# Pelestarian Harimau Sumatera
# Kerinci Seblat

## Kerinci Seblat Tiger Protection Project

## Report on Activities and Progress
## April 2000- March 2001

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Although Bp Wandojo moved to Manggala Wana Bakti, Jakarta in May 2000, he remained as Director of the national park until November 2000 and therefore as titular head of the Tiger Protection Project. Although more than 1500km from Kerinci and with many additional calls on his time due to a new national position, Bp Wandojo remained unfailingly involved, enthusiastic and supportive for the project he helped to develop.

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In November 2000, Ir Anwar Msc was appointed as director of Kerinci Seblat National Park to succeed Bp Wandojo and we thank him for this energy and enthusiasm for the project and his interest in the project's operations and staff.

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## Acronyms

| | |
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| **CITES** | Convention on International Trade in Endangered Species of Wild Fauna and Floraa |
| **FFI** | Fauna & Flora International |
| **IUCN** | The World Conservation Union |
| **KSDA** | |
| **KSNP** | Kerinci Seblat National Park (TNKS) |
| **PHKA** | Pelestarian Hutan dan Konservasi Alam |
| **PHS** | Pelestarian Harimau Sumatera |
| **TNKS** | Taman Nasional Kerinci Seblat (KSNP) |
| **TPCU** | Tiger Protection and Conservation Units |
| **TPP** | Tiger Protection Project |
| **TRAFFIC** | Trade Records Analysis of Flora and Fauna in Commerce |

# 1 Project Summary

The long-term goal of the Pelestarian Harimau Sumatera (PHS) project is to develop a sustainable and effective protection programme for Sumatran tiger, which may act as a model for other in-situ protection programmes elsewhere in Indonesia.

The primary aim is to assist the national park management and provincial-level departments of the Department of Nature Conservation (Konservasi Sumber Daya Alam or KSDA) to detect, prevent and deter tiger poaching activities in and around Kerinci Seblat National Park (KSNP) and to assist the national park in protecting tiger habitat and tiger prey species.

The project was approved, in early 2000, by the Director General of Nature Conservation and Protection (Perlindungan dan Konservasi Alam) which department has subsequently been re-named Perlindungan Hutan dan Konservasi Alam (Forest Protection and Nature Conservation). The project's operating MoU was re-ratified between the new Director of the KSNP, Ir Anwar MSc. and FFI Indonesia Programme in February 2001.

The project went active and the first Tiger Protection and Conservation Unit (TPCU) was deployed in late May 2000.

The project operates under the day-to-day control of a Unit Manager (Alip Tantun Hartana) on secondment from National Park headquarters who reports to the park-project operations liaison officer (Park Tiger Officer) and through him to the Director of the national park.

# 2 Project Location

**Kerinci Seblat National Park and surrounding forest, Central Sumatra, Indonesia**

Kerinci Seblat National Park is the second-largest national park in Southeast Asia, the location of which is shown in Map 1 below. As a Level One Tiger Conservation Unit (TCU) (Wikramanayake, *et al*) with the highest overall score of any TCU identified, is one of the five most important habitats for tigers in the world and probably the single most important protected area for tiger in Southeast Asia.

The park covers a total of approximately 1.35 million hectares (more than 13,000 sq. km) excluding buffer zone forests however a number of areas around the national park have been heavily affected by human activities, including illegal logging and conversion of forest to agriculture in recent years. Additionally certain areas of the park and its buffer-zones have been designated as 'Traditional' or 'Special Use' zones. The former are areas of forest traditionally used by local people for non-timber forest product collection and additionally for village lumber requirements but which must remain under forest cover to maintain watershed protection. Special Use zones are areas converted to agriculture within the national park borders – and this category includes most of the long-standing enclaves within the national park.

The largest enclave is the Kerinci valley, a long and densely populated Graben valley lying at the approximate geographic centre of the national park at 750 m a.s.l. Other important enclave areas include Renah Permatik, Renah Kemumu, Renah Kayu Embun and Air Liki/Ngaol. These compose both national park forests converted, legally or otherwise, to agriculture over the past 30 years and other areas, most importantly the Renah Kemumu enclave which has a history of human settlement far pre-dating establishment of the national park.

With the exception of Renah Kayu Embun, these forest enclaves are currently accessible only by footpaths (*jalan setapak*) although, at the time of writing, there are proposals to drive a road through the national park to Renah Kemumu, which lies at the center of the park's most biodiverse areas.

**Map 1 – Location of Kerinci Seblat National Park within Indonesia and Southeast Asia**


Historically the KSNP mainly comprises a series of *hutan lindung* (protected watershed forest), game/hunting and nature reserves originally established by the colonial Dutch which were amalgamated into what was then Indonesia's largest protected area in the mid-1980s. The national park was gazetted in 1999 and its borders given formal legal status – the first of Indonesia's national parks to achieve this

The national park was considerably reduced in size in the late 1980s and early 1990s in a series of boundary reorganisations, which stripped the park of the majority of its lowland and lowland hill forest habitats below 500 m a.s.l. Most all of the flatter plains landscapes were also excised from the park – in some cases by boundary changes which produce logging enclaves penetrating deep into it's core.

The areas excised from the park were then reallocated to logging concessions for limited/selective logging operations and some observers, including members of the ICDP team, had understood that once first-phase selective logging had been conducted the most biodiverse areas of these concessions would be returned to the national park.

This has not happened and conversion of these forests is now underway in many areas and illegal logging is rampant in both the remaining active and the inactive concessions.

Six logging concessions surrounding the national park remain active and under the control of their concessionaires or sub-contractors. Recently, however, logging appears to have restarted in inactive logging concessions with unknown contractors apparently appointed under new Regional Autonomy legislation. There are indications that one or more of these contractors is operating close to, or within, National Park borders

At least two of the originally-appointed companies, which are still active - PT Rimba Karya Indah and PT Duta Maju Timber - are known to have conducted logging operations deep inside the national park. In addition, the logging practices of many of the concessionaires have been found, upon audit, to be incompatible with long-term sustainable forest management and watershed protection.

These activities have considerably reduced the actual habitat available to Sumatran tigers since 1990, while logging roads and trails have dramatically improved access to formerly remote forest areas, which are now being very heavily exploited by illegal logging operators, farmers and hunters.

Even so, KSNP probably remains unique in its preservation of complete, contiguous ecosystems - lost in other areas of Sumatra. Assisting the national park in protection of these key habitats is seen as an important part of the PHS role.

## 3 Background and History

A minimum estimate for population was made at a Sumatran Tiger Population, Habitat and Viability Analysis (PHVA) workshop held in Padang in 1994, when it was suggested that 76 or more animals range within KSNP and the surrounding forests.

This estimate was made on a basis of three adult residents per 100 sq. km and on the assumption that Sumatran tiger generally favour lowland forest, thereby excluding much of the park from the tiger habitat and population equation.

Camera trapping and extensive surveys within and around the national park by FFI since 1995 and survey and patrol work since April 2000, by FFI and the PHS TPCUs indicates the 1994 population proposal was a considerable under-count and that, as with the results of work carried out by the Sumatran Tiger Project (Franklin, *et al*) in the forests of Way Kambas NP, Lampung, a higher population of Sumatran tiger was present than proposed by the PHVA.

The low estimate for Kerinci is likely to have been due to lack of data available to the PHVA on tiger populations in hill forests and due to the erroneous suggestion that tiger do not favour the hill forests of which TNKS is mainly composed. In fact tiger in KSNP certainly range to at least 2300m a.s.l. One of the areas of the national park formerly famous for tiger is the Ladeh Panjang-Danau Sakti peat swamp complex of north Kerinci at 1950 m a.s.l.

This project was conceived in 1997/8 when members of the FFI Kerinci team began to record a rise in reports of poaching of tigers in and around the national park. Such incidents were immediately reported to either national park staff or to nature protection officials from KSDA. However, it rapidly became apparent that neither the park nor KSDA had the capacity to react to such reports. In mid-1998, a meeting was held with the then field manager of the Sumatran Rhino Protection, drs Dwi Sutantohadi in which it was proposed that FFI should seek funding for Tiger Protection and Conservation Units. These would operate on similar lines to the Sumatran Rhino Protection Units at Air Hitam, Bengkulu.

At the time, a large international NGO was proposing to provide funding for up to 10 additional RPUs based around KSNP and the two-unit TPCU concept was expected to be complimentary to the expanded RPU programme. In the event, funding for the RPU proposal did not materialize.

The difficulties facing National Park management in Indonesia are well known. In the case of Kerinci, the Tiger Protection Project (TPP) was launched in a park that has historically suffered from a lack of management capacity and strategic and staffing failures. These are now being addressed under an on-going Integrated Conservation and Development Programme.

More importantly for the purposes of the TPP, the park had no specific anti-poaching and protection strategy, no intelligence regarding poaching, no routine in-forest conservation patrol schedule and had never brought a poacher to court

The management issues referred to are now being addressed. However, the current system of operational budgeting as laid down by Jakarta still produces a 'feast or famine' scenario which has precluded an effective in-forest patrol system, few national park rangers have ventured far into the national forests they are responsible for protecting and park rangers continue to operate reactively and not pro-actively.

A new system of patrolling and ranger management using Patrol & Conservation Units is now (April 2001) being implemented, launching in the Kerinci area and subsequently in West Sumatra and other administrative regions. However, until April 2001, only the three four-man Rhino Protection Units based at Air Hitam, north Bengkulu and the two Tiger Protection and Conservation Units at Bangko conducted regular in-forest patrols in a national park more than two-thirds the size of Belgium.

