WILDCATS CONSERVATION ALLIANCE

Section I. Project Information

Project Title: Project Title:
"Khao Laem: Tiger Conservation Project, Phase 5"

Grantee Organisation: Freeland Foundation

Location of project:
Khao Laem National Park, Western Thailand
Map in appendix
(15.059301 N, 98.608739 E)
Park HQ at UTM 47P 456814 1661080 (WGS84)

Size of project area (if appropriate): 1,497km^2	*No of tigers in project area, giving evidence & source:* Approximately 13-15 individuals during entire project period – thirteen of which have been identified via camera trap images. Three were further identified as originating from adjoining protected areas via images in the national database. Khao Laem is part of a contiguous 18,000km^2 transboundary landscape in western Thailand, comprising of 18 PAs called the Western Forest Complex (WEFCOM) which allows free movement of tigers throughout this landscape. Tiger population figures quoted are via (unpublished) camera trap data from the protected area covering the previous 7 years.

Partners:
Khao Laem National Park (KLNP) management; Department of National Parks Wildlife and Plant Conservation (DNP): Seven years ago, in 2016 at the request of a now retired KLNP Park Superintendent, Freeland initiated low-intensity ecological tiger monitoring activities. This long-term monitoring remains on-going and supplements large scale Spatially Explicit Capture, Recapture survey's (SECR) of which three were conducted during 2020-22. KLNP (and Freeland) directly shares wildlife data obtained from these surveys with the DNP's Protected Area Regional Office in Ban Pong and tiger data with the Wildlife Conservation Division's Tiger Research Centre at Khao Nam Ram in Huai Kha Kheng Wildlife Sanctuary. This process ensures tiger records are rapidly cross-referenced against a national database of identification images. A high level of security is maintained over tiger image distribution to reduce the possibility of poachers using them to identify sites for poaching tigers.

Panthera Thailand assisted until midway through 2020 by loaning cameras to Freeland for surveys. This equipment was returned (except for 4 cameras which were donated to KLNP) as Panthera needed them to conduct a parallel SECR tiger survey in an adjoining protected area. Leopard and clouded leopard location data is shared with Panthera as implementers of a national presence/absence survey funded by WWF.

Consultant senior biologist Saifon Sittimongkol PhD from Thailand's Prince of Songkhla University worked analysing project survey data and joined surveys teams overseeing SECR survey implementation during 2022. We still hope to include Thai undergraduate and MSc students from her university in future surveys, but to date student have declined joining the project due to concerns about Khao Laem's rugged terrain.

In 2022, prey and certain carnivore data was shared with Matthew Luskin, PhD from the University of Queensland, Australia and some data analysis reruns were conducted by MSc student Sophie Beekenkamp from Leiden University in the Netherlands. A study about anthropogenic threats at Khao Laem is currently being conducted by an MSc student at Queen Mary University in London.

Eric Ash DPhil WildCRU Oxford (post doc) served as advisor during the project

Freeland was a previous recipient of a 2-year grant from IUCN under their programme *Accelerating Tiger Recovery along the Thailand-Myanmar Border.* This increased available resources to support an expansion of Khao Laem tiger survey efforts, which now encompass almost all terrestrial area of the park. We would like to further increase tiger survey efforts to include Thong Pha Phum National Park which is contiguous to the western border of Khao Laem NP and likely contains tigers.

Freeland is a member of the IUCN Thailand National Committee, which helps synchronise conservation efforts with other domestic partners, including the DNP (As the chair).

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Reporting period: February to July 2023 for tiger survey information and Jan to June 6 months for SMART data

Section II. Project Results

Long Term Impact:

The long-term impact sought by this project is 'to secure the Thai tiger population through implementing sound conservation practices', with the aim of doubling its number in accordance with the Thai Tiger national strategy.

During this latest phase of the project, tiger, prey and threat information was generated regularly and immediately shared with the management of Khao Laem National Park with tiger-specific data sent to the research station at Huai Kha Kheng Wildlife Sanctuary. This created both a greater understanding about the status of tigers at KLNP and contributed to the national tiger information database. Unfortunately, surveys also documented that the tigers face frequent and persistent threats. This was validated by a constant variation (loss and recruitment) among the resident tiger population. Recently, several tigers chronicled over many years are missing (both males and females) with other tigers moving in and taking over their territories. This turnover of at least four individuals suggests there are other underlying influences, or threats, which require further investigation and resolution.

Poaching and other types of anthropogenic disturbances regularly occur and these threats were particularly highlighted during early 2022 when tiger-specific poaching occurred in adjacent Thong Pha Phum National Park. The on-going long-term monitoring (LTM) in Khao Laem performed a valuable function as it quantified the level of poaching, both directly through images of poachers and indirectly as it yielded an indication of the very low prey species abundances. This was particularly evident along forest edges and Western Khao Laem near communities adjacent to Thong Pha Phum NP. Along with SMART patrol data such additional information guided anti-poaching measures to sites where efforts are most required. Threat responses this year included rapid-response training, monitoring of tracks using GSM cameras in conjunction with regular trail cameras to identify poacher routes and intensity of poaching traffic. A new Superintendent at KLNP brought increased vitality to enforcement and this year his enthusiasm helped intensify park protection, community outreach and ranger training.

If ecological disturbance and poaching can be brought under control then a natural population recovery of tigers remains entirely possible. However, at Khao Laem, Thong Pha Phum and likely other adjoining protected areas more resources and effort are required to reduce the myriad of threats. Only then can a situation conducive for tiger and prey recovery be achieved and the goal of doubling tiger numbers realised.

Conservation Outcome: (*What are the actual changes that this project has achieved?)*

The aim is to obtain a precise understanding of the tiger and prey populations within Khao Laem National Park and its function facilitating tiger dispersal and recovery across WEFCOM. To achieve this, we have been implementing scientifically accepted techniques to survey tigers and prey, although no national standards have been designed yet).

In the first half of this year, we reduced the previous two survey approaches (LTM and SECR) to just one, namely long-term monitoring. The reasons are twofold; firstly, due to the immense financial and labour resources required for SECR surveys and secondly, we feel the three spatially explicit surveys during 2020-22 generated sufficient data for us to act upon. The accumulating LTM data in addition to existing SECR data clearly identify where the areas of greatest tiger and prey presence (and threats) exist.

Through previous data cataloguing and analysis, we were able to determine both tiger relative abundance indexes (RAI) and abundances for all wildlife (including prey) recorded during the surveys. By sharing tiger images with the Khao Nam Ram research station in Huai Kha Kheng WS the tigers

previously been recorded in other parts of WEFCOM were identified (M4 (HKT276), M5 (HKT299) and M6 (KST003M) [1]. The Long-Term Monitoring (LTM) initiative has yielded invaluable insights into the dynamics of the tiger population. Through this endeavour, we were able to discern (previous) instances of breeding and track fluctuations among the resident tiger population. These findings highlight the complex nature of the current situation, demonstrating its vulnerability to even subtle environmental shifts.

We have been able to raise capacity among many Khao Laem based officials though on-job-training in survey data collection and processes to implement wildlife surveys. Some officers are now capable of implementing all aspects of camera trap surveys from planning, through site selection, setting cameras, recording data and retrieving camera data. We have implemented data management practices for officials, but due to practicality (ability and availability of mandated staff) we still have not taught data cataloguing or analysis as the officials are very overworked and already struggle to manage the SMART database. Survey data is managed off-site and later shared with the park, the DNP regional management office in Kanchanaburi province's Ban Pong Protected Area Regional Office (PARO3) and the tiger research station at Khao Nam Ram. Detailed project reports from Khao Laem were personally handed to the Department's Director-General.

There is now a heightened awareness both at the park and regional management level about threats tigers and prey face at Khao Laem and how continued wildlife monitoring is an essential component of park management which maintains a contemporary understanding of the status of wildlife.

Over consecutive years, survey information validated the persistence of tigers with surveys even documenting a slight increase in one important prey species (sambar). However, over the last year some prey species have declined (wild boar and muntjak) both likely associated with the emergence of African Swine Fever (ASF). As the wild boar population decreased due to this viral pandemic other small prey species (both species of muntjak) similarly declined. Wild boar is the main prey of tigers due to the dearth of sambar and young boar provide ideal prey for leopards. We surmise that leopards increased predation of muntjak following the decline of wild boar. There are few records (at Khao Laem) of tigers preying on the gaur, although this is certainly occurring. The gaur population of Khao Laem has never been particularly high and this year it has seen a slight decline also.

There is little that can be done about the decline in Wild Boar and other prey species except increase protection for the remaining animals to allow natural population recoveries. To guarantee success in park protection officials need to improve the rate of poacher interdictions. As reported in 2022, a national policy that encourages total patrol coverage in protected areas takes rangers away from problematic areas and leaves the door open to poachers. Therefore, other methods must be introduced to counter the poaching threat and increase the deterrent value of patrolling.

There also needs to be an acknowledgment that illegal cattle grazing and ecological disturbance of all types need to be addressed. To offset increased enforcement, it is critical to balance this by simultaneously implementing community outreach. A full-time outreach team is required to foster relations within known poaching communities, as these are now well documented. As mentioned in previous reports, some communities are particularly aggressive and are actively involved in numerous kinds of criminality beyond wildlife poaching. Outreach activities with such communities are conducted in tandem with law enforcement agencies, specifically the Border Patrol Police (BPP) who have the respect of these remote communities due to the rural development support they provide, including medical facilities and schools.

The main outcome from work conducted to date at Khao Laem is a better understanding of the tigers, threats and other issues that appear to constrain a tiger population recovery there. To resolve the major

[1] Suffix designations; HKT – Huai Kha Kheng Wildlife Sanctuary, KST – Khuean Srinagarindra National Park

issues increased resources are required, as improved patrols will only occur when conducted by well-trained, well-equipped and well-managed rangers. Then, poachers will realise that entering Khao Laem is risky. Through regular visits and active engagements of local communities, we aim to establish enduring relationships with community members, many of whom are ethnic Karen. This ongoing interaction will facilitate the introduction of measures designed to incentivize positive behaviours, including provision of socio-economic livelihood support as a means of rewarding and promoting their sustainable practices.

