

This report will be made public. If it contains confidential or sensitive information, please also provide a revised report for sharing with the public.

Section I. Project Information	
Project Title: Kerinci Seblat Tiger Protection & Conservation (<i>Pelestarian Hairmau Sumatera Kerinci Seblat</i>)	
Grantee Organisation: Fauna & Flora International	
Location of project: Kerinci Seblat National Park and adjoining forests, primarily in the centre of the landscape with a higher patrol intensity in a Core Area	
Size of project area (if appropriate): Kerinci Seblat National Park – 1.38m ha/5200 ² miles, including a Core Area of 82,800 ha with patrols mainly focused to approximately 500,000 ha of national park and park-edge forests.	No of tigers and / or Amur leopards in project area, giving evidence & source: Analysis of park-wide surveys (2007-2009) and camera trapping in 2010-11 proposed a population of 166 tigers in the wider Kerinci landscape.
Partners: (<i>Please give details of partners, including communities, academic institutions etc. for this project.</i>) Kerinci Seblat National Park Authority, Indonesia National Police, KSDA (operating units of the MoEF working outside protected areas), park-edge district forestry services, Forum Harimaukita (Sumatran tiger conservation forum), Lingkar Institut, ICS (Solok Selatan), WCS Wildlife Crime Unit (information-sharing), Merangin Village Forest team.	
Project Contact Name: (<i>main contacts via email</i>) Debbie Martyr and Amy Winterbourne Project team in the field: Donny Gunaryadi and Cahyo Nugroho	
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Reporting period: February 2019-January 2020	

Please ensure that your report relates to the objectives and activities detailed in your proposal and logframe. Please include results data in Section II and Section III.

Section II. Project Results

Long Term Impact: *(How has this work contributed to the vision and long-term impact that your project aims to achieve?)*

The project's long-term goal is to underwrite a sustained, natural increase in Sumatran tiger populations in Kerinci Seblat National Park (KSNP) through detecting and reducing threat to tiger, tiger prey and habitat, and supported by collaborations between national and local government, local civil society and forest-edge communities.

Patrols advised that direct threat to tiger remained at levels far below the long-term average, while investigations reported suspected poachers and traders across the landscape were widely deterred by the risk of detection and law enforcement.

Encounter rates with tiger on TPCU patrols rose significantly with frequency of encounter (FoE) with tiger across the landscape the best in more than four years. In the Core Area, tiger detection in the final six months of the project period was the best in at least six years.

However, the most significant result in terms of long-term project impacts is likely to have come from the FFI/KSNP tiger monitoring team who conducted park-wide occupancy surveys which found tiger occupancy higher than when park-wide surveys were last conducted in 2007-2008, a time when Kerinci Seblat was recognised as having the highest level of tiger occupancy in Sumatra.

Threat to tiger, their prey and habitat has continued to be recorded on patrols and investigations during the project period and integrated field-level actions to detect, contain and address threat and to mitigate human-tiger conflicts will always be a key component of tiger conservation strategies in the Kerinci landscape.

However, after a difficult period during which historically high levels of illegal wildlife trade-driven poaching threat to tiger was recorded, it appears that a turning point has been reached and that tiger numbers may now be increasing, in line with the project's long-term vision for Sumatran tiger in Kerinci Seblat national park.

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

Active threat to tiger detected on TPCU patrols remained far below the long-term programme average at one active tiger snare per 70 days. Tiger Occupancy surveys across the national park by the FFI/KSNP tiger monitoring team showed that TPCU concerns that falling threat to tiger in routine patrol areas was a product of 'leakage' of threat to other sites in the park were generally unfounded.

The number of tigers present on TPCU patrols increased significantly with a minimum of 101 tigers recorded (84 in 2018-19) while frequency of encounter with tiger rose to 1 per 18.5km from the 1 per 22km recorded in the previous project period. Overall, 57% of patrols across the landscape and 82% of patrols in the Core Area reported tigers present.

Investigations strongly advised that poaching and illegal wildlife trade (IWT) threat to tigers in the Kerinci landscape is now primarily opportunist and from older, long-established, habitual wildlife criminals; and the risk of detection by 'Tim Tiger' and the subsequent law enforcement was frequently cited in covert interviews with suspected poachers and traders, even in areas of the landscape where there is no routine TPCU presence. No evidence of any consistent IWT demand for tiger body parts, with the exception of tiger canines, was observed.

Although poaching threat to tiger detected on patrols and during investigations remained low, two intelligence-led tiger law enforcement actions were conducted. These resulted in the arrest and prosecution of five men. In both cases, the poaching incidents which preceded the law enforcement appear to have been opportunist and not pre-planned.

Training delivered by forensic experts from Indonesia's national police has strengthened TPCU capacity to manage a wildlife scene of crime, and collect evidence for forensic analysis and follow-up investigation. It has also established a valuable line of communications with these experts. Meanwhile a training workshop in wildlife emergency veterinary responses and procedures, including animal welfare, provided invaluable training to newer TPCU rangers and tiger monitoring team (MHS) personnel.

During this reporting period, 20 court prosecutors from districts bordering KSNP and Bukit Barisan Selatan National Park in Bengkulu province, received training in wildlife crime, its links to Organised crime and wildlife crime prosecution. They are now more able to effectively prosecute wildlife crime cases.

No camera trap monitoring of tiger populations in the Core Area was conducted during the project period but instead will be undertaken in the third quarter of 2020. On the basis of patrol records we anticipate this will record increased tiger densities in the Core Area.

