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Abstract: Drawing upon four decades of tiger conservation work with partners around the globe, WWF has developed this far-reaching strategy. It is based on a landscape-based approach to tiger conservation and the identification of focal tiger landscapes. The importance of strong international cooperation is emphasised. The document formulates a vision, a long-term goal and targets in support of the goal. An overview of tiger status, key threats and a categorization of focal tiger landscapes are presented. Actions needed to fulfill goal targets and actors responsible for programme implementation, coordination, funding and monitoring are identified.



# CONSERVING TIGERS IN THE WILD

A WWF Framework and Strategy for Action 2002 – 2010



Species Programme  
WWF International  
February 2002

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Amur (Siberian) tiger on iced lake: *WWF/ Klein & Hubert*

Sumatran tiger cubs: *WWF-Canon/ Alain Compost*

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Thank you one and all.

Species Programme  
WWF International



*Participants of the WWF Global Tiger Conservation Strategy Workshop at Anyer, Indonesia.*

## EXECUTIVE SUMMARY

Drawing upon four decades of tiger conservation work with partners around the globe, WWF has developed this new and far-reaching strategy. Its cornerstone is based on a landscape-based approach to tiger conservation and the identification of focal tiger landscapes. In developing its new programme, WWF is not only looking for greater effectiveness on the ground but also greater coherence, both within its own network, and also with its partners. The task at hand — ensuring the long-term survival of the tiger — is far greater than any one organization's capacity to achieve. Focus, prioritization, strength of purpose, long-term support, cooperation and partnership are all essential. WWF has chosen seven focal tiger landscapes, where the chances of long-term tiger conservation are best and its involvement will be most valuable. These are:

1. Russian Far East (Russia)
2. Terai Arc (India, Nepal)
3. Satpuda-Maikal Range (India)
4. Sundarbans (Bangladesh, India)
5. Lower Mekong Forests (Cambodia, Lao PDR, Vietnam)
6. Taman Negara-Belum-Halabala (Malaysia, Thailand)
7. Kerinci Seblat/ Bukit Barisan Selatan (Indonesia)

To complement the geographic focus of WWF's Tiger Conservation Programme, and in recognition of its tremendous impact on tigers, the international trade in tiger parts and products has been selected for special attention.

This strategy is aligned behind and based on the following vision and goals:

Vision: A world in which tigers thrive in natural habitats across their range and benefit humanity as a result.

Long-term Goal: To conserve viable populations of tigers and their prey, across their entire range, in large, well managed networks of protected areas, buffer zones and connecting tiger-friendly landscapes.

WWF's Programme Goal (to the year 2010):

To improve the protection and management of key tiger populations and their habitats in top priority conservation landscapes, through measures that can be sustained and supported over the long term by governments, local communities and other stakeholders.

Programme Targets (by the year 2010):

In support of WWF's Programme Goal, two programme-wide targets have been developed. The first focuses on the conservation of tigers, their prey and their critical habitats in a small number of high priority, focal landscapes selected from across the tiger's range. The main indicator of success (conservation impact) will be the presence, in each landscape, of at least 100 contiguously distributed breeding female tigers.

Target 1: *To establish well-managed networks of core protected areas and connecting tiger-friendly buffer zones and corridors in the focal tiger conservation landscapes selected from across the tiger's range.*

The second target focuses on the highly significant and global threat posed to tigers by the ongoing international and domestic trade in tiger parts and products. Indicators of success will be developed on the basis of baselines established from existing and ongoing research in cooperation with the TRAFFIC network and its partners.

Target 2: *To reduce (with a view to its elimination) the trade in tiger parts and products to a level which no longer threatens the survival of tigers in the wild.*

Prime responsibility for implementing the programme will lie with the relevant WWF and TRAFFIC offices, Regional (Asia/Pacific, Europe/Middle East) and Ecoregional Programmes, and coordinators for the focal tiger landscapes. Overall guidance, coordination and support will be provided by the Species Programme, to

## INTRODUCTION: A NEW APPROACH TO TIGER CONSERVA-

The tiger, *Panthera tigris*, largest of all the cats, is one of the most charismatic and potent flagship species on the Earth; it is also one of the most threatened. Only 6,000 or so remain in the wild, most in isolated pockets spread across increasingly fragmented forests stretching from India to south eastern China and from the Russian Far East to Sumatra. Across its range, this magnificent animal is being poisoned, electrocuted, blown up by land mines, trapped, snared, shot, and captured as cubs — the majority to meet the demands of the continuing illegal wildlife trade. Hunters and traders, and impoverished people whose main means of subsistence comes from the forest, are wiping out the tiger and the natural prey upon which it depends.


While poaching for trade continues to menace the tiger's survival, the greatest long-term threats are the loss of habitat and the depletion of the tiger's natural prey. In response, WWF has carried out a wide range of field-based projects and activities. While these initiatives have certainly helped the tiger, they can and must be improved. With this in mind, WWF and its partners have undertaken extensive analyses to determine where tigers have the best chance of survival in the wild and what factors must be addressed to achieve this.

Drawing upon four decades of tiger conservation work with partners around the globe, WWF has developed this new and far-reaching strategy. Its cornerstone is based on a landscape-based approach to tiger conservation and the identification of focal tiger landscapes. A tiger conservation landscape, as defined by WWF, is an area of land, regional in scale, that can support and maintain, over the long-term, a viable meta-population of tigers, linked by safe and suitable habitat, together with an adequate natural prey base. On the ground, a tiger conservation landscape will often equate to a series of well managed core protected areas (national parks, wildlife sanctuaries, etc.), together with any buffer zones, linked together by dedicated

habitat or by land-use that is tiger-friendly in its status and management. Landscape-based approaches not only recognize the full spatial and ecological requirements of large predators like the tiger, but also the need for integrated land-use planning and management that reconciles the needs, on an appropriate scale, of all stakeholders.

In developing its new programme, WWF is not only looking for greater effectiveness on the ground but also greater coherence, both within its own network, and also with its partners. The task at hand — ensuring the long-term survival of the tiger — is far greater than any one organization's capacity to achieve. Focus, prioritization, strength of purpose, long-term support, cooperation and partnership are all essential.

Whilst outlining an ambitious agenda for WWF for the coming years, this strategy is also a poignant rallying cry to all people interested in conserving the tiger, its prey and their critical habitats. As the top predator over some of the world's most diverse remaining forests, successful tiger conservation will not only benefit the animal itself but also the many thousands of other species that live with it, including hu-



*The task at hand — ensuring the long-term survival of the tiger — is far greater than any one organization's capacity to achieve. Focus, prioritization, strength of purpose, long-term support, cooperation and partnership are all essential.*



## TIGERS: A SHORT BACKGROUND

In the past century, the world has lost three of the eight tiger subspecies. The Bali, Caspian and Javan tigers have all become extinct, and the South China tiger is facing the same fate. Historically, the tiger ranged from Turkey eastward to the coasts of Russia and China, and from as far north as Eastern Siberia to the Indonesian island of Bali. This historical range has shrunk dramatically over the years and today the remaining tigers, numbering perhaps no more than 6,000, occur patchily across the Indian subcontinent, South-east Asia, and the Russian Far East, with a small number still surviving in China and possibly North Korea.

Until the 1930s, sport hunting was the main cause of declines in tiger populations. Although trophy hunting persisted as a major threat to tigers up to the early 1970s, the greatest threat between the 1940s and the late 1980s was loss of habitat due to encroachment by a burgeoning human population, logging, and conversion of forests to commercial plantations such as oil palm and pulpwood. In China, several thousand tigers were exterminated in the name of progress and development during the Cultural Revolution. In the 1990s, hundreds of tigers were killed to meet the demand for their bones and other parts, which are used for traditional medicines especially in China, Taiwan, and South Korea, but also in Japan and Southeast Asia. Tiger parts are also exported illegally to ethnic Asian communities all over the world, including those in Australasia, Europe, the USA, and Canada.

Compounding the threat to tigers is a growing conflict between the tiger and the interests of neighbouring communities. Revenge killing of tigers, often by poisoning or electrocution, to protect livestock is on the rise. Over-hunting of the tigers' natural prey is also emerging as a major factor causing declines in tiger populations across their range, and a factor that also contributes directly to cattle lifting.