Summary of activities and achievements: *(A narrative summary in 300 words)*

The first half of 2023 saw notable improvements in park management, largely attributed to the arrival of a new Superintendent. His enthusiastic support for this project was instrumental in enabling the full implementation of several initiatives that were previously stalled.

Tiger monitoring continued utilising long term ecological monitoring (LTM) surveys over 60-day cycles (Surveys 34, 35, and 36). Four tigers were recorded, namely M4 (HKT276), M5 (HKT299M), M6 (KST003M), and F6. Three of these tigers migrated into Khao Laem from other parks, hence their national database IDs. In collaboration with officials, we were able to compare the status and variations in tiger and prey populations and reviewed the threats.

During each patrol (and survey) SMART data was recorded and continues to be fed back into the park's SMART database. Over the first 9 patrol teams conducted 304 Patrols over 791 days covering a distance of 10,308 km - covering 3,301kms on foot, 3,306kms by truck and 3,701kms by boat.

The project executed four training initiatives, 1) SMART data collection 2) SMART software, 3) two mentored enforcement patrols that validated prior training programs, and 4) GSM camera refresher on-job-training (OJT) during anti-poaching operations. These sessions benefited 69 rangers from both eastern and western sectors of Khao Laem. Additionally, during each of the four tiger surveys, OJT in technical equipment use and data collection was administered.

We conducted nine educational outreach visits to schools around Khao Laem reaching 942 (472M/470F) students and a further three conservation-awareness visits to communities were conducted reaching 120 (59M/61F) villagers. In conjunction with park officials, we met 306 cattle owners and documented their cattle, buffalo and goats as part of a process to reduce and remove all domestic stock from within the park.

Details of activities and results:

The main outcome we wish to achieve is that Khao Laem National Park management practices improve, threats mitigated and the function of the park facilitates tiger recovery across southern WEFCOM.

Under the measurable indicators and verification processes outlined in the project logframe we can see activities and predicted outputs are progressing satisfactorily. During this year's activities we have increased the size of the long-term monitoring area and even included some areas outside of the regular grid, as we responded to reports of tigers entering those areas. We were able to monitor dynamic change within the tiger population, but unfortunately this year no breeding was recorded. Sharing of data with DNP and partners increased the catalogue of identified tigers. Additional work is required to catalogue and analyse data in order to update the tiger and prey abundance figures. Prey data was shared with Smithsonian Institute who are preparing a Dawna Tenasserim landscape prey distribution paper. Khao Laem's data is now very much integrated with the DNP's data and that of a bilateral consortium to understand where the optimum tiger conservation sites exist.

Objective 1. Further improving understanding of tigers, prey and threats in KLNP
This component saw a continuation of the long-term monitoring, prioritizing areas that tigers are known to regularly inhabit. The plan was to utilise a minimum of 20 cameras in Eastern Khao Laem and 10 cameras in key areas in Western Khao Laem. The actual results are as follows;

Long term monitoring
During the first part of 2023 cameras were deployed in twenty 3 x 3 km cells covering 180km^2**,** representing 100% of the proposed survey area. A total of **3.645 survey nights** were completed (Surveys 34, 35, and 36) using 88 cameras. With 6 months of this year's project remaining, we will expand predicted coverage**.** However, only four grids in Western Khao Laem were surveyed which is less than planned, so we propose to expand the level of effort in that area. Several cameras were left on stand-by with rangers at the western sub-stations in case tigers return near to the villages.

In the eastern sector we conducted surveys in three distinct yet connected areas, namely San Nok Wua Mountain (central area), Kong Mong Ta (Northeast) and Potana (East) between February 2023 to August 2023 during survey trips 34 to 36 we deployed 80 camera traps. With the balance of cameras being placed in the west.

During the start of this period the San Nok Wua trekking trail was open and, as previously reported, this disturbance displaces wildlife. During the period that tourists were present, survey cameras were relocated from the main trail onto smaller side trails. As some of these small trails are steep, the general capture rate is usually less than main trails, although plenty of serow were recorded in these steep areas. The areas of Kong Mong Ta and Potana were not open to tourists and the only people recorded were poachers, NTFP collectors and rangers on patrol. Due to their close proximity to known poaching, communities' wildlife was noticeably less abundant, therefore anti-poaching patrols and use of GSM camera traps was increased in these areas.

During surveys, we recorded 10 independent captures (IC) of tigers, 32 IC of leopards.

This year, three tigers already identified in the national database were recorded in **[REDACTED]** and one resident female. These were M4 (HKT276) M5 (HKT299M) M6 (KST003M). M4 has been at **[REDACTED]** for almost 3 years now but the other two males were recorded for the first time this year.

Male tiger M5 (HKT299M) was first recorded just two years ago in **[REDACTED]** as a young animal. In April M5 was photographed in **[REDACTED]**. The distance from **[REDACTED]** to the location **[REDACTED]** is about 80kms. Initially, it was unclear which route he walked to reach **[REDACTED]** as the Vajiralongkorn Dam lies between the locations. However, a patrol team recorded tiger tracks on the shore of the reservoir, so it is assumed he swam across, as the distance across the water is only about 60 metres.

This male (M5) was recorded predating a domestic cow by villagers collecting non-timber forest products. The tiger ran off and the villagers quickly alerted the park that there was a tiger in the area. Rangers inspected the scene and decided to place cameras around the calf's carcass and within a few hours, the tiger returned, when several images were recorded. Through sharing these images with the DNP, it was possible to clearly identify this particular individual tiger. In response, additional ranger patrols were conducted in the area and outreach to **[REDACTED]** warned community members of the hazards of walking in the forest alone, or at night. After a short period, no further tiger tracks were recorded around **[REDACTED]**, but a month later, tracks were recorded in **[REDACTED]**. These were likely from the same animal. As **[REDACTED]** adjoins Thong Pha Phum National Park and at this location is only about 15kms from the Myanmar border it is fairly certain this is a transboundary dispersal area for all wildlife, including tigers.

Male M6 (KST003M) was first recorded in **[REDACTED]** which again is a long distance from **[REDACTED]**, with a highway in between.

The three-legged tiger recorded near Pilok Kee in Western Khao Laem last year was never seen again. Rumours from local communities said this tiger was hunted by Karen militia and the skin sold, although this was never verified. Occasionally, tiger tracks were recorded by patrols in Western Khao Laem and we remain on stand-by the conduct rapid surveys if the situation warrants.

Data from the Eastern LTM catalogued 27 mammal species, with 5 Felidae detected 89 times, over 187 images. The five felid species recorded were as follows: Leopard Cat (Prionailurus bengalensis), Asiatic Golden Cat (Catopuma temminckii), Clouded leopard (Neofelis nebulosa), Indochinese Leopard

(Panthera pardus), and Indochinese Tiger (Panthera tigris). Note: Marbled Cat (Pardofelis marmorata) previously recorded at Khao Laem was not yet recorded during this year's surveys.

The following prey species were recorded; Red Muntjak, Fea's Muntjak, Serow, Gaur, and Wild boar. Sambar deer were not recorded this period. There was a noticeable decline in wild boar records (both LTM and SMART) likely from an outbreak of African Swine Fever. A parallel decrease in other prey species records was also observed, except (inexplicably) serow which increased, possibly due to the steep side trails at San Nok Wua being surveyed.

Suitable camera locations within survey grids were defined using existing tiger data from previous surveys combined with SMART patrol data to identify routes to access these locations. To further improve the likelihood of recording tigers, cameras were placed on well-defined trails, routes to water sources and areas with prey.

Due to limited resources (travelling by boat to the west adds considerable fuel costs) we concentrated most monitoring in eastern Khao Laem as it is contiguous with the southern sector of Thung Yai Naresuan (west) Wildlife Sanctuary which is very remote and documented to have its own tiger population.

East LTM surveys covered sixteen grids and West LTM surveys covered four grids (see following 6-month table compares level of effort to previous years)

Year	2018		2019		2020		2021		2022		2023 (1/2)	
# Grids surveyed	4		12		9		14		10		20	
# Cameras deployed	28		26		102		64		95		88	
# Camera days	5,321		8,285		7,083		6,466		7,467		3,654	
Grid I/D					B16, C29, C30, C31, D43, D44, E59, F77, G93, I127		B15, C26, C29, D43, D44, D45, E58, E59, F77, G93, H109, H111, I127, I128		D44, D45, E58, E59, M170, N179, N180, O188, O189, P198		East. D41, D42, D44, D45, E58, E59 (San Nok Wua), C31, C30, B16, C29 (Kong Mong Ta), G94, H110, I126, I128, J143, J144 (Potana)	West M175, M176 N184, N185. Bor Ong
Species	**IC**	**TC**	**IC**	**TC**	**IC**	**TC**	**IC**	**TC**	**IC**	**TC**	**IC**	**TC**
Tiger	10	n/a	12	121	6	35	7	24	34	325	11	27
Leopard	32	n/a	36	111	96	223	58	206	16	29	32	52
Clouded Leopard	7	n/a	7	13	20	30	11	16	7	13	4	4
Golden Cat	3	n/a	1	1	1	1	1	1	3	5	2	2
Marbled Cat	0	n/a	0	0	1	1	0	0	1	6	0	0
Leopard Cat	32	n/a	24	76	11	11	30	62	43	66	14	20

Information (raw data) from surveys is always shared immediately with the park and highlights presented during each monthly SMART patrol review and planning meetings. We encourage park management to integrate all wildlife information into their SMART database, as such records clearly identify wildlife-rich areas which require additional patrolling.

Objective 2. Capacity development for officials to manage and analyse data, reduce threats and utilise pro-active anti-poaching methods

This activity utilised four forms of capacity development for Khao Laem officials;

2.1 Data collection on-job-training

During each of the three wildlife surveys conducted during these first six months, participating rangers were taught how to collect the various types of field data, much applicable to SMART. The Thai protected areas still use paper reporting forms for SMART and these were utilised when wildlife surveys were integrated into SMART patrols. We do not prescribe the use of paper forms, but this is the current national standard which we are obliged to follow. Usually, seven rangers per team participate in a survey and collect data along the way. The names and contact details of each trainee are kept for our evaluation purposes. During several surveys there were two teams, so the approximate total of rangers trained is over one-hundred. However, because there are only currently about 64 patrol rangers it means most were trained several times and this exceed our predicted output of 60 to be trained. This is informal training, meaning it is not tested and to be successful it relies on the enthusiasm of each

participant. Some rangers are far more motivated than others and mostly the more senior team leaders were the ones that became thoroughly engaged.
Target of 60 to be trained, which was achieved.

