

Mapping Nature Crime: Place-Network Investigation of Neglected Places in Vietnam

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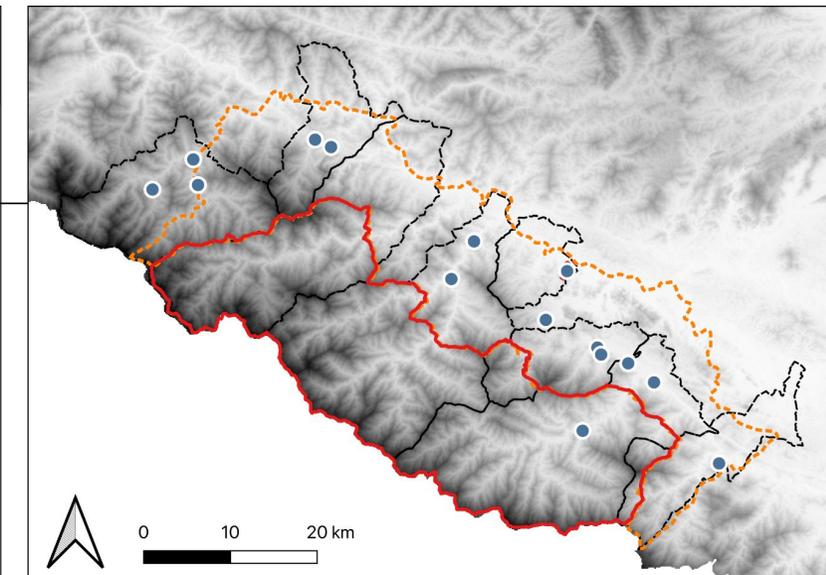
ADAPTING VIOLENT CRIME TO NATURE CRIME?

| | Violent crime | Nature crime |
|--------------------------|--|--|
| Crime ecosystem | Urban neighborhoods; smaller spatial areas | Rural and dispersed communities; forested land areas |
| Facility type | Diverse with refined functions | Simpler with merged functions |
| Contestation of legality | Uncontested; it is illegal | Contested; the illegality of actions vary over time and landscapes |
| Information collector | Trained LEAs; sophisticated investigators | Trained conservationists with years of community bonding |



Participatory Mapping

- Study site: Pù Mát National Park, Vietnam
- Sampling: Referral sampling
 - 14 villages from 8 nearby communes
 - 92 non-authority (villagers), 41 authorities (forest rangers, community conservation teams, border army)



Study Area

- Village Representation of Participants
- Vietnam boundary
- PMNP Core Zone
- Country boundary (World Bank)
- PMNP Buffer Zone
- PMNP Adjacent Communes
- Elevation derived from USGS DEM
- Band 1 (Gray)
- 1,731
- 7

(Cochrane and Corbett, 2020)

Crime site

Based on professional hunters' knowledge, poaching happened across the park and the **border areas** were particularly pointed out. The poaching activities in the **northern park** worth extra attention from authorities.

Convergent setting

Public meeting places associated to poaching and wildlife trade in the past vary from the **village gate**, **wedding banquet**, to **alcohol selling store**. Nowadays, hunters tend to meet privately at hunters/middlemen/buyers' houses and contact each other via phone calls. Expanding connections for wildlife trade highly relies on trusted mutual acquaintance.

Corruption spots

Business sites that encourage poaching and illicit wildlife economy concentrate along **National Road 7** and nearby towns, including **restaurants and hotels** that sell wildlife meat, and **market and grocery stores** that sell materials for making snares, bullets, and other poaching tools.

