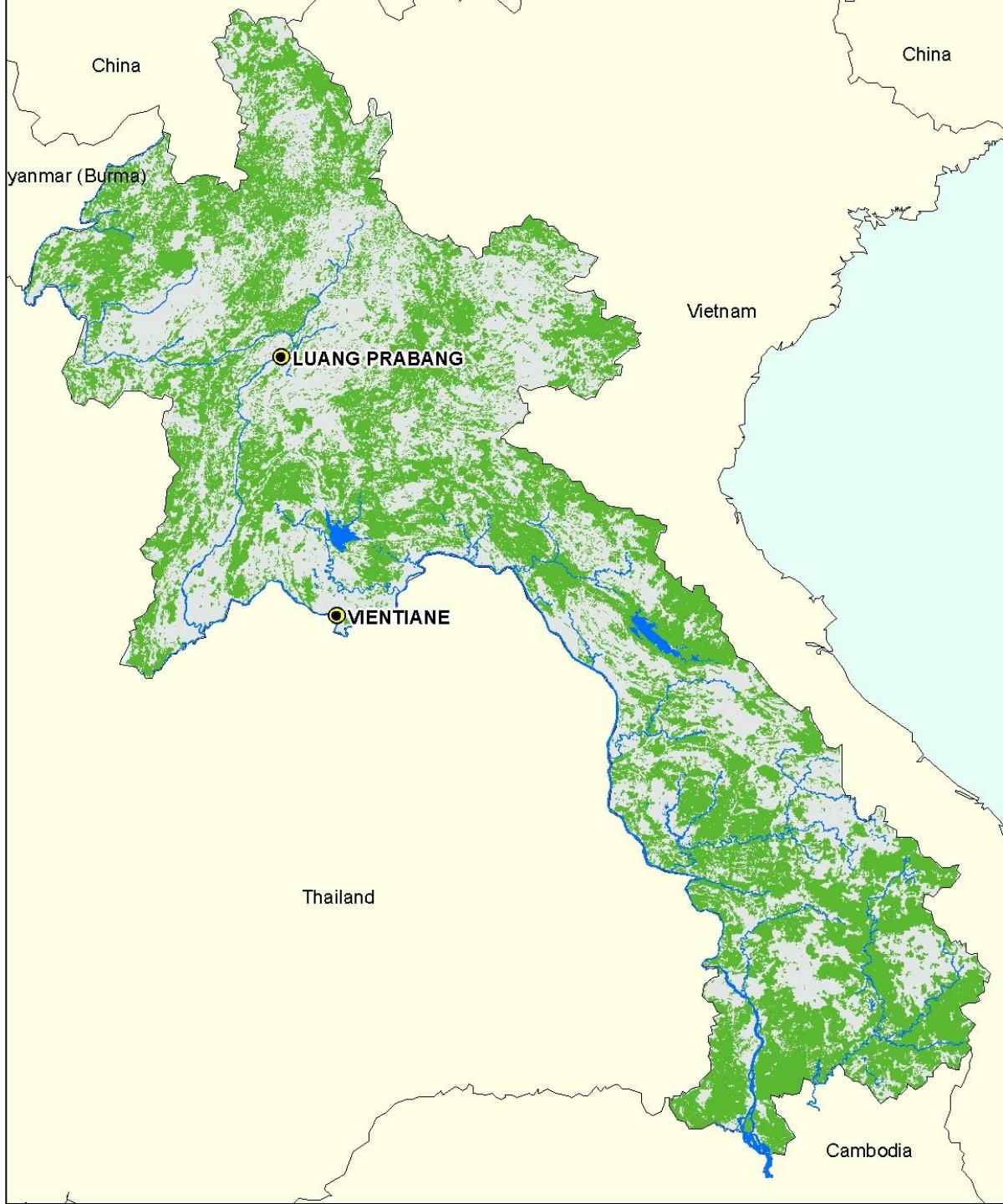
Forest cover: 42%



Context of Lao PDR Geography

Mostly mountainous

Forest cover: 42%



Context of Lao PDR

Historical

French presence

Kingdom of Laos and
Vietnam war 1954 - 1975

Lao PDR 1975 - present
Lao People's Democratic Republic



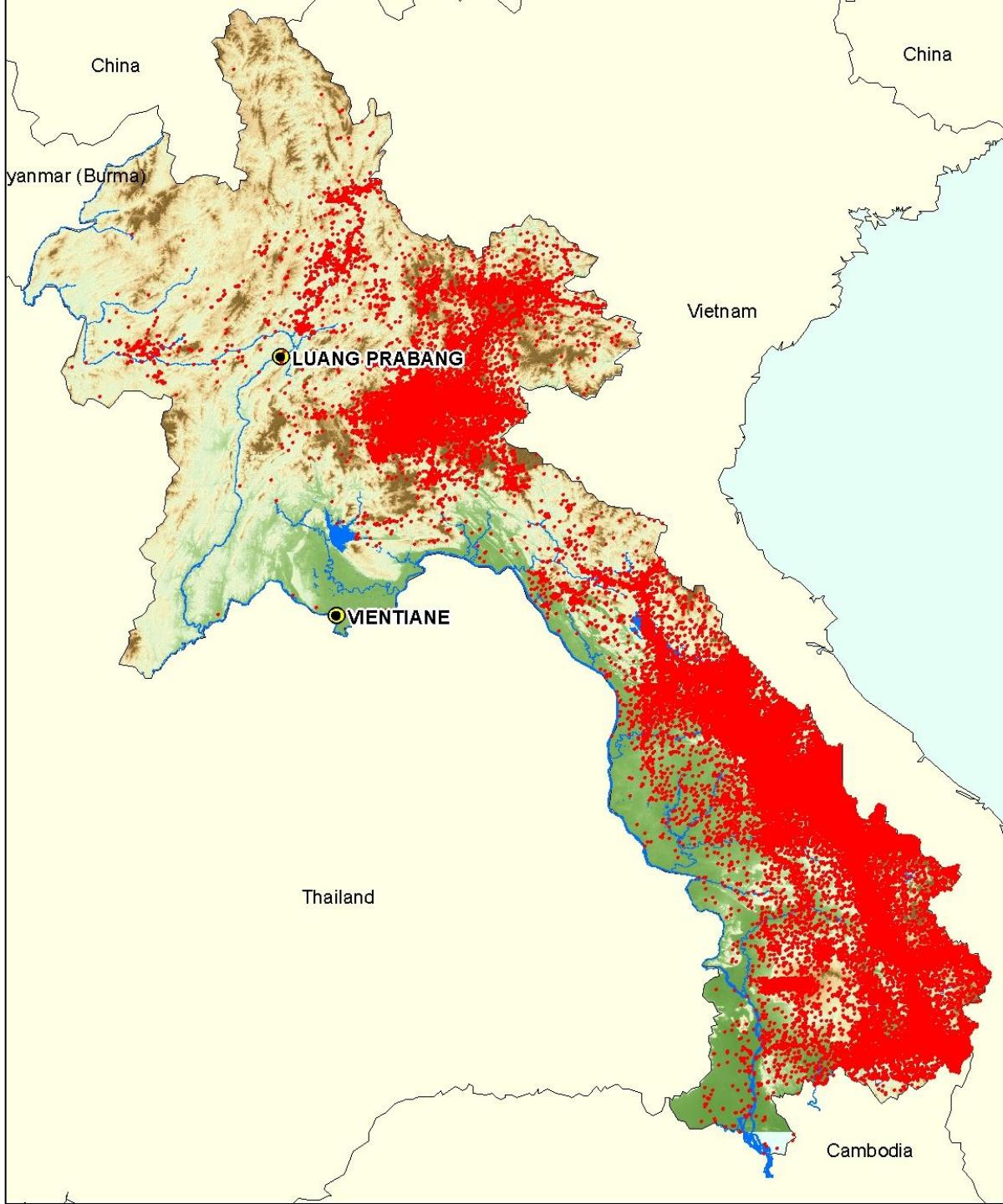
Context of Lao PDR

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Lao PDR 1975 - present
Lao People's Democratic Republic



Background