2.2 Managing data (OJT SMART and survey)

During this first six months of the project, officials collating camera-trap information were mentored in ways to store images and other types of information. This way, data is immediately retrievable and useful for summarizing results. To assist and implement activities, we employed a full-time employee to be embedded in the SMART office at Khao Laem. There, she worked on a daily basis alongside data management staff until June 2023. The presence of this staff member increased our understanding of weaknesses within the data management system and the official's ability to save and retrieve data in a useable manner. An interesting challenge is that official data is recorded in Thai (including Thai numerals), but most GIS systems cannot use these Thai numerals requiring them to be transcribed back to English. Apart from being time consuming, it is a concern as it is very easy to mis-transpose numbers as they are typed into a database. It would be better if locations were recorded in English. Furthermore, the use of paper reporting forms further compounded this issue concerning rewriting 14-digit locations of SMART data.
Target: 2 officials to be trained. This was achieved. We also learnt that officials regularly delegated their work to our staff member, which defeated the objective. This problem was resolved in June when our SMART technician resigned to return to university to continue her education. At this time, there is no Freeland SMART technician on-site, but we are able to occasionally mentor and increase capacity using a SMART/GIS consultant that assists as required.

2.3 Enforcement ranger training

Four distinct ranger training events occurred at Khao Laem up to July 2023. Training 69 rangers over 15 days. Mostly over to 3 to 4 days per time, the rangers learnt about rapid response enforcement, weapons safety, patrol tactics, use of navigation equipment, first aid and emergency evacuation processes. Spreading training out over several locations caused less disturbance to the SMART patrol plans and meant rangers could be trained and then implement their new skills during a mentored patrol.

Date of Training	Total day(s)	# Students	Location	Course
3-5 January 2023	3	20	Khao Laem NP (Potana Sub-station)	Rapid response training, navigation, first aid, NCAP GSM camera use & response
26-29 Jan 2023	4	20	Khao Laem NP (Potana Sub-station)	Navigation, SMART reporting, patrol tactics, weapons safety
29 April -3 May 2023	4	15	Khao Laem NP (Potana Sub-station)	Training validation and mentored patrol (including enforcement tactics during a patrol) with PARO 3
29 June - 2 July 2023	4	14	Khao Laem NP HQ & West Khao Laem	Training validation and mentored patrol in West KLNP (including enforcement tactics during patrol)
Subtotal	15	69		

The proposed target was to train 25 enforcement rangers, this was surpassed.

2.4 Use of GSM cameras (mix of formal and OJT).

Rangers were taught how to operate the GSM cameras and in ways to clandestinely set them in the most appropriate locations where there is cell phone coverage along poacher trails. This way, images are immediately uploaded and received by stand-by rangers monitoring the system. Then, rapid responses can be implemented to interdict poachers. This has been used successfully on several occasions.

Milestone (and target) 2.4 Six officials to be trained in the first 6 months of 2023
This was easily achieved as 20 rangers were trained how the GSM cameras worked, installed into the on-line database and then placed in the forest. During actual placement operations, only two trusted rangers are involved in this confidential work, to ensure no tip-offs are provided to local poachers.

In the above table there are two validation activities. These are designed to check that recipients utilise the skills previously taught. This is achieved by conducting post-activity tests and actual patrols as well as responses to camera alerts in real situations. Instructors (from the DNP but trained by Freeland) accompany the rangers and guide them through complex skills such as takedowns, to ensure safety. If dangerous practices are observed, the instructors intervene and explain the correct protocol.

Objective 3. Conduct Community outreach to reduce threats to tigers, including poaching and cattle grazing in the park

During the first half of 2023, community outreach was conducted in two forms, educational outreach to schools and awareness outreach to villages within Khao Laem National Park.

Indicator 3.1. Community awareness visits to known 'poaching hotspot' villages to create a better awareness about park laws and local regulations as a way to reduce violations and foster greater interactions between the community and the Khao Laem park management. Our proposed target for this year is three village meetings with **milestone 3.1 achieved** as two villages visited in the first 6 months of 2023.

We achieved the milestone when a joint Freeland-Khao Laem ranger team conducted two community meetings in Western Khao Laem where we were able to reach 86 (36M/50F) villagers. Several key topics were discussed, including new laws relating to the park and wildlife, how to reduce illegal cattle grazing, ecology and the community's reliance on forest resources. Then how all these topics are interconnected and directly related to the community's impact on Khao Laem and its biodiversity.

For the output, we did not predict a target of how many community members we would reach, as this is impossible to predict as participation is voluntary. Most community members are farmers working in the fields during the day, therefore these events must be held in the evening after people have had finished for the day. If budgets were available, offering free dinners may be an easy way to draw more participants.

In the Pilok Kee area, the communities' anti-park mindsets appear to have diminished a little, as they were quite receptive and willing to discuss options to reduce poaching and illegal cattle grazing. This may be because the village headman openly supported the meetings and previously the villagers were not 'consulted' about many issues - just ordered to follow regulations. The result was two amicable meetings. The folk from **[REDACTED]** definitely do not wish to see retribution against tigers predating their cattle and now regularly talk with rangers stationed at a checkpoint near their village.

Indicator 3.2 To foster greater collaboration with communities, we will establish new partnerships to Khao Laem, firstly with a Chiang Mai-based Karen NGO.

This plan did not go exactly according to plan. As we evaluated the potential partnership, we recalled at another site their behaviour created additional issues with the park management. Consequently, we decided that perhaps that partner was not appropriate for Khao Laem and we decided not to engage them. Currently, we are searching for either a local NGO or CSO working in the Thong Pha Phum/Khao Laem area, rather than bring a group from another area. This is proving harder than we imagined though.

Indicator 3.3a. A report documenting locations of villages with cattle and numbers of cattle. A short narrative report (see appendix) has been prepared and a very detailed database of cattle ownership, names, locations, I/D of owners and contact details created in conjunction with the park. Details from the cattle-ownership surveys which took more than three weeks to implement as 306 livestock owners were interviewed in two amphurs. These cattle owners free-graze 6,061 cattle, 1,732 water buffalo, and 120 goats, which will be a substantial issue to resolve. We now realise this may be a long-term project and were able to include this issue into a concept paper to a large international donor which, if approved, will lead to a Southern WEFCOM landscape project covering all protected areas in that landscape.

Cost share activities

Conservation Educational Outreach.
In the first six months of 2023, seven schools in both east and west Khao Laem were visited and 679 (340M/339F) students were reached.

Mitigating Human-tiger Conflict
In a case of cattle predation by a tiger in **[REDACTED]**, we were able to quickly introduce measures aimed at preventing human-tiger conflict and related retribution to cattle predation.

A young male tiger dispersed into the **[REDACTED]**, which has a history of tiger poaching as its just eight kilometres from Pilok Kee village, where five tiger poachers lived who were jailed in early 2023.

Community members from **[REDACTED]** reported their cattle were being preyed upon by a large tiger and trail cameras we supplied to record just such events were deployed within a few hours. On the same day, the tiger was photographed returning to the kill from the previous day located just two kilometres from **[REDACTED]**.

The improved relationship with **[REDACTED]** villagers permitted a rapid response to this event and rangers were stationed around the village to monitor anything unusual. Luckily, the tiger moved away from this area and later tiger tracks were recorded about thirty kilometres away suggesting this tiger was moving north-westward towards central Thong Pha Phum National Park and an area without human habitation.

During **[REDACTED]** outreach, we produced a short video about activities which the park superintendent thought was an ideal portrayal of how the problem of human-tiger conflict could be resolved.

Supporting SMART patrolling and gauging effectiveness of results

Ranger-led patrols covered 1,202.84 km^2 during the first half of 2023 which accounts for **72.33 %** of the total area of Khao Laem National Park (1,497 km^2)

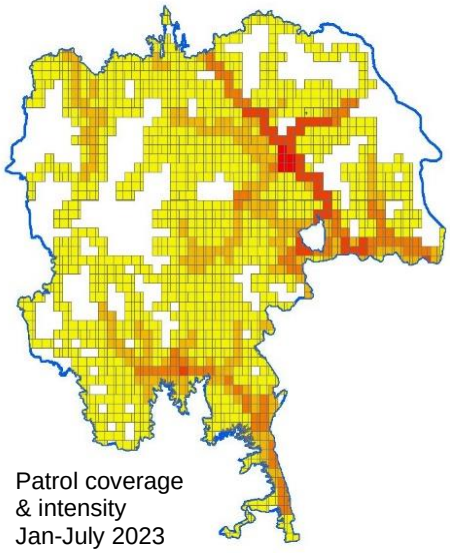
Results. 9 patrol teams[2] conducted 304 Patrols over 791 days covering a distance of 10,308 km

The number of interdicted violations in the first half of 2023 improved compared with last year and totalled 61 incidents. These included; 4 logging cases and 17 poaching cases (up from 2 in all of 2022). There were also 16 incidents involving illegal collection of non-timber forest products that mostly concluded with administrative fines, with 14 various cases sent to court for formal prosecution.

During SMART patrols, 6 tiger sign locations were reported with other wildlife sign recorded from 250 locations and threats found at 89 sites**.**

SMART Patrol Reports (and meetings) were concluded every month between January to July 2023 inclusive.

