

CONSERVATION ACTION PLAN FOR THE RUSSIAN FAR EAST ECOREGION COMPLEX

Part 2. NGO Joint Action Plan

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Major Contributing NGOs:

World Wide Fund for Nature Far Eastern Office
Wildlife Conservation Society
Khabarovsk Wildlife Foundation
Amur Socio-Ecological Union
Phoenix Foundation
League of Environmental NGOs of Evreiskaya Province
Amur Ecological Foundation
Zov Taigi Nature Conservation Center

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INTRODUCTION

This document is the result of four years of collaboration by dozens of scientists, experts, and enthusiasts of nature conservation in the Russian Far East Ecoregion Complex (RFE). This region genuinely deserves unwavering attention due to its unbelievably rich biodiversity, charismatic plants and animals, and unique natural ecosystems. The RFE, for the purposes of this action plan, covers 1.35 million km², or one percent of the Earth's land area (*Figure 1*). While the RFE encompasses all of four provinces of the Russian Federation (Amurskaya, Evreiskaya, Khabarovskiy, and Primorsky provinces), the bulk of conservation efforts will be focused on its southern portion, where both levels of biodiversity and threats are greatest. The *Part 1 of Conservation Action Plan: Biodiversity and Socio-Economic Assessment (CAP 1)* provides a complete overview of the RFE Ecoregion Complex (Darman et al. 2002).

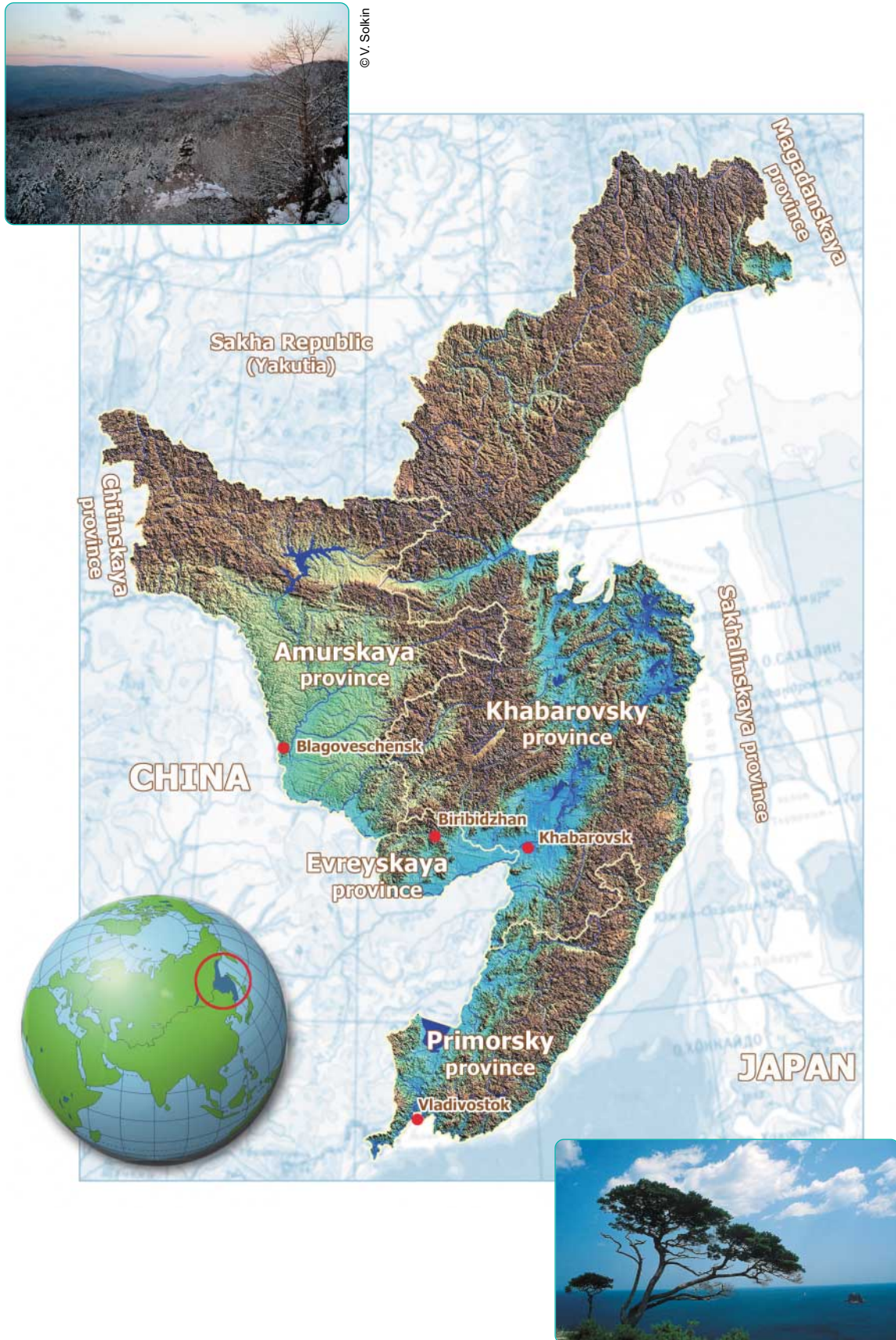
Much has been done to conserve the rich biodiversity in the RFE, but difficult social and economic conditions in Russia force us to remain alert and think of the future. Endless

reforms have shattered the government system for conservation and use of natural resources, while new economic mechanisms for promoting sustainable resource use have yet to be created. Rapacious plundering of natural resources is escalating, while poaching and illegal trafficking has reached unprecedented levels.

Despite difficulties, international and regional non-governmental organizations (NGOs) have assumed responsibility, it seems more than the Russian Government, for saving the **Amur tiger** (*Panthera tigris*), the **Far Eastern leopard** (*Panthera pardus orientalis*), and forest and wetland ecosystems of the RFE. Today, leading conservation NGOs in the RFE have pulled together to strengthen efforts to conserve biodiversity in the globally important region by elaborating and implementing this joint plan with concrete actions. In creating the Conservation Action Plan. Part 2 (CAP 2), we reviewed work from previous years, proposals of many interest groups and scientists, and official programs of regional governments (Attachment 1 contains a full list of documents

Figure 1.

RUSSIAN FAR EAST ECOREGIONAL COMPLEX



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used in preparing the CAP 2). Existing strategies on conserving the Amur tiger, the Far Eastern leopard, and the Oriental white stork (*Ciconia boyciana*), as well as resolutions from regional and international seminars on these species (Attachment 2) were the foundation for developing individual species strategies and action plans. The map of Ecological Zoning of the RFE Ecoregion Complex (*Figure 2, page 15*) was used to delineate priority territories for conservation. This classification scheme was proposed by RFE scientists (Bocharnikov et al. 2002) and served as the basis for detailed assessment of biodiversity and threats to its conservation (*Figure 3, page 16*). A complete description of the analyses undertaken is provided in the Biodiversity and Socio-Economic Assessment.

Though this CAP 2 was elaborated by NGOs and will serve as a blueprint for our work, we have made efforts at every step of the way to involve and get approval from key government stakeholders. Representatives of state scientific institutes, nature conservation agencies, and

regional administrations participated in discussion of the CAP 2. The CAP 2 was reviewed several times by the RFE Ecoregional Council for Sustainable Development, WWF's guiding association, of which all the organizations contributing to the CAP 2 are members (Attachment 3 lists Council members). The CAP 2 was presented for discussion to the Interagency Commission on Biodiversity Conservation in the Amurskaya and Khabarovsk provinces. Appropriate government committees in the Primorsky and Evreiskaya provinces also commented on the draft. Most of the recommendations were accepted and included in this document, though in certain instances, the opinions of NGOs differed from those of state agencies.

We would like to thank all those who provided input in preparation of the Conservation Action Plan for the Russian Far East Ecoregion Complex. Part 2 (Attachment 4 provides a list of contributors).

1.

BIODIVERSITY VISION



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The Russian Far East Ecoregion Complex, which includes the Primorsky, Khabarovsky, Amurskaya, and Evreiskaya provinces, harbors outstanding levels of biodiversity and endemism. The region is home to globally significant endangered species such as **Amur tiger**, **Far Eastern leopard**, **Oriental white stork**, and **red-crowned crane** (*Grus japonensis*). Unsustainable logging, poaching, and degradation of forest and freshwater ecosystems threaten these species and their habitats.

A biodiversity vision for the Russian Far East Ecoregion Complex serves as a touchstone for long-term conservation of the region's unique biological features. By agreeing on a far-reaching vision and the steps for achieving it, conservation organizations can focus resources and efforts on the priorities that are most important for conserving the region's biodiversity.

1.1.

BIODIVERSITY VISION
FOR THE RUSSIAN FAR EAST ECOREGION COMPLEX

From the coast of the Sea of Japan, where **gorals** (*Nemorhaedus caudatus raddeanus*) scale rocky outcroppings, to inland mountain ecosystems with hotspots of endemic plant communities, native communities of flora and fauna are preserved and continue to evolve. From northern boreal forests where **wolves** (*Canis lupus*) roam to southern temperate forests in which leopards prowl, representative terrestrial and freshwater habitats are conserved at sufficient scales to allow ecological processes, such as large-scale migrations and predator-prey relations, to fluctuate naturally. Vast areas of intact forests

are resilient enough to recover from natural disturbances such as forest fires. The regular monsoon floods of the Amur River, which flows free and uninterrupted by dams, support freshwater communities with their relic vegetation and breeding and migrating waterfowl.

In extensive tracts of intact forests, protected by effectively managed nature reserves and connecting corridors that extend throughout the region, large predators such as **Amur tigers**, **Far Eastern leopards**, **lynxes** (*Felix lynx*), and **Brown** and **Asiatic black bears**

(*Ursus arctos*, *Selenarctos tibethanus*), roam freely without interference from humans. These predators prey on healthy populations of **Manchurian red deer** (*Cervus elaphus xanthopygos*), **sika deer** (*Cervus nippon*), **roe deer** (*Capreolus pygargus*), and **wild boar** (*Sus scrofa*), which in turn are supported by robust yields of keystone species such as **Korean pine** (*Pinus koraiensis*) and **Mongolian oak** (*Quercus mongolica*). **Ginseng** (*Panax ginseng*) and other plants with biologically-active compounds are treasured and support both the local economy and biodiversity.

The Amur River valley and associated wetlands are seen not as a separate entity, but as part of a system of tightly interconnected terrestrial and freshwater habitats. The Amur River valley, conserved in an internationally recognized Green Corridor, supports millions of birds along the Northeast Asian Flyway. Healthy populations of roe deer migrate along the Green Corridor for hundreds of uninterrupted kilometers. Wetlands of Khanka Lake, the Zeya-Bureya Plain, and the Middle Amur are protected and restored and provide important habitat for flourishing populations of Oriental white stork, red-crowned crane, **Amur river turtle** (*Pelodiscus sinensis*), and **Komarov lotus** (*Nelumbium komarovii*).

Humans, an integral part of the landscape, contribute to conservation and are committed

to using natural resources sustainably. Wildlife and all natural resources are valued as an indivisible part of a sustainable economy. Legends and cultural traditions fostering respect and responsible stewardship surround tigers, leopards, cranes, storks, **Siberian spruce grouse** (*Falcipennis falcipennis*), and other species. Poaching of rare species and their prey is eliminated and hunting quotas are determined taking conservation of large predators and other biodiversity into account. Illegal trade in wildlife is a problem of the past. Sustainable logging and effective regeneration practices allow both people and wildlife to reap long-term benefits. The fishing industry maintains viable populations of **pink and chum salmon** (*Oncorhynchus gorbuscha*, *O. keta*), **kaluga sturgeon** (*Huso daurica*), and other species. Indigenous peoples benefit from successful management of ecotourism, hunting and fishing, and non-timber forest products.

Cultural barriers between Russia, China, Mongolia, and North Korea are overcome in order to achieve effective conservation of the Amur River Basin and its associated freshwater and terrestrial habitats. International programs for conserving tigers, leopards, cranes, storks, and freshwater fish help to maintain viable populations of these species and support conservation and sustainable use in their habitats.

1.2. STEPS TO ACHIEVING THE BIODIVERSITY VISION

The goal of this Conservation Action Plan is to provide a road map for achieving the long-term biodiversity vision. While acknowledging that conservation of freshwater and terrestrial ecosystems and species cannot be achieved individually and must be regarded as parts of one whole, we have divided these priority ecosystems into individual strategies in order to help set measurable conservation targets. Strategies and action plans were developed for priority biomes (forests and freshwater), as well as for

a set of representative biomes to ensure that important areas of biodiversity are not overlooked. In addition, action plans for species, which are inevitably linked with conservation of forest and freshwater habitats, were developed for focal species where habitat conservation alone would not be sufficient to guarantee their survival. Measures for conserving species of special concern are included in action plans for priority and representative biomes.

The long-term goals in these priority directions, important steps for achieving the Biodiversity Vision, are:

For boreal and temperate forests:

- ▶ Degradation and fragmentation of valuable forests for biodiversity conservation are halted by creating a viable system of representative protected areas and promoting ecologically-sound forest management practices.
- ▶ Significant blocks of forests remain intact to support full-scale assemblages of plants and animals and natural ecological processes, such as predator-prey relations and large-scale migrations.
- ▶ 20 percent of temperate forests and 10 percent of boreal forests are preserved in various types of protected areas, connected by corridors and buffer zones made up of high conservation value forests and other forests managed for biodiversity conservation.
- ▶ Sufficient areas of forest habitats support viable populations of the endangered Amur tiger and Far Eastern leopard, which are effectively preserved in cooperation with China and North Korea.
- ▶ The forestry industry in the Russian Far East is economically effective, ecologically sound, and beneficial to society in accordance with international principles of sustainable forestry.
- ▶ Indigenous peoples and local communities benefit from sustainable use of natural resources, including collection and sale of non-timber forest products, ecotourism, sustainable hunting, and other renewable sources.

For freshwater habitats:

- ▶ The Amur River remains free flowing and ecological processes function naturally, and Russia, China, and Mongolia collaborate on an Integrated Management Program for the Amur River Basin
- ▶ 30 percent of freshwater habitats are preserved in various types of protected areas, connected by river corridors and stepping stones (an additional one million hectares protected compared to the current level)
- ▶ A system of freshwater protected areas, linked by the Amur Green Corridor and internationally managed in cooperation with China and Mongolia, supports unique stop-over areas for millions of waterfowl along the Northeast Asian Flyway
- ▶ Viable populations of focal species and species of special concern - Oriental white stork, red-crowned and **white-naped** (*Grus vipio*) **cranes**, Amur river turtle, and kaluga sturgeon - are protected or effectively managed in cooperation with China and other countries based on approved species conservation action plans
- ▶ Healthy fish populations and secure spawning areas in the Amur River and its tributaries are guaranteed by sustainable fishing practices, state enforcement of ecologically-sound fishing quotas, water conservation, and minimal pollution from large industries
- ▶ Indigenous peoples benefit from sustainable resource use and ecotourism

For representative biomes:

- ▶ Conservation of biodiversity and important ecological phenomena is guaranteed in the following representative Ecoregions: Lower Amur Mountain Valley, Bureya Mountain, Amur-Zeya Plain, and Aldan-Stanovoy Mountain
- ▶ Sufficient areas of representative habitats remain intact in order to support viable populations of species of special concern, namely: Siberian spruce grouse, **snow sheep** (*Ovis nivicola potanini*), red-crowned and white-naped crane, and Amur river turtle

For focal species

(Amur tiger, Far Eastern leopard, Oriental white stork, ginseng):

- ▶ Create and maintain a genetically viable population of at least 300 breeding female tigers (about 700 tigers in all) over an extended range
- ▶ Enlarge and maintain a genetically viable population of at least 50 Far Eastern leopards in southwestern Primorsky Province and create new founder populations in other parts of the animal's former range
- ▶ Sustain a viable population of at least 500 nesting pairs of Oriental white storks in the Russian Far East Ecoregion Complex and ensure that this population is conserved throughout its range including in wintering areas to the south
- ▶ Conserve viable ginseng populations in the wild and restore the plant to parts of its former range, while allowing local people to profit from the sustainable harvest of ginseng

1.3. METHODS FOR ACHIEVING THE BIODIVERSITY VISION

Each of the action plans is divided into three strategic components: protecting the **WEB OF LIFE**, changing the **RULES OF THE GAME**, and adapting **MARKETS AND LIFESTYLES**. Box 1 lists the main tools for intervention in each of these components. The most important directions for the Russian Far East Ecoregion Complex in each of these three strategic components are outlined below.

Web of Life:

At present, the most cost-effective way to conserve biodiversity is to create protected areas, which will become more difficult in the future if land is privatized or targeted for development. Since the protected areas system in the RFE cannot expand infinitely due to political, economical, and financial reasons, new organizational forms of protecting land

need to be developed in addition to traditional nature reserves. New forms of land protection might include high conservation value forests (HCVF) and linking corridors or conservation landscapes, where sustainable use of natural resources is practiced. The protected areas system will also need to take into account different development scenarios in various parts of the region. For example, in the highly developed and populated regions in the south, new nature reserves will be harder to secure than in the relatively undeveloped and unpopulated boreal forests of the north. As a result, methods for creating protected areas in these two zones will differ. In the south, efforts should be made to improve management of the existing system of strictly protected areas, while national parks can be created instead of nature reserves, along with multiple use corridors, and HCVFs to guarantee con-

servation of remaining parcels that are valuable for biodiversity conservation. In the north, it may be sufficient to create traditional forms of strictly protected areas, which are connected only informally by tracts of intact land not slated for development, or to reserve lands for future inclusion in a larger Econet.

Rules of the Game: Conservation organizations can only do so much to compel governments into action in conserving biodiversity. Yet, it is our duty to draw attention to the issues at hand and ensure that steps are being made in the right direction. Lobbying governments, setting up public watch groups, promoting incentives for businesses and the public that protect the environment, facilitating international agreements, and other measures are some of the ways that conservation organizations can change the rules. In Russia, many of the laws concerning protected areas, the forestry sector, and taxation and credits are developed and implemented on the national level. Where possible, regional legislation needs to be developed in order to help decentralize decision-making and take specifics of the Russian Far East into account.

Markets and Lifestyles: A protected areas network for the RFE cannot realistically cover more than 15 to 20 percent of the region. Therefore, we must promote sustainable use of natural resources on surrounding territories as the basis for economic development, especially for local communities. Yet, this is a monumental task, because Russia still does not have a true market economy and the government is oriented toward large-scale exploitation of natural resources without providing funds for regeneration or returning

profits to local people. In order to prove that sustainable resource use can be both profitable and compatible with conservation needs, we must create successful models of sustainable forestry, fishing, hunting, ecotourism, and so on, demonstrating the results to government decision-makers, business and industry, and the public.