- WCS began working here in Laos in 1992; wildlife was among the least known in Asia
- Wildlife and habitat surveys in most protected areas; compiled in the 1999 Status Report
- Found internationally important populations of many threatened species ; but largely unmanaged & in decline



WILDLIFE IN LAO PDR

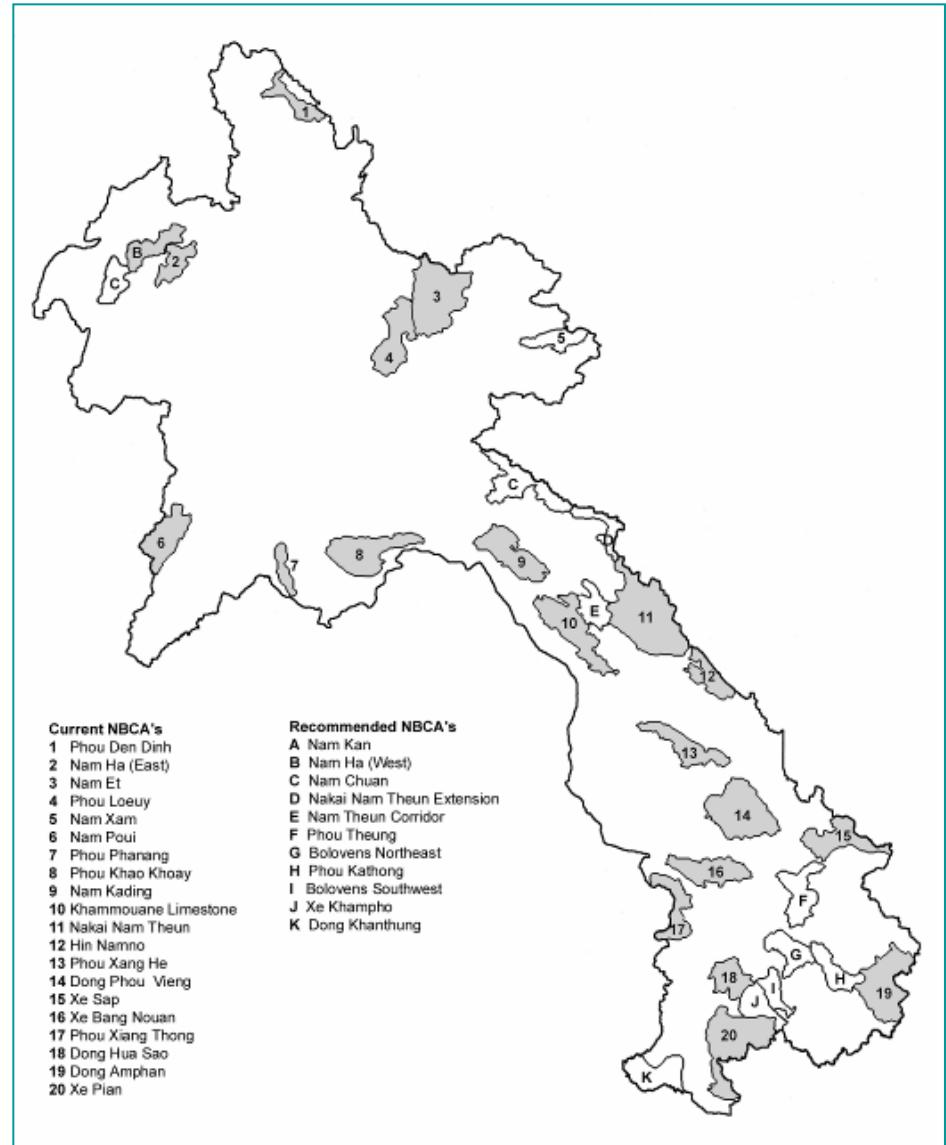
1999 STATUS REPORT

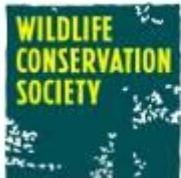
IUCN
The World Conservation Union
WCS
Wildlife Conservation Society
CPAWM
Conservation and Protection of Wildlife in Laos



