

**PUBLIC VERSION**

|  |
|--|
| <b>Section I. Project Information</b>  |
| <b>Project Title:</b><br>Khao Laem: Conservation in one of Thailand's Frontier Tiger Parks                                       |
| <b>Grantee Organisation:</b><br>Freeland Foundation  |
| <b>Location of project:</b><br>Khao Laem National Park<br>Kanchanaburi Province, Western Thailand<br>See map in appendix         |
| <b>Size of project area (if appropriate):</b><br>Size of PA - 1,496.93 km <sup>2</sup>   |
| <b>Partners:</b><br>Management of Khao Laem National Park, Department of National Parks Wildlife and Plant Conservation (DNP's). |
| <b>Project Contact Name:</b><br>Tim Redford  |
| <b>Email:</b>  |
| <b>Reporting period: February 2019 to February 2020 (13 months)</b>  |

**Section II. Project Results**

**Long Term Impact:**

This survey project led by Khao Laem National Park for the first time categorically proves the presence of tigers at this site and progressed the recovery of tigers in Thailand by ensuring these tigers are recorded and included into tiger conservation planning, especially important for the concluding review of outcomes from the current Tiger Action Plan 2012-2022. Such information will also help prioritise protected areas for inclusion in the successive tiger action plan due in 2022. We anticipate such understanding will assist KLNP site gain increased government support, which will help ensure the long-term protection of Indochinese tigers. This is relevant both at this site and across the South Western Forest Complex (sWEFCOM) as protected areas are contiguous and tigers can disperse in any direction. While implementing this project we have learnt about gaps in forest connectivity, which if closed will give enhanced protection, or integrated into existing protected areas may improve dispersal corridors. Equipped with this information we can now look at ways to discuss those sites with the relevant agencies to understand why they exist in the first place and if the corridor status may be altered, as a way to enhance protection. Although it is too soon to prove any long term impact of this project, increased awareness of tigers and threats will help ensure measures to improve protection and facilitate safe dispersal are put into place. Combined, these will undoubtedly improve the prospects for a recovery of this species.

## Conservation Outcome:

Due to a strong national commitment by the Royal Thai Government to conserve its natural resources the Kingdom has a highly developed protected area system, complete with many trained rangers protecting and monitoring, who's role it is to prevent poaching, logging, encroachment and more recently human-wildlife conflict. This is very important as it has facilitated the persistence of tigers in Thailand, even at a time when their numbers are dwindling in many range states, or have been completely extirpated in some. Most tiger conservation focus in Thailand is on the two UNESCO Natural World Heritage Sites; Huai Kha Kheng-Thung Yai World Heritage Site (HKK-TY) and Dong Phrayayen-Khao Yai World Heritage Site (DPKY). From a tiger conservation perspective HKK-TY has received considerable attention; however further south in the same forest complex, southern WEFKOM's PA's, including Khao Laem National Park (KLNP) have been largely overlooked. Evidence gleaned from this project suggests Khao Laem is highly likely be of extreme importance for tiger conservation by facilitating tiger dispersal across this southern section of the complex, as well as accommodating its own breeding population.

Specifically this project has contributed towards three conservation outcomes:

1. Improved knowledge of resident tigers in KLNP; when this project started there was little evidence that tigers persisted in Khao Laem, no one was aware of how many and their distribution in the forests in this protected area. This situation has now been revised considerably and we have now have sound information about how many tigers there are. In the next stage of this project we will expand utilisation of trail cameras, by placing them in pairs at each site where tigers were recorded to identify individual tigers.
2. Increased understanding of KLNP's role in facilitating tiger dispersal within WEFKOM. By sharing photos' with the DNP's research station in HKK we found that only one tiger was previously identified. There is still much to learn, but it appears that not only is KLNP a dispersal site for tigers seeking to establish their own territories - it is a tiger reserve in its own right with resident tigers present throughout the year.
3. In the short term the third of our predicted outcomes was only been partially achieved. This is in the form of measurably improved patrolling results and consequently protection of the site. We can see from tabular data below that the number of crimes interdicted by rangers has increased dramatically e.g. 25 poaching interdictions in 2018 compared with 215 in 2019 - an 860% increase in actions. This may not be as alarming as it initially seems, as it is normal to see an increase in detection rates of crimes prior to any decrease, and before enforcement starts to deter poachers. Reporting such wildlife crime information bolsters SMART, as data improves the analytic ability of the software. However, the practical skills of enforcement managers and senior staff are still required for final decision making during adaptive management. At KLNP holding open SMART reporting meetings each month has further allowed field-based experience to be integrated into evaluation of poaching trends and park protection has benefited because of this. There are limitations with available budgets though and so this increased data reporting is improving focussed patrolling with less than optimum resourcing. Improved management and protection strategies have occurred at KLNP, but without understanding what is happening in the other protected areas in Southern WEFKOM it is difficult to judge changes as a whole for the landscape. In 2018 ZSL Thailand helped convene a meeting with all south WEFKOM parks and conservation partners and this demonstrated protection gaps and weaknesses. This was an extremely useful exercise and led to increased collaboration between parks in the form of joint patrols at parks with shared borders. Results demonstrated such patrols were more effective than those conducted by a single PA. There would be advantages with organising a second south WEFKOM strategy meeting in the near future, if the DNP were amenable to this and funding available.

