

Appendix 3

Details of methods

Villages with type of fence, number of camera trap nights, and number of semi-structured interviews conducted

Note: Forest Department officials interviewed were added as a separate row as they had jurisdiction over several of the selected villages.

Village name	Type of fence	Camera-trap nights	Semi-structured interviews
Baghmari	Enclosed	42	6
Haabasti	Enclosed	<i>NA</i>	18
Gorumara	Enclosed	61	20
Jalokhiabasti	Linear	<i>NA</i>	17
Ajgarjuli	Enclosed	35	18
Kolbasti	Linear	39	11
Aadhiyachapori	Linear	118	14
Wenzajuli	Linear	68	16
Talabari	Linear	2	21
Botiagaon	Linear	<i>NA</i>	12
Simalugaon	Linear	222	2
Sagunbasti	Linear	56	15
Babamura	Enclosed	<i>NA</i>	9
Bihpukhuri	Linear	220	18
Balu Danga	Enclosed	<i>NA</i>	5
Manimuni	Enclosed	<i>NA</i>	3
Mrigamari	Linear	110	27
Boribeel	Linear	52	17
Pukhuripar	Enclosed	30	6
Forest Department			11
		1055	266

Table S6: Table of villages with type of fence, number of camera trap nights, and number of semi-structured interviews conducted

I. Qualitative methods used for descriptive model of fence maintenance

Participant observations, informal conversations, and unstructured interviews

In order to get an understanding of the study system and triangulate the data collected on fence maintenance, elephant presence, governance, and monitoring systems, we engaged in participant observations (Bernard 2006, Newing et al. 2010) for 320 hours by taking part in fence maintenance activities, farming, guarding crops and property from elephants, cooking, celebrations and Forest Department-led HEC mitigation drives. In certain scenarios, we were participating observers, such as farming and guarding activities. In others, we were more observer than participant, such as during discussions and meetings. This helped build rapport with the community, enabling nuanced observations of peoples' interactions with elephants and the fences and improving the quality of information acquired (Bernard 2006). In most circumstances, AK's identity as a student attempting to understand human-wildlife interactions in the landscape was known to the community members. Comprehensive field notes with detailed descriptions were maintained over the course of fieldwork. The data collected through participant observations also helped build the context for semi-structured interviews and refine the questions to be clearer and more relevant to the social settings.

Elephant-fence interactions

Camera traps were placed at select locations along fences in order to assess elephants' interactions with the fence (~1000 trap nights, refer Appendix 3) and independently gauge whether and how elephants were able to breach fences (Ranjeewa et al. 2015, Liefting et al. 2018). This was done through the first and second phase of the study. Given that elephants and humans use the same paths (Keil 2016), we found that camera-trap data could also be used to triangulate the social science data, such as people's interactions with the fence, in an independent manner. The community members were aware of and accustomed to the camera trap and hence not deterred by its presence. This helped deal with the problem of reactivity, often encountered in observational social science studies (Bernard 2006).

Semi-structured interviews

In order to explore, triangulate, refine and empirically verify the broad theory comprising relevant variables identified in the initial phase of the study, a semi-structured interview was framed and used across the study area (n = 266, respondents from 19 villages and the Forest Department). This interview comprised a mix of open-ended as well as close-ended questions and were framed in a manner so as to avoid biasing the responses (Bernard 2006, Newing et

al. 2010, Cohen and Lea 2004, refer Appendix 3 for sample sizes and Appendix 4 for the survey instrument).

Sampling in a particular village was stopped when we reached saturation, that is, each additional unit of effort yielded little new information relevant to the research question and we were able to 'make sense' of the data (Glaser and Strauss, 1967, Newing et al. 2010). The theory, with additional data was constantly tested against observations to refine it. Once saturation was reached in each of the study sites, a model was put together describing the relationship between the variables and the outcome.

A human ethics clearance was obtained from the National Centre of Biological Sciences (ref no: NCBS/IEC-15/007).

Documentary materials

Following Glaser's dictum of grounded theory (2007) that 'all is data', we noted not only what was being said but also how, what, under what conditions and the background to what was being said as this help contextualize the data. Additionally, we used images, videos, books of accounts, camera-trap footage, attendance registers, newspaper articles, correspondences and any other information that revolved around the research question as data. This helped understand the data in its context as well as verify and triangulate it, serving as an additional line of evidence.