Opportunities and challenges for endangered species conservation in Lao PDR

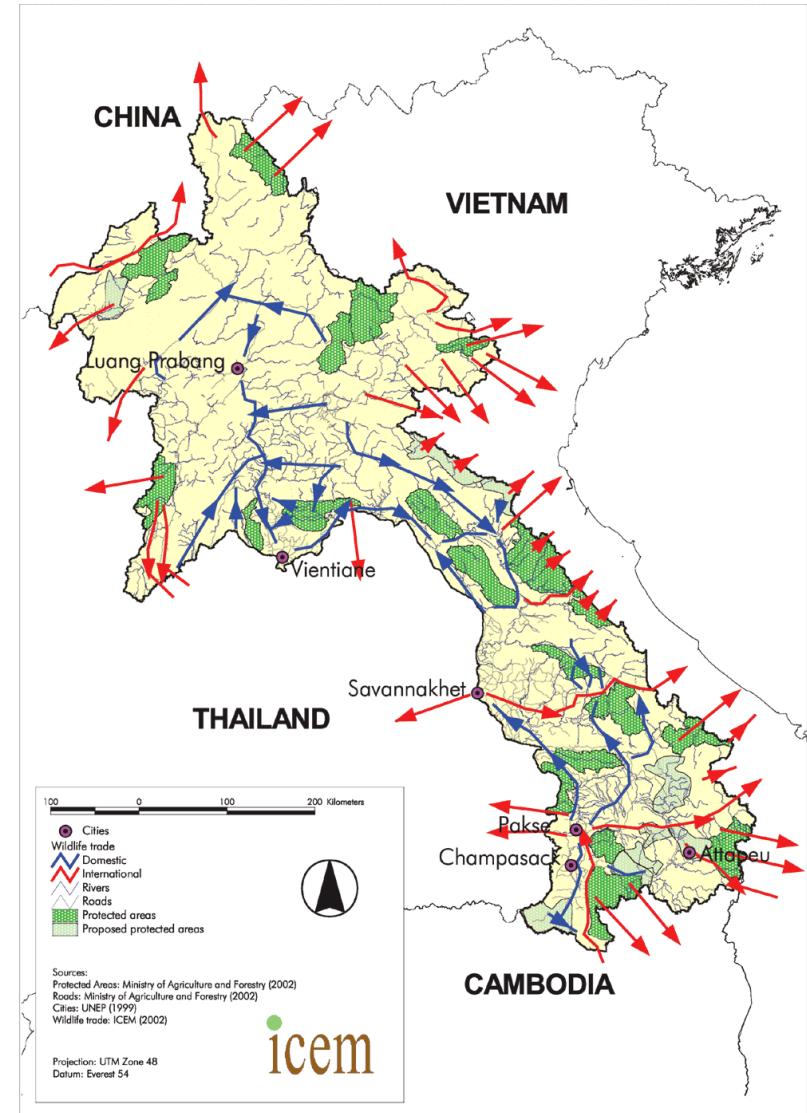
- Protected areas cover:
14%
- PAs poorly staffed and funded





Opportunities and challenges for endangered species conservation in Lao PDR

- 85% of population in rural areas;
low per capita income
- Hunting and trade largely unregulated



Sources:
Protected Areas: Ministry of Agriculture and Forestry (2002)
Roads: Ministry of Agriculture and Forestry (2002)
Cities: UNEP (1997)
Wildlife trade: Icem (2002)

Projection: UTM Zone 48
Datum: Everest 54

icem

Model Areas

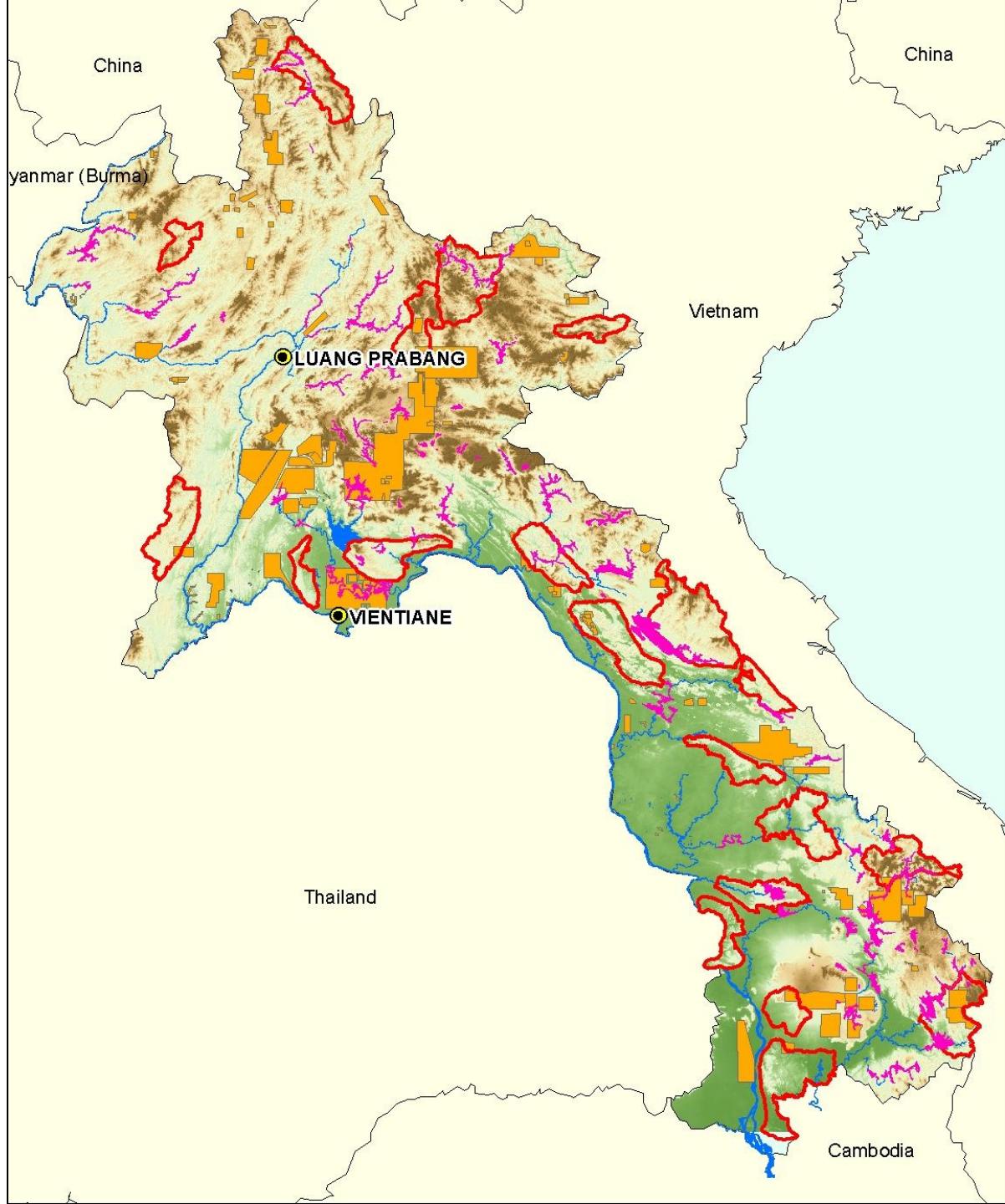
1. Northern Annamites Landscape
2. Nam Et Phou Louey Landscape
3. Xepon Landscape
4. Vientiane Capital City
 - Wildlife Trade Project
 - National University (to replicate models)