Summary of activities and achievements: *(Please provide a summary for use in our communication materials Max 300 words)*

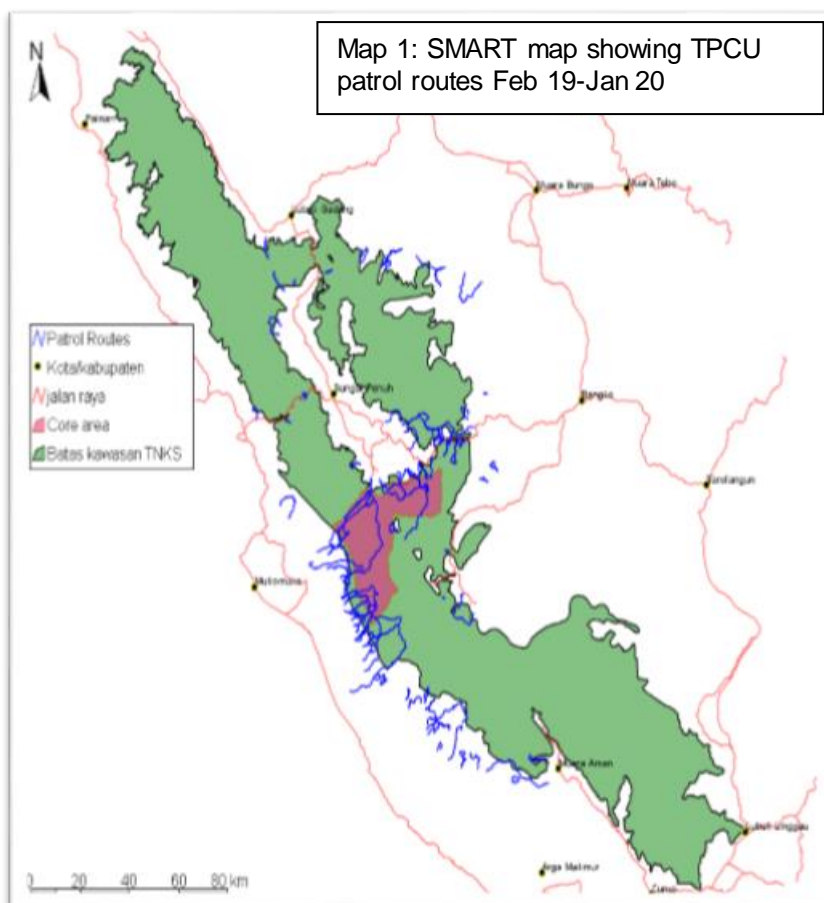
- Six TPCUs conducted 116 SMART forest patrols across 1,870Km (1,162 miles) in national park and park-edge forests.
- Patrols recorded a minimum of 101 tigers (84 in 2018-2019, 89 in 2017-2018) with FoE rising to 1-18.5km from 1-22km.
- Nine active tiger snares were detected on six patrols. However, patrol Effort to detect threat was far above the long-term average at 1 active snare per 70 patrol days.
- More than 150 investigation and 'for information' reports were logged in park-edge districts and municipalities of four provinces. These found poaching threat to tiger has become primarily opportunist and no longer driven by consistent, organised trade demand.
- TPCU investigations supported two tiger law enforcement actions resulting in the arrest and prosecution of five men; two of these men were subsequently sentenced to custodial terms, sentencing is awaited in the second case. A man already cautioned by TPCUs for clearing Core Area national park forests to build a luxury house was arrested and sentenced to three-years in prison and a record GBP 85,000 fine.

- Verbal warnings and advisories were issued to more than 70 men for a range of wildlife and forest law offences with 15 formal Cautions issued and five high-powered illegal calibre airguns and three chainsaws confiscated.
- Seven human-tiger conflicts were attended and mitigated, five of these incidents were minor and only two involved livestock predation (in one case, semi-feral farmland guard or hunting dogs).
- The programme also delivered wildlife emergency response veterinary training for TPCU and MHS personnel; training in wildlife scene of crime management led by specialist police forensics officers; and wildlife crime prosecution and sentencing guidelines for court officers.
- Tiger Occupancy surveys across the national park by the FFI/KSNP tiger monitoring team recorded tiger occupancy in 87% of Grid Cells surveyed - substantially higher than when the last park-wide surveys were conducted in 2007-2008.

Details of activities and results: *(Please give detailed narrative of the results of each objective & output. Please include measures for example patrol numbers and distances covered)*

1: SMART forest patrols by Tiger Protection & Conservation Units (TPCU) to consolidate gains made and contain any significant resurgence in poaching threat to tiger while focused patrols during the fasting month of Ramadan contain a spike in local market-driven threat to tiger prey species.

A total of 116 SMART foot patrols were conducted by TPCUs in national park and park-edge forests (See Map 1, below) of three provinces covering a total distance of 1,870km (1,162 miles)



by GPS Waypoint and with a total of 626 days spent on forest patrols.

Two additional one-day patrols were conducted in support of the national park to evacuate tourists who had fallen ill while visiting forests in the north of the Kerinci valley. Data from these activities is not included.

Patrols recorded the presence of a minimum of 101 Sumatran tigers, the highest number in three years, FoE at 1 tiger per 18.5 patrol kilometres walked (1-22km in 2018-19, 1-23km in 2017-18) - the best in at least four years with Effort to record tiger presence at 1 per 6.2 patrol days.

Detection of tiger was lower in the first six months of the project

period, not least due to unusually heavy seasonal rains in the first quarter of the year. In the second six months of the project, FoE increased to 1 tiger per 17 km while Effort to record tiger across the project landscape reduced to 1 per 5.5 days (1-7 days in 2018-19; 1-6.8 days in 2017-18), the best in six years.