An important output of the project has been on-job-training in survey techniques which led to a competent team of rangers able to conduct a whole section of the survey independently. This is an important legacy for future wildlife monitoring at this site.

## Summary of activities and achievements:

Thailand has become one of the last strongholds for wild tigers in Southeast Asia. However, the long term survival of Indochinese tiger is not yet assured and bolstering of conservation capacity and mitigation of threats within tiger reserves is critical. The Western Forest Complex (WEFCOM) is well established as a tiger conservation landscape of global priority and evidence suggests tigers are dispersing from source sites within this complex to adjoining PA's. However, there remain substantial gaps in understanding of where tigers occur and the degree of connectivity to allow safe tiger dispersal. Although Southern WEFCOM's Khao Laem National Park (KLNP) has received little conservation attention compared to adjoining parks, evidence now suggests this site is of major significance for tiger conservation.

Surveys recently documented tigers, which increases proven tiger distribution across WEFCOM. Several individual tigers were confirmed

Strengthened patrols and park-based monitoring are exceeding expectations, catalysed by considerable enthusiasm among park staff. This additional knowledge of tigers, prey, threats, and patrol effectiveness will help protect the KLNP population of tigers

This news is exciting, but further monitoring is still required to understand more about abundance of tigers and poaching trends. We hope activities planned for year 2 will establish a tiger population baseline essential to evaluating trends and there will be a continued increase in the effectiveness of anti-poaching patrols.

Information generated during this project is contributing to better informed park protection activities and landscape-scale management strategies, setting the stage for population restoration of tigers.

## Details of activities and results

The desired outcome for the project is;

***'a greater understanding of the tiger population within Khao Laem National Park and its role in facilitating tiger recovery across WEFCOM. Augmented by improved capacity of the park's officials to unilaterally monitor and protect its tigers, providing a foundation for population recovery in Khao Laem NP and WEFCOM overall'***

To validate success we proposed a number of indicators to be monitored and evaluated during the project, these included; minimum number of tigers present in KLNP, the number of prey species present to support the tiger population (not abundance), the number of potential threats, or disturbances documented, detection rates of tigers across management zones and finally how many tigers identified during surveys that had previously been documented in other parts of WEFCOM (showing dispersal in/out of KLNP).

To gain the above information we conducted a series of activities explained in the following section.

**Objective 1** Confirmation of KLNP's tiger distribution and to identify key sites for a later SECR grid survey.

Opportunistic surveys based on known factors guided where cameras were placed and these have contributed a lot of valuable information to assist with both this reporting and planning for the next phase of the project during 2020.

Output 1. A completed summary report on tiger presence in KLNP is developed within this one year project and presented to the DNP. Results are incorporated into the sWEFCOM tiger survey database.

Indicator 1.1. Our plan was to increase the survey coverage during this year by 25%. We had a very low baseline, as prior to this project few cameras were utilised in Khao Laem. Our target was >400km<sup>2</sup>

to be surveyed (this would mean 44 cameras would be needed), however due to limited survey equipment (just 26 cameras due to thefts) this was constrained and we were only able to survey 108km<sup>2</sup> in total. Nevertheless we achieved some valuable results. Based on our previous experience and existing tiger records it was decided at the start of the project to prioritise the eastern section of the park. Comparisons between east and west further confirmed the eastern sector higher value conservation area and three test grids on the western side of the reservoir further validated this as recorded images showed a high level of occupancy by domestic cattle, low species richness and the presence of poachers.

Indicator 1.2. Our target for the survey effort would be to equal or surpass the previous year's total of camera-trap nights (CTN) in which cameras would be in the forest working. Our baseline was 7,300 nights and we optimistically aimed set a target of  $\geq 14,600$ . However, we achieved 8,285 based on approximately 26 cameras in the forest working per month.