BOX 1. STRATEGIC COMPONENTS AND MAIN TOOLS FOR INTERVENTION*
WEB OF LIFE

- Halting illegal hunting and logging
- Protected areas networks (Econets)
- Habitat restoration
- Transboundary nature reserves
- Research and monitoring of rare and indicator species or ecosystems

RULES OF THE GAME

- Policies and legislation
- Resource regulation and monitoring
- Financial incentives
- Subsidies and credits
- Bilateral and multilateral agreements

MARKETS AND LIFESTYLES

- Promoting certified products
- Consumer awareness
- Leveraging business and industry
- Private investments
- Benefits to local communities

* Adapted from «Creating Space for Nature,» WWF's Strategy for the Europe/Middle East Region, July 2001

2.

KEY PARTNERSHIPS FOR PLAN IMPLEMENTATION

Implementation of the CAP 2 is the responsibility of the leading environmental NGOs that contributed to its preparation. For each province, these are:

- ▶ Amurskaya Province: **Amur Socio-Ecological Union (Amur SEU)**
- ▶ Evreiskaya Province: **League of Environmental NGOs (ECOLIGA)**
- ▶ Khabarovsk Province: **Khabarovsk Wildlife Foundation (KWF)**
- ▶ Primorsky Province: **Phoenix Foundation (PHOENIX)**

Other organizations and instruments that play a crucial role in implementation of the CAP 2 in the RFE are:

The Wildlife Conservation Society (WCS) primarily handles issues related to scientific research aimed at developing and implementing plans for conservation of the Amur tiger and Far Eastern leopard in Primorsky and Khabarovsk provinces, as well as sustainable use of biological resources.

The World Wide Fund for Nature (WWF) carries out projects in all four provinces, concentrating its efforts on implementing integrated environmental policies using an Ecoregional approach, creating a system of nature reserves, promoting sustainable forestry, and conserving wetlands of the Amur Basin.

The Amur Ecological Foundation (AMUR) participates in implementation of freshwater and Oriental stork conservation strategies, in monitoring of water pollution, in supporting traditional way of life of indigenous people along the Amur river banks.

The Zov Taigi Nature Conservation Center (ZT) works to promote awareness of issues on biodiversity conservation in the entire RFE Ecoregion Complex and to build support for implementation of the CAP.

WCS, WWF, and the Phoenix Foundation signed an agreement on collaboration on Amur tiger

and Far Eastern leopard conservation. The Tigris Foundation joined this group to carry out conservation measures in southwestern Primorsky Province.

The International TRAFFIC program works on controlling illegal trafficking of derivatives of rare species.

Efforts to conserve forest ecosystems are implemented in close coordination with members of the Sosnovskaya Coalition, initiated by the **Pacific Environment and Resource Center (PERC)**, as well as with forest programs of the **Socio-Ecological Union** and **Greenpeace**, united in the **Taiga Rescue Network**.

The KWF is the coordinator for a large project of the World Bank/GEF on fire prevention measures in valuable forests of the southern RFE.

The WWF and the Amur SEU are working together to conserve wetlands in the Amur Basin in collaboration with the Northeast Asia Crane Site Network and **Wetlands International**.

State nature conservation agencies are the main partners for NGOs in implementing the CAP 2. These include the Department of Natural Resources and Environmental Protection of the RFE Federal Region and its regional offices in Amurskaya, Evreiskaya, Khabarovskiy, and Primorsky provinces, as well as provincial wildlife and game departments. These agencies in particular should be interested in having a unified governmental strategy for biodiversity conservation and natural resource management. While under the current system of jurisdiction, NGOs have little authority to capture and punish poachers, NGOs provide maximum assistance to existing state agencies - hunting inspections, the «Tiger» Inspection of the Ministry of Natural Resources, ranger services in zapovedniks, and the RFE Customs Agency.

The Association of RFE Zapovedniks is an active partner not only in developing the system of protected areas in the RFE, but also in scientific research, ecological education, and ecotourism.

The governments of Amurskaya and Khabarovskiy provinces actively support the CAP 2 and have created interagency commissions on biodiversity conservation and expanding the protected areas system. These commissions include representatives of the NGOs that contributed to developing this CAP 2, which will facilitate collaboration and agreement among all interest groups while implementing actions in this plan. The political climate in these provinces is favorable to biodiversity conservation largely due to obligations that the governors of Khabarovskiy and Amurskaya provinces made in the framework

of WWF's «Gifts to the Earth» program.

In the Evreiskaya Province, unique opportunities for conservation present themselves thanks to progressive regional legislation and close cooperation of the provincial government with federal conservation agencies.

The most difficulty in implementing the CAP will be met in Primorsky Province, where the market has come to dictate decision-making in the majority of cases. Nonetheless, we will make efforts to realize the CAP 2 in this important province, relying on the «Long-term Program for Nature Conservation and Wise Use of Natural Resources of Primorsky Province until 2005» (1989) and «Biodiversity Conservation for the Sikhote-Alin» (1998), approved earlier by the provincial government.

In elaborating the scientific basis of this CAP 2 and in implementing specific nature conservation projects, our organizations seek assistance from leading scientists of the following organizations: Far Eastern branches of the Russian Academy of Sciences (Pacific Institute of Geography, Biology and Soils Institute, Institute of Marine Biology, Institute of Water and Ecological Problems, Institute for Economic Studies); applied research organizations (Far Eastern Forestry Institute, Far Eastern Game Management Institute, Pacific Institute for Fisheries and Oceanography); and institutes of higher learning (Far Eastern State University, Primorsky State Agricultural Academy, Blagoveshensk State Pedagogical University, and Far Eastern State Agrarian University).

Cooperation with institutes of higher learn-

ing will also include support of the «Druzhina» student brigades for nature conservation. In the past three years, the following student conservation «Druzhina» were created: «Bars» (Amurskaya Province); «Manchur» and «Ussurisky Medved» (Primorsky Province); «Berkut» (Evreiskaya Province); and «Nizhneamurskaya Nature Conservation Inspection» and «Amba» (Khabarovsk Province). Students are directly involved in anti-poaching activities and participate in many nature conservation projects implemented within the framework of this CAP 2.

Other regional environmental NGOs which will be invited to collaborate on implementing the CAP 2 are: the Association of RFE Zapovedniks; the Institute for Sustainable Natural Resource Use; Ecodal; Sikhote-Alin Foundation; Ginseng Hiking League; Associations for indigenous peoples of the North; regional societies for hunters and fishermen; the non-commercial partnerships «KhasanEcoTour» and Natural Resource Managers of the Southern Sikhote-Alin.

Without doubt, the state education system will be an important partner in building environmental awareness during implementation of the CAP 2, including schools, children's clubs, and teacher training institutes. We work actively with the Committee on Culture and with regional natural history museums. Clubs for Ecological Journalists were created in order to ensure widespread and continuous information on conservation issues in the mass media, along with special insets in leading newspapers, and regional television and radio programs.

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

Freshwater and forest ecosystems are priority biomes due to their global and regional significance for biodiversity conservation. Within the RFE Ecoregion Complex, 17 individual Ecoregions were delineated to characterize species assemblages and major habitats (*Figure 2*). Each Ecoregion represents a relatively large unit of that contains a distinct assemblage of natural communities sharing a majority of species, dynamics, and environmental conditions. As a result of analyses conducted for the Biodiversity and So-

cio-Economic Assessment, seven Ecoregions for conservation of forest and freshwater ecosystems were delineated where the bulk of conservation efforts should be focused in the RFE (*Figure 3*). Priority areas within these Ecoregions were determined based on detailed analysis of biodiversity and endemism, threats to natural ecosystems, presence of focal species or environmental processes and phenomena, and other criteria (see Biodiversity and Socio-Economic Analysis for full description of this process).

The four priority areas for conservation of forest biomes as determined in the biodiversity assessment are:

- ▶ **EASTERN MANCHURIAN MOUNTAIN ECOREGION**
- ▶ **SIKHOTE-ALIN MOUNTAIN ECOREGION**
- ▶ **LESSER KHINGAN AND BADZHALSKY ECO-DISTRICTS OF THE BUREYA MOUNTAIN ECOREGION**
- ▶ **TUKURINGRA-DZHAGDINSKY ECOREGION**

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

The three priority areas for conservation of freshwater ecosystems as determined in the biodiversity assessment are:

- ▶ **Khanka Lake Lowlands Ecoregion**
- ▶ **Middle Amur Plain Ecoregion**
- ▶ **Zeya-Bureya Plain Ecoregion**

These priority areas for conservation are the main focus of the forest and freshwater strategies and action plans. Other areas are included where necessary to incorporate measures to conserve focal species and processes, species of special concern, and at-risk ecosystems.

After analysis of the role of priority areas in protecting the region's biodiversity, four additional Ecoregions were delineated where biodiversity is relatively low, but representation value of certain ecosystems is high. These four «representative» Ecoregions are:

- ▶ **Lower Amur Mountain Valley Ecoregion**
- ▶ **Bureya Mountain Ecoregion**
- ▶ **Amur-Zeya Plain Ecoregion**
- ▶ **Aldan-Stanovoy Mountain Ecoregion.**

Within these territorial divisions, areas were targeted where new threats from human activities are highest. Parts of the representative Ecoregions are important for conserving species of special concern, such as the snow sheep, which otherwise would not be

protected if only forest and freshwater ecosystems were slated for conservation. Actions for conserving representative habitats of these four Ecoregions are elaborated in the Strategy and Action Plan for Conservation of Representative Biomes.

Figure 2.

ECOREGIONS ZONING IN THE RUSSIAN FAR EAST ECOREGIONAL COMPLEX

(source: Bocharnikov et al., 2002)

NUMBERS ON THE MAP
ARE THE ECO-DISTRICTS
IN ACCORDANCE WITH BIOM
CLASSIFICATION

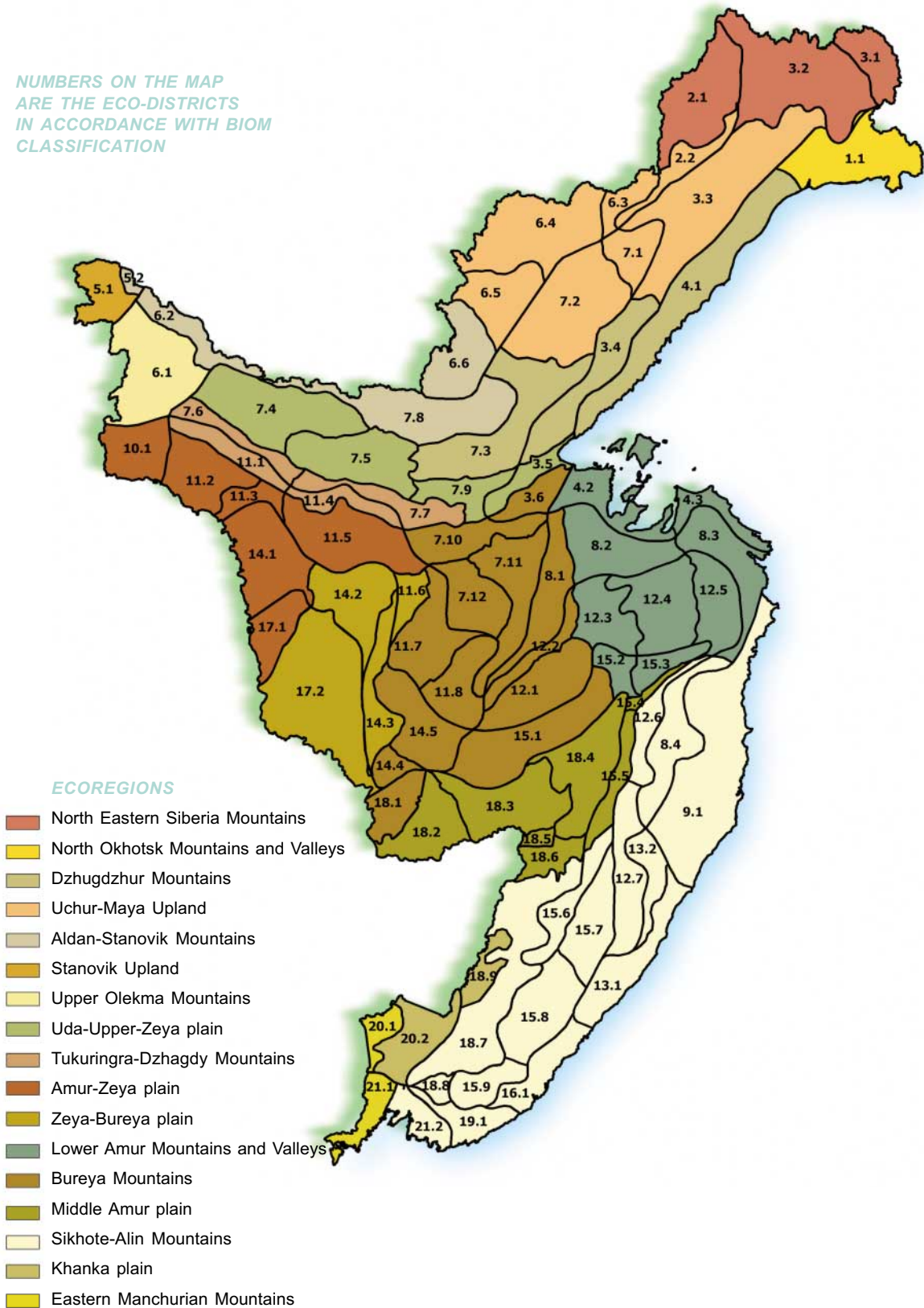
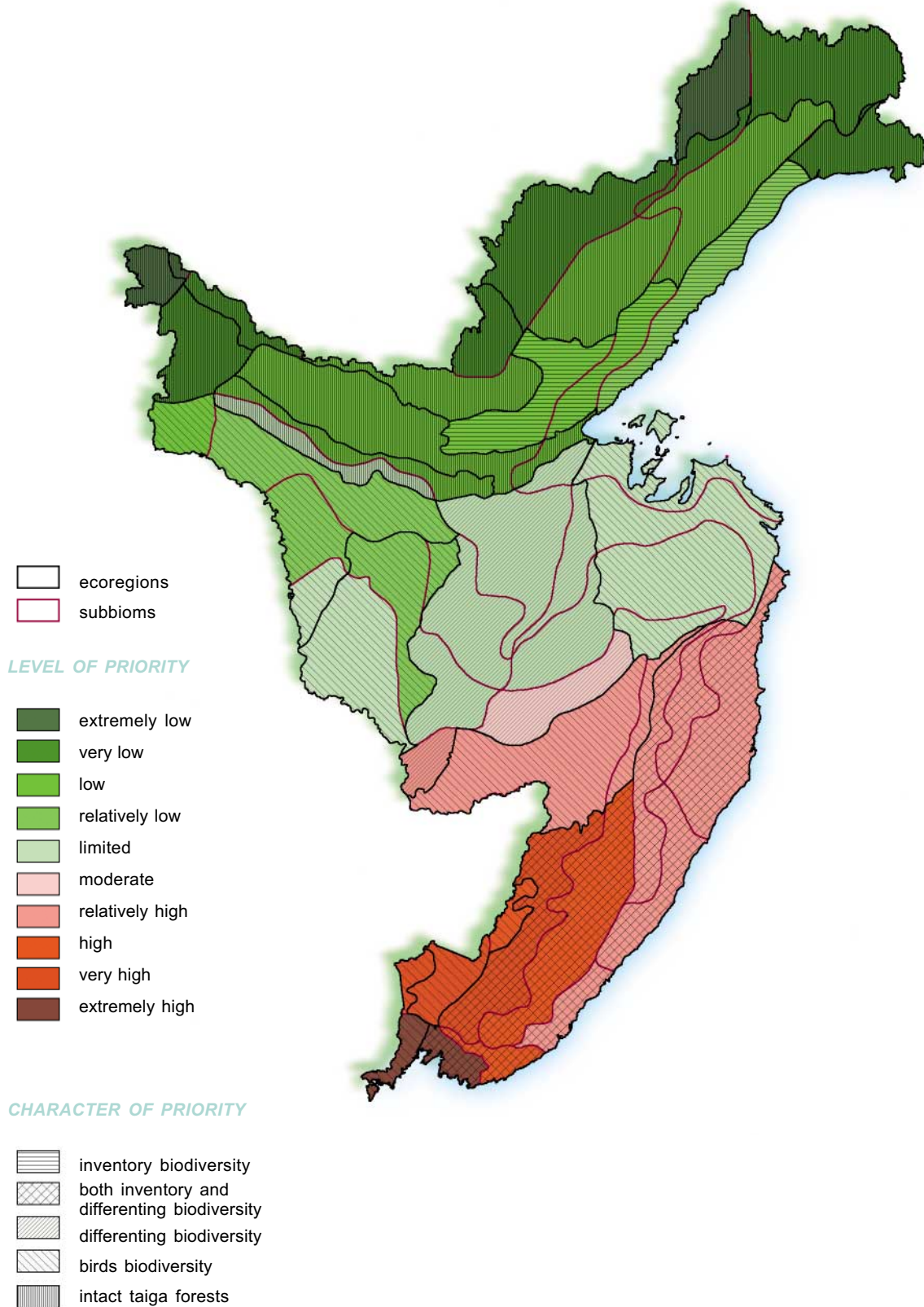


Figure 3.

**BIODIVERSITY CONSERVATION PRIORITIES
IN THE RUSSIAN FAR EAST ECOREGION COMPLEX**

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3.1. STRATEGY AND ACTION PLAN FOR CONSERVATION OF FOREST ECOSYSTEMS IN THE RUSSIAN FAR EAST ECOREGION COMPLEX

Temperate and boreal forest ecosystems in the Russian Far East Ecoregion Complex are some of the most intact in the Northern Hemisphere. The level of diversity of plant and animal species in temperate forests is one of the highest of similar latitudes around the world. Numerous plants are endemic to the region and relics of a time before the last Iceage. Large predators such as the Amur tiger and Far Eastern leopard and their prey depend on these sizeable tracks of forest habitat.

Timber resources in the region make up more than 11 percent of all of Russia's reserves. Yet, logging practices are unsustainable and generally inefficient. Illegal logging accounts for as much as half of all timber production in Primorsky Province alone. Forest fires that rage out of control can be catastrophic for forest habitats and their inhabitants. Fragmentation and degradation of the region's forests are escalating at an alarming rate.

