Conservation of Biological Diversity in Russia and the former Soviet Union
CONTENTS

VOICE FROM THE WILD (LETTER FROM THE EDITORS) ................. 3

PROTECTED AREAS
RUSSIAN ZAPovedniki SYSTEM CONTINUES TO EXPAND ....... 3
UNESCO WORLD NATURAL HERITAGE SITE: A FIRST FOR RUSSIA .......... 4
TWO APPROACHES TO THE SAME MISSION ..................... 5
IN APRIL, HUNDREDS MAY MARCH FOR PARKS ................. 6
ALONG THE SHORES OF SMOLENSKOE POEZERO NATIONAL PARK ...... 7

FOCUS: CONSERVING LAND IN RUSSIA - A CONTEMPORARY LOOK AT THE PAST
COMMANDMENTS OF THE FOREFATHERS OF ZAPovedniki ........... 9
PRESENT STRATEGIES TO ENSURE A FUTURE FOR PROTECTED AREAS IN RUSSIA ................. 10

LEGISLATION
ENVIRONMENTAL IMPACT ASSESSMENT AND SUSTAINABLE DEVELOPMENT IN RUSSIA .......... 12

MANAGEMENT
CONFERENCE ON POPULATION STUDY METHODS .................. 14
HOW ARE YOU? ................................................................ 15
MONITORING PROGRAMS IN RUSSIAN ZAPovedniki ............... 15
LETOPIAS PERIODI AND BIOIEST: RIVALS OR ALLIES? ............ 16

NGOs
ECOURUS: PIONEERS IN RUSSIAN ENVIRONMENTAL LAW .......... 17
ARAL SEA INTERNATIONAL COMMITTEE ............................. 18

ENVIRONMENTAL EDUCATION
ZAPovedniki AS EDUCATIONAL CENTERS ....................... 19
ENDANGERED ECOSYSTEMS TO FIND AND PRESERVE: ON CREATING A RED DATA BOOK FOR ENDANGERED ECOSYSTEMS .......... 20

EDITORIAL BOARD
Editor-in-Chief: Margaret Williams
Managing Editor: Anya Menner
Assistant Editors: Mikhail Bliunikov, Mary Rees
Art and Layout: Ilya Belov, Dmitry Krasnovski
Endangered Species: Nikolai Formozov
Legislation: Vadim Mokierki
Living Arctic: Irina Pokrovskaya
Contributing Editors: Christine Nasse, Christine Tan, Eugene Simonov
Translators: Mikhail Bliunikov, Margaret Williams, Anya Menner, Mary Rees
Special thanks to Mary Rees for contributing her time and effort in producing the sixth issue of RCN!
Contributing authors:
Contributing artists & photographers:

CONTENTS

WHOSE PROBLEM IS THE ARAL CRISIS? ......................... 21
COTTON, POLITICS, AND WATER: SEALING THE FATE OF THE ARAL SEA .......... 21
THE TUGILA OF THE ARAL SEA REGION IS DYING: CAN IT BE RESTORED? ........ 22
CRISIS OR IMPASSE? ............................................... 24

ENDANGERED SPECIES
NEW THREATS TO THE POLAR BEAR ......................... 24
CORNCRAKE IN THE DON RIVER VALLEY .......................... 26
NERPA - ONE OF BAIKAL’S ATTRACTIONS? ..................... 27
BAR-HEADED GOOSE OF KIRGHIZIA ............................... 28
AN INTRODUCTION TO BAT CONSERVATION IN RUSSIA .......... 29
REGIONAL IUCN GROUP ADDRESSES THE DECLINE OF AMPHIBIAN SPECIES IN THE CIS .......... 30
SAVE THE BUSTARD! ............................................. 31

CONSERVATION FINANCE
HUMANITIERS AROUND THE WORLD .............................. 31
RUSSIAN NGO DEVELOP GRANT-MAKING CAPACITY .............. 32
FIVE MILLION SWISS FRANCS FOR NATURE CONSERVATION IN RUSSIA .......... 32

LIVING ARCTIC
RCN ANNOUNCES A NEW COLUMN: THE LIVING ARCTIC .......... 33

NEWS
"APPROVED... WITH SOME CORRECTIONS": AN UPDATE ON HIGH-SPEED RAILROAD CONSTRUCTION ................. 33
RUSSIAN ENVIRONMENTALIST ARRESTED AND ACCUSED OF ESPIONAGE .......... 34
CHEETAH "95: CENTRAL ASIAN CONFERENCE ON BIODIVERSITY ................................. 34

CONSERVATION LIBRARY ...................................... 35
CALENDAR ......................................................... 36
BULLETIN BOARD ............................................... 37
CONSERVATION CONTACTS .................................... 39

ON THE COVER
Lynx (Felis lynx) in Kerzhenkski Zapovednik. Drawing by D. Fedorovski. Reprinted with permission from Kerzhenkski Zapovednik

The Biodiversity Conservation Center is a Russian non-profit, non-governmental organization aiming to preserve the biological diversity of Northern Eurasia. BCC’s programs help to conserve wilderness, endangered species and ecosystems, promote public environmental education, and assist other nature conservation groups to achieve these goals.

Russian Conservation News is produced with support from USAID/ISAR-International Clearinghouse on the Environment, the Echoing Green Foundation, the John D. and Catherine T. MacArthur Foundation, and the Pocono Environmental Education Center.
Voice from the Wild
(Letter from the Editors)

In the sixth issue of Russian Conservation News, we call your attention once more to one of the world’s most impressive systems of protected areas - the system of Zapovedniki. Since the first Russian Zapovednik was established eighty years ago, this vast network of strict scientific reserves has flourished, expanded and changed. The contribution Zapovedniki have made to biodiversity conservation is tremendous. We send our congratulations to the managers, scientists, and other supporters who have made the system one of the best.

Today, however, the future of Zapovedniki, is at stake. Zapovedniki are on the verge of financial collapse. During the Stalin regime, Zapovedniki of the USSR were jeopardized by a “reorganization” — when more than 50 nature reserves were closed. Now, the current economic situation once more threatens the survival of many Zapovedniki. Employees are receiving only forty percent of their standard wages, and in many cases, even these minuscule amounts are paid two or three months late. In some more remote Zapovedniki, employees are faced with starvation, and are essentially forced to exploit the plants and animals they should be protecting.

Last year, international assistance played a key role in the survival of many Zapovedniki. In Baikal-Lenski, the federal government paid less than half of the 620 million rubles needed to run the nature reserve, and only 144 million rubles of the 700 million needed in Brianski Les Zapovednik. The rest was paid by international organizations. Regional governments, too, supplemented the budgets of many reserves.

This year again, international assistance will be a critical factor in the survival of Russian nature reserves. We hope that the western community will continue its support of the Zapovednik system, in Russia and other parts of the former USSR through partnerships, exchanges, joint projects, and especially direct financial support. And, we hope that more of our western colleagues will come to see first-hand the nature still protected in these wilderness areas!

PROTECTED AREAS

Russian Zapovednik System continues to expand!

As 1995 came to a close, the Russian government was busy signing documents for the creation of several new Zapovedniki, bringing the count to 93. The total area (as of December 31, 1995) of Russia’s territory now protected within Zapovedniki is 30,017,146 hectares, making up 1.48% of the territory of Russia. The following additions to the Zapovednik system were made:

Tungusski Zapovednik, with a total area of 296,562 hectares was established on October 9, 1995 in the Evenk Autonomous Region (northeast Siberia). This nature reserve was established with support from the Russia Programme Office of the World Wide Fund for Nature (WWF).

Koryakski Zapovednik, with a total area of 327,167 hectares (whose protection extends to 83,000 hectares of aquatorium of the Bering Sea). The nature reserve is located in the Olyutorski and Penvinsky Districts (on
the northern part of Kamchatka Peninsula) of the Koryak Autonomous Region. With support from the Russia Programme Office of the World Wide Fund for Nature (WWF), the reserve was officially established December 27, 1995. See Number 3 of RCN, for an article about the reasons for creating the nature reserve, which preserves important habitat for brown bear, whooping swans, cranes, and many sea bird species.

Rostovski Zapovednik, with a total area of 9,464.8 hectares, located in Remontenski and Orlovski Districts of the Rostov Region (southern Russia, near Sea of Azov). Established December 27, 1995.

Prisurski Zapovednik, with a total area of 9025 hectares located in the Alat’rski District of Chuvashsk Republic (several hundred km east of Moscow). Established December 27, 1995.

Also in the news......

UNESCO has designated Taimyrski Zapovednik as an international Biosphere Reserve, Russia’s eighteenth Zapovednik to be recognized by UNESCO with this status.

New National Parks

Russia’s thirtieth National Park was established in Krasnoyarsk Region (south central Siberia) on November 3, 1995. Shushenski Bor National Park, with a total area of 39,200 hectares, will be administered by the Federal Forest Service of Russia. Ukraine received its fifth National Park when Vizhnitski National Park was established on August 30, 1995. The park occupies 8000 hectares in Chernovitsk Region in the western part of Ukraine.

Happy 80th Birthday to Russia’s oldest Zapovednik!

In 1996, Barguzinski Zapovednik, the first Russian Zapovednik, turned eighty years old. The nature reserve stretches one hundred kilometers along the northeast shore of Lake Baikal and extends 45-80 km east to the Barguzinski Mountain range, one of the highest ranges in the region, with peaks reaching 3000 meters. The Zapovednik, protecting 263,176 hectares of alpine and taiga ecosystems, was created especially to protect the Barguzinski sable. The Zapovednik protects habitat other types of wildlife, such as Northern Reindeer, Brown Bear, Wolverine and Otter, Northern Hazelhen, Black-billed Capercaille; white-tailed eagles nest on the Lake’s shores. (See the FOCUS section of this RCN issue to learn more about why the Zapovednik system was created!)

UNESCO World Natural Heritage Site - a first for Russia

by Anya Menner

Yes! For the first time, a Russian site has finally been given the status of a World Natural Heritage Site! Thanks to the hard work of many environmentalists (especially Greenpeace of Russia), now the UNESCO list of World Heritage has been enriched with one more treasure: the Virgin Forests of Komi (VFK). Although Russia signed the Convention on World Cultural and Natural Heritage Protection in 1982, and now has several World Cultural Heritage Sites, the Komi forests are the first natural landscapes to be designated with World Heritage status.

The required documents on VFK were submitted to UNESCO in 1994, and in August 1995 the Committee Bureau recommended the proposed territories, including Pechora-Ilych Zapovednik, National Park Yugyld-Va and their buffer and safety zones, for adoption onto the list of World Heritage. The efforts of concerned enthusiasts culminated in World Heritage Committee approval of this recommendation in December 1995.

VFK represents a huge complex of forest ecosystems that have been stable and autonomous in their evolution and were untransformed by human activity. The territory includes forests tracts, river issues, and part of a mountain ridge. The integrity and magnitude of the area have allowed development independent of the surrounding environment, which has suffered strong human impact. In terms of biodiversity, VFK is located on the border of two major biological zones, Siberian and European. This is the only area in Europe where forests have preserved their autonomy. These boreal forests can be considered analogous to Brazilian tropical forests.

VFK satisfies three of the four conditions necessary to gain World Heritage status: First, it is of great value for biodiversity conservation; second, it uniquely demonstrates biological and evolutionary processes in natural ecosystems and communities; and third, it is a specific natural phenomenon and a place of particular beauty.

As the first territory to acquire world recognition, VFK is not likely to be the last. Document packages on landscapes on Kamchatka and in the Far East, Altai and Tuva regions, as well as Voloozersky National Park, have already been compiled and submitted to the Commission for World Heritage for further consideration. According to the two-year plan developed by the Ministry of Environmental Protection, sites in Fennoskandia and Baikal are expected to be proposed in 1996 for World Heritage status.

Greenpeace of Russia initiated all this activity, and it has succeeded in reaching an agreement with the Ministry of Environmental Protection to present unique Russian territories for World Heritage status. Greenpeace did a tremendous job preparing documents, making contacts with a large number of people and organizations concerned with World Heritage formation, arranging site visits of the World Conservation Union (IUCN) Committee members, holding an All Russia-Conference on World
Heritage, and forming regional working groups to compile materials.

Greenpeace's work has been instrumental in developing a process for document preparation, that can now be used by other governmental and non-governmental organizations. Greenpeace is the major consultant for problems of expertise, nominations and requirements. Greenpeace is expected to complete several projects that are already underway in Fennoscandia and the Baikal region. Then three organizations will take over: the Institute of Nature Conservation, the Institute of Ecology and Evolution, and the Ministry of Environmental Protection as coordinator of the whole project. These institutions will select and assess proposed objects for World Heritage designation, develop methodological and legislative bases for selection, check documents and organize nomination procedures on the federal level.

All countries participating in World Heritage list compilation are supposed to have their own lists of objects with national significance, declared as “National Nature Heritage”, with defined level of protection.

Unfortunately, Russia still does not have such a list, and the questions concerning the status of National Nature Heritage and the procedures for nomination and adoption onto the list have not been resolved. The lack of developed criteria for assigning the status of either World Heritage or National Nature Heritage is retarding efforts to provide additional protection to many unique Russian territories.

World Heritage status is accorded only to areas that are already protected on the federal level. While it does not mean direct financial support, the international designation for Russian protected areas can be beneficial in many ways. First, it provides an additional guarantee of protection from economic infringements. Also, according to statements by the World Heritage Fund, the World Heritage Site status ensure emergency assistance in urgent and disastrous situations. Finally, World Heritage status for Russian protected areas is important for promoting environmental ideas among regional and local authorities and increasing awareness of the significance of protected areas for nature conservation. May the Russian natural heritage be preserved and become World Heritage!

Anya Menner is Managing Editor of Russian Conservation News.

---

**Two Approaches to the Same Mission**

*by David Ostergren*

There is strength in flexibility. Economic pressures are compelling the managers of Zapovedniki (strict scientific nature reserves) to adjust their approaches to research and border protection. Most Zapovedniki are too poorly funded by the federal government to carry out this mission effectively, but fortunately, the directors and head scientists are able to use their discretion and personal judgement to create individual management strategies for each Zapovednik.

Let's compare two Zapovedniki located in the Altai Region, the Altaiski and Katunski Zapovedniki. Both include alpine, steppe, riparian and forest biomes, and both are close to or border international boundaries. This, however, is where the likeness ends.

The Altaiski Zapovednik was established in 1932, reorganized in 1952 and again in the mid-1960's, but in general it has had a long history of federal support, including regular patrol and access by helicopter during the Soviet period. Sergei Erofeev, a fifteen-year employee, has been director for four years. Two years ago he, along with scientists, citizens and other employees, defeated a proposal to change the status and size of the Zapovednik, which is relatively large at 881,200 ha. Three hundred people, including 100 of the 130-140 people affiliated with the Zapovednik, live at the base Yalu located on Lake Teletskoye at the reserve's edge.

Access to the northern, mostly forested end of the Zapovednik is by boat from the lake, Road access to the southern edge of the reserve includes a ten- to fourteen-hour circuitous drive passing through the regional capital, Gorni-Altaisk. The road ends about 60 km from Mongolia and scientists or government inspectors then travel on foot, skis or horse to the steppe and alpine habitat of such species as the Argali Sheep and the Snow Leopard.

The relatively young Katunski Zapovednik was established in 1992, and its main office is in Ust-Koks, at the confluence of the Katun and Koks Rivers. The reserve borders Kazakhstan along its entire southern boundary. The Zapovednik is directed by A.V. Zateev, and although he had worked in the area for more than six years, he joined the Zapovednik a mere four months ago.

To access the western edge of the 150,100-hectare Zapovednik, government inspectors and scientists must travel by boat or snow machine nearly 100 km up the Katun River. Access to the
Protected Areas

eastern regions is two days by road through Kazakhstan. The area on the western slopes of Belukha Mountain may be approached by road and then on foot or horse from the northeast. This reserve has never had regular helicopter patrols, and now their cost is prohibitive. To search for violators from the air, the director occasionally joins tourists or hunters who have rented helicopters and are passing over the Zapovednik, en route to camping or hunting sites.

The ecosystem is largely alpine, distinguished by large glaciers and pure water. Rare species include the Kozel Mountain Goats, Altaiski Ular and perhaps a few Snow Leopards.

Both directors say the greatest threat to their Zapovednik is grazing by flocks of sheep and cattle and the subsequent loss of lowland habitat for winter ranges of wild sheep and mountain goats. In addition, though shepherders generally stay off the reserves, it is very likely they will trespass while hunting for food. The Altaiski trespassers are the Altai people to the west, Tuvints to the east and Mongolians to the south. Most of the transgressions in the Katun come from Kazakhstan. Both directors feel the best deterrent to grazing and hunting is not armed defense of the Zapovednik borders, but more visible activity by rangers and researchers.

For example, Altaiski Director Erofeev believes merely increasing the presence of Zapovednik personnel in the southern section would greatly reduce the amount of grazing and hunting. Federal funding just barely covers salaries, and though there has been some international financial help for educational activities, Erofeev would like to receive simple supplies such as clothing, food, binoculars and radios. A two- or three-room ranger station staffed year-round by rotating staff would suffice for protection.

Research on rare species or the ecosystem in general could potentially yield the most significant protection and valuable assistance to the Zapovednik. Ideally, a few scientists based at the station could demonstrate the reserve’s scientific value and justify its restriction to research and education. In the area bordering Lake Teletskoye and the Chulishman River, improved radio contact and increased patrols would reduce the bulk of illegal hunting for food. Erofeev believes most of the grazing can be thus eliminated, though determined poachers seeking financial reward may only be stoppable through armed confrontation.

To preserve the integrity of the Katunski Zapovednik, Director Zateev and the scientific staff (just three of Katun’s 50 employees) are taking different approaches. Educational programs for the schools within the district are their first priority. One hundred thirty schoolchildren participated in programs initiated by Zapovednik scientists and conducted by the teachers themselves. The short-term result is the children’s increased awareness of the Zapovednik and its value. The children will then grow up with a general acceptance of protected territories as good sources of clean air and water; they can also talk to their parents and thereby generate community support for the Zapovednik and its mission.

The Katunski Zapovednik staff hope to work with 300 to 400 students in 1996. Their primary goal now is obtaining a computer to print lesson plans and a semi-weekly newsletter about the reserve and the species within its territory. The director and scientists hope there will be few or no violations of the Zapovednik in ten to twenty years.

Another strategy for protecting the Zapovednik is enlarging the territory to include the entire potential habitat for the Snow Leopard. A grassroots movement to establish a national park may succeed in creating a buffer zone around the reserve.

To the south, a three-kilometer buffer zone overlapping the edge of Kazakhstan is proposed. In return, a three-km buffer zone that includes a protected Kazakh territory would be established in Russia along the Kazakhstan border.

The politics of these arrangements, however, are difficult and largely beyond the control of the director and scientists of the Katunski Zapovednik. The director intends to continue and expand patrols by government inspectors, but his long-term goals focus on an educated populace. Rafting on the Katun River through the Zapovednik is allowed for a small fee, and mountain climbers will continue their benign activity on Belukha Mountain.

The two Zapovedniki face the same shortage of funding and changing conditions, but both are adapting in a manner appropriate to their resources, skills, and creativity. If the integrity of the greatest system of land protection in the world is to be maintained, efforts and projects similar to those at the Altaiski and Katunski Zapovedniki need to be encouraged and supported locally, nationally, and internationally.

David Ostergren is currently writing a dissertation at West Virginia University on the changes in management practices on central Siberian zapovedniki since the fall of the Soviet Union.