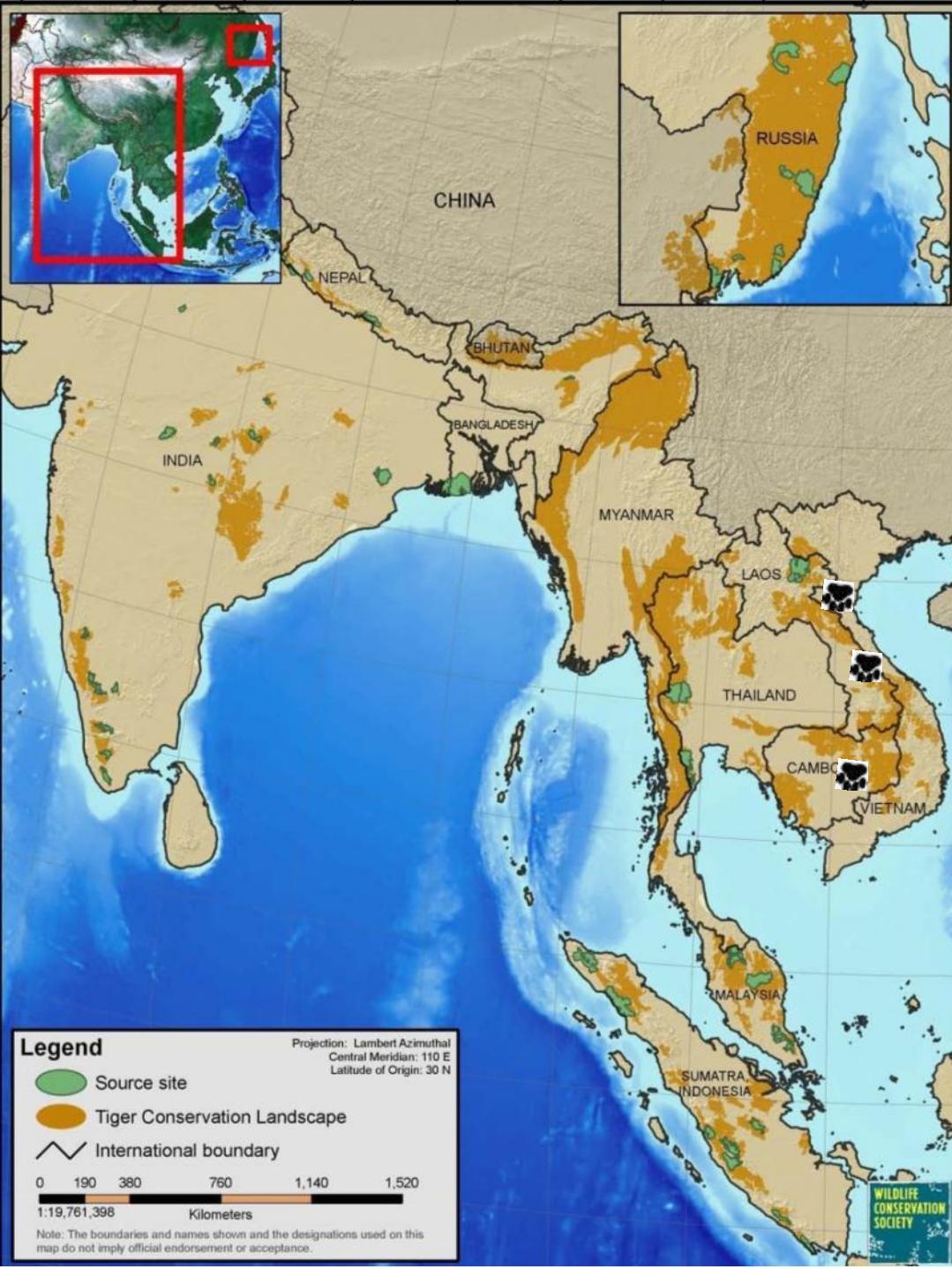


Context of Lao PDR Development

Mining concessions

Hydropower projects





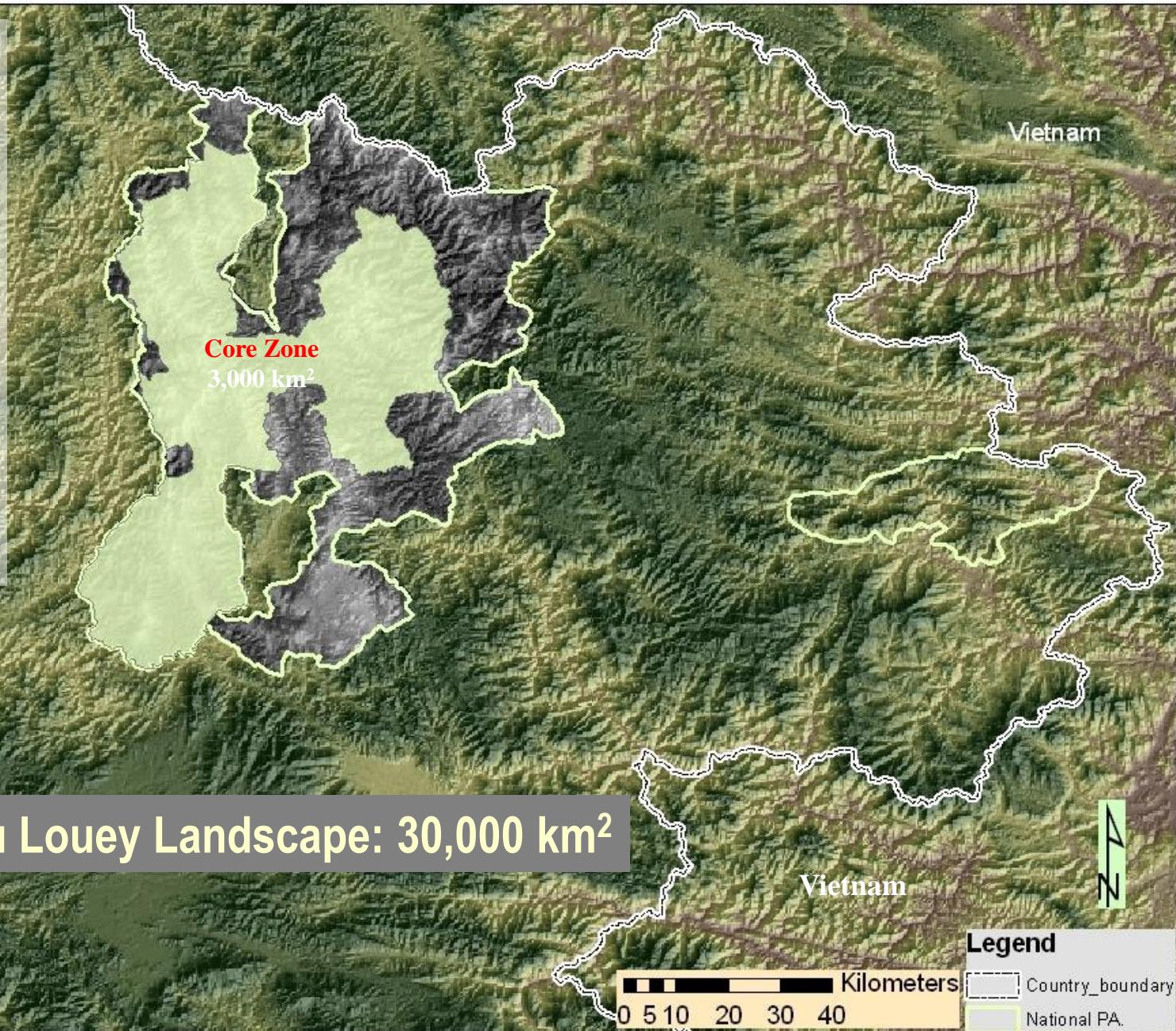
NEPL Landscape

- Only confirmed tiger breeding site remaining in Indochina
- Key to future of tigers in region
- 17 Globally Threatened bird species and 20 mammal species