In order to combat these threats and guarantee long-term conservation of globally important boreal and temperate forest biomes, large tracts of forests should be set aside in an effectively managed Econet, consisting of protected areas and linking corridors. Various types of protection regimes need to be explored and new methods to conserve forests tested, for example by developing special regulations for conserving high conservation value forests (HCVF). Policies for improving management in the forestry sector need to be worked out, and model projects for promoting sustainable forestry implemented. International cooperation with China and North Korea will be necessary for conserving critical forest habitats for the Amur tiger, Far Eastern leopard, and other species that depend on forests in border areas.

In the table below, focal species and species of special concern that will benefit from protection of particular forest habitats are indicated in parentheses.

Long-term goals for forest conservation:

- ▶ Degradation and fragmentation of rare and valuable forests for biodiversity conservation are halted by creating a viable system of representative protected areas and promoting ecologically-sound forest management practices

- ▶ Significant blocks of forests remain intact to support full-scale assemblages of plants and animals and natural ecological processes, such as predator-prey relations and large-scale migrations
- ▶ 20 percent of temperate forests and 10 percent of boreal forests are preserved in various types of protected areas, connected by corridors and buffer zones made up of high conservation value forests and other forests managed for biodiversity conservation
- ▶ Sufficient areas of forest habitats support viable populations of the endangered Amur tiger and Far Eastern leopard, which are effectively preserved in cooperation with China and North Korea
- ▶ The forestry industry in the Russian Far East is economically effective, ecologically sound, and beneficial to society in accordance with international principles of sustainable forestry and the FSC
- ▶ Indigenous peoples and local communities benefit from sustainable use of natural resources, including collection and sale of non-timber forest products, ecotourism, sustainable hunting, and other renewable sources

The Forest Conservation Strategy and Action Plan for the Russian Far East Ecoregion Complex takes into account global priorities for forest conservation set out by WWF in the Forests for Life Campaign. Milestones to measure success according to each of its Target Driven Programs (TDP) are listed below:

TDP 1: The establishment and maintenance of viable, representative networks of protected areas in the world's threatened and most biologically significant forest regions by 2010

Important Milestones for the RFE Ecoregion Complex:

- ▶ Over 1.5 million hectares of temperate forests and 3.5 million hectares of boreal forests are set aside in protected areas by 2010
- ▶ Half a million hectares of high conservation value forests (HCVF) are incorporated into the Econet by 2010
- ▶ Protected area management is improved in four model areas and capacity for

training future managers and mechanisms for long-term financing of reserve activities are in place by 2012

TDP 2: 100 million ha of certified forests by 2005, distributed in a balanced manner among regions, forest types and land tenure regimes

Important Milestones for the RFE Ecoregion Complex:

- ▶ Sustainable forestry standards and principles of sound management, approved by FSC, are practiced on 500,000 ha of forests in the southern Russian Far East by 2005
- ▶ Capacity for FSC certified sustainable forestry practices created on 2 million ha of forests used by timber companies by 2012

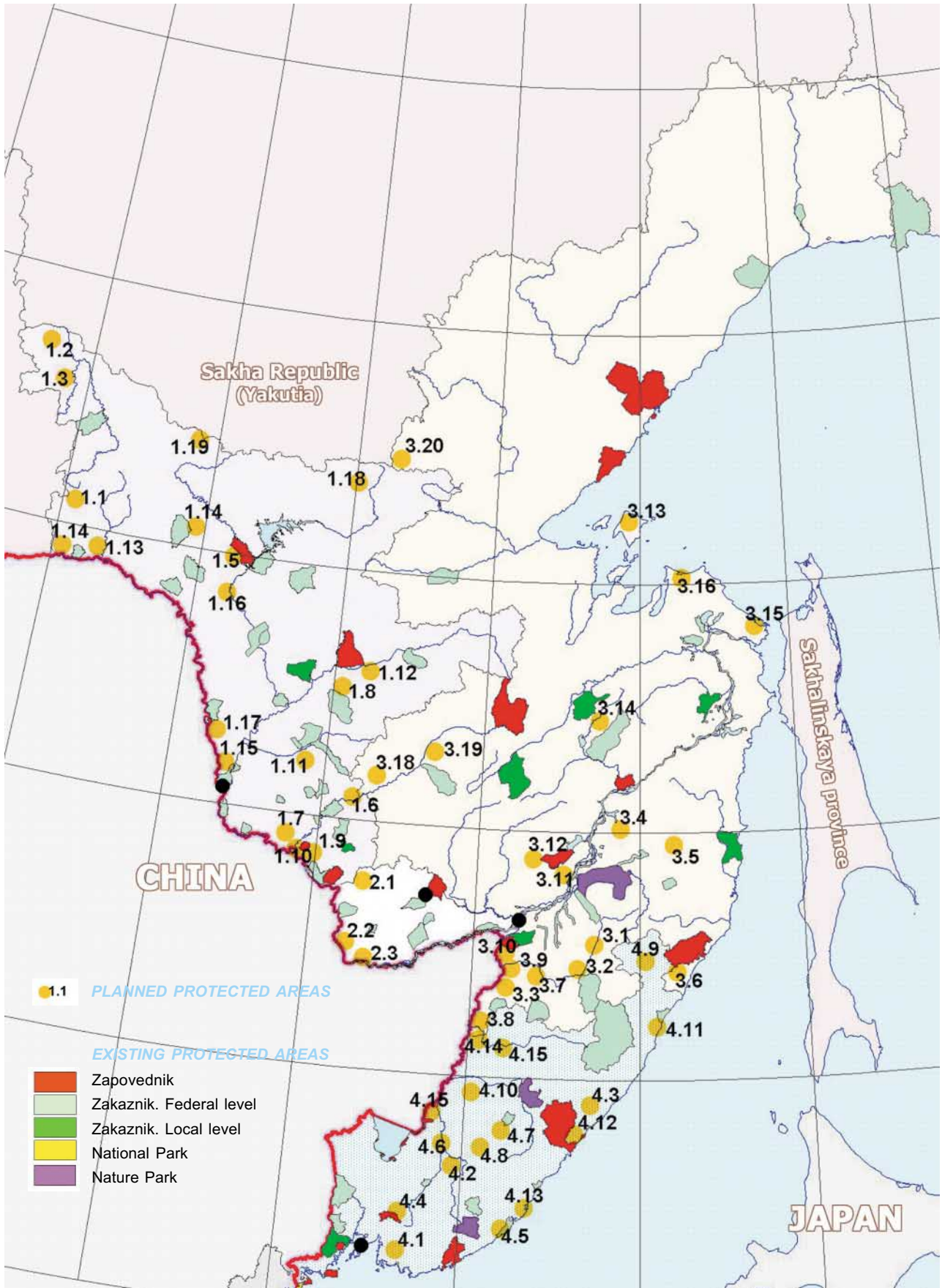
TDP 3: By 2005, at least 20 forest landscape restoration initiatives underway in the world's threatened, deforested, or degraded forest regions to enhance ecological integrity and human well-being

Important Milestones for the RFE Ecoregion Complex:

- ▶ Model project for forest regeneration initiated by 2005
- ▶ Project underway in the Zeya-Bureya Plain to plant 3,000 ha of forest belts by 2007 (see Freshwater Action Plan)

Figure 4.

**PROPOSED SYSTEM OF NATURE PROTECTED AREAS
IN THE RUSSIAN FAR EASTERN COMPLEX**



component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Representative forests and associated biodiversity are effectively preserved in a network of protected areas and linking corridors (Econet) by 2020	<p>Provide basis for establishing five million hectares of forest protected areas in the Econet (1.5 million ha temperate forests and 3.5 million ha boreal forests) by 2010</p>	<p>Carry out gap analysis and inventory high conservation value forests of RFE Eco-regional Complex by 2004</p>	<p>WWF, SEU</p>
			<p>Prepare the climate passport for RFE Eco-regional Complex to determine possible shifts in forest distribution for the future Econet by 2004</p>	<p>WWF</p>
			<p>Work with federal government agencies and regional administrations to develop mechanism for providing sufficient state financing for Econet operation by 2006</p>	<p>WWF, SEU, ECOLIGA, KWF</p>
			<p>Carry out informational seminars with regional and federal-level decision-makers on mechanisms of financing protected areas and management of Econets in freshwater and forest habitats, ongoing</p>	<p>WWF</p>
			<p>Work out and implement a regional model of forming and maintaining local Econet in the Evreiskaya Province by 2006</p>	<p>WWF, ECOLIGA</p>
		<p>Enlarge system of protected boreal forests by 773,400 ha by 2007 and create local Econet in the Tukuringra-Dgagdy Mountain Eco-region by 2012</p>	<p>Establish Ulegir Landscape Refuge (95,400 ha) by 2003, <i>ref. 1.1</i></p>	<p>SEU, WWF</p>
			<p>Create Imangra Botanical Refuge (250,000 ha) by 2003, <i>ref. 1.2</i></p>	<p>SEU, WWF</p>
			<p>Create Olekminsky Botanical Refuge (368,000 ha) by 2003, <i>ref. 1.3</i></p>	<p>SEU, WWF</p>
			<p>Enlarge Urkansky Wildlife Refuge (20,000 ha) and grant federal status by 2005 (grouse), <i>ref. 1.4</i></p>	<p>SEU, WWF</p>
			<p>Create buffer zone on southern border of Zeysky Zapovednik (40,000 ha) by 2006 (grouse), <i>ref. 1.5</i></p>	
		<p>Enlarge system of protected temperate forests by 55,900 ha by 2007 and create local Econet in the Lesser Khingan Eco-district of Bureya Mountain Eco-region by 2012</p>	<p>Create Malmalta Landscape Refuge (13,200 ha) by 2003, <i>ref. 1.6</i></p>	<p>SEU, WWF</p>
			<p>Create four natural monuments (6,300 ha) by 2004</p>	<p>SEU, WWF</p>
			<p>Create Kuldursky Nature Park (36,400 ha) by 2005, <i>ref. 2.1</i></p>	<p>ECOLIGA, WWF</p>

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)	COORDINATORS
WEB OF LIFE	Econet (continued)	Enlarge system of protected temperate forests by 1,124,150 ha by 2007 (705,900 ha in Primorsky Province and 418,250 ha in Khabarovsk Province) and create local Econet in the Sikhote-Alin Mountain Ecoregion by 2012	Create Khor-Muchen corridor (108,000 ha) by 2003 (tiger), ref. 3.1	KWF, WWF
			Create Yuzhno-Primorsky Nature Park (19,000 ha) by 2003 (tiger), ref. 4.1	WWF
			Create Solnechnye Gory Nature Park (15,800 ha) by 2003 (tiger, ginseng), ref. 4.2	WWF
			Create Tavaiza wildlife refuge (32,400 ha) by 2004 (tiger, goral), ref.4.12a	WCS
			Create Mataisky corridor (14,850 ha) by 2004 (tiger), ref. 3.2	KWF, WWF
			Create Vyazemsky Nature Park (49,400 ha) by 2005 (tiger), ref. 3.3.	KWF
			Create Gur-Khoso Nature Park (120,000 ha) by 2005 (tiger), ref. 3.4.	KWF
			Create Khutinsky corridor (60,400 ha) by 2005 (tiger), ref. 3.5	KWF, WWF
			Create Nelminsky corridor (33,000 ha) by 2005 (tiger), ref. 3.6	KWF, WWF
			Create six natural monuments in northern Sikhote-Alin (13,000 ha) by 2005 (tiger)	KWF
			Create Khorsky (Kutuzovka) Nature Park (19,600 ha) by 2005, ref. 3.7	
			Create Kema-Amginsky Nature Park (75,500 ha) by 2005 (tiger, grouse), ref. 4.3	WWF
			Enlarge Ussurisky Zapovednik (24,500 ha) by 2005 (tiger), ref. 4.4	
			Create a buffer zone around Ussurisky Zapovednik (225,000 ha) by 2006 (tiger), ref. 4.4	
			Create buffer zone and grant federal status to Vasilkovsky Wildlife Refuge (23,600 ha) by 2005 (tiger, leopard, goral), ref. 4.5	WWF
			Create Solontsovy Wildlife Refuge (14,300 ha) by 2006 (tiger), ref. 4.6	WWF
Create Tissovsy Wildlife Refuge (17,000 ha) by 2006 (tiger, ginseng), ref. 4.7	WWF			
Create Zhuravlevsky Wildlife Refuge (39,300 ha) by 2007 (tiger, ginseng), ref. 4.8	WWF			

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Econet (continued)	Sikhote-Alin Econet (continued)	Create a system of protected areas in Samarga River watershed taking into account interests of indigenous Udege tribe by 2007 (tiger, grouse), <i>ref. 4.9</i>	
			Create Siny Khrebet Wildlife Refuge (195,000 ha) by 2007 (tiger, ginseng), <i>ref. 4.10</i>	
			Enlarge Losiny Wildlife Refuge (16,000 ha) by 2007 (tiger), <i>ref. 4.11</i>	
			Enlarge Goraly Wildlife Refuge (1,500 ha) by 2007 (goral), <i>ref. 4.12</i>	
			Create Kamennye Vorota Wildlife Refuge (7,000 ha) by 2007 (goral, leopard), <i>ref. 4.13</i>	
		Gain World Heritage Status for Central Sikhote-Alin Ecoregion by 2010	Grant World Heritage Status to system of protected areas in Bikin River watershed by 2005	
			Grant World Heritage Status to system of protected areas in Khor River watershed by 2006	KWF, WWF
			Grant World Heritage status for system of protected areas on Anyu River by 2007	KWF, WWF
		Implement programs for creating local Econets on four model territories of temperate forests by 2010	Elaborate and approve program for Khor River local Econet by 2003	KWF, WWF
			Elaborate and approve program for Oblachnaya Mountain local Econet by 2004	WWF
			Elaborate and approve program for southwestern Primorsky Province local Econet by 2005	WWF, WCS, PHOENIX
			Elaborate and approve program for Arkhara River local Econet by 2006	WWF, SEU
		Incorporate at least half a million hectares of high conservation value forests (HCVF) into buffer zones of Econet by 2010	Develop and get approval for methods to inventory, classify, and set aside HCVF by 2003	WWF
			Conduct training in delineation of HCVF for forest management enterprises by 2003	WWF
			Identify priority forest biotopes for conservation by 2003	WWF
			Incorporate HCVF as a part of local Econet in practices of TerneyLes logging company by 2004	WWF
Incorporate HCVF as part of local Econet in practices of logging companies on territory of Chuguevsky State Forest by 2005	WWF			

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Temperate forests in border regions are preserved in a system of transboundary nature reserves by 2020	Launch Russian-Chinese transboundary protected area along Strelnikov/Wadanshan Range by 2008	Create ecological corridor along Strelnikov Range (9,300 ha in Khabarovsk Province and 12,000 ha in Primorsky Province) by 2005 (tiger), <i>ref. 3.8, 4.14</i> Develop joint agreement on creating bilateral protected area and elaborate joint management plan by 2007	KWF, WCS, WWF WCS, WWF, KWF
		Launch Russian-Chinese transboundary nature reserve in Khingan Gorge of Amur River by 2010	Create Pompeevsky Landscape Refuge (40,000 ha) by 2006, <i>ref. 2.2</i> Prepare documents for creating bilateral protected area in Khingan Gorge by 2007	ECOLIGA, WWF WWF, ECOLIGA
		Launch Russian-Chinese-North Korean transboundary nature reserve in Tumen River watershed by 2010	Convert border patrol zone of Khasanski District into a zapovednik regime as a part of UNESCO Transboundary Protected Area by 2005 (tiger, leopard, goral), <i>ref. 4.17</i>	WWF, WCS, PHOENIX
			Create Barsovy National Park on Russian side and initiate talks with China and North Korea by 2006 (leopard, tiger, goral)	WWF, WCS, PHOENIX
			Prepare documents for creating trilateral protected area for conserving Far Eastern leopard by 2007	WWF, WCS, PHOENIX
		At least 10 percent of boreal forests are reserved for future inclusion in Econet by 2015	Withdraw boreal forests from exploitation for Boreal Forest Econet (2 million ha in Amurskaya and Khabarovsk provinces) by 2010	Establish borders and protected regimes for territories of traditional use of natural resources for Evenki tribes in northern Khabarovsk and Amurskaya provinces by 2005
	Set aside large blocks of intact forests as reserved lands to be buffer zones of a future Econet in northern Khabarovsk and Amurskaya provinces by 2007			KWF, SEU, WWF
	Campaign to build support for setting aside boreal forests using Siberian spruce grouse as symbol of boreal forest ecosystem health by 2008		Shoot film on Siberian spruce grouse as symbol of boreal forest ecosystem health and distribute widely by 2005 Study impacts of logging of boreal forests on Siberian spruce grouse and develop strategy for its conservation by 2006	WWF WWF
	Catastrophic forest fires are prevented from degrading valuable forest habitats by 2020	Conduct large-scale public awareness campaign on preventing forest fires (on model of «Smokey the Bear» campaign in U.S) by 2008	Publish printed materials, work with mass media, and carry out public surveys to encourage public to prevent forest fires by 2004	WWF, ZT, KWF, SEU, PHOENIX
			Re-establish the system of Forestry Schools for children in model areas by 2007	WWF, SEU
		Increase effectiveness and responsiveness of fire fighting divisions to fight catastrophic fires in tiger habitat through training and improving communications by 2012	Improve coordination among agencies to fight fires by 2003	KWF, WWF
			Build capacity in Interregional Fire-Fighting Center in Khabarovsk by 2004 Elaborate training program to fight forest fires and carry out preventative burning techniques in high risk areas by 2005 Explore opportunities to create mobile fire-fighting units in priority Ecoregions by 2006	WWF, KWF KWF, WWF KWF, WWF, PHOENIX