In April, hundreds may March for Parks

by Margaret Williams and Irina Chebakova

With spring just around the corner, National Parks and Zapovedniki throughout Russia are polishing plans to hold the second annual March for Parks - an Earth Day event to recognize the role protected areas play in preserving cultural and natural heritage. In 1995, over five thousand people around Russia participated in tree plantings, park clean-ups, press conferences, school programs, nature walks and other activities. This year, March coordinator Irina Chebakova hopes that protected areas from Georgia, Ukraine, and Kazakhstan, and other republics of the former Soviet Union will host March events during the Earth Day celebration, planned for April 18-21.

Whereas 1995 was a “trial” year for Russian park managers (who adopted the idea from the Washington, DC-based National Parks and Conservation Association), 1996 is full of elaborate plans to involve local communities in the celebration of their parks.

Russian Conservation News
Protected Areas

Bolshaya Kokshaga Zapovednik will focus on children for this year's March, sponsoring a drawing and essay contests for children who live in National Parks and Zapovedniki. In Laplandski Zapovednik, Director Sergey Shestakov has successfully garnered support from the regional administration in Murmansk, which issued a regional-wide proclamation that 1996 is the Year of National Parks and Zapovedniki. NGOs such as Homeland of the Cranes are making a big push to get local schools and communities involved in Earth Day, too.

Events in Russia's capital will be held during the weekend of April 21 and 22 in Sokolniki, a city park on the edge of Moscow and in Losiny Ostrov National Park. Contributions from Human-i-tees, an environmental t-shirt company, the Eurasia Foundation, private donations and many volunteers from the USA and Russia will be used to support this year's Russian March for Parks.

Margaret Williams and Irina Chebakova are the Coordinators for Russia's March for Parks

Along the shores of Smolenskoe
Po’zero National Park: Mutual Understanding through positive action

by Irina Chebakova

"Think globally, act locally"—is a frequently cited slogan that well describes the philosophy adopted by the Director of Smolenskoe Po’zero National Park, Sergey Volkov. Director Volkov's many-tiered approach to nature protection includes strengthening law enforcement in the park, while at the same time actively seeking contacts with local administrations and community groups. In addition to the programs he and his staff are developing on the local level, Volkov maintains a close partnership with colleagues abroad, namely the Great Smoky Mountain Parks Commission, as they cooperate on environmental education projects.

In many ways, Volkov is a pioneer. Russia's National Park system is only 13 years old, and Volkov heads one of Russia's newest (this N.P. was created only in 1992). In a time of an unpredictable economy and lack of precedents in park management, Volkov and his staff are essentially building the park from ground zero. Located in the center of European Russia, Smolenskoe Po’zero N.P. represents a diversity of landscapes within a relatively small areas (146, 200 hectares). Much of the relief is dominated by the 35 glacially-formed lakes that gave the park its name (po’zero in Russian means along the lake). The lakes vary in size, and despite the proximity of one to another, each has a unique character and surrounding community.

Although the park is situated in a highly developed area, about 582 hectares of pristine forest of a type that has almost vanished from central Russia have remained preserved. These forests of mixed conifer and broadleaf trees are now strictly protected by the park. The park's other special natural features includes its sphagnum bogs, rich in animal and plant life. Smolenskoe Po’zero's wildlife includes 10 species of amphibians, 5 species of reptiles, 57 mammals, 190 birds, 28 fish species, and more than 2000 invertebrates. In addition to its natural treasures Smolenskoe Po’zero harbors archaeological sites from the Stone, Bronze, and Iron Ages. Ugrik-Finnish settlements from pre-Slavic times, reminders of which remain in the names of local rivers and lakes. The park is also full of monuments to Slavic history and culture, among which is the ancient Slavic city Verzhavsk.

As a “newcomer” to the region, the park has many problems, most of which are related to the local communities. When the park was created, its borders were drawn to incorporate 137 villages, with a total population of 7000 people. Most of these were residents of collective farming villages who have suffered hard from the failing economy and restructuring of the collective farming system. Residents are expected to observe park regulations (just as a visitor would) in places they recently roamed at their own will. Although they can continue to pick berries and mushrooms on park territory, there are clear limits on other activities. As park rangers continue to make themselves visible, gradually local residents are coming to accept the new limitations placed on land use in the park.

In addition to strict law enforcement, park managers are finding other ways to earn the attention — and respect — of the local people. The park has begun to provide fuelwood for residents on park territory. (While it may seem surprising to western readers that fuelwood is cut and sold inside the park, it is a question of necessity. In this arrangement, both sides benefit and the park administration can control the location and volume of timber being cut).

The park has made many contacts as it actively pursues its program in public outreach. Cooperating closely with children's environmental organizations in the region, the park administration is slowing gaining popularity in the small farm villages, as well as in Lasolnsk Region. For example, the park's outreach programs includes work with many local and regional schools in Smolensk, an historic city (with a population several hundred thousand) about an hour's car ride away from the park. In addition to schools, the park works closely with a children's environmental club, the Children's Forest Republic. This kids' club is known for orchestrating role playing that tests participants' knowledge about history and ecology.
Donning costumes for theatrical performances, the kids also learn about pagan traditions and human interaction with nature. The “Forest Republic” is extremely popular in the Smolensk region, from which around 4000 children come each year to the National Park.

One of the unique aspects — and strengths — that has influenced the work style at Smolenskoe Po’ozero National Park is the large number of staff who had previously worked in Zapovednik and have professional backgrounds heavily weighted in research and science. Their experience is evident in the thorough and precise approach the scientists follow, as they are familiar with methods of collecting and organizing scientific data. In Smolenskoe Po’ozero N.P., scientists work according to the datebook Priroda (Chronicles of Nature), which details the functional role of Nikita Popov scientists follow closely in monitoring climate, flora and fauna populations, phenology, and other uniform parameters in the study of ecosystems.

The scientific staff work closely with the law enforcement inspectors, recruiting them to conduct inventories, population counts, and other field work. Together, the inspectors and scientists are trying to develop the most effective ways of conserving nature in the park.

Now, even the local children from all over the region — and as far as the Baltic region — are becoming involved in scientific research. The Children’s Forest Republic has been the most active of kid’s groups. Since 1987, even before the park was designated, they have conducted research, describing flora and fauna on 30 hectares of what is now park territory. These budding field scientists identified nesting sites of rare birds, hill communities, and collected data on a species of birch tree. The kids are compiling the material, which will be presented to the park for its continued use. If park managers can procure necessary funds, they will create an exhibit of the work completed and collected by the kids. One project demonstrates how the application of scientific, communication, and teaching skills can build a program of public support.

In the village of Przewalsk (the birthplace of the well-known naturalist-explorer, Mikhail M. Przewalski, who described and named the rare Mongolian horse, Equus callabus, Przewalski’s horse) the park administration has created a sort of mini forest school. Here, children (aged 14-16) can learn from park employees skills and knowledge needed to work in a National Park. The “junior rangers” in this extracurricular program have already shown off their new knowledge in public, entering and winning regional environmental contests. The junior rangers are perhaps the park’s most loyal and helpful allies. Last year, it was they who participated in the March for Parks on Earth Day with the greatest enthusiasm, planting trees, cleaning up tourist sites, and building a 7-km interpretive nature trail. The trail passes through a menage of ancient settlements and ruins, WWII battle sites, and places visited by the famous Przewalski.

In addition to developing young naturalists and potential conservationists, Director Volkov is energetically working to increase the skills and qualifications of the park staff. This year, a series of courses in continuing training will be offered to the staff. The park is becoming an educational center for foreign colleagues as well. Last year (1995), the park participated in an international conference held in Portland, Oregon by Concordia — University-associated organization. This year, Smolenskoe Po’ozero National Park will host a similar conference for Russian, American, and Germans. The conference will bring together state industry, the private sector, and conservationists to address issues of biodiversity conservation and sustainable development. Volkov’s efforts are slowly — but surely — succeeding in weaving together disparate groups and individuals that, since the park was established, few had a reason to oppose new rules and regulations.

If Volkov’s hard work pays off, the community will increasingly begin to see itself as caretaker of the park — a place from which they can benefit, and which preserves their own rich natural and cultural heritage.

Irina Chebakova is an expert on Nature Parks in the Biodiversity Conservation Center.
FOCUS: CONSERVING LAND
IN RUSSIA - A CONTEMPORARY
LOOK AT THE PAST

From the Editors: In recognition of the 80th anniversary of Russia's first Zapovednik — Barguzinskii, on the northeast shore of Lake Baikal — we take a closer look at the philosophy that guided the creation of an astounding network of wilderness areas. These places protect hundreds of types of ecosystems and species, and they play a crucial role in global efforts to conserve biological diversity. Despite the contributions Zapovednik scientists have made to research in ecology, ornithology, soil science and many other fields, few westerners are aware of the vast wilderness system that was meant to provide “model” ecosystems free from human influence. (For more information, see the listing for Models of Nature by D. Weiner in RCN's “Conservation Library” section.)

The system of Zapovedniki became, and remains, the gem of the natural protected areas of Russia, Ukraine and other post-Soviet states. It was envisioned early in the 19th century by a remarkable group of ecologists, geographers and biologists who lived in Russia and Ukraine and traveled throughout the Russian empire. Much of what they had written and said became implemented in the Zapovedniki system later in the century. Below we are delighted to present a short collection of quotations from these “Zapovedniki forefathers” as they appear in Vladimir Boreiko's recently published book, The History of Protected Areas in Ukraine (published in Russian by Kyyv Ecological-Cultural Center, 1995). An activist and environmental educator, Boreiko is one of Ukraine's leading specialists on protected areas and on the use of mass media to build public support for them.

This collection exemplifies the scientific approach to preservation which was so characteristic of the early classics of Eurasian ecological thought. Unlike the chiefly recreationist-aesthetic rationale behind the American national park system, Zapovedniki were conceived first and foremost as scientific laboratories in the wild. Since very little is known in the west about the works of the people who envisioned Zapovedniki, contemporaries of John Muir, George Perkins Marsh and Aldo Leopold, we hope that you will enjoy this brief introduction to the names and ideas of the great conservationists of the Eurasian continent, and benefit from learning more about the history of Zapovedniki and conservation in northern Eurasia.

Commandments of the Forefathers
of Zapovedniki

(Excerpts from Chapter Two of The History of Protected Areas in Ukraine by Vladimir Boreiko)

Vasili Dokuchaev, the founder of soil science and the earliest advocate of large-scale preservation of wild ecosystems, said:

"In order to restore the steppe, if possible, to its pristine state,... to witness that mighty influence of the virgin herbaceous cover on life and the quality of ground and surface water,... to prevent the ultimate destruction of the steppes... to preserve this remarkable steppe world for our descendants forever [and]... to keep it [intact] for scientific (and practical) purposes... to [prevent the loss of] an entire series of peculiar plant and animal organisms of the steppe in its struggle with humankind... the state should put under [permanent] protection a larger or smaller tract of pristine steppe in southern Russia and put it at the disposal of those primeval, and now vanishing, organisms. And if a permanent research station is established in such place, there is no doubt that the expenses... will bring quick and plentiful return." (1895)

Dokuchaev was the first to come up with the brilliant idea of establishing a long-term research station at a preserve, which later would be successfully implemented in the Soviet Zapovedniki.

Grigori Kozezhevikov, a professor of Zoology at Moscow State University, was one of the first scientists in the Russian Empire to advocate the creation of Zapovedniki idea from a scholarly viewpoint.

"In order to study nature, we must strive to preserve the land in a pristine, untouched state, protecting the most typical examples of such territories. Of course, most of all we need to protect the virgin steppe and primeval taiga forests. What is the purpose of such undisturbed areas? First of all, there is a purely scientific, and then also a practical one, since only scientific research gives us a firm basis for the practical use of nature..."

"When we are left only with depleted, and later artificially cultivated nature, without having even a small piece of more or less pristine nature, we will be unable to solve the many exciting riddles which are presented to us by plant and animal life. Areas designated for pristine nature preservation should be of a rather large size so that they will not be influenced by the cultivation of adjacent plots, at least in places as far as possible from the edges of such plots.

"Such preserves should be protected ("zapovedny") in the strictest sense of the word. No wildlife hunting or trapping in any form should permitted, save only for scientific purposes. No management altering the natural struggle for survival can be applied there,... As for vegetation, no trees should be cut, nor even hay produced, and all types of artificial planting should be explicitly prohibited. We need neither to delete, add, nor improve anything. Nature should be left alone, so that we will be able to observe the results. Zapovedny areas have tremendous scientific value; thus, the creation of such areas should be first and foremost the business of the state." (1908)
A member of the Russian Academy of Sciences and a gifted botanist, Ivan Borodin added some important points to Kozhevnikov’s views:

“We have already understood the necessity to protect the monuments of our history. It is time now to realize that the most important of those are the remnants of nature that surrounded our ancestors. To lose these remains would be an unforgivable crime. Regardless of how many protected areas our neighbors will create in surrounding countries, such territories will not be able to replace our future Zapovednik. Stretching for huge distances in two parts of the world, we [Russia] possess unique natural treasures. Such objects are no less unique than the paintings of Rafael — it is easy to destroy them, yet there is no way of restoring them thereafter. The creation of Zapovednik is important for educational purposes.” (1914)

Dmitri Solovyev added: “The Zapovednik is an area designated as protected in perpetuity (emphasis added — V.Boreiko).” (1918)

The father of Russian forest science, Professor Georgi Morozov suggested that Zapovedniki should be established according to a long-term, comprehensive plan and, if possible, using botanico-geographical regions to ensure representation of different types of vegetation and fauna. As a result, Zapovednik would preserve “standard examples” of the wild landscapes in all biogeographical regions in the country. (1910)

[This idea of geographical representation within protected areas was a new and radical one. It was not recognized as important in the U.S.A. until much later!]

Aesthetic reasons for preserve establishment were also popular among early Eurasian conservationists. Valeri Taliyev, an associate professor at Kharkov University in Ukraine, wrote in his book, Protect Nature:

“The beauty of nature has a high value on its own. It should be preserved regardless of petty practical concerns. A scenic landscape; a picturesque road, a cliff, a place full of memories — these are as important national treasures in the spiritual sphere as mineral deposits in the material one. Since all territories are unique, nature protection should encompass the greatest diversity of the territories possible.” (1914)

One of the greatest advocates of Zapovedniki was a world-class entomologist and geographer from St. Petersburg, Andrei Semenov-Tyan-Shansky. In addition to earning recognition for his scientific work and travels, he was also known as a translator of Horatio and a Pushkin scholar. He wrote:

“Zapovednik should... provide an ample and educational illustrative background to the vast picture of the harmonious development of the natural processes that have shaped the particular landscape, climatic or soil zone before humans disrupted these normal conditions.” (1913)

Semenov-Tyan-Shansky later added, “Nature... which is free and yet untouched by man is a great museum that we need for our future enlightenment and development of mind — a museum that, once destroyed, cannot be recreated by human hands... [Considering] the exquisite and indispensable aesthetic pleasures pristine nature gives us, elevating our soul, we also have a great moral duty as nature’s children [to protect it]... Creating and respecting the laws of a rational society, we cannot help but notice that everything that has lived on the Earth’s surface...has every right to live free forever...” (1919)

Present Strategies to Ensure a Future for Protected Areas in Russia

Report compiled by Anya Menner

Throughout Russia and the former Soviet Union, changes in the economy, federal legislation and social structure have been sharply felt by those in the system of protected areas. The changes have wrought new problems for protected areas — severe budget cuts, encroachment on protected wildlife and resources and lack of public support — to name a few. In the transitional post-Soviet period, protected areas also must adapt in order to survive in modern socioeconomic conditions. And the choices managers and legislators make in the next few years to facilitate those adaptations will be critical, possibly determining the future of conservation in the country. What does the future hold for the protected areas of Russia?

Russian Conservation News conducted interviews with more than a dozen experts — managers, academics, activists, and professionals in the protected areas. Their answers to three questions are summarized below. (See the following key to reference the abbreviations.)

Experts interviewed:

Dmitri Aksenov (DA), expert in forest conservation (Biodiversity Conservation Center)

Irina Chebakova (IC), expert in National Park management (Biodiversity Conservation Center)

Natalia Danilina (ND), Deputy Director of the Department of Nature Reserve Management (Ministry of Environmental Protection)

Yuri Dobrushin (YD), expert in protected areas planning, Rosgiproles Institute (Federal Forest Service)

Konstantin Effron (KE), member of the Protected Areas Commission of the Russian Academy of Science

Tatiana Korneeva (TK), member of the Protected Areas Commission of the Russian Academy of Science

Russian Conservation News
because the funds are lacking is arguable. Apparently there are plenty of funds available to wage war games in Chechnya. But even without funding, new protected areas should be established — at least so that natural resources will be saved from exploitation and any other development.

**MK:** The task of developing National Parks requires designing a system that represents a variety of nature, as visitors will expect to have the opportunity to become familiar with the diversity of landscapes in this country. From that point of view, the already existing National Parks are insufficient. One of the important and necessary aspects of creating protected areas is the establishment of a regime of nature protection. The development of tourism and the process of turning a park into a well-equipped, welcome site for visitors will occur gradually. Looking to the west as an example, it's clear that quite a long period is needed to develop such conditions.

**DA:** It's of foremost importance to create new protected areas. They present no financial competition for existing areas. Actually, many protected areas can be created with very little investment, such as Zakazniki (special purpose reserves) and Nature Monuments. Currently the old way of exploiting resources [when all property and natural resources were controlled by the state] is coming to an end, while new methods haven't yet been put into place. More pristine land should be protected especially now [during the transition]; industrial damage will take a far greater toll on nature than, for example, poaching.

**RCN:** Considering the current economic crisis in Russia, does it make sense to keep creating new protected areas, or is it better to concentrate resources on maintaining already established protected areas?

**ND:** Creating new protected areas is absolutely necessary. The current network of protected natural areas in Russia is insufficient. Now we have a situation where land can be set aside without compensating the landowner, since the state still owns these lands. The establishment of new protected areas does not pose any financial competition to existing ones. A law which signs into creation a new protected area automatically allocates some governmental funding, but it's a minuscule amount. For example, recently the Ministry of Finance allocated 900,000 rubles ($192) for the establishment of five new Zapovedniki.

**NS:** In my opinion, the idea that protected areas should not be created has benefited nature protection. But development of the private sector as a whole is continuing, and we must increase the rate of establishment of new protected areas while privatization of land still has not yet begun.

**MK:** It is much easier to coordinate and negotiate with organizations and land-users occupying government land than with private owners, who must be paid for their potential losses [of income that could be earned with development] for land that is placed in conservation.

**NS:** Land that is privatized will have to be purchased in order to conserve it, and if the government has too little funds now to pay even the meager salaries to the employees of protected areas, certainly there will be too little funds to purchase lands for conservation.

**RCN:** What are the preferred types of protected areas to create in this difficult period (if it is possible to generalize)?

**NS:** It is really impossible to generalize. For each individual situation, there is a separate solution. I must express my opposition to the idea which has been circulating recently. That theory claims that the Russian Zapovednik is a product of totalitarianism, and thus Zapovedniki have no future in the post-Soviet era and should be replaced by National Parks.

**IC:** It is extremely important to create federally protected areas, as state ownership of a designated site will guarantee its protection.

**KE:** Especially after the war [WWII], great amounts of work were completed in order to plan a network of Zapovedniki. [The plan was published in 1958 in Russian under the title "A plan for the geographic network of Zapovedniki of the USSR," by E.N. Lavreko, V.G. Geppter, V.G. Kinkov, and A.N. Formozov.] The plan was the result of expeditions during which scientists developed comprehensive, large-scale maps describing plant types, forest cover, soil classification and other data. New protected areas should be created according to this scientifically-based plan.

**ND:** The mechanism for establishing Zapovedniki is well-developed and, without a doubt, this is one of the best forms of protected areas. However, the protection regime is very strict and can have the effect of isolating a local community. In Russia we clearly do not have enough variety in types of protected
areas, and we need to look at other potential forms that could be used.