In November 1994, member nations of the

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) took unprecedented action, and agreed unanimously to strengthen international efforts to halt the illegal trade in tiger parts. They also urged tiger range and consumer countries to voluntarily prohibit internal trade of tiger products and, to restrict trade with countries that continued to traffic in tiger parts where possible. Some CITES parties, including China and South Korea, banned internal trade in tiger bone and products, and other nations such as Singapore increased the penalties for violations. Taiwan greatly strengthened its trade controls, and Japan has recently introduced new legislation on its domestic trade. However, enforcement weaknesses and trade control gaps remain – a recent investigation in Japan concludes that tiger products are being marketed on the internet.

Together with some CITES member nations, WWF has begun to work with traditional medicine communities to develop strategies for suspending or eliminating the use of tiger parts and derivatives. In addition, TRAFFIC, the wildlife trade monitoring programme of WWF and IUCN -- The World Conservation Union, continues to work with governments to identify key trade routes and traders, and to collaborate with informant networks to help stop the illegal trade. TRAFFIC and WWF cooperate with CITES member nations to help build capacity among customs and

### **Current status and distribution of tigers in the wild**

The IUCN 2000 Red List of Threatened Species has classified the tiger species as endangered, with the Amur, South China, and Sumatran tigers as critically endangered. The tiger is proscribed from international trade by its listing on Appendix I of CITES.

Although India has the largest number of tigers, individual populations are dispersed and generally small. The largest unbro-

populations of tigers are probably those of the Russian Far East and the Sundarbans. China is known to have populations of four of the five surviving subspecies of tiger but these may not be viable; the South China tiger is on the very brink of extinction. Only Bhutan, India, Nepal, and Russia have carried out complete range-wide tiger status surveys. In other countries, comprehensive tiger status surveys are lacking.

### Conservation significance of the tiger

Tigers occur in a broad variety of forest types ranging from the dry forests of India and Indochina to the tropical rainforests of Sumatra and Malaysia, and from the mangroves of the Sundarbans in Bangladesh and India to the taiga forests of China and the Russian Far East. These areas include 15 Global 200 Ecoregions.

Tigers are a keystone species, crucial for the integrity of the ecosystems in which they live. As top predators, they keep populations of prey species in check, which in turn maintains the balance between herbivores and the vegetation upon which they feed. In short, when tigers thrive, the whole ecosystem thrives. The tiger is a universal flagship and an ambassador for other species living with it. Tigers are part of our planet's natural heritage as well as symbols for the variety of cultures that live across their range. Even in places where tigers have become extinct or never existed in the wild, they live in myth and legend. People of faiths, such as Hinduism and Buddhism, revere tigers as icons. In certain national parks and nature reserves, particularly in Nepal and India, tigers are a major tourist attraction, drawing much-needed revenue. In Nepal, earnings aid local communities. Were it not for the tiger, many protected areas would not exist today.

### Current Population Estimates of Tigers in the Wild

Subspecies	Mini-	Maxi-	Range Countries
Amur (Siberian) tiger	360	406	China, North Korea, Russia
Bengal (Indian) tiger <i>P.t. tigris</i>	3,176	4,556	Bangladesh, Bhutan, China, India, Myanmar (western),
Indo-Chinese tiger <i>P.t. corbetti</i>	1,227	1,785	Cambodia, China, Laos, Malaysia, Myanmar (eastern),
South China (Amoy) tiger	20	30	China
Sumatran tiger	400	500	Indonesia
<b>Totals (rounded)</b>	<b>5,000</b>	<b>7,200</b>	

Source: Adapted from 1999 WWF Species Status Report *Wanted Alive! Tigers in the Wild*

### WWF and tiger conservation

Since its founding in 1961, WWF has rallied significant support for tiger conservation. WWF's 1999 Species Status Report *Wanted Alive! Tigers in the Wild* provides an overview of WWF's tiger conservation work over the past four decades. Following IUCN's call for international efforts to save the tiger, WWF launched its successful global campaign "Operation Tiger" in 1972. Through its Tiger Conservation Programme in India, WWF continues to provide critical support to more than 20 protected areas where tigers live. In Malaysia, Indonesia, Indochina, and Russia, WWF works with partners such as the Wildlife Conservation Society (WCS) to strengthen tiger protected areas and support anti-poaching efforts. In Nepal and Bhutan, WWF and the Save the Tiger Fund collaboratively support tiger tracking and monitoring work, and activities to enlist public support for tiger conservation. In Bangladesh, WWF collaborates with IUCN-Bangladesh to support local scientists and wildlife staff to carry out tiger management research. WWF is currently involved in tiger conservation efforts in all range countries, except Myanmar and North Korea.

*Even in places where tigers have become extinct or never existed in the wild, they live in myth and legend.*

## THE CHALLENGE — KEY THREATS

### Poaching driven by illegal wildlife trade

Efforts by WWF and others to reduce demand for tiger-based medicines by engaging traditional medicine communities have met with some success. However, despite the ban on international trade in tiger parts imposed by CITES and the existence of laws against domestic trade in most range and consuming countries, illegal trade continues. Bhutan, Laos and North Korea have yet to accede to CITES. Trade in tiger parts and products is overt in some places, and to an extent rampant in several countries, including Cambodia, Indonesia, Laos, Myanmar, Thailand, and Vietnam. In North Korea, which is both theoretically a range and consuming country, trade in tiger parts and derivatives is still legal. There continues to be a lucrative market for tiger-bone medicines in East Asia, North America, and in parts of West-



*“Tiger” medicines on sale in mid-late 1990s in*

ern Europe and Southeast Asia.

In the first few months of 2001, there was an upsurge of poaching in India, the country where the majority of the world's tigers survive. The Wildlife Protection Society of India stated that its records of wildlife seizures were the highest it had ever documented. The Ministry of Environment and Forest's database on seizures revealed that 123 tiger skins and bodies were confiscated from poachers or illegal traders between January 1998 and July 2001. Hundreds of tiger body parts, including bones, prized by practitioners and users

Moreover, official seizure records reflect only the tip of the iceberg; many more tiger deaths certainly go unreported.

In Cambodia, a macabre method of poaching tigers is widespread: landmines are used to kill the animals. Camera traps used during surveys have yielded encouraging photographs of wild tigers and other mammals; they have also taken photos of people in pursuit of wildlife carrying automatic weapons and heavy duty trapping equipment. “Hunting is the single greatest threat to most key species of large mammals,” according to a survey report carried out by the WCS and IUCN, two of our close conservation partners. Another investigation carried out in Indonesia by WWF and WCS, estimated that at least 66 Sumatran tigers -- believed to be about one-seventh of the surviving population -- were illegally killed in 1998 and 1999.

### Habitat loss and fragmentation

The current range of the tiger encompasses some of the densest human populations on Earth. Since the Indian government launched Project Tiger in 1973, setting up tiger reserves throughout the country, its human population has increased by more than 300 million to over 1 billion today. In the same period, livestock numbers in India have grown by more than 100 million. Similarly, Vietnam's human population has doubled in the past 30 years. Bangladesh, which together with neighbouring west Bengal in India is home to the world's only mangrove-dwelling tigers, has the densest agriculture-based human population in the world. Human pressure on habitats continues to grow and impact negatively on tigers throughout their range, leading to fragmentation and decline in populations of tigers and their prey. Most tiger populations today consist of fewer than 100 individuals and only about 40 per cent of them make up viable breeding populations.

Tiger habitat is severely impacted by a wide array of development initiatives, ranging from dam building, road construction and mining to commercial logging, and the clearance of forests to make way for oil palm and paper pulp plantations. In Indonesia, oil palm plantations have grown from 100,000 to 2.4 million ha between 1967 and 1997. Concessions of 5.5 million ha have already been granted, much of this in Sumatran tiger habitat.

In the last stronghold of the Amur or Siberian tiger, the most pressing problem for tiger habitat is large-scale cutting of oak and Korean pine forest. These forests are the main autumn and winter strongholds for wild boar, the tiger's main prey. Since about half the world's tigers live outside protected areas, this leaves them extremely vulnerable to intrusive development. Even where tiger habitats are within protected areas, many of these areas do not yet have appropriate management plans, infrastructure and resources.

### **Reconciling tiger conservation and human needs**

Millions of people live in, and subsist on land that is or was until recently tiger habitat. Land shortage, food scarcity, overpopulation, unemployment, and other hardships of the rural poor constantly threaten tigers. Tiger conservation is of little significance to local people unless they can see and derive benefits from it. In general, conventional policies directed towards tiger conservation have not recognized and addressed the needs of local communities. While in some situations, exclusionary approaches to tiger conservation have proved effective, in many others alienation of local communities has resulted in degradation of habitat and exacerbated human-tiger conflict. Broad-based approaches reconciling tiger conservation objectives and the needs of local people in a mutually beneficial manner need to be identified, strengthened and adequately funded.



