

# Situational Crime Prevention and Pangolin Poaching in West Kalimantan, Indonesia



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## **Situational Crime Prevention and Pangolin Poaching in West Kalimantan, Indonesia**

Recently, Planet Indonesia has partnered with researchers to better understand pangolin hunting behaviors through a crime script model and identify potential community-led crime prevention measures. Interviews were conducted in eight villages in Gunung Niut Nature Reserve and five villages in Gunung Naning Protection Forests.

This research has shown that pangolin hunters typically prepare for their hunts at their homes, often at night or in a clandestine way, and will usually hunt alone or in small groups of 3-4 people. As pangolin hunters conduct their activities at night, they often rely on the full moon's light to aid them. Hunting usually consists of several nights in the forest or until a target amount is caught, focusing on areas likely to contain pangolin habitats (wooded areas, river banks, flat and hilly/foothills areas) and often occurs during or near a full moon. Methods and points of entry vary but are generally on foot or motorbike, depending on the distance from settlement, or possibly by canoe if water-adjacent. Common entry points are heavily wooded foothills or former fields transitioning to forest, with high indicators of pangolin suitability (hiding areas, ants/termites, large trees).

Hunts are executed with snares, guns, and dogs (varies by location) and yield the most success during the Dry Season (April to September) or the adjacent shoulder seasons due to the ease of mobility for the hunters. A typical yield for a hunt is 3-4 pangolins per night. After reaching their quota, the hunters typically exit the forest and return home to prepare the meat and scales for consumption and/or sale (survey data provided directly by Planet Indonesia).

### **Theoretical Framework for Criminology of Poaching Events**

There are four general criminology models that are commonly used in the context of wildlife crimes and poaching. These are routine activities (discussed below), crime pattern theory, rational choice, and situational crime prevention (Kurland et al., 2018).

- Generally speaking, routine activity theory posits that several factors combine to allow, facilitate, or encourage poaching events.

- Crime pattern theory builds on this by examining poaching events' spatial and temporal distribution in a physical and temporal space (of any scale).
- Rational choice theory looks at the decision-making matrix of an individual poacher when presented with different conditions in an econometric analysis to predict crime.
- Finally, situational crime prevention builds on elements of all three other theories to alter the physical or cultural environment to discourage or prevent wildlife crime events (Kurland et al., 2018).

Given the type of data collected by Planet Indonesia through its poacher and community interviews and the limited geospatial information on pangolins that is readily available, it makes the most sense to use a routine activities model to analyze the crime scripts data and then use situational crime prevention analysis to develop a set of possible interventions for piloting in the Planet Indonesia study areas.

Studies from a criminological theory perspective of poaching behaviors in other areas, specifically southern Africa, have shown that a “routine activities theory” of crime patterns can be applied to poaching behaviors and used to identify potentially successful interventions at different levels (Warchol & Johnson, 2011). Despite the significant differences in targets, populations, and environments, a routine activities analysis can be particularly instructive when breaking down a local poaching problem. Rather than assuming a sole “motivated offender,” routine activities theory posits that crimes exist within a social system and that other situational factors, along with the offender’s motivation, are crucial elements that can be acted upon to suppress criminal activity (Warchol & Johnson, 2011). Warchol and Johnson suggest that this flexibility makes it a particularly useful lens for examining poaching behavior and anti-poaching interventions (2011).

According to Warchol and Johnson (2011), in routine activities theory, there are three elements necessary for crime to occur: suitable targets, motivated offenders, and the absence of capable guardians. These can combine in different ways and with different outcomes, depending on the species and the local situation. However, the analytical structure is apt for the type of interview-based data collected from actual poachers that Planet Indonesia has obtained.

### *Suitable Targets*

In West Kalimantan, much like in southern Africa, many species have been identified as “suitable targets” for poaching, including pangolins (Planet Indonesia, 2021). According to Planet Indonesia, individuals engage in poaching, a prohibited activity, for a variety of reasons. These individuals may intend to capture pangolins, incidentally engage in the activity (taking pangolins they capture while targeting another species), or opportunistically engage in the activity (taking a pangolin because it presented itself). Planet Indonesia-generated crime scripts and other provided data indicate that pangolin hunting is generally seasonal and pangolins can be both an intended target and an incidental capture. The animals are also particularly straightforward to catch, especially if sleeping or startled, due to their tendency to curl into a ball when threatened. This makes a “target-based” intervention difficult. Planet Indonesia Spatial Monitoring and Reporting Tool (SMART) patrols are already removing snares in project focus areas, which can help to reduce the capture of all species. However, a few additional interventions could easily be implemented that would directly affect the target, method of capture, and component of the routine activity of poaching.

