









THE GOLDEN MOUNTAINS OF ALTAI



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THE GOLDEN MOUNTAINS OF ALTAI

A Treasure of Biodiversity and Culture

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Introduction

Nestled in the Golden Mountains of Altai in southern Siberia, the Republic of Altai is a unique blend of ancient cultures, stunning landscapes, and extraordinarily high biodiversity. The republic borders Mongolia, China, and Kazakhstan, covering 93,000 square kilometers—an area roughly the size of the state of Indiana. Sacred sites dot the republic's varied terrain. Its lands include temperate and boreal forests, dramatic alpine landscapes, rich agricultural lands, the wild and scenic Katun River, and the remote and fragile Ukok Plateau.

The republic's relative isolation and lack of development mean that its landscape and habitats remain largely intact. Many community members are committed to protecting their sacred land, and some open-minded government officials are ready to consider sustainable and renewable technologies. Yet external pressures on the region are numerous. The Russian government's plans to open the border with China by means of a gas pipeline would have enormous ecological impacts on the region. Other large development projects, like the proposed Altai Dam on the Katun River, would endanger public

health, water quality, critical habitat, and the local tourism-based economy.

In this paper, we explore why the Altai is a highpriority conservation area, what threats the region faces today, and where the most significant conservation opportunities are located. The paper discusses specific recommendations to engage in and advance these conservation opportunities. It focuses on:

- Strengthening cultural and environmental activism;
- Promoting alternative energy and green-building technologies;
- · Creating and strengthening protected areas; and
- Supporting eco-tourism, effective land-use planning, and legislative and policy reforms.

Taken together, increased efforts to protect Altai's environment and cultures will lead to conservation victories that can establish Altai as a model for environmental protection and sustainable development.

Ancient Peoples, Ancient Crossroads

The Altai is an ancient crossroads that has been inhabited by Scythians, Turks, Uigurs, Mongols, Altaians (also known historically as Oirats), and others. The entire region has been home to both settled peoples and nomadic cultures for millennia. Some scientists even point to evidence indicating that humans have inhabited the region for one to two million years. A great number of archaeological sites across the republic contain petroglyphs, *kurgans*, and ancient artifacts, some dating as far back as the Stone and Bronze ages.

Today, the Republic of Altai is home primarily to native Altaians, ethnic Russians, and Kazakhs. The Altaian people make up about one-third of the republic's population. Their traditional and spiritual culture continues to figure prominently in people's daily lifestyles, blending with the influence of Russian and post-Soviet cultures. Given the histori-

cal and cultural ties to other Turkic groups of the former Soviet Union, the Altaian people maintain close relationships with neighboring Tyva and more distant Sakha-Yakutia, and with Kyrgyzstan in Central Asia.

The Altaians are a Turkic people who have settled in the greater Altai region. Originally nomadic, the Altaians became more settled with Russian influence. Today, many live a partial subsistence lifestyle that includes hunting, gathering, and animal husbandry. They speak Altaian, a Turkic language, and practice a mixture of Buddhism and shamanism, influenced by both animism and Russian Orthodoxy. Many mountains, rivers, lakes, and high-elevation plateaus are considered sacred sites by the Altaians, which often translates into a local cultural and spiritual mandate for protecting natural resources and landscapes.



Ancient petroglyphs of Elangash (Kosh Agach area). Photo by Meerim Kylychbekova.

Sacred Landscapes

The Altaians' culture and spirituality are tied deeply to the region's dramatic landscapes. The people live close to the land. Their culture is inextricably linked to the surrounding landscape. They revere many animals as sacred and venerate the mountains and rivers of the republic's unique geography.

The Altai Mountains form a dizzying alpine ecosystem, with crystalline lakes and glaciers dotting the mountainous terrain. Mount Belukha, located along the southern border with Kazakhstan, is the range's highest summit, standing more than 4,500 meters tall. It is also a sacred mountain, traditionally called *Uch Sumer*, or "three peaks." Forests cover approximately 25% of the republic's territory. Its largest lake is Lake Teletskoye, or *Altyn Kol* (Golden Lake),

which is surrounded by ancient Siberian pine forests. In the south, the landscape transforms into large steppe plateaus with rich biodiversity and, in some places, permafrost tundra.

The largest rivers in the republic, the Katun and Biya, flow from the glaciers of Mount Belukha and Lake Teletskoye, respectively. The Katun and Biya merge to become the Ob River, which ultimately joins with the Irtysh River to form the longest river system in Russia. To the native Altaians and local residents, these magnificent rivers are sacred and tied to generations of history and lore. Many shamans attend to the spirit of the Ob River (*Toibodym* in Altaian), known for its self-will and power.

^{1.} Most well-known, perhaps, is the Pazyryk Ice Princess, discovered in 1993 on the Ukok Plateau and documented in National Geographic.