### **Insufficient capacity for conservation**

Tiger conservation is constrained by a dearth of trained personnel, equipment, cash and data. In India, for example, Project Tiger's 2001 Status Report reveals that 30 to 40 percent of the posts in its 27 tiger reserves remain vacant. There is also a lack of young and trained staff. Although TRAFFIC, WWF, and the CITES Secretariat are cooperating to train customs officials and authorities, much more needs to be done to combat illegal trade and hunting and to monitor tigers and patrol inside and outside of protected areas. The requirements for tiger conservation are evolving and growing, necessitating renewal and enhancement of professional knowledge and skills. Reliable information on poaching, habitat change, and prey status is critical for tiger conservation planning and monitoring but this is rarely available. In many countries, basic data, such as tiger population numbers and distribution, are not known.

### **Inadequate international cooperation**

Most of the world's prime tiger habitats straddle international borders. Furthermore, illegal trade in tiger parts and products is international in nature and effective implementation of CITES depends on communication and networking among tiger range, transit, and consumer countries. International cooperation is also crucial for effective exchange of technology and experience in tiger conservation between countries. The current level of international cooperation is, however, far from adequate and,

### **Funding constraints**

Most governments of the tiger range countries, limited by financial resources and beset with a plethora of pressing social and economic issues, have been unable to direct adequate funds to tiger conservation. According to WWF's Russia office, insufficient funding is one of the gravest problems in implementing the legislative requirements for tiger protection. India's

latest Project Tiger Status Report (2001) states that inadequate funds and the delay in these funds in reaching tiger reserves is seriously hampering work. Consequently, low budgets, compounded by the ongoing world economic decline, have resulted in a deterioration of conservation measures for most protected areas across the tiger's range. With very few notable exceptions in Nepal, Bhutan, Russia, and India, tiger conservation is still *ad hoc* and ineffective. Sustainable financing mechanisms are needed for more effective and long-term tiger conservation.

Although the international community provides substantial financial and technical support for tiger conservation, much more is needed (see adjacent box).

#### INTERNATIONAL FUNDING FOR TIGER CONSERVATION

According to the Global Tiger Projects Database, put together by the Zoological Society of London, a total of nearly US\$ 15 million was channelled into tiger conservation worldwide between 1998 and 2000 by some 69 agencies. The two largest funding agencies -- WWF and Save the Tiger Fund -- accounted for more than 60 per cent of the total funding. Close to US\$ 11.4 million, i.e. more than 76 per cent of the total funding, went to projects directly supporting tiger conservation in the field. The distribution of "on the ground" tiger conservation funding by bioregion is given below:

South China	0.18%
South East Asia	11.12%
Indochina	21.37%
North Temperate & Taiga	29.15%
Indian Subcontinent	38.18%

The remainder was spent on "international" projects (e.g. meetings, publications, and international wildlife trade inves-

## THE RESPONSE — WWF IN ACTION

Although the tiger faces incredible odds, there is hope for this adaptable, vigorous and naturally fecund species. In the Russian Far East, thanks to strenuous conservation measures, including a successful anti-poaching campaign in the early 1990s, the tiger population has recovered from fewer than 40 in the 1940s to over 350 today. Similarly, tiger numbers in Nepal's protected areas have gone up in recent years due to collaborative approaches to wildlife and protected area management. In Bhutan, a network of biological corridors linking all key tiger-holding protected areas provides vast, contiguous forest habitat for the tigers and their prey.

In developing a meaningful strategy and conservation programme for tigers, WWF recognizes the need to:

- ❑ employ broad-based approaches that not only focus on core tiger populations but also on the protection, restoration and sustainable use of the ecosystems in which the tigers live and need to use to disperse and remain viable;

- ❑ reconcile the needs of tigers with those of humans in a mutually-beneficial manner;
- ❑ reduce global threats to tigers, particularly international trade in tiger parts and products;
- ❑ build the capacity of governments and local institutions for tiger conservation, particularly in terms of trained personnel, improved information and technology, and sustainable financing;
- ❑ promote effective international cooperation and cross-border alliances for tiger conservation.

WWF believes that it will be able to address the aforesaid needs more effectively by:

- ❑ enlarging the geographic scale of tiger conservation from a site-specific to a landscape level;
- ❑ prioritizing and focusing on selected landscapes, where the chances of long-term tiger conservation are best, and where WWF's involvement will be most valuable;
- ❑ strengthening existing partnerships and developing new alliances with other

conservation and related organizations at all levels;

- developing synergy and linkages with other conservation and development efforts in the same geographic or thematic field of work.

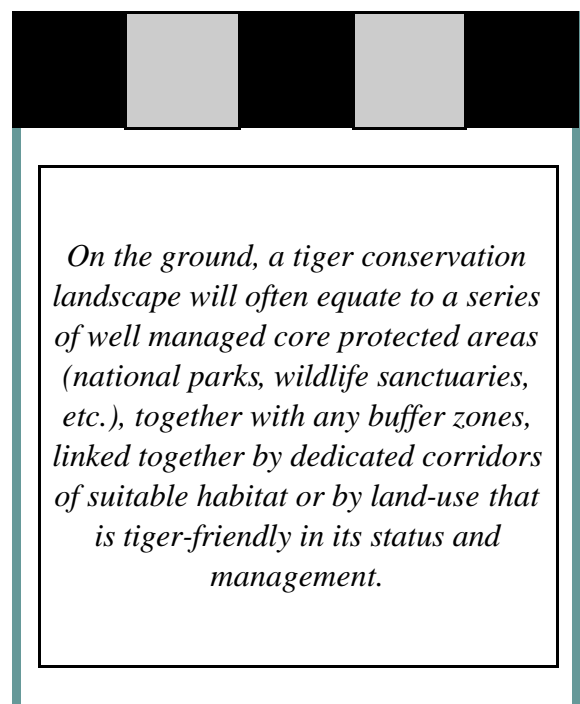
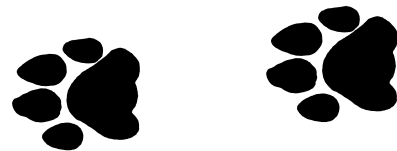
### Scaling-up to save tigers

Today, wild tigers occur mostly in small populations. Such populations are predisposed to inbreeding and are increasingly vulnerable to the pressures of encroachment and poaching. Keeping tiger "islands" intact amid some of the most densely human-populated countries on the Earth is possible, but offers little hope for the tiger's genetic vigour and long-term viability. WWF recognizes the need to take tiger conservation beyond the borders of national parks and nature reserves into entire landscapes by employing conservation approaches that integrate protection, restoration, management and sustainable use of the ecosystems in which the tigers live. The essence is to conserve the ecology and behaviour of wild tigers, not just discrete genetic populations. Far from implying that conservation work in increasingly isolated tiger reserves is unimportant, it underlines the unique role that these core areas have in seeding the process of establishing vibrant and viable tiger conservation landscapes.

The concept of tiger landscapes builds on the concepts of Ecoregion Conservation and the "tiger conservation unit" (TCU) developed by WWF and WCS with support from Save the Tiger Fund. The concept is elaborated in the 1997 publication entitled *A Framework for Identifying High Priority Areas and Actions for the Conservation of Tigers in the Wild*. The framework calls for focusing limited tiger conservation resources on these units. This approach recognizes that long-term viability of wild tiger populations is dependent not just on population size, reproductive success, and demographic structure, but also on trends in habitat fragmentation, levels of disturbance, size of prey base, and human impacts. A tiger conservation unit is defined

as "a block or a cluster of blocks of existing habitats that contain, or have the potential to contain, interacting populations of tigers." For the definition of the various levels of TCU, see the box on the next page.

Through this strategy, WWF is taking the TCU model a step further. A tiger conservation landscape, as defined by WWF, is an area of land, regional in scale, that can support and maintain, over the long-term, a viable meta-population of tigers, linked by safe and suitable habitat, together with an adequate natural prey base. On the ground, a tiger conservation landscape will often equate to a series of well managed core protected areas (national parks, wildlife sanctuaries, etc.), together with any buffer zones, linked together by dedicated corridors of suitable habitat or by land-use that is tiger-friendly in its status and management. Landscape-based approaches not only recognize the full spatial and ecological requirements of large predators like the tiger, but also the need for integrated land-use planning and management that reconciles the needs, on an appropriate scale, of all stakeholders.