Indicator 1.3. # Tigers identified during surveys. Based on previous years opportunistic surveys we had provisionally identified X tigers and we aimed by expanding the survey area to new locations we would record further tigers. This was achieved and although we recorded X separate individuals those photographs were not clear enough to identify them.

Indicator 1.4. # of potential prey species identified during surveys. Baseline 4, Target: >5. During this year we were able to record 5 prey species namely red muntjac (*Muntiacus muntjak*), Fea's muntjac (*Muntiacus feae*), Serow (*Capricornis milneedwardsii*), Gaur (*Bos gaurus*) and Wild Boar (*Sus scrofa*). A notable absentee is the Sambar deer (*Rusa unicolor*). Although sambar should be present, this species is highly sought after by poachers and has a low recovery rate<sup>1</sup> in areas where it is poached.

Indicator 1.5 # survey reports generated independently by the park. Baseline 0, Target: 12. Although to date no wildlife-specific survey reports have been generated by the park, the information from mentored surveys is supplied to the SMART technicians and wildlife data is incorporated into their SMART database. This is then collated into the park's 12 monthly reports and sent to the regional protected area office that has oversight for parks in this region of Thailand. The Freeland lead on this survey project attends each monthly SMART meeting and is able to give supplemental updates as required too. We feel this report will help the park prepare their own survey report and project staff will assist them in the preparation of their first report.

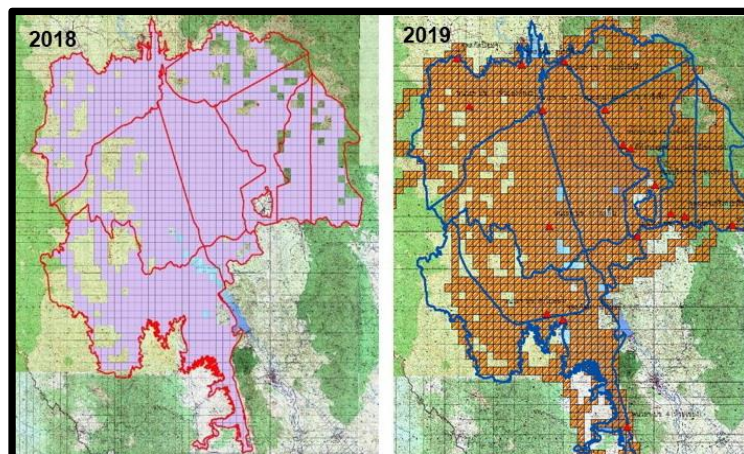
---

<sup>1</sup> [https://www.researchgate.net/publication/222171151\\_Population\\_recovery\\_patterns\\_of\\_Southeast\\_Asian\\_ungulates\\_after\\_poaching](https://www.researchgate.net/publication/222171151_Population_recovery_patterns_of_Southeast_Asian_ungulates_after_poaching)

**Objective 2** Improve park capacity to conduct patrol-based monitoring (cost share)

Output 2. Our target was by the end of the project, 100% of 8 patrol teams in KLNP would have enhanced capacity to effectively carry out patrols, efficiently gathering data to actively integrating this into SMART, which in turn will assist adaptive patrol strategies and coverage. To evaluate if targets were reached we designed activities with specified metrics, to be validated by SMART software;

Indicator 2.1. The percentage of KLNP covered by park protection patrols. The baseline was 10%, a relatively low figure, but as SMART was not previously mandated by the DNP as the standard database for park monitoring its use was limited and sporadic. Prior and during this project we have been encouraging the use of SMART by subsidising patrol provisions and donating essential technical and field equipment. Our target for patrol coverage was ≥50% of the park. This was surpassed over the last year and impressively the rangers patrolled 89% of the parks area (1,332km<sup>2</sup> of 1,497km<sup>2</sup>)