## 4 Progress Towards Implementing Project Objectives May 2000-March 2001

- ***Establish 2 x 4 person (basic staffing) Tiger Protection Units (TPUs) operating in either whole units or parts thereof to protect tiger and tiger prey species in Kerinci and surrounding buffer zone***.

Two TPCUs were established between May and August 2000, operating under the leadership of two national park rangers seconded, full-time, to the TPP.

- ***Increase the capacity of the park to successfully detect, pursue and prosecute, where possible, the individuals or groups involved in poaching and habitat destruction.***

Selected national park rangers now accompany TPCUs on one or more patrols each month for in-field training and capacity building and rangers are routinely involved in operations conducted by TPCUs. Enthusiastic (motivated) rangers in district offices are identified and routinely involved in planning and discussing TPP work schedules. Also the Unit manager attends monthly regional and provincial operational and strategic planning meetings.

- ***Collect intelligence on the identity of tiger hunters/buyers of tiger products and work towards their successful prosecution***

This work is continuing. Pre-patrol and operation intelligence is critical to any targeted conservation and anti-poaching programme and is a the basis for any effective patrol programme

- ***To educate, in the course of project work, local communities on the protected status of tiger and the species' role in the forest ecology.***

This work continues informally, however there is an overwhelming argument for a complimentary education/outreach programme targeted at problem communities, tiger-human conflict areas and decision-makers, most notably the police, the army and the judiciary. Regrettably, lack of law enforcement in the past means that the law is often seen as irrelevant, while, to justify poaching, unscrupulous individuals manipulate fear of tiger.

- ***To involve and motivate communities to report poaching activities and tiger sightings.***

This continues and has been most successful in communities where there are family or other links to members of the TPCUs or to long-serving field assistants of FFI Kerinci.

- ***Through protection of species prey base and habitat, to reduce incidence of tiger-human conflict for the future welfare and protection of both local communities and tiger.***

Tiger-human conflict, whether actual or perceived likely, is now identified as the single largest cause of human-induced Sumatran tiger mortality in and around KSNP. Resolution of the conflict, and prevention of it being manipulated by poachers, appears to be a critical factor in the in-situ conservation of the Sumatran tiger.

# 5 Activities

## 5.1 Primary Activities

- ***Establishment of specialist units working in groups of between three and five individuals, to patrol areas where tiger poaching is suspected or reported, and in areas of high tiger density.***

For patrol and operational purposes, units do not operate in groups of fewer than three men. For intelligence purposes (under cover data collection in the field), two and a maximum of three have been found to be most effective but rangers may operate on intelligence missions alone with back-up where necessary. Patrols are most likely to be effective when a unit is led by a national park ranger with the additional legal powers held by Forest Police (PolHut). Growing lawlessness and rising levels of illegal gun ownership mean one or more members of a Patrol team must be armed in operational situations. The national park has issued firearms to the Unit Manager and two Unit Leaders for use on these occasions.

- ***Collection of intelligence on the identity of tiger hunters and buyers of tiger products plus liaison with national and international agencies working to cut the trade links between poacher and end-user.***

This work continues and liaison with selected police officers has been established in selected areas. But the involvement of rogue police and army officers in illegal logging and wildlife offences means that the project must be exceptionally cautious over any external liaison and information interchange. Informal discussions have been held with the Wildlife Conservation Society at Bukit Barisan Selatan National Park concerning techniques of field data collection and monitoring of trafficking and poaching. Contact made with TRAFFIC-Southeast Asia and it is hoped that they will be able to assist in training of TPCUs in investigative and forensic techniques.

- ***Pursuit and prosecution, where possible, of the individuals or groups involved in the tiger trade***.

This work continues although collection of legally-sound evidence is a difficult process and the intention to commit a crime – possession of snares or conspiracy to trade in a protected species – is unlikely to be accepted as the basis for a successful prosecution. The arrest of Abu Yani in July 2000, and other enforcement operations around the park, has made the task of the TPCUs more difficult since poachers and dealers, although still operating, are now more covert about activities. However, the arrest appears to have had a deterrent effect with at least one major Jambi province dealer appearing to have suspended or ceased trading in tigers.

- ***To protect tiger prey base within the park and surrounding forest.***

This work continues. Poaching of ungulates is a serious problem around the national park with opportunist, semi-professional poachers and commercial-scale poaching syndicates having been identified. Although poaching of sambar deer *(Cervus unicolor*) is a serious problem in many areas, the most heavily persecuted deer species, on the basis of snares removed, is the smaller red barking deer *(Muntiacus muntjac)*. The IUCN Red List-listed forest antelope, serow (*Naemorrhedus sumatrensis)* is also heavily threatened in many of the areas. All three species are protected under Indonesian law, with the serow,

a CITES-registered species, listed as of higher priority for protection. Although TPCU members react where possible to ungulate poaching reports, priority is given to reports of sambar and serow snares as, given the size of these animals, tiger can on occasion fall victim to traps set for these ungulates.

The hunting, for sport, of wild boar and indiscriminate setting of snares for pig which are a crop pest in some areas, is also a cause for concern. The team has collected records of both tiger and protected prey species being trapped in snares set for wild pig. Pig hunting groups are also known to have killed sambar and other protected species, including Malay tapir. Widespread mistrust of authority is one probable reason why accidental snaring of protected species is seldom reported to the national park, although where a species trapped accidentally has a commodity value, the trapper is likely to seek to profit from the event.

Four Sumatran tiger are reported to have died as a result of being accidentally snared in pig or sambar traps or poisoned with bait put out for wild pig between April 2000 and February 2001 and this is likely to be an under count.

## 5.2 Secondary activities (as per Proposal):

- ***Assisting National Park management and managers of KSDA in baseline biodiversity monitoring, collection of data concerning tiger habitat, numbers and seasonal movements. Acting as an extension arm of the island-wide Sumatran Tiger Project.***

Operational pressures mean that biodiversity data collection has taken lower priority than originally envisaged. However, on all except active enforcement operations, team members collect tiger and biodiversity data. The low incidence of tiger encounters on patrols in some areas formerly considered high tiger density habitats – in some cases very recently - is a matter of some concern and requires further investigation.

User-friendly data field sheets based on frequency of encounter have been designed for the teams but pressure of work on the units means that input into the project database has frequently been delayed.

- ***Identification and prosecution of habitual poachers of prey species (deer, serow, etc.)***

No formal in-court prosecutions have been made to date, but the work continues. The issuing of formal legal cautions to poachers apprehended in the forest appears to have a salutary effect. Additionally, given past lack of enforcement, the team considered it important to give communities time to realise that habitual poachers now face a real risk of apprehension. In the second year of operation, the team will start to seek legal prosecutions against habitual poachers.

Meanwhile, the reaction of local communities to the PHS team's in-forest patrol schedule strongly suggests that if an effective and regular patrol routine could be instituted the problem of poaching of tiger and other species would be considerably reduced.

- ***Units to investigate and ascertain, where possible, the likely causes of tiger attacks i.e. illegal logging, poaching, ladang (farm land) incursion to park, etc. Tiger conflict/attacks, whether on people or livestock, often lead to revenge attacks by the park edge community.***

The importance of conflict or potential conflict between community and tiger as a cause of mortality in Sumatran tiger cannot be overstated. A significant percentage of all cases of tigers being killed in and around this national park appear to have resulted from actual or potential conflict. This is discussed further in section 6.7.

- ***The collection and collation of information and intelligence from members of the community, researchers, NGOs and TNKS and KSDA rangers, for use by the project and park managers, and by national and international agencies.***

It was anticipated that much information would be received from NGOs and from TNKS and KSDA rangers, not least given the village-level activities of NGOs operating under the ongoing ICDP project in and around TNKS. This has not been the case. The TPP has established informal and friendly links with the Bangko-based NGO Warsi, which is conducting tiger and rhino trade monitoring activities around the national park. To date, the team has found that information collected by TPCU members and team-recruited informants is generally the most reliable.

- ***Identification, in liaison with park authorities, NGOs and local informants, of existing tiger poaching problem areas and the identification of future problem areas. This data will be used by park management and regional spatial planning authorities***.

This work is ongoing and data is passed to park management on monthly a basis except where urgent action is required.

- ***Liaison with all stakeholders, local and national government, local communities, and media organisations to maximise positive tiger publicity and public relations.***

Tiger-related incidents are the object of considerable press and community interest, as in the publicity given to the apprehension, trial and subsequent sentencing of Abu Yani, and the interest in the fatal tiger attack at Renah Kayu Embun in October 2000.

In the latter situation, a very pro-active response was required and the PHS team had also to seek to defuse a potentially very damaging situation, which individuals actively hostile to the park sought to exploit. TPCU members were on site within six hours of the attack - having first visited the victim's family to express condolences. Withdrawal of armed police sharpshooters who had been ordered to 'kill the tiger' was negotiated.

Local press were briefed on the incident, discussion established between local government and the park and the team liased with local farmers throughout the incident period. As a result Renah Kayu Embun farmers, who had remained in the area subsequent to the attack, requested that a demonstration planned to rally against the

national park be cancelled. Subsequently these same farmers joined TPCU members in patrols of the attack area, firstly to ensure safety of local people and secondly to attempt to monitor the tiger's location.