^{2.} Kurgan is a Turkic word, widely used in Russia, Central Asia, and the Caucasus, to identify a type of burial mound constructed over a pit grave or a burial chamber. These chambers were complex structures, often containing the bodies of animals, household utensils and tools, weaponry, and jewelry. Native Altaians strongly oppose any type of interference with the kurgans, including archeological excavations, as they believe it will result in serious ramifications like natural disasters.



Mount Belukha. Photo by Ashley Tindall.

Wealth of Biodiversity

With limited infrastructure—fewer than 2,000 miles of paved roads cross through the entire region—and a population of only 200,000 people, the Republic of Altai boasts a wealth of biodiversity. Perhaps most well-known among the region's species is the magnificent snow leopard, a large reclusive cat whose range once extended across much of Central Asia.



Top: Snow leopard (Irbis). Photo courtesy of Snow Leopard Conservancy. Bottom: Argali sheep. Photo by Richard Reading.

Due to habitat losses, decreased prey access, and poaching, the leopard is now critically endangered and restricted to high alpine areas in Tibet and China.³ An elusive creature, the snow leopard spends most of its time in alpine zones and is difficult to study and track.

Other key predator species found in the Altai include wolves, fox, lynx, and the manul cat. The republic is also home to brown bears, wild boar, and wolverines. The best-

known ungulate in the region is the Argali mountain sheep, a highly endangered species whose distinctive twisting horns make it a prized target of poachers and trophy hunters. Fewer than 350 sheep remain in Russia's Altai. The republic is also known for Siberian ibex, roe deer, and maral deer, which occur naturally but are also farmed for horns and meat. Rich concentrations of raptors and other birds can also be found in the region.

The Republic of Altai's biodiversity also extends to the plant world. The Altai is well known for its medicinal herbs, which occur both in the wild and in cultivation. Golden root is a popular medicinal plant highly sought throughout Asia. Many herbal teas, roots, berries, honeys, and non-timber forest products such as Siberian pine nuts are collected and sold within Russia and across Asia. South Korea is a particularly valuable market for many of the Altai's medicinal products.

Much of the richly biodiverse Altai is a working landscape where subsistence farmers and livestock herders have lived in sustainable coexistence with nature for hundreds or thousands of years. Forests in the north gradually give way to higher and drier steppe and pasture lands in the alpine south. These provide vast open spaces for the seasonal pasturing of cows, sheep, goats, horses, camels, and yaks.

^{3.} According to the International Snow Leopard Trust, snow leopards are still found in 12 countries, with the largest numbers found in China, India, Kyrgyzstan, Mongolia, and Pakistan. China (Xinjiang-Uyghur Autonomous Region) and Mongolia have the largest habitats.

International Union for the Conservation of Nature, "The IUCN Red List of Threatened Species: Ovis ammon," January 28, 2009, http://www.iucnredlist.org/details/15733.

Communities Protecting Nature

Both the Altai Republic's government and its people have long recognized the importance of conserving and protecting the territory's natural wealth. Thanks to efforts by local and national environmentalists and the Russian government, UNESCO designated the "Golden Mountains of Altai" a World Heritage Site in 1998. This site, covering 16,000 square kilometers, includes three separate areas: Altaisky Zapovednik, with a buffer zone around Lake Teletskoye; Katunsky Zapovednik, with a buffer zone around Mount Belukha; and the Ukok Quiet Zone on the Ukok Plateau.

Beyond the UNESCO designation, conservation efforts in the republic have led to an extensive system of protected areas designed to safeguard flora and fauna. Approximately 25% of the republic has some form of protected status. This protected areas network includes:

Zapovedniks, or federally created nature preserves.
 These areas afford the highest protections, with highly restricted public access and a mission dedicated primarily to the study and protection of key species.

- Zakazniks, or wildlife refuges. These offer the next-greatest level of protection and are often created to protect a particular species while still allowing limited commercial activities, such as logging, hunting of non-protected species, and livestock grazing.
- Nature parks. These are one of Russia's newest forms of protected areas. They allow great latitude in the kinds of activities that can go on inside a given area (e.g., tourism), but still keep nature conservation as the primary goal. Nearly all nature parks incorporate lands used by local people, from farms and villages to seasonal grazing lands.

Grassroots support for nature park creation in Altai is rising. Nature parks in particular are seen as a way to protect the precious lands and wildlife valued by Altai people. The parks also afford Altaians a way to continue their communal traditions of land use, enabling them to profit from sustainable tourism and secure jobs for local residents.



Summer flowers in Karakol Valley (Uch Enmek Park). Photo by Meerim Kylychbekova.