**Nam Et-Phou
Louey
National
Protected Area
(5,959 km²)**

**Core zone
(3,000 km²)**

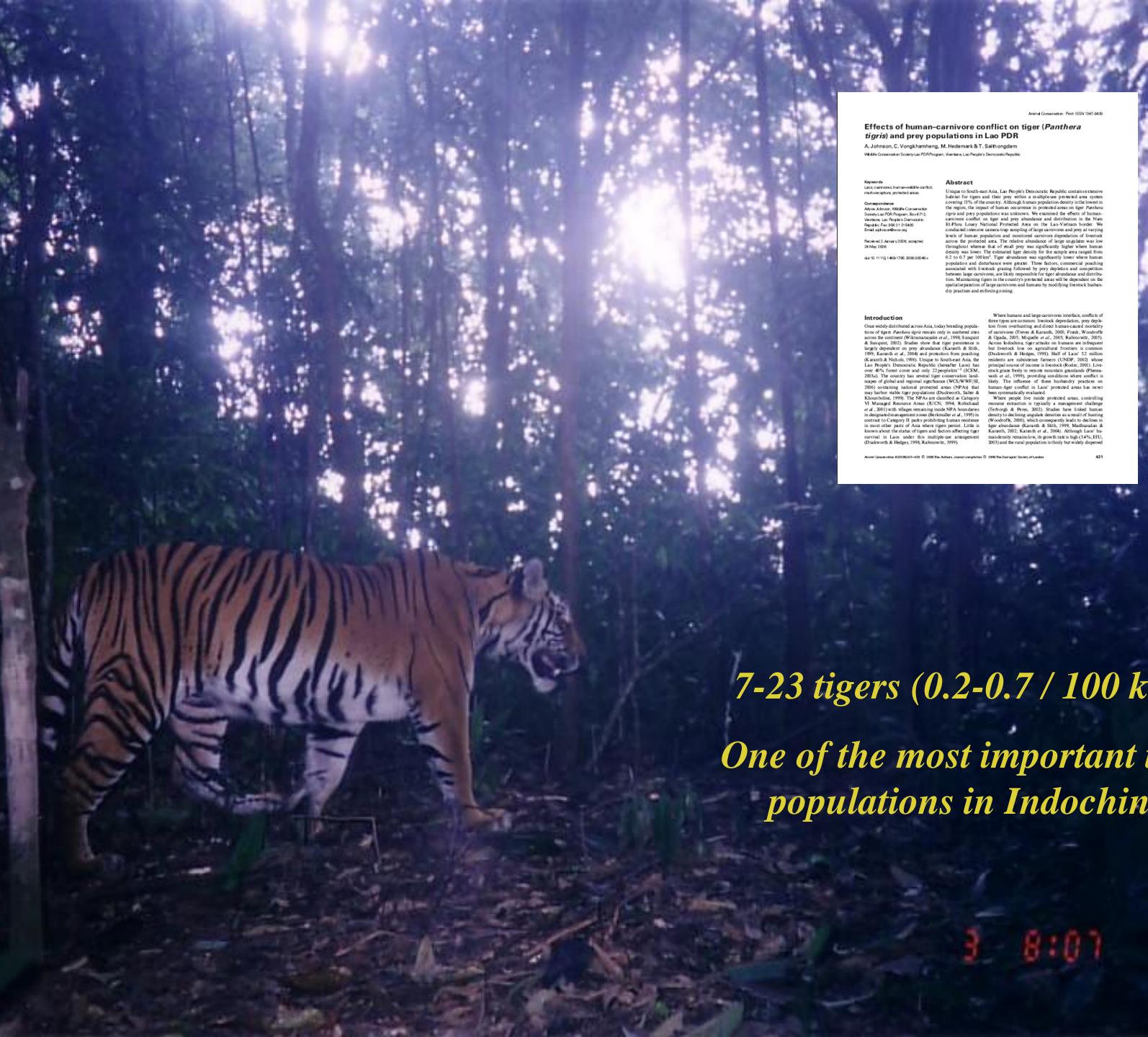
**Management
zone
(2,959 km²)**





- 400-2257 m asl
- *Evergreen / deciduous forest & grasslands*





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Effects of human-carnivore conflict on tiger (*Panthera tigris*) and prey populations in Lao PDR

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Keywords:
Lao PDR, carnivores, human-wildlife conflict, tiger, prey abundance, protected areas

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Usage in South-east Asia, Lao People's Democratic Republic contains extensive habitat for tigers and prey within a multiple protected area system. In this region, the impact of humans occurs in protected areas on tiger, *Panthera tigris*, and prey populations. We used camera-trap surveys to assess the effects of human-carnivore conflict on tiger and prey abundance and distribution in the Nam Ou National Park, Lao PDR. We also conducted interviews with local people to conduct intensive camera-trap sampling of large carnivores and prey at varying levels of human population and monitored carnivore depredation of livestock and human fatalities. Our results show that meat prey was more abundant than human fatalities in the park. The highest human fatality rate was lower than the highest tiger density in the park, ranging from 0.2 to 0.7 per 100 km². Tiger abundance was significantly lower where human densities were higher. Prey abundance was significantly higher in areas associated with livestock grazing followed by prey depredation and competition with humans. The tiger population in the park was estimated to be 7–23 individuals. Maintaining tigers in the country's protected areas will be dependent on the spatial separation of large carnivores and humans by modifying livestock husbandry practices and enhanced policing.

Introduction

Where humans and large carnivores interface, conflicts of

three types can occur: livestock depredation, prey depredation and human fatalities (Woodroffe & Karanth, 2000; Frank, Woodroffe & Opler, 2003; Macfie et al., 2005; Balme et al., 2005).