## CLASSIFICATION OF TIGER CONSERVATION UNITS (TCUs)

**Level I TCU:** A TCU offering the highest probability of persistence of tiger populations over the long term. Main attributes are: large blocks of habitat suitable for tigers and prey with adequate core areas; low to moderate poaching pressure on tigers and prey species either as a result of remoteness or vigilant protection.

**Level II TCU:** A TCU offering medium probability of persistence of tiger populations over the long term. Main attributes are: moderate to large-sized blocks of suitable tiger habitat with adequate core areas; moderate to high poaching pressure on tigers and prey species but with potential for implementing effective anti-poaching measures in the near future.

**Level III TCU:** A TCU offering low probability of persistence of tiger populations over the long term due to its small size, isolation from other habitat blocks containing tigers, and fragmentation within its respective Major Habitat Type. With intensive management, Level III TCUs can harbor small populations of tigers. Main attributes are: small blocks of habitat suitable for tigers with small or no core area; high poaching pressure on tigers and prey species that endangers conservation efforts.

**TCUs requiring immediate surveys:** Any TCU that potentially contains extensive blocks of appropriate tiger habitat, with or without protected core areas, but for which we lack data on habitat quality, poaching pressure, or population status.

## Vision of the future — goals for today

WWF's strategy is aligned behind and based on the following vision and goals.

<b>Vision</b>	A world in which the tigers thrive in natural habitats across their range and benefit humanity as a result.
<b>Long-term Goal</b>	To conserve viable populations of tigers and their prey, across their entire range, in large, well managed networks of protected areas, buffer zones and connecting tiger-friendly landscapes.
<b>WWF's Programme Goal (to the year 2010)</b>	To improve the protection and management of key tiger populations and their habitats in top priority conservation landscapes, through measures that can be sustained and supported over the long term by governments, local communities and other stakeholders.

## Programme Targets (by the year 2010)

In support of WWF's Programme Goal, two programme-wide targets have been developed. The first focuses on the conservation of tigers, their prey and their critical habitats in a small number of high priority, focal landscapes selected from across the tiger's range. The main indicator of success (conservation impact) will be the presence, in each landscape, of at least 100 contiguously distributed breeding female tigers.

<b>Target 1</b>	To establish well-managed networks of core protected areas and connecting tiger-friendly buffer zones and corridors in the focal tiger conservation landscapes selected from across the
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The second target focuses on the highly significant and global threat posed to tigers by the ongoing international and domestic trade in tiger parts and products. Indicators of success will be developed on the basis of baselines established from existing and ongoing research in cooperation with the TRAFFIC network and its partners.

#### Target 2

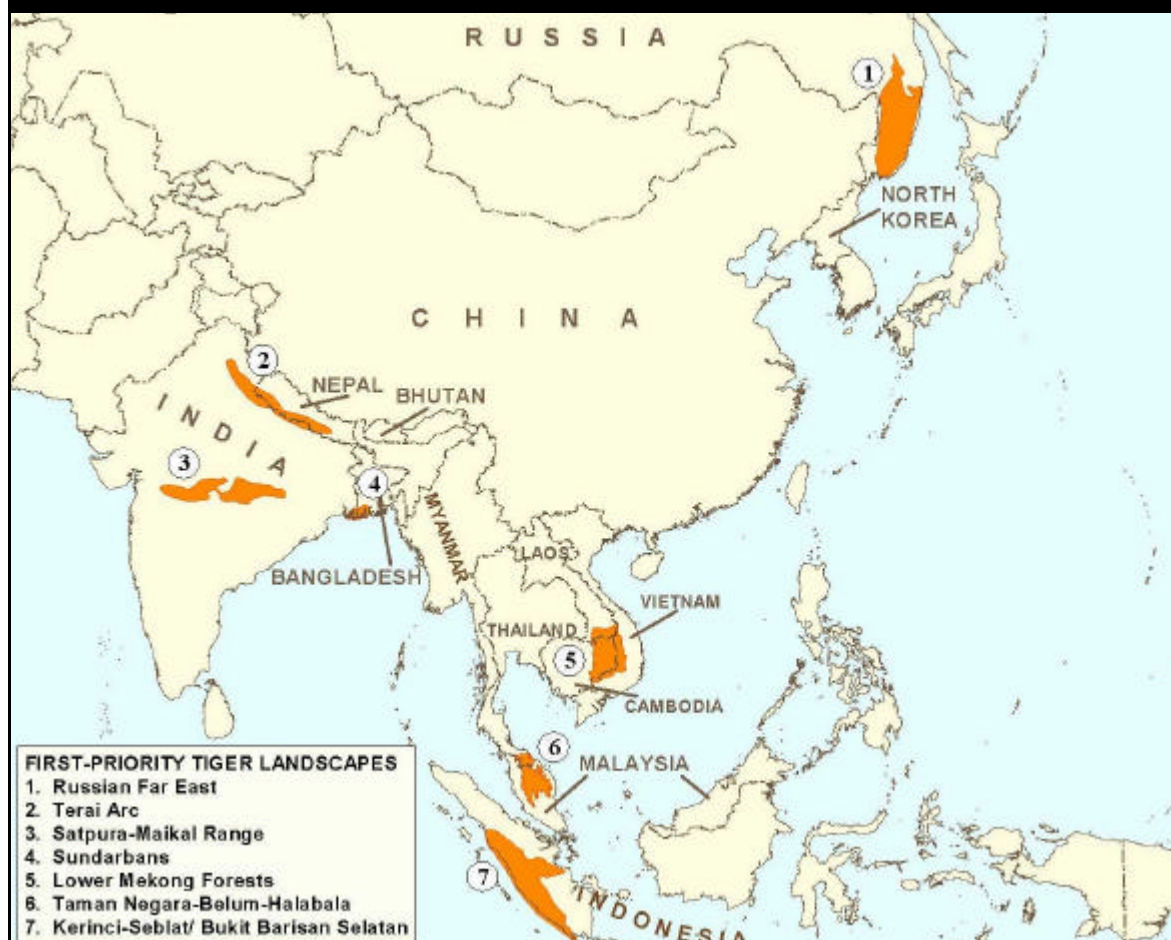
To reduce (with a view to its elimination) the trade in tiger parts and products to a level which no longer threatens the survival of tigers in the wild.

### Focal tiger landscapes — scaling-up... and focusing down

If the long-term conservation of viable populations of tigers requires both an increase in effort and a scaling up of approach, WWF's current strategy also acknowledges the fact that resources for tiger conservation are nonetheless finite. Those we do raise must be invested in the most effective way, and it is essential that they be focused on those places and issues that will contribute most to the long term survival of tigers in the wild. All tigers are important yet priorities must be set.

At the Anyer workshop, staff from WWF and TRAFFIC, and international tiger experts from the Smithsonian Institution, Zoological Society of London, and WCS, developed criteria for prioritization and examined potential tiger landscapes against these. On the basis of both geographic representation and occurrence of viable tiger populations, it was agreed to select seven focal landscapes from across the tiger's range. Key criteria used in the process included: number of Level I TCUs;

Map showing the focal landscapes





for connecting at least 50 reproductive female tigers; potential for good prey base; existence of committed conservation leadership; ecological value of the area; urgency for tiger conservation; and potential for partnerships and catalytic action. In recognition of their importance, as well as to provide fallback options should they be needed, a further four tier-two landscapes were also identified. Details of the process and the outcome of the workshop are elaborated in the *WWF Global Tiger Conservation Strategy Workshop Report (September 2000)*.

The seven focal landscapes chosen are:

1. Russian Far East (Russia)
2. Terai Arc (India, Nepal)
3. Satpuda-Maikal Range (India)
4. Sundarbans (Bangladesh, India)
5. Lower Mekong Forests (Cambodia, Lao PDR, Vietnam)
6. Taman Negara-Belum-Halabala (Malaysia, Thailand)
7. Kerinci Seblat/ Bukit Barisan Selatan (Indonesia)

Succinct descriptions of these are provided in Appendix 1.

The four tier-two landscapes are:

1. Manas-Bhutan-Namdapha Complex (Bhutan, India)
2. Eastern Indian Highlands (India)
3. Western Forest Complex (Thailand)
4. Western Ghats (India)

### **Trade in tiger parts and products — a "global" landscape**

To complement the geographic focus of WWF's Tiger Conservation Programme, and in recognition of its tremendous impact on tigers, the cross-cutting issue of trade in tiger parts and products has been selected for special attention.

Current issues related to trade in tigers parts and products are described in the TRAFFIC publication *Far From A Cure: The tiger trade revisited*, released in March 2000.

