Section I. Project Information

Project Title: "Khao Laem: Tiger Conservation Project, Phase 7"

Grantee Organisation: Freeland

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

Size of project area	**Number of tigers in project area, giving evidence & source:**
Total area of PA: 1,497km^2 Total area of 2025 survey efforts: 198km^2 The focal site is in Thailand's Kanchanaburi Province within a contiguous series of 19 protected areas (previously 17) known as the Western Forest Complex (WEFCOM) which have a combined area of more than 20,000 km^2. This landscape allows for free tiger dispersal, including transboundary movement westward into Myanmar.	Total 9 individuals. (Unpublished project data) Seven tigers identified in 2025 and two further individuals currently unidentified. Between 2015 and 2025, this project confirmed the presence of 22 tigers at Khao Laem National Park.

Partners:

Management of Khao Laem National Park (KLNP) under the auspices of the Department of National Parks Wildlife and Plant Conservation (DNP). Since 2016, Freeland has conducted continuous tiger monitoring at Khao Laem National Park (KLNP). This long-term project generates data which is immediately shared with KLNP management and the DNP's Protected Area Regional Office (PARO3) in Ban Pong. To maintain a centralized national record, tiger-specific data is also sent to the DNP's Wildlife Conservation Division Tiger Research Centre at Khao Nam Ram, ensuring all sightings are cross-referenced against the national tiger identification database.

For enforcement related activities, including training and operations, the project collaborates with the Protection Unit from DNP's PARO1 central office and the central protection unit based at Panom Thuan, Kanchanaburi.

In 2023 the newly retired Superintendent of Khao Laem NP joined Freeland staff as a consultant counterpart assisting collaboration with the DNP headquarters in Bangkok. He continues to support the project, contributing valuable institutional knowledge of Khao Laem National Park management and helping to strengthen communication and collaboration between the project and the DNP. During 2025 a new and enthusiastic Superintendent was appointed to manage Khao Laem and the project has been closely collaborating with him.

Further tiger related partnerships include Fauna & Flora (FFI) Myanmar and Wildlife Asia (Australia) as both organisations are implementing tiger projects in Myanmar. FFI further supports Freeland's work in Southern Thailand also along the Myanmar border and Wildlife Asia supports the Karen Wildlife Conservation Initiative (KWCI) which works in neighbouring Myanmar, as well as Freeland's work in Salawin National Park and Salawin Wildlife Sanctuary in northwest Thailand. These partnerships bring the ability for transboundary tiger monitoring, monitoring expertise and provide collaborations for successive data analysis.

Data concerning presence and locations of large felids is also shared on an ad-hoc basis with Panthera Inc. (Thailand) and during 2024 data was integrated by Panthera into a national review of Indochinese leopard and clouded leopard status supported by WWF Thailand.

At the end of 2023 Freeland initiated a new partnership with Thong Pha Phum National Park (TPP) which adjoins Khao Laem to the west and since then tiger conservation activities were conducted within that protected area too. TPP tiger, prey and threat data has direct relevance to this project as the tigers disperse throughout this far western sector of WEFCOM.

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Start date of this year's project activities: 1st February 2025

Section II. Project Results

Long Term Impact:

The long-term impact sought by this project is to contribute towards doubling the national tiger population in Thailand by the conclusion of the next Thai Tiger National Action Plan (T-TAP) in 2034. This impact will represent significant progress toward our vision of **'ensuring the persistence of Indochinese tigers'.**

Evidence from key source sites within the Western Forest Complex (WEFCOM) landscape already indicate tiger conservation measures are succeeding, with the tiger population measurably increasing, especially within the core source site at Huai Kha Kheng Wildlife Sanctuary. From there tigers are dispersing into adjacent protected areas where they are susceptible to numerous threats. Sustaining the recovery of tigers within this landscape therefore requires mitigating and removing such threats by bolstering protection, especially in edge and transboundary habitats, managing both prey and tigers as a contiguous meta-population with improved coordination between agencies sharing information, successes and best practices.

By focusing on professionalising park protection at Khao Laem, we expect effective patrolling and adaptive management to create a real deterrent against poaching. As patrol practices become more strategic in response to threats, poaching will become increasingly difficult to conduct.

A major challenge is engaging communities residing within and around the boundaries of Khao Laem, as many regularly are regularly involved in nature crime and ecologically damaging vocations. This project has been focussing attention on these communities, some of who were previously involved in tiger poaching. Community outreach is breaking down barriers and opening up much-needed lines of communication. There is now a genuine willingness among some villagers to sit down and talk, with the shared goal of finding legal, sustainable livelihoods for those ready to move away from poaching. By fostering this dialogue, we're beginning to replace conflict with cooperation, creating a path for local people to support conservation rather than work against it.

Ultimately, we expect the combined efforts of improved enforcement and community outreach to transform Khao Laem from a vulnerable dispersal zone into a thriving permanent stronghold for tigers, providing the secure habitat necessary to sustain their natural recovery that will contribute to doubling of Thailand's Indochinese tiger population by 2034.

Conservation Outcome:

Activities have already led to a better understanding of the tiger population (and threats) within Khao Laem and its function facilitating tiger recovery across the southern WEFCOM landscape. Tiger conservation measures have improved, augmented by increased capacity among officials who are able to conduct tiger population surveys, collect field data, implement adaptive protection measures and mitigate human-tiger conflict. Now within this safer environment, both the resident and dispersing tiger populations are increasing, alongside a parallel recovery of prey species. This outcome is validated by the continued persistence and increase of tigers over the last eight years and the recent discovery of a previously unknown breeding population of sambar deer in two remote valleys.

Until mid-2022, surveys were documenting an increase in all key prey species essential in creating a situation conducive for tiger breeding and successful rearing of cubs. Unfortunately, surveys in 2022 revealed how precarious the situation remains with the emergence of African Swine Fever (ASF) pandemic which led to a population crash among Wild Boar, the tiger's main prey species at Khao Laem

Threats to tigers at Khao Laem extend beyond poaching and habitat loss to include broader human, environmental, and wildlife health pressures. Ongoing surveillance is essential to detect emerging risks early, enabling effective mitigation.

Summary of activities and achievements:

This report describes activities and results conducted in Khao Laem National Park during 2025. These are designed to investigate and solidify the importance of the site in the distribution and conservation of Indochinese tigers (Panthera tigris corbetti) within one southwestern section of the huge Western Forest Complex. Work is led by park-based officials from the Department of National Park, Wildlife and Plant Conservation (DNP), with support from Freeland via the WildCats Conservation Alliance with additional matching support from private US- donors.

Approaches comprise of a collection of complementary tiger conservation activities which include; park protection, operations support (REDACTED), enforcement ranger training, technical and equipment support, human-tiger conflict (HTC) mitigation, community outreach awareness for school students and communities. Outreach encompassed dialogue aimed at reducing illegal grazing of cattle, mitigating additional human-wildlife conflict (HWC), and long-term monitoring (LTM) of tigers, prey and threats to indicate changes.

Wildlife surveys conducted in 2025 and in previous years categorically demonstrate the permanent presence of both tigers and critically endangered Indochinese leopards within a diverse carnivore intraguild at the site. Surveys during 2025 built upon information gained during three Spatially Explicit Capture-Recapture (SECR) wildlife surveys which concluded in 2022 and previous long-term monitoring during 2016-24. Although no SECR surveys have been conducted since 2022, LTM focuses on key tiger habitats in eastern Khao Laem, where remoteness and rugged terrain limit poaching. As a result, species richness is highest in these low-pressure areas.

The project has maintained its three main objectives form previous years (explained here with a condensed list of achievements);

Objective 1. Further improving understanding of tigers, prey and threats in KLNP

Indicator 1a. At least 180km^2 of eastern Khao Laem will be re-surveyed, this represents twenty 3x3km survey grids.

1a.1. Between January 2025 and February 2026, five systematic long-term monitoring (LTM) surveys (KL42-46) were implemented, during which 22 grids (198km^2) were surveyed. We expected to complete six (60-day) surveys in conjunction with the KL rangers, but extreme weather (heavier than usual rains) and later forest fire suppression duties, especially over the final quarter of the year restricted the rangers' availability. Delays did not impact actual number survey days, as most cameras continued working throughout the period. There were issues with moisture from the prolonged rains and theft of cameras by poachers, which reduced data.