### *Motivated Offenders*

In a routine activity model, motivated offenders are any individual with a propensity or a desire to perpetrate crime under specific circumstances (Cohen & Felson, 1979). This is, in many ways, analogous to the interview data developed by Warchol and Johnson (2011), in which they found that population size, poverty, and local circumstances led to a variety of types and motives for poaching. However, there were similarities and patterns between different types of poachers. Warchol and Johnson (2011) identified both commercial (large-scale, mostly large game, primary source of income) and subsistence (variable scale, small game, and supplemental food and income) at their sites in South Africa. While the commercial scale had a high economic value, subsistence poaching was found to remove the vast majority of game (Warchol & Johnson, 2011). This is consistent with the findings of Planet Indonesia, which does not appear to have identified many commercial scale poaching, at least of pangolins, in its study areas. However, some may be present, and “on-demand” poaching for scales may begin in their study areas.

While it may be challenging to identify and isolate the different motivations and cultural, economic, and social cross-pressures that drive particular individuals into poaching activities of

any kind, Warchol and Johnson (2011) identified that local perceptions of subsistence or small-scale poaching and large-scale or commercial poaching were very different. The former were treated as necessary for community survival, reclaiming preserved land for local population support, providing supplemental income and food, and were not stigmatized (at one research site, a local fund was established to pay poaching fines for locals). This was contrasted with commercial poaching, which was looked down on in the community because it was seen as exporting local animal wealth, benefiting outsiders (many employed or used materials and individuals from other areas), and depleting resources otherwise available for local benefit (Warchol & Johnson, 2011). While there is no direct evidence about these attitudes in the Planet Indonesia interviews, this would be a prime question that could be researched at the community level in developing a potential CBSM plan. If there were such a distinction, creating community pressure at a specific type or scale of poaching might be possible. However, the long-term outcomes and whether it would be seen as a tacit endorsement of subsistence poaching are worth examining as serious concerns.

### *Capable Guardians*

The third and final component of routine activities theory is capable guardianship. Warchol and Johnson describe this element as “animate and inanimate objects that serve to deter, detect, delay, and/or respond to the poaching threat” (Warchol & Johnson, 2011, p. 285). This is an expansive definition that they use to sweep in natural and human passive barriers (e.g., rivers/mountains and fences), legal and regulatory actions (laws, fines, customs), active human intervention (e.g., guards and patrols), and active and passive monitoring (lookouts and trail cameras) that can be used to either detect and respond or identify and punish. Overall, Warchol and Johnson (2011) found that many guardianship measures are minimally effective or variably effective based on local circumstances and local poaching practices:

- Guards and patrols can be avoided or misdirected; schedules can be taken advantage of; and the density of the bush and geography can either enhance or inhibit their effectiveness (2011).
- They also found that laws are often ineffective due to a lack of familiarity by prosecutors and judges: low priority for prosecution, lack of enforcement, or corruption (2011).

- Depending on the target and the nature of the barrier, some geographic features can inhibit or enhance poaching (e.g., a river can be a barrier to target removal or a means of access; dense bush can impede movement or provide cover from patrols) (2011).
- Fencing was found to be highly ineffective: it was frequently torn down, evaded, or inhibited guard response; it was occasionally used for creating snares (2011).
- Warchol and Johnson briefly addressed the use of signage. However, they did not explore differences between different types of signage, focusing primarily on how signage can be obscured, defaced, damaged, removed, or faded/illegible (2011).
- They did not address the potential use of trail cameras or signage indicating that cameras or other identification and monitoring methods were being used in an area (2011).

### *Importance of Community Involvement in Anti-poaching Efforts*

There are many modes and methods of addressing all of the elements that lead to or affect levels of poaching. Research, however, has repeatedly demonstrated that the most effective methods are those that work with and are (ideally) developed with the input and buy-in of the local communities and populations affected (Cooney & Challender, 2019). There is no hard and fast rule or guidance on what works or does not work, as local factors, community desires, cultural beliefs and practices, economic factors, and species-specific conditions can have a significant impact on the success or failure of particular interventions (Cooney & Challender, 2019). These findings indicate that focusing on a situational crime prevention strategy that addresses the elements of capable guardians (with local-level targets) or motivated offenders is likely to be the most successful. Cooney and Challender (2019) have also found that methods creating incentives, vested interests, community ownership, or alternative income must be designed carefully to avoid unintended consequences (e.g., supplementing instead of replacing poaching income or becoming reliant on external funders). Successful campaigns generally work with the community to create an intrinsic sense of ownership, a shift in values, or locally-driven changes in the costs and benefits of poaching activity (Cooney & Challender, 2019). This general analysis should apply regardless of the program implemented or the Theory of Change employed.

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