

Section I. Project Information	
Project Title: Tiger Conservation Survey”	
Grantee Organisation: Freeland	
Size of project area (if appropriate): 1,497km ²	No of tigers in project area, giving evidence & source: Approximately XXX individuals. The focal park is part of a contiguous 24,000km ² landscape comprising of 17 PA’s allowing free movement of tigers throughout. Population estimate via (unpublished) camera trap data gained over previous 5 years
Partners: Panthera/ZSL Thailand has assisted to date by loaning additional technical equipment for surveys. Freeland biologist, Eric Ash is presently completing a DPhil (Zoology) relating to large carnivores in Thailand with WildCRU , University of Oxford. He has been assisting cataloguing Khao Laem data during this project. Collaboration with WildCRU will facilitate sharing of technical expertise to ensure surveys are conducted to appropriate scientific standards. This partnership between WildCRU and Freeland is starting to also provide opportunities for young biologists interested in conducting tiger research in Thailand.	
Project Contact Name: <i>(main contact via email)</i> Tim Redford, Surviving Together Programme Director	
Email: tim@freeland.org	
Actual start date of project: <i>(if different from 1st February)</i>	
Reporting period: March to August 2020 (Feb 2020 in previous years final report)	

Section II. Project Progress**Summary of progress for the first 6 months:****Synopsis**

Tiger ecological monitoring continued throughout the first half of 2020. At the end of the last project operational period, which is also the start of this period - a female tiger and two sub-adult cubs were recorded. These previously unrecorded tigers were new to the identification database. Given the inaccessibility and size of the protected area such developments are not necessarily unexpected, but do certainly come as a welcome surprise. These new records demonstrate the value of continuing long-term ecological monitoring, as the shorter period grid surveys may miss such important events, especially in the case of seasonal wildlife dispersals influenced by weather, or other ecological disturbances, such as the dry season opening of tourist trails within the park (which certainly displaces wildlife). Over the last year, previously recorded tigers continue to be recorded, as do several Indochinese leopards that co-inhabit the same areas. In March, a female leopard was recorded with a single cub. This is exciting, as it demonstrates the prey base in the area is rich enough to support two species of large carnivores, even when these are caring for cubs.

Background of 2020 project developments

During the first half of this year's tiger monitoring project (March to August 2020 inclusive) proposed activities were slightly revised, mostly because of domestic travel restrictions due to covid-19. However, this proved only a temporary constraint, as by May the Thai government lifted these restrictions and surveys were able to continue again. Originally during the first half of this year's project we proposed to conduct the SECR grid survey during May to August, but a request from partner Panthera came to revise this. They asked us to delay conduct of the grid survey until the dry season, because their surveys in conjunction with ZSL Thailand have always been conducted in adjacent protected areas only during the dry season. By postponing implementing the grid survey to the dry season - a later amalgamation of data from across the landscape will make a larger analysis more comprehensive. This will lead to a greater understanding of tiger ecology across most of Southern WEFCON. This seemed a reasonable request and so we complied. At the same time we received news from IUCN Thailand that a proposal seeking their financial support to expand the scale of the grid survey was successful. This increases the proposed survey area from twenty 3km x 3km grids to eighty-five, now encompassing almost the entire terrestrial area of the park. We aim to start this grid survey in October 2020, dependent on newly purchased survey equipment arriving from USA. We have engaged two additional local staff to help with training, survey implementation, data cataloguing and analysis. These two staff are Ms. Atcharee Sangrawee, a previous employee (as project biologist) and Dr. Saifon Sittimongkol (as senior project biologist). All other staff implementing survey activities remain unchanged.

Ecological tiger surveys continued throughout the first half of this phase of the project, with cameras opportunistically placed and checked regularly every 2 months. Totally four separate routes were surveyed. In 2019 we surveyed two sites, but with disappointing results, low species richness among photo captures and high levels of illegal domestic cattle grazing were recorded. This led to us to initiate ways to assist the park management to engage cattle grazers in order to lobby their willing removal of cattle. We have previously achieved successful outcomes removing cattle in another protected area and we believe the process we developed there can be utilised in a similar manner. We recorded camera trap images of cattle grazers carrying weapons into the park to poach as they graze their cattle. There is no excuse for this, as it is totally illegal to have a weapon in a protected area. The combined poaching and ecological disturbance from cattle are probably the reason wildlife species richness is so low. Monitoring of cattle and measures to initiate removing them are now in place, but may take two to three years before concluded. We are awaiting results from the most recent survey from the park where cameras were set in a previously un-surveyed area.