Key focal crimes are used by this project as indicators and are compared against previous baseline data on a monthly basis to quantify progression during this project period**.**

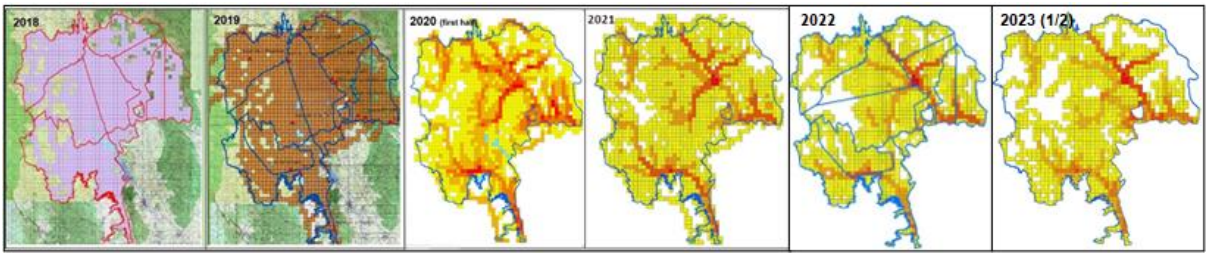


Patrol coverage
& intensity
Jan-July 2023

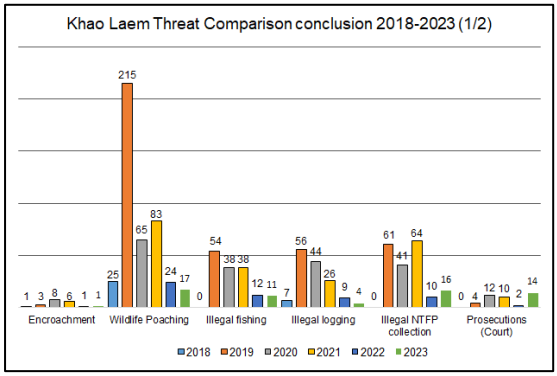
[2] Previously there were 11 patrol teams, this year these have been amalgamated and reduced to 9

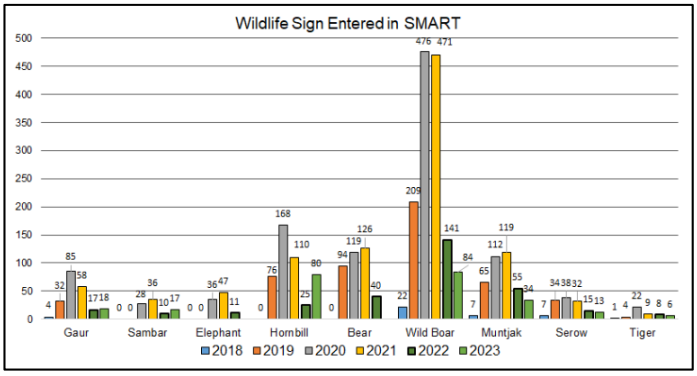
No.	Forest Protection Unit (7-man teams)	Patrol (# times)						Patrol (# Days)						Distance # (kms.)					
		2018	2019	2020	2021	2022	2023 (1/2)	2018	2019	2020	2021	2022	2023 (1/2)	2018	2019	2020	2021	2022	2023 (1/2)
1	HQ Team 1	24	105	55	44	62	31	72	336	169	168	149	91	1,273.92	2,872	1,198	2,314	1,133	870
2	Potana Team 2	21	99	56	59	75	42	57	294	160	162	169	84	578.74	1,843	1,545	1,900	1,901	593
3	Kroeng Kaweir Team 3	18	86	47	50	35	47	58	317	163	158	174	93	694.14	2,043	1,527	1,529	1,515	1,295
4	Huai Kaying Team 4	19	105	50	41	21	28	66	326	170	169	176	84	1,365.90	4,196	3,903	3,573	1,862	1,618
5	Pha Pheung Team 5	16	72	42	43	31	26	60	298	162	170	179	84	952.38	3,606	2,693	2,614	1,670	1,572
6	Ong Phra Team 6	18	95	42	36	21	21	62	300	171	167	176	85	828.67	3,225	1,774	2,186	2,290	943
7	Nong Kum Team 7	14	87	51	45	38	43	60	322	162	164	174	90	808.21	4,011	1,527	2,551	701	1,347
8	Lijia Team 8	24	105	60	46	62	40	68	328	168	168	145	96	876.35	3,182	2,335	2,410	1,358	838
9	Bo Ong Team 9	n/a	n/a	52	50	24	26	n/a	n/a	169	168	176	84	n/a	n/a	1,545	2,134	1,404	1,232
	Total	154	754	455	414	369	304	503	2,521	872	1,494	1,518	791	7,378.32	24,978	18,047.00	21,211	13,834	10,308

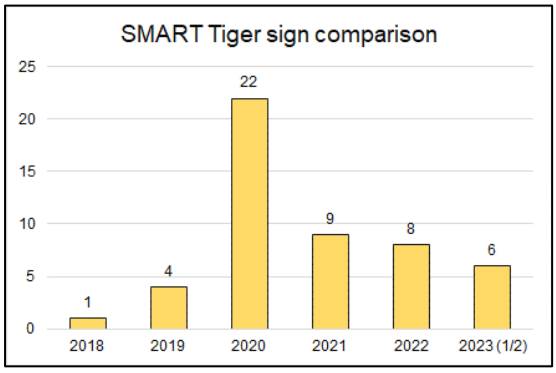
Khao Laem patrol coverage (and intensity) comparison 2018- 2023 (1/2)

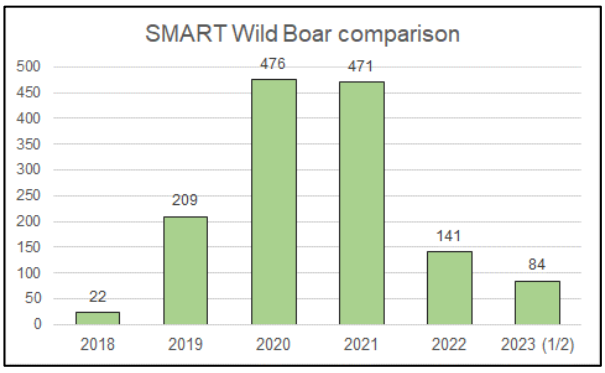


SMART data comparison 2018-2023 (1/2) Threats and wildlife entered into SMART

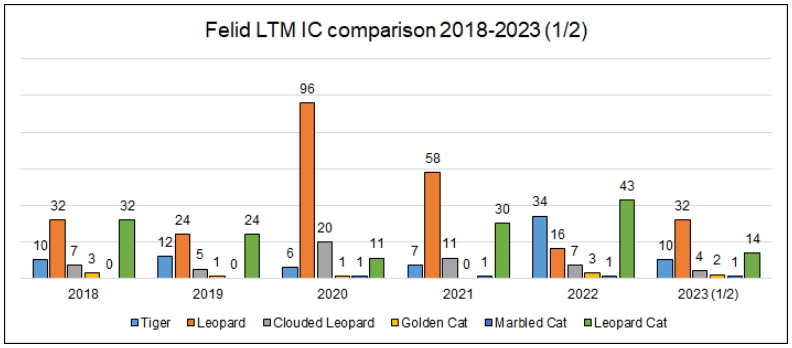


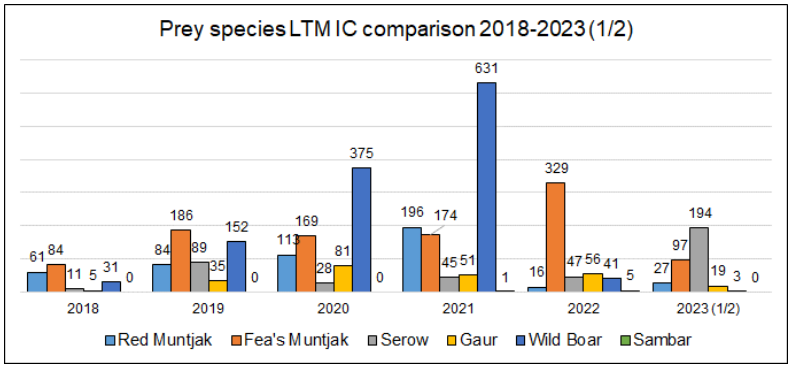






LTM Data conclusion





Tigers recorded each year

	FF I/D # & DNP I/D	2018	2019	2020	2021	2022	2023 (1/2)
1	M1	Check					
2	M2						
3	M3						
4	M4 (HKT276M)						
5	M5 (HKT299M) West						
6	M6 (KST003M) Jan 2023						
7	UNK M						
8	F1						
9	F2						
10	F3						
11	F4						
12	F5						
13	F6 (UNK F)						
14	F7 Pilok Kee 3 legged (I-douan) West						
	Totals	**2**	**5**	**4**	**4**	**8**	**4**

Obstacles to success: Give details of any obstacles/challenges to success that the project has encountered.

This year there have not been any *substantial* obstacles, except perhaps a lack of resources to implement everything we would like to do.

In 2022 we had the following issues, but in 2023 many of these were resolved;

1. DNP budget reductions and staff changes. Current situation: This issue has largely been resolved with the appointment of a new Director-General who was promoted from the field and understands the real issues protected areas and officials face. He has pledged to increase ranger salaries which has already raised the enthusiasm of rangers.
2. Death of the park Superintendent. The replacement chief has assimilated well into the park management and has the respect of staff.
3. Insufficient resources (staff and funds). Freeland was able to re-allocate unused funds from another project which enabled many activities and essential equipment purchases (VHF repeater).
4. Poaching. This remains an issue, but now we have a better understanding of where the most challenging areas are located - attention can now be directed towards such problem sites.
5. Lack of outreach. Again because of reallocation of funds and additional support we were able to initiate long-awaited outreach and focussed this on the most problematic areas.

6&7. Human-tiger conflict and related cattle issues. This problem - which was declining - has returned. But due to improved relationships with some communities, dialogue is now possible and solutions are in discussion. It is a serious issue and one in need of large resources to solve. Now armed with a real understanding of its scope and scale, mitigation measures can be planned and budgets sought to implement these.

8. The on-going war in Myanmar. This has not directly impacted Khao Laem, however there has been an increase in impoverished Burmese migrant workers travelling through Khao Laem en-route to urban areas to seek employment. Their presence in the forest is ecologically disturbing and leads to further criminality.

There are three emerging challenges at Khao Laem;

9. The impact of African swine fever (ASF) on the prey base and the carnivore guild ecosystem.

10. The prospect of an El-Nino weather cycle drought in the 2023 dry season.

11. An aspect of the new National Park law which allows collection of NTFPs by local communities. This has the potential for abuse by migrants and commercial enterprises. Already an increase in collector traffic has been noted in the forest and many times they take dogs with them which is not allowed.