**TK:** In order to take the pressure for tourism away from Zapovedniki, and at the same time satisfy the local need for and interest in tourism, it's necessary to establish National Parks.

**DA:** Generally, it is necessary to establish as many protected areas as possible on as much land as possible. The type of protected area is not so important, as long as the main forms of land use are prohibited, such as construction of buildings, power lines, roads, mining, timber harvesting, grazing new lands, and molluscoration. Protected areas should act as an obstacle to the development of new lands. Zakazniki, for instance, prohibit hunting, but allow some cutting of timber and grazing. Development should be intensive, not extensive, localized on lands already settled.

**EM:** Zapovedniki should continue to exist as the cornerstone of strictly protected areas, and other types of protected areas can be developed on that foundation. Most likely it would make sense to simply create reserves with particular types of infrastructure. Keeping traditions is important and perhaps even the priority. The best protected areas in the world of conservation, the system of Zapovedniki was established here and should be preserved. Any relaxation of the strict protective regime in the Zapovedniki and its buffer zones should be impermissible.

**YD:** In the new [economic-political] situation, it will be necessary to transfer lands for conservation from private landowners and land users directly to governmental agencies. What is needed is a united, sustainable system of protected areas established at different levels (local, regional, national) but the creation of such an ecological framework is far away, considering the lack of organizational, economic and legal mechanisms.

RCN asked employees in several National Parks and Zapovedniki to describe the most difficult problems in creating protected areas.

**Valdaiski N.P.:** The existing parks are so impoverished that it discredits the park's authority in the eyes of the local community. The greatest problem facing the establishment of new protected areas is the low level of interest by local administrations.

**Russki Sever N.P.:** It's important that the subjects of the federation (regional governments) and the federal government continue to offer assistance to protected areas after these areas are created, instead of leaving them to the hands of fate.

**Zurat-Kul N.P.:** Subjects of the federation (regional governments) usually support only the idea of creating parks, and after they have established the park, they regard it very poorly, offering only prohibitions and limitations instead of help.

**Pinezhski Zapovednik:** It's extremely important that managers of Zapovedniki and National Parks have a world view, with an understanding of different approaches to problem solving and evaluating the activities occurring in the given protected area.

**Visinski Zapovednik:** The worst problem of all is the lack of support from local communities. To resolve that problem, it would make sense to relax the strict regulatory regime of Zapovedniki. Finally, the lack of preparation and professional background of the managers of protected areas is another problem facing protected areas today.

**Voronezski Zapovednik:** The federal government has no clear policy on the management of protected areas. And on the regional level — regional governments seldom understand the significance or value of protected areas.

**Berezinski Zapovednik:** The greatest challenge is overcoming the contradictions and lack of understanding of authorities, and even local people, by earning their support and trust.

---

**LEGISLATION**

**Environmental Impact Assessment and Sustainable Development in Russia**

**by Oleg Cherp**

Though Environmental Impact Assessment (EIA) has been a regular part of every legislative proposal in the U.S. since 1970, EIA began being introduced into Soviet legislation only in the mid-1980s, and largely under strong western influence. Adoption of the western concept of the EIA process has resulted in the development of two distinctive and somewhat conflicting regulatory concepts. This article outlines the history of EIA, its relevance to sustainable development and the problems connected with introducing EIA in Russia.

**Brief Background**

On January 1, 1970 President Nixon signed into law the National Environmental Policy Act (NEPA), requiring every major proposed federal action to include a statement on environmental impacts, unavoidable environmental effects, possible alternatives, comparison of short-term uses and long-term productivity, and any irreversible commitments of resources.

The resulting EIA process was defined not so much by the provisions of the Act itself, but by the verdicts of American courts, which have generated what has been termed the "NEPA Common Law." American EIA typically includes several stages: identifying key environmental impacts, predicting their magnitude and significance, consulting all parties that may be influenced by the planned development, documenting all these things and submitting the documentation (the Environmental Impact Statement, or EIS) to the designated authorities, who are then supposed to use it in reaching a decision on the project under consideration.

The success of EIA in America influenced other western and developing countries to adopt similar procedures, from the 1970's to the 1990's. In the 1980's EIA was adopted as an element of project appraisal by such multilateral development institutions as United Nations Development Program, the World Bank and European Bank of Reconstruction and Development.

The European parts of the former Soviet Union have adopted formal EIA legislation only in the late 1980's to mid-1990's, at a time of great social and
economic transition, and the EIA systems reflect the contradictions of that period. EIA legislation was translated from the West because at that time western systems of political organization typically served as models here, or it was designed to comply with international law in hopes of achieving closer integration with the international community. For instance, the Russian Minister of the Environment explicitly related the 1994 Russian adoption of the formal EIA procedure to the need to comply with the Espoo Convention on EIA in a Transboundary Context.

**EIA and Sustainable Development**

EIA addresses a basic issue of sustainable development by dealing with environmental impacts at the planning stage, rather than leaving future generations alone to tackle the environmental consequences. Though it is not the only type of environmental regulation that works at the planning stage, EIA suffers from the existing norms, standards, sitting criteria and permit procedures by attempting to balance the expected, development-aided increase in man-made capital and the depletion of natural capital which may reduce the ability of future generations to use it.

From the perspective of sustainable development, the ideal EIA process would successfully resolve a three-fold difficulty in comparing man-made and natural capital. These are (1) the uncertainty in predicting environmental impacts, (2) the difficulty in putting a monetary price on environmental changes, especially those of an irreversible nature, and (3) conflicts of interest. A conflict of interest arises when the environmental and economic costs and benefits of development are compared on a macroeconomic — national or global — scale without proper attention to the expected redistribution of costs and benefits among regions and social groups. For example, what is “sustainable” for a given nation as a whole may be “unsustainable” for certain communities within that nation.

The ideal EIA process would diminish uncertainty, address the irreversibility of environmental impacts, and provide a chance to resolve conflicts of interest through comprehensive environmental analysis, interaction with the design process and various communication- and participation-enhancing procedures. In sum, a good EIA process starts early in the planning stage; focuses on major developments and impacts; is linked to a decision-making process; continues throughout the project’s life-cycle; is complemented by formal training and informal education; and encourages communication, education and participation throughout the process.

**EIA in Russia**

Though Russia has adopted EIA legislation on the pattern of western political systems, Russia has at the same time inherited a centralized system of economic planning, which includes the traditional governmental process of appraising development plans and projects. This has resulted in reliance on government agencies for environmental impact assessment. Typically, those same governmental institutions are also involved in making decisions on designing and executing proposed projects.

These two tendencies in Russia were institutionalized in two different processes advocated by different schools of thought within the government. These distinct, somewhat conflicting regulatory concepts are the State Environmental Review (gosudarstvennaya ekologicheskaya ekspertiza, SER) and the Assessment of Environmental Impacts (otsenka vosdyavivya na okrugayushchuyu sredu, OVOS).

**History and Comparison of SER and OVOS**

The SER, an "outcome-oriented" concept, is directed towards trying to achieve the same results as the western EIA process by relying on the traditional Soviet decision-making system, OVOS, a "process-oriented" approach, aims to replicate the western EIA process, in hopes that results similar to those in the West would be achieved.

From 1988 to the present, many legislative acts in Russia, among them the Federal Environmental Protection Law (1991) and the Federal Environmental Review Law (1995), have established and strengthened the practice of environmental review of all planning documents by the Ministry of the Environment. The Russian word for this [SER] practice, ekspertiza, literally means "expert review." SER is an exact replica of the traditional process of project appraisal used in centrally planned economic systems; it has been limited mainly to checking a project's compliance with environmental norms and standards and has lacked some essential features of the western EIA process. For example, it has not provided for consultation and public participation, nor for evaluation of the complex and uncertain impacts of significant new development.

The OVOS concept has been developed by Russian environmental specialists and has been reflected in some of the Ministry of the Environment's guidelines and instructions of the late 1980's and in a 1994 Order introducing special "OVOS Regulations." It focuses on establishing an adequate process for identifying likely environmental impacts, consulting concerned parties and balancing the environmental impacts against social and economic considerations. Though the OVOS approach was more receptive to the general principles of western EIA practice, it has failed to be effectively incorporated into the existing decision-making procedures in Russia, where there has been no mechanism similar to American courts and citizens' groups that would make OVOS provisions work as NEPA worked in the U.S. in the 1970's.

**SER, OVOS and Sustainable Development**

Several reasons for SER's failure to meet the requirements of a good EIA process are pertinent to the concept of sustainable development; they are as follows:

* SER's system of checking environmental impacts against universal standards and criteria is unable to deal with complex, synergistic, uncertain and irreversible impacts.
* SER is not concerned with reviewing alternatives and comparing environmental and economic costs and benefits.
* SER does not provide for proper consultation and public participation and cannot therefore be an instrument for resolving conflicts of interest.
* SER is unsustainable on its own and may not survive the ongoing social transition.

![Long-eared Jerboa](Eusherotetes_nicae)  
Drawing by V. Smirin
The Russian OVOS system is not fully operational yet, and there is the possibility that it will remain a theoretical concept whose sphere of action is restricted to the paper on which the Ministry of the Environment's laws are written. In that case, obviously, OVOS would be of littler relevance to sustainable development. If OVOS' role is strengthened, it may not potentially be hindered by SER deficiencies; however, OVOS will also be incompatible with the traditional decision-making system and other social mechanisms. In order to make OVOS effective, it seems necessary to destroy or radically change many key elements of Russian government and society. Are such radical transitions consistent with the principles of sustainable development? Will serious, irreversible damage to ecosystems be allowed to occur while the country is struggling with reforms of this type?

This writer believes that in order to move towards the model of a sustainable society, it is necessary to integrate OVOS' ability to address complex social and environmental challenges with SER's good relations with post-Soviet societies. More specifically, this may be done through implementing the following set of recommendations:

Environmental Impact Assessment should be performed by experts who are selected through an open competitive procedure administered by the Ministry of the Environment.

* EIA procedure, especially the process of consultation and public participation, should be codified in sufficient detail.
* New EIA regulations should make governmental support for EIA training and research mandatory.
* The Ministry of the Environment should define its role not as conducting environmental assessments, but as developing guidelines, organizing training and regulating quality control.
* In regulating the EIA process, the government should enforce not only "environmental standards" but also "standards of EIA procedure."

Oleg Cherp is the NIS Program Director of ECOLOGIA in Moscow.

---

**MANAGEMENT**

**Conference on Population Study Methods: A call to nature reserves**

by Dr. Vladimir Zakharov and Dr. Alexander Baranov

The international conference New methods of population study: a non-invasive approach was held in Moscow October 23-27, 1995. This conference featured the V International Symposium BIOTEST: Estimation of the Condition of Natural Populations by Developmental Homeostasis, which aims to develop further a new approach in nature health assessment. In addition, the training seminar Monitoring of Nature Populations Status in Wildlife and Anthropogenic Environment in the context of Letopis Prirodi (Chronicles of Nature) Studies took place for Zapovedniki staff.

Over 200 oral presentations, posters on phenetic, molecular, biochemical and immunological methods of population study demonstrated the latest achievements in the area of population monitoring and initiated interesting discussions. Protected areas researchers presented and discussed the current status of population monitoring on reserves, various study methods and results.

Experts from Zapovedniki pointed out the neglect of fundamental science in developing new study methods. Besides utilizing concepts of biodiversity conservation, special attention should be paid to increasing the effectiveness and accessibility of methods for real assessment of populations in conditions of both varied anthropogenic impact and protection.

Lastly, Zapovedniki experts issued a collective statement to the Department of Nature Reserve Management, the Center for Monitoring of Russian Ministry of Environmental Protection, and many international and national environmental organizations requesting:

- financial support for the publication of a methodological manual of Biotest
- development of research on species and ecosystem health monitoring:
- the possible creation of regional Nature Health Monitoring Centers based in Zapovedniki.

This conference was organized by mutual efforts of the Center for Russian Environmental Policy, Russian Affiliate of the International BIOTEST Foundation.

---

**Editor's note:** For years, Letopis Prirodi (Chronicles of Nature) has been the major and often only scientific monitoring program in Zapovedniki. (See RCN #2 for a description of the Letopis Prirodi and related problems). Developing new approaches that enable Zapovedniki to act as scientific laboratories adopted and applied to current needs in conservation is not an easy task. The process is impeded by poor communication and information exchange among Zapovedniki and other scientific centers, lack of incentives for Zapovedniki staff, conservative attitudes, and to crown it all - a financial crisis in Zapovedniki. The following articles present a discussion of steps that can be taken in environmental monitoring in nature reserves.

Department of Nature Reserves Management of the Ministry of Environmental Protection, Institute of Developmental Biology, International Fund for Animal Welfare, and Russian Program Office of the WWF. Financial support provided by the International Scientific Foundation, Center for Russian Environmental Policy, WWF, and Pew Scholars Program in Conservation and Environment (scientific grant to professor A.V. Yablokov) enabled 248 people from the former USSR, Russian scientific centers and universities, and 28 Zapovedniki to attend.

Dr. Vladimir Zakharov and Dr. Alexander Baranov report from the Institute of Developmental Biology.
How Are You?
(A non-invasive approach to environmental health monitoring)


How are you? — the question we address people when we are anxious about their health. We are very anxious now about the state of the environment, ecosystems and species and want to know how they are. We cannot get a direct answer though, and often only notice the danger when the problem is already out of control. There is an urgent need to identify techniques to properly monitor environmental health and to know answers before species are lost. An efficient approach to monitoring should:
- estimate positive or negative effect of any ecological change
- be sensitive to even initially reversible ecological change
- be applicable for majority of species and impacts
- assess the impact on the population level
- be relatively simple and inexpensive.

BIOTEST — a new Integrated Biological Approach for Assessing the Condition of the Natural Environment provides the opportunity to get answers about the well-being of natural populations of various organisms under a wide range of both natural environmental conditions and anthropogenic effects. This approach is satisfied the above criteria and fulfill the major task of assessment — to know how you are.

A fundamental indicator of such well-being is the efficiency of the physiological processes which ensure proper development of organisms under certain environmental conditions. BIOTEST aims to assess the efficiency of developmental homeostasis where changes reflect basic changes in physiological functioning and can manifest themselves from the molecular to the organismic level. The generality of developmental homeostasis ensures that it is common to the entire biotic community, thus enabling a wide variety of species, both plant and animal, to be used for assessment.

BIOTEST uses a variety of independent detection techniques which in general assess the efficiency or changes in the physiological processes responsible for developmental homeostasis. Based on the functional level at which changes are manifested, all techniques can be categorized into five basic groups: morphological, physiological, genetic, biochemical and immunological. The underlying basis for the majority of these approaches is departure from the optimum level, indicating that organisms are exposed to environmental stress. The simultaneous analysis of many biological parameters for a broad variety of living creatures reduces risk of incorrect evaluations of the environmental well-being. Two stage integration of the results at the individual and ecosystem level is a way to provide us with a reliable estimate of the environment and possible change.

There are two options of how to use BIOTEST: for areas of special concern, the full BIOTEST system seems to be needed; while for brief screening of a large area, it is possible to use a less complex, but still rather effective, system of BIOTEST techniques limited to the simplest and cheapest methods (based mainly on morphogenetic estimates).

BIOTEST can then be applied in two main ways often complementary in integrated problems solving:
- monitoring consequences of any kind of human activities, including anthropogenic agents (chemical and physical) and changes in habitats;
- background monitoring which provides reference data for any assessment and can act as an early warning system.

BIOTEST methodology provides the accurate and integrated information on the environment, wildlife and human health urgently needed to harmonize the relationship between economic activity and preservation of the natural environment. The International BIOTEST Foundation and its Moscow affiliate were established in 1991 to ensure the development, promotion and wide application of the new BIOTEST methodology.

BIOTEST brochure can be received upon request from Moscow Affiliate of Biotest Foundation. See contact list for address.

Dr. Vladimir Zakharonov is President of International Biotest Foundation and its Moscow affiliate.

---

Monitoring programs in Russian Zapovedniki: Biotest and Letopis Prirodi together

by Alexander G. Nikolaev

(excerpts of the report on the Conference: New Methods on Population Study)

Initially Russian Zapovedniki (strict nature reserves) were established with the goals of nature conservation and long-term monitoring of natural processes. Since the end of the 1930s, the specially developed program of monitoring, named Letopis Prirodi has been the obligatory program for all Zapovedniki. The basic principles of Letopis Prirodi have been preserved and still guide Zapovedniki scientists today. Invaluable information from Letopis Prirodi enables to evaluate dynamic processes over long time.

Editor's note: Voronezhski Zapovednik has been working in collaboration with the Institute of Developmental Biology of the Russian Academy of Science for 15 years using phenetic approaches in population monitoring. For several years, the Zapovednik has served as a test site for implementation of Biotest approaches, opening possibilities to update Letopis Prirodi.
However, in recent years, methodology and way of data generalization have been highly debated. In many aspects acquired data look fairly obsolete. Modern views and approaches necessitate change in methodology, and, in particular, the introduction of alternative or complementary programs that can provide successive data acquisition and preserve the informational capacity of Letopis Prirodi.

As we see it today, one of the major goals of Letopis Prirodi, especially in terms of its application is to define the most effective indicators of biota status and possibilities for their use in environmental quality control. To this end, the goals of Letopis Prirodi converge with the concept and methodology of the BIOTEST program.

BIOTEST is based on modern theoretical and methodological views and reflects recent achievements in environmental biology. Synthesis of these two approaches will allow elimination of certain archaic elements of Letopis Prirodi without rejecting the advantages of this program.

The BIOTEST approach provides an assessment of the vital capacity of plant and animal groups, including rare and endangered species important for scientific research in Zapovedniki.

Fundamental for BIOTEST definition - norm of development, could be defined only in Zapovedniki, where the information on the indicative species is stored. Also Zapovedniki studies data contribute to BIOTEST providing the basis for differentiation of developmental changes (caused by disturbances in the environment) from deviations caused by natural factors (fluctuations of biotopic, genetic or other types of natural processes and systems). The main advantage of combining approaches is to increase assessment reliability as well as to open new possibilities in Zapovedniki application. If, theoretically, there are no obvious contradictions between monitoring approaches, the problem arises in changing the existing organization and management of scientific research in Zapovedniki. It is up to the administration of Zapovedniki to develop the working procedures for data acquisition by means of complementary programs, and this should be done taking into account the reduced financing and limited staff capacities.

Alexander G. Nikolaev works as a Senior Researcher in Voronezhski Biosphere Zapovednik.

---

**LETOPIS PRIRODI and BIOTEST: rivals or allies?**

**Comments on Conference proceedings**

*by Evgeny Shvarts*

Traditionally Letopis Prirodi, probably the first long-term ecological research complex program in the world, was always considered a core part of scientific studies in state reserves. The deep scientific financial crisis in all countries of the former USSR profoundly touched the small and remote scientific centers of Zapovedniki. Researchers have had to seek alternative funding sources as well as analyze the actual effectiveness of their Letopis Prirodi program. Zapovedniki are federally protected territories, and lack of federal funding, clearly anticipated in the near future, stresses the importance of finding financial support at regional levels.

But local authorities, especially in economic crisis, coupled with an almost completely dissipated Soviet middle class, are hesitant to support studies, for instance, on dynamics of small mammal numbers, variability of higher plants, or inventories of aqueous invertebrates.

In such a situation, the BIOTEST program emerges as a well-developed and useful methodology to assess environmental health and quality. It also has potential to convey the necessity for local administrations to assess environmental quality with the purpose of health and food quality protection within the traditional ideology of Letopis Prirodi — long-term monitoring of natural population status on reserve territories. Moreover, it helps to perform a significant breakthrough in the thinking of many old scientific groups in Zapovedniki — that it is necessary to monitor populations status not only on reserves but also beyond reserve borders, in habitats with varied degrees of anthropogenic impact. In this way, ideology of biosphere reserves can be successfully adapted to the Russian system of Zapovedniki without detriment to the latter (i.e., without introducing zones). Regional authorities and decision-makers tend to support regular assessment of environmental and food quality rather than ideas of biodiversity conservation.