Threats and Challenges

The ecological damage concomitant with large-scale construction, industrialization, and resource extraction schemes has largely bypassed the Altai Republic. The region's mountainous, underdeveloped roads and its distance from Russia's established rail system have allowed local residents and native Altaians to protect their culture and traditional land-use practices. Despite local government officials' good intentions and general public support for nature protection and habitat conservation, however, the Altai Republic faces ongoing challenges and specific threats.

The Altai (Russia-China) Gas Pipeline through the Ukok Plateau

After traveling to China in early 2006 to explore trade relations, Russian President Vladimir Putin announced that a 2,700-kilometer gas pipeline would be constructed from western Siberia to China's Xinjiang Province. As proposed, the pipeline will bisect the Altai Republic and pass over the fragile tundra of the Ukok Plateau. The area is recognized locally, nationally, and internationally as worthy of protection, and is part of the UNESCO World Heritage Site.

Local residents responded to the pipeline plans with great concern, voicing anxiety about potential damage to the tundra and to archaeological and sacred sites in the region. They are concerned that a pipeline and its accompanying road opening the border to China will lead to unregulated development, increased illegal logging, and a flood of Chinese products crowding out Russian goods. Local, national, and international environmental groups are undertaking a major campaign currently to ensure that the pipeline will not be built through the culturally and historically significant Ukok Plateau.

Katun River: Dam and Development Sprawl

The Katun River is one of the last large, undammed wild and scenic rivers in Russia. Flowing for over 680 kilometers, the Katun is famous for its glacierblue waters, alpine valleys, and world-class kayaking and rafting. The Katun is also considered a sacred

river by local Altaians. The northern half of the Katun is especially accessible, and many tourists from across Russia and around the world visit it each year. Unfortunately, its free-flowing and fast waters and its deep alpine valleys have also made it a target for construction of a large hydroelectric dam.

The idea for a hydroelectric dam project on the Katun River dates back to the 1980s. In one of its first major victories, the Soviet environmental movement successfully halted this project through protests and scientific research. Recently, however, Moscowbased financial interests have attempted to re-launch dam construction by securing land rights. The current proposal is to construct a 50-meter dam that would flood over 730 hectares of land, destroy three bridges across the Katun River, add several roads, and remove a large portion of land from the "commons" used by local residents. The dam would virtually eliminate much of the recreational tourism for which the Republic of Altai is famous. Hundreds of small lodging facilities and hiking, camping, and water-sport businesses rely on the free flow of the Katun River. The dam would severely undermine the river's sacred status, as the core of local beliefs and traditions around Katun is based on its pristine nature.

"Wild Tourism"

Tourism—including eco-tourism, adventure sports, hunting, fishing, health spas, and even science- and agro-tourism—is an increasingly important part of the Republic of Altai's economy. Mount Belukha has been a popular mountain climbing destination since the early 1900s. Russian and international visitors have flocked to the region in increasing numbers since that time, with over 450,000 tourists in 2002 alone, according to the republic's Ministry of Tourism.

While this trend illustrates an excellent opportunity for the Republic of Altai to develop a non-agricultural revenue stream, many people are concerned that unorganized and unregulated tourism in the region could lead to problems in waste management, threats to habitat and biodiversity, damage to sacred and archaeological sites, conflict with local land users, and increased risks of forest fires. In some localities, the development of lodging and recreational facilities is not well regulated and controlled. Many builders and business owners circumvent landuse and building codes by paying bribes or by simply assuming that already overwhelmed and underfunded government agencies will not be able to stop them.

The terms "eco-tourism" and "green tourism" are used liberally in Russia—particularly in the Altai. Often, however, there are no actual assurances that their impacts are ecologically sustainable. Many consider tourism a panacea for the republic's economic woes, but without the creation of an underlying tourism infrastructure and education for local people in providing services and management, it is likely that tourism will continue to cause increased ecological problems along with economic benefits.

Other Threats and Challenges

Overgrazing continues to be one of the most widespread problems in the Republic of Altai. While nomadic herding has been an important practice in the region for millennia, the Soviet system created vast herds of cattle, sheep, horses, and goats that overgrazed and damaged the landscape. Overgrazing has eliminated much of the natural vegetation in some areas, resulting in erosion and desertification, loss of bird and small animal habitat, and the introduction of non-native species. Livestock numbers crashed after the collapse of the Soviet Union: people used their animals for sustenance when markets and stores were literally bare of goods. Herds are now rebounding, and historical problems may recur as the market economy develops, as land is privatized, and as semisubsistence farm families increase their cash incomes. Other management issues, such as minimal local meat and dairy processing capacity, also present challenges for local agriculture.

Small-scale **mining** for gold, tungsten, and other metals is active in the republic. Much of it occurs with little regulatory oversight or enforcement. These

small placer mines can cause significant damage to waterways.