Monitoring and Evaluation: (*Describe the methods used to monitor and evaluate the progress of the project)*

The project operation was quite smooth this year as covid delays appear to be over. Furthermore, this year we did not have any large scale SECR surveys taking dedicated time and resources. This freed our staff (and consultants) to work on ranger training, outreach and data management mentoring.

The project work plan and logframe is extremely helpful and a version translated to Thai language guides the project coordinator through implementation and provides clear indicators essential for project evaluation (See appendix). As we have established targets including dates, as per the work plan, we are able to internally monitor if we remain on track. Regular meetings with park management and the

regional protected area management office allow discussions that review if predicted targets have been met.

The major tool for monitoring patrols and associated data is SMART. We participate in every park-based SMART meeting and there is a good cross flow of information from SMART and back to the park concerning the status of wildlife and the threats we have recorded.

Data analysis from the surveys has enabled previous establishment of baseline figures for tigers and prey, as well as an insight into the threat situation. Threats at Khao Laem are a combination of natural and anthropogenic issues including; fires, poaching, illegal and unmanaged NTFP collection, free roaming stock (cattle), feral animals (dogs), tourists, and habitat loss.

Each quarter, a meet is arranged with the park management to discuss the project and fine tune plans for upcoming activities. Previously, some issues such as violations were sensitive, and there appeared to be some occasional lack of acknowledgement of the threats facing Khao Laem. This is a complex issue to resolve, but it is something we are conscious of and will investigate ways to bring these issues into the discussion arena, so ways to resolve them can be tabled.

Communications in Thailand are easy using the many smart phone applications. So, regular calls between management and field staff ensures output targets are met.

Internally at Freeland we hold weekly management meetings during which team leaders explain significant upcoming events in each project. These are tracked using an application called 'Trello'. A second meeting each week discusses project reporting. Every Monday, Freeland holds a zoom call for the entire Thai staff when they explain their weekly plans to listening management and colleagues.

We regularly share images and plans concerning the project via several Line groups (Line is similar to WhatsApp).

Shared learning: *(How will you share the outputs and learning from your project, in what format and with whom?)*

All information from this project is shared with the site custodians, the DNP. Thereby contributing to the enhanced understanding of tiger ecology across the WEFCOM landscape. We have recently contributed data to be integrated into a peer review paper about the distribution and abundance of large carnivore prey species across the Dawna Tenasserim Landscape.

Khao Laem ungulate information was shared with a Thai student. To date though, nothing formal has been published.

Most recently data will be integrated into a PhD chapter by project consultant biologist Jonathan Moore.

Finally, an MSc student at Queen Mary University in London re-analysed some threat data in her thesis.

Earlier this year, we prepared 3 pull-up banners explaining the project to be displayed at the Khao Laem visitor centre and a further 3 banners which were displayed during Global Tiger Day, July 31st.

Media: *(Please provide a list of publications and media both local and national which mentions the work funded by this project and/or mentions WildCats Conservation Alliance)*

There were no media articles mentioning the project this year.

Have you provided at least 2 blogs? No. We have not prepared any project-specific blogs, although we have provided information and images to WildCats.

Have you provided at least 10 high quality images with details of the relevant credit? Y/N?

Yes

Section III. Appendix (Please populate this section with details from section II)	
Did you carry out camera trapping as part of this project? Yes	
If yes: **Total camera trap nights/days:** A total of **3.645 survey nights** were completed (Surveys 34, 35, and 36) using 88 cameras.	**Total area surveyed:** **Total area surveyed 180km^2**
Numbers of tiger/leopard/prey recorded **4 tigers (undefined #Leopard as insufficient resources to analyse images)**	**Please include data on other species recorded** **See table in appendix**
Are numbers of tigers/leopards/prey increasing or decreasing in your project area? **We have an anecdotal understanding that tigers may be declining in Eastern Khao Laem as several individuals who have been resident for several years (including females) have recently disappeared and been replaced by other tigers moving into the area. This is not a good sign as it suggests either there is an issue with poaching, too low a prey base to support breeding, or other currently-unknown issues. It is unusual for females to vacate defined territories in this way.**	
Did you carry out other surveys? Previously, yes, with SECR surveys, but this year only with long term monitoring.	

Please give details n/a	
Did you carry out patrolling as part of this project? Y/N	
If yes: Through a cost share we are able to support SMART patrolling at Khao Laem **Total distance patrolled:** 10,308km **See table above in narrative**	**Total area patrolled:** 1,202.84 km^2 during the first half of 2023 which accounts for **72.33 %**% Khao Laem National Park (1,497Km^2)
Do you use Patrol Monitoring software such as SMART? Yes, SMART is in use.	
If yes: **Total distance patrolled using patrol monitoring software?** **As above**	**How do you collect data? Handheld devices/paper/other? Please give details?** **Handheld GPS and paper reporting**

Please provide comparison data on from your patrolling over time

	2018	2019	2020	2021	2022	2023
Encroachment	1	3	8	6	1	1
Wildlife Poaching	25	215	65	83	24	17
Illegal fishing	0	54	38	38	12	11
Illegal logging	7	56	44	26	9	4
Illegal NTFP collection	0	61	41	64	10	16
Prosecutions (Court)	0	4	12	10	2	14

Was the data you collected analysed by a SMART specialist?

No, only by park-based officials and previously by Freeland staff.

Please provide data on violations recorded/arrests/successful prosecutions

	2018	2019	2020	2021	2022	2023
Cases (combined all types)	33	389	196	194	56	61
Prosecutions (Court)	0	4	12	10	2	14

Currently we do not have any information about successful prosecutions. We will follow-up with park management.

Does your project work with local communities? Yes, but currently in a limited manner.

If yes: (please be as specific as possible and include gender split) **Who? Villagers in both west and east Khao Laem**	**What did you do? Was it successful? Conservation awareness for villagers and discussions on how to remove cattle. Appeared successful, but no formal questionnaires used.**	**How many people did you reach?** 86 (36M/50F) villagers

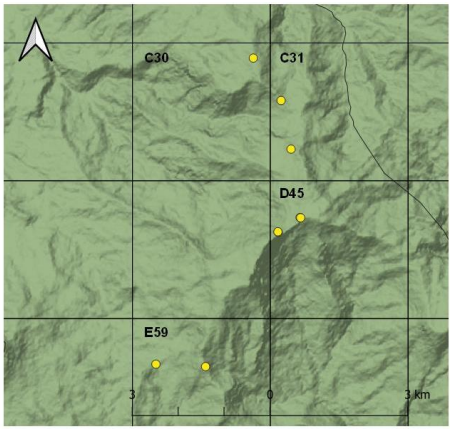
How do you measure the success of this activity? N/A

Did you carry out educational activities with adults or children? Y/N		
If yes: (please be as specific as possible and include gender and numbers) **Who? Students**	**What did you do?** **Educational outreach for students. Pre/post tests demonstrated an immediate increase in understanding of conservation issues among recipients.**	**How many people reached?** In the first six months of 2023, seven schools in both east and west Khao Laem were visited and 679 (340M/339F) students were reached.
Have you seen behaviour change from these activities? (Please give details of your results and of how this is measured). As activities recently occurred, no follow up has been implemented. We would like to return to these schools in very remote locations if resources allow (costs about GBP600/trip for fuel for 4WD trucks and boats)		
Did you carry out training activities for any staff/community member on the project? No		
If yes: (please be as specific as possible and include gender split) **Who? N/A**	**What did you do? Was it effective?** **N/A**	**How many staff trained? How many others trained?** **N/A**
How do you measure the effectiveness of this training? N/A		

Did you carry out conflict mitigation activities with community members? Informally, yes.		
If yes: **Who? Community members from [REDACTED] village where a tiger was killing cattle**	**What? Relating to HTC in Western KLNP**	**How many people did this include? Met with approximately 200 villagers (exact figure not collected)**
Have you seen behaviour change from these activities? (Please give details of your results and how this is measured) Nothing recorded, although a general improvement in relations with the park has been recorded in this remote community.		
Were any scientific papers/articles published because of your project? No public documents, but two MSc theses were completed		
If so, please give details or provide copies. N/A		

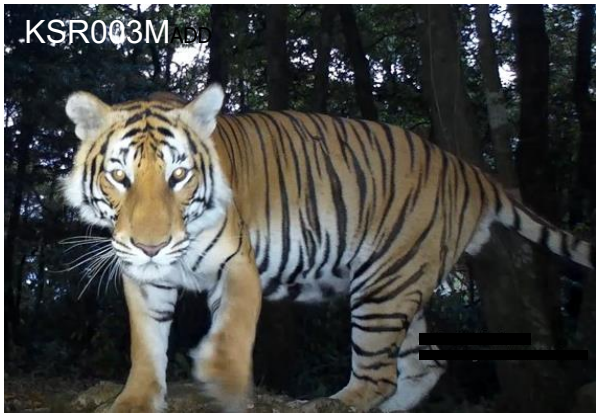
Appendix

Tiger images



Camera locations that recorded tigers to December 2022 to May 2023					
Cam #	Grid Zone	X	Y	Total images	Independent captures
378	47P			1	1
369	47P			2	2
303	47P			2	1
378	47P			1	1
369	47P			2	1
376	47P			1	1
359	47P			6	1
360	47P			1	1
285	47P			1	1
Total				17	10

FileName_Code	Trip surveys	Camera	X	Y	Date	Time	Total images
IMAG0076	KL34_SW	378				04:39:00	1
IMAG0139	KL34_SW	369				06:03:00	1
IMAG0149	KL34_SW	369				23:01:00	1
PIRT0126	KL34_SW	303				21:46:00	1
PIRT0127	KL34_SW	303				21:46:00	1
IMAG0143	KL35_SW	378				08:21:00	1
IMAG0048	KL35_SW	369				06:15:00	1
IMAG0049	KL35_SW	369				06:16:00	1
IMAG0039	KL35_SW	376				07:02:00	1
IMAG0031	KL35_SW	359				20:13:00	1
IMAG0032	KL35_SW	359				20:14:00	1
IMAG0033	KL35_SW	359				20:15:00	1
IMAG0034	KL35_SW	359				20:16:00	1
IMAG0035	KL35_SW	359				20:17:00	1
IMAG0036	KL35_SW	359				20:17:00	1
IMAG0018	KL35_SW	360				20:56:00	1
IMG_0020	KL35_SW	285					1



Appendix

Khao Laem cattle monitoring project May 2023

Over a two-month period to the end of May 2023, a census of livestock ownership in Khao Laem was conducted in two amphurs (districts). An amphur is the second-level administrative subdivision below provincial level. Officials acting on an order from the new Director General of the Department of National Parks, Wildlife and Plant Conservation interviewed stakeholders to explain that it is illegal to graze cattle in protected areas and to enquire how many cattle they own. The objective is to create a better understanding of the law and the exact status of cattle and other livestock being grazed within the protected areas as the start of a phase-out. Illegal grazing occurs in almost every protected area, but is particularly prevalent in western Thailand which has many communities laying fully within the boundaries of protected areas. At all such communities, contracts have been made with villagers (many of who are from indigenous groups) that stipulate what activities are permitted, or not, in the demarked community areas. Villagers sign these agreements, with serious violations carrying the penalty of being evicted from the site within the protected area. Such eviction may occur to the five poachers who killed two tigers in Thong Pha Phum National Park in January 2022 when they are released from gaol in five years.