At the same time I believe that complete synthesis of Letopis Prirodi and BIOTEST programs is not appropriate and hardly possible. I doubt that methodology of BIOTEST as typical population methodology is ideal for studies on dynamic processes at the ecosystem level; for example, I cite the effect of global climatic changes on ecosystem functioning, succession dynamics of ecosystems, cycling of ecosystem functioning, and other processes less appreciated by local populations, though not less important. Both programs can be most effective as complementary to one another, allowing scientists to regularly modify and optimize both the Letopis Prirodi program itself and the routine collection and processing of observational data.

In conclusion, I would like to emphasize the tremendous personal efforts of Dr. V. Zaharov and Dr. A. Baranov to find time and vigor not only for organization of the International Conference and Seminar, but also for arranging the arrival of Zapovedniki staff members from Russia, Belarus, Kyrgyzia, Kazakhstan and Ukraine. I am positive that for many of them this occasion became an important source of support not to part with the Zapovednik as their working place.

Dr. Evgeny A. Shvarts is a Chairman of Biodiversity Conservation Center Council.
NGOs

ECOJURIS: Pioneers in Russian Environmental Law

by Anya Menner

"During 70 years of our history we grew accustomed to the rule that not a court verdict but the directive of an authority is the truth in the last resort. One of the absolute achievements of democracy in Russia is the return to the separation of executive, legislative and judicial branches of power. ... And for rapid progress in the ecological situation in Russia, it is very important to transform the flow of complaints addressed to authorities into a stream of legal claims and statements."


1991: the year of the sadly recalled Moscow putsch, of extreme political instability and drastic economic changes, is also the year of the establishment of the first Russian public-interest environmental law firm, "Ecojuris: Women Lawyers for Environment and Development." At that time ten women — highly-qualified and experienced lawyers — came together with the goals of protecting the environment and ensuring ecological safety and the rational use of natural resources. It was not intentionally a completely female organization; it just happened that it was women who were enthusiastic enough, could survive all the hardships and work through the problems of a very contradictory period in the life of this country.

"We had neither salaries nor an office in Ecojuris, and we had to combine our work in the firm with another occupation in order to have at least one salary. The grant system that is fairly well-developed now was then just beginning, and we could not count on it. The first grant we got from the Institute for Soviet-American Relations (ISAR)* in 1994 was of great importance to us, since we could then give up working in other places," recalls Vera Mishchenko, president of Ecojuris.

Now Ecojuris is well-known across the country and abroad for its activity, and its work is supported by various grants from the USA and Holland. And ISAR still assists the NGO with a general support grant. Ecojuris cooperates with several American environmental NGOs, such as Earth Island Institute (California), Environmental Law Alliance Worldwide (Oregon), and Environmental Law Institute (Washington, D.C.). Ecojuris has worked as a non-profit organization since its formation.

The firm is a unique blend of regulatory and litigation attorneys who provide a broad spectrum of environmental legal services for citizens, non-governmental organizations and municipal authorities.

One very important aspect of Ecojuris' activities is collecting, analyzing and publishing Russian laws and regulations regarding the environment, land use, use of natural resources and nature protection. With support from the Social-Ecological Union, two volumes have already been issued, and one more is now in preparation. Updating these tomes is now very intensive because of the continuing legal reform in many fields. In order to make legal work more efficient and to make environmental legislation widely available to the public, Ecojuris is developing a computer data base with regular updates.

Ecojuris' activities are made all the more difficult by the numerous gaps and contradictions in current laws and the lack of enforcement mechanisms, so the lawyers spend part of their time as well trying to resolve those problems in the legislature. Ecojuris analyzes its experiences and tries to share those analyses with others through seminars, newsletters and publications. In addition, Ecojuris experts have participated in preparing and reviewing numerous laws and regulations, among them the "Mining Law" and "the Baikal Bill." Further, proposals for improving the federal "Law on the Protection of the Natural Environment" and the draft "Wildlife Protection Law" were completed and passed on to the government. Two or four Ecojuris lawyers have sat on Federal Duma committees as experts in drafting environmental laws until the recent elections of the new Duma.

Ecojuris has participated in two projects of the Federal Biodiversity Program under the supervision of the Russian Ministry of Environmental Protection. One project deals with the analysis of foreign legislation and international law, and the other with the creation of alternatives to the State-protected-area system in Russia. Analysis of the experience of other countries demonstrated the importance and advantages of alternative options for nature conservation. Unfortunately the proposed elaboration of the problem did not find approval in the Ministry, and this project was cancelled. Now non-governmental protected areas are not protected by federal law and exist only by agreement with local authorities.

The dominant legal nihilism in our society and the lack of public-interest environmental law agencies create a situation where environmental laws can be violated almost without resistance or threat of penalty, because people are unaware of how and where to appeal.

"There are very few environmental lawyers in Russia — probably about 40 for the whole vast territory. The low prestige and incomparably low income turn many skillful lawyers away from the environmental field. Our greatest wish is the development of a regional net of environmental law firms," says Vera Mishchenko.

Ecojuris has taken on responsibility for organizing annual conferences for
NGOs

"ECOJURIS: Pioneers in Russian Environmental Law", continued from page 17

lawyers and environmentalists and preparing lawyers for other regions in Russia. Currently two interns from Siberia and Buryatiya are undergoing professional training for two years in Moscow, with support from the MacArthur and Ford Foundations.

Several cases won by Ecojuris in protecting people’s rights to a healthy environment, as well as defending public health and privately owned lands, have made essential contributions towards making citizens realize their rights and power and breaking the walls of indifference and despair.

In collaboration with Socio-Economic Union, Ecojuris participated in a case challenging construction of a landfill on the territory of Russki Sever National Park, and as a result the financing of the project and all construction were cancelled. Recently Ecojuris proved the illegality of a governmental decision to take a piece of land away from Losiny Ostrov (Moose Island) National Park.

One of the firm’s goals is to expand its work with protected areas, where the rate of violations has increased during recent years. The administrations of protected areas have neither lawyers on staff nor funds for legal cases, and often their only chance for legal defense is through Ecojuris. The seminar “Modern Legal Problems of Protected Areas and Damage Reimbursement” brought together protected areas staff and environmental lawyers in Moscow in October 1994. The resolutions of this conference are supposed to be widely distributed among not only state institutions and officials, but also public organizations.

**Anya Menner** is Managing Editor of Russian Conservation News.

* ISAR is now called the International Clearinghouse for the Environment.

Aral Sea International Committee

by William T. Davoren

The Aral Sea International Committee (ASIC)* was formed in Moscow in March 1991, as a bilateral US-USSR organization. Now the Committee is a cooperative venture involving Americans and activists of five new Central Asian nations — Uzbekistan, Turkmenistan, Tadjikistan, Kyrgyzia, Kazakhstan — plus Uzbekistan’s Republic of Karakalpakstan. In the USA, the ASIC is based at the Pacific Environment and Resources Center in San Francisco. The Committee’s principal Central Asian cooperating NGO is the Union for Defense of the Aral and Amu Darya, Nukus, Karakalpakstan (Uzbekistan).

The Committee’s primary goal is to assist NGOs of Central Asia in bringing about reform of land and water use in the Amu Darya and Syr Darya river basins, severely damaged by USSR irrigation developments of the past 35 years. These historic rivers have supported life and nature over this vast area, and fed the Aral Sea, for thousand of years.

For the world, making the Aral region productive again for man and nature can be instructive for ecosystem restoration projects worldwide. For the three to five million residents of the sub-region near the Sea — in three new nations on the lower reaches of the two rivers — the problems are much more urgent. They need clean water for drinking and new health services to assure survival, sustenance and sustainability. Their drinking water supplies have been destroyed or polluted, only a few cities have wastewater treatment plants, and health and economic problems abound. The river basins contain 35 million residents, but most of them have less urgent needs than the Karakalpak, Uzbeks, Turkmen, Kazakhs and various minorities living in the areas of “epidemiological-sanitational” concern.

Thanks to grants from the Eurasia Foundation (USAID) and the Trust for Mutual Understanding, we brought seven of our Central Asian NGO leaders to California in 1994. In March the first group of five, from Uzbekistan, experienced field tours, brief internships at businesses or institutions of their choice, and took part in the first “PriAral Workshop”. This workshop was held at San Diego State University, March 1-4, sponsored by the Committee and the new Central Asia Research and Remediation Exchange institute developed at SDSU by the Department of Geological Sciences. The SDSU Workshop was supported by a grant from the John D. and Catherine T. MacArthur Foundation, which also supported mini-conferences at Washington DC on March 21 and 22. The second group, two NGO leaders from Turkmenistan (a biologist and a woman journalist), arrived in late May and departed June 15 from Washington DC after tours and site visits in the western US similar to the first group.

William T. Davoren is the Executive Director of ASIC.

* Name changed September 1993 from Aral Sea Information Committee 102795.

(See the article on page 22)
ENVIRONMENTAL EDUCATION

Zapovedniki as Educational Centers

by Margaret Williams

In addition to serving as refuges for large numbers of plants and animals, Zapovedniki were envisioned as institutions that could provide education and training to young scientists. As part of that vision, museums were constructed on the base of many Zapovedniki. Over time, the museums became centers for education and research, and in many cases were the only point of contact a local resident had with a particular nature reserve.

About 25 Zapovedniki have museums which are in various stages of operation or disbandment. Museums in Kavkazki (in the Caucasus Mts.), Kivach (in Karelia), and Laplandski Zapovednik (in the northwest Arctic), continue to operate, receiving school children, tourists, and researchers alike. However, many museums have suffered from the sharp federal budget cuts.

In 1994, in addition to budget cuts, Mother Nature wreaked havoc on Ussuriski Zapovednik, located in Primorski Krai (the Maritime Region of the Far East), one of Russia's regions of high biological diversity. The place was hit by a typhoon, destroying its museum.

The nature reserve is unique in that it preserves habitat of the highly endangered Siberian tiger. And, unlike many state nature reserves, Ussuriski is fairly accessible from larger cities such as Vladivostock, Artem, and smaller towns. The museum had been a popular destination for residents of these places, as well as visitors from the USA, western Europe, India, Korea, Japan, and other countries. Like those in other

Zapovedniki, the Ussurisk museum served as a training site for rangers, and university students.

Lydia Sasova, who had directed the museum, recalls that "years of experience demonstrated that when people had the chance to leave the noisy, dusty and polluted streets and visit our nature reserve, they became inspired, thoughtful, and receptive to ideas about nature conservation. Our museum offered them a chance to learn about the nature around them, and left them feeling deeply grateful for such an opportunity".

This year began with more optimistic news for Ussuriski Zapovednik. After searching for funding and piecing together support from regional organizations, Sasova heard that a grant will be awarded by the Russian Programme Office of World Wide Fund for Nature (WWF). The grant will help reconstruct the museum and its exhibits over a two-year period. Funding will support construction, taxidermy, carpentry, and artwork to be displayed in the museum. The grant to Ussuriski is part of a wider program to support environmental education programs in other Far East nature reserves, too, including Dalnevostochni Morskoi, Sikhote Alinski, and Lazovski Zapovedniki.

The museum will be headed by Sasova, who is a junior research scientist in the Zapovednik. Sasova has worked as the curator on a volunteer basis. As a

Swallowtail (Papilio machaon)

Drawing by I. Blumikova

...
ENDANGERED ECOSYSTEMS

To find and preserve: On creating a Red Data Book for Endangered Ecosystems

by Dr. Arkadi Tishkov

While plants and animals can be preserved in botanical gardens and zoos, respectively, ecosystems and landscapes can be preserved only if they are protected from land use and other anthropogenic disturbances. The list of endangered and extinct species gets longer each year but few people think about the fact that ecosystems are disappearing just as quickly, as economic development gradually erodes the diversity of our landscapes. As each ecosystem vanishes, a whole retinue of flora and fauna goes with it.

One of the highest levels at which biological diversity can be identified is the ecosystem, which is comprised of layers of biomes and natural zones. In conservation practice, an analog to the gene pool is the concept of an "ecosystem pool". In many regions, the impoverishment of this pool of diverse ecosystems has been catastrophic. An illustrative example is the zones of European broadleaf forest and steppe that have virtually disappeared from the face of the earth. With those, a unique combination of flora and fauna was lost. Recovering them will be impossible without a restoration of similar ecosystems on a large area of territory.

Human activity was not always the reason for the decrease in biological diversity. Several thousand years ago, the development of civilization helped to increase diversity. Use of fire, grazing, planting crops and cutting trees created a mosaic of habitats for biota, adding to diversity on a local and regional level. The majority of deserts and dry steppe, and xeric landscapes of the Mediterranean Sea, for example, were the results of anthropogenic activity.

As human disturbance became more frequent, and more homogeneous on large expanses of territory, the ecosystem "pool" became increasingly unified and degraded. In some cases, this was intentional. In others, the result was unintentional but occurred with the introduction of animals and plants. Such was the fate of the American prairie, where ecosystem restoration was impeded by the development of European exotic species. In many cases of endangered ecosystems, it is evident how human activity has led to the formation of islands of natural ecosystems in a sea of human-dominated landscapes.

Which were the first ecosystems to fall victim to man? In our country, these were the forests and steppe of the northern Caucasus, oak and linden forests, meadow steppe and "real" steppe of the Russian Plain, riparian forests and meadows, stream communities, sphagnum bogs in their southern ranges, and others. In several regions of the Far East and Siberia, cedar and cedar-fir, and cedar-broadleaf forests are on the verge of extinction.

What is needed is a inventory of all ecosystems that are considered to be endangered or threatened by anthropogenic pressures. A special Red Data Book should be compiled for ecosystems. Some attempts at this have been made. For instance, Ukraine has published a Green Book of rare plant communities. A similar book was developed by A.A. Chibelev for the Orenburg Region, and V.V. Kruchkov has published a Red Book for ecosystems of Murmansk Region. Besides these localized efforts, though, not much progress has been made to catalog endangered ecosystems.

Can environmental restoration really save ecosystems? For our country, the concept is not a new one. Even at the end of the last century, Vasili Dokuhaev, realizing that the steppe was being degraded, took the first steps to restore them on the territory of Derkulski Horse Farm in the steppe. (See the Focus section of this issue of RCN to learn more about Dokuhaev). Restoration on the basis of knowledge of the processes of natural succession is the only possible approach to save many ecosystems threatened with extinction. It's not enough to simply reserve lands where habitat is threatened. The physical traits of these landscapes — processes contributing to soil formation, plants that have been extirpated from the site — should be returned to these ecosystems.

The most successful projects in restoration were conducted by our experts in Stavropol, Tula, Don, Sumsk, and Voronezh Regions. During 1981-1990, work conducted in a Ukrainian Zapovednik preserving steppe gave us a glimpse at the potential for saving the ecosystem pool and the gene pool of meadow steppes. Now, fewer areas in the chernozem ("black earth") region are being used for agriculture. However, the lack of disturbance in these old fields alone will not restore the steppe. A specific mix of seeds should be planted in such places to stimulate the "right" (steppe species) vegetation and ensure the lands do not remain covered with weeds, with no neighboring steppe lands to regenerate the dying ecosystem. This seed material should be taken from Zapovedniki and National Parks, where constant management (e.g., hay cutting, moderate tilling) is carefully conducted to maintain the steppe.

Saving floodplain ecosystems is more difficult, as imitating the natural floodplain processes is especially complicated. There are some examples, however, in some Central Asian Zapovedniki, where the minimal water level was determined, and provided, to keep tugal ecosystems intact.

Thus, the combination of preservation and restoration of rare and endangered ecosystems should be our primary objective, if we are to save our "ecosystem pool". Let us begin with a clear, scientifically based approach; let's collect the information about the distribution and topography of the diversity of ecosystems, which could be listed in a Red Data Book of Rare and Endangered Ecosystems. Onward!

Dr. Arkadi Tishkov heads the Laboratory of Biogeography in the Institute of Geography, Russian Academy of Science. Drawing on this page by I. Blinnikova.
Whose problem is the Aral crisis?

For the last three decades, the push for economic development in the Aral region caused changes disastrous for the natural environment, human populations, and plans for the future development of the region. Now it is widely recognized that the main reason for the myriad of problems in the region is irresponsible and short-sighted policies toward nature in general and natural resources use in particular.

But whose problems are they? Who will bear responsibility for solving them? Who cares about the Aral Sea region - its soils, biodiversity, population and the degradation that has devoured not only nature, but also human society?

We hope that worldwide discussion and the participation of scientific organizations and experts along with regional NGOs can guarantee that decisions oriented for immediate profit will no longer be made at the expense of the Aral Sea's vanishing natural resources. The international meeting held last September (1995) indicates that some orchestrated attempts at remediation are being made. However, only if each party can come to the negotiating table in a spirit of cooperation and mutual understanding can there be a chance for improvement — if it is not too late.

Cotton, politics, and water: sealing the fate of the Aral Sea

by William T. Davoren

When the USSR dissolved, the fate of the Aral Sea — its decline and the subsequent dessication of the vast deltas of the Amu Darya and Syr Darya — was sealed. Since 1991 the five Central Asian republics have continued using the rivers primarily for cotton production.

The Aral Sea is the great symbol of a man-made catastrophe. Once the fourth largest inland sea, (ranking behind Lake Superior of the USA’s Great Lakes), diversion of its rivers for the irrigation of cotton crops has turned the Aral Sea into several brine lakes with about 25% of the Sea’s 1960 volume. The retreating sea left behind some two million hectares of a bare sea bed poisoned by salt and pesticides. Toxics and salts blow from this desiccated sea bed, affecting people, vegetation and soils in millions of more hectares in the areas surrounding the former Sea. Salinity has increased from the 8 or 9 parts per thousand (ppt) of 1960 to about 40 ppt today — higher than ocean salt water.

The Sea’s 24 species of fish (including two species of sturgeon) were exterminated by the early 1980s. Even earlier the receding sea had become unreachable by the landlocked fishermen of Muynak, Aralsk and other fishing ports. The vital connection between the rivers and the Aral Sea, the lowering of its level, and the increasing salinity spelled the end for the living creatures associated with the sea and its rivers. The health and livelihoods of at least two million people have been affected.

Among the missing are the 10,000 fishermen who had relied on its natural productivity for centuries. The drying out of the deltas and their riparian “forests” affected all species of mammals and birds there. The last Amu Darya tiger apparently was shot in 1978.

Foreign assistance to Central Asia began with the report of the United Nations Environment Program (UNEP) produced through cooperation with the USSR that had begun in 1990. Since 1991, the World Bank, the UN Development Program (UNDP), the US Agency for International Development (USAID), plus private and public foundations of the USA, The Netherlands, Germany, Japan, Sweden and other countries, have become involved. Most current projects are trying to improve the dire public health conditions in the disaster area (Republic of Karakalpakstan, Dashkovuz Region of Turkmenistan, and the Kyzyl-Orda region of Kazakhstan).
However, no fundamental reorientation of the water wastage for cotton monoculture has occurred, and allocation of the two rivers' waters among the five states remains unchanged since the USSR dissolved. The governments' resistance to reforming the wasteful land and water practices of the past 65 years (since collectivization of Central Asian agriculture) is still very strong. This is especially true of Uzbekistan and Turkmenistan.

The water project development agency Minvodkhod, and affiliated research agencies such as the Scientific Production Association and the Central Asian Scientific Research Institute of Irrigation (SANIIRI) at Tashkent, are in control (still). Despite good intentions of international agencies (e.g., the Aral Sea Conference on Sustainable Development sponsored by UNDP at Nukus, Karakalpakstan in September), the governments of Uzbekistan, Turkmenistan and Kazakhstan appear dedicated to finding more or better land for using the rivers' waters to produce more cotton. Diversifying agriculture for food production remains a low priority.