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS	
RULES OF THE GAME	Management of existing forest protected areas improves and financing of their activities is ensured by 2020	O rganize annual training seminars for reserve managers and decision-makers in forest habitats by 2007	D evelop program for training seminars for various groups of reserve managers and decision-makers in forest habitats by 2004	WWF	
		I ntroduce course in two forestry institutes on biodiversity conservation, protected area management, and sustainable forestry by 2010	D evelop curriculum for course in forestry institutes on biodiversity conservation, protected area management, and sustainable forestry by 2005	WWF	
	Legal and organizational basis for organizing Econet to conserve forest ecosystems is in place and enforced by 2020	D isseminate experience of legislative initiatives in creating Econets throughout RFE Ecoregion Complex by 2007	D raft and adopt program on creating Econet in Amurskaya Province by 2003		SEU, WWF
			D raft and adopt program on creating Econet in Khabarovsk Province by 2004		KWF, WWF
			D raft and adopt program on creating Econet in Evreiskaya Province by 2005		ECOLIGA, WWF
			P rint review of progressive legislative changes for instituting sustainable use of forests in corridors and buffer zones linking protected areas by 2005		WWF, KWF
		C reate mechanism for promoting relations between different sectors of society to coordinate implementation of Conservation Action Plan by 2007	S upport activities of Ecoregional Council for Sustainable Development in the Russian Far East, ongoing		WWF
		The forest industry is economically effective and has the incentives and know-how needed to carry out sustainable forestry practices in accordance with FSC standards by 2020	P rovide coordination between government, business, and NGOs on forestry issues by 2008	D evelop proposals for decentralization of management functions and decision-making in forestry industry by 2004	
	D evelop proposals for reform of taxation, credits, investments, and payment for natural resource use to promote sustainable forestry and use of modern technologies by 2006				WWF
	P erfect legislation to provide financial incentives for sustainable forestry by 2010		D evelop proposals for reform of licensing forest use by 2003		WWF
			E nsure that regional forestry legislation does not contradict standards of sustainable forest management by 2005		WWF
			E laborate proposals for differential pricing for use of forest resources and increasing value of timber resources by 2007		WWF
	C reate practical demonstrations of sustainably managed forests in all four provinces of the RFE Ecoregion Complex by 2012	C reate model of sustainably managed forest in Primorsky Province by 2004; replicate to other three provinces by 2007		WWF	

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
RULES OF THE GAME	Sustainable forestry (continued)	C reate practical (continued)	D evelop long-term plan for forest management and use (using landscape planning principles and taking into account biodiversity conservation and needs of indigenous peoples) with public participation in one province by 2005; replicate to other three provinces by 2007	WWF
	Halt illegal logging by 2020	R educe share of illegal timber in exports by half by 2007	Carry out training on collecting evidence, charging, and prosecuting forest regime violators in all forest districts, ongoing	WWF
			P repare proposals for cooperation on illegal logging for Russian-Chinese Commission on Forestry Cooperation by 2003	WWF
			T rain all customs agencies in Ecoregion Complex to identify and halt illegal transport of timber by 2004	WWF
			L aunch joint campaign with NGOs in China, Japan, and North and South Korea to halt illegal logging by 2005	WWF
			A nalyze entire trade network from suppliers to buyers and find ways to close gaps by 2006	WWF
			D isseminate experience of anti-poaching brigades in controlling illegal logging by 2010	WWF
			E nsure that all forest inspection agencies in Ecoregion Complex have capacity to pursue violators and punish them to the full extent of the law by 2004	WWF
			L obby regional governments to finance 75 percent of forest inspection brigades by 2005	WWF, SEU, ECOLIGA
			I mplement experience of anti-poaching brigades' control of illegal logging to all regional forest agencies by 2006	WWF, SEU, ECOLIGA
			P romote openness of logging operations and accounting procedures in all large timber companies by 2010	<p>Carry out public awareness campaign against illegal logging in the Ecoregion Complex using experience of Primorsky Province by 2003</p> <p>Rate timber companies according to their environmental records and distribute information to buyers by 2003</p> <p>Enlist participation of two large holding companies (making up 50 percent of exports from Ecoregion Complex) to use open accounting procedures for timber sales by 2005</p> <p>Ensure public access to information on state of commercial forests and logging operations by 2005</p> <p>Carry out independent inspections and publicize findings of operations in two of the largest timber companies by 2006</p>

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
MARKETS & LIFESTYLES	Sustainable forestry is practiced in half of the timber industry of the Ecoregion Complex by 2020	<p>Create capacity for FSC certified sustainable forestry in Russian Far East Ecoregion Complex by 2010</p>	<p>Perfect Russian standards for sustainable forestry with participation of Russian and international NGOs and taking into account specifics of the Russian Far East, synchronize them with other regions in Eastern Russia (Altai-Sayan, Eastern Siberia), and get approval by FSC by 2004</p>	WWF
		<p>Implement sustainable forestry principles in 2 million ha of forests used by timber companies in Ecoregion Complex by 2012</p>	<p>Train independent experts on voluntary forest certification according to the FSC system by 2005</p>	WWF
			<p>Explain advantages of sustainable forestry and voluntary certification to businesses and public through targeted awareness campaign by 2004</p>	WWF
			<p>Apply sustainable forestry standards and principles of sound management to operations of two large timber companies (including «TerneyLes») on at least 500,000 ha by 2005</p>	WWF
			<p>Invite ecologically-minded timber companies to join Association of Environmentally Responsible Timber Companies of the Russian Far East by 2005</p>	WWF
		<p>The majority of timber exported from the RFE Ecoregion Complex is certified by 2020</p>	<p>Conduct international marketing campaign and develop demand for certified timber products from the Ecoregion Complex by 2010</p>	<p>Implement cooperative project between WWF-Russia and WWF-China to promote FSC standards in Russia-China timber trade by 2004</p>
<p>Organize meetings with buyers and Asian Forest Trade Network by 2004</p>	WWF			
<p>Present informational materials on successes and benefits of sustainable use of forests in Asian countries to government, companies, and public by 2005</p>	WWF, ZT			
	<p>Forge partnerships with international buyers such as Ikea, Home Depot, Sumitomo, and others by 2010</p>	<p>Launch two to three joint model projects for sustainably producing timber in Sikhote-Alin Mountains and Lesser Khingan Range by 2007</p>	WWF, SEU ECOLIGA	

3.2.

STRATEGY AND ACTION PLAN FOR CONSERVING FRESHWATER ECOSYSTEMS IN THE RUSSIAN FAR EAST ECOREGION COMPLEX

The Amur River is one of the largest free-flowing river in the world and provides unique habitats for over 104 freshwater fish species, of which 18 species and one genus are endemic to the region. The Amur supports tremendous resources of seven species of migratory salmon, though fish resources are being depleted at a drastic rate. Subsequently, the decrease in fish stock is a tragedy for indigenous tribes, which have depended on its resources for centuries. The Amur's catchment area, which includes most of the Russian Far East Ecoregion Complex, is located at the boundary of northern boreal and southern subtropical biomes. The Amur River Basin has the second highest level of freshwater biodiversity in the Northern Hemisphere after the Mississippi.

The floodplain of the Amur River is an important link in the chain of stopover and nesting sites for millions of migratory birds. As much as 95 percent of the world's nesting population of Oriental white storks is found in the Amur floodplain, along with 65 percent of red-crowned crane and 50 percent of white-naped crane populations. Conversion of

wetlands for agriculture, however, combined with large-scale logging, forest fires, overfishing, pollution, construction of dams for hydroelectric power on tributaries of the Amur, and other pressures threaten these species and all of the plant and animal diversity.

International cooperation and far-reaching measures are needed to guarantee long-term conservation of this globally important freshwater system. The action plan below is an important step towards implementing an Amur River Basin Integrated Management Program. Necessary measures include setting aside freshwater habitats in protected areas to create an internationally managed Amur Green Corridor, implementing policies that will promote water conservation and guarantee a free-flowing Amur River, and developing capacity for sustainable use of freshwater resources.

In the table below, focal species and species of special concern that will benefit from protection of particular freshwater habitats are indicated in parentheses (see relevant species strategies).

Long-term goals for conservation of freshwater ecosystems:

- ▶ The Amur River remains free flowing and ecological processes function naturally, and Russia, China, and Mongolia collaborate on an Integrated Management Program for the Amur River Basin
- ▶ 30 percent of wetlands are preserved in various types of protected areas, connected by river corridors and stepping stones (an additional one million hectares protected compared to the current level)
- ▶ A system of protected areas, linked by the Amur Green Corridor and internationally managed in cooperation with China and Mongolia, supports unique stop-over areas for millions of waterfowl along the Northeast Asian Flyway
- ▶ Viable populations of focal species and species of special concern (Oriental white stork, red-crowned and white-naped cranes, Amur river turtle, and kaluga sturgeon) are protected or effectively managed in cooperation with China and other countries based on approved species conservation action plans
- ▶ Healthy fish populations and secure spawning areas in the Amur River Basin are guaranteed by sustainable fishing practices, state enforcement of ecologically-sound fishing quotas, water conservation, and minimal pollution from large industries
- ▶ Indigenous peoples benefit from sustainable resource use and ecotourism

The Conservation Action Plan for the Russian Far East Ecoregion Complex takes into account global priorities for freshwater conservation set out by WWF in the Living Waters Campaign. Milestones to measure success according to each of its Target Driven Programs (TDP) are listed below:

TDP 1: Conserving freshwater ecosystems: 250 million hectares of high priority freshwater ecosystems worldwide are protected and sustainably managed by 2010

Important Milestones in the RFE Ecoregion Complex:

- ▶ 600,000 ha of wetlands are preserved in various types of protected areas in an Econet by 2007, and another 600,000 ha protected by 2010
- ▶ Three transboundary reserves between Russia and China are effectively functioning in a Green Corridor along the Amur River by 2012

- ▶ Four management plans are developed for freshwater reserves by 2007 and at least two models of good management created by 2010; capacity for training future managers and mechanisms for long-term financing of reserve activities in place by 2012

TDP 2: Conserving freshwater processes in river basins: Ecological processes are maintained or restored in at least 50 large catchment areas containing high priority freshwater ecosystems by 2010

Important Milestones in the RFE Ecoregion Complex:

- ▶ Amur River Basin Integrated Management initiative is adopted by 2004
- ▶ A ban on sturgeon fishing in the Amur River Basin is in effect by 2003 and restrictions on fishing are strictly enforced by 2007
- ▶ Natural and restored wetlands are protected or effectively managed on 10 percent of the Zeya-Bureya Plain by 2012

TDP 3: Promoting sustainable water use: Private sector practices and related government policies concerning key water-using sectors are established and/or changed in order to sustain the integrity of the freshwater ecosystems on which they depend and/or impact by 2010

Important Milestones in the RFE Ecoregion Complex:

- ▶ A unified monitoring system is implemented in the Amur River by Russian and Chinese institutions by 2004
- ▶ Analyses of water use and pollution levels in the Amur River are conducted and results are disseminated by 2006
- ▶ Best practices for water use are implemented in one model factory in the Amur River Basin by 2010
- ▶ Government policies for promoting water conservation are in place in at least one important industry on the Amur River by 2010

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)	COORDINATORS
WEB OF LIFE	Representative freshwater ecosystems and associated biodiversity are effectively preserved in a network of protected areas and linking corridors and buffer zones (Econet) covering at least 30 percent of wetland habitats by 2020	Create local Econet in Zeya-Bureya Plain to preserve 367,400 ha of freshwater ecosystems by 2007	Create Smirnovsky Botanical Refuge (900 ha) by 2003, <i>ref. 1.7</i>	SEU, WWF
			Grant regional protected status to Aldikon River wetlands (275,000 ha) by 2003 (stork, red-crowned crane), <i>ref. 1.8</i>	SEU, WWF
			Create scientific-experimental section of Khingansky Zapovednik (500 ha) by 2003 (stork), <i>ref. 1.9</i>	WWF
			Create Kupriyanovsky Wildlife Refuge (15,000 ha) by 2004 (stork, cranes, turtle), <i>ref. 1.10</i>	SEU, WWF
			Create buffer zone around Tashinsky Wildlife Refuge (50,000 ha) by 2004 (stork, cranes), <i>ref. 1.11</i>	SEU, WWF
			Create buffer zone on southern border of Norsky Zapovednik (26,000 ha) by 2004 (stork), <i>ref. 1.12</i>	SEU, WWF
			Create Kuria Konstantinovskaya, Protoka Sazanya, and Protoka Mikhailovskaya fish refuges by 2005 (stork, kaluga, turtle)	
		Create local Econet in Middle Amur Plain to preserve 222,800 ha of freshwater ecosystems by 2007	Create wildlife refuge on Podkhorenok River (22,800 ha) by 2004 (stork), <i>ref. 3.9</i>	WWF, AMUR
			Create system of protected areas in Dobraya River watershed by 2005 (stork, cranes, turtle), <i>ref. 2.3</i>	ECOLIGA, WWF, AMUR
			Create specialized refuge on Bidzhan River with breeding center for Amur River turtles by 2005	ECOLIGA, AMUR
			Create botanical refuge on Sheremetevsky Lakes in Ussuri Valley (30,000 ha) by 2005 (rare plant species), <i>ref. 3.10</i>	WWF, AMUR
			Create Khalkhadyan-Nedostupnye Lakes Landscape Refuge (100,000 ha) by 2006 (stork, cranes), <i>ref. 3.11</i>	WWF, AMUR
			Create Selgon-Simminsky Ecological Corridor (70,000 ha) by 2005 (stork, cranes, turtle), <i>ref. 3.12</i>	WWF
		Create local Econet on Khanka Lake Plain and in Ussuri Valley over 94,000 ha to preserve important freshwater habitats by 2007	Enlarge Khankaisky Zapovednik (8,600 ha) by 2003 (stork, cranes, turtle), <i>ref. 4.15</i>	WWF
			Create Alchan-Bikinsky Wildlife Refuge (85,400 ha) by 2004 (stork, cranes, turtle, tiger), <i>ref. 4.16</i>	WWF
			Create system of refuges in breeding habitat of Amur River turtles on Razdolnaya and Ussuri rivers by 2007	

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS	
WEB OF LIFE	Freshwater ecosystems in border regions are preserved in a system of effectively managed transboundary nature reserves by 2020	Support cooperation between existing Khanka/Xinkaihu transboundary nature reserve for improving management and developing ecotourism by 2008	<p>Organize exchange program between Primorsky and Heilongjian provinces to coordinate conservation activities on both sides of Khanka Lake by 2004 (stork, cranes, turtle)</p> <p>Elaborate and approve joint management plan for Russian-Chinese nature reserve on Khanka Lake by 2005</p> <p>Develop and implement programs to promote ecotourism on Khanka Lake by 2007</p>	WWF	
		Incorporate wetlands in Tumen River watershed into Russian-Chinese-Korean transboundary nature reserve by 2008	<p>Organize exchange program between Primorsky, Jilin, and Northern Hamgen provinces to coordinate activities in Tumen River watershed by 2003</p> <p>Support development of Khasansky Nature Park by 2005</p> <p>Obtain Ramsar status for internationally significant wetlands of Tumen River watershed by 2006</p>	WWF WWF, PHOENIX WWF	
		Launch Sanjian-Middle Amur Plain Russian-Chinese transboundary nature reserve by 2010	<p>Create buffer zone around southern edge of Bolshekhekhtsirsky Zapovednik by 2004 (stork, cranes, turtle, kaluga)</p> <p>Organize exchange program between Khabarovsk, Evreiskaya, and Heilongjian provinces to coordinate conservation and management activities on both sides of Amur River by 2004</p> <p>Prepare and sign agreement on cooperation between Sanjian Nature Reserve (China) and Zabelovsky Nature Reserve (Evreiskaya Province, Russia) by 2005</p> <p>Elaborate cooperative management plan for new transboundary protected area by 2007</p>	WWF WWF, AMUR WWF, ECOLIGA WWF	
		Protected freshwater ecosystems and their watersheds on two million hectares are effectively managed by 2015	Ensure that management of wetlands of international importance complies with IUCN/WWF efficiency criteria by 2008	<p>Prepare and approve management plan for Khingansky Zapovednik by 2004 (stork, cranes, turtle)</p> <p>Prepare and approve management plan for Bolonsky Zapovednik by 2005 (stork, cranes, turtle)</p> <p>Prepare and approve management plan for Muravievsky Wildlife Refuge by 2006 (stork, cranes)</p> <p>Prepare and approve management plan for Udyl Lake Federal Wildlife Refuge by 2007</p>	WWF WWF, AMUR SEU, WWF WWF, AMUR
			Elaborate and gain approval for management plans for all protected wetlands by 2012	<p>Evaluate existing management of protected wetlands on regional level by 2004</p> <p>Demonstrate two models of good management of protected wetlands by 2007</p>	WWF, SEU, ECOLIGA SEU, WWF, ECOLIGA

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Effective management (continued)	Build capacity for effective management of freshwater habitats in protected areas by 2012	Develop curriculum for course in Russian Far Eastern University in Vladivostok on conservation and management of freshwater ecosystems by 2007	WWF
			Produce textbook and teaching materials for course by 2007	WWF, ZT
			Carry out annual regional training seminars for freshwater reserve managers and decision-makers resources by 2007	WWF, AMUR
		Ensure stable government financing of basic operation of wetland reserves (salaries, running costs) by 2012	Develop mechanisms for ensuring sufficient state funds for protected areas by 2006	WWF, SEU, ECOLIGA, KWF
	Carry out information seminar with decision-makers on regional and federal levels on mechanisms of protected area and Econet financing in freshwater and forest ecosystems by 2007		WWF	
	Critical wetland habitats in the Amur River Basin are restored by 2020	Ensure that natural and restored wetlands are protected or effectively managed on 10 percent of Zeya-Bureya Plain and forest cover is increased to 3 percent to stabilize their ecosystems by 2010	Elaborate and get approval for Zeya-Bureya Plain Restoration Program by 2003; allocate funds for its implementation by 2004	SEU, WWF
			Adopt legislation for conserving all small lakes and wetlands between fields by 2006	SEU, WWF
			Undertake conservation and restoration activities on all remaining patches of bushes and forests by 2007	SEU, WWF
			Plant forest belts on 3,000 ha by 2007	SEU, WWF
	Ecological processes in the Amur River Basin are preserved and overarching threats mediated by 2020	Begin initiative for Integrated Management of the Amur River Basin by 2007	Elaborate Amur Integrated Management Program by 2004	WWF, SEU, AMUR
			Hold international meeting to discuss Amur Integrated Management Program by 2005	WWF, SEU, AMUR
		Ensure availability of information and openness of decision-making about management of freshwater ecosystems in Amur River Basin by 2007	Publish inventory of Amur wetlands (Russian side) by 2004	WWF, AMUR
Create accessible database using GIS and other tools on biodiversity and natural resources of Amur River by 2004			WWF, AMUR	
Carry out independent monitoring of flooding of Bureya Reservoir by 2004			SEU, WWF, AMUR	
Conduct independent study on environmental impacts of planned dams on main channel of Amur River by 2005			WWF, SEU, AMUR	
Conduct international census of rare waterfowl by 2005 (stork, cranes)			WWF, AMUR	
Carry out assessment of biodiversity in border areas of Russia and China by 2004			WWF, AMUR	
Create mechanisms for organizing Amur Green Corridor protected areas network along Russian-Chinese border (see Econet and transboundary nature reserves above) by 2005			WWF, SEU, ECOLIGA, AMUR	
Launch Amur Green Corridor by 2007	WWF, SEU, AMUR, ECOLIGA			