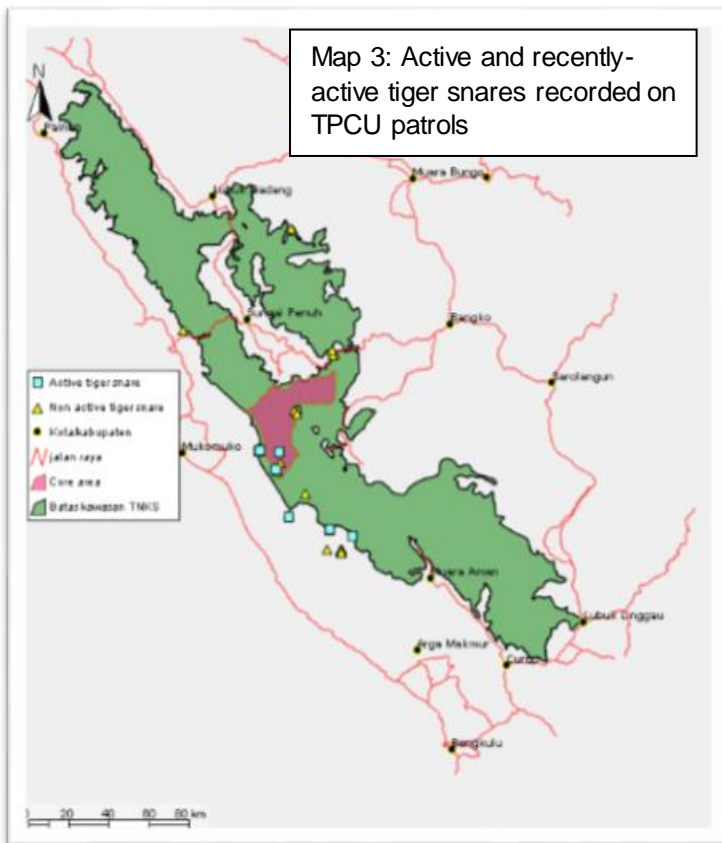
At least two breeding records were reported, in one case with an adult tigress and two cubs moving around a TPCU overnight bivouac, so close that the patrol team could smell their distinctive musky odour.

Tiger presence was highest in national park and park-edge forests in Bengkulu in the south-west of the national park, which accounted for just over 60% of all tiger records made during the project period.

It is very possible that tiger numbers are now recovering from the historic levels of illegal wildlife trade-driven poaching threat recorded between 2012 and 2016.

However, this rise in the number of tigers recorded and improved FoE may also be a consequence of tigers having previously changed their use of a very hilly landscape in response to snare poaching threat and are now beginning to return to their normal movement patterns, thus resulting in the increase in detection recorded.

Direct threat to tiger in the form of snare poaching using heavy-duty cables increased from the record low in 2018-19, when only one active and five 'recently' active tiger snares were recorded on three TPCU patrols.



A total of nine active tiger snares were reported by TPCUs in the course of six patrols, four of which were information-led, with eight inactive or abandoned tiger snares recorded on a further four patrols (See Map 3). A tenth site was recorded where a snare had trapped a tiger but where, on the basis of examination of the site, the animal had successfully released itself.

All active tiger snares, and all but two of the 'recently-active' snare sites recorded, were found in forests in the south-west of the national park in Bengkulu.

Only one Occupancy transect by the tiger monitoring team – in an area in the south-east of the national park which has never been patrolled for capacity reasons – recorded active poaching threat to tiger with three 'sling' cable snares destroyed and a further four 'recently-active' snare placements.

Although recorded threat to tiger increased during the project period in terms of the number of active snares, TPCU patrol Effort to detect threat, at one snare per 70 patrol days, was far above the long-term programme average of 1 snare per 28 patrol days, or the 1 snare per 8.7 patrol days recorded in at the height of the poaching ‘spike’ in 2015.

Meanwhile the low level of direct threat to tiger recorded on the MHS tiger Occupancy transects (most conducted in data-deficient areas of the national park, *see Occupancy surveys*, below), has substantially reduced concerns that the fall in threat to tiger recorded since 2017 was a product of leakage of threat to other areas where there is no focused field presence.

However, the team notes that both tigers seized as evidence in law enforcement actions during the project period had been shot and not snared. Threat from this poaching method is much more difficult to measure accurately than snare poaching and investigations reported widespread availability of illegal calibre ‘Airsoft’ guns, which may be used to hunt larger animals – including tiger - opportunistically.

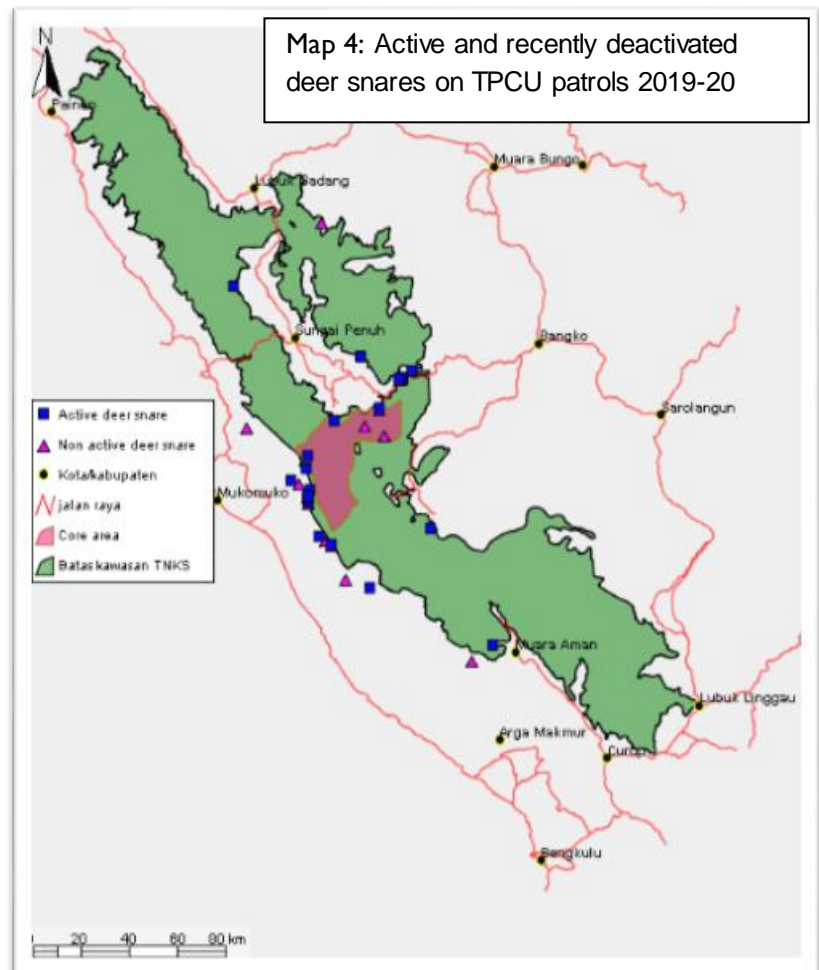
TPCUs recorded and destroyed a total of 118 active deer snares in the course of 20 patrols with almost 80% recorded on seasonal patrols during, and immediately before, the holy month of Ramadan, a period when poaching of tiger prey species traditionally spikes as hunters seek to meet a rise in local market demand and to raise funds for the Idul Fitri celebrations which mark the end of Ramadan.

