

Taxonomic status of otter species in Nakai-Nam Theun National Park, Lao PDR, based on DNA evidence



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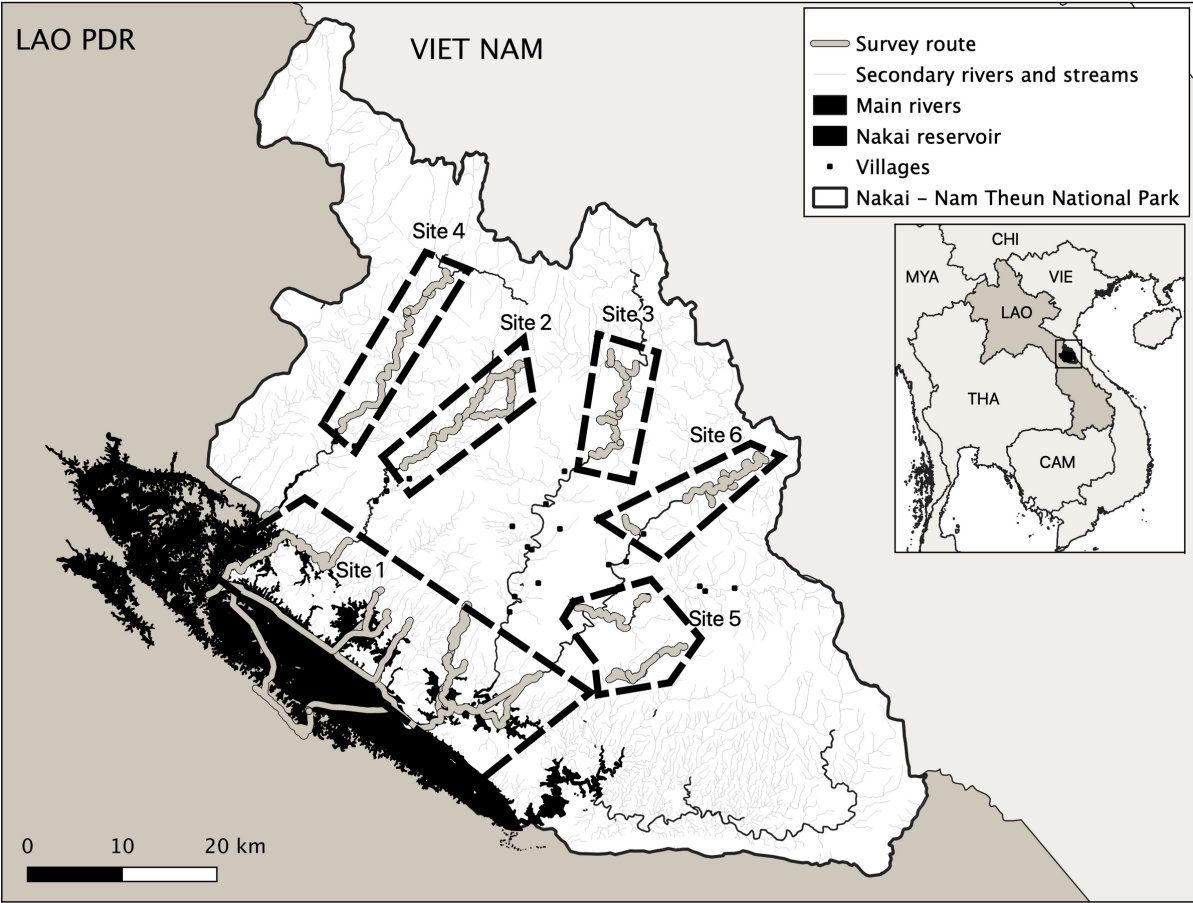
Camille N. Z. Coudrat · Wanlop Chutipong · Manakorn Sukmak · Supaphen Sripiboon · Worata Klinsawat. 2022. *Ecology and Evolution*