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)	COORDINATORS
WEB OF LIFE	Ecological processes (continued)	Build public support and capacity for local community participation in conservation of Amur Freshwater Ecoregion by 2012	Launch public awareness campaign to promote Amur Freshwater Ecoregion initiative and build support for creation of Amur Green Corridor by 2004	WWF, SEU, ECOLIGA, ZT, AMUR
			Establish small grant program to support public environmental movements by 2005	WWF
			Elaborate and carry out programs to support traditional use of Amur river natural resources by indigenous peoples by 2007	AMUR
			Create public environmental inspection for independent control of Amur River by 2007	WWF, SEU, ECOLIGA
RULES OF THE GAME	Multilateral and interregional agreements guarantee long-term conservation of the Amur River Basin by 2015	Create necessary framework for international cooperation in transboundary regions of Amur River Basin 2008 Instate international moratorium on dam building along Amur's by 2010	Create Russia-China-Mongolia Advisory Council to coordinate projects on Amur River Basin by 2006	WWF
			Obtain necessary regional and bilateral agreements for uniting system of protected areas along Amur River into frontier «Green Corridor» by 2007	WWF, SEU, ECOLIGA, AMUR
			Lobby regional and national governments to place moratorium on dam building along main channel of Amur River by 2007	WWF, SEU, ECOLIGA, AMUR
RULES OF THE GAME	Government policies for ensuring sustainable use of freshwater resources are in place by 2015	Enact government incentives to promote water conservation in important Amur industry by 2010 Improve control of use of fish resources in Amur River Basin by 2012	Develop proposals for government policies, such as tax credits or metered water use, to promote water conservation in industry by 2007	WWF
			Elaborate program for sturgeon conservation in Amur River Basin by 2004	WWF, AMUR
			Create two model anti-poaching brigades for fighting illegal fishing in Amur Basin Fish Inspection Agency in Evreiskaya and Khabarovsky provinces by 2005	WWF, ECOLIGA
			Create zones with different restrictions on fishing (spawning sites, migratory ways, etc) by 2006	
			Establish effective mechanisms of coordination between anti-poaching brigades, law enforcement agencies, customs authorities, and border agencies by 2007	WWF
			Elaborate training program for fish inspections in other regions to distribute lessons of model anti-poaching brigades by 2007	WWF
			Improve scientific basis for establishing fishing quotas and enforce these quotas and harvest limits to prevent overfishing and poaching by 2007	
Secure participation of NGOs and representatives of indigenous peoples in decision-making about quotas, ongoing	WWF, ECOLIGA, AMUR			

component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: focal species and species of special concerned granted protection are indicated in parentheses; reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
MARKETS AND LIFESTYLES	Government policies (continued)	Improve control (continued)	Prepare proposals to create conditions for implementing sustainable fishing practices in husbandry managed by indigenous peoples by 2005	AMUR
			Assess feasibility and elaborate mechanisms for involving local communities in regulation of fishing industry by 2006	AMUR
	Sustainable use of fish resources with benefits for nature and people, especially for indigenous tribes, is guaranteed by 2020	Monitor fish stock and harvest levels by 2010	Identify and classify critical spawning and rearing areas and migration routes for migrating fish populations by 2007	WWF, AMUR
			Estimate important fish stocks and impacts of commercial fishing (including illegal catches) by 2007	WWF, AMUR
		Gain support for ecologically responsible use of freshwater biological resources to stabilize or increase fish stocks by 2012	Suggest mechanisms which increase responsibility of users of fish resources by 2004	WWF
			Prepare and distribute ecological ratings for fishing companies working on Amur River by 2005	WWF
			Test applicability of eco-labeling approach for important Amur fisheries by 2006	WWF
			Elaborate model project for ecotourism in selected freshwater protected area and surrounding community and develop ecotourism management plan with local participation by 2005	WWF, AMUR
	Ecotourism provides tangible benefits to protected areas and local communities in three model territories by 2020	Implement one model project on developing ecotourism in freshwater ecosystems to provide half of income to local families by 2010	Set up routes and provide infrastructure for ecotourism by 2006	WWF
			Advertise ecotourism program widely and attract visitors to model site by 2007	WWF, ZT, AMUR
			Organize regular sampling to measure concentrations of pollutants by 2004	AMUR
	Promote sustainable water use and reduce pollution in key branches of industry in the Amur River Basin by 2020	Ensure effective methods for monitoring water quality in the Amur River Basin by 2010	Study water use and pollution levels in Amur River and assess input of large tributaries by 2006	AMUR
			Provide access to scientific data on pollution in Amur River to greater public in China and Russia by 2006	WWF, AMUR
		Implement best practices and technologies for water use and limiting pollution in one model factory on Amur River by 2010	Analyze water use in model factory and make proposals for water conservation by 2007	WWF, AMUR
			Elaborate proposals for important branches of industry on reducing pollution in Amur River by 2007	WWF

3.3. STRATEGY AND ACTION PLAN FOR CONSERVING REPRESENTATIVE BIOMES IN THE RFE ECOREGION COMPLEX

The goal of the Conservation Action Plan for the RFE Ecoregion Complex is to identify priorities for biodiversity conservation in the region and lay out a roadmap for their implementation. Temperate forests and freshwater ecosystems of the Amur River Basin have been determined to be the most important areas to target conservation efforts due to their high levels of biodiversity, imminent threats, and other criteria. However, the goal is to conserve biodiversity that is representative of the whole Ecoregion Complex, as well as to ensure conservation of areas that play a major role in supporting focal species, species of special concern, and ecological processes. After analysis of the role of priority areas in protecting the region's biodiversity, we determined that four additional subregions (Ecoregions) should be included in the strategy to ensure conservation of representative biomes and important ecological phenomena. Within these Ecoregions, we selected territories with the highest risk of new threats from human activities. Brief descriptions of



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these Ecoregions, their main biological features, ecological phenomena, and threats are provided below.

The long-term goal of the representative biomes strategy and action plan is to ensure conservation of biodiversity and important ecological phenomena in representative areas in the Russian Far East Ecoregion Complex.

LOWER AMUR MOUNTAIN VALLEY ECOREGION

This Ecoregion consists of large tracts of intact forests primarily made up of coniferous species. Situated along the lower Amur River, wetlands and chains of large lakes in the Amur's tributaries play a crucial role as breeding sites and stopover areas for migratory waterfowl on the Northeast Asian Flyway. The large inter-tidal zone of the Okhotsk Sea coast is important habitat for wader birds while shallow bays provide some of the last feeding grounds for **gray whales** (*Eschrichtius gibbosus*). The Amgun River is the richest salmon river in the Ecoregion Complex.

Intact forests made up of **Ajan spruce** (*Picea ajanensis*) and **Khingam fir** (*Abies nephrolepis*) are representative of the northeastern portion of Khabarovsk Province along the Okhotsk Sea. However, these ecosystems are threatened by a rapid increase in logging due to construction of logging roads and mining for gold and platinum. Plans to drill oil along the continental shelf threaten the unique coastal zone and shallow waters of



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Shantar Bay, where preventative measures are urgently required.

Important medium-term targets for conserving representative areas of this Ecoregion are setting aside 10 percent of the region's boreal forests and 20 percent of freshwater habitats and implementing sustainable forestry practices in model areas. Measures for conservation of the Siberian spruce grouse, a species of special concern found in boreal forests of the Ecoregion, should also be implemented (see Forest Action Plan for more details).

BUREYA MOUNTAIN ECOREGION

Vast mountain boreal forests with high levels of species richness and landscape diversity characterize this Ecoregion. The Bureya Mountain area has the third highest level of species richness in the RFE due to landscape diversity and overlapping of northern and southern floral and faunal communities. In the mountains, large blocks of intact **larch** (*Lar-*



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ix sibirica, *L. dahurica*) and spruce forests are found. Alpine ecosystems of the Badzhal Range are important centers of speciation - development of new species - characterized by many endemic species of plants found above treeline.

These ecosystems are threatened by current construction of the Bureya Hydroelectric Station, as well as clearcutting along the Baikal-Amur Railroad.

AMUR-ZEYA PLAIN ECOREGION

The Ecoregion consists of a large plain covered with boreal forests made up of **Scotch pine** (*Pinus sylvestris*), at the eastern edge of the tree's range. Pine forests occupy less than one percent of the RFE Ecoregion Complex and remnant patches have been preserved here. This is the only Ecoregion in the RFE Ecoregion Complex where Transbaikalian floral and faunal communities are found. Furthermore, the Ecoregion is the western boundary for many species of Manchurian plants and animals. Large-scale migrations of Siberian roe deer still occur here along the Amur River.

Major threats in the Ecoregion are erosion due to insufficient reforestation of logging sites over the past century, logging of the last remnant stands of pine, and forest fires. Poaching and logging threaten pine trees, ungulates, **black-billed capercaillies** (*Tetrao parvirostris*), among others. Open quarry gold

The medium-term target for conservation of representative habitats in this Ecoregion is to set aside 10 percent of the region's boreal forests, particularly along the man-made reservoir of the Bureya River. Measures for conservation of the Siberian spruce grouse, a species of special concern found in boreal forests of the Ecoregion, should also be implemented (see Forest Action Plan for more details).



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mining operations cause large-scale disturbances. Plans to construct two dams on the main channel of the upper Amur River could destroy unique steppe-like cliff ecosystems in valleys and change natural hydrological regimes of important floodplain ecosystems.

Medium-term targets for this Ecoregion are to create a transboundary reserve between Russia and China along the Amur River and to promote sustainable forestry while banning logging in remnant pine stands.

ALDAN-STANOVYOV MOUNTAIN ECOREGION

This Ecoregion contains the highest mountains in the Ecoregion Complex with true alpine landscapes, representative of all ecosystems found above treeline. Large blocks of intact high mountain boreal forests made up of larch and spruce play a crucial role in maintaining the hydrological balance of river sources. An isolated population of **snow sheep** (*Ovis nivicola potanini*) inhabits high altitude zones with alpine tundra. The region marks the geographical boundary between northern taiga of the Republic of Yakutia (Sakha) and southern Amur flora and fauna.

Major threats consist of construction of the new Ulak-Tokko railroad, which will bring human pressures to intact yet vulnerable high mountain forests. Added pressures will include increased poaching for snow sheep, unregulated tourism, and extraction of gold and semiprecious stones.



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The medium-term targets for conservation in this Ecoregion are to conserve alpine habitats of the Stanovoy Range where snow sheep are found, to support traditional use of natural resources by indigenous peoples, and to organize low-impact ecotourism.

Initiatives in this strategy should also be coordinated with targets in the forest and freshwater action plans where the objectives overlap.

3. STRATEGIES AND ACTION PLANS FOR CONSERVING PRIORITY ECOSYSTEMS

Ecoregion	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
LOWER AMUR MOUNTAIN VALLEY	10 percent of boreal forests and 20 percent of freshwater ecosystems are protected by 2020	C onserve areas of coastal zone to support gray whale population by 2012	C reate national park on Shantar Islands (515,500 ha) by 2004, <i>ref. 3.13</i>	KWF, WWF
		E nsure conservation of main stopover areas for waterfowl on Northeast Asian Flyway by 2012	G rant Ramsar status to Evoron Lake (80,000 ha) and Evur River Valley (230,000 ha) by 2005, <i>ref. 3.14</i>	WWF, AMUR
			G rant Ramsar status to Shastya Bay (40,000 ha) and Amur Estuary (75,000 ha) by 2006, <i>ref. 3.15</i>	WWF, AMUR
			G rant Ramsar status to Mukhtelskaya Plain and Nerpichy Bay (50,000 ha) by 2007, <i>ref. 3.16</i>	WWF, AMUR
	S et aside large blocks of boreal forest for future conservation by 2012	D elineate key habitats and secure their exclusion from logging by 2007	WWF	
Sustainable forestry is practiced in all spruce-fir forests by 2020	I mplement voluntary FSC certification in two model boreal forests by 2012	<p>Carry out independent evaluation of allowable levels of logging and prepare ratings of logging companies by 2004</p> <p>Organize campaign to halt clearcutting on the territory of Kharpinsky Wildlife Refuge by 2004</p>	WWF	
BUREYA MOUNTAIN	10 percent of boreal forests are protected and Siberian spruce grouse conservation program is implemented by 2020	C reate system of protected areas around man-made reservoir on Bureya River (275,000 ha) by 2007	E nlarge Bureisky Zapovednik by 53,300 ha by 2004	WWF
			C reate Tyrminsky Wildlife Refuge (40,000 ha) by 2004, <i>ref. 3.17</i>	
			C reate Nizhnemelginsky Wildlife Refuge (60,000 ha) by 2005, <i>ref. 3.18</i>	
		C reate Ust-Urgalsky Nature Park (24,000 ha) by 2006, <i>ref. 3.18</i>		
	C reate a system of natural monuments to protect endemic plant habitats by 2010	K eep in reserve large blocks of boreal forests for conservation by 2007	KWF, WWF	
I ntroduce methods for sustainable forestry on one model territory by 2012	C arry out independent evaluation of allowable levels of logging and prepare ratings of logging companies by 2004	WWF		

Ecoregion	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
AMUR-ZEYA PLAIN	10 percent of boreal forests are conserved in protected areas by 2020	Create Ulunginsky Landscape Refuge (50,000 ha) by 2010, <i>ref. 1.16</i>	Create Mukhinsky Nature Park (15,000 ha) by 2004, <i>ref. 1.13</i>	SEU, WWF
			Enlarge Urushinsky Wildlife Refuge (by 30,000 ha) by 2005, <i>ref. 1.14</i>	SEU, WWF
			Create Upper Amur Landscape Refuge (60,000 ha) by 2006, <i>ref. 1.15</i>	SEU, WWF
	A Russian-Chinese transboundary reserve on the Upper Amur is effectively functioning by 2020	Create the Amursky National Park (Korsakovsky Krivun) ha by 2010	Create Bussevsky Botanical Refuge (22,000 ha) by 2004, <i>ref. 1.17</i>	SEU, WWF
			Develop and implement joint management plan for the Russian-Chinese transboundary nature reserve by 2012	Develop proposals for creation of Russian-Chinese transboundary nature reserve on upper Amur River by 2007
	Sustainable forestry is practiced in pine forests by 2020	Provide support for sustainable logging of secondary forests by 2012	Analyze export of illegally cut timber and prepare proposals to halt illegal exports by 2003	SEU, WWF
Implement integrated measures for enacting ban on pine tree logging by 2004			SEU, WWF	
Implement model project on sustainable forestry by 2012		Train representatives of forestry enterprises (as part of Forest Action Plan initiative) by 2007	SEU, WWF	
ALDAN-STANOVY MOUNTAIN	Alpine and mountain ecosystems of the Stanovoy Ridge are effectively conserved by 2020	Grant federal status to Tokinsky Nature Park (jointly with protected areas in Yakutia and Khabarovsk Province) by 2008	Create Tokinsky Nature Park (500,000 ha) by 2006, <i>ref. 1.18</i>	SEU, WWF
		Approve and implement snow sheep conservation action plan by 2012	Elaborate snow sheep action plan for protecting snow sheep in Stanovoy Range by 2004	SEU, WWF
		Set aside three territories of traditional nature use for indigenous peoples by 2012	Reserve large blocks of intact boreal forests for reindeer grazing by 2006	SEU, WWF
			Create Upper-Giluiskey Landscape Refuge (100,000 ha) by 2007, <i>ref. 1.19</i>	SEU, WWF

4.

STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

The Amur tiger, Far Eastern leopard, Oriental white stork, and ginseng plant have been selected as focal species for the NGO Joint Action Plan due to the extent of threats to their long-term survival and their importance as indicator and umbrella species for key habitats in the region. Tigers are one of WWF's and WCS's species of global concern, which include those that act as flagships for important conservation issues and serve as charismatic ambassadors for their habitats and other less-known species. The leopard plays a similar role and is an indicator for the most vulnerable part of the RFE in southwestern Primorsky Province. The Oriental white stork is an important indicator of the purity of freshwater ecosystems. The ginseng plant is an important indicator species for temperate forests, and interest in its conservation is shared with cultures of China and North and South Korea.

Nearly 95 percent of the world's Amur tiger population lives in the Russian Far East, where approximately 450 tigers reside today. The tiger's range extends over an area a quarter of what it was 75 years ago. The number of breeding female tigers on this territory is approximately 180 individuals. Nearly twice that number is needed to sustain a viable tiger population over the long-term.

The Far Eastern leopard is on the brink of extinction. Fewer than three dozen animals roam the conifer and broadleaf forests in southwestern Primorsky Province. The range and population of the leopard have decreased drastically in the past 50 years and only three to five litters are registered annually. Leopards have been observed in northeastern China and North Korea only in isolated instances.

The population of the Oriental white stork has decreased three times in the past half century to fewer than 3,000 birds today. Outside of Russia, the species nests only in northeastern China. The bulk of the population - about 400 pairs - resides in wetlands in the Amur Basin in the southern part of the Russian Far East.

Nearly the entire population of wild ginseng grows in Primorsky Province. Logging and collection of ginseng in large proportions have had negative impacts on wild populations of the plant: in the 1970-80's, logging destroyed almost all mixed Korean pine-deciduous forests, which are the main habitat for this rare species.

Viable populations of focal species must be created to ensure their long-term persistence. In turn protection of focal species and their habitats will guarantee conservation of an entire array of plant and animal diversity in the RFE Ecoregion Complex.

4.1. STRATEGY AND ACTION PLAN FOR CONSERVATION OF THE AMUR TIGER

An international working group developed a federal strategy for conservation of the Amur tiger in 1995. The conservation action plan below is based on that strategy with modifications to reflect recent progress in tiger conservation.

The long-term goal for tiger conservation is to create and maintain a genetically viable population of at least 300 breeding females (about 700 tigers in all) over an extended range. Minimum area requirements for the species indicate that the tiger has room for expansion if its prey base were to increase. Measures need to be taken to increase populations of wild boar, red deer, and sika deer in the Ecoregion Complex.