The global landscape is a dynamic one, in that priority areas for work may shift geographically as improved trade controls in one country drive illegal trade to another less-regulated one. This 'landscape' covers range, transit and consuming countries — wherever there is trade in tiger parts and products, including those purporting to contain tiger parts.

In general, the needs in this landscape include: instituting or enforcing trade bans; increasing law enforcement capacity to detect and halt tiger trade; increasing awareness of the judiciary of the impacts of illegal tiger trade; monitoring wildlife markets; enlisting traditional Asian medicine users and practitioners in tiger conservation efforts and promoting alternatives to tiger-based medicines; developing forensic methods for identifying tiger derivatives; measuring attitudes of key consumer groups toward the use of tiger derivatives; and assisting non-CITES states in acceding to the Convention.

### **Planning at the landscape level**

For each of the focal landscapes, prioritized and annually-reviewed programmes of work will be developed. The indicative table of landscape-level targets and milestones in Appendix 2 reflects the current state of programme development and discussions with the key stakeholders, and relates to the following broad objectives:

- ☐ establishing and managing effective tiger conservation landscapes;
- ☐ reducing the poaching of tigers and their prey;
- ☐ eliminating the trade in tiger parts and products;
- ☐ creating incentives that will encourage local communities and others to support tiger conservation;
- ☐ improving trans-boundary and international cooperation for tiger conservation;
- ☐ building capacity for tiger conservation at all levels, including training and education, communications and information, public awareness, technical assistance, partnership and research.

On the basis of ongoing consultation, progress in implementation, periodic monitoring and evaluation, as well as unforeseen opportunities and threats, fine-tuning and shifts in focus and prioritization may occur.

## **PROGRAMME IMPLEMENTATION**

Prime responsibility for implementing the Tiger Conservation Programme will lie with the relevant WWF and TRAFFIC offices, Regional (Asia/Pacific, Europe/Middle East) and Ecoregional Programmes, and coordinators for the selected priority tiger landscapes. Overall coordination and support will be provided by the Species Programme, together with a WWF Tiger Working Group, composed of field, donor and supporting staff.

### **Focal landscape coordinators**

For each focal landscape, a focal person or coordinator has been nominated (Appendix 3). For the work on trade in tiger parts and products, a focal person from the TRAFFIC network has also been assigned. The landscape focal persons and their teams in the field have the vital role of translating WWF's vision and strategy into action on the ground. They are assigned the task in light of their knowledge and experience in tiger conservation. They coordinate work at the landscape level: planning, implementing, monitoring and reporting on projects, providing supervision, oversight and technical backstopping. They are expected to closely monitor developments and potential threats to the ecosystem (roads, dams, industrial development, agro-forestry, plantations, etc.) so that these can be addressed, when appropriate, by the WWF network and its Species Programme through enhanced communications and campaigning activities.

### **Tiger Programme Coordinator**

A full-time Tiger Programme coordinator will be recruited to provide overall guidance and coordination in the development and implementation of the

programme. Communications and marketing support will also be amongst the coordinator's responsibilities. The person will consistently develop and maintain linkages across the programme, ensure alignment between field activities and the broader programme needs, be responsible for timely reporting and up-to-date communications, and assist in monitoring and evaluation of individual projects as well as the programme as a whole.

### **Tiger Working Group**

A Tiger Working Group (TWG) will be set up to guide, monitor, and review the overall progress and achievements, and to maintain a strong interface with the broader WWF network. For the regular functioning of the Working Group, a compact core group will be set up. This group will be made up of representatives from WWF donor national organizations, staff members from the Species Programme and the Asia/Pacific Programme of WWF International, a representative from TRAFFIC, and the Coordinator. A much wider group of peers and experts, both within and outside WWF, will be maintained for broader networking, professional counsel, coordination and information sharing.

## **MONITORING AND EVALUATION**

Each landscape programme will have a monitoring and evaluation plan, based on targets, milestones and indicators against which progress can be assessed. Technical and financial progress reports will be delivered regularly, in line with donor requirements. On a yearly basis, an overview and analysis of progress, based on the reports received from the field, will be produced and circulated to donors, landscape focal persons, partners, and other key people within and outside the WWF network. Workshops will be conducted at appropriate intervals to evaluate and review progress towards targets and milestones, highlight major issues and constraints, and provide recommendations for improvements.

## FUNDING

WWF currently spends some USD3.7 to 4.9 million each year on projects which are directly or indirectly related to tiger conservation. The spending on projects, which are primarily directed towards tiger conservation, is in the order of USD1.2 to 1.5 million annually.

### Future needs

The full-fledged implementation of this strategy will cost much more than what WWF currently spends directly on tiger conservation. For all purposes, the programme will need almost USD 11 million in the first three years. See the table of indicative programme budget below for the breakdown.

Apart from synergy of conservation purpose, alignment with WWF's programme for Asian rhinos and elephants, and linkages with Ecoregion Action Programmes and other relevant Target Driven Programmes, such as Forests for Life, will be crucial to complement core tiger funding. Also of importance will be concerted fund-raising efforts and donor coordination within the WWF network, partnership with

other conservation organizations, and liaison with Government Aid Agencies and international funding agencies.

Although costs will go up in the future to save this magnificent species, if we cannot mobilize these funds today the future cost will be even higher -- and the risk to tigers even greater. It is hoped that this strategy will mobilise and inspire governments, institutions, people, funding agencies, and members of the business community all over the world to make a financial commitment to saving one of our planet's most endangered natural treasures.

### Tiger Emergency Fund

Since its creation in 1998 as part of WWF's *Year for the Tiger* campaign, the Tiger Emergency Fund (TEF), co-managed by WWF and IUCN, has provided more than USD260,000 in emergency aid and small grants to projects in all parts of the tiger's range. While work in the focal tiger landscapes and on international trade in tiger parts and products will be WWF's core programme for tiger conservation for the years to come, the ability to respond to emergencies and critical interventions elsewhere will be maintained

**Indicative Programme Budget FY02 – FY04 in USD**

Cost Particular	FY 02	FY 03	FY 04	Total
Landscape Project Field Costs	2,610,000	3,150,000	3,150,000	8,910,000
Tiger Action Plan Coordinator	57,100	51,500	58,500	167,100
Communications and Fundraising	15,500	19,500	14,500	49,500
Technical Assistance	95,000	122,000	10,000	227,000
Monitoring and Evaluation	30,600	30,600	75,600	136,800
Management Costs	365,000	438,500	430,100	1,233,600
<b>Total</b>	<b>3,173,200</b>	<b>3,812,100</b>	<b>3,738,700</b>	<b>10,724,000</b>



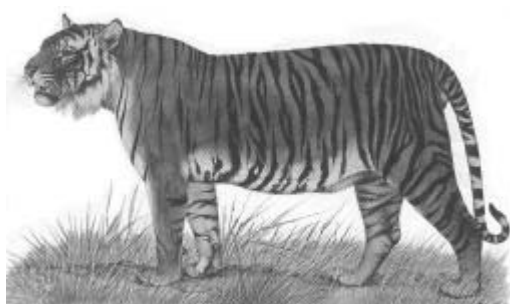
## PARTNERSHIP

Solid partnership and cooperation, between all stakeholders, is essential if the tiger is to survive. No one organization, agency or community has the authority, resources, knowledge or outreach to succeed alone. Implementation of tiger conservation on the scale proposed in this strategy, will call, as never before, on the ability of people and organizations to work together. The approach will require long-term commitments, and synergy of knowledge, skills and resources to implement the diverse and complementary range of activities required: community-based natural resource

management, law enforcement, conservation education, research and surveys, and cross-border cooperation.

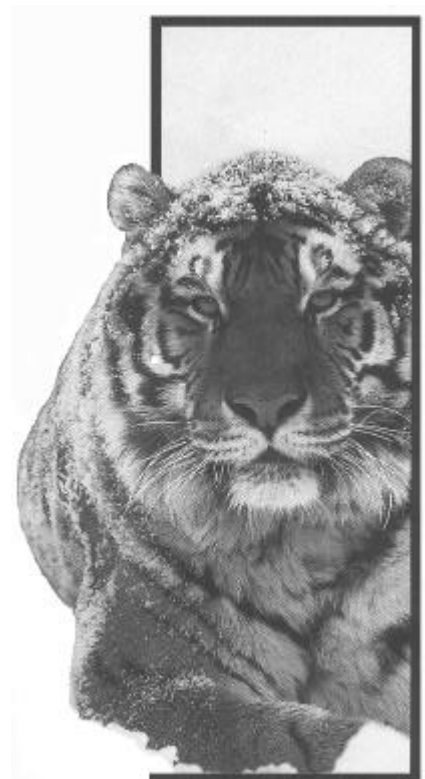
In the past, WWF has been fortunate to cooperate with a large number of partners at international, regional, national and local levels. In the implementation of this strategy, WWF aspires to strengthen existing partnerships and to forge new ones at all levels.