And the political leaders of these three main states still raise the bloody flag of importing water from Siberian rivers. This sentiment was encouraged by the "help our neighbors" statement of the Russian Federation representative at the Heads of State meeting at Nukus in September. Before perestroika and glasnost, diverting Siberian rivers was the USSR promise that allowed overdevelopment of the Amu Darya and the Syr Darya — and the planned death of the Aral Sea. (Of course, these water import projects were originally planned to put another 1.3 million hectares of desert and steppe lands into cotton production in Kazakhstan — not to help the Aral Sea.)

Unfortunately, the scientists of Central Asia have been given no important role in the rebuilding and restoration of Central Asia's natural environment. The academics are fortunate even to survive, apparently. I learned at the Nukus conference that the faculty and staff of the academies of sciences, in Uzbekistan at least, were paid $20 US per month — one-sixth of the $120 US paid to the numerous police brought to Nukus (for security or presidential vanity purposes) during the UNDP conference and the heads of State meeting there.

William T. Davoren is the Executive Director of the Aral Sea International Committee.

---

**The tugai of the Aral Sea Region is dying. Can it be restored?**

*by Dr. Nina M. Novikova*

The vast expanses of the Aral Sea basin are situated in the center part of the great belt of the Palaeartic deserts where the Kazakhstan-Gobi (Central Asian) and West Asian-Saharan (North African-Mediterranean) biotic complexes come into contact and interpenetrate. The desert landscapes in the Aral region represent evolutionary series of post aquatic plains as they developed into terrestrial ecosystems. The process of the development of these successive landscapes (delta, floodplain, and lakes) acts as the primary mechanism that sustains levels of biodiversity.

This article will take a close look at the extent to which just one element of the Amudarya and Syrdarya River delta plains of Aral sea basin has been severely damaged by human activity. This is the unique natural complex in the riparian ecosystems called tugai.

What is tugai? This name refers to a specific complex of woody-bush vegetation and high grasses that occurs only in the floodplains and valleys of Central Asian rivers. Almost impassable wild thickets of densely grown trees entwined with lianas alternate with grassland clearings, where plants reach up to four meters in height, thus forming the most remarkable landscapes in deserts.

The tugai woodlands are composed of relics of Tertiary-era forests, colonized the river valleys during the global aridization of climate about 3.5 million years ago. Here dominant poplars (Populus diversifolia, P. ariana, P. pruinosa) are accompanied by willows (Salix songarica, S. wilhelmsiana), oleasters (Elaeagnus turcomanica, E. oxycarpa, E. angustifolia, E. orientalis) and five tamarisk species. The tugai meadows are represented by gigantic cereal grasses: reed (Phragmites australis) and tropical species (Eriocorys ravenneus, Saccharum spontaneum). While potentially, the tugai flora in Amudarya delta could encompass 235, (and in the Syrdarya, 430) vascular plant species, only about 70-80 plant species are found in those floodplains. The Amudarya delta contains the most representative and diverse tugai communities which occupy 60% of the total tugai area in Central Asia.

Tugai communities are characterized by vegetation that is highly specialized and adaptable to the extreme conditions of desert floodlands. All vegetation can survive the exhausting summers (with temperatures up to 42-46 degrees C) as well as winters, when the temperature can drop to -30 degrees C. Flood periods are long, lasting for 2-3 months, and are followed by periods of extreme dryness, when the soil is subjected to severe aridization. Salt content in soils increases by the autumn and can reach concentrations of 1.5-2%, values usually attributed to saline and toxic for vegetation.

In order to survive such conditions vegetation developed specific mechanisms of oxygen and water absorption, evaporation and reproduction. The severe climate conditions define the relatively low diversity of species in the tugai communities: commonly individual sites are represented by three to five species and often just by a single one.

Despite the relative homogeneity of vegetation, tugai complexes of Central Asia are habitats for animals, including 60 species of mammals, more than 300 birds species, 20 amphibia and more than 4000 arthropods. Flocks of thousands of birds stop during their flights on delta lakes in tugai; even small tugai sites in surrounding desert become a retreat for many animals.

The river completely conditions the life of tugai, giving and terminating life, defining its destiny. Desert rivers, mainly fed by the melting of glacial snow, carry out of the mountains huge amounts of suspended matter giving the water an appearance of cocoa. The alluvium accumulates in river beds and gradually fills the channel to create a barrier for the water, thereby forcing river to change its
course. In the deltas the period of channel formation and desiccation takes about 50 years.

With river departure, seasonal changes become stable: ground waters migrate downward, become more salinized and unavailable for vegetation; as salts accumulate, the fertile soils of the tugai are transformed into saliniferous type. Tugai communities vanish and are replaced by halophytes (vegetation adapted to conditions with high salt content). Evolution is not terminated on this stage. Saliniferous landscapes are gradually being replaced by takyr (clayer) deserts, completing the cycle of desertification.

Humans and tugai - are they compatible?

Tugai are often referred to as natural oases. These fertile sites always attracted people dwelling in deserts because of firewood and soil, but for a long time, human activities were not of any catastrophic effect. Since the 1930’s, however, the Amudarya River delta has become an important focus of land use. After WWII, 120,000 ha of forest tugai was destroyed by harvesting of fuelwood and development of arable lands. In the 1960’s, extensive irrigation for cotton fields and crops required construction of several dams, water reservoirs and channels. Significant amounts of water were taken up, lowering the level of the Aral Sea level some 0.5 to 0.7 meters a year. As of today, the Aral Sea level has dropped by 18 meters and less then one-tenth of the previous volume of water reaches Amudarya and Syrdarya deltas. Run-off from crops discharges pesticides and salts into the river.

The human-caused changes in flood regime and increase in water mineralization (from 0.4 to 1.5-3 grams per liter) were devastating for the whole river ecosystems, the negative effects are felt most severely in the deltas. Since 1970, floods have been completely terminated in Amudarya delta. In 1950 forest tugai complexes in the delta covered 100,000 ha. By the 1970s the area was reduced to 52,000 ha and now it is less than 15-20 thousand ha.

A once continuous system of tugai complexes has been transformed into isolated islands of mostly desertified complexes where only about dozen species survive and up to 60% of woody vegetation is dead. One of the features of desertification is a dramatic increase in the rate of succession processes which exceeded the rate of natural changes in vegetation by 2-10 times and on some sites by 20 times producing gaps in stages of evolution and breaking cycles. The changes in vegetation are accompanied by regrouping of species in zoocomplexes, loss of trophic potential for birds and mammals and relocation of whole communities of waterfowl and bog waterfowl into other regions.

Protected areas (nature reserves and nature preserves) were established in the Aral region to protect vulnerable desert ecosystems. They succeeded in preventing economic activities but failed to withstand irrational water use and the subsequent crisis. However, the largest tugai complex is still preserved in the Badas-Tugai Zapovednik.

Only changes in policy and public attitudes toward water resources could slow down the devastating processes. For a long time the Aral Sea crisis was considered an important problem for the socio-economic and personal welfare of human society. Only in the 1980’s were attempts made to consider natural complexes in water regulation system as equal in rights to other subjects consuming water. In 1988 a decree by the USSR government set standards for minimal water flow that should reach the Sea, taking into account the needs of delta ecosystems. The restoration of a water regime favorable for tugai will make possible re-colonization of delta and river valleys by tugai communities only upon condition that irrigation projects of desertified lands should be scientifically based to prevent secondary salinization of soils.

In 1993, an international UNESCO “Aral Sea” project began. The project, supported by Ministry of Research and Technology of Germany (BMFT), and implemented by leading scientists from Karakalpakstan, Russia, Kazakhstan, Turkmenistan and Uzbekistan, aimed to develop a model of Amudarya and Syrdarya delta ecosystems in conditions of strong anthropogenic impact. Limits for salinity and minimal water level in Aral Sea critical for ecosystems have been determined. A description of terrestrial delta plain ecosystems of the Amudarya and Syrdarya rivers has been compiled, an ecological-geographical data base has been developed along with an electronic atlas of natural and human communities-social complexes. Two International scientific stations have been built in the Amudarya and Syrdarya deltas, and new technologies for agricultural and water purification have been developed.

During the implementation of the project, an information system and data base was created by the Laboratory of Terrestrial Ecosystems Dynamics in the Institute of Water Problems (Russian Academy of Science). Such data can serve as a foundation for further investigations on biodiversity in this and other regions.

(For more information on biota transformations see: Zaletaev V.S., Novikova N.M., 1995 “Changes in Biota in Aral Region as a result of anthropogenic impacts between 1950 and 1990”, Geojournal 35:1: 23-27)

Dr. Nina M. Novikova is a senior researcher in the Institute of Water Problems investigating dynamics of natural processes related to the current transformations of aquatic regimes in arid regions.

February 1996, #6
Crisis or impasse?

(Comments on the current situation in the Aral Sea Region.)

Upper level meetings, friendly handshakes, promises, declarations to bring Central Asian countries wealth and environmental security.... Who can believe in this? Looking back, we can see that promises, plans and programs to “increase the level...” or “diminish the negative effects...” continued nicely as the upper echelons of power pursued profit and neglected the needs of nature and people.

What has changed since the breakdown of USSR? Now five republics of Central Asia once united under one government have become Independent States. They may each have their own plans for further development, but they must share the tragedy of Aral region. They stepped into the arena of international relations, but in many ways, preserved archaic and conservative regulations and rules.

A combination of a strong and powerful oligarchy of Ministers, corrupt governmental institutions, an almost complete lack of public information, unethical behavior and greed continues to build the wall between such powers inside the States and abroad and actual implementation of useful projects.

One can hardly see a way to unite the knot of problems in the Aral Sea area. Each player involved in the tangle has its own interests to defend: the Ministry of Water Resources (Minvodkhaz) can feed itself and its staff only by developing extensive constructing projects at the expense of nature. When international organizations contact this Ministry and work in cooperation, it means that more money will flow through its pockets and no decision to cancel economic development of new areas will be made.

In spite of all calamities, Turkmenistan forges ahead. Its plans for extensive farming in new areas in the southern Aral Sea region will require the expansion of existing canannels system and even transformation of the sewage collectors into irrigation paths.

Karakalpakstan (a semi-autonomous republic in Uzbekistan) bears the worst consequences of water crisis and there is no amendment the government could suggest to people. But there is an easy and tested way of muffling the protest waves: to find an exterior culprit. In this case, Turkmenistan controlling the upper parts of the Amu Darya river is a suitable scapegoat. Wars over water deficiency have not yet begun but it is a likely scenario.

The story of the Aral Sea should be a great warning to all of humankind about how civilization can come to an end. Already a strong alarm has sounded for other regions and people. But in the Aral region, the situation is no longer a crisis any more. It is death. Slow but inevitable death.

-- Andrey Zatoka, Co-Chairman of Dashkhovz Ecological Club, Turkmenistan.

ENDANGERED SPECIES

New Threats to the Polar Bear

by Dr. Nikita Ovysanikov

Consider this: Last summer I inquired about the availability of polar bear skins in two villages of the Russian Arctic. In Dickson (in western Taimyr) I could have bought one for $4,000; in Varnek (on Vaygach Island) I was offered a polar bear skin for one million rubles (about $350).

Last year, the local hunting officer of the Cape Schmidt region in Chukotka — the official responsible for wildlife law enforcement! — was caught and prosecuted for selling polar bear meat to people who then contracted trichinosis from it.

These things occurred despite the fact that Polar Bear-hunting is illegal in Russia. Now a proposed international agreement with a benign-sounding name threatens to legalize Polar Bear-hunting and allow even greater numbers of bears to perish.

Polar Bears have been protected for three decades in the Russian Arctic, where three populations of Polar Bear (Ursus maritimus) can be distinguished, the Spitsbergen-Novozemelskaya, Laptev, and Chukotka-Alaska populations. Because the current state of each population is different, different protection measures for each are required. However, no reliable estimations of totals for any of them are available, and our understanding of what is really happening with the species remains mostly a guess.

Only the Chukotka-Alaska population is considered to have recovered as a result of full legal protection. On the Russian side the bear has been protected since 1956. On the American side, according to the Marine Mammals Protection Act (1972), only Native peoples of Alaska are allowed to hunt Polar Bear — for traditional subsistence, clothing and handicrafts — without restrictions on number, sex or age groups of bears.

Trophy hunting or the sale of intact polar bear skins has been prohibited in Russia and the United States since the International Polar Bear Treaty was signed (1973), ratified and put into effect (1976). Only Canada is in violation of the Treaty, because it allows trophy hunting of Polar Bears through native hunters’ sales of their shot permits to foreigners.

Earlier, strict Polar Bear protection in the former Soviet Union set a good example in conservation. However, with the advent of economic and political reforms, the level of Polar Bear protection has changed dramatically throughout the Russian Arctic. The new and wild market economy in Russia has thrown open the flood gates for illegal trafficking abroad and has created demands for polar bear parts, as well as for those of other rare and endangered species.

Despite the prohibition on hunting Polar Bears, legislative nihilism and the disorganization of former law enforcement agencies, along with the incredibly higher prices for food and alcohol in the North, have led to nearly unlimited illegal shooting of Polar Bears wherever they are accessible to poachers.
Today poaching is the primary cause of Polar Bear mortality in Russia. In recent years, in violation of federal law, permits to shoot Polar Bears have even been granted by regional authorities, regional Committees of Nature Protection and local village authorities. According to estimates based on personal reports and experts’ calculations, dozens of bears are taken in every region, though it’s impossible to estimate total numbers accurately. Moreover, the majority of illegally killed Polar Bears are taken by native hunters. Every fall all the villages of the north coast of Siberia that are visited by cargo, hydrographic and ice breaking ships operate as trading points for the exchange of Polar Bear skins, gall bladders, fur pelts and ivory with natives. These products then easily drift to the black markets of such Asian countries as Japan, China (possibly) and Korea.

Against this background the governments of Russia and United States will cooperate to implement an agreement titled, in English, “Principles of Conservation and Management of the Chukotka-Alaska Polar Bear Population.” Though still in draft-form, the agreement is supposed to be completed and signed by summer 1996. The proposed draft would allow Native people of Chukotka to hunt Polar Bears.

The potential effect of the proposal’s current version on the Russian side should not be underestimated. The issue is far too serious to remain hidden from environmental organizations and activists until the day when there is no longer anything to discuss.

Now, at least, any case of polar bear shooting in Russia is illegal and can be prosecuted as a crime. This gives some formal protection to polar bears. Giving the Native people of Chukotka legal opportunities to hunt Polar Bears under existing conditions would simply legalize poaching. As if that weren’t bad enough, the proposed agreement goes even further.

The language of the agreement purportedly addresses the traditional subsistence requirements of the Native peoples of Chukotka and Alaska. However, the agreement lists such needs as the manufacture and sale of handicrafts, which have nothing to do with traditional subsistence. In fact, the Polar Bear is not generally considered a species traditionally hunted for subsistence needs. This agreement will essentially allow commercial use of polar bears by the Chukotka-Alaska population. And it is debatable whether any group — Native people or trophy-hunting lobbies — should be granted rights to use a national natural heritage in this way.

The draft of the agreement allows the use of snowmobiles, all-terrain vehicles and motorized vessels (in the Russian draft, this includes all vessels smaller then 40 registered tons!!!) for hunting Polar Bears. Is this what is called “traditional Polar Bear-hunting methods of indigenous Native people”? These are modern methods of commercial hunting — even harvesting — of large game, and when utilized, no claim to “exclusive privileges” should be allowed.

The present draft does not encourage either side to undertake practical actions to improve wildlife protection, such as making law enforcement tools work effectively, especially on the Russian side of the region covered by the agreement. It is urgently important not only to “recognize the need to improve law enforcement” in cases of illegal shooting and trading of Polar Bear parts, but also to affix in the written agreement the condition that effective law enforcement on both sides is obligatory for granting Native people the right to hunt Polar Bears traditionally. Hunting rights should not be granted without these measures.

Article Two of the draft states, “The Agreement applies to Polar Bears and their habitats throughout the entire Chukchi Sea... and the eastern portion of the East Siberian Sea”, it makes no exception for the protected natural areas of either federal or regional status. This paragraph, as presented in the draft, may be interpreted as contradictory to Russian federal legislation on nature conservation and protected natural territories. It could therefore be used in such speculation as issuing Polar Bear-hunting permits even within protected territories and marine areas, including Wrangel Island.

Legal enforcement of hunting regulations on the Chukotkan side — and all over the Russian Arctic — has largely disintegrated and is essentially nonfunctional. Who in this situation will guarantee control on how the proposed quota is regulated? In general, implementation of this agreement in Russia would provide a legal cover for Polar Bear-poaching and could greatly increase poaching rates, an activity in which indigenous people are heavily involved at present. In practice, it could lead to uncontrolled harvesting of Polar Bears by anyone interested in the business. This is a serious threat to the species, and it would also lead to further corruption of the cultural traditions of Native people.

Undoubtedly the draft of the agreement should be seriously revised to make it work for the effective protection of Polar Bears and their habitats. More exact language is necessary to define the subjects granted the rights to hunt Polar Bears, and to avoid misinterpretation of the official language. What is regarded as “traditional Polar Bear-hunting techniques” should be precisely defined, in order to avoid speculations on the interests of northern indigenous peoples and to prevent their corruption. Before the agreement is signed and goes into effect, it should be opened up to broad public discussion.

Dr. Nikita Ovyanikov is a Senior Research Scientist at the Pacific Institute of Geography, Chukotka Division.
Editor's note: Every year brings sad news - when the last individuals of Corncrake (Crex crex L.) vanish in one more European country. Although the Corncrake in Russia still is not in such a critical status, the general alarming situation with this species forces Russian ornithologists to pay close attention to it. A large group of researchers currently works on the issue together with British Royal Society of Protection of Birds and Birdlife International. Last summer Corncrake censuses were conducted in eight regions and one autonomous republic in Russia. The results will be presented in RSPB publications.

### Corncrake in the Don River Valley

**by Dr. Victor A. Minoransky and Dr. Alexander V. Dobrinov**

In the first half of the twentieth century, the Corncrake in the European steppes of Russia was a widely distributed bird species. Wet meadows with thick and tall grass, meadow mires surrounded with sedge, rush and bushes in flood plains of rivers form the major habitats for Corncrake. Less frequently these birds could be encountered in kitchen-gardens, secluded orchards and only very rarely, on the fields where grains grow. Noticeable declination of Corncrake numbers in steppe zones started in 1960s and was attributed to damming of the

Don and diversion of smaller rivers, dessication and vanishing of many small water bodies, ploughing of drained floodplains and increase in agricultural activities. Regular studies on the whole delta area (340 square kilometers) since the 1950s and research on the selected sites on an area of 1,500–1,600 ha (15–16 square kilometers) since 1976 have demonstrated the decrease in the species numbers during the last thirty years. In spite of general decline of the steppe zone health this territory remains one of the main reserves for the bird and Corncrake is still a regularly nesting species in the Don valley.

Since the beginning of May until the middle of June voices of birds can be heard in various parts of delta over the area of 340 square kilometers. According to the recent data of bird censusing 25–30 pairs were nesting on the area of 400 ha. Corncrake avoids arable lands, but it successfully can live around people: meadows visited by people and cattle, even kitchen-gardens can often serve as nesting grounds for pairs. This species can easily inhabit suitable sites even transformed by human activities, for instance in Azov suburbs (city located in the Don delta) corncrakes inhabited the small mire resulted from the drainage pipe leakage just in 250 meters from houses and barns. Together with Corncrake this mire is inhabited by Black-winged Stilt (Himantopus himantopus), Spotted Crake (Porzana porzana), Moorhen (Gallinula chloropus) and Redshank (Tringa totanus) as well.