Specifically, seven areas within Khao Laem were surveyed;

East Khao Laem

1) San Nok Wua Trail (popular with trekking tourists and open for just 4 months per year during November to March. During that period survey cameras are relocated off the trekking trail.
2) San Nok Wua – Potana trail
3) Rantee (east of Kong Mong Ta Trail – northwest of eastern Khao Laem)
4) Radar Hill (past San Nok Wua trail, higher along the same mountain)
5) Thipuye area, (southeast) and adjacent to a Karen village
6) Tee Krong (Central eastern KL)

Note. Tigers were recorded except xxxxx, which is a notorious poaching area inhabited by many undocumented migrants.

West Khao Laem

7) Western Khao Laem's Bor Ong - Pilok Kee area (Near where tiger poaching event occurred in 2022 and a tiger was recorded in April 2023 and November 2024)

Sub-indicator 1a.2 # tigers initially identified during survey Baseline: 8, **Target: >10**
The aim was to document an increase in the number of identified tigers from eight (2022-3 baseline) up to ten individuals during 2025. We managed to record 9 individuals during 2025, of which 6 had been previously identified and 3 remain unidentified as images just one flank, blurred, or unconclusive for identification purposes.

The following tigers M6, M7 & F2 are classed as resident as they have all been continuously recorded for more than two years, with one F2 (KLT002F) recorded continuously for ten years.

New tigers M8, M9 and M10 & another 1.1 unknown individuals make 2025's count at 9 the highest since the project started. The presence of previously unrecorded individuals confirms inward recruitment, demonstrating that the KLNP corridor is functional - facilitating tiger dispersal across Southern WEFCOM.

One previously dominant male recorded at the end of 2023 - M4 (HKT276M) with a distinct limp and in emaciated condition was not seen again in 2025.

Sub-indicator 1a.3 # potential prey species identified during surveys. Baseline: 5 species, Target: >5. Recorded 5. LTM surveys continued to assess the abundance and distribution of tiger prey species. These include; Serow, Red Muntjac, Fea's Muntjac, Gaur, Sambar Deer, and Wild Boar. Due to the previously mentioned ASF outbreak in 2022-2024 tigers preyed on other ungulate species, which led to a decrease in their presence too. This was confirmed by decreased LTM and SMART patrol records and so these smaller ungulates are included as prey species. 2025 saw a significant increase in sambar deer (71 independent captures), signaling a prey restoration.

Sub-indicator 1a.4 Per cent (%) Increase Relative Abundance Indicator (RAI) for tigers and 5 prey species.

Tiger. 2024 Baseline RAI: 0.42 which increased to 0.50 in 2025

Prey:
Wild Boar: Baseline RAI 8.36, actual RAI 11.52
Muntjak (combined two species): Baseline RAI 4.63, Actual RAI 1.60
Serow: Baseline RAI 2.55, actual RAI 0.81 (Note increase in graph later in report)
Gaur: Baseline RAI 0.40, actual RAI 2.57
Sambar: Baseline RAI 0.15, actual RAI 0.60

Sub-indicator 1.1b. #Threats recorded (especially poachers and dogs) decrease (also linked to Objective 2).
#Poachers recorded baseline: 8, **target: TBD**

We predicted that as patrol effectiveness improved, recorded threats, particularly poachers and feral/domestic dogs would initially increase, reflecting higher detection rates, before declining as deterrence effects took hold. Current trends appear consistent with this, with capture rates of threats continuing to rise.

Threat	2025
Illegal cattle grazing	131
Illegal buffalo grazing	1,469
Poachers	248
Feral Domestic dogs	134
Villagers	20
Illegal gold miners	91
Enduro motorbikes	22

Over the past year, the increased scale and intensity of LTM effort has contributed to a higher number of recorded threats. This likely reflects not only improved spatial coverage and detection capacity, but also a genuine persistence of threats, especially in western sector of Khao Laem.

Overall, records indicate that poaching and other natural resource crimes in western Khao Laem remain at severely high levels, emphasising the need for more focused adaptive enforcement efforts.

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

During 2025 the project conducted several capacity development training activities for officials, both formal and informal in the form of mentoring during actual park protection, wildlife monitoring and community outreach activities. Two training activities involved the introduction of SMART Mobile and EarthRanger applications. Training was delivered at two distinct levels: one for technicians to manage the systems, and another for rangers collecting data during patrols, which feeds directly into the two systems. Both applications are being used alongside the standard paper-based SMART data collection as a way to evaluate each's effectiveness.

Activity 2.1 Data collection training during surveys: This aim is to promote concise data collection of wildlife and SMART data increasing the quantity and quality of field data input into the SMART database. Creating a dataset that can be utilised for adaptive management.

Indicator 2.1 A total of 64 rangers were trained across four surveys, each covering a minimum of four trail routes. Survey teams typically comprised at least five rangers, occasionally increasing to seven (with three teams covering four trails). On one trail (radar) only a single ranger participated each survey alongside Freeland surveyors.

Activity 2.2 Management of SMART Survey Data: This involves enhancing utilization of the SMART database improving accuracy of SMART reports. Activities also include initiating use of the customizable management features. This section was considerably expanded with the introduction of SMART mobile and EarthRanger.

Indicator 2.2 The number of officials receiving OJT mentoring again exceeded the baseline of two officials by training three office-based technicians. Two officials participated in an EarthRanger technical workshop in Bangkok in August 2025.

During the SMART mobile and EarthRanger application training activities at Khao Laem, fifty rangers were trained in use of these smartphone applications. There are plans to expand the Khao Laem data management centre in 2026 so real time monitoring of patrols can be implemented. An EarthRanger technician travelled (pro-bono) to Khao Laem several times in support of the introduction of this application and to the regional management office for South WEFCOM in Ban Pong to explain the application to the regional director.

The use of patrol-based reporting improved at Khao Laem and our project manager regularly advises technicians about key information prior to patrols and reviews results during monthly SMART patrol meetings.

We were further able to mentor and increase capacity using an independent SMART/GIS consultant who assisted when required.

Activity 2.3 Law Enforcement Training: Formal training for law enforcement rangers include strategic patrol training and other basic skills to enhance park protection and wildlife survey safety.

Indicator 2.3 No formal enforcement ranger training events were conducted by the project at Khao Laem during 2025. However, enforcement tactics, navigation and field skills were taught to 20 rangers at the regional enforcement headquarters at Panom Thuan, as rangers from this unit operate in support of all parks in South WEFCOM including Khao Laem.

Limited rapid response training was conducted for 24 Khao Laem rangers [REDACTED].

Activity 2.4 [REDACTED]

Indicator 2.4 [REDACTED]

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

This objective had four related activities; 1) visiting local communities 2) visiting local schools 3) Solidifying partnerships with CSO/local conservation groups and 4) reducing domestic stock including cattle, water buffalo and goats free roaming within Khao Laem.

Activity 3.1a Community awareness visits to known 'poaching hotpot' villages to create a better awareness about park laws and local regulations to reduce violations and foster improved interactions with Khao Laem management

Indicator 3.1. Our proposed target for this year was four village meetings, but unfortunately only three villages were possible. A target number of recipients was not predicted, as participation is voluntary and many villagers find it hard to participate in meetings during the day as they are usually working. The combined Freeland and Khao Laem team discussed park regulation, sustainable resource use and conservation with 93 participants (57M/36F). It should be noted that during early 2026, a combined Freeland/Kasetsart university delegation visited three villages within Khao Laem to discuss collaboration on legal vocational support and ideas for alternative livelihoods. As some activities are not permitted inside protected areas, the suggestions needed to be legally acceptable.

During village meetings, the "Living with Tigers" questionnaire was jointly administered to better understand the challenges forest dwellers face when sharing the landscape with tigers. Many participants are of indigenous origin or Burmese migrants, and as some are unable to read or write Thai, they were supported in completing the questionnaire.

Activity 3.1b conducting awareness in local schools. We now have a better working relationship with the Thai Border Patrol Police at Khao Laem. We will conduct more conservation awareness in their schools and training their teachers to use our 'Teachers for Forests' Thai language conservation awareness guide.

Indicator 3.1b. School visits – Target 8 schools visited and 1,000 Students. Actual results; only 5 schools visited and 671 (325M/346F) students reached. Twenty-three teachers received instruction on how to use the 'Teachers for Forests' manual.

Indicator 3.2 Establishing new partnerships to collaborate on community outreach.
In May 2024, Freeland signed up to a 5-Year Memorandum of Understanding (MoU) with the DNP to enhance conservation efforts in the country's UNESCO Natural World Heritage Sites. Activities in support for this initiative continued throughout 2025 with results reported to the DNP every three months.