The major problem with regard to maximising positive tiger publicity is the Indonesian urban perception of the tiger as a 'savage animal' and since these are increasingly eroding traditional village beliefs in the relationship between tiger and community - much thought is needed to develop a positive perception of the species.

In the project's first year of operation, publicity was not courted – particularly since the team is anxious not to compromise its security and operational effectiveness. In spite of seeking to maintain a low profile, the team's activities have attracted media attention and where this is the case, media queries are directed to the national park. However, the teams have recently agreed to a request by the national Televisi Republik Indonesia (TVRI) station that a feature be produced on the PHS team. Also, the national daily newspaper –Kompas - and a British daily newspaper - The Guardian - have also requested permission to write features on the work of the teams. Additionally, at the national park's request, TPCU rangers assisted in hosting a large-scale press visit organised by the national park for Indonesian daily newspapers and television stations.

- ***Liaison with conservation and protection organisations outside the immediate project area to identify and cut trade routes and identify and prosecute the buyers of, and dealers in, tiger products.***

The fragmented and opportunist nature of the black market in tiger and tiger products in and around KSNP means that, to date, this objective has not been pursued. Furthermore the conservation community in Sumatra is somewhat fragmented, although enthusiastic, and developing a useful and coordinated strategy is likely to be time-consuming and not immediately productive. This avenue will be explored further in the course of 2001 now that teams are fully staffed and a routine operating procedure has been developed.

## 5.3 Tiger Protection and Conservation Units

Although the original proposed name for the teams was Tiger Protection Units, this was changed, in April 2000, at the suggestion of the then national park Director Bp Wandojo Siswanto to Tiger Protection and Conservation Units or TPCUs as better reflecting the actual nature of the duties

The basic composition of the teams remains as originally proposed – highly motivated four-man units, composed of members of forest-edge communities and with each unit under the full-time command of a national park ranger (PolHut).

## 5.4 Personnel

### 5.4.1 Staff Members

The staff members of each TPCU with their dates of initial employment are given below:

**Tiger Protection and Conservation Unit 1**

**Leader:** Arifin (also senior TNKS ranger) – May 2000
Samsul Basir – May 2000
Sukarno – (Karno) May 2000
Jon Effendi – (Pendi) - January 2001

**Tiger Protection and Conservation Unit 2**

**Leader** Eko Supryatno – August 2000
Andi – full-time from December 2000
M Rozali – June 2000
Darham (intel/casual) – on trial. Replacing Suhardimus

## 5.4.2 Recruitment and Staff Selection

Identifying and recruiting TPCU rangers, whether from national park or community, was not easy and, given the parameters, will never be easy. Once recruited, a team had to be forged from many very disparate elements.

### Community Rangers/*Mitra harimau*

It was decided that the non-TNKS personnel should be drawn, where possible, from individuals from forest-edge communities who had previously lived from forest products collection. They should therefore understand the economic imperatives, how markets are driven and organised, how supply lines operate and be able to work effectively both in forest edge communities and district towns.

A deliberate decision was taken not to recruit any individual known or believed to have poached deer professionally or habitually because of the danger of future recidivism

A good profile was that of an experienced gaharu *(Aquillaria* spp.*)* collector. Such individuals work in small, self-organised groups, usually in deep forest and often have a remarkable knowledge of forest flora and fauna. Since much of the gaharu trade in Sumatra is at best only semi-legal, professional or semi-professional gaharu collectors usually have a wide knowledge of the forest-products underworld around the park and beyond

Only the most minimal formal educational skills – the ability to read and write - were initially required. Forest or other skills were more important than educational certificates. However three of the early TPCU members had also worked as field assistants to the FFI Kerinci team - and so had good basic skills in data collection, including using GPS and map-reading.

### TNKS ranger members of the TPCUs

Selection of TNKS rangers was also not easy, not least because the national park is short of able and motivated ranger staff and initially park managers resisted loss of such rangers from their previous posts.

As with the community rangers, a critical qualification for Unit Leaders was motivation and a genuine commitment to in-situ conservation of species and the forests of the Kerinci Seblat. Pre-existing forest skills were rated as less important for the Unit Leaders since they would be working with highly-skilled community rangers and so would develop forest skills through working with their teams .It was however clearly essential that the Unit Leaders were exceptionally fit.

Unit Leaders needed to have a good knowledge of criminal and civil law, have an ability to function under extreme pressure on occasion and not be easily intimidated by other protection and enforcement bodies or individuals of rank senior to them. Additionally Unit leaders had to have an ability to lead, motivate and weld a very disparate group of individuals into a team that would be mutually reliant in potentially very dangerous situations. Legal permission to carry a firearm was a prerequisite.

After 10 months of operations, the two units are now seen as an integral and effective part of the national park's conservation and protection strategy and not, as when the programme was first about to go active, as a transient international 'project'.

Following a trial patrol in October 2000 in which two TNKS rangers were invited to participate, selected national park rangers (PolHut) are now invited to join one or more routine patrols with the TPCUs every month.

The purpose of this is three-fold:

1. To enhance National Park ranger capacity and give them practical experience of patrols and surveys in primary and deep forest and practical knowledge of forests within their 'sectors' which, due to financial shortfalls and local administrative strategies and priorities etc., they would almost certainly never otherwise visit.

2. To build close ties between the TPCUs and the national park rangers and so prevent the TPCUs being seen as a distant 'elite' but instead as a ranger team which operates in support of the national park but in a different manner to the standard ranger teams.

3. To develop a cadre of experienced, enthusiastic and motivated young national park rangers both as a future recruitment pool for this project and any others like it but, additionally, as a motivating force for the other PolHut members of the national park.

Additionally, and unfortunately, as lawlessness increases in the wake of continuing political instability at national level, the presence of additional TNKS rangers is helpful when working in areas where illegal loggers - some of whom now habitually carry firearms - or suspected armed poachers are believed active.

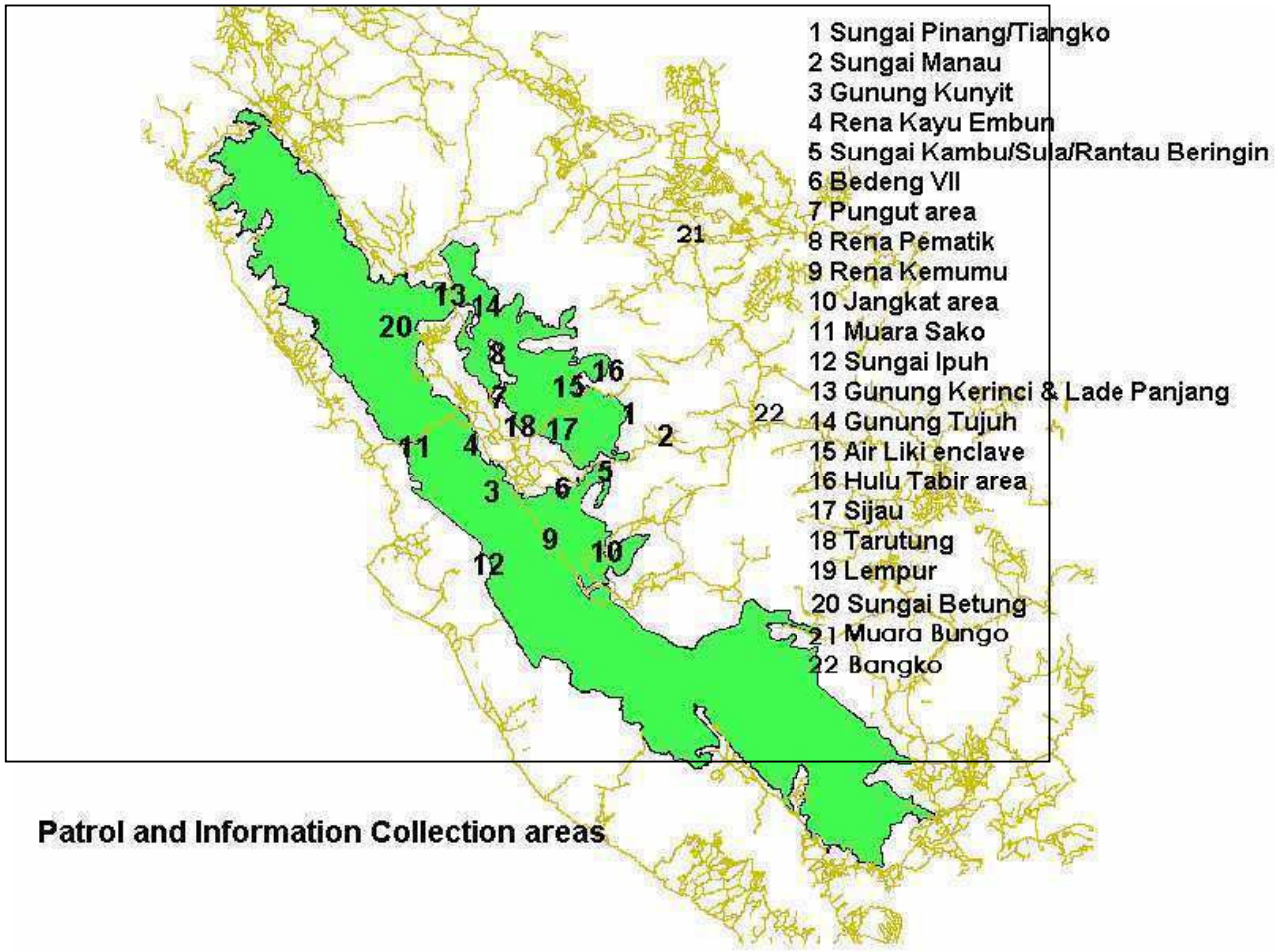
## 6 Forest Patrols and Operations

Patrols currently fall into two categories, namely reactive and proactive.