According to an analysis of suitable habitat areas the Don delta is assumed to have about 700–800 pairs of Corncrake; large amount of the species was preserved on Tsinyiansky peninsula in state preserve (on the area about 600 square kilometers) where now many Red Data Book species reside (Osprey (Pandion haliaetus), Levant Sparrowhawk (Accipiter brevipes), White-tailed Eagle (Haliaeetus albicilla) and others). Data from other districts allow to estimate the number of corncrake in Rostov region as 2,500–3,000 pairs.

The current status of corncrake demands complete prohibition of shooting it by hunters. Expanding farming and agricultural activities consume habitat areas for Corncrake and development of the protected areas network in steppe zone is getting more and more important for Corncrake conservation. Preparation work on the creation of the protected areas commenced more than twenty years ago. In 1985 the question was raised of establishing a Zapovednik in the Don delta where rare species, such as White-tailed Eagle, Black-winged Stilt, Marbled Polecatt (Mustela putorius) and other breed. Although all documents for organization of the Zapovednik were collected and approved in several agencies, recently the proposed territory got only status of a Zakaznik special purpose native preserve. We consider this result as a success, because the question of reserving territories for protected areas in steppe region, where about 85–90% of the area are arable lands and they are still expanding, encounters more and more obstacles. The first Zapovednik in the region - Rostovsky-preserve steppe ecosystems was created in 1995 in the eastern part of the Rostov region. We hope that it will be the core for developing network of protected areas in our region.

**Dr. Victor A. Minoransky** is a professor in the division of Zoology at Rostov University. He is a founder and scientific supervisor of nature-historical museum "Don Delta"; interested in biodiversity of European steppe, protected areas creation, biomonitoring.

**Alexander V. Dobrinov** is a school teacher, naturalist. He is interested in bird studies in the Don delta and nature protection.
Nerpa - one of Baikal’s attractions?

by Tatiana Markova

Lake Baikal, magnificent and incredibly beautiful, is known throughout the world. More and more people are drawn here to enjoy its severe beauty and to experience for themselves the uniqueness of this natural creation. And all visitors dream of catching a glimpse of its only mammal, the Baikal seal, locally called *nerpa*, an endemic that inhabits the expanses of this inland sea.

To this day it has not been established beyond doubt where the Baikal Seal, *Phoca sibirica*, originated. Its nearest relatives live today in the cold North Sea and southern Caspian Sea. The first scientific description of nerpa was made during the 2nd Kamchatka or Great Northern Expedition led by Vitus Bering in the 18th century. One of the teams of this expedition worked at Baikal under the leadership of J.G.Gmelin who studied many aspects of the lake and its environs and described the seal.

The Baikal nerpa is a representative of the order of Pinnipeds and the family of seal (earless) seals. It spends most of its life in water, surfacing periodically to breathe. Thanks to the capacity of its blood to hold oxygen nerpa can remain under water for up to 45-60 minutes, although it usually stays there for 20-25 minutes, enough time to escape danger or find food. In water it can reach speeds of over 25 kilometers an hour, but in normal circumstances it will swim at half the speed. Investigations of V.D. Pastukhov have shown that the Baikal nerpa lives longer than other seals with a maximum age of 56 in females and 52 years in males.

In winter, when Baikal is frozen over, nerpa makes escape holes in the ice, an inborn instinct. Mid-March is the time when the Baikal Seal gives birth to one or, very occasionally, two pups, in snow dens on the ice. At first the pups are yellow-green in color, but in two weeks turn white, enabling it to stay well camouflaged on the ice, while it is still feeding on its mother’s milk. At this time the pup remains in its den not entering the water. By the time the young seal switches to independent feeding on fish, its fur turns a silvery-gray. On the market, this fur is considered the most beautiful, hard-wearing and expensive, and for this reason such pups are the main object of hunting. The skins of adult nerpa have long been used for making clothes, mittens and boots - *uny*.

Nerpa mainly feeds on fish with no commercial value - gobies and, especially, the Baikal endemic, *golomyanka*. The famous Baikal *omul* falls prey to nerpa by chance, and makes up no more than 1-2% of its daily ration. Omul swims too quickly for the seal, and it is only those that are weakened that are eaten. Such selection only improves the quality of the omul population.

The present nerpa population has been estimated to be over 60,000 (according to data collected by Pastukhov and Evgeny Petrov). Hunting for the seal’s meat, fat and fur, has been carried on since ancient times. In the past, hunting was allowed at any time of the year and with no limitation. Until the end of the 19th century this could be withstood by the seal population, as a relatively small number were hunted commercially (up to 2,000 head). However, in the first years of the 20th century, intensive development on the shores of Baikal and higher prices for seal products, caused a dramatic increase in hunting, with nearly six thousand individuals taken annually in the 1930s.

In 1935, as a result of the noticeable decline in nerpa numbers, only the more productive spring hunt was permitted, later a complete ban on its hunting was introduced in the southern half of the lake. Until the early 1970s hunting remained at a relatively low level, after which it began to rise in accordance with the plan of a scientific and economic experiment.

Today, the Baikal Seal remains the object of official and unofficial hunting. The main hunt takes place on the ice on sleds in the northern and middle basins of the lake. This begins when the seals’ dens are broken by the warmer rays of the spring sun (around the 15th - 25th of April) and ends with the appearance of the first dark patches of melting ice, which always occur nearer the western shore.

Since 1970 two new forms of hunting were introduced to Baikal - from boats with rifles and in autumn with nets. Both take place amongst ice fields, melting in the spring and forming in the autumn, so requiring especially strong, larger motor boats. Masked by a white screen, the boats move slowly in towards the nerpa, which are usually asleep, to distances of 150-300 metres on the ice. The motor is turned off and the pair hunters, marksman at the nose and driver at the stern, carefully paddle the boat up to within 40-70 metres of the animals, after which a shot is fired at the nerpa’s head. Bullets entering the body of the animal usually result in the nerpa’s managing to escape into the water, later to die, to no purpose, of its wounds.

The autumn hunt with nets is the most exhausting and difficult, taking place during the short days of autumn at low temperatures while ice is forming in the bays. It appears that the most effective method is with nets set at the bottom. Nerpa is usually drowned in the netting.

Clearly, if we want to maintain the seal population at least at today’s (decreased) numbers, the official limit to hunting should be reduced, or better still, in our opinion, banned altogether. We have found out that hunting for nerpa is not particularly lucrative for the hunters. State farms pay the hunter 3,000 roubles (less than one dollar!) for every kilogram of nerpa, and 50-80 thousand ($10-$15) for a skin, which is not very popular because of the low quality of the fur of the adult animal. If the settlements
around Baikal were to be supplied with adequate food and clothes and tourists wishing to see nerpa and bringing in an income, it might well be possible to cut the hunting considerably if not to stop it altogether.

In order to properly understand the problem and develop better measures for conservation, the participants of the joint Russo-American Project "Nerpa" (financed by ISAR/International Clearinghouse on the Environment) are undertaking a survey amongst local people, hunters, tourist firms, workers in the Protected territories around Baikal and scientists in order to assess the state of the nerpa population, the significance of the hunting, and what is necessary for it to be cut or stopped without causing conflict.

A very important part of the Nerpa project is its emphasis on information and education. For many years an attitude of consumption towards natural resources, nerpa amongst them, has been cultivated in people’s minds. Now, in the absence of economic stability and a strong "green" movement in this country together with a widespread indifference towards anything that does not relate to material acquisition, the situation has worsened. Things are becoming more critical because of the absence of good working laws for nature protection and because those that exist are not being implemented. In addition, the increased possibilities for individual means of transport and growing wave of unorganized tourism has apparently been having a greater negative impact on the nerpa population over the last ten years than ever before.

Within the project, scientists are also looking at the effect of industrial pollution in the lake, investigating the levels of PCBs and dioxins in the seal. Pollutants weaken the animals ability to combat infection, and it is considered that these were the underlying cause for the mass deaths of nerpa in 1987-88. This in the world’s deepest and purest lake! Another stress factor for the nerpa population is the impact of global warming on the lake’s ice conditions on which nerpa is closely dependent. Baikal is completely covered by ice for some 5 months of the year. The last twenty years has seen a tendency for this period to decrease, disturbing the complex biological cycle of development of the seal and bringing about a decline in its numbers.

One of the aims of the project is to bring nerpa closer to the attention and hearts of the people of the Baikal region through video films, information, and exhibitions for adults and children. It should help all of us to understand better nerpa and its habitat, and develop in us the desire to care for both. In our industrial society, constant efforts are required to heighten people’s perception of the natural world and to help us feel its wonder and fragility.

Tatiana Markova, Candidate of Biology, is a biochemist at the Institute of Plant Physiology, Siberian Branch of the Russian Academy of Sciences. She is also one of Baikal Environmental Wave’s three Co-chairpeople, and head of the education block of Project Nerpa.

---

Bar-headed Goose of Kirgizia: Threats to its Survival, Potential for its Preservation

by Aleksandr Yakovlev and Bakuiy Musabaev

The Bar-headed Goose (Anser indicus) is the only species of goose inhabiting the high-mountain regions of Central Asia. The species was first observed in 1867 on islands in Lake Chat’r-kul, an alpine lake in Kirgizia, by a pioneer in research, Nikolai Severstov, who wrote that the goose occurred in "great flocks." From the 1940s through the 1960s, the population of this species numbered in the thousands, but in the years since then their numbers have fallen dramatically. By October 1991 just 44 and 27 individuals were counted on Lakes Son-kul and Chat’r-kul, respectively, and 14 of those were yearlings. This population decline can be attributed to an increase in agricultural activities, such as keeping livestock, in the nesting range of the species.

This mountain goose is included in the Red Data Books of Rare and Endangered Species of Kirgizia, Tadjikistan and Russia. Some sites within the species' nesting range have been designated as Zakazniki (special purpose reserves) and later Zapovedniks (strict nature reserves). However, the population has continued to decline.

In 1989 in Issyk-Kul Zapovednik in Kirgizia, a program for reintroduction of the goose was developed. In 1995, 23 eggs were laid by three pairs of Bar-headed Goose kept in captivity. A portion of these were placed and hatched under Muscovy Ducks. The goslings hatched by the ducks were then raised by humans and kept in captivity for further breeding, while the goslings hatched by adult geese were allowed to grow up in an environment with minimal human contact. The latter group, upon reaching the age of 8 to 10 weeks, was released at Lake Son-kul in close proximity to the wild goose. For the first two days the goslings remained isolated from their wild brethren by 50 to 150 meters. On the third day, however, they were accepted into the larger flock.

Further experiments are planned for the Bar-headed Goose to be reintroduced into nature. Additionally, researchers are considering proposals to enlarge the islands on which these geese nest, before the nesting season. According to the data of Thomas J. Roberts (1991, Birds of Pakistan, vol. 1, Non-passeriformes, Oxford University Press), Bar-headed Goose winter in the densely populated Indus River Valley in Pakistan. In order for the project to be successful, and to ensure the birds' survival in their nesting and wintering ranges, contact and coordination among ornithologists of Kirgizia and Pakistan will be essential.

Aleksandr Yakovlev and Bakuiy Musabaev write from Issyk-Kul Zapovednik in Kirgizia, where Yakovlev is Deputy Director for Scientific Research and Musabaev is Director of the Zapovednik.
An Introduction to Bat Conservation in Russia

by Alex V. Borissenko and Sergey V. Kruskop

The conservation of bats (Chiroptera) rates high among the priorities of various wildlife organizations in many countries. Although more and more attention has been paid to wildlife conservation in Russia, the subject of preserving bats has never actually been raised as a separate goal, as has preserving birds. However, low reproduction rates, along with considerable roosting conservatism and specific habitat demands, make bats especially vulnerable, and the necessity of assigning specific status to bat preservation is steadily increasing. This is due first to the specificity of the biology of bats, which sets them aside from both other mammals and birds. This in turn makes the methods commonly used for monitoring other mammals or birds rather ineffective, and using those methods may result in an inadequate estimation of the threats to bat populations. Secondly, the fulfillment of bat conservation tasks requires a considerable number of professionals and specifically trained amateurs in a network across the country. Unfortunately this cannot yet be achieved in Russia because of certain historical and economic constraints. In this article we shall summarize the basic information on Russian bats and the problems related to launching bat research and bat conservation projects in our country.

In Russia bats have been generally regarded as useful in destroying insect pests; however, their economic importance was considered so insignificant that involving many people in bat conservation was not thought reasonable. Therefore bat-related work was restricted to a few professionals (not more than 40 or 50), most of whom were not dealing with bat conservation. At present there are very few bat researchers in Russia whose work concerns monitoring and preserving regional bat faunas. This is definitely inadequate for a territory covering about one-eighth of the earth's land surface. For this reason different regions have been surveyed to various degrees. Central Russia is probably one of the most extensively studied areas; compared to others such as southern Siberia; however, there still remains a lot to be done even there.

Up to now 39 bat species from eleven genera and three families have been recorded in Russia (and one more species in southwestern Ukraine). Some 15 (possibly 16) of them occur in Central Russia. The distribution of ten of these species is restricted to the Northern Caucasus, six occur only in the Far East (Primorskiy region), and two have been found in both these areas. Six species are included in the Russian Red Data Book of Rare and Endangered Species; however, at least six more should probably be considered rare and/or endangered. Insufficient data is available for estimating the degree of threats to at least 12 species. Thus our knowledge of the state of the populations of most bat species is far from satisfactory.

The preliminary results of bat studies conducted to date indicate a definite decline in bat populations over the past several decades. In many places this is probably due to urbanization or other kinds of impact on the habitat, whereas in others the reasons for such a decline are not so obvious. It is more or less clear that urbanization, agriculture involving insecticides and possibly other forms of landscape alteration can have negative effects on bat populations; however, no precise or even approximate calculations have ever been made. Nor has anyone actually estimated the influence of disturbance, which is generally considered one of the most important factors.

From what is known about Central Russian bats, they appear to have a somewhat spotted distribution pattern: areas with low population densities and low species diversity alternate with places with relatively high numbers of species and/or individuals. Such aggregations often seem to be seasonal and do not necessarily correspond to intact habitats. In summer they are confined to places with lots of potential roosts and available insect prey, so that a mosaic landscape with considerable diversity of foraging sites is most desirable. Sometimes large nursery colonies are found in such places. Known winter aggregations are restricted to cavernous limestone riverbanks, which are used as hibernation sites. The same sites may house summer concentrations of male bats of wintering species. The situation seems similar over most of the Russian territory and is possibly somewhat different only in the southernmost parts. It is our opinion that such key sites are vital in maintaining bat biodiversity, and their protection should be among the priorities of bat conservation activities.

In launching a bat conservation project in Russia, it would be reasonable to start with making a survey of the key sites for bat biodiversity which would outline the main localities needing special conservation status. Monitoring these sites would allow us to make estimations of the state of populations of different bat species in different parts of Russia. Central Russia is the optimal territory to begin this kind of work. Although it is not the richest region in terms of bat biodiversity (compared to the Caucasus, for instance), it appears to be one of the most threatened areas, mainly due to the high degree of industrial and agricultural development.

Among the main problems related to bat conservation in Russia we would name serious lack of the following:

* Interest in and understanding of the importance of environmental preservation
Endangered Species

in general, and of bat protection in particular, among authorities and the public alike.

* Appropriate knowledge of bat biology among people directly involved in conservation work, such as rangers and regional wildlife preservation experts.

* Professional specialists and amateurs willing to conduct bat monitoring and conservation tasks and draw public attention to the problem.

* Informational exchange between regional bat experts.

* The modern equipment necessary for bat research and insufficient funding of bat-related projects.

However difficult, these problems are more likely to be resolved in Central Russia than in other regions. Of course, this would be impossible to achieve without support from international wildlife organizations, from regional authorities and, of course, from common people.

We hope that in the future it will be possible to organize an independent all-Russian bat research coordination center and a network of regional bat researchers. Among the priorities of this organization would be coordination of bat monitoring projects across Russia (and possibly other countries of the CIS), education of researchers and others already involved in other kinds of wildlife preservation activities, involvement of amateurs in bat monitoring and elaborating new bat conservation projects.

In this article we hope to have shown the necessity of drawing special attention to preserving the Russian bat fauna. We would be most grateful to hear from any person or organization interested in further collaboration.

Alex V. Borissenko and Sergey V. Krushtop are both research assistants and assistant curators of the mammal collection at the Moscow State University Zoological Museum. Alex primary interests include the morphology, ecology, systematics and conservation of bats, while Sergey researches primarily bat distribution, ecology and conservation.

Regional IUCN group Addresses the Decline of Amphibian Species in the CIS

by Dr. Sergey L. Kuzmin

In recent years, most notably since the 1980s, reports of the decline of amphibian species have become more frequent. Admittedly, these reports may in part be due to more intensive research and the development of modern approaches to monitoring population status. However, even older monitoring methods indicated whether local species were dying off, and such reports were significantly fewer. From all regions of Europe, Asia, Africa, America and Australia, we are hearing about the shrinking numbers of amphibians and news regarding all the current families of amphibians, including species that vary widely from one another in terms of ecology, distribution and the degree to which they are considered evolutionarily progressive.

What is happening to amphibians? Is it possible that a process of extinction is occurring globally? And if so, is this connected with some natural process, or with the increase of human activities in nature? Is this truly a global, or merely a regional phenomenon? To what can we attribute the rate of loss of amphibian populations? So far, suggestions about the role of the destruction of the ozone layer and the consequent "greenhouse effect" have not definitively confirmed any theories.

In order to examine such questions, the World Conservation Union (IUCN) founded a special working group, the Species Survival Commission Declining Amphibian Populations Task Force (SSC) in 1991. There are currently more than 1,000 members, and more than 100 regional and working groups have been formed to examine the geopolitical and territorial aspects of the problem. In the former Soviet Union two regional groups are active in the Baltic States and the CIS. The latter was organized in 1992 and consists of nine sub-regional groups with 52 members in all.

Up to now the group has completed the first stage - compilation of all the published data on the decline of amphibian species in the CIS. The most vulnerable species have been identified, as well as a large number of "hot spots." Preliminary data suggest that the main factor in amphibian decline is human activity, the first and foremost of which is pollution and destruction of habitat. Because different species have varying sensitivities to anthropogenic activity, we may be able to make projections about the changes in fauna and the number of species on land that is still being developed. In 1995 Moscow Pensoft Publishers released a book in English based on these data, Amphibian Populations in the Commonwealth of Independent States: Current Status and Declines. (requests for this book can be sent to the author, Sergey Kuzmin. Please see "Conservation Library" section of this issue of RCN).

Currently, the process of monitoring and identifying "hot spots" is continuing, along with attempts to determine the reasons and mechanisms for amphibian decline. A data base is being created on the distribution and ecology of amphibians of the former USSR. The regional working group of the CIS seeks to cooperate with other organizations or individuals in the exchange of information; new members are always welcome to join the working group. (For information, see the back of this issue).

Tree frog (Hyla japonica)
Reprinted from the booklet from Muraviova Nature Reserve, of Amur program of the Socio-Ecological Union.

Dr. Sergey Kuzmin is the Chairman of the CIS Regional Working Group on Declining Amphibian Populations and a researcher at the Institute for Problems of Ecology and Evolution.
Save the bustard!
The Bustard, Otis tarda, the largest representative of avifauna of the republic Moldova has long been considered an endangered species. However, no measures were undertaken for this species protection neither by scientists nor the experts from the State Department on Nature Protection. Probably, they just tolerating the disappearance of this bird. In 1990, the NGO Pro Natura members investigated the status of the Bustard in Moldova and since then have held three expeditions and a survey of experts in their search for the birds. Results demonstrated that fortunately, the Bustard still inhabits Moldova. But urgent measures are required for this species' conservation. Helping the bustard population to survive could be possible by protected its habitat and creating a state nature preserve in the forest-steppe zone of Moldova. Pro Natura is incapable of financing such a project and counts on sponsors support. Donations, or ideas for cooperation are needed. For more information, please contact: Roman Gucu, Pro Natura, Gari Str, 86-a or, Drochia, Moldova 279400

CONSERVATION FINANCE

Human-i-Tees Around the World

by Michelle Conant

In January, six environmental groups in the former Soviet Union received $2,500 each from the Human-i-Tees Foundation of Pleasantville, New York. Human-i-Tees is a U.S.-based environmental t-shirt company that helps student groups around the country raise funds through the sale of T-shirts, and each year the company donates more than 20% of its profits to environmental organizations in the U.S. and abroad through its Foundation.