We were able to continue the partnership with the Border Patrol Police and this enabled school visits and joint patrols.

Regarding our plan to identify a local Civil Society Organization (CSO) working on rural development around Khao Laem, we have initiated contact with a small forest conservation CSO based near Sangkhlaburi. We expect to meet with the organization in person and explore opportunities for collaboration during 2026.

Indicator 3.3 Reducing domestic stock grazing in Khao Laem, including cattle and goats

While large-scale cattle reductions have not yet been realised, progress has continued in raising awareness both among senior DNP officials and local administration officers, strengthening the foundation for long-term solutions to reduce cattle grazing in Khao Laem.

Park officials have maintained engagement with local farmers, encouraging the relocation of cattle from protected areas. Building on earlier efforts, when one investor removed approximately 600 cattle, small positive steps towards reducing stock-based ecological disturbance are continuing.

Through sustained advocacy, we have further strengthened awareness within Thailand's Department of National Parks (DNP) of the severity of livestock encroachment, not only in Khao Laem but across multiple

protected areas. Our research continues to highlight the ecological impacts of grazing and its association with increased poaching activity.

Again in 2025, we collaborated with IUCN/DNP on their proposal to the World Bank's Global Environment Facility (GEF8), which includes a dedicated component to reduce threats from cattle grazing in tiger habitats. This was approved in 2025, but now in 2026, contracts are not finalised and funds have not reached the field. The plans for community engagement, stricter enforcement and incentives for farmers to keep livestock within designated zones should soon become a reality. Unfortunately, despite time spent assisting prepare the proposal and guaranteeing cost sharing the budget we have become aware that most financial support will not go to Khao Laem park.

History of the Project:

Khao Laem National Park is one of 18 protected areas in the western forest complex. It covers an area of 935,625 rai or approximately 1,497 square kilometres. A large central valley within the park was inundated by the Vajiralongkorn Dam in 2001, reducing the terrestrial area to 1,109 square kilometres.

Situated in the Tenasserim mountain range, which straddles the Thai-Myanmar border from north to south the protected area borders Thung Yai Naresuan (West) Wildlife Sanctuary to the North and northeast, Lam Khlong Ngu National Park to the east, and Thong Pha Phum National Park to the west. This vast area is a mosaic forest of bamboo, mixed deciduous, dry evergreen, hill evergreen, and dry dipterocarp forest types. The topography mostly consists of steep limestone mountains running north to south, serving as the source of several major rivers such as the Rantree River, the Songkaria River, the Bikee River, with numerous small streams which all flow into the large Khao Laem Reservoir (Vajiralongkorn Dam). Positioned at the confluence of three biogeographical regions, the park's biodiversity-richness is high, with wildlife from both southern and northern Thailand inhabiting the area, as well as several endemic species, mostly amphibians' and reptiles. Despite being fragmented by the dam and one highway, its remoteness and rugged terrain, especially in the east, make it ideal habitat for this diverse range of wildlife.

Khao Laem management and Freeland first jointly installed camera traps in eastern Khao Laem 2014 and recorded six felid species, including the Leopard Cat (Prionailurus bengalensis), Marbled Cat (Pardofelis marmorata), Asian Golden Cat (Catopuma temminckii), Clouded Leopard (Neofelis nebulosa), Indochinese Leopard (Panthera pardus delacouri), and Indochinese Tiger (Panthera tigris corbetti). [REDACTED]

Threats to tigers and prey at Khao Laem are profuse, largely due to numerous villages located around the park border with some even located within the protected area on land allocated as a dam inundated villages in the central valley. Most communities are a mix of Thai, indigenous peoples (IPs) and illegal migrants. All engage in poaching, illegal cattle grazing and practices which are ecologically damaging such as burning the forest which they mistakenly believe assists their collection of Non-Timber Forest Products (NTFPs).

The presence of free-roaming domestic stock, mainly cattle and water buffalo but other livestock too in the Khao Laem forests introduced crossover disease threats. During 2022-23 a dramatic decline in wild boar was documented, likely due to African Swine Fever (ASF) sweeping across all of Southeast Asia. As Khao Laem has few sambar deer due to poaching the reduction in the tiger's next main prey led to a likely-associated decrease in several other ungulate species, as tigers and other large carnivores were compelled to predate smaller-sized prey. By the end of 2023, wild boar were starting to recover somewhat, and some family groups with young were recorded once again, albeit at very low densities.

In the period 2023-26, tiger monitoring at Khao Laem reverted back to using just one format; systematic long term ecological monitoring (LTM). As described later in this report SMART patrol data also provided an additional method to monitor both threat and wildlife data, but this delivers less conclusive evidence of wildlife trends than the focussed wildlife surveys.

LTM does however provide a better understanding about change within the tiger population over the longer time across seasons and years.

Totally, 37 mammal species were documented, including six potential tiger prey species; Sambar Deer (Rusa unicolor), Wild Boar (Sus scrofa), Gaur (Bos gaurus), Red Muntjac (Muntiacus muntjak), Fea's Muntjac (Muntiacus feae) and Serow (Capricornis sumatraensis) [REDACTED]. There is also high diversity of carnivores with two species of Ursidae (bears), Viverrids (civets), Herpestes (mongoose), Mustelidae (martens and weasels) and

Due to the biodiverse richness of Khao Laem, Freeland in conjunction with the DNP continue to conduct surveys to monitor wildlife status especially the Indochinese tiger population and other endangered and critically endangered mammal species in the park.

Key achievements during 2025

- 64 individual rangers mentored in use of survey equipment during LTM surveys
- 30 Regional protection rangers trained during enforcement
- Total of 136 cameras installed during LTM in twenty-two 3 x 3km grids
- Cameras operated for 11,868 trap nights
- 198km^2 surveyed using LTM techniques
- Nine individual tigers recorded (and six identified)
- 301 anti-poaching patrols conducted by 9 patrol teams over 1,909 days covered a distance of 22,312km
- 25 poaching cases, 20 encroachment, 7 cases of logging, 20 illegal fishing cases, and 13 cases of illegal NTFP collection were interdicted with 21 cases sent to the police for prosecution
- 3 villages and 93 villagers participated in conservation awareness outreach
- 5 schools were visited and 671 students received information about Khao Laem, its biodiversity and importance in both local communities' daily lives and its national importance

Obstacles to success:

Much progress was achieved in 2025 but numerous challenges remain;

1. **DNP changes in staff.** Since the project started, this project has worked with six superintendents. Each time a chief is changed, often the deputies change too. Luckily in 2025 this was not the case but even so updates about project status, aims and current situation were required twice. As there is no park management masterplan or strategic approach, specific priorities and direction are the responsibility of each Superintendent.
2. **Insufficient resources (staff and funds)** As activities have grown. it has put increased strain on available project resources, and the park has been requesting further assistance to resolve staffing and human-tiger conflict issues. We have been able to assist to a limited level, but further funds are required to support the outreach efforts in mitigating Human-Tiger Conflict (HTC). This situation is becoming resolved at the time of writing as trekking to San Nok Wua Mountain has gained in popularity, providing additional income for the park.
3. **Poaching.** Wildlife poaching remains a serious and persistent issue in Khao Laem. Long-term monitoring, [REDACTED], has enabled the clear identification of spatial hotspots where poachers, snares, and illegal collection of non-timber forest products (NTFPs) repeatedly occur. These data not only confirm the scale of the threat but provide critical intelligence for adapting enforcement strategies and targeted patrols.
4. **Engagement with certain communities** continues to present challenges. Some individuals assert perceived traditional hunting rights, despite the fact that such activities are not legally permitted within protected areas. This is particularly concerning given that residency within and along the park boundary is conditional, and formal agreements have been signed in which communities commit to refraining from hunting.
5. In addition, ongoing issues related to **free-ranging cattle grazing** further complicate management efforts. Livestock are often brought into protected areas in contravention of regulations, contributing to habitat degradation, competition with wild ungulates, and increased risk of disease transmission. The presence of cattle can also facilitate human access deeper into the forest, indirectly increasing opportunities for poaching and other illegal activities.
6. Combined the above challenges underscore the need for strengthened compliance, clearer enforcement of existing agreements, and continued engagement to address both poaching and unsanctioned grazing practices.