Unfortunately, not all news has been good during this period. Two rangers died while conducting their duties, one while participating in a wildlife survey. The first fatality in June occurred soon after a ranger returned from an anti-poaching patrol. He and two further rangers contracted leptospirosis. This spread through one ranger's blood system and entered his brain and he was rushed to hospital unconscious, but he never regained consciousness. The other sick rangers responded well to antibiotics and both made quick recoveries. It was ascertained they drank still dirty water during the

patrol, as it was the dry season and no clean running stream water was available. Potable water is the most challenging problem and all rangers in Thailand during dry season patrols. We are investigating how to buy water filters to supply ranger patrols, but imported systems are both hard to find and expensive. Sometimes water is impossible to find during patrols in some sections of the park and these are subsequently not patrolled. Wildlife from such areas moves to more hospitable places during the dry season and despite the lack of patrols the arid areas are not prone to increased poaching pressure.

A second ranger fatality occurred in August, during a monitoring survey. One of the two survey teams had their exit route cut-off by a river in full spate during a flash flood. Being late, low on food supplies and wanting to return home the team decided to risk a crossing, but the current was too strong and the first ranger who was taking across a guide rope was swept away, pulled underwater by the flow. He was recovered further downstream, but had already drowned in that short time. CPR failed and the rangers still had to travel another day downstream to the reservoir before they could radio for help. The team were recovered by boat via the reservoir. Several rangers and a Freeland staff member temporarily ordained themselves as monks following the funeral. This is the Buddhist tradition in Thailand if someone close to you dies. We were able to facilitate compensation for the families from the Thin Green Line Foundation and from our own organisation. Both deceased rangers leave wives with young children.

Due to budget constraints all project satellite phones are without credit and not in use. We are looking for funding to reinstate operational status for the satellite phones, which would help during emergencies. We also hope to obtain message-enabled InReach Garmin GPS which operate using the Iridium satellite phone network. Further safety can be introduced by ensuring all team members have walkie-talkies in case they are separated for any reason.

Prior to the upcoming SECR survey in October we have a plan for further first aid and safety training, navigation refresher training, along with camera trap use and SMART reporting. We hope this will improve safety and effectiveness during surveys.

Details of activities and results to date: *(Please give details of progress made towards the objectives & outputs of your Logframe, and activities included in your Work plan. Please add any relevant charts, maps and images.*

The main impact sought by this project is to secure the (safe) future for tigers at the focal national park. To help arrive at that point we have a guiding work plan. Note, this now has additional comments and the revised version is in the appendix. By improving the quality of park management through the use of evidence-led protection strategies it will facilitate safe tiger dispersal within Southern WEFKOM. Two main objectives help foster that outcome, namely Objective 1. Improving knowledge of tigers, prey and threats and Objective 2. Building capacity in DNP staff to manage, interpret and analyse camera trap and SMART data on-site. To improve security at the site we have a cost-share sub-objective supporting ecological wildlife surveys, SMART patrolling and interpreting effectiveness of patrolling results

During the first six months of this project phase we sustained regular tiger ecological monitoring while preparing for the larger SECR grid survey which will help us define the density of tigers in a specific area. This survey will also lead to a greater understanding of tiger distribution across the whole landscape. To date the ecological surveys have yielded good results and the number of tigers identified continues to increase. Individuals previously recorded are still being photographed including females which tend not to have such large territories as males and this bodes well for a population restoration. So, although wildlife poaching is occurring - as proven more by camera captures of armed people in the forest - it appears tigers (or other large carnivores) are not currently their main quarry.

As previously mentioned we originally proposed to conduct the Spatially Explicit Capture Recapture (SECR) grid survey earlier this year, however this has now been postponed until October (still dependent on acquisition of new cameras). The first phase of this survey will run from October to January with some initial data analysis likely occur at the start 2021.

SMART patrolling

Our aim is to increase the number of DNP officials with capacity in proficient survey, monitoring and patrolling skills. Each survey the rangers accompanying the survey staff received further training in map, compass and GPS use to increase their SMART reporting ability.

Patrols (unaccompanied) occurred for an average of 15 days per month per team. An additional patrol team was introduced this year, bring the number of teams to nine. Totally, these nine teams patrolled 273 times, covering 872 days and 10,558.47kms (as recorded by SMART).

The quality of patrolling and reporting has increased measurably since we started this project. We feel this is largely down to the additional patrol provisioning support we provide, as much as the increased ranger reporting capacity. During discussions rangers clearly described their lack of motivation when they had to conduct un-provisioned patrols and were required to buy their own food and expendable supplies (sometimes even including batteries for their GPS).