In Southeast Asia, the most common type of conflict is

livestock loss on agricultural frontiers (Karanth & Stith, 1995; Karanth & Sunitha, 1996; Karanth & Sunitha, 1998; Karanth & Nichols, 1998). Unique to Southeast Asia, the tiger population is threatened by both human depredation and human-wildlife conflict (WWF, 2006). The tiger ranges over 40% forest cover and only 22 individuals⁻¹ (IUCN, 2007). The tiger population in Southeast Asia is considered to be one of the most important in the world in terms of range and regional significance (WCS, WWF, IUCN, 2007). The tiger population in Lao PDR may further suffer tiger populations (Duckworth, Sauer & Johnson, 1999). The NPA are classified as Category II Management Areas (MAs) under the IUCN classification (Johnson et al., 2001) with villages remaining inside NPA boundaries (Johnson et al., 2001). The tiger population in the park is contrasted to Category II parks prohibiting human residence (Duckworth, 2000). Although little is known about the status of tigers and factors affecting tiger abundance in the park, tiger density in the park is high (4.7 individuals/100 km²), which is higher than the national average (Duckworth & Helgen, 1998; Johnson et al., 2001) and the rural population in the park is relatively

When humans and large carnivores interface, conflicts of three types can occur: livestock depredation, prey depredation and human fatalities (Woodroffe & Karanth, 2000; Frank, Woodroffe & Opler, 2003; Macfie et al., 2005; Balme et al., 2005). In Southeast Asia, the most common type of conflict is livestock loss on agricultural frontiers (Karanth & Stith, 1995; Karanth & Sunitha, 1996; Karanth & Sunitha, 1998; Karanth & Nichols, 1998). Unique to Southeast Asia, the tiger population is threatened by both human depredation and human-wildlife conflict (WWF, 2006). The tiger ranges over 40% forest cover and only 22 individuals⁻¹ (IUCN, 2007). The tiger population in Lao PDR may further suffer tiger populations (Duckworth, Sauer & Johnson, 1999). The NPA are classified as Category II Management Areas (MAs) under the IUCN classification (Johnson et al., 2001) with villages remaining inside NPA boundaries (Johnson et al., 2001). The tiger population in the park is contrasted to Category II parks prohibiting human residence (Duckworth, 2000). Although little is known about the status of tigers and factors affecting tiger abundance in the park, tiger density in the park is high (4.7 individuals/100 km²), which is higher than the national average (Duckworth & Helgen, 1998; Johnson et al., 2001) and the rural population in the park is relatively

7–23 tigers (0.2–0.7 / 100 km²)

One of the most important tiger populations in Indochina

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Environmental Threats

1. Over-harvesting of wild animals and plants
2. Illegal trade of wild animals and plants
3. Habitat loss – shifting cultivation & plantations
4. Potential mining