7. These dynamics highlight a complex enforcement landscape, where improved surveillance and more effective patrolling are revealing both the true extent of illegal activities and the need for stronger compliance mechanisms. Addressing these challenges will require a combination of sustained law enforcement, clearer communication of legal obligations, and targeted community engagement to shift behaviours and reduce reliance on illegal hunting and grazing practices. While park management has improved tremendously, more resources are required from Freeland to assist them in maintaining the higher levels of enforcement to create lasting change.
8. **Illegal gold mining** in western Khao Laem and adjoining Thong Pha Phum remains a significant and growing threat. In addition to the direct ecological damage caused by excavation and habitat disturbance, prospectors frequently "live off the land," setting snares and engaging in illegal fishing while operating in remote forest areas. This challenge has intensified considerably, driven by multiple factors including the ongoing civil unrest in Myanmar and rising global gold prices, which increase the incentive for cross-border incursions. In both Khao Laem and Thong Pha Phum, the number of undocumented migrants illegally entering Thailand from Myanmar has increased markedly. Through our ongoing work in the landscape, we have gained a clearer understanding of the scale, drivers, and spatial patterns of this illegal mining issue, enabling more informed and targeted responses.
9. **Cross-over diseases** spread by illegal cattle grazing remains a significant issue. HTC, ecological disturbance and disease spread of are likely occur if grazers continue to free-roam their stock.
10. **Forest fires** due to dry weather conditions, fires were a considerable problem again at Khao Laem this year, which preoccupied rangers and took them away from regular duties.
11. **Insufficient outreach.** While local-language outreach may help address some of the challenges with community engagement, its effectiveness is currently constrained by limited resources. Substantially increased funding is required to expand the scale, frequency, and reach of outreach activities, ensuring more consistent engagement and greater impact across target communities.
12. **Civil War in Myanmar** is leading to more migrant workers and refugees entering Thailand through the forests in Thong Pha Phum NP which adjoins Khao Laem. This causes ecological disturbance. Related subsistence poaching by armed rebels and/or Myanmar military is also occurring.

As discussed in the interim report, three key emerging and ongoing challenges were identified at Khao Laem. Since then, some issues have begun to naturally resolve or stabilise, largely due to increased patrol presence, improved surveillance, and stronger engagement with key stakeholders. In several cases, heightened awareness and consistent enforcement have led to reduced activity or behavioural shifts without the need for direct intervention. However, while these positive trends are encouraging, they remain fragile and require continued monitoring and support to ensure that gains are sustained over the long term.

13. The impact of **African swine fever (ASF)** on the prey base and wider carnivore guild ecosystem has begun to stabilise. Following an initial decline in wild boar populations, recent monitoring indicates signs of recovery as the disease wave has largely passed through the landscape. This has contributed to a gradual rebalancing of predator–prey dynamics, reducing pressure on alternative prey species and supporting improved ecological stability within the carnivore guild. Continued monitoring will be important to confirm recovery trends and assess any longer-term impacts.

10. **Climate change,** particularly during El Niño-driven dry periods, presents a growing challenge for Khao Laem National Park. The park currently lacks sufficient trained firefighting personnel, as well as the equipment and resources needed to effectively implement fire prevention and suppression measures. Prolonged dry conditions increase the risk of forest fires, while also limiting patrol capacity, as some remote areas become inaccessible due to the absence of reliable water sources. These constraints reduce both enforcement coverage and the park's ability to respond rapidly to emerging threats, further compounding management challenges.

14. In parallel, provisions under the new National Park law allowing the collection of non-timber forest products (NTFPs) have introduced additional management challenges. In 2025, this activity has occurred without clear zoning or systematic monitoring, increasing the risk of overexploitation and misuse. There is growing concern that these provisions are being exploited by migrants and

commercial interests. Long-term monitoring has already recorded increased NTFP collector presence with some bringing their dogs into the park, an illegal practice that poses further ecological and health risks. This includes disturbance to wildlife and the potential transmission of diseases such as canine distemper virus (CDV), to which tigers are particularly susceptible.

Monitoring and Evaluation:

Project implementation during 2025 was largely smooth and adaptive, despite some operational (financial) constraints. Periodic deployment of rangers to firefighting duties during the dry season reduced patrol intensity and limited wildlife survey effort. In addition, large-scale SECR surveys have not been conducted since 2022 due to their significant resource requirements. However, the project has maintained continuity in monitoring through targeted long-term monitoring (LTM) and other survey approaches.

A positive development was the increased focus on ranger mentoring, alongside expanded community outreach and strengthened data management capacity. These efforts have improved field-level skills and data quality, although continued investment in these areas will be important to maximise long-term impact.

The project work plan and logframe continue to provide a strong foundation for implementation. The availability of a Thai-language version has been particularly valuable, enabling the project coordinator to effectively track progress against clear timelines and indicators. Regular oversight by the Programme Director, including site visits and engagement with park leadership, has further strengthened coordination. The PARO3 regional office also contributes through periodic reviews and technical input.

SMART remains the central tool for monitoring patrol performance and analysing trends in threats and wildlife. We expect in successive years that EarthRanger will also play a large part in reporting and evaluation. Its ecoscope[1] feature enables rapid conclusion of key data for reporting. Monthly SMART meetings at the park level facilitate effective information flow between field teams and management, supporting adaptive decision-making. Collaboration with the PARO3 protection division has been especially beneficial, with additional ranger support provided for targeted threat response and mitigation.

Comparison and analysis of survey data continue to build a robust evidence base, establishing baselines for tiger and prey populations while also improving understanding of threat dynamics. This enables comparison across monthly, quarterly, and multi-year timeframes, strengthening the project's ability to assess trends and adapt accordingly.

Quarterly meetings with park management provide a platform to review progress and refine upcoming activities. While some issues—particularly the scale and intensity of threats—remain sensitive and complex, there is increasing openness to discussion. The project will continue to support constructive dialogue, ensuring that challenges are acknowledged and addressed collaboratively through practical and mutually agreed solutions.

Communication and coordination across the project in Thailand are highly effective, supported by the widespread use of smartphone applications. Regular communication between management and field-based staff ensures that immediate priorities are clearly understood and addressed in a timely manner. This responsiveness has contributed positively to maintaining operational momentum, even in a dynamic field environment.

Freeland maintains a structured internal communication system, with weekly management meetings where team leaders outline upcoming activities and report on key outputs. These are tracked using the project management platform Trello, enabling transparency and accountability across teams. A second weekly meeting focuses on project reporting, while a full-team Zoom call every Monday ensures alignment across the Thai team, providing a platform to share weekly plans, administrative updates, and cross-project learning.

Day-to-day communication is further strengthened through the use of multiple Line groups (Thailand's preferred messaging platform), where images, updates, and field plans are shared in real time. This facilitates rapid information exchange and also supports the communications team in capturing and

[1] https://www.earthranger.com/ecoscope

promoting project activities through social media. Collectively, these tools create a well-integrated communication system that enhances coordination, visibility, and adaptive management.

While the project would benefit from an independent external evaluation, current resource limitations prevent this. In lieu of this, we continue to engage previous consultants to provide informal feedback on progress and performance, which has been consistently positive. Nonetheless, securing resources for an independent review would add further value by providing objective assessment and strategic guidance.

Having representatives from EarthRanger visit the site in 2025 provided a valuable opportunity for knowledge exchange and mutual learning. The visit enabled the project team to share first-hand experiences of implementing monitoring and data management systems in a complex field environment, highlighting both successes and practical challenges. At the same time, EarthRanger representatives brought insights from other conservation landscapes, offering perspectives on how similar tools and approaches have been adapted elsewhere to improve operational effectiveness.

This exchange was particularly useful in identifying opportunities to strengthen data integration, enhance real-time decision-making, and further align field-based monitoring with broader adaptive management frameworks. Learning how other sites have addressed common constraints—such as limited connectivity, data flow bottlenecks, and staff capacity—provided practical ideas that can be tailored to the Khao Laem context. Overall, the visit reinforced the value of collaboration and continuous learning, while helping to position the project to make more effective use of emerging technologies in support of conservation outcomes.

Shared learning:

Knowledge generation and sharing remain central to the project's approach, ensuring that data collected contributes not only to site-level management but also to broader conservation understanding across the landscape. All information generated through the project is routinely shared with site management and its custodians, Thailand's Department of National Parks (DNP), strengthening evidence-based decision-making and enhancing understanding of tiger ecology across the wider Western Forest Complex (WEFCOM).