Every month much data is gathered each month from these patrols and our field staff participate in the monthly meetings, updating officials about surveys and results. Understanding the trends in data coming from the field not only facilitates a better awareness of wildlife and threats to the park, it also provides information needed to gauge the safety and security of survey teams as they conduct the tiger monitoring work.

Interdiction of focal crimes are extremely low to date this year. No explanation for this is available, as patrols are as frequent as 2019. One theory is that a new protected area law with increased penalties may be a reason, but this remains anecdotal.

SMART patrolling - focal metrics

This year's figures appear a little lower than last year. However, this is not the case as each team has now started separating patrols, so foot, boat, vehicle and air defined individually.

One concern we have about SMART is the emphasis on distance covered, or quantitative data. The pressure on the rangers to maintain a relatively high distance covered during each patrol means quality and safety are being compromised. For example in the rush to ensure the prescribed distance is achieved rangers are stopping less to gather information and less likely to sit and listen for unusual, or unnatural sounds in the forest, such as chainsaws. Also, by encouraging rangers to achieve long distances and greater coverage they are conducting patrols into areas which may be dangerous at certain times due to flash floods, or forest fires. This problem is apparently lowering patrol standards to increase productivity is something we will be monitoring and discussing with park management. There is a new national Thai Ranger Association (TRA) created this year aimed at improving ranger performance, efficiency and safety. Concerns such as the above about SMART may be brought to their attention for deeper discussion and consideration.

Tiger and prey surveys

During this first half of the project two major surveys were conducted. Between these two surveys 39 cameras were placed in 9 grids in the forest for an accumulated total of 3,147 days.

In 2019 the most common capture was Fea's muntjak (which is IUCN data deficient), but this year to date there has been an increase in the number of wild boar captures.

It is complex to make any data comparisons between the first six months of 2020 with 2019 based on just half the data.

The most noticeable absentee remains the sambar deer. Not one single record was obtained. This has been the case since the start of this project.

Give details of any obstacles to success that the project has encountered over the last 6 months. (Please provide detailed examples, explain what impact these will have on the project results and the changes to the budget and timetable of project activities)

Over the last six months there have been numerous challenges which have influenced the project. Starting in the dry season of 2021 (Jan-April) the park was subject to numerous forest fires. We have no information about how this impacted the wildlife within the park, but fire suppression took a considerable amount of the ranger's time. Mostly fires were deliberately set by villagers hoping to stimulate the growth of mushrooms in the successive rainy season, but also fires were started by poachers to draw wildlife into areas where they could be shot easily. Fire promotes the growth of new grass and the ungulates (tiger prey) move to such areas to graze.

As 2020 dry season was extremely hot and dry vast sections of the park were without fresh water. This made already arduous patrolling even more challenging and as previously reported, the lack of fresh water led to some rangers drinking stagnant water and contracting leptospirosis. The fires also posed a danger to the safety of rangers, as it is possible to become surrounded by the fire with no safe exit. The rangers were conscious of this and consequently took care not to put themselves in this situation.

The covid-19 pandemic did initially pose a problem, as the Thai government requested the entire population self-isolate and banned inter-provincial travel. This however was only a short ban and we were able to continue the ecological surveys almost without a break. A second wave could present a problem if travel were prohibited again, but to date careful management of the covid situation by the government has prevented a re-occurrence. For some conservation groups this is a big problem, as international staff cannot enter Thailand. We however, are well prepared being based in Thailand.

There was the delay in initiating the SECR grid survey, but this was deliberate and not a problem. Consequently we have been able to substantially increase the size of the survey which will lead to more comprehensive results.

None of the above challenges are made a negative impact on the project budget. Modifications to the plan for the SECR delayed the conclusion of the grid survey, but we hope to have an initial analysis of the eastern survey by early 2020 in time for the final report detailing this year's WildCats support. This initial analysis will however not be representative of the survey for the whole park, as the western survey will be implemented between January to April 2021.

Budget:

The budget expenditures are on track. From the granted £18,779.00 (746,465THB) for the entire year 49.0758% (366,487.00THB) has been expended by end August 2020.

Media:

There are no specific media reports about this project as we attempt to keep tiger location information in the public arena to a minimum, as tigers are being targeted by transnational organized gangs. Illegal tiger trade in Thailand is a huge problem with wild tigers being laundered into and through tiger attractions which cater for tourist 'tiger selfies'.

Tiger related media

<https://www.iucn.org/news/thailand/202008/iucn-joins-roarforthaitigers-global-tiger-day-2020-underscores-need-transboundary-tiger-conservation>