Conservation of forest ecosystems will for the most part ensure tiger conservation. In turn, forests are home to an array of other species of plants and animals that will benefit from tiger conservation. Legal mechanisms for ensuring appropriate resource use in tiger habitat, such as carrying out independent environmental impact assessments, need to be vigilantly enforced. In southwestern Primorsky Province, tiger conservation measures are compatible with conservation goals for the Far Eastern leopard. Sustainable forestry practices are critical to saving ecosystems for both of these rare large felines. Therefore, these species strategies are



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tightly connected to each other and to the Forest Strategy Action Plan. Appropriate cross-references between these action plans are provided where necessary.

Creation of a network of tiger reserves, extending from north to south along the Sikhotealin Range will guarantee protection of a third of the current population of breeding females (*Figure 5*). Existing zapovedniks should be the core areas of such a system. Multiple use corridors will connect the zapovedniks, and special management plans should be developed for these territories in cooperation with local residents.

Anti-poaching brigades have been successful in clamping down on poaching over the past eight years. Steps need to be taken to encourage the Russian government to shoulder financing of these brigades over the long-term. Severe measures are required to reduce the demand for tiger derivatives in other countries. Cooperation with China and North and South Korea will be critical for halting tiger poaching, as well as for creating a system of transboundary protected areas for tiger and leopard conservation.

Education and communication with the public and decision-makers remain important objectives for tiger conservation in the future. Programs and educational campaigns for schools and the mass media should continue to be developed and implemented. To ensure peaceful coexistence between tigers and humans, measures need to be taken to deal with problem tigers near settlements and compensate

farmers for livestock losses to tiger kills. Finally, providing sustainable income to local communities through ecotourism, non-timber forest products and wise use of game species will help build support for tiger conservation programs. The long-term benefits of ecotourism and other tiger-friendly sources will include a decline in poaching on ungulates, the tiger's main prey, and greater public support for tiger conservation.

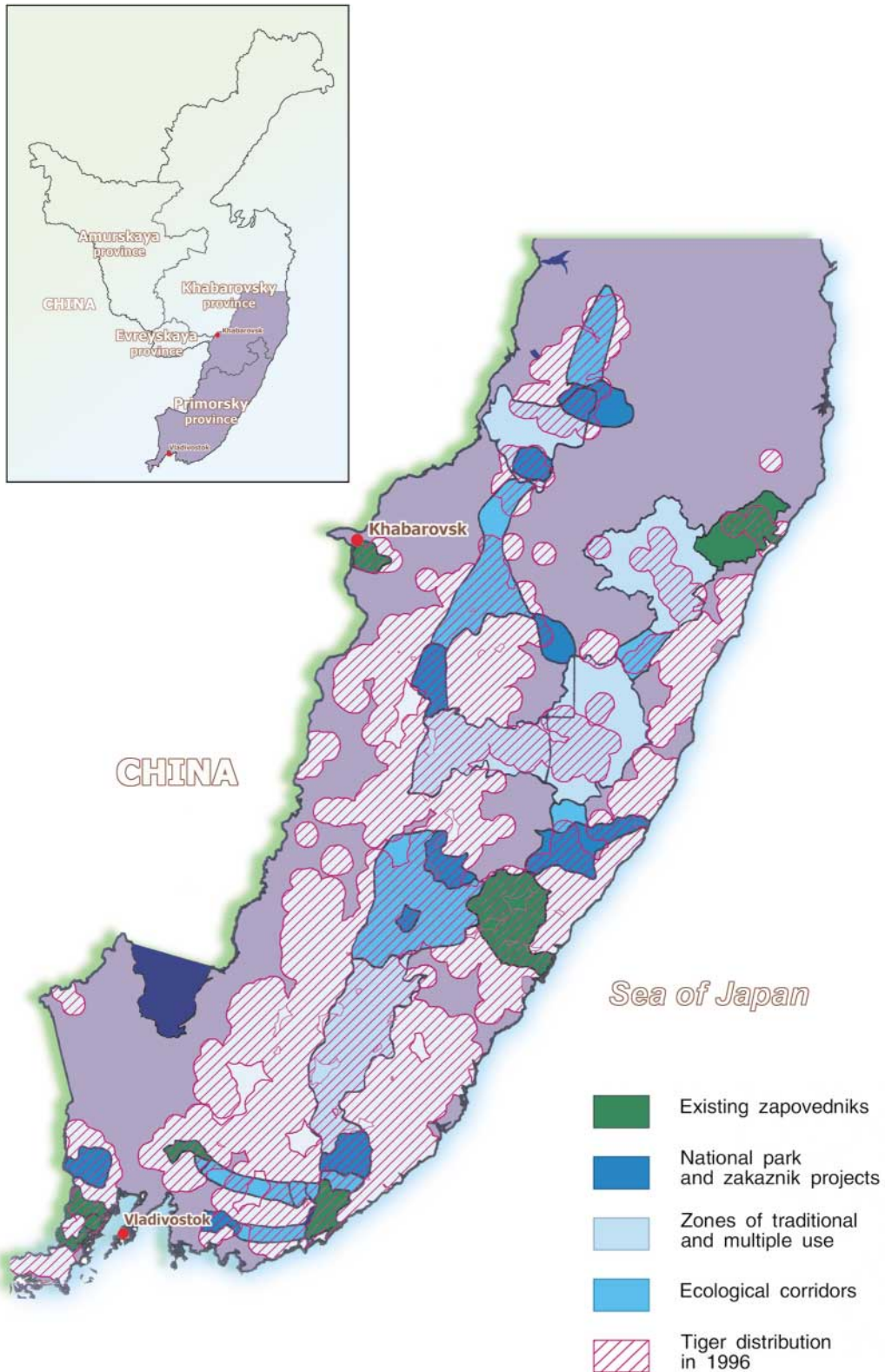


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Figure 5.

AMUR TIGER ECONET: PROPOSED SYSTEM OF NATURE PROTECTED AREAS IN KhabarovskY AND PRIMORSKY PROVINCES

(source: Miquelle et al, 1999; Bogatov et al, 2000)



4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Steady growth of tiger population throughout a unified range is ensured by 2020	Reduce demand and sales of tiger derivatives by 2010	Implement system of measures to stop transportation, sale, and storage of tiger derivatives by 2003	WWF, PHOENIX
			Build capacity for enforcing CITES regulations on trade of tiger derivatives by 2006	WWF, PHOENIX
			Cooperate with customs agencies of other countries to stop export of illegally harvested tigers and other species, ongoing	WWF, WCS, PHOENIX
		Halt tiger poaching and illegal logging in tiger habitat by 2010	Ensure government provides social guarantees for anti-poaching brigades, ongoing	WWF, PHOENIX
			Provide technical support to network of anti-poaching brigades until 2006	PHOENIX, WWF
			Develop mechanisms for state funding of at least three-fourths of anti-poaching brigade operations by 2006	WWF, PHOENIX
			Enforce high fines for poaching rare species, ongoing	WWF, PHOENIX
			Prosecute and punish all crimes against tigers and forest habitats to full extent of the law, ongoing	WWF, PHOENIX
		Develop capacity of «Tiger» Inspection and rehabilitation centers to make them fully responsible for handling conflict tigers by 2010	Elaborate methods and protocol for dealing with conflict tigers (and assess rehabilitation and release to the wild) by 2004	WCS, PHOENIX
			Provide support to tiger rehabilitation centers in Primorsky and Khabarovsk provinces by 2006	WWF, WCS, PHOENIX
			Develop and maintain agreement between Russian Federation, Moscow Zoo, and EEP for transferring tigers that cannot be released into the wild to appropriate holding facilities by 2004	WCS
		Monitoring and research lead to effective tiger conservation by 2015	Monitor and research tiger populations over entire range continuously, ongoing	Conduct annual census in 16 model areas of range, ongoing
Prepare annual reports on state of tiger population, ongoing	WCS			
Carry out studies on tiger ecology and behavior in protected areas and in areas with human pressures, ongoing	WCS			
Carry out complete census of tigers and ungulate prey species throughout range and publish data by 2007	Monitor changes in tiger habitat through aerial and satellite photography, ongoing		WCS	
	Assess ungulate carrying capacity in tiger habitat by 2004		WCS, WWF	
	Unify tiger census methods in different countries by 2005		WCS	
Establish Tiger GIS Center to collect and distribute information 2010	Equip a geo-information tiger center and train personnel for creation of GIS databases by 2003		WCS, WWF, PHOENIX	

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Effectively managed tiger conservation landscapes consisting of protected areas and connecting corridors (Econet) are established by 2015	Set aside over 1 million hectares of new nature reserves, buffer zones, and corridors capable of supporting contiguous and viable tiger population by 2007 (see also Sikhote-Alin Econet in Forest Action Plan)	Create six nature parks (299,300 ha) by 2005, <i>ref. 3.3, 3.4, 3.7, 4.1, 4.2, 4.3</i>	WWF,KWF
			Establish six natural monuments (13,000 ha) by 2005	KWF,WWF
			Create four corridors to connect tiger reserves (216,250 ha) by 2005, <i>ref. 3.1, 3.2, 3.5, 3.6</i>	KWF,WWF
			Enlarge Ussurisky Zapovednik (24,500 ha) and create a buffer zone around it (225,000 ha) by 2005, <i>ref. 4.4</i>	
			Create buffer zone (23,600 ha) and grant federal status to Vasilkovsky Wildlife Refuge by 2005, <i>ref. 4.4</i>	WWF
			Create five new tiger refuges (298,000 ha) by 2007, <i>ref. 4.6, 4.7, 4.8, 4.10, 4.12</i>	WWF,KWF, WCS
			Enlarge Losiny Wildlife Refuge (16,000 ha) by 2007, <i>ref. 4.11</i>	WWF
		Include at least 500,000 ha of specially protected forest areas in Econet by 2010	Carry out landscape management plans for Econets in model areas in tiger habitat (Khor River watershed, Oblachnaya Mountain, and southwestern Primorsky Province) by 2007	WWF,KWF, WCS, PHOENIX
		Support creation of unified tiger population throughout its range in Russia by 2010	Assess feasibility of corridor connecting tiger populations in SW Primorsky Province and Pogranichny Range by 2005	WWF,WCS
		Establish two Russian-Chinese nature reserves by 2010	Elaborate and approve management plan for corridor to connect Sikhote-Alin and SW Primorsky tiger populations by 2007	WWF,WCS
			Instate strictly protected status in border patrol zone of Khasansky District as a part of UNESCO Transboundary Protected Area by 2005, <i>ref. 4.17</i>	WWF,WCS, PHOENIX
			Create Barsovy National Park by 2006	WWF
			Create transboundary nature reserve in Cherny Gory Range-Changbangshan Mountains by 2007	WWF,WCS, PHOENIX
			Create corridor in Strelnikov Range (9,300 ha in Khabarovsk and 12,000 ha in Primorsky provinces) by 2005, <i>ref. 3.8, 4.14</i>	KWF, WCS,WWF
Implement wide-scale program to increase tiger prey base by 2007	Initiate talks for creating transboundary nature reserve in Strelnikov Range-Wadanshang Mountains by 2007	WWF,WCS, KWF		
Increase ungulate populations in the tiger's range by 2015	Develop and adopt program for restoring ungulate populations in tiger habitat in Primorsky Province by 2003 and Khabarovsk Province by 2004	WWF,WCS, KWF		
	Test effectiveness of improving biotechnical methods, anti-poaching efforts, and economic solvency of hunting leases to increase ungulate numbers in model hunting estates by 2005	WWF,WCS		
	Organize seminars and training for game managers and users to disseminate experience in model hunting estates by 2005	WCS,WWF		

4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
RULES OF THE GAME	Legal and financial mechanisms for tiger conservation are in place and enforced by 2010	Develop and implement system of penalties and incentives for land users to protect tigers and their prey base by 2007	Create interagency commission on tiger conservation by 2004	WWF,WCS PHOENIX
			Carry out zoning of Primorsky Province and southern Khabarovsk Province in accordance with goals for tiger conservation by 2004	WCS, KWF,WWF
			Develop and get approval for methods to assess damages to rare and endangered felines listed in the Russian, IUCN, and regional Red Books due to habitat degradation by 2004	PHOENIX WWF
			Lobby for approval of Executive Legislation Act on compensation of damages to endangered felines by 2004	PHOENIX WWF
			Lobby for inclusion of article on protecting interests of tigers and other rare species in requirements for environmental impact assessments, including mandatory compensation for damages to tiger populations by 2005	WWF
		Incorporate tiger conservation strategy into government programs for regional development and action plans for local NGOs by 2010	Enact rules on hunting providing new regulations for shooting ungulates in appropriate agencies by 2003	WWF, WCS
			Elaborate and enact law on ecological corridors in Primorsky Province Legislative Council by 2004	WWF
			Elaborate and enact regional programs for tiger conservation in accordance with national strategy by 2004	WCS,WWF, KWF, ZT, PHOENIX
			Adopt new regional law in Primorsky Province on hunting, taking into consideration optimal ungulate densities and providing incentives for sustainable game management by 2004	WWF, WCS, ZT
			Ensure that key territories inhabited by tigers remain state and municipal property by 2005	
International cooperation between Russia, China, and North and South Korea enhances efforts to conserve tigers by 2010	Develop and implement internationally and locally approved strategy for tiger conservation by 2007	Create coalition among NGOs based in the RFE by 2003	WWF,WCS, KWF, ZT, PHOENIX	
		Initiate governmental talks and support international working group to coordinate tiger conservation strategies by 2004	WCS,WWF	
		Approve the joint program on tiger conservation between WWF-China and WWF-Russia by 2005	WWF	
		Coordinate activities of customs agencies in Russia, China, and North and South Korea for halting illegal export and trade of derivatives from tigers and other rare species by 2005	WWF,WCS, PHOENIX	

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
RULES OF THE GAME	International cooperation (con't)	Coordinate scientific research and cooperation among tiger experts from different countries, ongoing	Launch program to exchange experience with scientists from China and North Korea on tiger conservation, ongoing	WCS,WWF
			Initiate agreements on cooperation among scientific organizations in China and Russia by 2005	WCS,WWF
	Legal mechanisms are in place to prevent depletion of the tiger's prey base by 2010	Improve coordination between forestry and game agencies to improve integrity of tiger habitat by 2007	Ensure enforcement of ban on cutting Korean pine and closely monitor logging practices in coniferous and deciduous forests, ongoing	WWF, ZT
			Partially close logging roads that are not in use to deter poachers by 2005	WCS,WWF, PHOENIX
MARKETS AND LIFESTYLES	Resource use in tiger habitat is compatible with tiger conservation objectives by 2020	Ensure that independent ecological impact assessments are carried out for all natural resource use related projects in forest ecosystems by 2007	Set up group of experts to carry out independent impact assessments including members of working group for tiger conservation, ongoing	PHOENIX, WCS, WWF
			Work with government authorities to discuss impacts of various economic development scenarios on tigers and other rare species by 2003	WWF,WCS, KWF, ZT
	Practice FSC-certified sustainable forestry on three million hectares of forests in tiger habitat by 2010	Determine thresholds for nature use in tiger habitat and bring regulations into line with these ecological thresholds by 2006	Determine thresholds for nature use in tiger habitat and bring regulations into line with these ecological thresholds by 2006	WWF,WCS
			Include objectives of tiger conservation (specifically road closures) as indicator and criterion for voluntary forest certification (See Markets and Lifestyles in Forest Action Plan) by 2004	WWF
Peaceful coexistence of tigers and humans is attained by 2015	Make the majority of people living in tiger habitat aware of rules for behavior during tiger encounters and for livestock grazing by 2007	Prohibit approaching tiger prey and collection of prey remains, ongoing	Prohibit approaching tiger prey and collection of prey remains, ongoing	PHOENIX, WCS
			Provide devices for self-defense (pepper spray, signal flares) to most local residents living in tiger habitat, ongoing	PHOENIX, WCS
			Develop and implement compensation scheme to farmers for livestock lost to tiger kills by 2003	PHOENIX
			Prohibit unattended grazing in forests for cattle farms in tiger country by 2004	PHOENIX

4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
MARKETS AND LIFESTYLES	Local communities receive benefits from tiger conservation by 2020	Implement program to ensure sustainable livelihoods for one model community through ecotourism in southwestern Primorsky Province by 2008	Develop community action plan for organizing services and facilities for tourists by 2006	WWF
		Establish tourist routes and facilities in nature reserve near model community and publicize routes widely by 2007	WWF	
		Carry out sustainable livelihoods program in model community in southern Sikhote-Alin by 2010	Evaluate potential for supporting local community through sustainable hunting, community forestry, or other sources with feedback mechanisms that reward efforts towards tiger conservation by 2004	WWF, WCS
		Elaborate and implement project on establishing tiger safari-park for ecotourism and research by 2010	Prepare feasibility study for establishing tiger safari-park by 2004	WWF
	The general public supports and participates fully in tiger conservation by 2015	Institute environmental modules in curricula of schools in Primorsky and Khabarovsk provinces on conservation of tigers and biodiversity by 2008	Develop and incorporate course materials on tiger conservation into education system of Primorsky and Khabarovsk provinces by 2005	WWF, KWF, PHOENIX
			Organize «Amur Tiger» children's creative arts festival, coordinating activities in Primorsky and Khabarovsk provinces by 2005	PHOENIX, KWF, WWF, ZT
			Print reading materials and information for textbooks for schoolchildren by 2006	PHOENIX, KWF, ZT
		Conduct wide-scale, ongoing media campaign (including TV, radio, newspapers, international media) to inform people about threats to tigers and measures for their conservation by 2006	Expand annual «Tiger Day» celebration to district centers in model areas, ongoing	PHOENIX, WWF, WCS, ZT
			Publish posters, leaflets, stamps, postcards, copy-books and other quality materials to promote tiger conservation programs, ongoing	ZT, WWF, PHOENIX, WCS, KWF
			Place billboards with information on tiger conservation and how to behave in tiger encounters on major thoroughfares, train stations, airports, and bus stations throughout tiger habitat, ongoing	WWF, PHOENIX, KWF
			Conduct contests on tiger conservation on TV and radio, ongoing	PHOENIX, WWF, ZT, KWF
			Film professional promotional clip for regional television by 2004	ZT
			Elaborate communication strategy on Amur tigers by 2004	WWF, ZT, PHOENIX

4.2. STRATEGY AND ACTION PLAN FOR CONSERVATION AND RESTORATION OF THE FAR EASTERN LEOPARD

A special working group developed a federal strategy for conservation of the Far Eastern leopard in 1996. The conservation action plan below is based on that strategy with modifications to reflect recent progress in leopard conservation.