KLNP SMART patrols comparison for 2018 & 2019

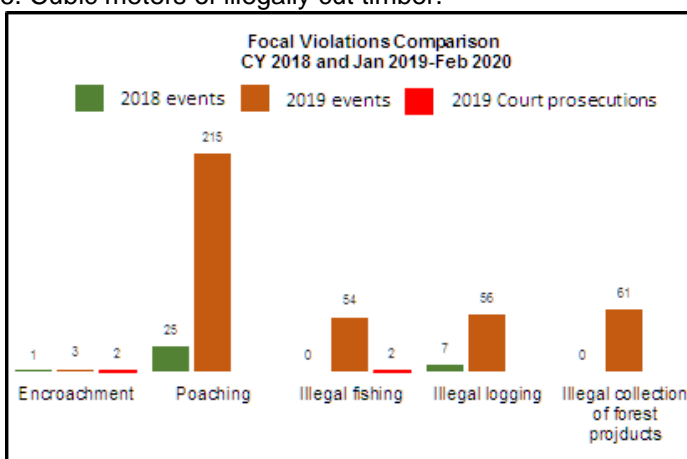
| No. | Forest Protection Unit (7-man teams) | Patrol (times) |            | Patrol (Days) |              | Distance (kms.) |               |
|-----|--------------------------------------|----------------|------------|---------------|--------------|-----------------|---------------|
|     |                                      | 2018           | 2019       | 2018          | 2019         | 2018            | 2019          |
| 1   | Kroeng Kra Wia                       | 18             | 86         | 58            | 317          | 694.14          | 2,043         |
| 2   | Potana                               | 21             | 99         | 57            | 294          | 578.74          | 1,843         |
| 3   | Pha Phueng                           | 16             | 72         | 60            | 298          | 952.38          | 3,606         |
| 4   | Ligia                                | 24             | 105        | 68            | 328          | 876.35          | 3,182         |
| 5   | Office                               | 24             | 105        | 72            | 336          | 1,273.92        | 2,872         |
| 6   | Nong Kum                             | 14             | 87         | 60            | 322          | 808.21          | 4,011         |
| 7   | Huai Kayeng                          | 19             | 105        | 66            | 326          | 1,365.90        | 4,196         |
| 8   | Ong Phra                             | 18             | 95         | 62            | 300          | 828.67          | 3,225         |
|     | <b>Total</b>                         | <b>154</b>     | <b>754</b> | <b>503</b>    | <b>2,521</b> | <b>7,378.32</b> | <b>24,978</b> |

Indicator 2.2. Amount of patrol effort (patrol man days) /distance travelled (km). Note some patrolling in Khao Laem is by boat. Baseline is 5,376 days based on 8 x 8 man teams x 7 days/month 12 months (source KLNP SMART 2017 ave). The target: 11,520 days/distance, as validated by SMART. Patrol data from January 2019 – February 2020; 8 patrol teams conducted 754 patrols,

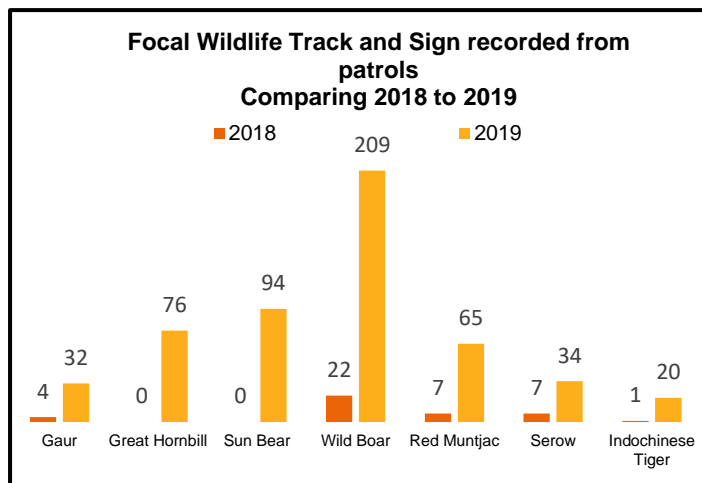
a total of 2,521 patrols days, covering a total distance of 24,978 kilometres, more than double the target.

Indicator 2.3 Number of arrests conducted by patrol teams. Baseline 1 per month during 2018, the target for 2019: 24/year or 2 per month. Over the year 389 violations were recorded, with four large cases sent to the police and then on to the courts. These concerned 2 encroachment cases and 2 logging cases, with evidence involving 1.36. Cubic meters of illegally cut timber.

Wildlife data reported from patrols included 1,279 distinct locations which included xx tiger tracks. The species in the chart on the following page are standard observation records for all Thai PA's. However, we are in discussions with park officials to include Asian Elephants at Khao Laem, as their presence is relevant for park management, as they are not regularly found in Khao Laem, possibly because of the steep terrain.



Indicator 2.4. # tiger/prey/threat records collated by patrol-teams Baseline 10 threats reported for Khao Laem per month (combined prey/threat)



Target:  $\geq 240$  (or 20 per month). As can be seen from the violations chart, more than 593 were recorded, with the exception of the illegal fishing records the balance are relevant as ecological threats to tigers and prey. So a total set of threats of 539 divided by 12 months = 44 threats/month reported.