Appendix 4 list some existing and potential partners.



# Appendices

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*Credit: WWF/ Kevin Schafer*

## BRIEF DESCRIPTIONS OF THE FOCAL TIGER LANDSCAPES

### RUSSIAN FAR EAST

The Russian Far East is the last stronghold of the Amur tiger, with a population of 330 to 370 adult tigers in the wild (IUCN Cat Specialist Group, 1999). It is estimated that China may have 30 to 35 Amur tigers, and North Korea possibly fewer than 10. In the 1940s, the Amur tiger was on the brink of extinction with less than 40 animals remaining in the wild. Thanks to vigorous anti-poaching and other conservation efforts by the Russians with support from international conservation organizations, including WWF, the Amur tiger population in the Russian Far East recovered from the precarious state and has remained stable throughout the past decade. The landscape is a single Level I Tiger Conservation Unit (TCU), with some cross-border areas in China. It overlaps with the Russian Far East Broadleaf and Conifer Forests Global 200 Ecoregion.

#### Status of Tiger Population and Habitat

With 330 to 370 adult tigers, the Russian Far East tiger population is possibly the single largest population of tigers in the world. The tigers are distributed in the Sikhote-Alin mountains in Primorski and Khabarovski Territories. About 90 per cent of the tiger population live in continuous habitat throughout most of Primorski Territory and adjacent areas of Khabarovski Territory. Sikhote-Alin (3,985 km<sup>2</sup>), Lazovski (1,210 km<sup>2</sup>) and Ussuriiski (404 km<sup>2</sup>) Zapovedniks provide some of the best conditions remaining for Amur tigers because of their extent and the protection afforded to them. There is also a small isolated population in the south-western part of Primorski Territory -- in and around the Barsovy (1,069 km<sup>2</sup>) and Borisovskoe Plato (634 km<sup>2</sup>) wildlife refuges. Since 1998, the Verkhnebikinskii landscape refuge (7,405 km<sup>2</sup>) has been created overlapping the border of Primorski and Khabarovski Territories, and a new 507 km<sup>2</sup> Mopau wildlife reserve has been established in the northernmost part of the range of the Amur tiger. Creation of

national parks has been endorsed at the regional levels but final approval by the Russian Government is awaited. These national parks are Udegeiskaya Legenda (1,020 km<sup>2</sup>), Zov Tigra (852 km<sup>2</sup>), and Anuiskii (4,296 km<sup>2</sup>). In addition, tigers occur in significant number in the forests outside the protected areas. Efforts are underway to designate additional national parks and reserves, connected by ecological corridors, to increase protected tiger habitat in the region.

#### Key Threats and Issues

##### Poaching of tigers and their prey for cash and food

Despite vigorous anti-poaching activities, poaching of tigers persists due to the lucrative international market for tiger parts and products. Tigers are also killed by local hunters who perceive them as competitors for game species on which their livelihoods depend. Of dire consequence is the large-scale hunting of red deer and wild boar, which are tiger's principal natural prey species in the Russian Far East.

##### Inadequate protection and management of habitats and prey base

Large areas of tiger habitat remain outside the protected areas system. These areas are increasingly vulnerable to indiscriminate logging and other imprudent uses. Poaching, over-hunting and other biotic disturbances in unprotected habitats have reduced red deer and wild boar populations to significantly low numbers.

##### Increased logging and construction of roads

The forests outside the protected areas are being exploited unsustainably for timber and other forest products. Large-scale cutting of oak and pine forests -- prime autumn-winter habitat for wild boars -- is a very serious concern. Also being heavily logged are the floodplain forests, which serve as the tiger's main hunting ground during summers. Logging roads are being laid in vulnerable areas, such as small river

and creek beds. Not only are these roads environmentally intrusive, they also provide easy access to poachers and hunters.

#### Forest fires

Of late, forest fires have destroyed vast areas of forests in the Russian Far East. Serious forest fire outbreaks occurred in 1998 and 1999.

#### Inadequate law enforcement

While anti-poaching efforts are vigorous and apprehensions significant, the conviction rate of the offenders is reportedly very low. This is perhaps due to lack of any serious understanding of the implications of poaching and illegal wildlife trade within the judiciary.

### **TERAI ARC**

One of the most spectacular assemblages of large mammals in Asia occurs along the base of the Central Himalayas -- in the Terai Arc. Here, in the world's tallest grasslands where elephant grasses reach 7 meters by the end of the monsoon, lives one of the densest populations of tigers on Earth. This high-profile landscape is made up of three Level I TCUs: Chitwan-Parsa-Valmiki, Bardia-Banke, and Corbett-Rajaji. It also overlaps the Terai-Duar Savannas and Grasslands Global 200 Ecoregion. This area has two priority landscapes -- Western Terai and Central Terai -- for greater one-horned rhinoceros conservation as part of WWF's Asian Rhino and Elephant Action Strategy. WWF in both Nepal and India has a long history of conservation work in protected areas in this landscape. In July 2000, WWF Nepal started a landscape project, the Western Terai-Churia Conservation Programme, with the conservation of tigers, rhinoceroses and elephants as a major objective.

### **Status of Tiger Population and Habitat**

The tiger population on the Nepalese side is reported to have grown from 81-86 breeding tigers to 121-126 in the past five years in four protected areas, namely Royal Chitwan and Royal Bardia National Parks, and Royal Sukla Phanta and

Reserves. On the Indian side, there are four tiger reserves: Corbett (1,318 km<sup>2</sup>, made up of Corbett National Park and Sonanadi Wildlife Sanctuary) with 138 tigers; Dudhwa (883 km<sup>2</sup>, made up of Dudhwa National Park and Kishanpur Wildlife Sanctuary) with 104 tigers; Valmiki National Park (840 km<sup>2</sup>) with 53 tigers, and Katarniaghat Wildlife Sanctuary (400 km<sup>2</sup>). Besides these tiger reserves, tigers also occur in three other protected areas in the Indian part. They are Rajaji National Park (820 km<sup>2</sup>), and Suhelwa (452 km<sup>2</sup>) and Sohagi Barwa (428 km<sup>2</sup>) Wildlife Sanctuaries.

### **Key Threats and Issues**

#### Encroachment and habitat fragmentation

The human population in the landscape is reported to have grown by more than three-fold -- from 83 persons per km<sup>2</sup> to 275 persons per km<sup>2</sup> -- in the past four decades. Consequently, large tracts of forests have been cleared to make way for human settlement and agriculture. The remaining forests and the still very rich biodiversity therein continue to experience severe biotic pressure, especially the tiger habitats outside the protected areas are being overly used for grazing and non-timber forest products. Securing corridors linking the protected areas in this landscape will need major attention.

#### Poaching of tigers and other wildlife

Despite strong anti-poaching measures, illegal wildlife hunting and trade continue, exacerbated by a porous international border and the poverty of the local people. Transborder consultations between Nepalese and Indian authorities have been held and efforts are ongoing to translate these policy-level dialogues into tangible on-the-ground bilateral cooperation. Of late, there have been sporadic upsurges in poaching, particularly of elephants, in Corbett National Park.

#### Human-wildlife conflict

Depleting prey base, growing cattle population, and expanding human occupancy and use of tiger habitats have together led to a rise in human-wildlife conflict. Cattle

depredation by tigers is high and cattle owners very often resort to poisoning of tigers in retaliation.

#### Lack of capacity

Against the backdrop of persistent poaching, the dearth of staff to carry out law enforcement and other conservation duties is felt pronouncedly. Even key areas such as Corbett and Dudhwa Tiger Reserves were reported to be severely understaffed. Those staff in post are generally ill-equipped to combat poachers. The creation of Uttaranchal as a separate state from Uttar Pradesh has also constricted government resources.

### **SATPUDA-MAIKAL RANGE**

Fondly dubbed "Kipling Country", being the setting of Nobel laureate Rudyard Kipling's jungle tales, this landscape straddles the Indian states of Madhya Pradesh, Maharashtra, and the newly created Chhattisgarh. It overlaps the Eastern Deccan Plateau Moist Forests Global 200 Ecoregion.