Cattle-grazing inside protected areas is in clear contravention of the 2019 National Park act and parallel provisions under the 2019 Wild Animal Conservation and Protection Act (under which management of wildlife sanctuaries is defined). To further clarify the processes and restrictions concerning bringing animals into protected areas in 2020 the DNP issued a Special regulation (part 33 Ngor) concerning permission to bring any animals into national parks and the need for permits for that, which includes domestic stock, pets and other animals. Furthermore, this regulation clarifies penalties for damaging the environment or eco-systems inside protected areas. Fines can be 100,000Baht (2,500GBP) and up to one year in gaol.

During the surveys, which took more than three weeks, 306 livestock owners were interviewed. **These cattle grazers currently free-roam 6,061 cattle, 1,732 water buffalo, 120 goats**, no sheep, but they do keep numerous other farm and domestic animals including chickens, ducks, dogs and cats. A 2022 estimate of 6-8,000 cattle in Khao Laem demonstrated the number temporarily decreased to 4-600 following the tiger-poaching event. This occurred as grazers sold their cattle out of concern they would be confiscated by the authorities as the convicted poachers said they killed the tigers as retribution after cattle were predated. This reduced figure, which was reported by community leaders in Western Khao Laem, was either incorrect, or

the figure has increased again after new cattle were brought back into community areas, facilitated by insufficient management and monitoring by the DNP.

Cattle are allowed to be grazed in the allocated and demarked community areas, but as the officials overseeing the monitoring of free-roaming cattle are somewhat inattentive, villagers took advantage, and once again, became paid cattle-grazers hired by outside investors.

The market value of cattle in Thailand is high, and consequently cattle farming is popular due to profit margins. As a large proportion of Thailand's cattle are free-roaming, this increases pressure on forests, damages ecosystems and displaces wildlife.

In less strictly managed areas, such as reserve forests, these are being illegally cleared to grow maize to be processed into dry cattle food for animals maintained in corrals, as some areas are not appropriate for free-roaming. Such cattle-related land conversion is causing immense harm across large areas of reserved forests both in Thailand and neighbouring countries too. Furthermore, such encroachment is being indirectly encouraged by the large cattle food production companies, which buy illegally produced maize, regardless of its origin.

There are now new regulations in Thailand concerning stabling of cattle, due to the emergence of bovine-specific viruses - for instance, lumpy skin disease. But in reality, most free-roaming cattle are left for months in the forest and rarely confined to fly-proof barns as the law defines. Consequently, infectious cattle disease easily spread to wild bovines, including gaur and banteng, adding a further challenge to the conservation and population restoration of these important prey species. Free-roaming cattle often die in the forest of diseases, accidents, or predated by large carnivores, as was the case in **[REDACTED]** in April 2023. In some instances, cattle die and the carcasses are rarely found and definitely never checked to identify the cause of death. These are issues cattle investors are prepared to absorb, as the free-roaming incurs little financial outlay except the herder's monthly fee.

A fair solution to the illegal cattle grazing issue would be to enforce the law confining cattle to community areas, implementing the enforceable disease-prevention measures and initiating support for compliant community cattle owners.

Cattle ownership table May 2023

แบบสำรวจข้อมูลการครอบครองที่ดินเดิม ที่ทำการเลี้ยง โค กระบือ แพะ และแกะ ในเขตพื้นที่ป่าอนุรักษ์ ปีงบประมาณ พ.ศ. 2566
ชื่อป่าอนุรักษ์ อุทยานแห่งชาติเขาแหลม สังกัด สำนัก/สำนักบริหารพื้นที่อนุรักษ์ที่ 3 (บ้านโป่ง)
ข้อมูล ณ วันที่ ๑๙ เดือน พฤษภาคม ปี พ.ศ. 2566

	ลำดับที่	ชื่อ-สกุล ผู้เลี้ยงสัตว์ในพื้นที่ป่าอนุรักษ์ Name			เลขประจำตัวประชาชน I/D	จำนวนปศุสัตว์ที่เลี้ยง (ตัว) Number of livestock raised (head)				ที่ตั้งคอกสัตว์ แปลงเลี้ยงสัตว์ ในพื้นที่ป่าอนุรักษ์ Location in forest location					
		คำนำหน้าชื่อ Title	ชื่อ First name	สกุล Surname	I/D card number	โค Cattle	กระบือ Buffalo	แพะ Goat	แกะ Sheep	ชื่อป่าอนุรักษ์ conservation forest name	หมู่บ้าน Village name	หมู่ที่ Cluster #	ตำบล Tambol	อำเภอ Aphur	จังหวัด Province
6	1	นาย	สิงห์ศิริ	ช่วยบำรุงวงศ์	1710800035579		7			อช.เขาแหลม	กระมองทะ	2	ไล่โว่	สังขละบุรี	กาญจนบุรี
7	2	นาย	ณรงค์เดช	สุนเส็ง	1729900002646		13			อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
8	3	นาย	ปวเรศ	ศรีเมฆ	1710700076508	50				อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
9	4	นาย	จีรพัฒน์	คลังวิทยา	8710873007084	18				อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
10	5	นาย	สุรางค์	กาบัว	1710800002867	31				อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
11	6	นาย	สมศักดิ์	สร้อยจำนง	1710800021675	10				อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
12	7	นาย	สามารถ	ศรีเมฆ	3710800054456	84	13			อช.เขาแหลม	จั่งอั้ว	4	ปรังเผล	สังขละบุรี	กาญจนบุรี
308	303	นาย	กิตติ	กรีหอม	3710600033862		23			อช.เขาแหลม	ห้วยปากคอก	7	ห้วยเขย่ง	ทองผาภูมิ	กาญจนบุรี
309	304	นาย	เต้ย	ไม่มีนามสกุล			4			อช.เขาแหลม	ใหม่ไร้ป้า	3	ปิล็อก	ทองผาภูมิ	กาญจนบุรี
310	305	นาย	ศรีชัย	ทองมาธนะโชค	2710700016007	9	4			อช.เขาแหลม	ใหม่ไร้ป้า	3	ปิล็อก	ทองผาภูมิ	กาญจนบุรี
311	306	นาย	พันธ์ทิพย์	ทองมาสิงาม	1710700088662		2			อช.เขาแหลม	ใหม่ไร้ป้า	3	ปิล็อก	ทองผาภูมิ	กาญจนบุรี
312															
313					รวมจำนวน	6,061	1,732	120	-	ตัว					
314															

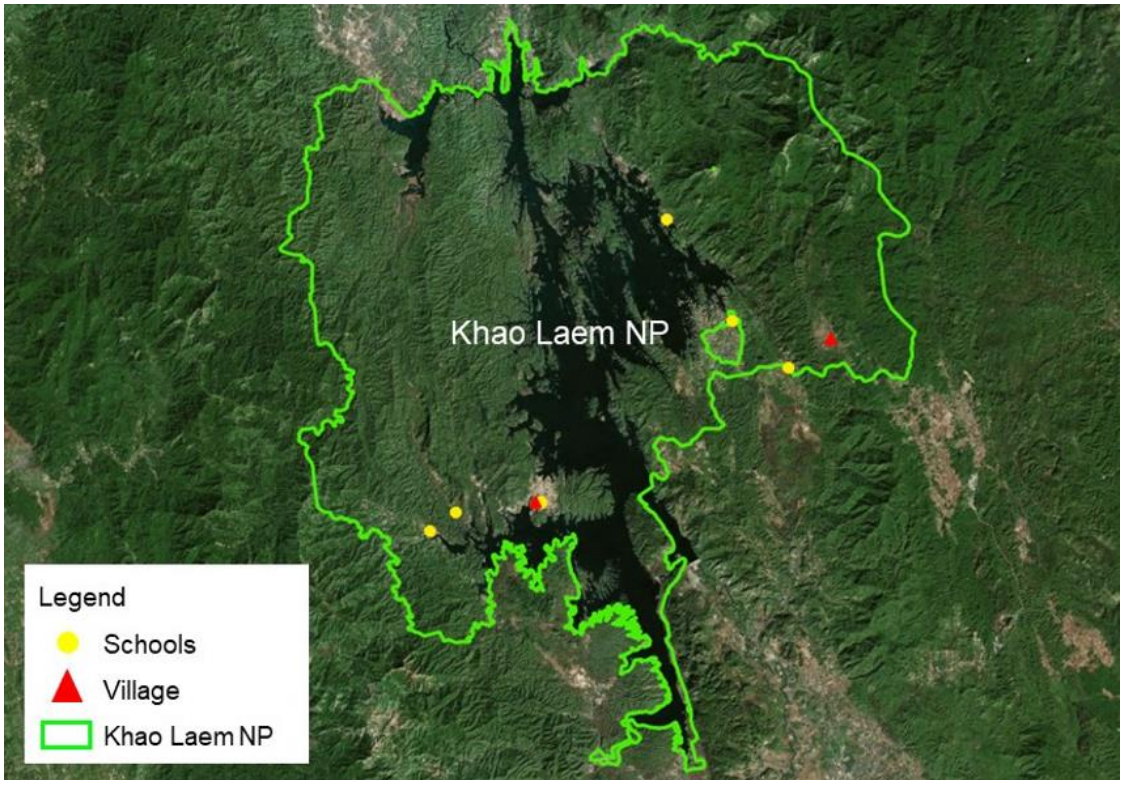
	ค่าพิกัดแปลง UTM (WGS 84) Location			เนื้อที่ประมาณ Area size			เอกสารสิทธิ์ทางที่ดิน land title document		แปลงสำรวจการถือครอง holding survey plots			หมายเหตุ Comm
	ZONE	E	N	ไร่ rai	งาน Ngan	ตารางวา Trang-wa	มี/ไม่มี	ประเภท	ไม่เป็น	ม. 64	ม. 121	
6	47P	0452694	1676790	0	0	0	ไม่มี	-	เป็น	ม. 64	-	ในคอก
7	47P	0457261	1659736	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
8	47P	0459795	1657749	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
9	47P	0458002	1657279	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
10	47P	0459797	1657753	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
11	47P	0459690	1657774	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
12	47P	0457442	1659479	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงในคอกและแบบ
308	47P	0447008	1636364	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงแบบปล่อ
309	47P	0439460	1639049	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงแบบปล่อ
310	47P	0436776	1641359	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงแบบปล่อ
311	47P	0438800	1637880	0	0	0	ไม่มี	-	ไม่เป็น	-	-	เลี้ยงแบบปล่อ
312												
313												
314												