Nam Et – Phou Louey Protected Area Advisory Committee

WCS Technical Assistance

NPA Management

Administration
Section

Enforcement
Section

Conservation
Outreach Section

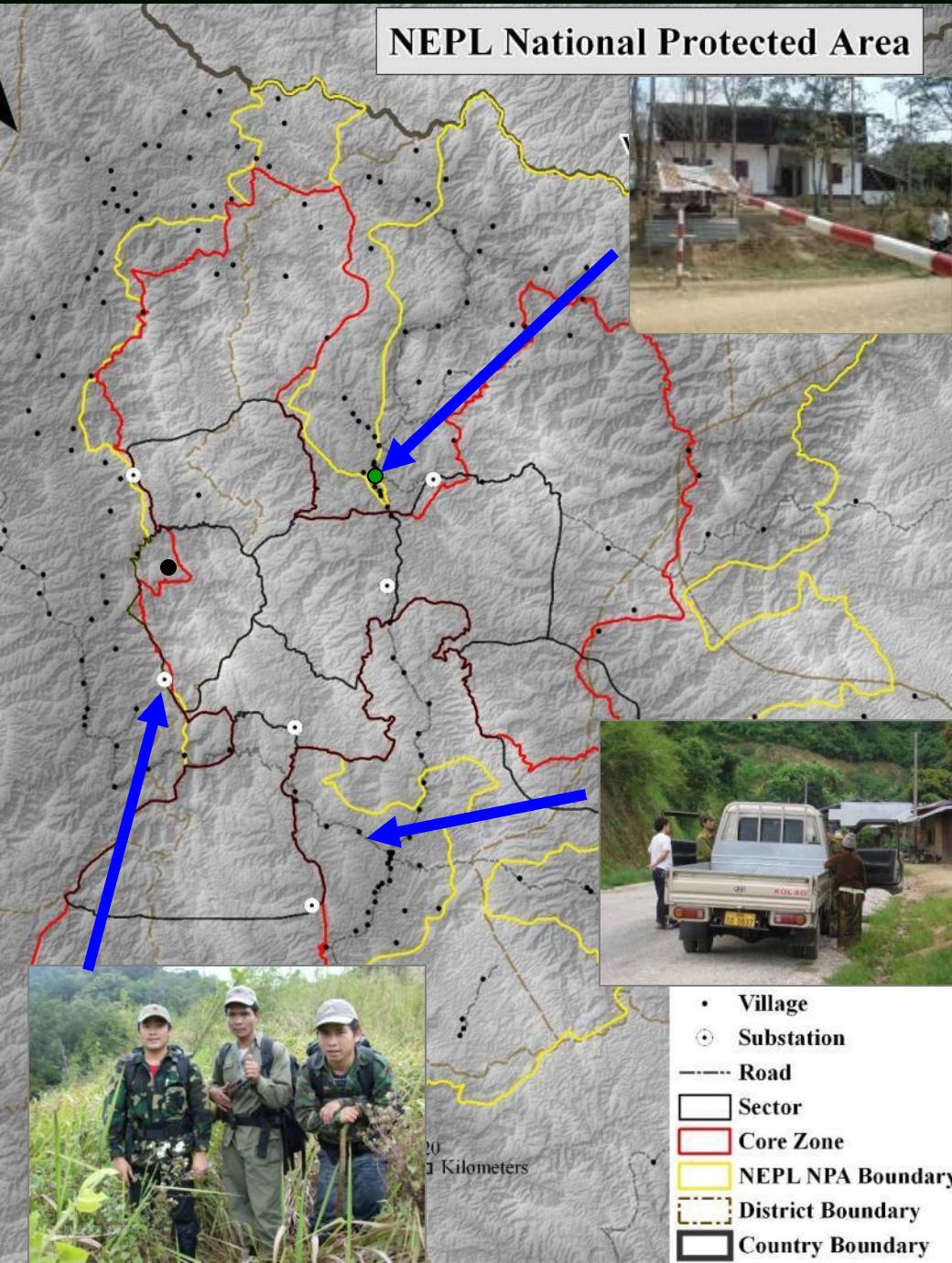
Research &
Monitoring
Section

Ecotourism
Section

Land Use
Management
Section



Enforcement Strategy



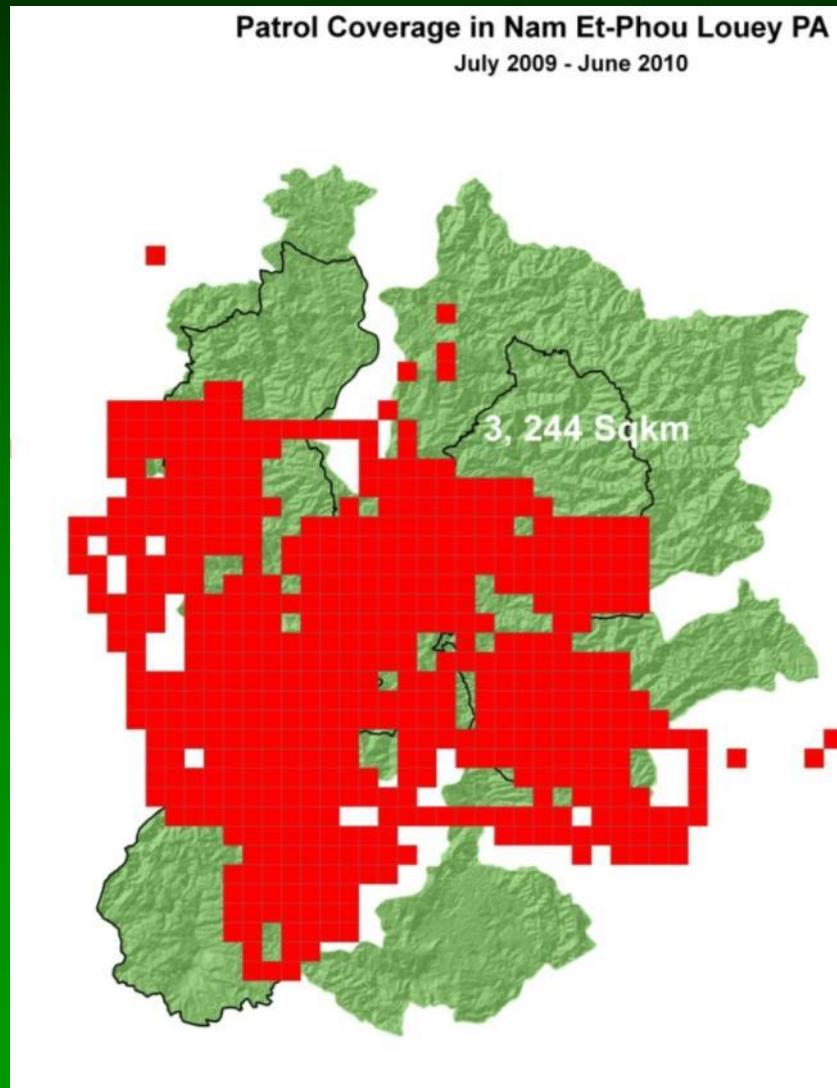
- Substations
- 6-8 rangers per station
- foot patrols in core zone
 - covering 2000 km²
- Mobile teams
 - 2-4 per team
- respond to informant reports
- roadblocks, markets and restaurants

Foot Patrol Effort and Coverage

Dry Season Patrol Effort / km (Nov-Apr)