The former are patrols in areas already identified either by the TPCUs or by FFI Kerinci in the past as areas of high tiger density or areas where a known tiger population is suspected to be vulnerable, and the latter are data deficient areas which require assessment of tiger population (if any) and threats (if any).

The very large area of the national park now known to be vulnerable and the widespread reports of poaching and habitat degradation mean the teams have been forced to practice 'triage' and to mainly concentrate on known priority areas, although at least one short 'survey' patrol is attempted each month. Map 2 and Map 3 show the patrol and information collection areas and the main areas of operation for habitat protection, respectively.

**Map 2 – Patrol and Information Collection Areas**




**Patrol and Information Collection areas**

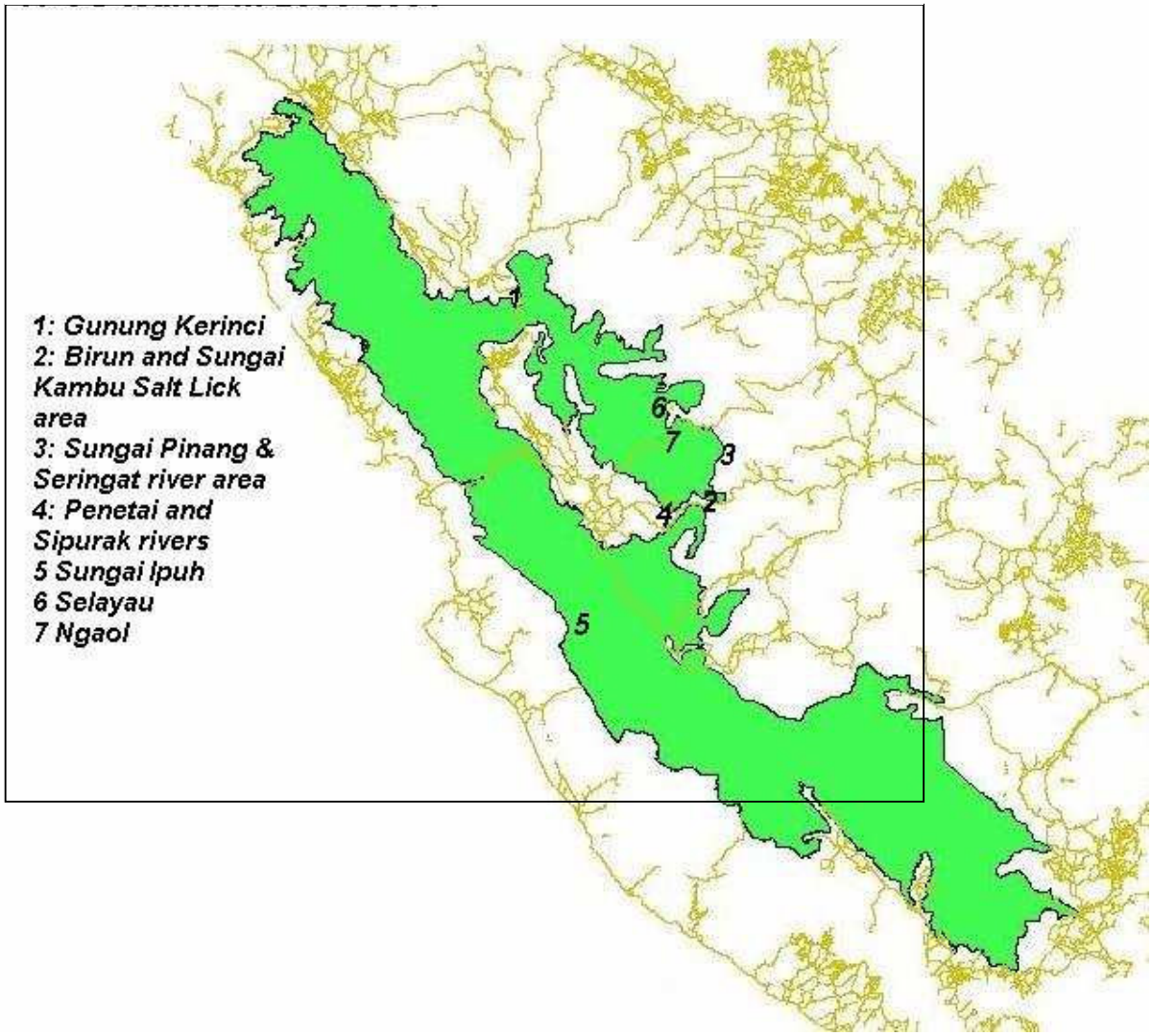
Patrols range from 3 to 11 days in length depending on the area visited although in practice most patrols are likely to run from 4-6 days and results indicate that tiger and ungulate populations up to six hours walk (5-12km dependent on topography) are most vulnerable to illegal hunting pressures. TPCU teams do not employ fixed camps, instead making camp at any suitable site encountered in the late afternoon or early evening.

The forests of the KSNP are generally hilly or mountainous and patrol teams generally follow the ridge trails, which are favoured by large mammals and people for travelling.

The degree of use of ridge trails is to a great extent dependent upon topography however favoured animal trails channel both large mammals and people into a small area and such trails are the most likely sites for both encounters with secondary tiger presence indicators (footmarks, scrapes, faeces etc.) and human activities (trail blazing, trapping etc.).

Much threat and population monitoring in the course of this first year of activities has been based more on intelligence and use of trusted local informants and not, as had been hoped, through repeat patrol and monitoring work. This is due to the heavy workload due to the wide range of threats identified by the teams.

**Map 3 – Main Areas of Operation for Habitat Protection**




It had been hoped that the FFI team would be able to assist the TPCUs in the field through surveys of data deficient areas and monitoring thus allowing the tiger teams to concentrate, initially, on identified active threats and critical populations and habitats. Unfortunately workload on the coordinator and financial shortfalls on the Kerinci team meant this was not possible. It is hoped this situation will change in 2001.

The presence/absence records collected by PHS team members on patrol and survey operations are given in Annex 1, and a summary of patrol and survey routes conducted is given in Annex 2.

## 6.1 Patrols and In Forest Intelligence

While swidden/shifting agriculture (*ladang*) can be relatively quickly detected through frequent use of satellite imagery, many of the threats to Sumatran tiger and biodiversity in the national park require a ground-based approach.

Patrols and In Forest Intelligence by the Tiger Protection and Conservation Units reported and where possible tackled a wide range of threats to Sumatran tiger and tiger habitat and, therefore, to the integrity of the national park:

These included:

- Illegal logging - widespread, open and increasingly aggressive and deep within the national park in areas where roads or rivers allow timber to be carried/floated out. Supported in some areas by rogue members of the security forces and often openly sponsored sawmills with clear evidence of local political support in some areas. The ICDP project currently estimates there are some 116 illegal sawmills now operating around the national park, although this is likely to be an under estimate.
- Incursions into the National Park and protected forests by farmers (shifting/slash and burn agriculture) – on occasion by organised syndicates or entrepreneurs. Poaching of ungulates and ground and other birds is heavily associated with opening of forest by some communities since farmers are likely clearing forest to 'live off' the land.
- Large-scale and organised manau collection (a species of rattan usually collected by felling the trees through which the palm climbs). Unsound and unsustainable collection methods cause serious habitat degradation. The TPCUs assist the national park regarding manau collection as time allows.
- Poaching of ungulates – sambar, muntjac (barking deer) and the endangered (IUCN Red List) serow. Commercial bush meat syndicates common in some areas with deer meat (and on occasion other species) sold smoked around villages by traveling salesmen. Hunting of wild pig, a crucial tiger prey resource, is a popular local sport and is often backed and promoted by local governments and pig may be hunted outside the park but also, illegally, on occasion within national park borders
- Poaching of Asian elephant - active in both Jambi and Bengkulu. In Bangko kabupaten such poaching is unrelated to human-elephant conflict.
- Bird trapping (ground birds) – mainly for meat (pheasant species). Almost invariably accompanied by poaching of ungulates.
- Song bird trapping – cage bird trade. Trappers from areas far beyond traditional local catchment areas now active in/around park. Tackled as encountered.
- Insecticide and electric fishing (both illegal within and outside national park borders). The PHS team acts against these damaging and unsustainable fishing methods as encountered. Poison and electric fishing is extremely unpopular with traditional communities and enforcement actions against perpetrators are very popular and win sympathy for the park and therefore conservation
- *Ganja* (marijuana) farming and trafficking – Links between marijuana trafficking/cultivation and poaching of tiger have been confirmed in two instances between 2000-2001. A third known tiger dealer/poacher was arrested in late 2000 on loan sharking charges while under investigation by the PHS team. The linkage revealed between tiger poaching/dealing and non-wildlife crimes has

resulted in useful and effective contacts being established with police intelligence organisations in Kerinci regency.

- Finally, a tourist was formally cautioned by Unit Leader, Arifin, after being found removing a specimen of *Amorphophallus beccari* from the forests of Gunung Kerinci.