Comfort spaces

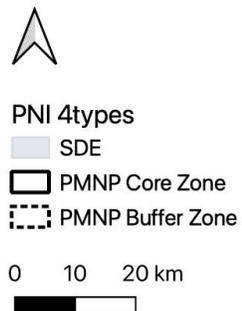
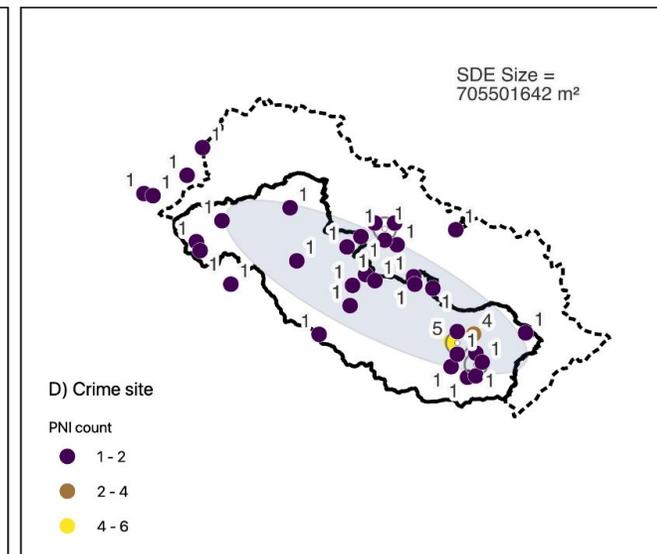
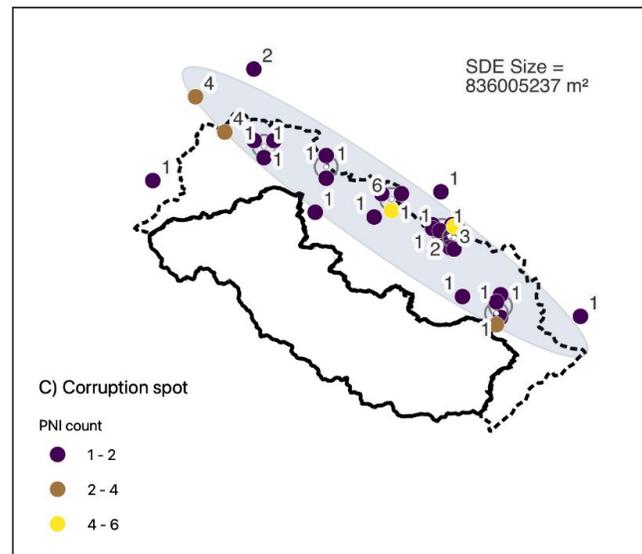
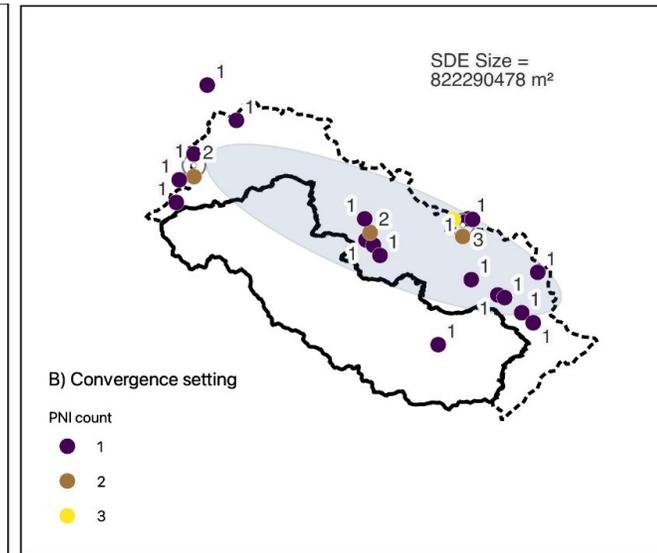
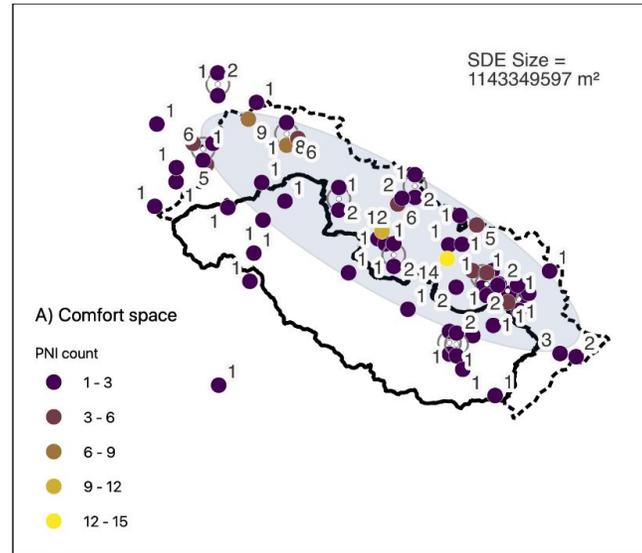
Most hunters feel the most secure in the **forest** or **private houses** to discuss, plan, and prepare trips to the forest, or meet with team hunters/middlemen/buyers.



PLACE FEATURES

4CS Spatial Patterns

- Comfort spaces (private): most identified, concentrated in villages
- Corruption spots: outside of the park, concentrated in towns along the national road No.7
- Convergent settings (public): sparsely identified, overlap with comfort space and corruption spot



PIVOT Implications in Conservation

Macro scale - Community Engagement & Deterrence

- Regular awareness raising: persistently attend public gatherings and showing presence in **convergence settings** to speak about poaching and wildlife trade problems
- Trust building for authority-community partnered guardianship



(Hammer, 2020; Madensen, 2007)

PIVOT Implications in Conservation



Micro scale - Place Management

- Physical space organization: trimming bushes that can be used as a storage place
- Regulation of conduct: deploy warning signs and CCTV to inform regulation in business sites
- Access control: address secrete trails to enter the forest
- Resource acquisition: engage business owners to discourage actions supportive of poaching and wildlife trade



(Hammer, 2020; Madensen, 2007)



- **Analysis**
 - Social-Network Analysis: explore network centrality and robust links
 - Spatial Modeling: find the association between location choice and environmental and human factors
- **Response:** Solutions proposed on multi-stakeholder meetings
- **Assessment:** Long-term monitoring for poaching incidents, place redevelopment evaluation

NEXT STEPS

ADAPTING NATURE CRIME TO VIOLENT CRIME?

- Beyond borders
 - enables new analysis, such as spatial partitioning
 - engage new stakeholders for crime prevention interventions (nontraditional partners)
- Moving from 1 to 2 – what to include in scanning, adding or broadening borders of scan may influence the scale of analysis
- Nuisance crimes
 - What is the harm here?
 - What's contributing to the crime?





Scientific Collaborators

- Vinh University
- San Diego Zoo
- Save Vietnam's Wildlife

Read our story map!



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