INTRODUCTION

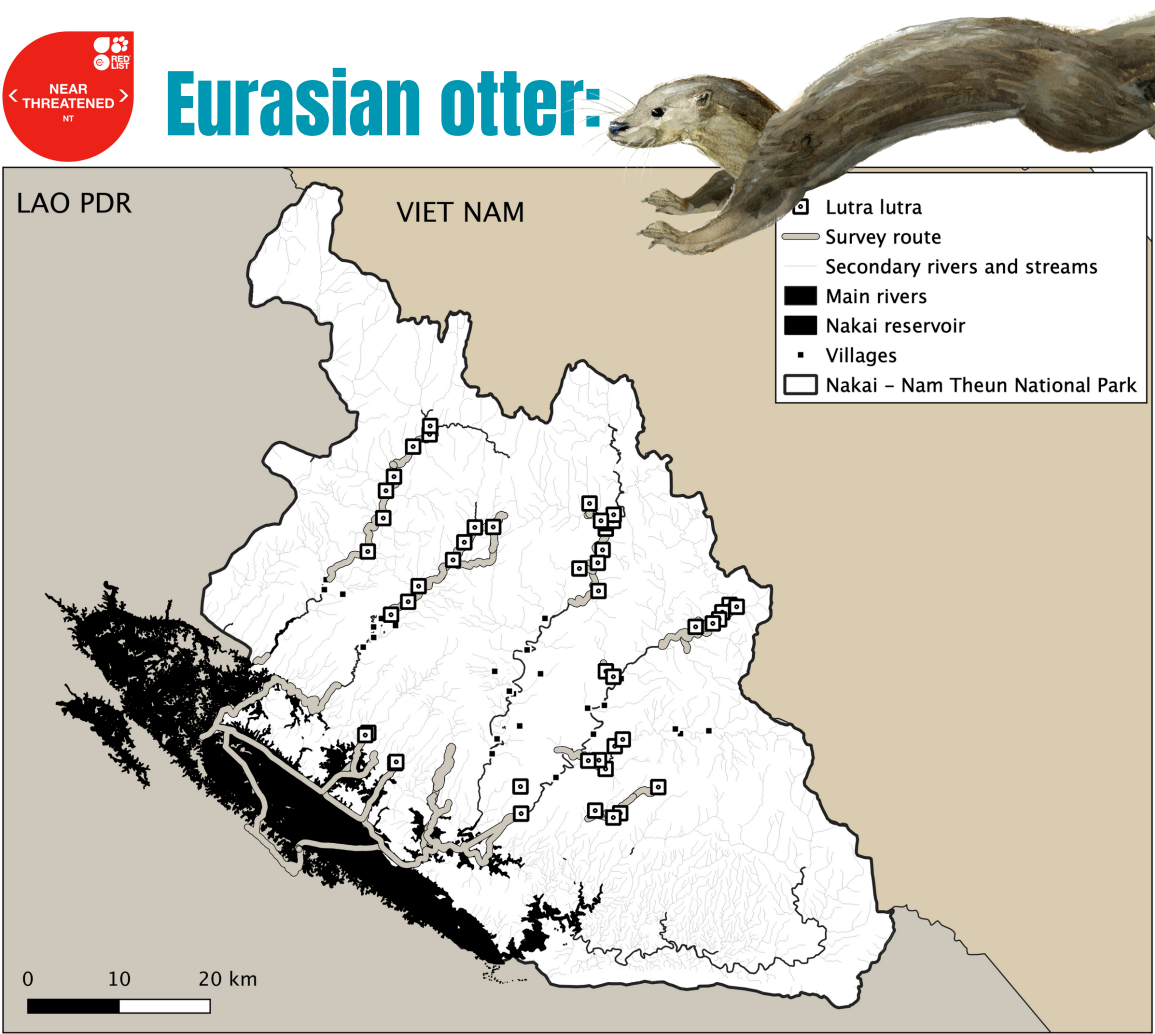
- The **populations of Asian otter species have been declining**
- **Main threats:**
 - Habitat loss
 - Decreasing number of their prey due to overfishing by humans
 - Illegal hunting for wildlife trade (for traditional medicine or for their fur)
 - Illegal capture to supply exotic pet markets
- The distribution and conservation status of otters in Asia are little known and understudied
- In **Laos**, **three otter species** have been **confirmed to occur: protected under the national law**
- **Nakai - Nam Theun National Park** has been identified as an **important area for the conservation of otters** in Lao PDR and Southeast Asia

METHODOLOGY

- Baseline **otter-fecal DNA surveys** in **Nakai-Nam Theun National Park** in the Annamite Mountains of Lao PDR:
 - From **December 2019 to May 2020**
 - Based on **mitochondrial DNA (mtDNA)**
 - Laboratory analysis at the Faculty of Veterinary Medicine, **Kasetsart University**, Thailand
- **Aims:**
 - **Identify otter species** occurring in Nakai-Nam Theun National Park
 - Map the **spatial distribution of genetic diversity** and **evolutionary relationships** of otter populations (*using 1700bp Cytochrome B - Control Region and mitogenome*)



MAIN FINDINGS & CONCLUSIONS



- Total of **56 fecal samples** analyzed
- **Two species identified in Nakai-Nam Theun National Park:**
 - **Asian small-clawed otter** *Aonyx cinereus* (7 samples, **12.5%** of samples)
 - **Eurasian otter** *Lutra lutra* (49 samples, **87.5%** of samples)
- **ASIAN SMALL-CLAWED OTTER:**
 - Only **one haplotype** was detected: ACLA01 (not detected previously in Asia)
- **EURASIAN OTTER:**
 - **Three haplotypes** were detected: LLLA01, LLLA02, LLLA03
 - Calculated **haplotype diversity of 0.600** and a **nucleotide diversity of 0.00141** based on mitogenome
 - All Eurasian otter **haplotypes were newly characterized** and clustered within the strongly supported **South-Southeast-North Asian** clade of *Lutra lutra*
 - Compared to the European clade, the **high mtDNA diversity** of *Lutra lutra* in Nakai – Nam Theun National Park potentially reflects **long-term demographic stability**