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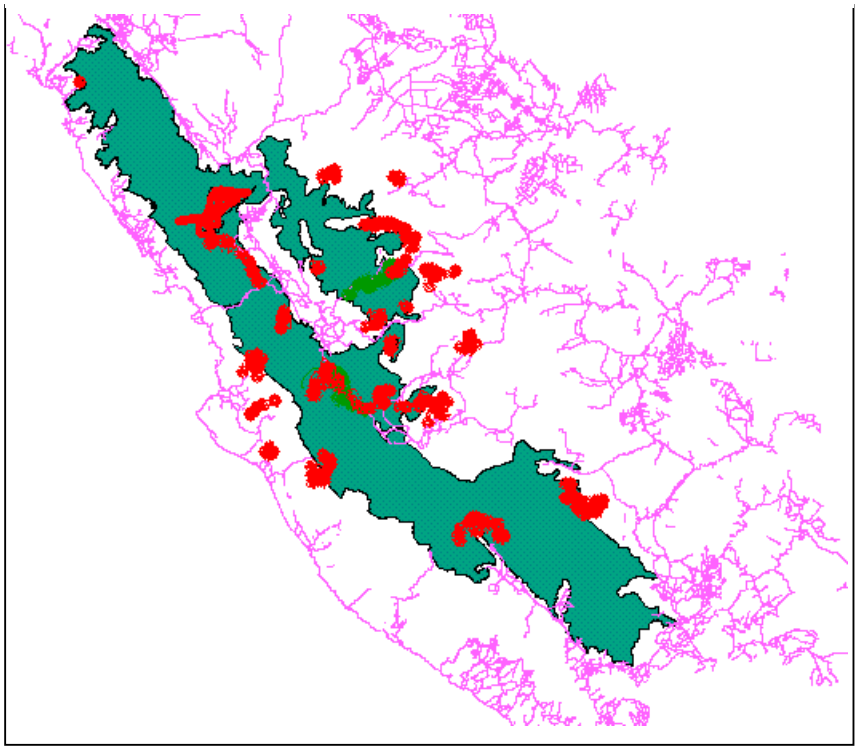
The law enforcement issues that have arisen during forest patrols are given in Annex 3. The legal cases issues arising from patrols and activities are given in Annex 4 and the Evidence held by TPCUs is given in Annex 5.

## 6.2 Poaching of Wildlife - In and Around Kerinci Seblat National Park

The known areas of tiger poaching; the areas where tiger poaching has been confirmed present in 2000-2001 by the project; and the areas where heavy ungulate poaching has been identified are shown in maps 4, 5 and 6 respectively.

**Map 4 – Main Known Tiger Poaching Areas**



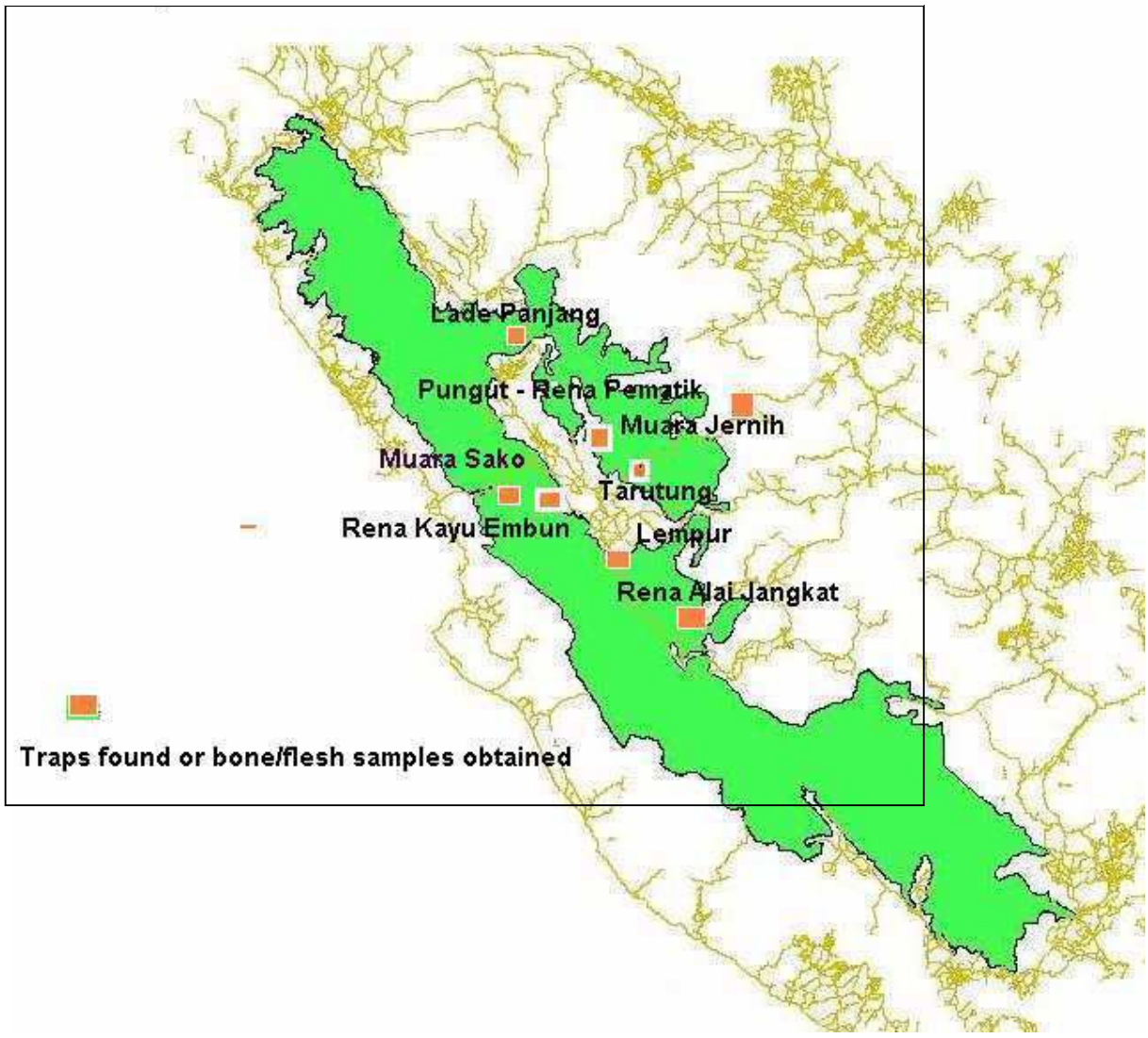
**SNARES**

The most common method of trapping both large ungulates and tigers in and around Kerinci Seblat National Park. Where snaring of tiger is employed, it appears to be in conjunction with dispatch of the trapped animals by shooting.

This was the case in both the case of the Muara Jernih tiger (July 2000) and a tiger seized by KSDA Padang, also in July following information supplied by PHS TNKS where pelts showed that animals had been trapped by heavy duty (wire) foot snares and the animals subsequently shot.

Two examples of specially constructed wooden box traps that contain two compartments, one for a dog (favoured as bait for tiger) have been found over the last year in the Gunung Kerinci area (Gunung Labu and Lade Panjang: Lake Singkarak). It is possible given the proximity of these sites and similarities in construction, that there is a connection between the individuals constructing these two traps.

**Map 5 – Tiger Poaching Confirmed Active During 2000-2001 by PHS (traps/snares or flesh/bone/pelt seizures)**



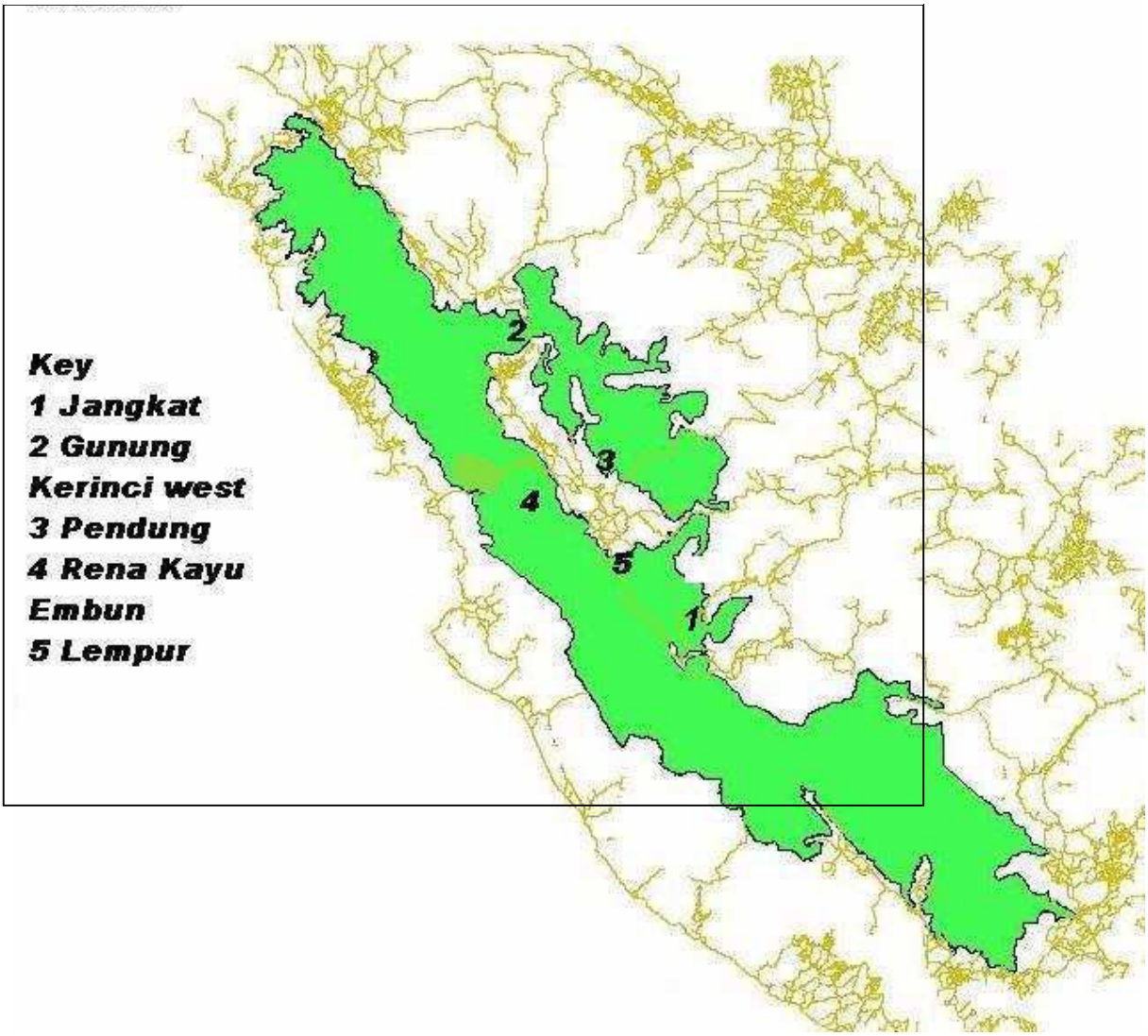
In the Jangkat area of Kabupaten Bangko, south of Kerinci, a variation of this theme employs weighted stones and a wooden bar to trap the animal by the neck. Snares specifically for tiger are likely to employ metal cable, often heavy duty but may also employ cheaper brake cable. However widely available heavy-duty nylon rope employed to snare sambar deer is also employed in tiger trapping incidents both intentionally (cf snares at Rena Alai) and opportunistically.