Intensity of threat to deer was low or very low with only three ‘long’ snare lines (>15 snares or more) recorded. However, two local men were apprehended and cautioned in national park forests in Merangin area of Jambi during Ramadan and a total of 56 deer snares confiscated.

Six of the nine active tiger snares recorded were reported during and immediately before Ramadan.

Current or very recent poaching of songbirds, using bird-lime (glue) or mist nets and driven by ongoing trade demand was the wildlife

crime offence most frequently encountered, recorded on a total of 35 (30%) patrols and TPCUs responded (*See Law Enforcement*) as appropriate where an offender was present. It is a matter of concern that some of the individuals recorded or reportedly engaging in hunting songbirds are



known or strongly suspected to have previously been implicated in poaching of Sumatran tiger, although there was no evidence that this activity was being used as a 'masker' for poaching of tiger.

Illegal logging, generally local and small-scale was recorded on 12 patrols in the national park or its protected buffer-zone while recent or active forest clearance, primarily for smallholder palm oil in the west of the national park, and for coffee in the east of the park, was recorded on 24 patrols with responses made where possible (*See Law Enforcement*).

2: Investigations - *identify and monitor individuals posing threat to tigers, their networks and trade routes, secure evidence for law enforcement as appropriate and identify and counter any resurgence in illegal wildlife trade- driven threat to tigers.*

More than 150 investigations and 'for information' reports were logged by TPCU personnel in the course of information collection in 15 park-edge districts and municipalities of the four provinces which overlay the national park.

Two of these investigations proceeded through to A1 status (evidence seen, perpetrator(s) identified) and supported two tiger law enforcement actions with five tiger poachers or traders arrested and prosecuted (*See Law Enforcement*).

A further five investigations recorded first-hand evidence of deer poaching (antlers) or other wildlife offences in the course of tiger-focused investigations, but did not proceed to law enforcement, not least because this would have compromised ongoing investigations.

A total of 30 reports logged were graded as A2 (information which was fully-credible but where first-hand evidence of crime was not seen). These logged reports frequently related to ongoing monitoring of the activities of suspected poachers or IWT traders and one of these individuals was finally arrested, following long-running surveillance, in October 2019.

One of these reports, relating to a sudden surge in trade demand for Asian water monitor (*Varanus Salvatore*) in park-edge districts in the south of the national park, was passed on to wildlife protection NGO ENV Vietnam as it was strongly suspected the water monitors were destined for export to East Asia and the main local (park-edge) dealer was also known to have links to trade in wild tigers and pangolins.

ENV Vietnam subsequently confirmed that demand – black-market prices for this species had suddenly risen very sharply in Vietnam, where the meat of this lizard is a local delicacy. Investigations in Bengkulu had already reported that traders were seeking to source whole body varanids and not just their skins as was previously the case.

Traders operating from towns in West Sumatra province, in the north of the national park, continued to be recorded as a source of IWT pressure, obtaining protected wildlife from poachers and local intermediaries, and trading-on to exporter-level dealers mainly in Riau province of eastern Sumatra but, it is believed, on occasion, to Java island.

Investigation effort was increased in park-edge-districts in South Sumatra, in the south-east of the national park, and investigations reported apparently higher levels of threat to tiger in this area which receives no TPCU patrol presence.

Investigations identified one man leading the poaching gang, which set the only active tiger snares recorded during park-wide tiger occupancy surveys (See 5.3) by the FFI/KSNP tiger monitoring team. Investigations also reported that poachers in this area were allegedly sourcing firearms through a trader, now identified, on the Bengkulu-West Sumatra borders in the west of the national park and a second man – named but not yet fully identified – in the West Sumatra provincial capital, Padang.

Discussions with the WCS Wildlife Crime Unit in Gunung Leuser national park in north Sumatra advised they also recorded an increase in suspected poaching of tiger and deer using firearms. It is possible that this shift in method by some poachers is a response to the financial impacts of losing snares to law enforcement patrols. However, given low or relatively low densities of large mammals in moist tropical rainforest, it seems unlikely there will be any substantial shift to the use of firearms for poaching given the time and costs of hunting low-density species using this method.

3: Law enforcement: *Conduct offence-appropriate law enforcement within the national park and with other government agencies, where outside the national park's jurisdiction. Support post-law enforcement case development to secure an appropriate judgment that offers a substantial deterrent.*

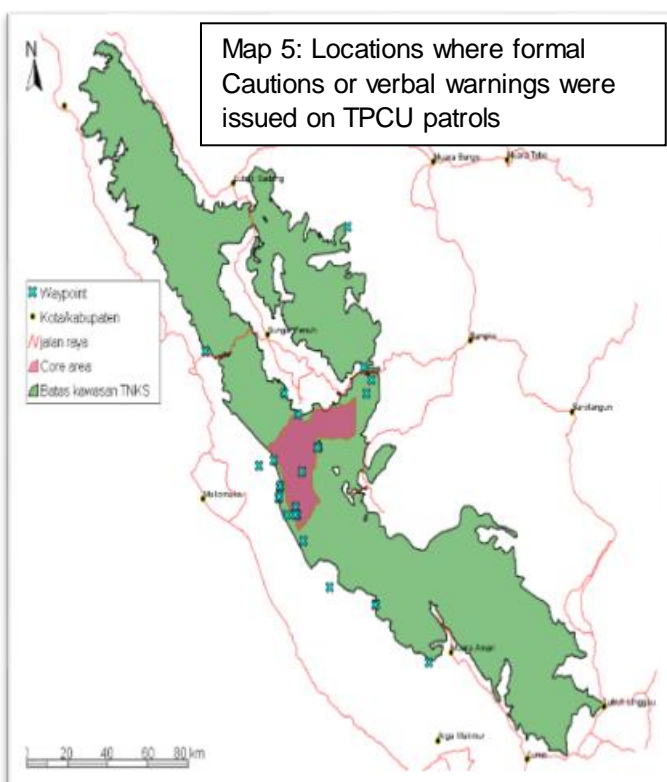
Two intelligence-led tiger law enforcement actions were conducted, resulting in the arrest and prosecution of five men, one an individual 'known' to the Bengkulu-based TPCUs since 2007, initially as a suspected tiger and deer poacher and, more recently, as a 'broker' or intermediary for local poachers.