#### **Status of Tiger Population and Habitat**

Stretching over 25,000 km<sup>2</sup>, this landscape has more than 500 tigers. Some of the best-known tiger reserves in India — Pench (Maharashtra), Pench (Madhya Pradesh), Bori-Satpura, Melghat and Kanha -- are located here. Within the tiger reserves, there are 8 tigers in Pench (Maharashtra) (257km<sup>2</sup>), 29 in Pench (Madhya Pradesh) (758 km<sup>2</sup>), 36 in Bori-Satpura (1,486 km<sup>2</sup>), 73 in Melghat (1,677 km<sup>2</sup>), and 114 in Kanha (1,945 km<sup>2</sup>). In addition to the tiger reserves, there are five national parks and seven wildlife sanctuaries in the landscape. Corridors holding the landscape together have become tenuous due to heavy biotic pressure.

#### **Key Threats and Issues**

##### Encroachment and habitat degradation

The landscape is heavily populated, and a very large number of people live in and around the tiger habitats. Among them are several forest-dwelling tribes such as the Gondas, Baigas, Korkus, Bheels and Kols.

Encroachment and degradation of habitats, as a result of increasing human and livestock populations, are among the most serious threats. Around 100,000 people along with 80,000 cattle, live in and around Kanha Tiger Reserve alone.

##### Poaching

Subsistence poaching of prey species and indiscriminate harvesting of forest products are prevalent due to low conservation awareness and poverty among local communities.

##### Lack of capacity

There is a severe dearth of staff to carry out law enforcement and other conservation duties. As of July 1998, 50 per cent of the forest guard posts in Pench Tiger Reserve (Madhya Pradesh) were vacant. Pench Tiger Reserve in the Maharashtra side too had 30 per cent of the forest guard posts lying unfilled.

### **SUNDARBANS**

The Sundarbans, meaning "beautiful forests" in Bangla and Bengali, is a unique landscape in that it is the only one in the world where tigers dwell in a mangrove forest ecosystem. Bangladesh and India share this landscape which is also the Sundarbans Mangroves Global 200 Ecoregion, with World Heritage Sites in both countries. There are some biodiversity and sustainable development projects being planned in the Sundarbans by the Asian Development Bank and the United Nations Foundation. However, it is difficult to say at this time to what extent these projects will benefit tiger conservation.

#### **Status of Tiger Population and Habitat**

Tiger population estimates are variable. Official estimates indicate between 300-450 tigers on the Bangladeshi side, and about 270 in India. Many tiger experts, however, suggest actual numbers may be much less. In the Bangladesh Sundarbans, there are three wildlife sanctuaries all together covering an area of 1,397 km<sup>2</sup> (Sundarbans East- 312 km<sup>2</sup>, Sundarbans South- 370 km<sup>2</sup>, and



Sundarbans West- 715 km<sup>2</sup>). On the Indian side, the Sundarbans Tiger Reserve is 2,585 km<sup>2</sup>.

### **Key Threats and Issues**

#### Intense human use

Although, there is no permanent human settlement in the Sundarbans, the use of the estuary by peripheral human populations is very intense. From an estimate in 1993, it is known that about 350,000 people use the Sundarbans during the main harvest season. However, unofficial sources suggest that the number of people entering and using the forest in a given year can be as high as one million! People exploit the landscape for fisheries, fuelwood, honey, timber, nipa palm, and numerous other products on a regular basis.

#### Human-tiger conflict

Given the intensity of human use, it is little wonder that human-tiger conflict is the most severe in the Sundarbans. Between 1975 and 1999, tiger attacks have caused 544 human deaths (i.e. about 23 per year) in the Bangladesh Sundarbans alone. And the death toll is increasing if recent reports are to be believed.

#### Poaching and illegal trade

Even though the inhospitable mangroves is a major deterrent for poachers, poaching of tigers and their prey and illegal wildlife trade persist due to a combination of factors: high human casualty from tigers; the lure of quick money; weak law enforcement; and local poverty. Trans-boundary cooperation between Indian and Bangladeshi authorities needs to be strengthened to curb poaching and illegal trade, and to coordinate survey and monitoring activities.

#### Intrusive development

The proposed national waterways in the Indian Sundarbans and the seismic surveys for oil exploration by Shell Company in the Bangladesh Sundarbans albeit outside the Reserve loom as potential threats.

## **LOWER MEKONG FORESTS**

This landscape, which encompasses the tri-border area of Cambodia, Laos, and Vietnam, is also a priority landscape for Asian elephants. It is made up of 17 TCUs, the largest of which is the Virachey-Xe Pian-Yok Don — a Level I TCU. There are two Level II TCUs and the rest are all Level III TCUs. There is a possibility to extend it to Cat Tien National Park in Vietnam, which besides being a Level III TCU, is known to be the last refuge for Javan rhinoceroses outside Java and is a priority landscape under WWF's Asian Rhino and Elephant Action Strategy. The landscape overlaps three Global 200 Ecoregions: Annamite Range Moist Forests, Indochina Dry Forests, and Mekong River.

### **Status of Tiger Population and Habitat**

Current tiger population estimates are vague and mostly derived from anecdotal information. Surveys are being carried out by the local wildlife and park authorities with support from Conservation International, Fauna and Flora International, Wildlife Conservation Society and WWF. There are 17 protected areas in this landscape (five in Cambodia, seven in Lao PDR, and five in Vietnam). Monduliri Province and Virachey National Park in Cambodia, Xe Pian protected area in Lao PDR, and Chu Mom Ray and Yok Don National Parks in Vietnam are some of the key areas for tigers.

### **Key Threats and Issues**

#### Habitat fragmentation

The landscape is heavily populated, and this has caused encroachment and over-exploitation of tiger habitats.

#### Poaching of tigers and their prey and illegal trade

Hunting of tigers and their prey is rife, and cross-border trade in tiger parts and products is rampant due to weak enforcement of wildlife legislation and strong traditional beliefs in the medicinal properties of tiger derivatives. Low conservation awareness and

poverty among the general public are exacerbating poaching and illegal wildlife trade.

#### Lack of capacity

Trained personnel are lacking, and institutional capacity for tiger conservation is limited. Conservation staff need to be trained in tiger survey and monitoring, data collation and analysis, and participatory approaches to conservation. More people need to be recruited to combat poaching and illegal wildlife trade. Lack of information on tiger populations, their prey and habitat conditions is a major constraint in tiger conservation planning and management.

#### Paper parks

Of the 17 protected areas in the landscape, only three are reported to have conservation management plans. With no conservation management plan, protected area management and conservation activities can be rudimentary, provisional, and ineffective for the long term.

### **TAMAN NEGARA-BELUM-HALA BALA**

This is a transboundary landscape that straddles much of Peninsular Malaysia and a small portion of southern Thailand. It overlaps the Peninsular Malaysian Lowland and Montane Forests Global 200 Ecoregion. Much of the landscape is a Level I TCU, and in Peninsular Malaysia this includes the hills and mountains of the Main Range. It is also a priority landscape for Asian elephants and Sumatran rhinoceroses.

#### **Status of Tiger Population and Habitat**

About 80 tigers are estimated to be found in Taman Negara National Park alone. Although population estimates for the rest of the landscape are little known, as a whole it may contain the largest remaining population of the Indochinese tiger in the wild. With an area of 4,343 km<sup>2</sup>, Taman Negara National Park is the largest protected area in this landscape as well as in the whole of Peninsular Malaysia. There is Temenggor Forest Reserve north to Taman Negara National Park. Another protected area by

name of Belum State Park is being proposed by the Perak State Government. This proposed park is contiguous to Temenggor Forest Reserve in the south and to Hala Bala Wildlife Sanctuary in the north across the border in Thailand.

### **Key Threats and Issues**

#### Logging and roads

The key threat to tigers in this landscape is the opening up of new forested areas for logging in the Temenggor Forest Reserve. Additionally, the construction of new trunk roads and highways that are ongoing or in the pipeline, for example to link three of Peninsular Malaysia's popular hill stations (Cameron Highlands, Genting Highlands and Fraser's Hill), will certainly result in the fragmentation of existing tiger habitat.

#### Habitat conversion

Development of land for agriculture along the boundaries of the landscape, particularly for oil palm plantations is a serious threat too. Conversion of forests into agriculture has led to more frequent encounters between tigers and livestock, aggravating human-tiger conflict.

#### Human-wildlife conflict

Depredation of livestock by tigers is significant. As per records maintained by the Department of Wildlife and National Parks, 1531 cattle, 54 buffaloes, 89 goats, and 175 sheep were killed by tigers between 1977 and 1997 in Pahang, Perak, Terengganu and Kelantan. In financial terms, the loss translates to approximately RM (Malaysian Ringgit) 1.8 million, a significant amount to rural communities. The situation is becoming worse. In 1998-99, tigers have killed 433 head of cattle in 30 oil palm estates in Terengganu alone.