Heavier duty cables are preferred by professional poachers since they minimize lacerations to the skin which reduce the pelt price. The three-way cable snares favoured by some poachers require a considerable investment by local poachers and so dealers may be asked to provide the capital or to supply the cable required.

Snares must be checked regularly since if an animal dies in the snare, the pelt will quickly spoil and drop in value in the high humidity environment.

In KSNP, snares are generally concentrated on hill top ridge trails favoured by ungulates and by tiger however the PHS team has clear evidence of poachers targeting salt licks, which attract high densities of both ungulates and predators.

**Map 6 – Areas where Heavy Ungulate Poaching has been Identified**




Farm crops at forest edge are vulnerable to depredation by wild pig and, additionally, in areas where there is not heavy poaching, by sambar deer, which can cause widespread damage to young crops – notably rice and young chilli peppers. This concentration of prey species attracts predator species and tiger and other animals are vulnerable to these snares, some of which are heavier than required for wild pig.

Active traps specifically designed to trap Sumatran tiger as opposed to standard heavy duty cable snares which may also trap sambar, serow and other species, were found in only two locations (with the exception of the snares set by Abu Yani in Tabir Hulu). One of these traps was found and disarmed after intelligence was obtained by team members on its approximate location. The team concludes it has also identified the individuals who set the second active tiger-specific trap.

## DESCRIPTION OF TWO SPECIFIC TIGER SNARES FOUND AND DESTROYED BY PHS TEAMS

| Site | Total | Construction method | Details |
|---|---|---|---|
| Bukit Lumut/ Setinjlaut (Lempur)<br><br>3 hours from forest edge (farmland) | 1 snare | Foot snare employing triangulation method (which secures animal for disposal by chosen method) | Heavy duty cables employed.<br>Any tiger snared is physically unable to escape due to presence of three different pressure points.<br>Using this trapping method it is normal to shoot the trapped tiger.<br>Any tiger that might conceivably escape from such a trap will suffer a broken limb and so be easily followed and shot.<br>Snares of this type are normally employed by professional rather than opportunist poachers. |
| Koto Rawang (Jangkat) | 1 trap | Neck pressure snare | Basic snare employs heavy duty cable with the addition of heavy weights and a log to trap the neck of any animal entering the snare.<br>Similar traps have been employed for Sumatran rhino and, as with rhino, once a tiger has entered such a snare, it can not only not escape, movement is impossible if the animal is to avoid suffocation by the pressure beam activated by the weight and cables set<br>Animals snared in such a trap are incapable of any effective movement and so may be killed in whatever manner the poacher wishes (ie firearms are unnecessary) |

**POISON**

Poison, using a baited tiger kill or dead domestic animal appears to be a favoured method of killing Sumatran tiger in areas close to farmland or in areas of tiger conflict and organophosphate based poisons are regularly cited by informants. The poison of choice cited is an organophosphate marked as TheMix 500mg, which is marketed as a pig poison, however there was no evidence of organophosphates in the vomit of the Rena Kayu Embun tiger when tested at the center for animal health studies at Bukitinggi in October 2000.

There does not appear to be a substantial commercial market for tiger flesh in the areas the PHS team has worked to date, therefore killing a tiger through use of poison is unlikely to be a deterrent factor.

The PHS team has only once been quoted a price for tiger flesh (equating to approximately USD1-100 grammes) but has secured three samples allegedly of dried and smoked tiger flesh, all from tigers killed in Kabupaten Kerinci area. Two of these three samples have been confirmed, by LIPI, as flesh of Sumatran tigers. Analysis of the third sample has been delayed.

**SHOOTING**

Although the great majority of the tiger poachers/hunters known to the team appear to have access to either factory-made guns or use home-made/small illegal factory-made guns, hunting of tiger using guns alone appears to be very unusual. However the PHS team has found that a wide variety of weapons are now circulating relatively freely around the national park and hunting of sambar with guns, both in the forest (particularly at salt licks) and in farmland edges and logging concessions has apparently escalated over the past two years.

Access to weapons is becoming all too easy in Sumatra although fortunately access to factory-made ammunition is more difficult as evidenced by approaches made by poachers to undercover members of the team requesting ammunition.

## 6.3 Tiger Killed Accidentally in Deer or Pig Snares

A fourth apparently significant cause of Sumatran tiger mortality is the accidental snaring of tigers in traps intended for other species, in particular for wild pig, which is a serious crop pest in some areas of the park.

The following incidents have been reported to PHS over the course of 2000-2001

| Incident No | Area district, regency, province | Incident – month | Details where available |
|---|---|---|---|
| 1 | MUBA / Lubuk Lingggau, South Sumatra | April/2000 | Pig snare. Farmer reported incident to TNKS rangers but no immediate follow up and incident subsequently denied. |
| 2 | Batu Kangkung, Solok, West Sumatra | July/2000 | Trap set for sambar deer |
| 3 | Sungai Pelakar, Sarolanggun, Jambi | Late 1999 | Tiger killed in snare set for wild pig by oil palm company PT Kresna Duta. |
| 4 | Tarutung, Kerinci, Jambi | January/2001 | Tiger killed by ladang farmer putting out poison. Report advises 2 tiger died, one subsequently sold to Jambi. |
| 5 | Selayau/Merangin, Jambi | December 2000 | Tiger caught in sambar deer snare set by hunter seeking meat for the Eidul Fitri celebrations at end of fasting month of Ramadan |

## 6.4 Intelligence

**To collect Intelligence on the identify of tiger hunters/buyers of tiger products/develop information networks/ involve communities in reporting poaching activities and tiger sightings**

Although in the original Project format, these three Proposed Activities were seen as separate, it has been found in the course of 2000 and 2001 that these areas are inextricably linked. Selected examples of wildife crime intelligence received by the PHS team are given in Annex 6.

Much valuable information has been found to come from the extended families and clans of community members of the TPCUs and one particular village (Birun) has proved particularly helpful to this project.

Intelligence collectors receive payment for their expenses but all other payments are results-related unless the informant is specifically instructed to carry out a task by the Unit Manager or leaders of TPCUs.

A number of difficulties have been encountered in the Intelligence area, not least that, in Sumatra, there is a strong tendency to refer to all larger wild felids as *harimau* (tiger) and not to distinguish between Sumatran tiger, clouded leopard and golden cat.

The team has learned that, in trade-related reports, the price quoted for a pelt and the vendor's or informants' estimate of age - as in 'a young tiger' - may be a helpful advance indicator of the species traded: thus a pelt offered at Rp350, 000 (approximately USD35) and described as a small tiger is likely to be that of a clouded leopard or golden cat (although there appears to be little or no intentional poaching of either species for trade purposes). A 'baby tiger' may prove to be a leopard or marbled cat.

Where a report is trade-related, size (length of pelt) cannot be used as a measure of validity except where the report involves a first-hand observation of the trade item since measurements become distorted, particularly where informants are unwitting members of the criminal underworld hoping to secure a commission.

Furthermore even experienced forest workers are not always reliable informants when reporting on or identifying bones and even, on some occasions, pelts. In October 2000, for instance, a community informant succeeded in seeing part of the pelt of a 'young tiger' which had been trapped in a pig snare by a Kerinci farmer, killed and the pelt stored in methylated spirits (known locally as spiritus). The informant confirmed to the PHS team that this was a tiger on the basis of the stripes on the animal's face. Investigation of this case indicated that prosecution would be counter productive and so a legal confiscation was made – at which point the species was confirmed as an adult Asian golden cat.