At a regional scale, the project has contributed data to collaborative scientific efforts, including a peer-reviewed study led by the Smithsonian Institution on the distribution and abundance of large carnivore prey species across the Dawna Tenasserim Landscape. This reflects the growing recognition of Khao Laem as an important data source within transboundary conservation research. In addition, Khao Laem datasets have been incorporated into a recently published global analysis forming one of the world's largest camera trap datasets, further demonstrating the international relevance of the project's monitoring efforts.

Data sharing has also supported more targeted research initiatives. Ungulate data from Khao Laem has been provided to a Thai student to support academic research, contributing to national capacity building, although formal publication from this work is still pending. Similarly, wild boar data has been shared with researchers investigating the spread of African swine fever (ASF) across Southeast Asia, helping to improve understanding of disease dynamics and their ecological implications.

While not all contributions have yet resulted in formal publications, the consistent sharing of data across partners, researchers, and institutions highlights the project's strong commitment to collaboration and transparency. Moving forward, there is clear potential to further consolidate these efforts into peer-reviewed outputs, ensuring that lessons learned and insights generated from Khao Laem continue to inform conservation practice at both national and global scales.

Media: Media coverage of Khao Laem National Park in 2025 remains limited, with most visibility confined to local park communications and Freeland's social media updates rather than national, or international news outlets.

Have you provided at least 2 blogs?

No. The project did not produce any written blogs, but it did share several ad hoc updates with WildCats via WhatsApp and email on relevant activities. Videos and images were also provided to the WildCats Conservation Alliance.

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

Details of activities and results:

Objective 1. Improving knowledge of tigers, prey and threats in KLNP and adjacent areas

- Captured 59 tiger detections (independent captures)
- New tigers M8, M9 & M10 suggests inward recruitment to KLNP, reinforcing corridor viability
- Wild boar (main tiger prey at KL) RAI was 11.52 (exceeding target: 10.00)
- Gaur above target at RAI 2.57 (Target was predicted at 1.00)
- Sambar, Serow and muntjak RAI and detections below predicted targets
- 248 poacher incidents recorded (baseline: 8) during LTM led to an RAI of 2.09
- Domestic dogs increased from 9 to 134 with an RAI of 1.13 (target: 0). Almost all dog records from western Khao Laem.

Objective 2. Mentoring capacity in DNP staff to manage and analyse data to foster greater understanding of threats and forest connectivity *and;*

- Trained 64 rangers in LTM protocols in SMART data collection
- 30 rangers were trained in the use of SMART mobile application and 20 in EarthRanger application
- [REDACTED]
- Training. A grand total of 158 rangers were trained in various skills

Objective 3. Reducing specific threats to tigers, including cattle grazing in the park.

- Reached 5 schools (671+ students)
- 3 villages (93 villagers)
- Limited interactions with cattle owners and little improvement on cattle situation.

See logframe later in the report for greater detail;

Section III. Appendix

Did you carry out camera trapping as part of this project? Yes

If yes: Total camera trap nights/days:	**Total area surveyed:**
LTM. 136 cameras produced a combined total of **11,868 survey days**	LTM East. 18 x 3x3km grids and west 4 x 3x3km grids Totalling 198km^2.
Numbers of tiger/leopard/prey recorded During LTM nine individual tigers were recorded with 59 independent captures (IC) over 169 total captures (TC). Seven prey species were recorded during LTM over 2,153 independent captures.	**Please include data on other species recorded** Totally 37 mammal species were recorded – see list in appendix Felines included; Indochinese Leopards (both spotted and melanistic morphs) over 76 IC with 245 TC recorded an underdetermined number of individuals. This is an ~26.67% increase from 2024 Clouded leopards. 15 IC & 5 TC (a decrease of 66.67% from 2024) Golden Cats. 12 IC & 55 TC (an increase of ~71.43% increase from 2024) Marbled Cats. 7 IC & 27 TC (an increase of 1100% from 2024) Leopard cats. 72 IC & 219 TC (an increase of ~111.76% increase from 2024) Other recorded carnivores include; Dhole, Asiatic black bears, Sun bears, hog badgers, and several civet species.

Are numbers of tigers/prey increasing or decreasing in your project area?

Tigers (individuals recorded over 8 years)

2018	2019	2020	2021	2022	2023	2024	2025
3	6	4	4	8	6	3	9

Trend – increasing

Combined Prey IC (Combined each year for 8 years

2018	2019	2020	2021	2022	2023	2024	2025
192	546	766	1,098	494	870	846	2,153

Trend – decreased 2022-24 and during 2025 increasing

See comparative tables/graphs in appendix for other felids and prey records

Did you carry out other surveys? No.

If yes:

Did you carry out patrolling as part of this project? Yes (as a cost share)

If yes:
Total distance patrolled: 23,093km

Total area patrolled: 65.21% of Khao Laem = 976.194km^{2,}

Do you use Patrol Monitoring software such as SMART? Yes. Both SMART and since December 2025 EarthRanger

If yes:
Total distance patrolled using patrol monitoring software? As above

How do you collect data? Handheld devices/paper/other? Please give details?
Hand held smartphones, Garmin GPS and paper reporting forms. Data given to SMART technicians.

Please provide comparison data on from your patrolling over time

See tables in accompanying report

Distance patrolled

NO	Team Name	Team Name (Thai)	2022	2023	2024	2025
			Kms	Kms	Kms	Kms
1	Pha Pheung Team 5	ผาผึ้ง สายตรวจที่ 5	1,666	3,885	3,377	2,601
2	Ran Te Team 8	รันตี สายตรวจที่ 8	1,987	1,131	1,797	1,844
3	Nong Kum Team 7	หนองกุ่ม สายตรวจที่ 7	1,408	2,192	2,296	2,693
4	Huai Kaying Team 4	ห้วยเขย่ง สายตรวจที่ 4	3,322	2,857	2,423	2,728
5	Ong Phra Team 6	องค์พระ สายตรวจที่ 6	2,942	2,057	3,159	3,344
6	Kroeng Kaweir Team 3	เกริงกระเวีย สายตรวจที่ 3	2,055	1,851	2,708	2,398
7	Radar Team 1	เรดาร์ สายตรวจที่ 1	1,623	1,485	3,154	3,571
8	Bor Ong Team 9	โบ่อ่อง สายตรวจที่ 9	1,143	2,158	1,958	2,211
9	Potana Team 2	โปตาน่า สายตรวจที่ 2	1,430	1,211	1,496	1,703
	Totals to date	**Totals**	**17,576**	**18,827**	**22,368**	**23,093**

Interdicted crimes over time

Type	2018	2019	2020	2021	2022	2023	2024	2025
Encroachment	1	3	8	6	1	2	2	20
Wildlife Poaching	25	215	65	83	24	27	14	25
Illegal fishing	0	54	38	38	12	21	11	20
Illegal logging	7	56	44	26	9	5	3	7
Illegal NTFP collection	0	61	41	64	10	27	62	13
Prosecutions (Court)	0	4	12	10	2	1	0	21

Was the data you collected analysed by a SMART specialist?

Collated, but not analysed

Please provide data on violations recorded/arrests/successful prosecutions

Item	2018	2019	2020	2021	2022	2023	2024	2025
Cases combined	33	389	196	194	56	82	91	72
Prosecutions (Court)	0	4	12	10	2	1	0	21

The judicial process in Thailand is often prolonged, with wildlife poaching cases often taking up to four years to reach conclusion. We do not have data on how many of these cases sent to the court resulted in a final judgement. For minor offences, administrative fines are typically imposed at the park level.

