The data were collected as part of a larger project which aimed to develop (a) the conceptual understanding and (b) practical tools needed to quantify and improve the effectiveness of ranger patrols as a means of enforcing protected area regulations. This component of the project aimed to estimate the number of individuals hunting, to quantify the relationship between patrol search effort and snare detection, to understand the motivations of hunters and to measure the active lifespan of snares. These data were used in the construction and parameterisation of agent-based models of ranger patrol and hunter interactions.

HOUSEHOLD SURVEYS (description adapted from Ibbett et al. 2020a)

Between February and April 2018, we interviewed respondents from 705 households in 18 villages. Between 30-50% of households were surveyed per village, with houses identified using a systematic sampling strategy where interviews were conducted at every n th house, with n inversely related to village size. We surveyed any available respondent above the age of 18 in each household. If respondents declined or were absent, interviews were conducted at the next available house. Data were collected using portable tablet computers via QuickTap Survey software. Data were collected on respondent demographics and household livelihood strategies, household reliance on different wildlife species for meat and medicine, specifically the frequency with which species were consumed, whether wildlife was bought or caught, the meat most preferred to eat. Respondents were also asked about conflict with wildlife on farms, and their perceptions regarding change in hunting levels over the previous five years. Data on hunting prevalence (specifically the proportion of households that collected wild meat, took snares to the forest to hunt, and hunted to generate income in the previous year) were collected using the unmatched count technique (Hinsley et al. 2019). Half the sample was randomly allocated to a ‘control’ group who received a list of non-sensitive items, while the ‘treatment’ group received a list which included the same non-sensitive items, plus an additional sensitive item. Respondents were asked to report only the number of items applicable to them, never which items. The survey also included questions on knowledge of rules pertaining to hunting activity and the perceived likelihood of a) a neighbour knowing if someone had caught wildlife, b) being caught by a patrol when hunting, c) receiving a penalty if caught. We measured social acceptability by asking respondents whether they would approve if a friend or family member went hunting. Finally, we asked households whether they had ever been caught by a patrol in possession of wildlife, and if so what happened.

SNARE DETECTION EXPERIMENT (description adapted from Ibbett et al. 2020b):

We adapted a methodology originally piloted by O’Kelly et al. (2018), and established five 3.25km transects around a patrol station. Either side of each transect, we delineated 6 x 0.25 sq km (500m x 500m) quadrats at 50m intervals. Within each quadrat we set between zero and 15 snares (the number was randomly drawn from a Poisson distribution with mean = 7.5), based on estimates of typical snare densities identified by other studies (Dobson et al., 2019). Single foot snares made from black nylon string (5mm), an inexpensive material often used by hunters in this area, were set without a trigger mechanism to prevent harm to wildlife, and all snares were successfully removed at the end of each transect survey. In total, 886 artificial snares were set, 442 in dry season and 444 in wet season. We recruited local guides from surrounding communities, who were instructed to set single snares as a local hunter might, in locations they deemed suitable to catch popular prey species such as wild pig (Sus scrofa), Northern red muntjac (Muntiacus vaginalis) and sambar (Rusa unicolor). Prior to setting snares, teams explored each quadrat for 30 minutes to identify suitable snare locations. Once set, teams recorded the GPS coordinates of each snare and the dominant habitat type of the quadrat. Teams were asked not to disclose the location or number of snares set in each quadrat to other teams or to leave obvious signs of their presence which future teams might use as cues. Four separate teams searched for snares. Each team was allocated quadrats to search for a designated time period. No quadrat was searched simultaneously by more than one team, and teams never searched quadrats in which they had set snares. Each quadrat was searched three times, for a fixed search duration varying between 15 and 90 minutes in 15-minute intervals. Every effort was made to minimize the effect of previous searches on the detectability of snares by subsequent teams. Teams were encouraged to search purposefully by following cues in the landscape (e.g. human footprints, wildlife tracks, cut vegetation).The start and finish time, the vegetation type in the quadrat, the distance travelled, the GPS locations of the search routes and any artificial or real snares detected were recorded throughout. We also recorded search order, to account for the fact that the more a quadrat was searched, the more cues were left in the landscape. All searches were conducted between January and November 2017.

SNARE PERSISTENCE EXPERIMENT

This experiment was conducted between November 2017 and August 2018. We selected two sites with different forest types in which hunting is thought to occur. Site A was situated in a patch of scrub forest surrounded by chamkar. The habitat mainly consisted of large bamboo and is thought to suffer high levels of disturbance. Site B was situated deeper in the forest around a salt lick in an area known to support relatively high densities of wildlife including elephant. The forest here primarily consisted of small bamboo groves with semi-evergreen patches. In November 2017, 30 artificial wire cable snares were set (15 at each site). Snares were made from either 5mm or 8mm thickness metal cable, and were set with a trigger mechanism but no loop. This meant snares could be released (triggered) but could not catch wildlife. All snares were set by local guides in locations they believed suitable to catch ungulate species such as sambar, wild pig, muntjac. Each snare was allocated an ID code. When setting snares, the ungulate species for which the snare was set, the length of the snare wire in metres from the top of the bow to the spring mechanism at the bottom of the snare, the cable thickness, the diameter (mm) of the tree used as a bow and whether the bow was made from wood or bamboo, was recorded. Additional information relating to the position of the snare e.g. whether the snare was set along an animal trail or close to a small stream, was also noted. All snares were removed and safely disposed of at the end of the survey period. Once set, snares were regularly monitored over a nine-month period (November 2017 to August 2018) to assess the snare status (still set, triggered, or removed). Snares were checked approximately every two weeks. Snares set at Site A were checked 20 times in total while those at Site B were checked 19 times in total as the site was inaccessible during the last monitoring period due to seasonal flooding. Any signs of disturbance within a three-metre radius were recorded, specifically whether there were any fresh wildlife signs or dung. If present, the species and approximate age of the signs were recorded, alongside any other observations or signs of disturbance. The rust condition of the snare was recorded using pre-determined categories. If upon inspection a snare had been sprung or was broken, the snare was repaired and reset as necessary. However, instances, where snares were completely removed, were not replaced.