## KERINCI-SEBLAT/BUKIT BARISAN SELATAN

Located on the Indonesian island of Sumatra, this landscape is composed of two Level I TCUs — Kerinci Seblat-Seberida and Bukit Barisan Selatan-Bukit Hitam. In addition, there are three Level II and three Level III TCUs. It encompasses Riau, a priority landscape for Asian elephants, and Bukit Barisan Selatan National Park, a priority landscape for Sumatran rhinoceroses under WWF's Asian Rhino and Elephant Action Strategy. The landscape falls in Sumatran Islands Lowland and Montane Forests Global 200 Ecoregion.

### Status of Tiger Population and Habitat

Although much of the landscape is very good tiger habitat and a good part of the 400 or so Sumatran tigers estimated to be remaining in the wild are expected to occur here, population estimates are patchy. According to camera trap estimates by WCS, there are about 45 tigers in Bukit Barisan Selatan National Park. Apart from Bukit Barisan Selatan, there are three more protected areas: Bukit Tigapuluh National Park, Kerinci Seblat National Park, and Bukit Rimbang Bukit Baling Wildlife Reserve. WWF is lobbying for designation of Tesso Nilo as a National Park.

### Key Threats and Issues

#### Poaching and illegal wildlife trade

Poaching is rife; investigations by WWF and the Wildlife Conservation Society

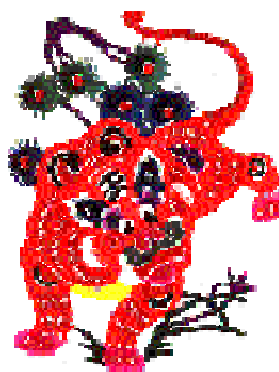
estimated that at least 66 Sumatran tigers were killed in 1998 and 1999 alone. Low conservation awareness, local poverty, weak law enforcement and strong market forces are causing poaching and illegal wildlife trade.

#### Logging and habitat conversion

Logging is indiscriminate and encroachment of habitat for agriculture, particularly oil palm plantation, is widespread. Another cause of worry with regards to habitat destruction is the expanding paper pulp industry. In Indonesia, pulp mills have so far relied heavily on unsustainable and, in many cases, illegal sources of fibre, much of which is obtained through clear-cutting of natural forests. Between 1988 and 1999, the demand for pulpwood is estimated to have caused 800,000 ha of deforestation. Considerably increased pulp production capacity in Indonesia will put further pressure on the country's remaining forests. Sumatran Island is the site of nearly half of Indonesia's existing and proposed pulp mills (as of 1997). Clearly, the pulp mills will be in extreme conflict with the purpose of tiger conservation.

#### Forest fires

Forest fires are recurrent and largely caused for rampant and rapid conversion of forests into oil palm plantation and other agriculture use. Of the 176 companies accused of causing the forest fires that raged in Indonesia in late 1997 destroying 5 million ha including 1 million ha of forest, 133 (i.e. more than 75 per cent) were reportedly oil palm plantation companies.



*Appendix 2: Indicative Targets and Milestones for Focal Tiger Landscapes which make up pages 21 to 29 of this document is attached as a separate file. It is in MS*



















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## LIST OF SOME EXISTING AND POTENTIAL PARTNERS

**Care for the Wild:** works to provide immediate aid to wildlife in distress. It is currently supporting conservation work in eight countries, including India, Lao PDR and Thailand among tiger range countries.

**CITES Secretariat:** With 157 countries as members as of 8 January 2002, CITES is an international agreement to ensure that international trade in specimens of wild plants and animals do not threaten their survival. The Secretariat, located in Geneva, has the coordinating, advisory and servicing role in the functioning of the Convention.

**Conservation International:** With its headquarters in Washington, DC, the CI works to preserve threatened ecosystems in over 30 countries, including Cambodia and Indonesia among tiger range countries.

**Corbett Foundation:** is a Trust set up to support public awareness, research and other activities as necessary for preservation of the unique ecosystem of Corbett country, and to promote harmony between local communities and surrounding nature.

**David Shepherd Conservation Foundation:** DSCF supports wildlife conservation in Africa and Asia. Their current projects include support to anti-poaching activities in the Russian Far East, conservation of Khao Yai National Park in Thailand, and tiger conservation in a number of h-dia's protected areas.

**Fauna & Flora International:** is presently carrying out protected area and tiger conservation work in two of the seven tier one landscapes, namely Lower Mekong Forests and Kerinci-Seblat/ Bukit Barisan Selatan.

**Global Environment Facility:** was established to forge international cooperation and finance actions to address four critical threats to the global environment: biodiver-

**Global Tiger Forum:** is an inter-governmental and international body for conservation of the tiger in the wild, with its Secretariat presently located in Delhi. The GTF's membership is currently made up of six tiger range countries, two non-tiger range countries, and two international NGOs including WWF.

**Government Aid Agencies:** GAAs are becoming increasingly involved in conservation issues, particularly in their relationship to poverty alleviation and rural development.

**Global Tiger Patrol:** GTP projects are concentrated in India, and these include support to Satpuda National Park in the Satpuda-Maikal Range, Corbett Tiger Reserve and Rajaji National Parks in the Terai Arc, and Sundarbans Tiger Reserve.

**International Fund for Animal Welfare:** IFAW is dedicated to supporting and catalyzing actions to protect wildlife, particularly those endangered by commercial exploitation.

**King Mahendra Trust for Nature Conservation:** Established in 1982, KMTNC is a non-governmental organization dedicated to promoting, managing and conserving nature in all its diversity in Nepal. Its projects include the Nepal Conservation Research and Training Center in Royal Chitwan National Park and the Bardia Conservation Programme in Royal Bardia National Park, both national parks being located in the Terai Arc.

**Phoenix Fund:** Phoenix is a Russian non-governmental wildlife conservation organization based in Vladivostok. In collaboration with local communities, government agencies and other NGOs, it seeks to enhance wildlife protection through public education and support to wildlife rangers.

**Project Tiger:** Lauded as one of the largest conservation initiatives ever undertaken in the world, Government of India's Project Tiger -- launched in 1973 -- today covers 27 Tiger Reserves collectively encompassing an area of 37,761 km<sup>2</sup>. Nine of these Tiger Reserves are located in the three Indian tiger landscapes: three in the Terai Arc; five in the Satpuda-Maikal Range; and one in the Sundarbans.

**Save the Tiger Fund:** A special project of the National Fish and Wildlife Foundation in partnership with ExxonMobil Corporation, STF was set up in 1995. Since then, it has supported some 158 projects.

**Tigris:** is a Dutch Foundation dedicated to supporting conservation of Amur tiger and Amur leopard in the Russian Far East.

**TRAFFIC:** is the joint wildlife trade monitoring programme of WWF and IUCN. The TRAFFIC network works in cooperation with the CITES Secretariat and a wide range of other partners.

**UN Agencies:** Several UN agencies are involved in environmental conservation, including in areas where tigers occur. To name some, they are FAO, UNEP, UNESCO, and UN Foundation.

**US Fish and Wildlife Service:** has established a special grants programme through the Rhino and Tiger Conservation Fund to support field projects and address major threats to wild tigers. USFWS also plays a key role in CITES efforts to stop the illegal trade in tiger parts.

**WildAid:** provides direct protection to wildlife in danger through wildlife law enforcement, habitat protection, education and community outreach. Their tiger-related activities are located in Cambodia, Myanmar, the Russian Far East, and Thailand.

**Wildlife Conservation Society:** Starting in 1895 as the New York Zoological Society, WCS adopted its present name in 1994 to better reflect its mission -- saving wildlife through out the world. The Society is active in several tiger landscapes -- Lower Mekong Forests, Kerinci-Seblat/ Bukit Barisan Selatan, Taman Negara-Belum-Halabala, and the Russian Far East.

**Wildlife Institute of India:** WII is India's premium institute for education and training in wildlife management. Its highly qualified faculty includes expertise ranging from ecodevelopment and landscape management to radio-telemetry techniques and GIS application in wildlife conservation.

**The World Conservation Union:** Better known by its acronym IUCN, this international body's Species Survival Commission (SSC) works to mobilize action by the world conservation community for conservation of threatened species. The SSC amongst other things prepares and updates the Red List of Threatened Species.

**Zoological Society of London:** In partnership with Global Tiger Patrol, ZSL operates the 21st Century Tiger initiative to raise funds and support projects for conservation of tigers in the wild.