A very useful indicator was the reporting of tiger track and sign, which increased from just one in 2018 to 20 in 2019. This possibly reflects the training given in track and sign collection for SMART reporting rather than simply an increase

in frequency of observations.

Indicator 2.5. Percentage of patrol teams submitting data for inclusion in KLNP's SMART database. Baseline 8/month, but increase in data quality is also part of this target of 8. This target was reached and every one of the 8 patrol teams submitted SMART data - every month. We can see by the increase in actions reported that the teams have increased in efficiency in both interdicting crimes and reporting important crime and wildlife data to the SMART technicians.

**Objective 3** Improve park capacity to conduct patrol-based monitoring

Capacity development during this project will be informal on-job-training and mentoring in decision making processes mostly involving best practices in tiger surveys. Training has been a combination of on-job-training, mentoring and semi-formal training for new rangers

Output 3. Number of DNP officials with increased capacity trained during the project life (survey, SMART and patrol)

Indicator 3.1 Number of rangers able to use trail cameras, knowing where to place them for best results and standard data collection. The baseline was 20. During each of the six bimonthly surveys 3 to 4 teams each with a minimum of seven rangers per team accompanied Freeland staff. So, a potential between 126 to 168 rangers could be trained. However, as many of the same personnel remained unchanged each trip, this figure should realistically be between 21 to 28 depending on how many routes were utilised each time. Some rangers demonstrated exceptional skills in the use of cameras and one assigned ranger from KLNP's wildlife science section is particularly outstanding and extremely motivated by the work. Our target of rangers to mentor was 40 person, and the combined total mentored during surveys was 56. (40% more than we predicted and 180% more than the baseline)

Indicator 3.2. Number of SMART Data entry officials mentored in higher level SMART software use. Current baseline 1 Target 4. This is one of the indicators that did not achieve its target. Although KLNP has about 6 rangers able to use SMART only one technician is fully competent. We worked with this technician and verified data entry was accurate and results reliable. The park was able to produce reports monthly, which were share with the regional management office. We will continue to support patrols and SMART implementation for another year and strive to increase skills of rangers to enter data in the park database.

Indicator 3.3. Rangers' receiving basic on-job-training in contemporary patrol procedures Current baseline 0, Target 8. During this year Khao Laem was able to employ a few new rangers and these

required basic training before they could join patrols and operate a competent team member. A DNP instructor travelled to Khao Laem on several occasions to conduct some basic training and we were able to support him by loaning teaching items, such as technical equipment to assist with navigation exercises and first aid training. Specifically compass use (including bearings), maps, GPS and field communications, field data collection were taught to 40 rangers.

Such short training activities do help foster basic patrol skills, but full enforcement ranger training is still required to develop fully competent rangers and we will continue to search for funding to support this. Retention of participant skills has not yet been validated.

**Key achievements of this project:**

- 6 Survey trips implemented over the year
- 26 cameras were able to survey 108km<sup>2</sup>
- 8,285 Camera Trap Night of survey conducted
- XX Tigers recorded
- 89% of the park was patrolled during the year (1,332km<sup>2</sup> of 1,497km<sup>2</sup>)
- Supported provisions for 8 ranger units which patrolled 2,521 days over a total distance of 24,798kms
- Over the year 389 violations were recorded in the park and four cases sent to court (for minor crimes the park levies administrative fines on the spot)
- Wildlife data recorded at 1,279 distinct locations during patrols, which included XX tiger track records and all data entered into SMART
- SMART patrol meetings occurred every month
- SMART reports prepared every month
- More than 56 rangers received on-job-training on how to implement camera surveys
- 40 new rangers and experienced rangers received first aid and navigation training

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

There have been few problems encountered by the project, most of these were expected and project planning considered and pre-empted some of these. The two main challenges have been, the long distances involved to access remote areas and theft of survey cameras. For the first problem, this was a known challenge, as the terrain in this protected area is extreme, with high karst limestone mountains - over 1,750m at Khao San Nok Wua and cliffs with sheer drop-offs of 300m or more. This has been turned to our advantage in some cases, as saddles between mountains are ideal sites to place cameras, as wildlife must pass through such points to move from one area to another. During the rainy season when the park is almost entirely covered in clouds - water is plentiful, but during the dry season it is extremely hard to find. This restricts areas wildlife can inhabit, while also limiting whole sections of the park that can be surveyed during the dry season. A further environmental challenge is forest fires, as dry bamboo forest covers much of the park is affected by forest fires during the 6 month dry season. Many areas are deliberately torched by villagers as they mistakenly believe it stimulates mushroom growth. Further fires are set by poachers to drive wildlife out of an area, or to create distractions for rangers, so they can access and poach areas to usually monitored, Burning stimulates new grass growth, which in turn brings grazing ungulates to the cleared areas where they are easier to shoot. The presence of poachers was confirmed through photographs from the survey cameras. Unfortunately, poachers afraid of being identified also steal the cameras too. These are however difficult to remove from the trees, as they are attached with thick steel cables and padlocks, but during this last year 6 have been stolen from 26 = 23%. Theft is more common than wildlife damage, such as by elephants, and puts a strain on our available resources. We have plans to implement measures leading to the identification and arrest of perpetrators and will be implementing these during 2020. Also discussed