The first tiger law enforcement action was conducted in partnership with Bungo district police in the east of the national park in March 2019 following an investigation launched a month earlier. Three men were arrested – with one, the teenage son of the poacher, subsequently released under caution – and the skin and skeleton of a juvenile male tiger seized as evidence. This animal had been shot in

park-edge forests by the poacher who had been 'lamping' for deer at night.

This case proceeded through post-law enforcement Case Development with Expert Witness support provided to police and court prosecutors. The two suspects were subsequently sentenced to 22 months and 24 months custodial sentences, lower than recent sentencing, in part because prosecutors saw this as an opportunist rather than a pre-planned wildlife crime offence.

The second law enforcement action was conducted in October 2019 in partnership with North Bengkulu divisional police with the complete body parts of an adult tigress seized as evidence and the broker – a man long 'known' to the team – and his son arrested. The joint law enforcement team then proceeded to a nearby village where a third man – the poacher in this case – was arrested and an illegal (5.5mm) calibre



'airsoft' gun seized as supporting evidence. This tiger had been shot in park-edge forests in a former logging concession in North Bengkulu district, which supports an important tiger population on the basis of patrol records.

This case proceeded through the post-law enforcement Case Development process to court hearings in early December where prosecutors proposed three-year prison sentences for all the offenders. Sentencing is expected imminently and WCCA will be advised as soon as judgment has been delivered.

In July, habitat law enforcement was conducted, with back-up from Mukomuko district police in the west of the Core area. Law enforcement was conducted after a group of farmers from a village in the south of the Kerinci valley repeatedly ignored both verbal and formal warnings by TPCU patrols to cease clearing virgin forest deep within the national park.

Only one of the 10 encroachers previously cautioned was present and he was formally arrested. He had recently started to build a luxury house in Mukomuko, but the case proceeded through to a court hearing and he was sentenced to a three-year prison term with an additional, record £85,000 fine or a further one month in prison. The remaining encroachers were summonsed to attend Mukomuko district police for interview but failed to comply. They have not returned to the forests they were clearing for coffee plantations.

More than 70 verbal warnings and advisories were issued for a range of wildlife and forest law offences with a further 15 formal Cautions and orders to 'quit' the national park issued.

A total of 21 of these warnings, including three formal Cautions, were issued to farmers clearing national park or protected park-edge forests for small-holder agriculture while four formal Cautions and 21 verbal warnings were issued to wild bird catchers encountered on patrols. TPCUs also issued one formal and 19 verbal warnings to villagers for illegal logging offences; in these cases, full law enforcement was not conducted, either because the culprits were cooperative or because it was judged they were daily-paid labour and that full law enforcement would not be appropriate. One formal written warning, rather than a verbal caution or counselling, was issued to a fisherman encountered in the national park as the individual was already known to the TPCUs as a suspected tiger and deer poacher.

Five high-powered airguns and three chainsaws were confiscated by patrol teams in addition to snares, bird nets and other equipment used by offenders.

4: Human-Tiger Conflict Mitigation - *Respond swiftly to human-tiger conflicts using a nationally approved conflict mitigation protocol, where possible before livestock predation has occurred, to protect both tigers and forest-edge community livelihoods*

Seven human-tiger conflicts, some requiring repeat attendance, were recorded during the project period, slightly lower than in the previous project period in 2018-19. All but two of these incidents involved tigers moving in or through forest-edge farmland and with no livestock predation or direct threat to the forest-edge community. TPCUs attended to assess risk and ensure the conflicts did not escalate while also counselling farmers on safety.

Livestock predation was recorded in two cases, the first, in early 2019 when a tiger killed a cow tethered overnight in newly-cleared farmland at park edge in Bungo district, Jambi. In this case, in addition to counselling farmers on livestock management, the team also patrolled surrounding forest and reported no further evidence of tiger in the immediate area. A community informant monitored the aftermath of this incident reporting no evidence of poachers seeking to exploit the

conflict. A juvenile tiger, seized as evidence in law enforcement in this area six weeks later, was thought unlikely to have been connected to this incident.

The second human-tiger conflict related to livestock predation occurred in Merangin district, Jambi in the east of the national park in late 2019 with at least five hunting or semi-feral farmland guard dogs killed, allegedly by a tiger, over a two-month period. In this particular case, TPCU personnel were unable to confirm that a tiger was responsible in all these incidents due to heavy rain - although poor quality pugmarks were seen in one case which occurred, at night, in forest immediately adjoining the national park. The dog's owner was informally cautioned after he admitted he had been in the forest, hunting lesser mouse deer, a protected species, at the time the dog was killed.

Human-sun bear conflict continued to be frequently recorded, particularly in the Kerinci valley. A bear, which started raiding empty *and* occupied houses in a park-edge villages had to be subsequently caught for its own safety. Although the team and national park partners recommended this bear be immediately released in a suitable location following veterinary checks, it was passed into the hands of KSDA Merangin and subsequently died of unknown causes.

5: Other Activities - Community/Government stakeholder liaison, training, monitoring tiger populations in Kerinci Seblat National Park

5.1 Training: In addition to training workshops for national park personnel in SMART database management and patrols to build ground-up forest and biodiversity conservation capacity three further major training workshops were conducted.