The long-term goal for leopard conservation is to enlarge and maintain a genetically viable population of at least 50 individuals in southwestern Primorsky Province and create new founder populations in other parts of the animal's former range. Minimum area requirements for the species and the amount of habitat currently available indicate that the leopard population could be doubled if its prey base were to increase. However, even a target population of 50 leopards can only guarantee short-term persistence. For long-term persistence, new leopard populations should be founded in former parts of the animal's range.

Important targets for creating a viable population will include perfecting the network of protected areas in southwestern Primorsky Province, promoting international cooperation with China and North Korea on leopard conservation, and increasing the leopard's prey base (*Figure 6*). Creation of a transboundary Russian-Chinese reserve will help improve cooperation on leopard conservation



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between the two countries and draw public attention to the problem. Eventually, a trilateral transboundary protected area between Russian, China, and North Korea should be established to guarantee conservation of the leopard and the unique biodiversity of the border region. Ecotourism in southern Primorsky Province has the potential to help slow habitat degradation by providing additional income to communities in leopard habitat that traditionally rely on forest use. Awareness building programs need to be carried out to reduce forest fires and the use of burning techniques for clearing fields, practices which have catastrophic impacts on leopard habitat. Ecological education programs should be elaborated for schools in southwestern Primorsky Province to help cultivate a new generation of environmental-

ly conscious decision-makers.

Since poaching for both leopards and their prey is one of the main reasons for disappearance of the Far Eastern leopard throughout southern Primorsky Province, steps need to be taken to reduce poaching by boosting the efficiency of existing anti-poaching brigades and creating a special brigade for leopard conservation. Most importantly, the demand for leopard derivatives needs to be curbed, for which cooperation with Chinese authorities and international non-governmental organizations will be critical.

Supporting deer farms in southwestern Primorsky Province is an important way to maintain and increase the leopard's prey base. Deer farms raise deer to harvest their antlers, used in oriental medicines. However, the industry is currently suffering a depression. If deer farms go bankrupt, the leopard's prey base will decline even

further. The number of people out of work in the region will increase and many will be forced to poach deer - and possibly leopards - to feed their families. An economic strategy for development of deer farms needs to be worked out in order to come to agreement with managers on protecting leopards on their territories, providing compensation for losses to leopard kills, and developing leopard safari-parks to attract tourists to the region.

Details on protected areas that will be created for leopard conservation as part of the Econet are listed in the Forest Strategy and Action Plan.

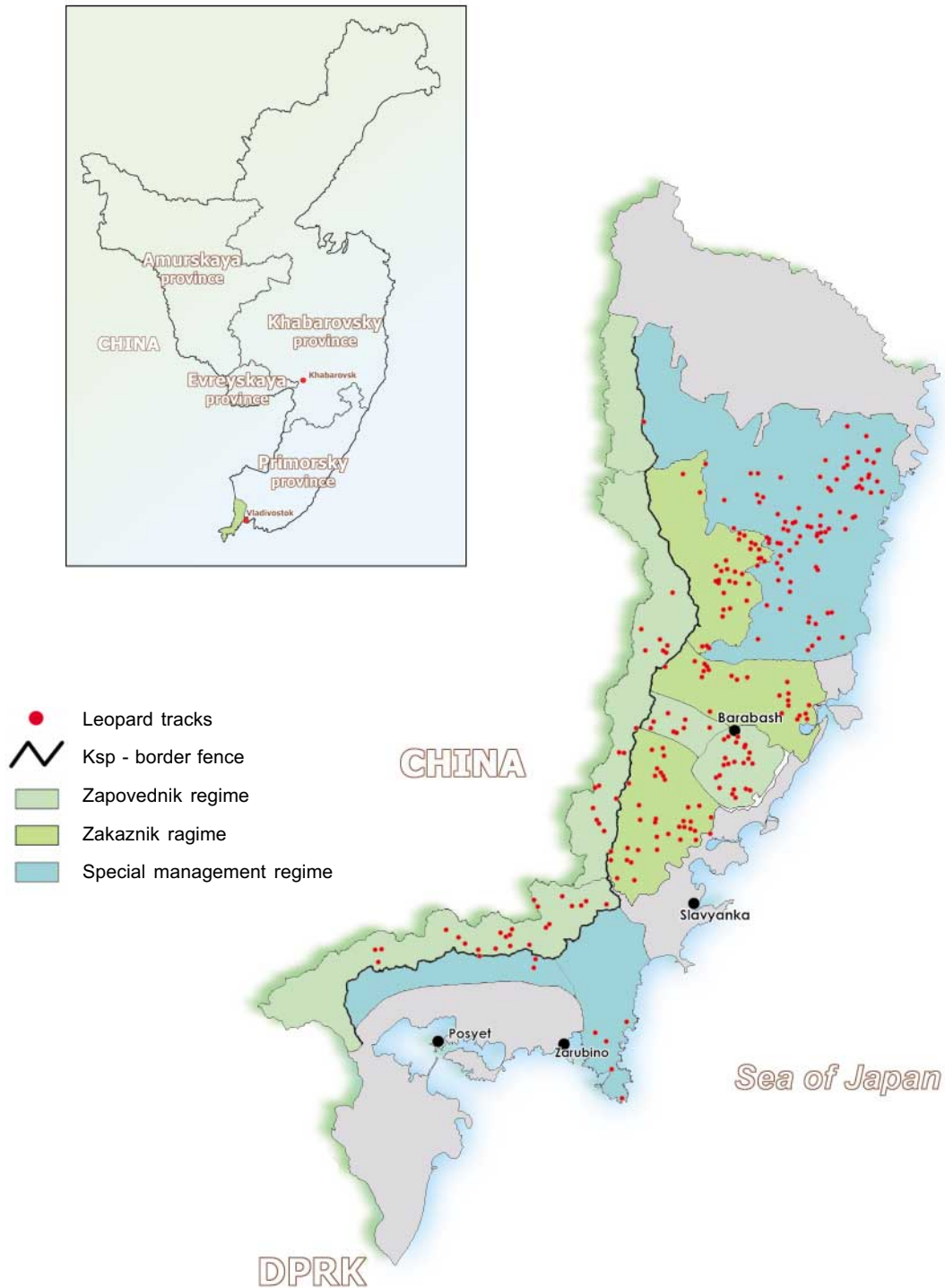


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Figure 6.

PROPOSED LAND MANAGEMENT ZONES FOR FAR EASTERN LEOPARDS IN SOUTHWEST PRIMORSKY PROVINCE

(source: Miquelle and Murzin, 2001)



4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS	
WEB OF LIFE	The protected areas network in southwestern Primorsky Province supports at least 50 leopards by 2015	Ensure sufficient prey base in protected areas by 2006	Implement biotechnical measures and effective anti-poaching control to increase prey populations in leopard habitats by 2004	WWF, WCS, PHOENIX	
		Create large, unified protected area (Barsovy National Park) based on existing zapovedniks and wildlife refuges by 2006	Establish and support coordination unit for administrations of Kedrovaya Pad Zapovednik, Barsovy Federal Wildlife Refuge, and Borisovskoye Plateau Wildlife Refuge by 2003	WWF, WCS, PHOENIX	
		Create system of buffer zones and ecological corridors connecting protected areas by 2007	Develop scientific justification for unified protected area in leopard habitat in southwestern Primorsky Province by 2003	WCS, WWF	
			Grant federal status to Borisovskoye Plateau Wildlife Refuge by 2004	WWF	
		Create system of buffer zones and ecological corridors connecting protected areas by 2007	Implement system of temporary calm zones within home ranges of females with litters on hunting estates in leopard breeding habitat by 2004	WWF, WCS	
			Develop management plan for conservation and effective management of leopard Econet (protected areas, buffer zones, and corridors) to determine optimal regimes of land use surrounding protected areas by 2004	WWF, WCS	
			Instate strictly protected regime in border patrol zone to create an ecological corridor along Russian-Chinese border and develop agreement with border guards to insure anti-poaching patrols by 2005, ref.4.17	WWF, WCS	
		Launch international transboundary protected area for leopard conservation in border region of Russia, China, and North Korea by 2007	Work out scientific justification for transboundary protected area in leopard habitat in collaboration with scientists from North Korea and China by 2004	WCS, WWF	
			Initiate negotiations in Russian Ministries of Foreign Affairs and Natural Resources to approve transboundary reserve by 2004	WWF, WCS, PHOENIX	
			Formulate agreements with relative government agencies in all three countries by 2005	WWF, WCS, PHOENIX	
		Cooperative efforts of ranger services control poaching, forest fires, and unsustainable land use in all leopard habitat by 2015	Halt poaching on leopards and their major prey by 2005	Organize effective protection service in existing reserves, wildlife refuges, and hunting estates in leopard habitat, ongoing	PHOENIX, WWF, WCS
				Coordinate anti-poaching operations among all reserves, refuges, and ranger services and carry out joint raids, ongoing	PHOENIX, WWF, WCS
Establish network of informers on leopard poaching in local villages and among workers of deer breeding farms by 2004	PHOENIX, WWF, WCS				

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Cooperative efforts (continued)	S trengthen protection measures in border areas by 2006	Carry out training courses for border guards, ongoing	WWF, WCS, PHOENIX
			S ign agreement between border guards and ranger services for joint protection of leopards behind boundary fences by 2004	WWF, WCS, PHOENIX
			Work with customs agencies and border guards to halt poaching and transport of illegal leopard skins and derivatives, ongoing	WWF, WCS, PHOENIX
			I mprove qualifications of customs officials by carrying out training programs by 2004	WWF, WCS, PHOENIX
		C hange land use practices of local land users to reduce forest fires by 2007	Elaborate fire-prevention management plan for all land users in leopard habitat by 2004	PHOENIX, WWF, WCS
			S upport «Fauna» fire-fighting brigade, ongoing	PHOENIX
			C reate fire-prevention system in leopard habitat by 2006	WWF
			C reate and maintain system of mineral belts used for prescribed fires by 2005	PHOENIX, WWF, WCS
	A viable leopard population thrives in areas of its former range by 2020	D evelop and carry out measures to select and prepare reintroduction site, including increasing prey base for leopards by 2006	Conduct detailed analysis of reasons for disappearance of leopards in former areas by 2003	WCS
			D evelop detailed, long-term Leopard Reintroduction Plan by 2004	WCS, WWF
			Select sites in former areas of leopard's range for experimental release by 2004	WCS, WWF
			E stablish or enlarge protected areas, or improve habitat quality on selected reintroduction sites by 2005	WWF, WCS
		P repare founder group of animals for reintroduction and develop methods for acclimating leopards by 2006	Support programs to maintain and increase population of purebred Far Eastern leopards in captivity, ongoing	
			D evelop documentation for construction of leopard reintroduction facilities and allocate funds for such center by 2005	WCS, WWF
R elease founder group to selected site in former range of leopard by 2008	Develop and experiment with methods for reintroducing leopards from captive populations into the wild by 2006	WCS, WWF		
C arry out continuous monitoring of released animals fitted with radio collars throughout their range by 2008	D evelop and carry out educational programs among hunters and general public to build support for expansion of leopard population to new territories by 2005	WCS, WWF, PHOENIX, ZT		

4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Monitoring and research of leopards is self-supporting, produces reliable data, and leads to effective leopard conservation by 2015	Implement perfected methods for monitoring leopard population, its habitat, and prey by 2006	Monitor habitat changes through remote sensing by satellite images, ongoing	WCS
			Keep GIS leopard database updated, ongoing	WCS
			Implement new census-taking methods (photo-trapping) by 2003	WCS
			Conduct winter census for leopards throughout their range at least once every three years beginning winter of 2002/2003	WCS,WWF, PHOENIX
		Establish Leopard Monitoring Center (based in transboundary nature reserve) by 2007	Build capacity for field researchers in leopard habitat, ongoing	WCS,WWF
			Implement system for regular collection of information in model areas (reserves, hunting refuges, etc.) by 2004	WCS,WWF
Organize genetic monitoring of leopards by 2007	Conduct DNA genetic study based on leopard excrements and hairs by 2004			
RULES OF THE GAME	Legal and financial mechanisms are instituted to involve deer farms in leopard conservation by 2015	Maintain and enlarge compensation system for losses to deer farms due to leopard kills by 2006	Provide compensation to deer farms for leopard kills, ongoing	PHOENIX
			Identify continuous funding sources (insurance payments) for compensation for leopard kills by 2005	PHOENIX
		Incorporate deer farming into leopard conservation activities by 2006	Assess relationship between leopards and deer farms and their role in providing prey base for leopards by 2003	WCS, WWF, PHOENIX
			Strengthen regional legislation that encourages deer farms to protect leopards and other rare species on their properties by 2004	WWF, WCS, PHOENIX
			Develop business strategy for deer farming in Primorsky Province to emerge from current economic crisis by 2004	
		Create model safari-park on selected deer farm by 2005	Assess feasibility and develop business plan for leopard safari-park to help maintain leopard populations by 2003	WWF, PHOENIX
			Create public administrative body to manage safari-park in leopard habitat by 2003	WWF, PHOENIX
			Obtain legal rights to manage model deer farm for leopard conservation by 2004	WWF, WCS, PHOENIX
		Provide infrastructure support to leopard safari-park to ensure its self-financing by 2006	Ensure funds for development of multi-use, self-financing leopard safari-park by 2005	WWF, PHOENIX

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
RULES OF THE GAME	Internationally coordinated mechanisms are established to conserve leopards by 2015	C reate Leopard Emergency Fund to support urgent actions for saving leopards by 2006	Create working secretariat to support Russian-Chinese Leopard/Tiger Working Group, ongoing	WCS,WWF
		E laborate and approve coordinated International Leopard Conservation Strategy by 2006	S upport training and exchange program between China, North Korea, and Russia by 2003 Coordinate research and census-taking among all countries by 2004	WCS, WWF WCS
		W ork with Chinese and North Korean governments to reduce demand for leopard derivatives by 2006	Involve TRAFFIC International in leopard conservation program by 2004	WWF,WCS
		C ooperate with NGOs in China and throughout Asia to support leopard conservation and reduce demand for leopard derivatives by 2004	Support Eco-Peace Forum as mechanism for transboundary coordination, ongoing S upport the process of creating a UNESCO Transboundary Protected Area or World Heritage Site in Black Hills, ongoing	WWF, WCS, PHOENIX WWF, WCS, PHOENIX
		E laborate and lobby for trilateral agreement on biodiversity conservation in border regions of China, North Korea, and Russia by 2008	Apply to international governments and private donors to support Hunchun Leopard and Tiger Nature Reserve in China by 2004	WCS,WWF, PHOENIX
		MARKETS AND LIFESTYLES	Wise use of game resources benefits both hunters and leopards by 2015	I mplement constant feeding system for ungulate populations during difficult times by 2008
D evelop and implement new norms for hunting in leopard habitat in cooperation with game managers and hunting societies by 2006	Research impact of hunting practices to leopard population, ongoing E nforce quotas for ungulate hunting by 2004 Ban and enforce use of traps and hunting with dogs in leopard habitat by 2004			WCS, WWF, ZT WWF, WCS WWF, WCS, PHOENIX
P etition regional administration to enact special regulation on hunting in leopard habitat by 2004	WWF, WCS, PHOENIX			

4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

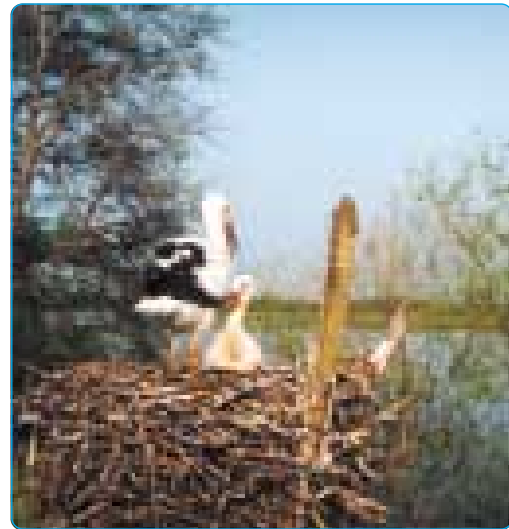
Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: reference # indicates location on Figure 4 (page 20)	COORDINATORS	
MARKETS AND LIFESTYLES	Economic development in southwestern Primorsky Province is compatible with conservation of leopards by 2020	D evelop and approve strategy for sustainable resource use in SW Primorsky Province by 2006	Conduct impact analysis of plans for economic development in leopard habitat by 2003	WWF, WCS	
		P romote ecotourism using leopard as symbol and ensure tangible benefits to local economies of southwestern Primorsky Province by 2007	Set up administrative body for developing ecotourism by 2003	WWF	
		Design and implement ecotourism routes and facilities in leopard habitat by 2004	WWF		
		P romote ecotourism throughout Russia, Asia, and the West through Internet, travel news, etc. by 2005	Set up annual Leopard Carnival in August in Khasan District by 2004	WWF, WCS, PHOENIX	
		E nsure that non-timber forest products form a significant part of income in local communities by 2007	Enact and enforce ban or severe restrictions on logging oak trees in leopard habitat by 2005	WWF, WCS, PHOENIX	
		Provide infrastructure support for small enterprises based on non-timber forest products by 2005	WWF, WCS, PHOENIX		
		Support Khasan District Fair for non-timber forest products and oriental medicines by 2005	WWF, WCS, PHOENIX		
		The public fully supports and participates in leopard conservation by 2015	C reate ecological education centers in populated towns in leopard habitat by 2006	Elaborate public awareness/communications strategy by 2004	WWF, ZT, PHOENIX
			E nsure that local communities and visitors of southwestern Primorsky Province are informed on leopard issues by 2007	Organize continuous, wide-scale campaign in mass media on threats to leopards and measures to protect them by 2004	WWF, ZT, PHOENIX
			Place billboards on main thoroughfares by 2005	WWF, WCS, PHOENIX	
	Carry out regular social surveys, ongoing		PHOENIX		
	Publish posters, leaflets, and other colorful materials to promote leopard conservation programs, ongoing		WWF, WCS, PHOENIX, ZT		
	I nstitute natural history course with sections on leopard conservation in school curricula in southwestern Primorsky Province by 2007		Organize «Land of the Leopard» children's creative arts festival by 2003	PHOENIX, WWF, ZT	
	Organize children's ecological theater groups and campaigns, ongoing		PHOENIX		
	Conduct slide presentations in schools and children's camps, ongoing		PHOENIX		
	Elaborate and conduct fun games and educational activities on leopard conservation in model schools by 2005		PHOENIX		
	Work out and adopt model school curriculum on natural history based on leopard biology by 2004		PHOENIX		
	Train local teachers on new school curricula by 2005	PHOENIX			

4.3. STRATEGY AND ACTION PLAN FOR CONSERVATION OF THE ORIENTAL WHITE STORK

The WWF developed a draft strategy to conserve the Oriental white stork in cooperation with IUCN (Strategy for Oriental white stork (*Ciconia boyciana*) conservation in Russia. IUCN/WWF, Moscow, 2000). The strategy was discussed and approved at the «Amur-2000» international conference. The Russian Government should be encouraged to adopt this strategy as the official manifest for Oriental white stork conservation in the Russian Far East Ecoregion Complex. The conservation action plan below is based on that strategy.