In December 2000, as part of a still on-going investigation into a large quantity of tiger bone reported held by a poacher in the Ngaol (upriver Tabir area) of Bangko kabupaten, most of the skeleton and skull of a '*harimau*' was recovered from a *dukun* (shaman) who insisted the animal was a Sumatran tiger even during the formal confiscation process. In fact, this was an adult male clouded leopard – formal identification being made by Andrew Kitchener of the National Museums of Scotland.

In March 2001, a TPCU ranger who has established an identity as a buyer of non timber forest products – although he has never purchased an item – was contacted by a middle-man reporting one or more tiger pelts for sale through a hunter living to the north of the Kerinci enclave. It took three days to actually identify and make contact with the man holding the item(s) – which were found to be a stuffed clouded leopard.

Thus, although a large number of tiger poaching incidents are reported in and around Kerinci Seblat National Park, it is apparent that at least a percentage of these are in fact misidentification of smaller, but also protected, cat species and in particular, clouded leopards.

A second and more serious problem is that information from intelligence agents and informants, whether on trade issues or active poaching, is often slow to reach the team due to poor communications and the very long distances involved. One answer to this problem could be to provide reliable and long-term informants with H/T (walkie-talkie) radios or to provide access to radio facilities via a trusted source. This problem remains to be resolved and is, in part at least, a training issue.

Regular informants have been trained in report writing, initial assessment of intelligence and simple identification of species both by pelt and bones. Two informants - (Andi – formely Hantu 3) and Jon Effendi (Pendy/Hantu Jangkat) have been taken on as full time TPCU members, a third informant (Darham, Hantu 2) is currently (April) on trial as a full time member of the team although he is probably most effectively employed as a collector of intelligence rather than in the field with the main teams.

Community informants can only provide the initial information on a trade or poaching report and, where possible, view traps or a trade item. The final investigation must be made by members of a TPCU or national park staff as community informants cannot be

produced in court as witnesses, especially in the current unstable situation, since it would be difficult for the project to subsequently guarantee their safety and that of their families.

Informants for the PHS team fall into two specific different categories. The first are supporters of the tiger project, and work part-time or as they receive information, and have proved a valuable recruitment pool for this project.

The second category comprises unwitting informants, members of the semi-criminal underworld, would-be traders and middle-men in wildlife products who deal with selected members of the team believing them to be agents of dealers from large cities elsewhere in Sumatra and in Java. They pass on information on reported poaching or trafficking incidents in the hope that they will be able to facilitate a transaction and take a commission.

The community information network planned has been constructed with extreme care and numbers of credible informants retained on a regular basis is smaller than had been envisaged when the project was launched. One attempt, to date, has been made to infiltrate the project by a man working in conjunction with an elephant and tiger poaching syndicate.

Although all reports of poaching and or trade incidents are logged by either the TPCU leader or Unit Manager, not all reports can be investigated and before any decision is taken on investigation, informants must produce corroborative data to allow for cross-checking with other informants. Furthermore, the sheer volume of information available to any rigorous collection of intelligence and the difficulties of gauging, in the early stages, the credibility of an informant, act as a brake on data collection.

**INFORMANTS: TYPE OF INFORMANT AND AREA**

**Key:** **A –** Information leading to prosecutions and successful operations against dealers, poachers and other target groups.
**B –** Reliable information, which cannot be acted upon for a variety of reasons.
**C –** Information of use for monitoring purposes only.
**D/E –** Information supplied by informants which, to date, has not been validated but which may be used in cross-referencing trade, poaching and other reports.

| *No* | *Area* | *Region – district and kabupaten* | *Number of regular informants* | *Category of Informant* |
|---|---|---|---|---|
| 1 | Sungai Penuh/ Sanggaran Agung | SetinjauLaut/ central Kerinci | 2 | A/B |
| 2 | Tamiae, Pulau Sangkar, Ma. Emat | Gunung Raya/ south Kerinci | 4 | A/B |
| 3 | Siulak Deras | Gunung Kerinci, north Kerinci | 1 | E |
| 4 | Birun | Sungai Manau Kab. Merangin | 3 | A |
| | Pulau Tengah | Jangkat. Kab Merangin | 2 | A/B |
| 6 | Lubuk Gaung, Kungkai | Bangko Kab. Merangin | 3 | A/B/C |
| 7 | Medan Jaya | Muko-Muko Selatan/ Bengkulu Utara | 1 | B |
| 8 | Sungai Gambir | Tapan/Pesisir Selatan | 3 | A |

## 6.5 The Black Market for Sumatran Tiger Products

Although the team had assumed that the price for Sumatran tiger pelts and bone would be higher in large cities such as Jambi, Palembang, Pekanbaru and the eastern seaboard port of Dumai this may not be the case since a number of local poachers have complained of being 'cheated' by dealers in these cities. This may not however be the case where private individuals buy tiger pelts in these cities.

The PHS team reports no significant or driving market for tiger bone in and around this area of Sumatra and it is demand for tiger pelts that is driving the illegal trade in Sumatran tigers.

**TIGER PELTS**

Prices in remote areas of the national park such as Jangkat district may be lower than those in areas with good communications and transport. Prices for tiger pelts and bone appear to be higher to the east of the Barisan Mountains and National Park than in Bengkulu, to the west.

Prices for a Sumatran tiger pelt in the area surrounding the national park in which Year One work has focused depend on the pelt being relatively undamaged and on size (length). The smallest pelt for which a price was quoted was reported at 130cm in length (slightly smaller than the young female tiger killed in Muara Jernih) and the largest was estimated, by informants, as measuring 2m. These pelts were not observed or measured by team members and therefore estimates of pelt length are approximate only and in the larger cases may have been over-estimated.

The lowest price for a tiger pelt transaction that is reliably reported over 2000-2001 was Indonesian Rp 2 million – and the highest, reliably reported, was Rp8 million. The team concludes that, in general, the pelt of an adult Sumatran tiger sold by poacher to a middle-man/local dealer or to a commissioning local buyer is between Rp4.5 million and Rp5 million. However, prices rise on each occasion that a pelt changes hands as buyers seek to make a commission profit.

Of the 34 cases of tigers being killed, in and around this national park between 1999-2001, which have been investigated or are known to this team, two men are implicated in not fewer than 15 transactions. Both men have also reportedly traded in tiger to the east of the Trans Sumatra highway in the Bukit Tiga Puluh and Bukit Duabelas national parks areas and since PHS intelligence in Muara Bungo is still inadequate, their involvement in the illegal trade in tigers is likely to be more substantial. One of these individuals has claimed to have withdrawn from the illegal trade. This remains to be confirmed.

Only one faked tiger pelt was seen this first year – a 20cm by 20cm strip of pelt, possibly dog, being peddled by a shaman in Jambi Bird Market and described as part of the pelt of "a man-eating tiger shot near Pontianak in West Kalimantan." (*sic)*

Although the team is firstly concerned with the conservation and protection of Sumatran tiger, the number of incidents concerning clouded leopard – not all of which are reported above - is a cause for serious concern, particularly given that this species is little known and its status is unclear.

**TIGER BONE**
There does not appear to be a large, organized market in tiger bone in this area of Sumatra although the bones of a tiger marketed in Muara Bungo in March were sold before the pelt.

Prices quoted to the team range between Rp200-250,000 on average. However prices reported, but not yet analysed, from the north Bengkulu area appear to be substantially lower. We do not report on these prices here as do not yet have an information base substantial enough to make an informed estimate.

**FLESH**
Generally available dried or smoked and not apparently normally marketed in this area: One sale price only – (October 2000) USD1- 100g. Tiger flesh appears to be divided up and handed to friends and family as a curiosity as opposed to being a valued commodity. One report was received of an army officer making a 'wine' using a tiger foetus.

**INCISORS**
USD10+/- for unmounted and untreated tooth. Note: many faked items have been observed.

**WHISKERS**
No reliable prices available but these are avidly sought after.

**CLAWS**
No trade reports received.

### 6.5.1 Market Operations: Information Gained to Date

When the project launched, the only data available to the team on how highly illegal wildlife trade networks operate in Sumatra was the example of the highly sophisticated (at its height) Sumatran rhino poaching apparat. This operates under a patronage system and where it has been possible to follow a rhino horn from poacher to exporter and, under certain circumstances, to overseas market.

The work of PHS during 2000-2001 indicates that the trade in Sumatran tigers in and around KSNP does not follow such a simple modus operandi. It is highly fragmented and opportunistic and the source of much of the tiger bone and pelt in central Sumatra is opportunist amateurs, professional deer hunters who will poach tiger if the opportunity is offered, and villagers responding to a conflict situation. Only a small number of semi-professional and professional poachers have been identified.

There is however strong evidence of some tiger being poached to order by businessmen for use in contract negotiations and individuals seeking gifts for superiors to gain promotion – notably young army and police officers.

Tigers killed by experienced poachers appear often to be disposed of to a major dealer within hours of the carcass being brought out of the forest (the normal modus operandi of Abu Yani and his fellow poachers in Muara Jernih) although some pelts may be secreted for several days or even weeks until a buyer has been secured. In general, however, any anti-poaching project planning to launch operations elsewhere in Sumatra should be aware that speed of reaction is critical.