In January 2020, with support from WCCA, TPCU and monitoring team members gathered in the TPCU Bengkulu basecamp for wildlife emergency response veterinary training and a review of wildlife welfare emergency protocols by a highly-experienced wildlife vet who is also an officer of KSDA Bengkulu.

The workshop included a review of veterinary drugs – in particular appropriate anaesthetics - that must be available 'on standby' and a collaborative 'stock take' of equipment held by the TPCUs, including blowpipe darts and other materials. However, during the final day's training – monitoring of anaesthetised animals, administering saline drips and other veterinary auxiliary support duties – a tiger emergency occurred in South Sumatra, which the trainer had to attend. This final component of the training will be conducted at a later date in 2020.

In September, a training workshop in wildlife scene of crime management by forensics specialists from the national police (INAPIS division) was held for TPCU personnel, national park officers and forestry service officers in park-edge districts of Jambi. While many of the basic techniques are already in use by TPCUs, this training formalised and strengthened existing procedures and will support forensic-led investigations and subsequent responses to serious wildlife crime incidents detected on patrols. The director of training of the Ministry of Environment and Forestry attended this workshop and stated he will be recommending that wildlife scene of crime management and evidence collection be incorporated into the ministry's national training programme for forest rangers – which currently only trains rangers in documenting habitat-related offences.

This workshop also meant that senior members of the tiger patrol team were able to establish a line of direct communication with police forensics experts – who also manage detection and monitoring of suspect mobile phone signals – which will prove of real value going forwards.

Additionally, in the second quarter of 2019, the programme facilitated a wildlife crime prosecution and sentencing workshop for court officers from across Bengkulu province, which includes both the southern section of KSNP and the eastern area of Bukit Barisan National Park. The workshop was attended by 20 prosecutors and other senior district court officers, with training delivered by national experts of the Ministry of Law and by Bengkulu provincial police.

5.2 Coordination and stakeholder liaison: Informal contact was maintained with colleagues in other tiger conservation programs in Sumatra, in particular with the WCS wildlife crime unit in North Sumatra and with local NGO partners, most notably Lingkar Institute in the far south-west of the national park. The team advisor also frequently communicated with local NGO Flight, who are focused on tackling IWT in wild songbirds and disrupting trade routes to Java Island. Informal discussions on changes in IWT were also conducted with national and international NGOs directly, and through a WhatsApp group established following a meeting at ZSL London in October 2018.

Discussions were also held with colleagues in the Ministry of Environment and Forestry regarding development of a national database of camera-trapped tigers and development of a standard operating procedure under which any tiger skin seized in law enforcement is checked against the database and likely cause of death (eg. snare/shot/other) is documented (this procedure is already in place in Kerinci).

No camera trapping was conducted during the project period and so informal planning to work with national police to identify – using facial recognition software - suspect individuals photographed during camera trapping did not proceed.

The team advisor also discussed the issue of ‘recidivism’ or reoffending among tiger poachers with local and national police officers and with specialists in UK to identify actions required to leverage behaviour change among habitual tiger poachers and so address a problem experienced both in Sumatra and more widely. This could not proceed as far as had been hoped but will be pursued subsequently.

Both TPCUs and the tiger monitoring team (MHS) shared data routinely with the Merangin village forest team and all activities were reported monthly, to the director of the national park for onward reporting to the Ministry of Environment and Forestry in Jakarta.

5.3 Park-wide Tiger Occupancy Surveys by the FFI/KSNP Tiger Monitoring team (MHS): For the first time since 2011, no camera trapping was conducted by the MHS due to park-wide tiger Occupancy surveys – the first since 2007-2009 – as part of the Sumatra-wide Tiger Survey. These surveys will establish a baseline for the 2018-2028 Sumatran Tiger National Conservation Strategy and Action Plan and have already provided invaluable information to the tiger patrol team and the national park.

Four *ad hoc* teams, each led by an experienced member of the MHS team, were established for this activity and a total of 69 Occupancy surveys were conducted during the project period in randomly-selected 17x17²km grid cells, in and adjoining national park forests in four provinces covering a total distance of 2,464km (GPS Waypoint). A substantial percentage of the grid cells surveyed lacked any current or recent valid data on tiger presence and surveys did not include the Core area.

Park-wide Occupancy surveys by the MHS team in 2007-2008 recorded the highest tiger occupancy in Sumatra with 59 of the 89 Grid Cells surveyed recording tiger occupancy. Survey results were subsequently analysed by a national team of experts and occupancy upgraded to 83%, the highest tiger occupancy in Sumatra.

Both the TPCU and MHS had expected park-wide Occupancy surveys in 2019 would record lower levels of tiger occupancy, not least due to the impacts on tigers of the IWT-driven poaching spike recorded between 2013 and 2016. Instead, transects by the MHS team reported tiger presence in

60 (87% naïve) of the 69 Grid Cells surveyed and so significantly higher than 'naïve' results in 2007-2008. Tiger occupancy was lower in the eastern areas of the national park and adjacent forest in South Sumatra (78%) and Jambi (81%), rising to 88% in Bengkulu. All transects in national park forests in West Sumatra, to date, recorded tiger presence.

This latter record is a matter of considerable interest given that camera traps in national park forests in West Sumatra in 2012-2013 were disappointing, and poachers from park-edge districts in West Sumatra and traders in certain towns in the province are known to pose a significant source of threat to tiger in national park forests in Bengkulu and Jambi provinces.

The TPCU and MHS teams had also expected that transects in areas of the national park receiving no focused patrol presence would record higher levels of poaching threat. This was not the case and suggests that reduced threat to tiger recorded in TPCU patrol focus areas since 2017 is not a consequence of leakage of threat to other areas.

Only one Occupancy survey recorded active snare poaching threat to tiger with three active and four recently-active snares found on a transect deep within the national park in Musi Rawas district of South Sumatra. A TPCU investigation subsequently identified the individuals responsible and their poaching syndicate leader, a prolific, habitual poacher trading tigers to dealers in South Sumatra and West Sumatra. A fifth active-but-abandoned tiger snare was recorded in park-edge forests in North Bengkulu.