was donating cameras to the park at high risk sites, as then if stolen the level of the crime increases from simple theft to stealing government property, which carries a harsher sentence.

To date, none of these challenges have affected the budget, or project implementation timetable.

### **Monitoring and Evaluation:**

Field coordination for this project is largely conducted by one dedicated researcher, with oversight from the Programme Director. The researcher regularly travels to the park and is an ex-Khao Laem biologist/technical officer who worked there for two years before this project. He therefore is acquainted with all the park, its staff and superintendent which facilitates all coordination. He is allowed much access and collaborates closely with the park's biologist and SMART technicians. During the course of the project he regularly confirms with park staff to ensure new tiger information is directed to the tiger research station in Huai Kha Kheng WS. This guarantees tiger images are entered into their national tiger database and he follows-up to confirm if the tigers recorded are those already identified, or new additions to the database.

This project aims to understand where key tiger areas are located in the park, so later more technical surveys can be focussed to obtain best possible results. Key sites are determined from the amount of tiger, or prey photos they produce. Over the year we have been able to identify these optimum locations and these are being included into plans for a comprehensive grid survey in 2020.

Due to current world events (Covid-19 health crisis) we have not yet conducted the year 1 project debrief with park officials and we are now considering amalgamating that with the grid and survey design planning into one meeting for year 2 (2020). Initial understanding of results for 2019 demonstrate the value of the site for tiger conservation and the on-going project monitoring of year one demonstrated that the majority of activities were implemented quite effectively. There were some gaps in understanding of data collection processes, but these were identified early on and easily rectified.

The proposed on-job-training performance review of a ranger patrol team during an actual patrol (by Freeland Law Enforcement Advisor) was not implemented. This was a cost share activity and can be conducted anytime up to six months after the project, as the longer the gap between learning and validation – the easier it is to observe shortcomings and gaps in skill retention. We will invite experienced ranger instructors to join a KLNP patrol and to discuss patrol tactics with the rangers. However, as we do not have funding to support enforcement training at this time, it may be counter-productive to raise expectations concerning training and fulfilling such needs as this time.

The main method for evaluating patrol effectiveness has been from SMART software reporting outputs. This software has been implemented very well over the last year at Khao Laem and the increased efforts by the rangers have clearly registered in the graphic reporting outputs. We will be continuing our support for SMART and patrol data collection (as a cost share) into 2020-21.

### **Shared learning:**

We are working directly with the management of Khao Laem which shares all information regularly with their regional office. This then shares upwards to the Department of National Parks, Wildlife and Plant Conservation (DNP) HQ in Bangkok. The DNP is the main management authority responsible for overseeing tiger conservation activities in Thailand, and so this sharing of information ensures project success is owned by the most relevant stakeholder.

This project was planned in conjunction with KLNP and integrated into regular park-based activities. It is led by Khao Laem with Freeland as a supporting agency. There is some pressure from a partner organisation to elevate activities to a full research project, but as we were not currently planning to publish any scientific papers concerning the tigers - we are weighing the advantages in changing the project's status. The central premise of this project is to improve capacity of this PA, so they are able to implement tiger monitoring and SMART activities 'in-house' this adds a strong aspect of sustainability



to the work. As mentioned, data generated from this project will assist in the development of Thailand's next national tiger action plan; the previous version of that strategy is due to conclude in 2022.

Freeland is collaborating with a DPhil (Zoology) student working under the University of Oxford's Wildlife Conservation Research Unit (WildCRU). His assistance has assisted increasing the project's technical expertise. This partnership has assisted further, as undergraduate interns have helped catalogue data and preparing short narrative conclusions, as was shown in the appendix of the interim report. These volunteers are currently reviewing further data and we hope they may be able to catalogue new data and provide another update shortly. This collaboration between WildCRU and the project may provide opportunities for further networking and elevation of data analysis and understanding of tigers at the site.