The long-term goal for Oriental white stork conservation is to sustain a viable population of at least 500 nesting pairs in the Russian Far East Ecoregion Complex and ensure that this population is conserved throughout its range including in wintering and stopover areas to the south.

The Oriental white stork is a symbol of wetland purity and can serve as an umbrella species for the Amur River Basin Integrated Management Program. Storks are not as well researched as some of the other species in the Russian Far East Ecoregion Complex.



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Therefore, research and monitoring programs to track the birds and understand their biology should be supported. All known nesting sites in the RFE should be granted protected status. Special measures should be taken to protect nesting trees from logging, fire, and other disturbances, as well as to create artificial nesting towers where trees are absent. Legal and economic mechanisms should be put in place to ensure that nature use practices in stork habitat are compatible with conservation of the rare bird.

An environmental education and public awareness campaign, using folklore and other traditions related to storks, will help teach people to value the Oriental white stork and will encourage public participation in its conservation. Distribution of information materials on storks and other Red Data Book species to hunters, schools, institutions of higher learning, and through the mass media and on the Internet will help build public support for their conservation.

International cooperation to ensure that storks are properly protected in their nesting, stopover, and wintering grounds in China and Korea will be critical for long-term survival of the species. Cooperation with breeding centers in Japan and South Korea will be important for re-

introducing Oriental white storks to their former range in these countries.

Since the Oriental white stork primarily relies on wetland habitats, this strategy overlaps somewhat with the Freshwater Action Plan. References to programs from that action plan are provided in parentheses below.



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Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Protection of nesting habitat for Oriental white storks is guaranteed by 2020	G rant protected status to all known stork nesting sites in Amur Freshwater Ecoregion currently lacking protection by 2010	C reate or enlarge six protected areas (367,400 ha) in Zeya-Bureya Plain by 2005 (see Freshwater Action Plan), <i>ref. 1.7-1.12</i>	SEU, WWF
			C reate or enlarge two protected areas (94,000 ha) in Khanka Lake Lowlands and Ussuri Valley by 2005 (see Freshwater Action Plan), <i>ref. 4.15, 4.16</i>	WWF
			C reate or enlarge six protected areas covering 222,800 ha on Middle Amur Plain by 2007 (see Freshwater Action Plan), <i>ref. 2.3, 3.9-3.12</i>	WWF, ECOLIGA, AMUR
			G rant natural monument status on local or regional levels to 50 percent of stork nesting sites currently not protected in nature reserves by 2007	WWF, SEU, ECOLIGA, AMUR
		E nsure individual protection of each nest by 2010	C heck stability of nest platforms and fix or remove them where necessary, ongoing	WWF, SEU, ECOLIGA
			D ig mineral belts around nest trees to protect them from fire, ongoing	WWF
			P lace informational signs near nests asking hikers to avoid disturbing birds during nesting period, ongoing	WWF, ECOLIGA
		Monitoring and research of Oriental white storks lead to their effective conservation by 2020	C ollect information on stork distribution and population dynamics to assess state of species, ongoing	C arry out continuous monitoring of storks on model nesting territories (Khingansky, Khankaisky, and Bolonsky zapovedniks), ongoing
	C arry out census of storks over entire nesting range at least once every five years by 2005			WWF, AMUR
	I nventory all occupied stork nests throughout range and record their characteristics by 2005			WWF, AMUR
	M aintain GIS and information databases on stork nest locations and to create the model of habitat preference, ongoing			WWF
	M onitor population health, ongoing		S tudy effects of climate and other factors on stork breeding success by 2004	
			C arry out study on content of heavy metals and pesticides in stork feathers and egg shells on model nesting territories by 2005	
	I nvestigate all important habitats in stork's annual life cycle, ongoing		C ontinue colored ring and satellite tracking in stork breeding areas to study migration, wintering, dispersion, etc., ongoing	
C arry out joint stork census in stopover and wintering grounds in China by 2005		WWF		

4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

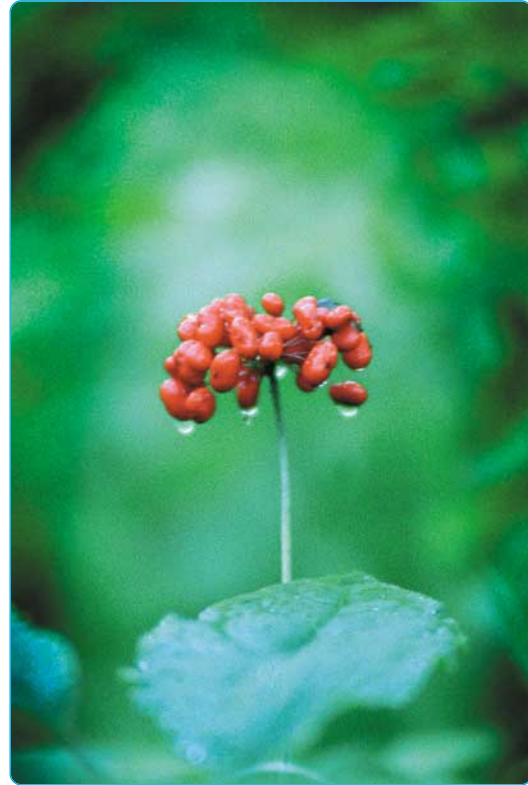
Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	A captive Oriental white stork population provides a sufficient gene pool for reintroduction programs by 2015	Support creation of reserve breeding population of Oriental white storks in captivity by 2012	Apply methods of raising more than one clutch a season for reintroducing storks to the wild by 2004	
			Support development of rare bird reintroduction station in Khingansky Zapovednik, ongoing	
		Assist zoos to develop captive breeding programs by 2006		
		Support reintroduction programs in parts of stork's former range by 2012	Promote joint program with the Toyooka Stork Homeland Center to reintroduce storks in Japan by 2004	AMUR
	Areas of degraded wetland habitat in abandoned agricultural lands are restored and inhabited by Oriental white storks by 2020	Incorporate stork recovery program into program for restoration of Zeya-Bureya Plain by 2007 (see Freshwater Action Plan)	Identify wetlands where storks used to nest that have been degraded by drainage or other human pressures and propose measures for their restoration by 2004	WWF
			Identify potential nesting sites for constructing towers for stork nests throughout bird's range by 2004	WWF, SEU, ECOLIGA, AMUR
			Construct artificial nesting towers in treeless areas and encourage storks to nest in human altered areas by 2007	WWF, SEU, ECOLIGA
		Develop and instate economic incentives for wetland restoration programs by 2012	Evaluate wetlands losses due to drainage for farmlands in stork habitat and assess agricultural productivity of such reclaimed lands	WWF, SEU, ECOLIGA, AMUR
	Legal mechanisms are instituted to ensure long-term conservation of Oriental white storks by 2020	Implement normative and legal acts on federal, regional, and agency levels to regulate rights, land use, and natural resource use on important nesting, feeding, and migrations grounds for storks by 2010	Lobby for adoption of Oriental White Stork Conservation Strategy, prepared in 2000 on federal level by 2004	WWF
			Draft recommendations and carry out legal seminars to train inspectors on collecting evidence and building cases against violators, going to trial, and prosecution of poachers harming rare species by 2004	WWF
Work out and implement economic incentives, such as system of fines and payments, to protect stork nests by 2006			WWF	
Support the International Oriental Stork Working Group, ongoing			WWF	
Mechanisms for international cooperation on stork conservation are in place by 2015	Ensure coordinated activities in stork conservation along its entire flyway by 2007	Develop international strategy and conservation action plan for Oriental white stork conservation by 2005	WWF, AMUR	
		Convene international conference on stork conservation in 2005	WWF, AMUR	
		Prepare recommendations for international agreement on conserving storks in framework of Bonn Convention by 2006	WWF	

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 Notes: <i>reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
MARKETS AND LIFESTYLES	Natural resource and land use practices are compatible with conservation of stork nesting habitat by 2015	D ecrease impacts of grass fires on stork nesting sites by 2008	Implement measures to prevent grass fires from spreading to nesting trees, especially in protected areas, ongoing D evelop economic incentives for fire-fighting measures by 2004	SEU, WWF, ECOLIGA WWF, SEU ECOLIGA
		H alt logging of potential and occupied nesting trees in stork habitat by 2008	Develop recommendations on preventing logging of potential nesting trees by 2005 B an logging of oak trees in Khanka Lake Lowlands by 2004	WWF, SEU, AMUR
		O rganize appropriate tree planting in stork habitat by 2010	Incorporate guidelines for conservation of stork nesting trees into Zeya-Bureya Plain Restoration Program by 2005	SEU, WWF
		P repare and distribute guidelines on stork conservation for natural resource inspections that allocate licenses for hunting, land, forestry, etc. by 2010	P repare inserts on storks and identification of rare birds in field for brochures handed out to hunters by 2004	WWF, ZT, AMUR
		D evelop and implement economic incentives to promote environmentally sound agricultural practices near stork nesting areas by 2010	Develop and implement guidelines on using chemical fertilizers and pesticides in wetland areas by 2007	
	The public fully supports and participates in stork conservation by 2015	I nclude Oriental white stork as focal species in ecology classes in middle schools in key regions by 2010	E xplore opportunities for using children's theater groups to promote stork conservation by 2004	WWF, SEU, ECOLIGA
			O rganize «Stork on a roof - Peace on the Earth» children's creative arts festival by 2005	WWF, SEU, ECOLIGA, ZT, AMUR
			P rovide teaching materials to schools and institutes of higher learning on biology of storks and conservation of Red Book species, particularly in rural schools by 2007	WWF, ZT, AMUR
		P romote stork conservation through nature reserves by 2010	Prepare booklet on stork conservation for distribution in network of nature reserves along stork's flyway by 2005	WWF, ZT
			P repare displays on storks in museums of zapovedniks within stork's range by 2006	WWF
C arry out promotional campaign to ensure 30 percent of people identify with stork as symbol of environmental purity and family happiness by 2010	Launch public campaign in mass media by 2004	WWF		
	C reate Oriental white stork website on Internet by 2004	WWF		
	P ublish photo album on storks and organize mobile photo exhibitions by 2005	WWF		
		S hoot professional film on stork biology and conservation by 2006	ZT	

4.4 STRATEGY AND ACTION PLAN FOR CONSERVATION OF GINSENG

Ginseng (*Panax ginseng*) in Chinese means the «root of life.» The ginseng root has been treasured for its healing powers for centuries. Collection of wild ginseng has led to the disappearance or depletion of the species over much of its former range in Primorsky and Khabarovsk provinces. Annual ginseng harvests have declined over the past century from 300-400 kg to only 25-45 kg. Ginseng grows very slowly for a hundred years or more, which is why it has been so easily eradicated by illegal harvesting. Relic wild ginseng survives for the most part in virgin mixed broadleaf and conifer forests of Primorsky Province in Russia and in parts of northeastern China and North Korea. The government of Primorsky Province approved a program for regenerating the region's ginseng population to save this rare species. The action plan below is based on that strategy with modifications to reflect recent progress in ginseng conservation.

The long-term goal is to conserve viable ginseng populations in the wild and restore the plant to parts of its former range, while allowing local people to profit from the sustainable harvest of ginseng.



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As an endemic and relic plant, ginseng is included in the Russian Red Data Book, which dictates that its extraction from the wild is allowed only in exceptional cases under special regulations with a permit from the Ministry of Natural Resources. The first step needed to conserve the species is to stop illegal harvest using the experience of anti-poaching brigades in the Sikhote-Alin Ecoregion. Severe measures are required to reduce illegal

trafficking across borders. Cooperation with China and North and South Korea will be critical for halting illegal harvest and trafficking, as well as for creating a system of transboundary protected areas. Ginseng conservation goes hand in hand with forest conservation. For this reason, creating a forest Econet in Korean pine and broadleaf forests as set out in the Forest Strategy and Action Plan is important to protect habitats where ginseng is found.

If organized correctly, wild ginseng could be harvested sustainably in the future to bring long-term benefits to local communities while conserving a viable gene pool of the species in the wild. However, official mechanisms for ensuring wise use of ginseng, such as legalizing wild ginseng harvest and modify-

ing CITES and Russian federal and regional laws, need to be vigilantly enforced. Wild ginseng seedlings and stock should be restored with the help of a special reproduction center using modern cultivation techniques.

Sustainable forestry practices are critical to saving ecosystems for all rare species from ginseng to the Amur tiger. Therefore, the strategies are tightly connected to each other and to the Forest Strategy and Action Plan.



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4. STRATEGIES AND ACTION PLANS FOR CONSERVING FOCAL SPECIES

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
WEB OF LIFE	Conservation of genetically and biologically viable populations of wild ginseng is guaranteed by 2020	Ensure that important and threatened ginseng communities are granted protection by 2010	Create Solnechny Gory Nature Park by 2003, <i>ref. 4.2</i>	WWF
			Ensure ginseng protection by creating Zhuravlevsky (39,300 ha) and Siny Khrebet refuges (195,000 ha) by 2007, <i>ref. 4.8, 4.10</i>	WWF
			Inventory populations of wild and cultivated ginseng; carry out scientific study to determine optimal harvest level of ginseng in the wild and on plantations by 2004	
			Develop proposals for protecting threatened ginseng communities and including them in Forest Econet by 2005	WWF
		Reduce illegal harvest and trade of wild ginseng by 2010	Create public support for ginseng conservation in local communities by 2005	
			Develop and implement mechanisms for local people to participate in ginseng conservation by 2005	WWF, WCS
			Work with law enforcement agencies to reduce illegal collection and trade of ginseng by 2006	PHOENIX, WWF
		Reduce illegal transport of wild ginseng across borders by 2008	Work with customs agencies to develop effective methods of monitoring illegal transport of wild ginseng and provide informational support by 2003	WWF, PHOENIX
			Create conditions for sale of confiscated roots in foreign markets at maximum price by 2005	
		Establish at least four ginseng nurseries to replenish wild populations and support commercial plantations by 2007	Develop long-term plan for ginseng reintroduction and business plan for nurseries to ensure they are self-supporting through sale of pure seedling stock to commercial plantations by 2005	WWF, WCS
			Provide infrastructure, equipment to ginseng nurseries by 2005	
			Plant ginseng nurseries to provide seedling stock for reintroduction and industrial plantations by 2007	
		Begin reintroduction of ginseng in model sites using seedlings from first nurseries by 2010	Determine model sites for reintroduction of ginseng by 2005	WWF, WCS
			Organize protection of model reintroduction sites by 2007	WWF
Carry out study of distribution and gene pool of ginseng populations by 2008				
Conservation of gene pool for wild ginseng is guaranteed by 2015	Create seedling stocks with samples of all main populations of ginseng in Primorsky Province by 2010			
		Create database of ginseng gene pool by 2008		
		Maintain and renew seedling stocks, ongoing		

Component	MEDIUM-TERM TARGETS by 2020	SHORT-TERM TARGETS by 2012	IMMEDIATE ACTIONS by 2007 <i>Notes: reference # indicates location on Figure 4 (page 20)</i>	COORDINATORS
RULES OF THE GAME	Legislative mechanisms guarantee restoration of wild ginseng resources by 2015	D evelop and approve federal normative acts on conservation and restoration of wild ginseng and its sustainable harvest in Primorsky Province by 2007	Prepare proposals for effective measures for protection and restoration of ginseng aimed at increasing the volume of wild ginseng in Primorsky Province by 2004	WWF
			D evelop and lobby for adoption of legislative acts to implement Program for Restoring Ginseng in Primorsky Province by 2005	WWF
			Review protected status of ginseng by 2005	
	Economic measures promote legal trade of ginseng collected sustainably 2015	E nsure government support for sustainable harvest of ginseng in local communities by 2007	P romote state support of associations of wild ginseng farmers and allocation of lands with ginseng for extended periods, providing associations with exclusive rights to harvest by 2006	WWF
			O rganize ginseng auctions based on regional ginseng restoration centers, ginseng farmer associations, and plantations by 2006	WWF
	Sustainable harvest of wild ginseng provides long-term benefits to local communities by 2020	I ncorporate ginseng harvest into activities of special enterprises for non-timber forest products by 2010	C reate associations of ginseng farmers in local communities based on existing forestry enterprises by 2004	WWF
			D evelop recommendations on sustainable harvests of wild ginseng to ensure conservation of sufficient gene pool by 2006	WWF, WCS
		C reate model commercial ginseng plantation and ginseng nursery for cultivation by 2010	D evelop business plan and marketing strategy for model ginseng plantations by 2006	
			E laborate methods of ginseng cultivation, incorporating demands of international markets by 2007	
	An ethical foundation for sustainable cultivation and harvest of wild ginseng is the basis for long-term ginseng conservation by 2020	D evelop a joint strategy with NGOs in China and Korea to conserve wild ginseng and support ginseng farmers by 2008	P romote cooperation of government agencies, scientific institutes, and NGOs in conservation and restoration of wild ginseng, ongoing	WWF, WCS, PHOENIX, ZT
			P romote ginseng as symbol of health for people and forest ecosystems in Primorsky Province by 2010	
			P romote ginseng as symbol of health for people and forest ecosystems in Primorsky Province by 2010	P romote ginseng as symbol of health for people and forest ecosystems in Primorsky Province by 2010
		P romote ginseng as symbol of health for people and forest ecosystems in Primorsky Province by 2010	WWF	

ATTACHMENTS

ATTACHMENT 1.

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ATTACHMENT 2.

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Note: The list includes all members who participated in the Ecoregional Councils from the year 2000 to 2002.

ATTACHMENT 4.

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CONSERVATION ACTION

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Dr. Dinerstein Eric	WWF US
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Dr. Gaponov Victor	Nature Resources Committee of Primorsky Province Administration (before 2001)
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Dr. Glushenko Yuri	Ussuriisky Pedagogical Institute
Dr. Gorchakov Victor	Administration of Primorsky Province, Dept. of Foreign Affairs
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Dr. Kovalev Alexander	Director of the Far Eastern Scientific & Research Institute of Forestry
Dr. Krever Vladimir	WWF Russia
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