Monitoring transects additionally recorded a total of 146 active deer snares in the course of eight tiger Occupancy surveys, while wild songbird poaching was recorded on more than 75% of all Occupancy surveys park-wide; this is compared with 30% of TPCU patrols and all occupancy transects in national park forests in South Sumatra and West Sumatra recording recent or active song bird hunting.

Senior conservation biologist members of the Sumatran Tiger Conservation Forum (*Forum Harimaukita*) have now established a verification team to examine records from Occupancy surveys under the Sumatra-Wide Tiger Survey and so occupancy records to date in both Kerinci and more widely may be subject to change. However, it is unlikely, given the long experience of the Kerinci tiger monitoring team, that any changes to the naïve Occupancy levels recorded by the MHS team will be substantial. Please note that the excellent Occupancy rates recorded relate solely to tiger presence in a survey site and have no relationship to tiger densities or number of individuals present.

Key achievements of this project: *(Please give a bullet point list of key measurable outputs- for example xxx of staff trained in SMART monitoring techniques, xxx camera traps covering xxx km²)*

- 116 SMART forest patrols by TPCUs across a total distance of 1,870Km (1,162 miles) in national park and park-edge forests.
- A minimum of 101 tigers recorded on TPCU patrols, up from 84 in 2018-2019 and 89 in 2017-2018 with 57% of patrols reporting one or more tigers present.
- TPCU frequency of encounter with tiger increased to 1-18.5km park-wide and Effort to record tiger reduced to 1-6.1 patrol days and to 1-4.5 days in the Core area.
- Patrol Effort to detect active threat to tiger at 1-70 days compared with a long-term average of 1-28 patrol days.
- Five tiger poachers or traders arrested, prosecuted following investigations by TPCU personnel.

- 36 TPCU and MHS team members received training in wildlife emergency responses, emergency veterinary procedures and protocols.
- 20 prosecutors from district courts in Bengkulu province – which includes areas of KSNP and Bukit Barisan Selatan NP received training in wildlife crime prosecution.
- Eight senior TPCU rangers, five national park officers, KSDA Jambi and local forestry service rangers leading patrols in areas adjoining the east of the national park trained in wildlife scene of crime management and forensic evidence collection.
- Park-wide Sumatran Tiger Occupancy surveys by the FFI/KSNP tiger monitoring team recorded tiger presence in 87% of the 69 grid cells surveyed park-wide, significantly higher than under the last park-wide survey conducted in 2007-2008.
- No evidence of significant leakage of threat to tiger from TPCU patrol focus areas to other areas of the national park was recorded on tiger occupancy surveys so advising that actions by the programme since 2016 have leveraged a landscape-wide fall in threat to tigers.

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

TPCU forest patrols: Evaluated, collaboratively, twice-monthly by patrol teams and by senior members of the team and, routinely, using the programme's SMART database to analyse and compare patrol results over a multi-year period. Tiger presence and change are evaluated using both Effort to detect tiger sign @ patrol days per tiger, and through frequency of encounter (Km walked to record), and % of patrols reporting tiger presence using secondary indicators. Active or recently-active poaching threat to tiger is recorded quantitatively (number of snares, number/% of patrols recording) and Effort (days) to detect, and compared with the number of deer snares recorded to secure a ratio of tiger to deer snares. Patrol 'coverage' is not a key evaluation and monitoring tool due to the adaptive patrol model used but may be drawn-upon in quarterly and six-monthly activity reviews using SMART patrol maps.

Investigations: Number of investigation reports logged, and graded (credibility). Investigations securing credible data on blackmarket prices, changes in demand for tiger or other species, new trade routes or identifying previously-unknown individuals (poachers, traders, couriers). Investigations or information collection supporting patrols which record active threat. Number of investigations progressing to A1 (observed first-hand) or A2 (credible but unproven). Number of investigations supporting subsequent wildlife law enforcement in the landscape or by associates in another area of Sumatra. Willingness of forest-edge informants to provide information on suspected threat to tiger or tiger prey or an emerging conflict for a TPCU response.

Law enforcement: Number of pre-planned tiger law enforcement actions conducted and outcomes; number of suspects, evidence and, if Sumatran tiger, condition of evidence (complete or partial body parts, missing body parts). Willingness of other government agencies to partner for law enforcement actions. Law enforcement proceeding from arrest through Case Development to a court hearing and to sentencing. Judgments made (sentences, fines etc). Availability of suitable Expert Witnesses. Number of habitat and other law enforcement actions on patrols where offenders are present, type of offence, number of offenders, actions taken. Post-law enforcement patrol records and investigations in areas where law enforcement has been conducted suggest law enforcement impact.

Human-tiger conflict mitigation: Number of human-tiger conflict incidents reported, grade (severity) of conflict. Conflicts reported before livestock (excluding farmland guard dogs) predation has

occurred, and conflicts involving livestock predation or posing direct threat to people. Conflicts mitigated in partnership with other government agencies under multi-stakeholder conflict mitigation taskforce groups (*satgas*) or directly by TPCU personnel. Post-conflict mitigation outcomes, including use of community informants to monitor any recurrence of conflict or reports of poachers entering the area.

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

The programme operates in full partnership with KSNP authority and all TPCU activities and outputs were reported, monthly, to the national park director and subsequently, to forestry headquarters in Jakarta. This reporting system delivered real-time information to the national park leadership and national decision-makers in evaluating progress towards Sumatran tiger and other conservation goals, challenges recorded in the field and actions required.

Human-tiger conflict mitigation actions in the east of the national park were reported to the Governor of Jambi province through a multi-stakeholder human-wildlife conflict mitigation taskforce group or 'satgas' formed in 2018 and, through involving district forestry service officers, local government leaders were also informed of human-tiger conflict incidents and the likely factors behind the conflict.

A wildlife Scene of Crime training workshop in September with trainers from Indonesia national police forensic division or INAPIS, not only built capacity of TPCU and other rangers attending but informal briefings also raised trainers' understanding of the scale and scope of poaching and IWT and technical support needed.