As expected, the team has found a strong connection between individuals involved at dealer and sub-dealer level in the illegal trade in tiger and the non-timber forest products trade, most notably traders in *Aquillaria* spp and also the trade in reptiles – snakes and fresh water turtles

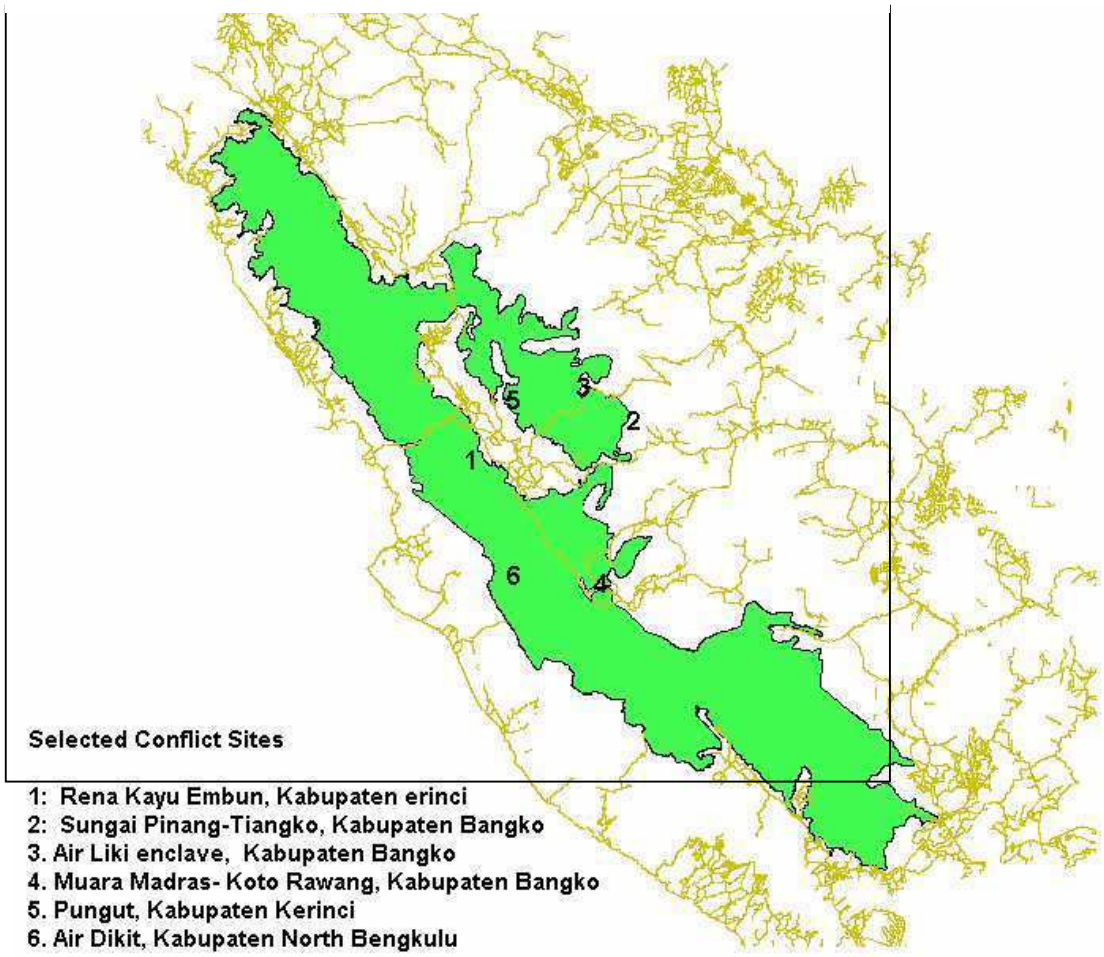
The ultimate source of tiger pelt and bones where exported out of the area surrounding the KSNP is unknown, however it is known that tigers killed in and around the national park have been sold to the eastern seaboard ports of Jambi and Pekanbaru. The small oil port of Dumaie, also on the eastern seaboard, has also been cited as an export gateway. There is narrative evidence of tiger also being marketed to Medan in North Sumatra and to Bandung in Java.

Unfortunately, tiger pelts, stuffed and mounted continue to be seen as high status items and as valuable gifts in Indonesia and a matter of particular concern is the old tradition in the Indonesian armed forces of presenting a new commanding officer with a high value gift such as a tiger pelt. Unfortunately this tradition appears to extend to the Indonesian police force which only recently separated from the Indonesian army.

## 6.6 Reducing Tiger-Human Conflict and Investigating Causes of Conflict

Although the importance of mitigation of tiger-human conflict was recognised in the initial Project Mission, the critical importance of this was not previously recognized due to lack of data and serious under-reporting. The main sites of tiger-human conflict are shown in map 7, and examples of conflict cases reported to the PHS team are given in Annex 7.

**Map 7 – Main Tiger-Human Conflict Sites**




A review of the 10 months this project has been in operation indicates that:-

- Tiger-human conflict is far more prevalent around the KSNP than had been assumed on the basis of information previously available to the national park or other nature conservation bodies

- Reduction of tiger-human conflict is essential to the well-being of the communities living around the national park but is also critical to the long-term in-situ conservation of Sumatran tiger.

The PHS team concludes that, where an incident of conflict between community and tiger occurs, there is a strong probability that there will be a fatal outcome to the tiger involved or to any tiger in the immediate vicinity when retribution is made.

In short, tiger-human conflict is a major cause of Sumatran tiger mortality and there is a strong probability of conflict, real or perceived, being manipulated by unscrupulous individuals to provide a rationale for the hunting of tiger and for subsequent trade.

Additionally, the events at Renah Kayu Embun, Kerinci in October 2000, indicate that education of officials responsible for public safety, in particular the police, is urgently required, particularly in forest-edge areas where tigers remain present to prevent an inappropriate or over hasty response.

Although it may appear that lethal retaliation is most likely against a tiger that kills livestock or attacks people, the team has also recorded incidents where tiger have been killed or where attempts to kill tiger have been made after dogs were attacked. A trained pig hunting dog, which doubles as a guard dog for a forest-edge ladang farm is a valuable commodity and status-giving possession and hunters react very negatively.

Conflict situations are very often not reported outside of the immediate community unless a human fatality occurs or multiple livestock depredation is involved and around the national park it has been found that tiger-human conflict is seriously under-reported.

A programme to collect data on past, unreported conflict in forest edge communities around the park and to ascertain the actual extent of tiger-human conflict is urgently needed before a realistic and effective response can be drafted. Team members and FFI Kerinci will seek to conduct this data collection in the course of project duties

In certain Tiger Range states, compensation may be paid to farmers whose livestock is killed by tigers. The possibility of launching a pilot scheme should be investigated as a matter of urgency, but will require careful monitoring and stringent control to prevent abuse. It could however have many benefits and we hope it may be explored in conjunction with the national park and other authorities in Indonesia, including the ongoing ICDP.

## 7. Logistics and base

Although it was originally planned that a permanent base campsite would be acquired and a camp built, the national park has since offered part of a site for a new provincial office in Bangko to the tiger team. The site has yet to be formally handed over to the park administration and so the team currently operates from a rented building, close to national park offices, in the town of Bangko 175km east of Sungai Penuh. The town was chosen for its strategic location on the trans-Sumatra highway but has since been found to be a centre for the trade in non-timber forest products, including trade in Sumatran tiger.

In Sungai Penuh, the team operates from a TNKS Mess but additionally uses the FFI house-office and rented house of the Unit Manager. In North Bengkulu area, the team has been generously offered use of facilities, as required, at the Rhino Protection Unit camp at Air Hitam, 18km north of the small town of Ipuh.

## 7.1 Project Equipment

- Through co-funding, the PHS team has acquired two pre-owned (1980 and 1981) Toyota Hartop jeeps and two pre-owned Yamaha RX King motorbikes. TPCU ranger Karno was loaned funds by the FFI coordinator to buy a motorbike, which he uses on project business. The ranger Jon Effendi also uses his own King RX motorbike. The team therefore has access to four motorbikes, which are heavily used.
- GPS – team members use Garmin 12XL GPS units on patrols. These were supplied at a discounted rate by Garmin UK.
- Cameras – Three compact weather-proof cameras are currently held by the team and this number will be increased as necessary. A manual (non-autofocus) SLR camera with a lens with zoom macro facility is being sourced.
- Tape recorders – two small voice operated tape recorders have been provided but have proved of less value than had been hoped in intelligence operations to date due to noise levels. This may be a training problem.
- Communications – a high output base station and radio tower has been placed at Bangko which allows communications direct to Sungai Penuh and to a number of areas around the park. The team use VHF/14.4Mhz hand held walkie-talkies when in the field using a pre-set check in time. However the hilly terrain and very remote nature of some patrol sites means difficult communications. It is planned to buy two mobile phones using pre-paid cards given proposed imminent hand-phone coverage in the Kerinci area and these may improve operational effectiveness in certain key areas where operations have been compromised by lack of communications.
- A PII 400 Mzh computer and Artec scanner have been acquired and the latter has been particularly valuable on occasion – not least in securing assistance in identifying items confiscated (cf skull and bones of the clouded leopard from Ngaol). A second computer is urgently required, ideally a laptop given the mobility of the Unit Manager.

A large number of items planned to be acquired over the course of 2000 are only (April 2001) now being sourced and purchased. These include full uniforms for operational (*Dinas* – on duty) purposes, T-shirts with project logo for both project and promotional purposes, additional field uniforms/clothing and Abri-standard boots. Additionally a variety of field equipment items, including altimeter watches, additional field stoves, spare rucksacks for local informants and rangers working in the field with the teams and extra field communications items are badly needed but work pressures, until recently, have been a serious constraint.

It is hoped that supporters of the project will understand the difficulties in both launching a project, outfitting and supplying project needs with a small administrative staff and heavy operational burden.