Patrol Coverage in Nam Et-Phou Louey PA
July 2009 - June 2010

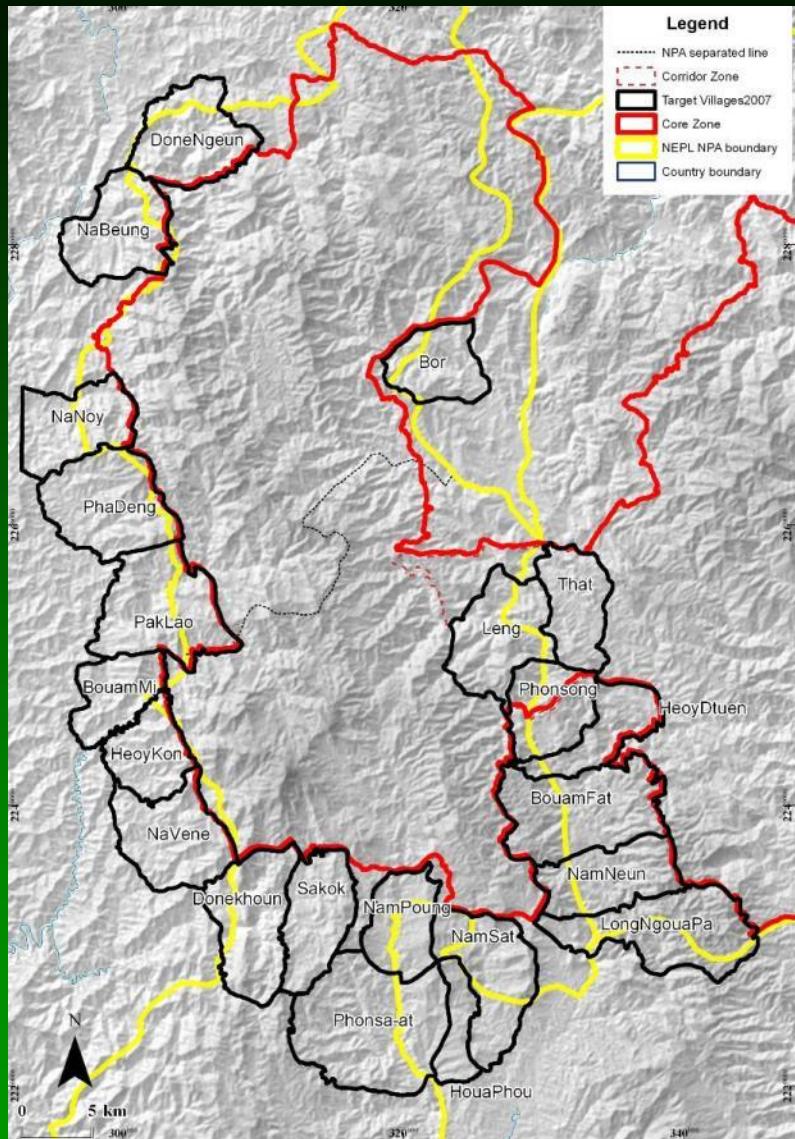


Conservation Outreach

- Introduce principles of wildlife & protected area management



- Land use zoning for sustainable hunting, fishing and gathering



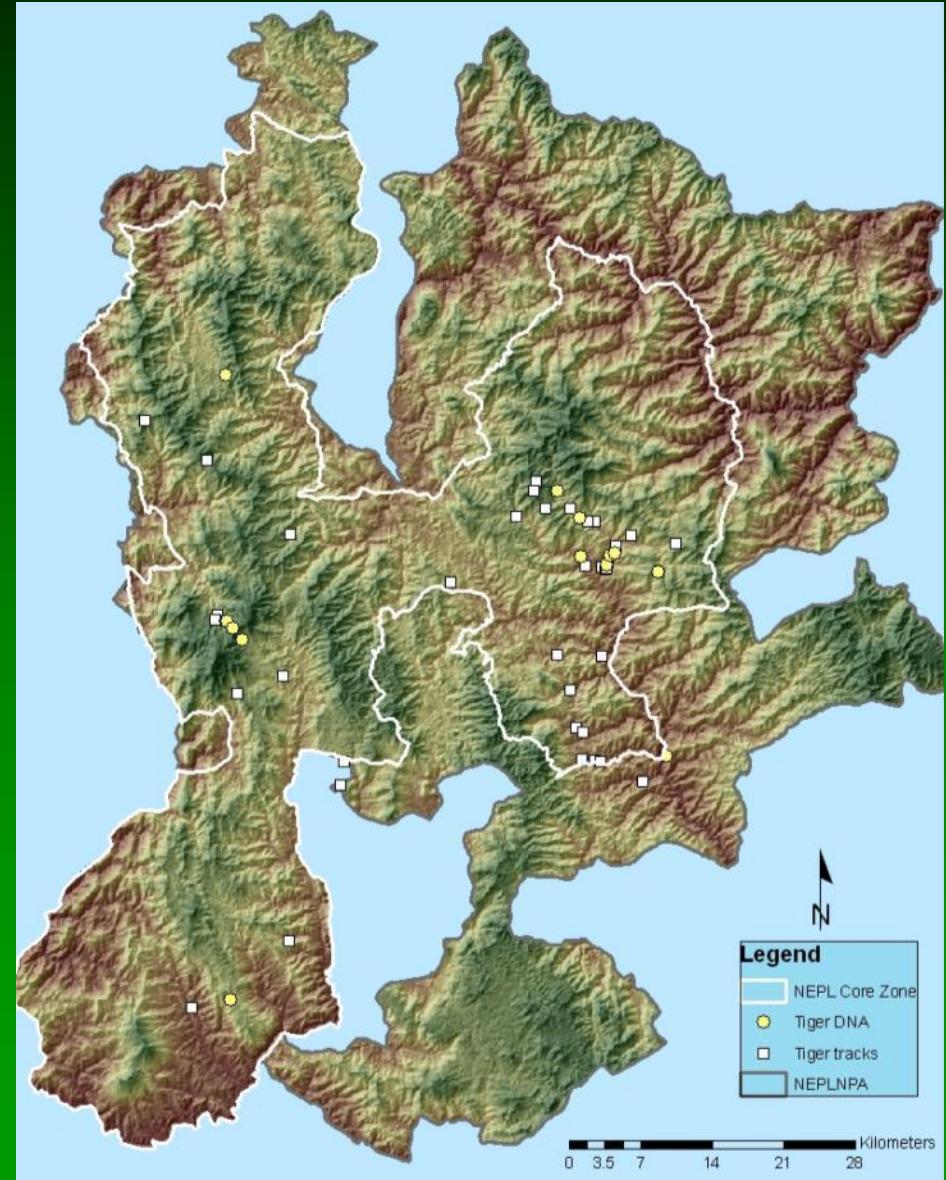
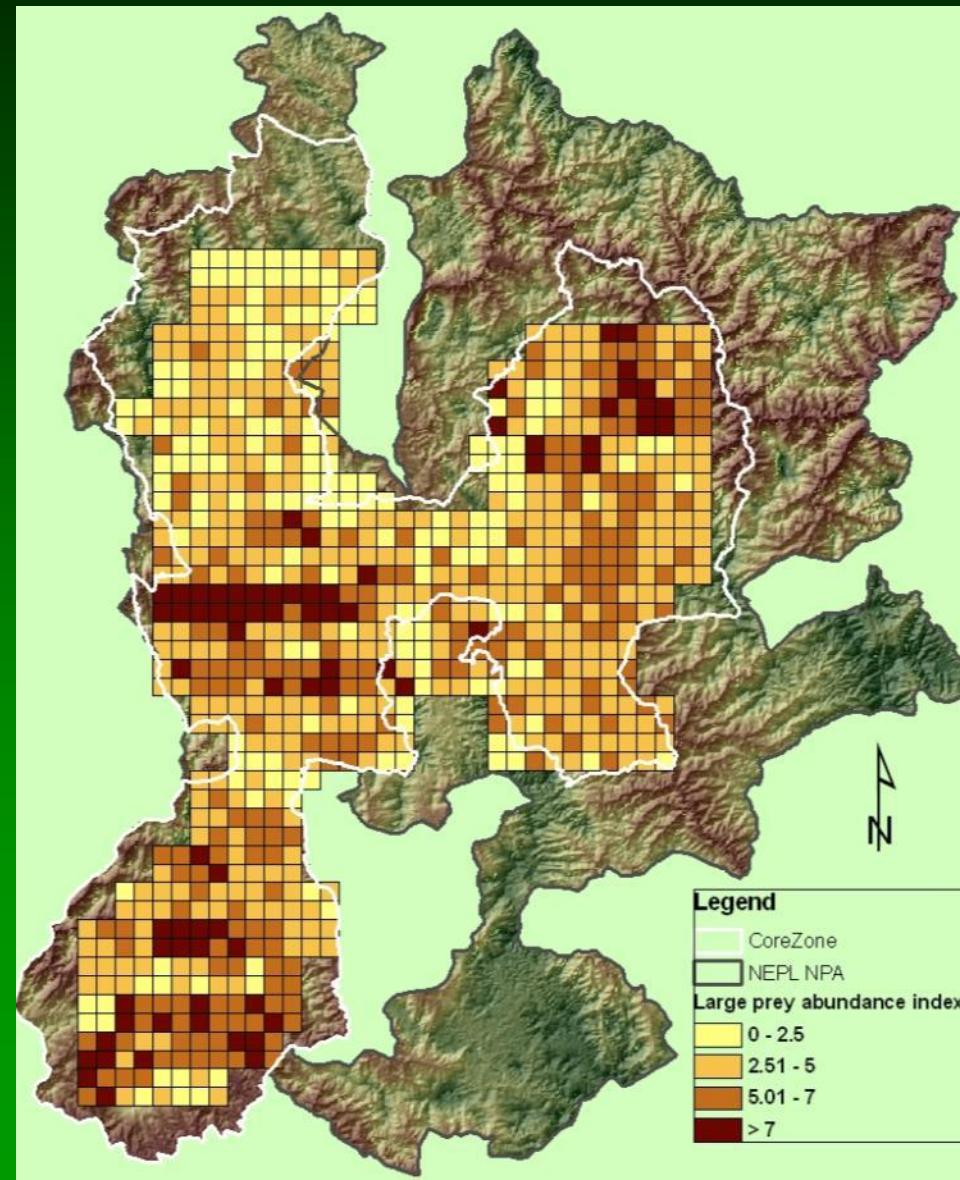
- Hunters
- Villagers
- Government Officers

"I will follow up on all hunting and wildlife trade criminal cases, because I am a dedicated government official who does not buy or sell wildlife."



Spatial distribution of abundance index of large prey

Tiger confirmed by DNA and
tracks





REDD Program

- Feasibility study in Bolikhamsay
- WCS sub-contracted by GTZ to do feasibility studies in NEPL and Nam Phouy NPA

Demonstration sites for Laotian-German CliPAD program Climate Protection through Avoided Deforestation



Thank you



**Lao PDR
Program**
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