Cattle 6,041, buffalo 1,732, goats 120, combined 7,893 head of stock in Khao Laem.

Appendix

Community Outreach

	Activity date	Park	Location (schools)	Location (district)	Level	Students		Teachers	Staff	Total students	Location	
						Male	Female					
1	1-Feb-23	KLNP	Border Patrol Police, Ban Rada	Sangkhla Buri	Grade 4 - 6	49	48	4	9	97	47P0454500	1662461
2	1-Feb-23		Ban Kreng Krawia	Thong Phaphum	Grade 4 - 6	101	107	5	9	208	47P0463911	1651057
3	2-Feb-23		Ban Yang Kaw	Thong Phaphum	Grade 3 - 6	35	34	4	9	69	47P0459559	1654635
4	6-Jun-23	KLNP	Ban Bo Ong (center children)	Thong Pha Phum	Grade 1- 6	24	18	1	6	42	47P0444822	1640642
5	7-Jun-23		Ban Phieng Luang 3 (Ban Mai Rai Pa)	Thong Pha Phum	Grade 3- 6	32	29	3	11	61	47P0438203	1640017
6	7-Jun-23		Border Patrol Police, Ban Pilockkie	Thong Pha Phum	Grade 4 - 6	34	45	5	11	79	47P0436210	1638507
7	8-Jun-23		Ban Phieng Luang 3 (Ban Mhung Rae I Tong)	Thong Pha Phum	Grade 1 - 6	65	58	2	11	123	47P0444794	1640735
8	22-Aug-23	KLNP	Ban Kong Mong Tha	Sangkhla Buri	Grade 3 - 6	81	84	6	9	165	47P0452123	1677346
9	22-Aug-23		Ban Kong Mong Tha	Sangkhla Buri	Grade 7 - 9	51	47	4	9	98		
					Total / 2023	**472**	**470**			**942**		



Activity date	Place	Location (village)	Location (district)	Villagers		Staff	Total
				Male	Female		
2-Feb-23	KLNP	Ban Thiphuye	Thong Pha Phum	31	36	9	67
8-Jun-23	KLNP	Ban Bor Ong	Thong Pha Phum	5	14	8	19
22-Aug-23	KLNP	Ban Gong Mong Ta	Sangkhlaburi	23	11	8	34
			Total 2023	**59**	**61**		**120**

FREELAND
A world free of wildlife trafficking and human slavery

Community Outreach Photos at
Khao Laem National Park ,7 schools and 2 village

Date 1 February 2023,

1. Border Patrol Police, Ban Rada school

2. Ban Kreng Krawia school

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Community Outreach Photos at
Khao Laem Natonal Park

Date 2 February 2023

3. Ban Kreng Krawia school

Date 6 June 2023

4. Ban E-Tong Children's Center

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Community Outreach Photos at Khao Laem National Park

Date 7 June 2023

5. Ban Phieng Lhuang 3 (Ban Mai Rai Pa) school



6. Border Patrol Police, Ban Pilockkie school



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Community Outreach Photos at Khao Leam Natonal Park