The owners of Human-i-Tees firmly believe that businesses should be proactive for environmental preservation and social action. In keeping with that philosophy, the Foundation awards grants ranging from $1,000 to $5,000 to groups working on a variety of local, national and international environmental issues. Organizations promoting student environmental education and activism, as well as those working to preserve ancient forests and native biodiversity, receive special attention.

In Russia the awards went to groups of schoolchildren, professionals and university students in St. Petersburg, Kaluga, Ryazan, Moscow and Murmansk. The money primarily supports field exploration and data collection for expanding the network of protected areas. For example, a project in the Mokshanskaya Lowlands of the Ryazan region will map out the forested and marshy areas where broad plant and animal diversity has survived, thanks to little economic development under the Soviets, and they will recommend where the borders of sustainable economic activity should be drawn in order to protect biodiversity.

The Biodiversity Conservation Center (BCC) played an invaluable mediating role between the Foundation and the grant applicants. Center staff completed the work of translating the guidelines, sending out announcements via direct mail and LIVENET (an electronic mail list distributed to more than 170 groups), reviewing the proposals, corresponding with grantees, and disbursing the contributions in an astonishing eight-week period!

A BCC-compiled panel of experts reviewed the submitted proposals and nominated ten for the second round of selection. The Human-i-Tees Foundation then chose the six which most closely met the following criteria: groups working to protect forests and/or critical habitat for endangered species; smaller, action-oriented groups; groups overlooked by other funding sources; and groups promoting student activism. The priority of the conservation problem and the expected effectiveness of the proposed action were also considered.

In the future the Human-i-Tees Foundation plans to expand its international grassroots funding program, allocating more than $34,000 for 1996. In addition to working with BCC, the Foundation is currently donating funds overseas through the Pacific Environment and Resources Center, Global GreenGrants, for community-based groups in Brazil, and the Marine Turtle Specialist Group, for leatherback conservation programs in Indonesia.

Michelle Conant is currently the Executive Director of Greenworking, a non-profit statewide environmental group, as well as the Biodiversity Grant Coordinator at Human-i-Tees.

Russian NGOs develop grant-making capacity

by Eugene Simonov

In 1995 the Biodiversity Conservation Center made its debut as a facilitator between conservationists in Russia and the FSU and grant makers. The process has been an enjoyable educational experience for the Center, its friends and partners both in Russia and in the USA.

In October, 1995 the Cultural Initiative Program (a branch of the Soros Foundation) looked to BCC to help disburse several pieces of equipment to conservationists. The BCC board helped to identify conservation groups who were in need of the equipment (copy machines, computers, printers, and fax machines) to those who could make the most efficient use of this donation. Grants were made to Zapovedniki, National Parks, and NGOs, including Tsentralno-Chernozemni Zapovednik (south-central Russia) which coordinates steppe-preservation effort in Russia and Ukraine; Kenozerski National Park, which is known for promoting preservation of natural and cultural heritage of the Russian North; the Northwestern Association of Protected Areas which supports many protected areas in European Russia; and several other organizations.
Transporting the equipment to locations remote from Moscow by the infamous Russian roads has been a hard task, but by the end of 1995, all pieces had been put to good use by their new owners.

In November-December, 1995 the Human-i-Tees Foundation requested the assistance of the BCC in organizing a small grants competition for grassroots conservation NGOs in 18 regions of Central and Northwestern European Russia. The competition was held in regions where the remaining European old-growth forests are most threatened by development, and encouraged student groups and young professionals to undertake on-the-ground efforts to protect those ecosystems. Out of more than 20 applicants, six conservation NGOs were awarded grants supporting what were judged to be the most effective conservation projects (see the preceding article by Michelle Connant).

Hopefully, these examples of a Russian NGO acting as an intermediary for grant makers and seekers are not just isolated instances, but a manifestation of a new trend in international grant making in the former Soviet Union. Domestic organizations are becoming better integrated into the grant making processes organized by large and small western foundations.

Over the last several years, conservation organizations of the FSU have gained experience in fundraising and grant management, working with international donors and grant competitions. Some of these organizations are already well known to western donors and NGOs. Their leaders frequently served as professional experts, evaluating proposals and helping to design grant making schemes.

Some larger NGOs have established a reputation as information clearinghouses and coordination centers for a multitude of smaller grassroots groups in many regions. Now, they have started to act as co-organizers of grant competitions and other mechanisms of distributing western assistance to the post-Soviet conservation movement. This capability could be an important service to many western foundations who want to participate in solving priority conservation problems in Russia, Ukraine, and Central Asia, but neither have offices in these countries, nor can organize distribution of relatively small grants to many groups overseas and ensure its proper use in remote locations. In many areas, effective communication between the most capable perspective grantees and foundations is hampered by language barriers — an obstacle that local intermediaries can easily overcome.

Our recent experience also shows that communication lines, banking systems, transportation and other essential infrastructure of this region of the world are, indeed, reliable enough to successfully complete grant making operations. What is probably even more important, though, is the networking and mutual trust that has developed within the international conservation community, which allows the organization of highly efficient grant making processes reaching active groups far in the field.

We at the BCC are very grateful to the Soros Foundation and Human-i-Tees for this enjoyable cooperation and plan to work further to bring such needed support to conservationists in the remote regions of the former Soviet Union.

Eugene Simonov is Program Coordinator at the Biodiversity Conservation Center.

---

Five million Swiss Francs for Nature Conservation in Russia

by Faina Y. Gordina

Geneva - The Swiss Federal Department of Foreign Affairs and WWF signed a contract for five million Swiss francs toward nature conservation in Russia. "This is the biggest grant that our department has ever earmarked for an environmental project in Eastern Europe", - said Remo Gautschi, Deputy Director of the Swiss Development Cooperation Office in the Federal Department for Foreign Affairs. "It is also the largest project that we have so far carried out with a non-governmental organisation".

The Swiss-funded part of WWF’s Russian Programme aims to:

- develop a sustainable forest management program for Pechoro-Ilych and help local communities benefit from the forests and their resources;
- create a Center for Environmental Education for Protected Areas;
- increase the level of public awareness of ecological issues;
- conduct training for managers of protected areas and develop management plans for specially protected natural territories with consideration of new social and economic conditions and the necessity to search for alternative sources of funding;
- create a Conservation Fund to increase funds for conservation programs in Russia.

"Russia is one of the last countries in the Northern Hemisphere where one still finds large areas of virgin forest", - said Dr. Claude Martin, the Director General of WWF-International. He added: "To do nothing and allow areas such as these forests to be destroyed would be a tragedy for the whole world. We cannot allow Russia to sell off its natural assets, simply to finance the difficult and costly process of adjusting to a new political and economic regime".

"Switzerland’s grant is a milestone on the path to the implementation of the environmental campaign programme for Central and Eastern Europe decided on by the ministerial conference “Environment for Europe”, in Lucerne at the end of April 1993", added Gautschi.

At the last Environment for Europe Conference, held in Sofia in October, 1995, Switzerland signed an important “debt for nature” agreement with Bulgaria.

Faina Gordina is a Project Manager of WWF’s Russian Programme Office.
LIVING ARCTIC

RCN announces a new column:
The Living Arctic

by Dr. Irina Pokrovskaya

In January of 1996, the first Russian language issue of a new informational newsletter, The Living Arctic, was published. The idea to create such a newsletter arose from the concern about deteriorating environmental, social, and ethnic conditions in the north of Russia. The problems that have seized Russia as a whole have struck the northern regions even more painfully and are manifested in the most dramatic and ugly forms. The Living Arctic was primarily designed as a way to express and exchange the ideas and thoughts of those who defend the rights of native people and the nature of Russian Arctic.

In subsequent issues of Russian Conservation News, we will be reprinting selected articles from The Living Arctic to share information about nature conservation and sustainable development in the Russian North.

The Russian Arctic is one of the few regions in the world that has been hardly touched by industrial impact. It is this trait, and not its abundant resources, that makes the Arctic one of the most significant national properties. Now, in the time of rapidly growing contacts with international communities and impetuously increasing interest in the Russian Arctic, it is more important than ever to identify a plan for sustainable development that can guarantee the rights and a high quality of life and environment for the people of the Arctic. We believe that our newsletter will contribute to the resolution of this urgent task.

We wish to dedicate this first column to a beloved and dedicated Arctic sociologist, Aleksandr Pika. In an expedition in the Chukotka region last summer, Pika was lost along with three other scientists — three of whom were American — and ten local people in a tragic boat accident that shocked the scientific community. Pika and his American colleagues, Steven MacNab, William Richards, and Richard Condon were involved in a project to examine social and economic problems in the north and make policy recommendations to federal and regional agencies. Aleksandr was one of the authors and part of the inspiration to create The Living Arctic. He was devoted to the ideas of Good, Justice and Perception and perished performing his civil and scientific duty.

Dr. Irina Pokrovskaya is an editor of information department of The Living Arctic newsletter. She can be contacted through the Biodiversity Conservation Center.

NEWS

“Approved... with some corrections”:
An update on high-speed railroad construction.

by Maria Kosolapova

From the Editors: In the third issue of Russian Conservation News, we published a report on plans for construction of a high-speed railroad from St. Petersburg - Moscow (Novgorod-route) which could be environmentally devastating. Scheduled for completion in 2015, the new railroad will be located 30 km to the west from an existing line (Oktiabrskaya). The length of the new route will be 654 km, and the project will cost about $10 billion. Four regions - Leningrad, Moscow, Tver and Novgorod will be dissected by a concrete corridor 2-4 meters high. The new route will cut through many natural territories: those of the Valdai Upland (where the largest Russian rivers such as the Volga, Dneiper, and Northern Dvina begin), Valdaiski National Park (violating the laws on Protected Natural Areas), and about seven special purpose nature preserves and nature monuments. Construction will require cutting of 5,300 ha. of forests, the majority of which are forests of “first group” designation, having special conservation significance. (For more information about the project, discussions, and alternatives for the new route construction - see RCN # 3).

In November, 1995, the Minister of Environmental Protection issued a resolution that approved the construction of the high-speed railroad from Moscow to St. Petersburg. The resolution was the culmination of a process that involved a State Environmental Impact Assessment, an economic justification of the project, much outcry from the environmental community, and a commission of 57 “experts” who reviewed all of the above.

Actually, the decision of the commission was “to approve the plan, with corrections”. However, the Russian Law On Environmental Impact Assessment states that such plans must be accepted or rejected; if enough “corrections” are needed, the plan should be rejected until it is ready for a second review by the Ministerial commission.

The outcome of the resolution — which was reached essentially illegally — reflected the strong lobbying power of the joint stock company (RAO VSM), whose economic stakes in the project are high. Allegedly, some signatures of some commission members who voted in favor of the project were obtained by illegal means.

Following the commission’s decision, several experts who had participated in the environmental impact assessment
joined environmental groups in a protest campaign against the resolution, demanding that it be annulled, and that the commission adjourn once more for a legal review of the documentation. The radical environmental group, the Rainbow Keepers, staged a protest next to the Ministry of Environmental Protection. Seven environmental NGOs from Moscow, Tver, Novgorod and St. Petersburg issued an open protest letter and handed it to the Minister of Environment V.I. Danilov-Danilyan.

The railroad project contradicts Russian law in another way: construction of the route can be started only after the approval of a specific technical plan. Although such a plan is not yet ready, RAO VSM has made several attempts (for which it has been fined) to cut trees in the areas planned for the new route.

Ironically, another Russian Ministry has been busy reviewing another railroad project. At the end of 1995, the Ministry of Transportation issued a decision to begin reconstruction of the Oktiabrskaya railroad, the existing Moscow-St.Petersburg line. Reconstruction of this line, for adaption to high-speed traffic, will cost about $1 billion. Oktiabrskaya Railroad currently has about 5 million passengers a year, running at 70% of capacity. According to some estimates, the new high-speed railroad will need a circulation of 40 million passengers in order to recover the costs of its construction. But will it be possible to recover the wetlands, woods, and wildlife that will be lost to the new high-speed railway?

Now, two competing projects are being developed. Will reason prevail over profit-driven ambition?

Maria Kosolapova is Coordinator of the Association of non governmental organizations of St.Petersburg - Moscow

---

Cheetah '95: Central Asian Conference on Biodiversity

On November 20-25, in activists, environmentalists, representatives from several foundations and experts in nature conservation from five Central Asian Republics, Russia, and the USA met in Dashkhovery, Turkmenistan. The conference was organized by Dashkhovery Ecological Club in cooperation with Law and Environment Eurasia Partnership (LEEP) and supported with funds from the John D. and Catherine T. MacArthur Foundation and the Soros Foundation.

At the conference, participants issued a resolution, recognizing the “catastrophic decline of many species of plants and animals” which calls into question the possibility not only for sustainable development but the survival of human civilization”. They resolved to unite their efforts in biodiversity conservation in the region by forming the international Institute of Biological Diversity of Central Asia, to be called “BIOSTAN”. The new organization was created to provide a structure wherein conservationists could support each other and exchange information amongst themselves and with other parts of the world. BOSTAN is available for cooperation with governmental, non-governmental, and commercial organizations. BOSTAN will be guided by an elected Coordinating Committee that will work in close cooperation with the Pakistan program office of World Wide Fund for Nature (WWF).

For more information about becoming a member of BOSTAN, contact Oleg Tsaruk, Acting Director of the BOSTAN Coordinating Committee: 11 Prospect Gaidar, Apt. 10, Tashkent, Uzbekistan. 700015; e-mail: <tashkent@glas.apc.org>

---

Russian environmentalist arrested and accused of espionage

On February 9, as Russian Conservation News was going to press, Editors received news from Bellona, a Norway-based international environmental organization (and a member of Socio-Ecological Union) about the recent arrest of a Russian scientist, Aleksandr Nikitin. Nikitin had been investigating environmental aspects of nuclear problems on the Kola Peninsula and was working on a report for Bellona on safety regarding the nuclear submarines and storage facilities for radioactive waste in the Northern Fleet. Below, we have re-printed excerpts from their letter to colleagues around the world.

Bellona co-worker Aleksandr Nikitin was arrested Tuesday morning at 07.00 local time at his home in St. Petersburg by at least five agents of the Russian Security Police (FSB). Nikitin was arrested on charges of espionage, which is punishable by up to 15 years in prison, or even execution. The arrest of Nikitin is a severe blow against the rights of environmentalists and democrats in Russia. Bellona lawyers in Murmansk and Moscow, as well as human right organizations, have started working on the release of Mr. Nikitin.

The FSB (former KGB) surveillance of Bellona research was already underway last October. In early October of last year, the FSB interrogated several people about the research and confiscated materials and computers. On October 17, the FSB claimed on the evening news that Bellona was helping western intelligence services, and that western environmentalists were using environmentalism as a cover for espionage. Bellona denied the allegations, stating that it is not interested in military issues and that all
News / Conservation Library

"Russian environmentalist arrested and accused of espionage", continued from page 34

information is collected from open sources. Similar interrogations by the FSB continued:

The severity of this case cannot be overstated. We ask you to repost this message as seems appropriate and send protests to your local Russian embassy. We are also initiating a signature campaign in which we hope you can participate. Print out a paper with heading: "Set Aleksandr Nikitin free", give a brief description of the case: "Bellona co-worker Aleksandr Nikitin was arrested on Feb. 6, 1996 in his home by agents of the Russian Security police FSB (former KGB). Because of these activities, is now charged with spying for a foreign power. We demand that Aleksandr Nikitin be released and that the Russian Government respect the rights of Russian environmentalists" Include the name of your organization. Please return the lists to Bellona before Mar. 1. Thank you for your concern!

Please send your letters to the fax numbers or e-mail listed below:

Contact: Nils Bohmer (+47 22382410) or Thomas Nilsen (+47 941 34 654)
Fax: +47 22383862; Phone: +47 22382410
Mail: BELLONA, Box 2141
Grünerlokka, N-0505 Oslo, Norway.
Email: bellona@euronetis.no // bellona@sn.no WWW: http://www.grida.no/ngo/bellona/ (ends with a slash).

CONSERVATION

Kuzmin, Sergey. 1995. Amphibian Populations in the Commonwealth of Independent States: Current Status and declines. Moscow: Pensoft Publisher. To obtain, please send a request to the author at: The Institute of Problems for Ecology and Evolution, 33 Leninskiy Propekt, Moscow 117071, RUSSIA; ph: 7(095) 954-0-36; fax: 7(095) 954-5534; e-mail: <sevin@sovamsu.sovusa.com>

Northern Perspectives is a Canadian quarterly highlighting northern and circumpolar issues published by Canadian Arctic Resources Committee. To subscribe, contact CARC, 1 Nicholas Street, Suite 1100, Ottawa, Ontario, KIN 7B7 ph: (613)241-7379; fax: (613) 241-2244; e-mail: <ay385@freenet.carleton.ca>

Raptor Link is an informational, bilingual (Russian and English) monthly newsletter about birds of prey of Russia. Subscription requests or correspondence should be sent to: Eugene R. Potapov, Dept. of Zoology, Villavagen 9, Uppsala S-752, Sweden.
Fax: +46(18) 559-888; e-mail: <Zooep@strix.udac.uu.se>

(In the Baltic Republics, requests can be sent to: Romas Mezioni, Jaunimo kv.3-42 LT-5730 Solute, Lithuania).


LIBRARY

B.N. Veyntsev's Record Library of Animal Voices and Sounds has a large selection of bird songs, and other animal voices available on tape. The Library carries records of almost all bird species of the former Soviet Union. Professional-quality copies can be made at your request for a negotiable price.

Contact: Olga Veyntseva, Phonoteca Golosov Zhivotnyh, Institute of Theoretical and Experimental Biophysics of the Russian Academy of Sciences, Puschino, Serpukovskij Rajon, 142292, Moscow Region, RUSSIA, Phone 7(095)923-96-68 ext.252; OR 7(095) 923-74-67 ext. 252, E-mail: <veintraceva@venus.iteb,serpukhov.su>


Wordly Wise

Republic, Krai, Oblast and Okrug are all types of administrative, political units which are subjects of the Russian Federation, similar to a state in America. In total, there are 89 subjects of the Russian Federation.
Zapovednik (zap-o-VYED-neck) = Nature Reserve; plural: Zapovedniki (zap-o-VYED-nee-kee) = areas that protect representative landscapes or unique landscape features, and have served scientific, conservation and educational purposes. Human activity is highly restricted in these territories.
National Park = areas protecting Russia's cultural and natural heritage, where limited use for recreation and education is permitted.

Know your Metrics?

one foot = 0.301 meters (m)
one mile = 1.61 kilometer (km)
one acre = 0.405 hectare (ha)
one square mile = 2.59 square kilometer (km2) = 640 acres

February 1996, #6
SEPTEMBER 10-12, 1996: CONFERENCE: IMAGES OF THE NORTH THROUGH PRISM OF SCIENCE AND TOURISM: Apatity, Murmansk Region, Russia

Sponsored by the Russian Academy of Sciences, Kola Science Center, and Administration of Apatity in cooperation with: Geological Institute, Econom, Khibiny Co., and Nordic Study Center

The conference is aimed at bringing together those interested in the development of northern areas: administrators, scientific researchers, tourist companies. Proposed topics (presented in paper sessions and workshops) include tourism strategies, parks planning and management, youth tourism, related economic issues. Trips before and after include visits to islands of Kandalaksha Bay, a Saami village, a coastal settlement, sites of special mineralogical significance.