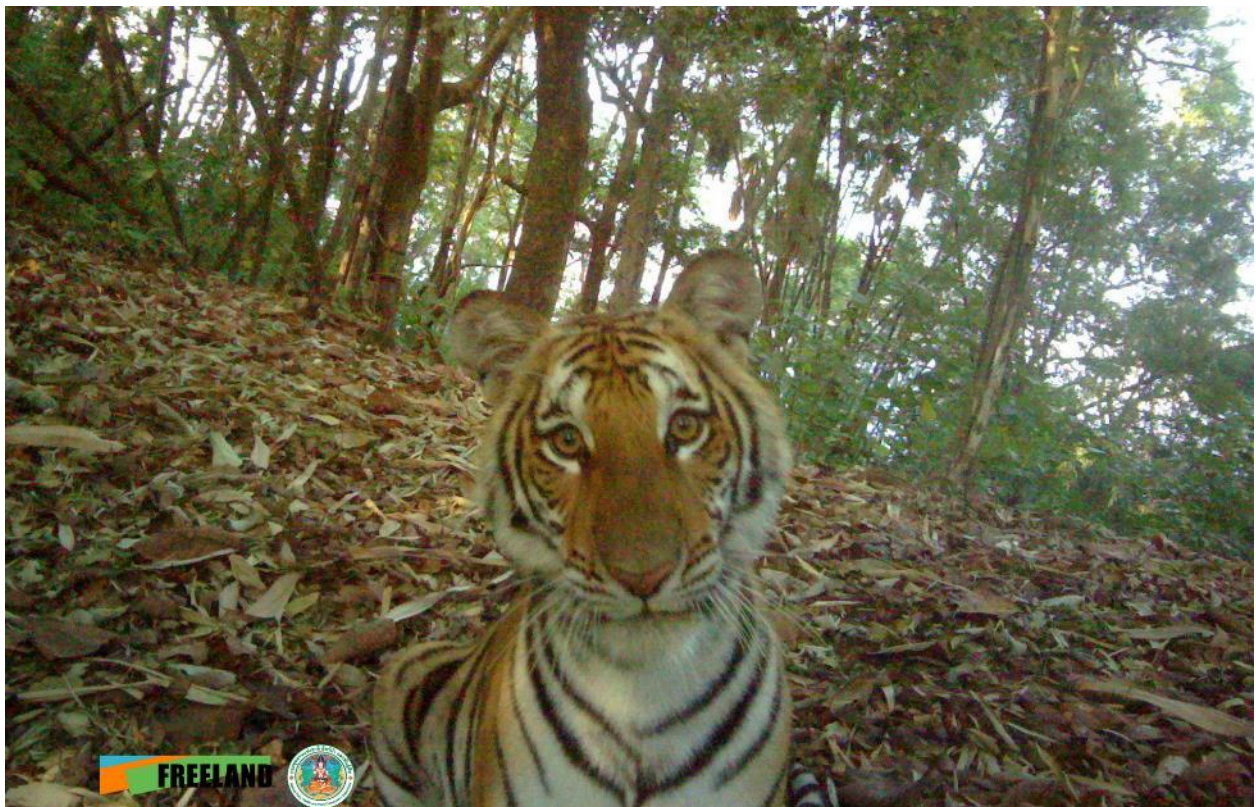
There are currently no plans to publish project results in peer-reviewed publications.

**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)*

As we strive not to draw attention to this site for fear of attracting tiger poachers'. We have deliberately not publicized findings anywhere in the media. There is a particular concern with Thai language press, as newspapers are well circulated often being read in restaurants by numerous people. Social media in Thailand has one of the highest per capita usages in the world with an estimate 50 million users or 73% of the entire population. Each and every time a tiger story makes any media, even as a personal story in Facebook, it is pounced on by reporters who then ensure it is retold in every paper and shown on every national TV network. This is highly concerning and Freeland has even internal policy in place to prevent deliberate circulation of wild tiger related news or locations.