Date 8 June 2023

7. Ban Phieng Luang 3 (Ban Muang Rae E-Tong) school






Community conservation awareness to 2 villages

1. Ban Thiphuye village on 2 February 2023



2. Ban Bor Ong village on 8 June 2023

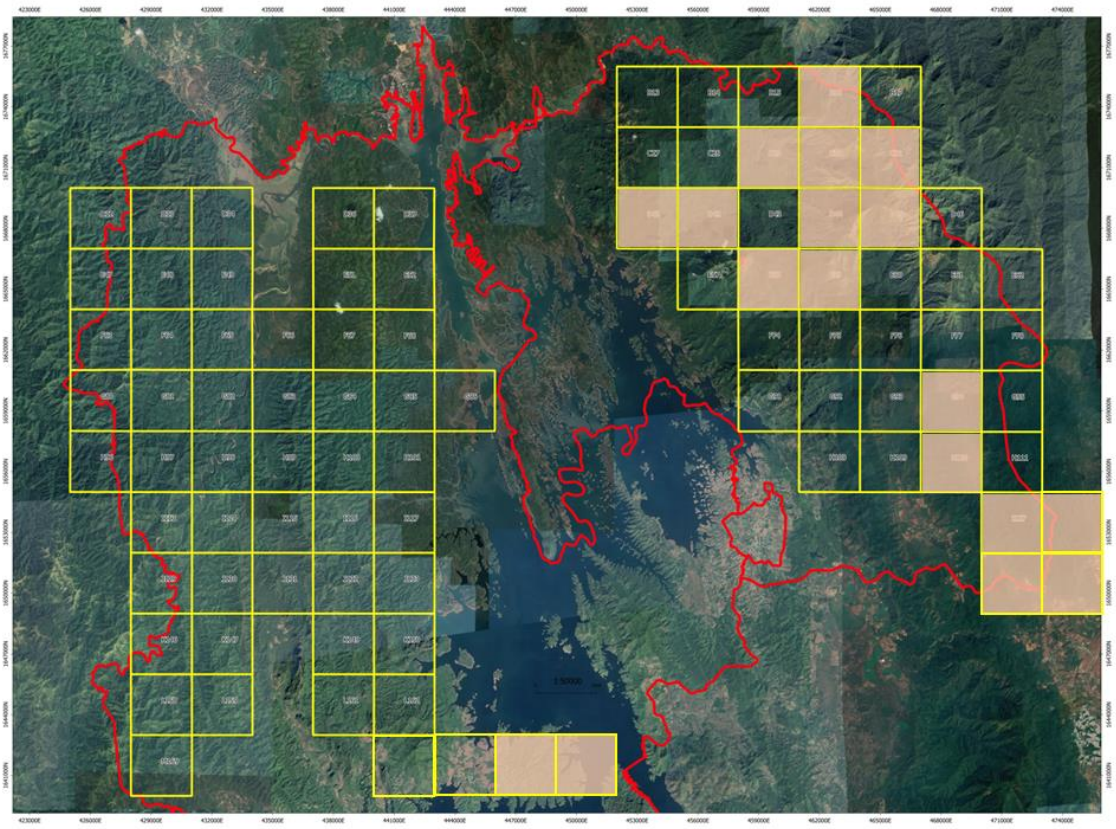


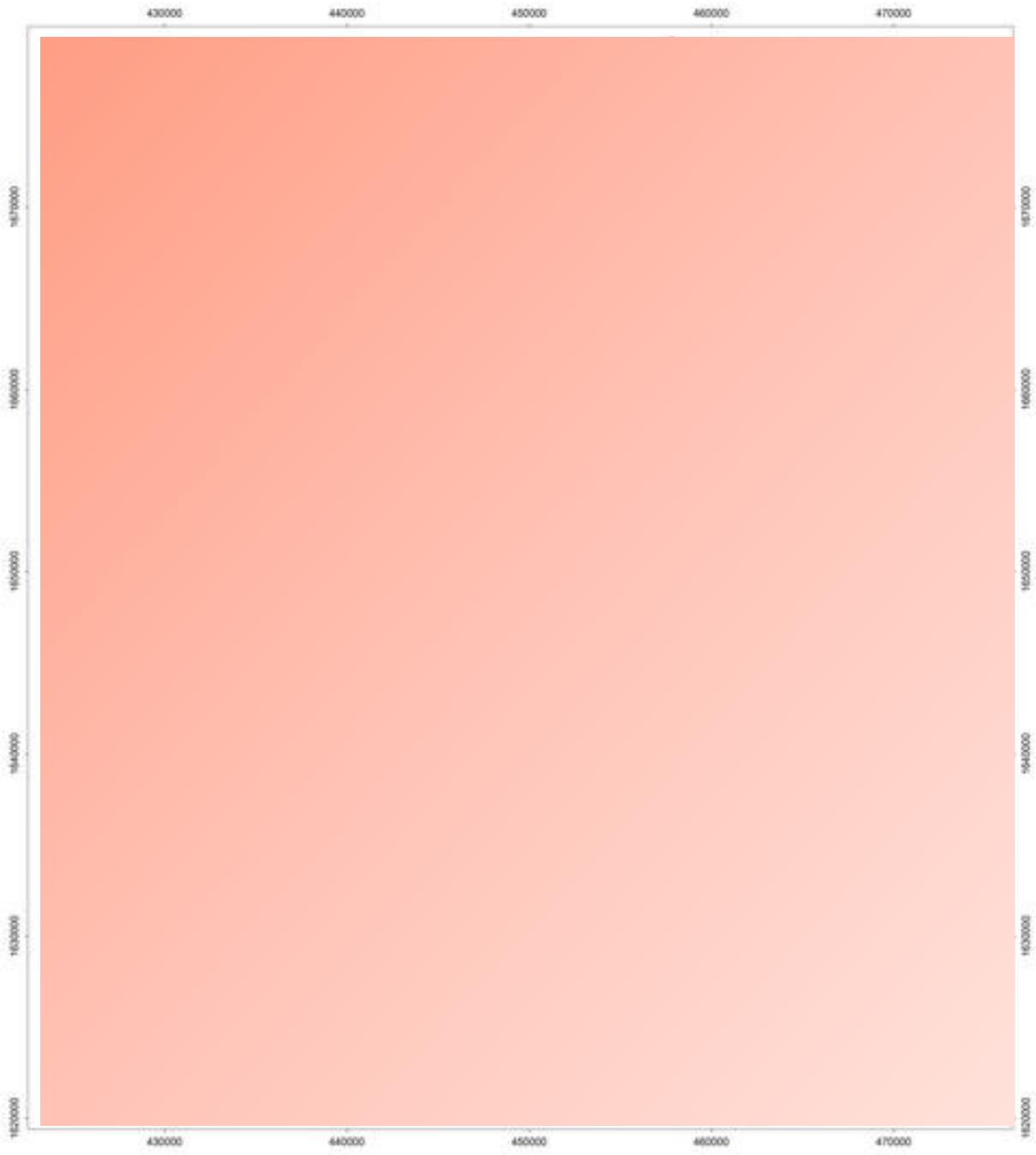
Appendix

Common Name	Scientific Name	Thai Name	Status	Method of detection	Identification confidence level
Indochinese Tiger	*Panthera tigris*	เสือโคร่ง	Endangered	CT	100%
Indochinese Leopard	*Panthera pardus*	เสือดำ เสือดาว	Critically Endangered	CT	100%
Clouded Leopard	*Neofelis nebulosa*	เสือลายเมฆ	Vulnerable	CT	100%
Asiatic Golden Cat	*Catopuma temminckii*	เสือไฟ	Vulnerable	CT	100%
Leopard Cat	*Prionailurus bengalensis*	แมวดาว	Least Concern	CT	100%
Red Muntjak	*Muntiacus muntjak*	เก้ง	Least Concern	CT	100%
Fea's Muntjak	*Muntiacus feae*	เก้งหม้อ	Vulnerable	CT	100%
Serow	*Capricornis milneedwardsii*	เลียงผา	Vulnerable	CT	100%
Gaur	*Bos gaurus*	กระทิง	Vulnerable	CT	100%
Wild Boar	*Sus scrofa*	หมูป่า	Least Concern	CT	100%
Malayan Sun Bear	*Helarctos malayanus*	หมีหมา	Vulnerable	CT	100%
Asiatic Black Bear	*Ursus thibetanus*	หมีควาย	Vulnerable	CT	100%
Hog Badger	*Arctonyx collaris*	หมูหริ่ง	Near Threatened	CT	100%
Yellow-Throated Marten	*Martes flavigula*	หมาไม้	Least Concern	CT	100%
Crab-Eating Mongoose	*Herpestes urva*	พังพอนกินปู	Least Concern	CT	100%
Dhole	*Cuon alpinus*	หมาใน	Endangered	CT	100%
Masked palm civet	*Paguma larvata*	อีเห็นเครือ	Least Concern	CT	100%
Large Indian Civet	*Viverra zibetha*	ชะมดแผงหางปล้อง	Near Threatened	CT	100%
Stump-Tailed Macaque	*Macaca arctoides*	ลิงเสน	Vulnerable	CT	100%
Northern pig-tailed macaque	*Macaca leonina*	ลิงกังเหนือ	Vulnerable	CT	100%
Asiatic Brush-Tailed Porcupine	*Atherurus macrourus*	เม่นหางพวง	Least Concern	CT	100%
Malayan Porcupine	*Hystrix brachyura*	เม่นใหญ่แผงคอยาว	Least Concern	CT	100%
Binturong	*Arctictis binturong*	หมีขอ	Vulnerable	CT	100%
Banded Linsang (at Potana)				CT	50%
Small toothed Civet (Radar)				CT	50%

Appendix

Areas surveyed 2023 first half

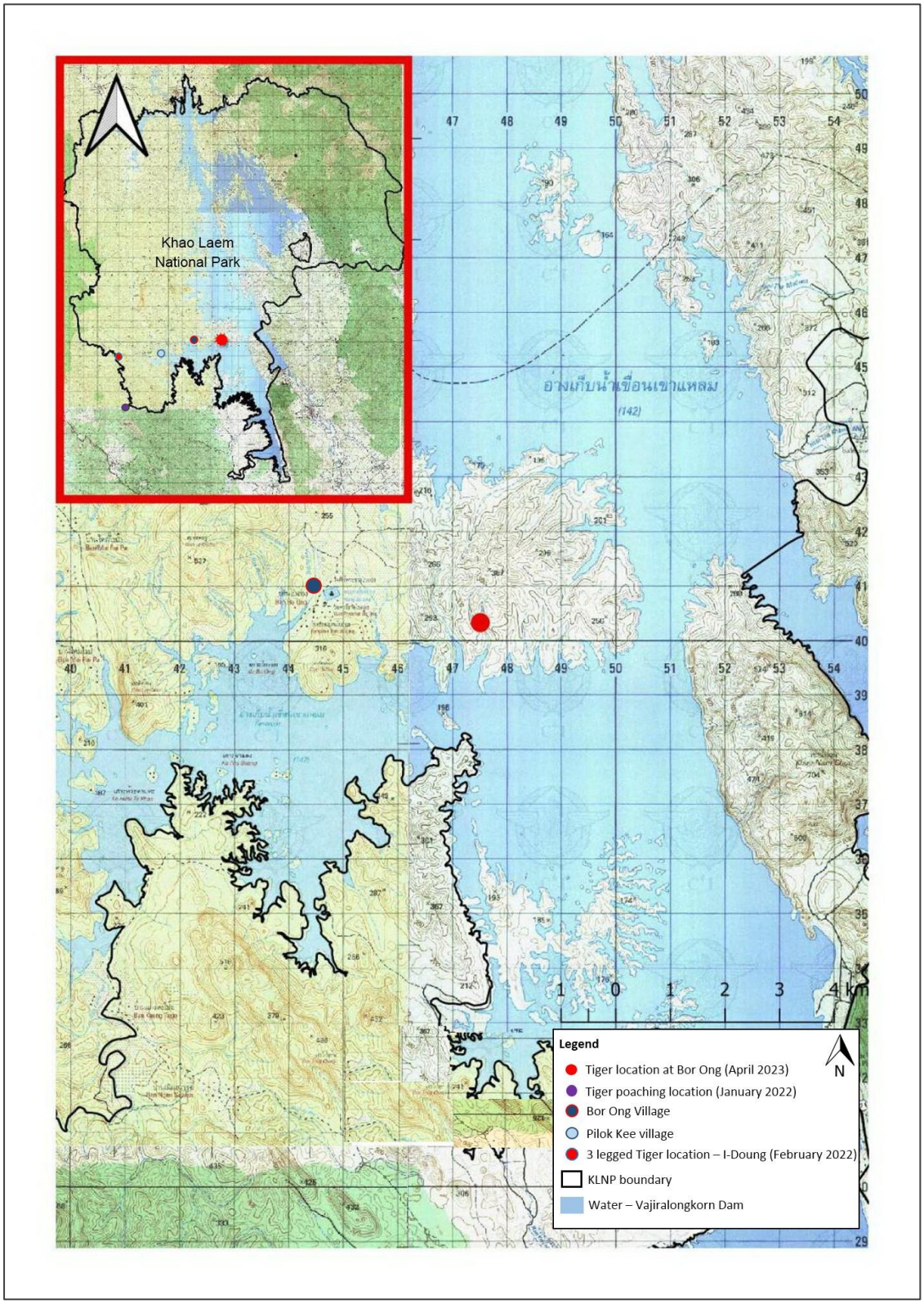




Map showing tiger locations (survey) in light green and tracks recorded during SMART patrols in red

Appendix

Area where HTC occurred (cattle -predation) at Bor Ong in Western Khao Laem



Since April 2023 when villagers in **[REDACTED]** forest community in Khao Laem reported a tiger was predating their cattle we were able to work closely with the park to prevent any retaliatory poaching. We conducted both outreach in local schools and communities to tell people about the tiger and to warn them not to travel into the forest before dusk or overnight. Villagers were very supportive and really appreciated the interest that was shown in their wellbeing. Camera surveys immediately established proved the tiger had left the area and this was relayed back to the local mayor.

The villagers now realise that it is their own cattle drawing tigers into their community area and want to initiate ways to move their cattle away and find new livelihoods. Discussions have started with villagers to figure out how they can turn this problem into a situation that benefits them. To this end, the park management is willing to consider community-led trekking, homestays and socio-economic enterprises. However, as most villagers are ethnic Karen they are not well versed in business or marketing and have asked for assistance to help decide on which would be the best way to earn an income.

Just two years ago, villagers poached two tigers (the poachers are now in jail for 5 years) and the whole community was against tigers. However, now after they have seen the deterrent of jail and the offer of assistance to find ways to help them earn a legal income, they appear to be changing their opinion about having tigers on their doorsteps.
To date, no snares have been found in this area and no more tigers have been poached.

Appendix

Additional items donated, or supported to the KLNP project in 2023

#	Date	Donated Item
1	Each quarter	NCAP GSM Camera support
2	Each quarter	SMART patrol support
3	January2023	Ranger enforcement training
4	January 2023	Project banners
5	January 2023	Motorbike loan
6	January 2023	Ranger field equipment
7	February 2023	Outreach
8	May 2023	Mentored patrol (East sector)
9	June 2023	Mentored patrol (West sector)
10	June 2023	Outreach
11	July 2023	Ranger backpacks
12	August 2023	Water filters
13	August 2023	Drone battery
14	August 2023	Mini training VHF radio use
15	August 2023	Outreach
16	September 2023	Cattle survey and reduction project
17	September 2023	Boat maintenance
18	September 2023	VHF Radio repeater
19	September 2023	VHF radio hand set