Does your project work with local communities? Yes, but very low level due to limited financial resources and local language (Karen) issues		
If yes: (please be as specific as possible and include gender split) Who? See table below 93 (57M/36F)	**What did you do? Was it successful?** Activities involved; Community visits to four villages to explain about local laws, responsibilities of residents if they reside inside the PA, why conservation of wildlife and forests is important. Why cattle are ecologically damaging. These figures do not include the park's Protected Area Committee (PAC) figures or ad-hoc fire suppression training.	How many people did you reach? 93 adults (areas close to KLNP included; mostly Karen indigenous people)
How do you measure the success of this activity? Outreach success in the Khao Laem tiger project is measured first through the scale and consistency of engagement with local communities and stakeholders. This includes the number of activities delivered, such as school visits, village meetings, and Protected Area Committee (PAC) sessions. The total number and diversity of participants reached, and the coverage across (high risk poaching) communities surrounding the protected area. Beyond participation, the project assesses whether outreach is translating into meaningful changes in awareness and behaviour. This is captured through improvements in knowledge of wildlife laws, shifts in attitudes toward conservation and willingness to cooperate with park management. Indicators include the adoption of practical measures such as reduced livestock free grazing, decreased involvement in poaching, increased willingness to report wildlife crime or sightings. Growing community participation in conservation activities and informal support to patrol efforts further demonstrate that outreach is influencing how people interact with the landscape. For students pre/post-tests measure immediate uptake of concepts explained and for adults strengthened relationships between communities and park authorities as evidenced by improved dialogue, collaboration and integration of community perspectives into park management through PAC meetings.		
Did you carry out educational activities with adults or children? Yes, as a cost share – see below		
If yes: (please be as specific as possible and include gender and numbers)	**Activities involved;** 4 school visits over 2 days (TPPNP); 4 school visits over 3 days (TPPNP & KLNP); 4 school visits over 3 days (KLNP)	**How many people reached?** 671 students

671 (325M/325F) students and *with more details in appendix*		

Have you seen behaviour change from these activities? (Please give details of your results and of how this is measured)

Communities have become more receptive to park-led engagement, with increased participation in meetings and improved dialogue with authorities. This is accompanied by early signs of better compliance with park regulations in Khao Laem, suggesting growing trust and gradual shifts toward more conservation-aligned behaviours.

In schools, pre- and post-session evaluations measure immediate knowledge gains on topics such as wildlife conservation and coexistence. Results show clear improvements in understanding, while for communities two follow-up questionnaires assess retention and comprehension including a new "living with tigers" questionnaire which captures changes in perceptions of risk, tolerance, and adherence to laws in tiger habitats. Together, these tools help us understand the community's feelings to assist us in refining delivery of outreach and to clear misunderstandings among community members about what is permitted (or not) inside the protected area.

Did you carry out training activities for any staff/community member on the project? Yes

If yes: (please be as specific as possible and include gender split)	**What did you do? Was it effective?**	**How many staff trained?**
A) In December 2025 an enforcement training activity was implemented for twenty (20/0) protection rangers at Panom Thuan as they assist and bolster Khao Laem rangers if required. B) Only one other external training activity in which two (male) Khao Laem officials participated in an EarthRanger application workshop.	A) To date no validation of the enforcement training has been conducted. We hope to implement this mid-2026 during a combined actual patrol that involves the trainees, experienced rangers and instructors. A patrol will be conducted and evaluations of skills and memory will define skill retention. All participants were immediately tested during the course and passed. B) The workshop explained how to integrating EarthRanger into park management will significantly strengthen adaptive decision-making by centralizing real-time data from patrols, camera traps, and community reports into a single, accessible platform. This will enable managers to quickly identify emerging threats, track patrol effort and effectiveness, and respond more rapidly to incidents such as poaching or human–wildlife conflict. By improving data visualization and analysis, EarthRanger supports more strategic deployment of resources, enhances coordination between park staff and stakeholders, and ensures that information generated through outreach and field	Just two officials trained Note. Three Freeland staff received training in SMART mobile and EarthRanger use relating to this project.

	activities directly informs management actions, ultimately leading to more efficient and responsive protection of tigers and their habitat. Activity was effective, but additional site-based mentoring for implementing officials will improve their confidence and skills. EarthRanger technicians have been very helpful with this, making several site visits to Khao Laem.	

How do you measure the effectiveness of this training?

Training validations are always conducted by Freeland approximately 6 months following delivery

Did you carry out conflict mitigation activities with community members? No

If yes:	What?	How many people did this include?

Have you seen behaviour change from these activities? (Please give details of your results and how this is measured)

Although the community engagements by Freeland have improved dialogue and willingness to cooperate, broader socio-economic and geopolitical pressures still weaken sustained community support for conservation. Chronic poverty, limited livelihood options, and the need for immediate income drive reliance on illegal activities such as cattle grazing, logging, and poaching, even among those who understand the associated impacts. These pressures are further exacerbated by instability linked to the ongoing conflict in Myanmar, which has increased cross-border movement, strained local resources, and contributed to a more complex and often insecure operating environment. In some western Khao Laem communities, the presence of undocumented migrants and individuals connected to armed groups, including elements associated with the Karen National Union, adds an additional layer of difficulty for enforcement and engagement. As a result, while communities may express conditional support for conservation, particularly where benefits are evident such as gold mining, this support is often fragile and undermined by competing survival needs and external influences. Strengthening long-term behaviour change will therefore require not only continued outreach, but also increased enforcement, targeted livelihood support, and sustained investment in staffing and resources to effectively monitor and respond to these complex dynamics.

Were any scientific papers/articles published because of your project?
Data was contributed to several papers some of which are still in the publisher's review and editing stage

If so, please give details or provide copies.
These will be provided following publication

Work plan

Below is the final work plan for 2025 and concluding at the end of January 2026. All activities were implemented as predicted and almost all targets achieved with one exception, the number of students reached during school outreach.

2025 Logframe with results "Khao Laem: Tiger Conservation Project, Phase 7"

			2025											2026	Post
		Month	1	2	3	4	5	6	7	8	9	10	11	12	13
Objective	Activity	Team Members	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Objective 0. New project Inception; planning, preparation and project management															
0	Meeting park management to update project aims and synchronising survey's with patrol plans	TR, WI, NH	✓			✓			✓			✓			
0	Planning surveys, data management and analysis	TR, WI & NH		✓		✓		✓		✓		✓		✓	
0	Participating in Khao Laem's monthly SMART meetings	WI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Objective 1. Further improving understanding of tigers, prey and threats in KLNP															
1	Conducting tiger surveys - long term monitoring (implementing, data cataloguing and data analysis)	WI, SR, TR	✓KL42		✓KL43		✓KL44			✓KL45		✓KL46			
Objective 2. Introduction of new park management technology & associated capacity development for officials															
2.1	On-job-training SMART data rangers	WI, SR	✓		✓		✓		✓	✓	✓	✓	✓	✓	
2.2	Introduction of new technology - S (SMART Mobile/Connect) & E (EarthRanger) & capacity development in this new technology for officials (Part cost share)	ER, TR, WI, WJ, NH			X ($)					X (ER)	✓ ($)	✓ (ER)			
2,3	Enforcement ranger training. (Cost share)	WJ											✓		
2.4	Use of GSM cameras refresher training	WJ				✓		✓		✓				✓	
Objective 3. Reducing threats through Outreach															
3.1 a&b	Community awareness visits to known 'poaching hotpot' villages (& schools as cost share)	WR, WI	X	X	X			✓		✓	✓				
3.2	Solidifying new partnerships to collaborate on community outreach.	TR, KN	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3.3	Reducing domestic stock grazing in Khao Laem (in collaboration with new GEF8 project)	TR, WI				✓	✓	✓	✓						
Others.															
M&E	Monitoring and Evaluation		Continued throughout the year												
R	Reporting and debrief with PA (including midterm evaluation and review)	TR, SS, WI							✓						✓

Team members:
TR - Tim Redford, WI - Wongsathit Intawong, WR - Waraporn Raksachat, SR - Sayan Raksachart, KN - Kajohn Nutaung, WJ - Worawat Jaruwattanapong (DNP), ER = EarthRanger, NH - New hire