**Have you provided at least 2 blogs? Yes**

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



|  |  |
|--|--|
| <b>Section III. Appendix</b> (Please populate this section with details from section II)   |  |
|  |  |
| <b>Did you carry out camera trapping as part of this project? Yes</b>  |  |
| <b>If yes:</b><br><br><b>Total camera trap nights/days:</b><br><br>Grid phase 1; D42, D43, D44, E58, E59 / 380 CTN x 13 cameras<br>Grid phase 2; C28, C29, C30 / 269 CTN x 4 cameras<br>Grid phase 3; F77, G93, H110, I127 / 200 CTN x 7 cameras<br>Bick-ee area (west of reservoir);<br>Combined 8,285 CTN<br><i>CTN = Camera Trap Nights</i> | <b>Total area surveyed:</b><br><br>Each survey grid covers 9 km <sup>2</sup> . We surveyed 12 Grids or 108 km <sup>2</sup> .   |
| <b>Numbers of tiger/leopard/prey recorded</b><br><br>Indochinese Tiger ( <i>Panthera tigris corbetti</i> )<br>XX encounters with XXX images<br><br>5 prey species recorded; Red Muntjac, Fea's Muntjac, Serow, Gaur, Wild Boar<br>(notably sambar deer were not recorded)<br>546 encounters with 3,082 images                                  | <b>Have you included data on other species recorded?</b><br><br>We recorded 44 wildlife species during these surveys and a species list is attached in this report (no occupancy, or analysis included here) |
| <b>Did you carry out patrolling as part of this project? Yes (as a cost share to this project)</b>   |  |
| <b>If yes:</b><br><br><b>Total distance patrolled: 8 teams walked 24,978 km</b>  | <b>Total area patrolled:</b><br><br><b>Using SMART it was calculated an area 1,332 km<sup>2</sup> From a total area of 1,497 km<sup>2</sup> was covered (89% of the PA)</b>                                  |
| <b>Do you use Patrol Monitoring software such as SMART? Yes</b>  |  |

|   |  |  |  |
|---|--|--|--|
| <b>If yes:</b><br><br><b>Total distance patrolled using patrol monitoring software?</b><br><br><b>See above but specifically;</b><br><br><b>8 patrol teams, 754 Patrols over 2,521 days</b>   |  | <b>How do you collect data? Handheld devices/paper/other? Please give details?</b><br><br><b>Handheld Garmin GPS and standard Thai language paper reports (although SMART is standard for recording patrol data in all PA's - Thailand still does not use SMART Connect)</b> |  |
| <b>Does your project work with local communities? Not at this site</b>  |  |  |  |
| <b>If yes: (please be as specific as possible)</b><br><br><b>N/A</b>  |  | <b>What did you do? N/A</b>  | <b>How many people did you reach? N/A</b>  |
| <b>How do you measure the success of this activity? N/A</b>   |  |  |  |
| <b>Did you carry out educational activities with adults or children? Not at this site</b>   |  |  |  |
| <b>If yes:</b><br><br><b>Who? N/A</b>   |  | <b>What did you do? N/A</b>  | <b>How many people reached? N/A</b>  |
| <b>Have you seen behaviour change from these activities? (Please give details of how this is measured) N/A</b>  |  |  |  |
| <b>Did you carry out training activities for any staff/community member on the project?</b>   |  |  |  |
| <b>If yes: (please be as specific as possible)</b><br><br>No community members, or staff received training, but rangers were trained<br><br>1. Mentoring and informal on-job-training for patrol rangers assigned to assist with this project |  | <b>What did you do?</b><br><br>Data collection and mentoring in use of GPS navigation devices, use of survey technical equipment and camera data sheet use<br><br>Basic training first aid and navigation training was given by DNP officials. This included all aspects of  | <b>How many staff trained? How many others trained?</b><br><br>Approximately 20 KLNP rangers per survey trip (approx. 7 per team) received OJT. As this was informal it tended to be more motivated rangers that |

|   |  |   |
|---|--|---|
| <p>2. We supported DNP instructors with technical equipment and finances to conduct their own informal navigation training over 5 days for new rangers at KLNPN</p>   | <p>first aid, and navigation training essential for patrolling and collecting field data. Specifically compass use, including bearings, map use, GPS use and field communications was taught</p> | <p>were engaged and received mentoring. Some older rangers were less interested.<br/><br/>40 new rangers and experienced rangers received first aid and navigation training</p> |
| <p><b>How do you measure the effectiveness of this training?</b></p> <p>For formal training courses we conduct training validation exercises, but as this training was in the form of informal mentoring we are not proposing to measure its effectiveness.</p> |  |   |
|   |  |   |
| <p><b>Did you carry out conflict mitigation activities with community members? No</b></p>   |  |   |
| <p><b>If yes:</b></p> <p><b>Who? N/A</b></p>  | <p><b>What? N/A</b></p>  | <p><b>How main people did this include? N/A</b></p>   |
| <p><b>Have you seen behaviour change from these activities? (Please give details of how this is measured) N/A</b></p>   |  |   |
|   |  |   |
| <p><b>Were any scientific papers/articles published because of your project? No</b></p>   |  |   |
| <p><b>If so, please give details or provide copies. N/A</b></p>   |  |   |



**Khao Laem National Park**