Applicants should suggest paper topics if they would like to make presentations.

Cost of conference: If paid before July 31: USD $150 (students $100). From Aug. 1: $175 (students $125).

Contact person for the conference: Mikail Torokhov, Fersman Str., 14, Apatity, Murmansk Reg. 184200 RUSSIA, Telex: 126129 KOLSC SU, fax: +47-78914153 from all countries, +7512 9514153 only from Norway and Finland, e-mail: <mitor@ksc-gi.murmansk.su>

SEPTEMBER 17-21, 1996: INTERNATIONAL CONGRESS AND TECHNICAL EXHIBITION WATER: ECOLOGY AND TECHNOLOGY: Moscow


The Congress will focus on water resources and water use, water-supply, water disposal and wastewater treatment, water preparation, water monitoring, market mechanism in water management, investment projects in water sector, international cooperation, water management and law, conversion and water management.

Contact: PO Box 173, Moscow 107078, RUSSIA
Phone/fax: (7-095) 207-63-60, 207-6475, 975-4808,
E-mail: <postmaster@sibico.msk.ru>
# Bulletin Board

## Bulletin

**Contact areas on line**

To contact your colleagues in Russia's Dniki or National Parks? Many of them have access to electronic mail. Here they are!

<table>
<thead>
<tr>
<th>Dniki:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ndskt: <a href="mailto:root@zap.mgsu.murmansk.su">root@zap.mgsu.murmansk.su</a></td>
</tr>
<tr>
<td>alno-Chernozemni: <a href="mailto:biosphere@glas.apc.org">biosphere@glas.apc.org</a></td>
</tr>
<tr>
<td>mukhsk: <a href="mailto:root@zapo.mgud.gor.karelia.su">root@zapo.mgud.gor.karelia.su</a></td>
</tr>
<tr>
<td>v-svirska: <a href="mailto:slan@orlan.spb.su">slan@orlan.spb.su</a></td>
</tr>
<tr>
<td>vayya Pad: &lt;SLEOPROJ/O=VLAD.WOOD/PO=sovmail.sprint.com&gt;</td>
</tr>
<tr>
<td><a href="mailto:soka@glas.apc.org">soka@glas.apc.org</a>&gt;</td>
</tr>
<tr>
<td>aya Kokshaga: <a href="mailto:kakshana@glas.apc.org">kakshana@glas.apc.org</a></td>
</tr>
<tr>
<td>vostochni Morskoy: <a href="mailto:faribm@visnet.marine.com">faribm@visnet.marine.com</a></td>
</tr>
<tr>
<td>ernski: <a href="mailto:dronrt@glas.apc.org">dronrt@glas.apc.org</a></td>
</tr>
<tr>
<td>tralno-Lesnoy: <a href="mailto:senforest@glas.apc.org">senforest@glas.apc.org</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National Parks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vodlozerski: <a href="mailto:chev@vodloz.karelia.su">chev@vodloz.karelia.su</a></td>
</tr>
<tr>
<td>2. Pereslavl (nature-historical park): <a href="mailto:echaplin@park.boitik.yaroslavl.su">echaplin@park.boitik.yaroslavl.su</a></td>
</tr>
<tr>
<td>3. Priibalkalski: <a href="mailto:alex@cppr.irkutsk.su">alex@cppr.irkutsk.su</a></td>
</tr>
<tr>
<td>4. Smolenskoe P'ozero: <a href="mailto:sfagtbnk@sovam.com">sfagtbnk@sovam.com</a></td>
</tr>
</tbody>
</table>

**Organizations:**

1. The Association of Baltic National Parks (ARNP)& Union of Protected Areas of Estonia: <teet@ltkm.envir.ee> |
2. Ministry of Environmental Protection, Department of Protected Areas Management: <zachina@glas.apc.org> |

## Board

<table>
<thead>
<tr>
<th>Number</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Sikkote-Alinski: <a href="mailto:sixote@glas.apc.org">sixote@glas.apc.org</a></td>
</tr>
<tr>
<td>12.</td>
<td>Daurski: <a href="mailto:root@daur.chita.su">root@daur.chita.su</a></td>
</tr>
<tr>
<td>13.</td>
<td>Les-na-Vorsklo: <a href="mailto:rubka95@glas.apc.org">rubka95@glas.apc.org</a></td>
</tr>
<tr>
<td>14.</td>
<td>Putoranski: <a href="mailto:teles@remac.msk.su">teles@remac.msk.su</a></td>
</tr>
<tr>
<td>15.</td>
<td>Rostoch (Ukraine): <a href="mailto:Gid@forest.lviv.un">Gid@forest.lviv.un</a></td>
</tr>
<tr>
<td>16.</td>
<td>Katunski: &lt;root@zapo ved.koks.altai.su&gt;</td>
</tr>
</tbody>
</table>

**National Parks:**

1. Vodlozerski: <chev@vodloz.karelia.su> |
2. Pereslavl (nature-historical park): <echaplin@park.boitik.yaroslavl.su> |
3. Priibalkalski: <alex@cppr.irkutsk.su> |
4. Smolenskoe P'ozero: <sfagtbnk@sovam.com> |

**Organizations:**

1. The Association of Baltic National Parks (ARNP)& Union of Protected Areas of Estonia: <teet@ltkm.envir.ee> |
2. Ministry of Environmental Protection, Department of Protected Areas Management: <zachina@glas.apc.org> |

---

**E-Mail Capability For Biodiversity Preservation**

*Offfer, from the Sacred Earth (SEN), writes:*

Through SEN's Environmental 

communications Project (ETP) has the entire gamut of 

mental NGO's in the former 

Union we have a special interest 

diversity protection. Over the past 

three years, SEN in partnership with the Social Ecological Union, has actively 

sought biodiversity specialists to take part in 
the ETP. Approximately 8 computer 

systems (CPU, modem and printer) are 

donated on a quarterly basis with many 
given to conservationists. Training and 

followup are crucial components of the 

ETP. Decision dates in 1996 are January 

15, April 15, July 15, and October 15. 

Inquiries about application guidelines 

should be sent to Dmitri Tolmatski at 

<senmos@glas.apc.org>. The majority of 

users below have received a full 

system from the ETP. They are actively 

seeking partnerships and funding. 

Contact them.

---

**Smireski, SEU Amur River Programmi, Moscow, Russia:**

<glas.apc.org> |

**Kayumov, Dront EcoCentre, Nizhny Novgorod, Russia:**

<dronrt@glas.apc.org> |

**Soklin, The Centre for the Defense of Wild Nature, Stok, Russia:**

<soklin@stvisnet.com> |

**Ir' Alexandrov, Institute of Physiology, St. Petersburg Center for Citizen Initiatives, St. Petersburg, Russia:**

<ir'@glas.apc.org> |

**P. division, SEU Amur Divison, Blagoveshchensk, Russia:**

<p@glas.apc.org> |

**oginov, Snow Leopard Lovers' Club, Ust-Kamenogorsk, Karakol, Kyrgyzstan:**

<sok@irisb.east.alma-atu.su> |

**Kochkin, Kedrovaya Pad Zapovednik, post, Primorsky, Russia:**

<8=LEOPROJ/O=VLAD.WOOD/PO=sovmail.sprint.com> |

**V. Proskurina, Friends of the Okhotsk Seacoast, Institute for Biological Problems of the North Magadan, Russia:**

<fbp@magadan.su> |

**A. Arambayev, Ashkhabat Ecology Club, Ashkhabat, Turkmenistan:**

<ac@atbna@glas.apc.org> |

**N. Latunov, Green Don, Novocherkask, Rostov Region, Russia:**

<ned@glas.apc.org> |

**Valeri Brinl, Daurski Zapovednik, Ononski region, Chita oblast, Russia:**

<lavra@glas.apc.org> |

**Elena Mukhina, Eclog Society, Bukhara, Uzbekistan:**

<bukhara@glas.apc.org> |

**Sergei Shaparenko, Kharkov University Druzhina, Kharkov, Ukraine:**

<lo@glas.apc.org> |

**Andrey Elizarov, Laboratory for Natural Ecosystems, Tillamut:**

<ele@glas.apc.org> |

**Sergey Kotelevskiy, Karadag Zapovednik, Feodosia Region, Ukraine:**

<kartag@karadag.crimea.ua> |

**Vladimir Bilyk, Young Ecologists, Young Environmental Protection Inspectors Sumy, Ukraine:**

<mb@uee.com> |

**Sergey Okaemov, Chazi and Mali Abakan Zapovednik, Abakan, Khakassia Rep., Russia:**

<lavria@glas.apc.org> |

**Andrey Rudomakh, Makop SEU, Novopokhmelnole village, Markop region, Russia:**

<makop@glas.apc.org> |

**Mikhail Shishin, Association of Non-Govermental Organizations "Kazan", Barnaul-15, Russia:**

<kazan@glas.apc.org> |

**Dmitry Pikunov, Pacific Institute of Geography DVO RAN, Vladivostok, Russia:**

<pikunov@glas.apc.org> |

**Pavel Sulyandziga, Radion Sulyandziga, "Association of Indigenous Peoples of the Primorski Krai", Krasnoy Yar, Russia:**

<udege@glas.apc.org> |
Volunteer for a Siberian Nature Reserve this Summer!

The Baikal-Lenski Nature Reserve (or Zapovednik, in Russian) is looking for hardy and adventurous volunteers for trailbuilding this summer season. It is one of the largest in Russia; it comprises 660,000 hectares, and is situated in the Irkutsk Region, one of the most wild and inaccessible parts of Lake Baikal. The Zapovednik boasts 110 km of shoreline, the Baikal mountain range, and the headwaters for the Lena, the Kirenga, and other Baikal tributaries. About 90% of the Zapovednik is forested, providing habitat for over 250 species of birds and 50 species of wild animals. About 200 bears live in the Zapovednik, the largest concentration around Baikal. No wonder that one of the Zapovednik’s areas is called “Shore of the Brown Bear”.

The Zapovednik is relatively young, only 8 years old, and lacks any amenities for visitors. Work will begin this summer on construction of an educational, interpretive trail, and we need your help! Volunteers will be needed during the first part of July, the best time to be at Baikal, and will last two or three weeks. Volunteers must be physically strong and healthy, able to do strenuous work and willing to live in primitive conditions (i.e.: sleep in tents or cabins). Work groups will consist of 7 or 8 people.

Volunteers are responsible for transportation to the Zapovednik (a round trip San Francisco-Irkutsk will cost about $1,200), as well as for living expenses while there (about $100-200 a month). Volunteers must also bring their own sleeping bag, warm clothing, rain gear, and rain boots. The Zapovednik will provide all necessary work tools and a guide-instructor.

All visas, invitations, and other logistics will be arranged through the Baikal Watch. We can help with your trip planning. Start planning now for this exciting opportunity!

For more information, please contact the Baikal Watch Program (Earth Island Institute, 300 Broadway, Suite 28, San Francisco, CA 94133 USA, ph: (415) 788-3666, fax: (415) 788-7324, e-mail: baikalwatch@ige.apc.org), or the Baikal Center for Ecological and Citizen Initiatives in Irkutsk (e-mail: <irkutsk@glas.apc.org>.

Internship/Volunteer Position in Moscow with ECOLOGIA/Eco-Line

ECOLOGIA/Eco-Line is an international environmental organization dedicated to environmental monitoring and information exchange. Eco-Line works with many organizations through Moscow, Eastern Europe, the USA, and the former USSR. Eco-line is currently developing an environmental library. Interns would help staff respond to informational requests, correspond with contributors, and working on the internet. Eco-line is based at the Socio-Ecologic Union, Russia’s largest environmental organization. Interns would have the opportunity to use Russian skills, meet many Russian environmentalists, and learn about their work. Contact: Oleg Cherp in Moscow: ph: 7(095) 221-3381; e-mail: <ecologias@glas.apc.org>. For more information about ECOLOGIA, contact Randy Kritkauskas in the USA: ph: (717) 945-7358; e-mail: <ecologias@ige.apc.org>.
CONSERVATION

Altaiski Zapovednik.
Barnaou, P.O.Box 40, Altaisky region, 656099, Russia

Baikal Ecological Wave, Jenny Sutton, Tatiana Markova, Co-Chairs of Project Nerva. P.O.Box 214, Irkutsk 664003, Russia, phone: (395-246-77-09; 395-246-59-62, 31-02-89, Fax: (395-2432322, or 34-34-60 [Fax is not convenient], e-mail: <sutton@wave.irkutsk.ru>

Biodiversity Conservation Center, P.O.Box 449, Moscow,119270, Russia, phone/fax: (095) 182-1888, e-mail:<biodivers@glas.apc.org>

Dashkhouv Ecological Club, Andrei Zatoka, Co-Chairman. Center - I, D. 8, kv 23, Dashkhouv 746301, Turkmenistan, phone: (360-22) 26683; e-mail: <zatoka@glas.apc.org>

Division of Mammals, Zoological Museum, Moscow State University, Alex V. Borissenko and Sergey V. Kruskop. Bolshaya Nikitskaya Str., 6, Moscow 103009, Russia, phone: (095) 203-3769, fax: (095) 203-2717, e-mail: <mammal@zoomus.bio.msu.ru>

Division of Zoology, Rostov University, Professor Victor A. Minorsky. Sokolova Pr. 23-113, Rostov-na-Don 34406, Russia, phone: (8632) 65-9531

Ecouris-WLED, President - Vera Mischenko. P.O.Box 339, Moscow 117313, phone: (095)246-3903; fax: (095) 292-6511 (for ecouris, box 7702), e-mail: <ecouris@glas.apc.org>

Ecolog Unity, Oleg Terak. Tashkent, Uzbekistan;
phone: (3712) 91-93-35, e-mail: <tashkent@glas.apc.org>

Ecologia, Oleg Cherpi. PO Box 210, Moscow 121019, Russia phone/fax: (095) 926-3081, e-mail: <ecologia@glas.apc.org>

Greenpeace Russia, Biodiversity program coordinator - Sergey Tsypenko. Dolgomovskaya Str., 21, Moscow 103066, Russia, phone: (095) 978-3950; fax: (095) 251-90-88, e-mail: <gpmoscow@greenpeace.org>

Institute of Developmental Biology, Russian Academy of Science, Dr. Alexander Barnov. 26 Vavilov Str., Moscow 117808, Russia, phone: (095) 952-2423; fax: (095) 952-3007 e-mail: <canuz@biotest.ac.ru> <canuz@glas.apc.org>

Institute for Ecology and Evolution, Russian Academy of Science, Sergey L. Kurzin. 33, Leninsky Pr. Moscow 117071, Russia, phone: (095) 954-1036; fax: (095) 954-5534 e-mail: <svein@sovusa.sovusa.com>

Institute of Geography, Russian Academy of Science, Laboratory of Biogeography, Arkadi Tishkov. Phone: (095) 238-1822; fax: (095) 230-2090, e-mail: <biogiders@glas.apc.org>

Institute of Water Problems, Russian Academy of Science, Dr. Nina M. Novikova. 10, Novaya Basmannaya Str., P.O.Box 524, Moscow 107078, Russia, phone: (095) 265-9565, fax: (095) 265-1887, e-mail: <novikova@iwprn.msk.ru>

Issyk-Kul Zapovednik, B. Musabaev - Director. Lenina str. 247, s. Anan'ev, Issyk-Kul region, Kirgizstan

Katunska Zapovednik. P.O. Box 24, Yst-Koksa, Altai Republic, 659760, Russia, e-mail: <root@zapoved.koksa.altai.ru>

Kiev Center for Environment and Culture, Chairman of the board - Vladimir Boreiko. Kulibina 5, apt.221, Kiev, 252062 Ukraine, phone: (044) 268-6108

CONTACTS

Ministry of Environmental Protection, Department of Nature Reserve Management. World Heritage coordinator- Alexey Blagovidiy. 8/1 Kedrova Str., Moscow 117874, Russia, phone: (095)125-8905; fax: (095)510-7093, e-mail: <blagovidiy@glas.apc.org>

Moscow Affiliate of the International Biotest Foundation, Chairman - Dr. Vladimir Zakharov. 26 Vavilov Str., Moscow 117808, Russia, phone: (095) 952-2423; fax: (095) 952-3007, e-mail: <canuz@biotest.ac.ru> <canuz@glas.apc.org>

Pacific Institute of Geography, Chukotka Division, Nikita G. Ovsyannikov. 25 Mlenzhinskogo Str. apt.28, Moscow 129327, Russia, phone/fax: (095) 287-6250

Pechora-Ilychsky Zapovednik, pos. Yaksha, Troitske-Pechorsky Raion, Komi Republic 169430, Russia, phone: (813) 95-699; fax: (8213) 9-9949

Sacred Earth Network, Dmitri Tolmaschi. Phone: (709) 921-7161; fax: (709) 206-9790, e-mail: <sgennos@glas.apc.org>

Smolenskoe Po'ezero National park. Podosinski pos., Demidovsky Raion, Smolensk Region 216275, Russia, phone/fax: 7-(36122)-7-77-29, e-mail: <nukus@glas.apc.org>

Usurirski Zapovednik. Kamenchuk pos., Usurirski Raion Primorski Krai, 692532, Russia

Voronezhski Zapovednik, Alexander Nikolaev. Graphiskaya station, Voronezh-47, 394047, Russia, phone: (0732)-27-0549; 27-0548, e-mail: <borlus@bio.vucn.tver.voronezh.su> (S. for Nikolaev)

World Wide Fund for Nature - Russia Programme Office, Program Coordinator - Laura Williams. PO Box 55, Moscow 125047, Russia, phone: (095) 156-4202, e-mail: <wwf@glas.apc.org>

Yugd-Va National Park. Pechora, P.O.Box 98, 169700, KOMI Republic, Russia, e-mail: <lavria@glas.apc.org>

Western Organizations mentioned in this publication:

The Arctic Sea International Committee, William T. Davoren. Executive Director. 1055 Fort Cronkhite, Sausalito, CA 94965, phone: (415) 331-5122; fax: (415) 332-8167, e-mail: <perc@igc.apc.org>

Baikal Watch, 300 Broadway, Suite 28, San Francisco, CA 94133 USA, phone: (415) 788-3666; fax: (415) 788-7324, e-mail: <earthisland@igc.apc.org>

Biodiversity Conservation Center, USA representative - Mikhail Blinnikov. 2126 West 16th Ave, Eugene, OR 97402, phone: (541)686-2288; e-mail: <ebinn@oregon.uoregon.edu>

ECOLOGIA, Randy Kritaukys. Box 199, College Str., La Plume, PA 18440, phone: (717) 945-7358; fax: (717) 945-7360, e-mail: <ecologia@igc.apc.org>

Human-i-Tees, The Environmental T-Shirt Company. 19 Marble Avenue, Pleasantville, NY 10570 USA

International Biotest Foundation, Dr. Carl D. Freeman Department of Biology, Wayne State University, Detroit, MI, 48202, USA, phone: (313) 577-2793; fax: (313) 577-6891

West Virginia University, Division of Forestry, David Ostergren; Box 6125, Morgantown, WV 26506-6125, phone: (304) 292-4262; fax: (304) 293-2441, e-mail: <dsao@wunvm.wvu.edu>
LETTERS TO THE EDITOR can be mailed to:

E-mail may be addressed to: <econx@glas.apc.org>

Phone contacts in USA:
Margaret Williams (202) 778-9573 or
Mikhail Blinnikov (541) 686-2288

Contact in Russia: Anya Menner; P.O.Box 449, Moscow 119270, phone/fax: 7 (095) 482-1888