Impact; To 'Secure the Thai tiger population by institutionalising sound conservation practices', with the goal of contributing towards doubling its population by 2034			
Project Summary	**Measurable Indicators**	**Means of Verification**	**Final outputs / situation status**
Goal; The goal is to introduce and institutionalise contemporary park management practices at Khao Laem National Park to improve tiger conservation. **Broad objectives;** **a) This year new technology will be introduced to increase the impact of patrols in reducing threats, subsequently enhancing protection for the entire protected area and its biodiversity.** **b) Monitoring will identify threats, and**	**Indicator A. Standardised long-term monitoring (LTM) methodology continues and tigers, prey and threat data are produced at Khao Laem.** Indicators in Objective 1 will record; **-** A measurable increase in survey effort and size of surveyed area **-** Persistence of the resident tiger population demonstrating stability - The tiger population increases **-** Unknown dispersing tigers are recorded, identified and catalogued by sharing images with the regional tiger research station at Khao Nam Ram in Huai Kha Kheng Wildlife Sanctuary **Indicator B. Survey data analysis improves the understanding of tiger density and produces comparative baseline figure for tigers** *- We will continue to update the tiger density figure (tigers per 100km^2).*	**Verification A1**. Tabular data from surveys validates the increased level of effort, with a secondary verification being an increased quantity of images compared with previous years. **Verification A2.** Individual tigers are positively identified utilising the existing Khao Laem and national tiger databases **Verification A3.** Jointly comparing tiger photos with DNP national tiger database differentiates resident individuals from those dispersing from the Thung Yai-Huai Kha Kheng source site. **Verification B1.** Initial analysis of new camera data	**A1.** During tiger monitoring activities, followed a (Thailand) standard DNP protocol which all conservation groups and the utilise to ensure data is comparative. 2024 quantity of survey images IC 3,117 & TC 9,005 2025 quantity of survey images IC 6,426 & TC 14,665 *This represents an approximate 106% increase in independent captures (IC) recorded.* **A2.** During 2025 we were able to maintain a similar LTM survey area of operations with the level of effort only slightly down to 198km^2. We were able to survey some remote areas that had not been surveyed since the 2020-22 SECR survey. This contributed to increases in both total and independent tiger image captures, resulting in a higher number of individually identified tigers. A3. Five of the 22 dispersing tigers from the HKK-TY Source site for each was identified. B1. Only a minimal data analysis was conducted this year, as resources and data remain low. We were able to obtain RAI figures for the tigers, other carnivores and prey. B2. No feedback or news from the author of the landscape-scale prey data analysis paper. This

record trends in tiger and prey populations. **c) Outreach will engage poaching high-risk communities and gain their trust and support.** **Outcome; Khao Laem will function more effectively, Emerging threats will be mitigated sooner, poaching reduced and a tiger recovery will be documented across a critical corridor section of southern WEFCOM**	*- 2021-22 data established an occupancy of 1.2/100km^2 for eastern Khao Laem. Deeper analysis has been hampered by the dearth of tiger data which is proving insufficient for deeper analysis* *- Prey data is compared and density is at a sufficient level to support the local tiger population. Note prey density figures were shared with Smithsonian Inst. (2022) who are compiling a DTL landscape-scale paper comparing large carnivore prey densities between Thailand and Myanmar.* **Indicator C. Patrol support** (Cost share): KLNP demonstrates continues commitment for park-based wildlife and violation monitoring. Relevant SMART and the newly introduced EarthRanger based metrics supporting this will include; *Number of potential threats, or disturbances, documented and compared for changes over seven years starting with 2018 baseline figures (see previous project reports). Indicators are; "% area covered" "patrol days/month," "Patrol kilometres covered/month" and "patrol hours/month.*	using Camerasweet[2] and later during a data analysis workshop (2025 date TBD) using R suite (or similar) analytic packages, will re-confirm tiger and prey abundance for Khao Laem NP. **Verification B2.** Comparing prey density figures with other sites to understand if it is sufficient to sustain the resident tigers and enough to support a population recovery. **Verification C1.** KLNP's SMART database will be utilised to compare the previous 8 years patrol coverage, violations and wildlife sign data. As patrols become more effective, we *eventually* expect to observe a decline in violations and a subsequent increase in wildlife sign records. However, there are many factors that influence variation either way, some of which require attention	research is still on-going and we hope it will eventually be concluded. The quantity of poacher images in 2025, especially in the West demonstrates poaching of prey remains a constraining factor for the persistence of tigers. C1. From the tables in the report appendix, we can see that SMART is now being regularly utilised. Records demonstrate an increase in violations in 2025. This is directly related to the increased effort from the new park superintendent. C2. Evidence proves poaching remains a serious issue and that patrol rangers are missing many events. C3. There remains a sensitivity about the actual level of violations reported. Therefore, figures may not truly represent the actual situation. It should be noted that SMART was comprehensively utilised throughout the year, with monthly reports produced every month. Regular monthly SMART patrol meetings were also held, during which patrol routes were planned. However, these efforts remained primarily focused on ensuring coverage, rather than enabling reactive or adaptive responses to poaching. More mentoring on adaptive responses is required.

2

	Number of patrol reports generated independently by the park (Baseline 12 – remains at 12) *Overall improvement in patrol effectiveness will be compared with the 2024 results. Utilising SMART we will continue comparing results each year from the 2018 baseline (see previous project reports) to demonstrate change over the long term.* *Additional metrics will include; poachers (or evidence of poaching) encountered per 1,000 hrs patrol time; cattle encountered per 100 hrs patrol time.*	before SMART becomes totally reliable, e.g., excessive patrol coverage is distracting from interdictions and currently reducing these. We do not believe patrolling is achieving its desired deterrent effect. **Verification C2.** We (unofficially) audit SMART data by conducting random comparisons with data obtained directly from rangers. **Verification C3.** Post-project debrief questionnaire with DNP officials with key focal indicators reviewed, including ranger efficiency, interdicted crimes, and news from confidential informants.	
Objective 1. Further improving understanding of tigers, prey and threats in KLNP			
Output 1 Between February 2025 and January 2026, six long-term ecological monitoring surveys will be implemented over three	**Indicator** 1a. A minimum of 180km^2 (20 grids) of tiger habitat in eastern Khao Laem will be re-surveyed. With the aim of increasing this by 20% to be 216km^2 (24 grids) during the 2025-6 period. Some sites not previously surveyed using LTM methods will be included.	**Verification** 1a.1. Camera-trap survey results will lead to an immediate identification of individual tigers and prey species and a basic understanding of abundance	1a.1. All aspects of this objective were achieved. 198km^2 was surveyed surpassing our baseline. But we only surveyed 22 grids slightly missing our predicted target of 24 grids. **Total 198 km^2 surveyed**

survey routes utilising a minimum of 20 cameras in Eastern Khao Laem and 6 cameras in key areas in Western Khao Laem as tiger track and sign information guides.	Baseline: 180km^2 in eastern KL and 45km2 in western KL (surveyed in 2024) LTM survey coverage. **Target: 216km^2 surveyed** # Tigers initially identified during survey Baseline: 6 (2023-4), **Target: >10** # Prey species identified during surveys. Baseline: 5, **Target: >6** % Increase RAI for tigers and 5 prey species. Baseline tiger: 0.42, **Target: 1.00** Baselines for prey: Wild Boar: 0.25, **Target**: **2.00** Gaur: 0.52, **Target**: **1.00** Sambar: 0.05, **Target**: **1.00** Serow: 4.45, **Target: 5.00** Muntjak: 3.61, **Target: 5.00** Indicator 1b. #Threats recorded during surveys (especially poachers and dogs) decrease (also linked to Objective 2). #Poachers recorded baseline: 6, **target: TBD** (Note: forest edge cameras record more poaching) #Dogs recorded, Baseline: 12, **target: 0**	of these using both RAI and occupancy. **Verification** 1b.1. Direct counts of threats recorded in camera trap images and their comparing with previous years surveys **Verification** 1b.2. Following data analysis and discussions during the proposed post activity workshop, key dispersal sites requiring increased protection will be identified.	1a.1. Tigers identified. Baseline of 6 tigers identified was met. With 3 further tigers remaining unidentified (challenges were blurred images and/or one flank only) 1a.1. Capture rates of certain prey species remain below targets. One remote survey area previously thought to be devoid of Sambar deer has proven that it has a recovering population (many young deer observed). The sambar records in 2025 are more than all previous years combined. This is additional good news, as the wild boar are also recovering from ASF strengthening the entire prey base. Wild Boar: 0.25, Target: **2.00** Actual **RAI. 11.52** ↑ Gaur: 0.52, Target: **1.00** Actual **RAI. 2.57** ↑ Sambar: 0.05, Target: **1.00** Actual **RAI. 0.6** ↓ Serow: 4.45, Target**: 5.00** Actual **RAI. 0.81** ↓ Muntjak: 3.61, Target**: 5.00** Actual **RAI. 1.6** ↓ 1a.1. RAI records were generally on track and some targets were surpassed due to the increase in survey effort. Some variations in figures as some LTM cameras were re-located to better tiger habitat. Sample Tiger Baseline: 0.42, Target: 1.00 Actual RAI 0.5 1b.1. Threats recorded during surveys (especially poachers and dogs) recorded considerable increase as survey grids in western Khao Laem, known as poaching hotspot areas were revisited.
Objective 2. Introduction of new park management technology & Capacity development for officials			

Output 2a. This activity will implement four forms of capacity development for Khao Laem officials', outputs listed below; 2.1) **Data collection On-job-training** (OJT) during surveys. Data collection conducted in the correct manner will increase the volume and quality of field data delivered and entered into SMART (& Earth Ranger).	**Indicator 2.1** will be the number of rangers who receive data collection training during surveys. This is generally 6 rangers per team and we are expecting at least two teams per LTM survey. As we have now formally trained all KL permanent rangers, we do not expect to surpass that figure. The proposed OJT will be in refresher format to update already trained rangers. Current baseline: 75 **Target: 60** **Milestone 2.1** Will be 12 rangers trained every 2 months.	**Verification 2.1** Each survey, the participating rangers will be listed on the survey data sheets and names maintained. This is untested OJT and each team leader will have the responsibility to administer training and assess the skills of recipients (validated by Freeland staff). Names of OJT participants available on request. Volume of data is being compared with previous months and years using SMART	**2.1** Only four surveys were conducted during 2025 (KL43-46), nevertheless the number of rangers trained and mentored in data collection surpassed the target figure. Totally 64 rangers were trained in data collection.