Nationally, outputs from surveys and patrols were shared informally with colleagues on the Sumatran Tiger Conservation Forum (Forum Harimaukita) or directly with other tiger conservation programmes in Sumatra mainly by email or in conversations with local NGO partners.

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)

No English language press reports regarding the project were published. A partial list of local newspaper reports can be compiled and passed to WCCA if this would be helpful.

Have you provided at least 2 blogs?

<https://www.fauna-flora.org/news/why-captive-breeding-will-not-save-the-wild-tiger>

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

Section III. Appendix (Please populate this section with details from section II)	
Did you carry out camera trapping as part of this project? N	
Note: Camera trapping in the Core Area was not conducted by the FFI/KSNP Tiger Monitoring team due to Occupancy Surveys under the Sumatra-Wide Tiger Survey. Camera trapping is scheduled to be conducted between July and September 2020 and results will be shared with WCCA post-analysis.	
If yes:	
Total camera trap nights/days:- N/A	Total area surveyed:- N/A
Numbers of tiger/leopard/prey recorded – N/A	Have you included data on other species recorded? N/A
Did you carry out patrolling as part of this project? Y	
If yes:	
Total distance patrolled: 1,870Km (GPS Waypoint)/2,424Km (GPS Tracklog)	Total area patrolled: Approximately 485,000ha – note, this excludes conflict mitigation and information collection and investigations and law enforcement which substantially extends programme impact.
Do you use Patrol Monitoring software such as SMART? Y	
If yes:	
Total distance patrolled using patrol monitoring software?	How do you collect data? Handheld devices/paper/other? Please give details? TPCU SMART data/observations collected using individual paper 'Tally Sheets' and data from these is subsequently cross-checked and reduces

1,870Km (GPS Waypoint)/2,424Km (GPS Tracklog)		the risk of a data observation not being recorded before entry to SMART database.
Does your project work with local communities? Y		
If yes: (please be as specific as possible)	What did you do?	How many people did you reach?
Who? Primarily forest/park-edge farmers, non-timber forest product (NTFP) collectors	Develop and cultivate links in the course of forest patrols, other duties between community and TPCUs to build information networks supporting tiger, other wildlife and habitat conservation and swift responses to human-tiger conflicts. Counselling to villagers encountered in the forest on acceptable activities within the national park and why some activities should be avoided/are prohibited.	>150 – including long-standing forest-edge informants with whom TPCU rangers maintain informal routine contact, but excluding NTFP collectors and others to whom verbal counselling or informal warnings were given (>75).
How do you measure the success of this activity? Community information networks – primarily but not exclusively - forest-edge farmers swiftly pass on advice to TPCU regarding possible threats to tiger, other wildlife or tiger habitat or a possible developing human-tiger conflict for intervention before livestock predation has occurred.		
Did you carry out educational activities with adults or children? N		
If yes:		

Who?	What did you do?	How many people reached?
Have you seen behaviour change from these activities? (Please give details of how this is measured)		
Did you carry out training activities for any staff/community member on the project? Y		
If yes: (please be as specific as possible) Who? 1: Prosecutors from district courts in Bengkulu province 2: TPCU rangers, KSNP officers, district forestry service personnel conducting patrols in and around KSNP with Merangin Village Forest project, other Jambi-based forestry service officers. 3: TPCU and Tiger monitoring field personnel (MHS)	What did you do? 1: Training by national Ministry of Law experts and Bengkulu police in wildlife crime prosecution 2: Training in Wildlife Scene of Crime management and evidence collection by Indonesia national police forensics division. 3: Wildlife emergency responses for rangers – veterinary and wildlife welfare procedures in a wildlife emergency (in particular a snared or injured animal)	How many staff trained? How many others trained? 1. 20 courts officers from districts adjoining Kerinci Seblat and Bukit Barisan Selatan national parks. 2: 8 TPCU rangers, 5 KSNP officers (including TPCU coordinators), 5 district forestry service officers (Bungo, Sarolangun, Kerinci, Merangin), officers of KSDA Jambi, provincial forestry service, MoEF directorate of law enforcement (Sumatra) 3. 36 TPCU and Monitoring team personnel. Two staff from FFI Jakarta joined as observers and will seek to replicate the training in FFI’s project site in Aceh, north Sumatra
How do you measure the effectiveness of this training?		
1: a/ Trainees demonstrated understanding of the links between poaching and IWT in Sumatran tiger and Organised Crime b/ Trainees understood they had access to Benchmark sentencing when prosecuting a case		

c/ Improved prosecution Case development and appropriate-to-offence sentencing (One case awaiting sentencing) will be measured where wildlife crime cases go to court.

2: Trainees showed great interest in the training with popular Q & A sessions. There has been no serious wildlife scene of crime encountered since the training where (on the basis of trainers' advice) forensic evidence – for eg fingerprints - may be available to support subsequent evidence-based investigation however TPCU patrols are now routinely carrying basic items allowing them to collect Evidence without contamination. The director of staff training for MoEF who attended the training advised he proposes to incorporate wildlife SOC management into the MoEF standard training programme for rangers.

3: Newer (post 2014) TPCU and MHS personnel (who have not previously received training in wildlife emergency responses) demonstrated capacity in use of anaesthetic blowpipes and understanding of wildlife emergency protocols (for long-standing staff this was a refresher training) including welfare. Senior members of the team were able to conduct a 'stocktake' of drugs and equipment (darts, syringes etc) in-hand and have identified items required. Effectiveness of training can only be fully judged when it is required to be implemented in a wildlife emergency situation.

Did you carry out conflict mitigation activities with community members? N

If yes:

Who?

What?

How main people did this include?

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

Were any scientific papers/articles published because of your project? Y

If so, please give details or provide copies.

Biological Conservation, March 2019. **Two species, one snare: Analysing snare usage and the impacts of tiger poaching on a non-target species, the Malayan tapir** Kassandra Campbell, Deborah Martyr, Dian Risdianto, Christofer J. Clemente: This paper used TPCU SMART patrol records to examine the impacts of snare poaching for tiger over a five years period – including the 2013-2016 poaching spike - on Malay tapir in KSNP.