2.2) **Introduction of new technology & capacity development for officials.** Introduction of SMART Mobile/connect[3] and EarthRanger[4] will increase ranger-based data collection and input. This will improve analysis and subsequent adaptive management. Training and support will be provided for these two applications. Note, we have already established contact with ER and have a pledge of their support to introduce at KL	**Indicator 2.2** Will be a combination of # new apps introduced (and in use) and the number of officials receiving training. Current baseline: 0 **Target 2.2.1:** First app (SMART Mobile) introduced & 2 technicians trained (6 months) **Milestone 2.2.1** SMART Mobile/connect introduced, trained and in use 6 months **Target 2: Second** app (EarthRanger) introduced and 2 technicians trained (12 months) **Milestone 2.2.2** EarthRanger introduced, 2 technicians trained and in use 12 months	**Verification 2.2** A short internal report from Freeland with extracted highlights from the two new apps will demonstrate use and ability of technicians. Highlights to be included in project reports.	**2.2.** The predicted number of SMART/EarthRanger data technicians (data management) was 3 - surpassed the target A further 30 patrol rangers were trained to use SMART mobile and 20 in us of EarthRanger. Finally, two officials went to Bangkok to participate in an EarthRanger training workshop conducted by A12

[3] https://smartconservationtools.org/en-us/Download/SMART-Mobile

[4] https://www.earthranger.com/

2.3) **Enforcement ranger training**. (Formal training) Training of patrol tactics and other basic skills to improve patrol success.	**Indicator 2.3** # rangers trained & tested Current baseline: 20 rangers trained **Target: 25** rangers to be trained **Milestone 2.3** Course was planned and conducted in final period of 2025 so no midterm indicator was provided.	**Verification 2.3** A training course report explains specific objectives and describes the training course content and topics taught. Instructors will review each of the 25 participants and they will be scored during a test. We would expect to see an increase in the number of criminal interdictions following the course.	**2.3** Twenty rangers were trained in enforcement and other park protection activities at Panom Thuan DNP Forest protection centre in December 2025. Topics included; use of VHF radios, wilderness first aid, navigation and SMART application and SMART data collection during patrols
2.4) **[REDACTED]**	**Indicator 2.4 [REDACTED]**	**Verification 2.4 [REDACTED]**	2.4 **[REDACTED]**

Objective 3. Reducing threats through community outreach			
Output 3 **3.1a Community awareness visits** to known 'poaching hotpot' villages to create a better awareness about national laws and local regulations to reduce violations and foster improved interactions with Khao Laem management.	**Indicator 3.1a** There are several indicators for these visits; # of villages visited, # participants (M/F) reached, responses to pre/post activity questionnaires Current baseline: 4 village **Target: 6 villages** **Milestone 3.1a** Two villages visited in the first 6 months of 2025 Note. No predicted target was defined, as participation is voluntary by villagers and often, they prioritise their livelihoods over sitting in meetings.	**Verification 3.1 a&b** Report (Thai language) about community and educational outreach to be prepared by implementing staff. Relevant information to be extracted and included in interim and final reports. To assess knowledge retention, we will conduct post activity questionnaires/interviews with adult recipients approximately 6 months following activities. These will be further verification evidence.	3.1 The number of villages visited was less than anticipated. During the three village visits, the outreach team met 93 (57M/36F) villagers 3.2 Most outreach activities were implemented in conjunction with the Border Patrol Police (BPP). They have a good relationship with villagers as they provide schooling and healthcare for villagers in return for their cooperation in national security. **Note.** Many recipients of the project outreach interventions are indigenous people (Karen, Mon and other smaller groups) some with limited Thai language reading and writing skills. So, activities tend to be more activity-based and verbal in both delivery and follow-up.

3.1b conducting awareness in local schools. We now have a working relationship with the Thai Border Patrol Police at Khao Laem. We will conduct more conservation awareness in their schools and training teachers to use our 'Teachers for Forests' Thai language training guide.	**Indicator 3.1b. School visits**; # of schools and # student participants (M/F) Current baseline: 8 schools visited **Target: 8 schools visited** Current baseline: 942 students reached **Target: 1,000 students reached** **Milestone 3.1b** four BPP schools receive conservation outreach in first half of 2025 and eight by end of 2025	For students (beyond the immediate post activity tests) we will continue guiding teachers to use the Thai language 'Teachers for Forests' manual and follow-up visits will determine if our manuals are actually being used by teachers.	3,1b During 2025, conservation outreach activities were delivered to five schools and three villages surrounding Khao Laem National Park, with a total of more than 671 (325M/346F) students reached. Twenty-three teachers also received instruction on how to use the 'Teachers for Forests' manual so they can introduce their own conservation awareness classes should they wish.

3.2 Solidifying new partnerships. To foster greater collaboration with communities we will partner more with the Border Patrol Police (BPP). Within this we will try to identify enthusiastic local community members to help them establish and lead new (informal) civil society conservation-focussed groups. Or alternatively find new outreach partners further away in other parts of Kanchanaburi.	**Indicator 3.2 Civil Society Organisations established/new partners identified and engaged in outreach** Current baseline: 0 groups **Target: 1 group** **Milestone 3.2a** Two organisations found and/or established in 2025	**Verification 3.2.** Verbal agreements, or confirmations of collaboration with at least one potential partner agencies. **Verification 3.2. a & b.** A section in the outreach report will document civil society meetings and topics. If feasible commitments by villagers to reduce free grazing cattle will be obtained. We are considering written pledges, although this may be difficult due to the various indigenous languages being used in these communities.	The project has established contact with one informal local CSOs who area of operations is just northwest of Khao Laem. We will solidify ways to collaborate with them in 2026. The cooperative relationship with the Border Patrol Police schools remains strong.

3.3 Reducing cattle in Khao Laem (The new DNP GEF8 tiger grant has a component for this, but it still not operational)	**Indicator 3.3a.** A short report documenting change from 2024 (locations of villages owning cattle and numbers of cattle in each) **Indicator 3.3b.** Increase in community meetings to negotiate the further removal of free-ranging stock from Khao Laem Using 2023 baseline: 1 meeting **Target: 4 meetings** (in first half of 2025) **Milestone 3.3a/b.** 2 further meetings held in second half of 2025	**Verification 3.3a** Cattle figures checked and verified with local administration officials and park management then variation with previous registration compared.	3.3 Status of cattle in Khao Laem National Park. Domestic livestock remains a persistent issue. During the last census in 2024, rangers estimate the total number of cattle and buffalo at approximately 7,000 animals, including some goats. Key areas with livestock presence include: (1) along Route 323 Thong Pha Phum to Sangkhlaburi roadside, (2) Pilok Kee, (3) Huai Ong Phra-Bikee area and Pong Cha La area adjoining TPP NP. Islands within the reservoir are also used for grazing, as receding water levels during the rainy season expose vegetated banks. These islands are likewise used by wildlife; both tigers and their prey utilise them as stepping stones when moving across the reservoir. While physical removal of livestock has again seen limited progress, activities in 2024–25 included 6 meetings led by the DNP primarily focused on farmer engagement. This included meetings to raise awareness among local residents of the legal and ecological impacts of livestock grazing within the park. These efforts are intended to build cooperation and lay the groundwork for more effective enforcement in the future. Additionally, a group of 20+ wild elephants, originally from Lam Klong Ngu entered agricultural zones in Thiphayu village in the eastern sector of the park. They remain an issue and in 2026 Freeland will conduct a training workshop for affected farmers demonstrating how to safely move elephants back to the forest.