One of the possible uses of the proposed Katun Dam's energy production would be to build an **aluminum smelting facility** using imported aluminum ore—a phenomenon often seen in developing countries where hydroelectric power generation and labor are cheap.

Although the Altai Republic's **forests** are generally in good condition, with some recovering from Soviet over-harvesting, poor use of timber resources is a common problem. Local forests are the primary source of building materials and heating fuel in the countryside, but a lack of milling equipment means that much high-grade timber is used for the low-grade purpose of heating fuel. Grazing animals often adversely affect forest regeneration.

Wildlife poaching is a two-dimensional problem: rich outsiders and poor locals. Trophy hunters in helicopters fly in to remote areas to hunt many species of big game year-round, often without regard for seasonal restrictions or game refuge boundaries. Local subsistence hunters work on the ground, mostly in winter, and hunt animals with value for fur or Eastern medicine. Some poached animals, including the beautiful snow leopard, are endangered. Increased and more effective enforcement is needed for both groups of poachers, and local poachers need better alternative economic opportunities.

Land privatization is progressing in Russia and will pose many new problems. Towns in desirable tourist areas are already changing, as newcomers buy out local residents, tear down their small houses, and make way for larger destination homes for tourists. Unsophisticated farmers may lose land that has always been under their control. Communal patterns of use may be altered. Local governments may lose the ability to plan development and govern use unless they adopt zoning laws.

Finally, **global climate change** is likely to have a significant impact on Altai's biodiversity and culture. The highest part of the Altai Mountains, including

the Katun, South Chuya, and North Chuya ranges, contains about 70 percent of all the glaciers in southern Siberia. These glaciers provide fresh water to the upper tributaries of the Ob and Yenisey rivers, two of Siberia's primary rivers that flow toward the Arctic. Rising temperatures, however, have contributed to the loss of glacial ice.

Conservation Opportunities

Despite the myriad challenges facing the Republic of Altai and its people, the region presents many opportunities to promote environmental protection, cultural security, and sustainable development thanks to its limited infrastructure and population and its active indigenous and environmental organizations. Key opportunities include:

- Strengthening cultural and environmental activism:
- Promoting alternative energy and green-building technologies;
- · Creating and strengthening protected areas; and
- Supporting eco-tourism, effective land-use planning, and legislative and policy reforms.

Cultural and Environmental Activism: Capacity Building for Local Communitybased Organizations

A strong environmental conservation movement has grown throughout Russia. The burgeoning movement has seen many successes in recent years, ranging from securing President Putin's decision to reroute the Siberia-Pacific Pipeline to protect Lake Baikal to the Russian government moving to revoke environmental permits for the ecologically devastating Sakhalin–II oil and gas project. Simultaneously, a movement of indigenous activists is growing in the country, with Altai at the center

Center for Ecology and Culture of Altai (CECA)

Gorno-Altaisk, Republic of Altai

Natalya Tokova, who got her start at the Fund for Sustainable Development of Altai, founded CECA in 2007. CECA works to develop environmental policy, protect biodiversity, conduct outreach, and facilitate the renewal of the ecological heritage of Altai for its sustainable development. Natalya Tokova spearheaded an extensive network of activists and community members throughout the republic—and beyond—and organized a republic-wide conference to develop effective strategies to address current environmental issues. Under her leadership, activists are campaigning actively against the Katun Dam project and exposing illegal and poorly managed logging projects near Lake Teletskoye.

Tengri School of Spiritual Ecology and the Association of Altai Protected Areas

Onguday, Republic of Altai

Danil Mamyev is one of the founders of Uch-Enmek Nature Ethnic Park, a board member for the Foundation for Sustainable Development Altai (FSDA), and president of the Association of Altai Protected Areas. Danil is committed not only to protecting his own people's traditional territories but also to the preservation of indigenous land and culture across the Altai. With the Tengri School of Spiritual Ecology, he attempts to bring the traditions of Altai's indigenous people into the environmental consciousness of all citizens and to create research centers introducing models of sustainable development based on native Altai philosophy.

Danil also participates in the regional government as Chair of the Land Use Committee in Onguday Raion. He has been actively promoting region-wide zoning to preserve environmental and cultural values in the impending post-privatization era. In the coming year, he will develop a contract for the resource-assessment and GIS-mapping work necessary to develop a zoning law, with co-funding from FSDA.

for indigenous activists working to protect traditional cultures.

Activists in both the Republic of Altai and surrounding Altai Region have united together with the larger Russian environmental movement to target key issues, including the Altai Gas Pipeline and Altai Dam. These grassroots organizations work in coalitions locally, regionally, and nationally to ensure that federal and regional public participation laws are followed. They also work to help guarantee that environmental impact assessments are thorough and that potentially disastrous projects are improved, mitigated, or stopped.

Successful capacity building of grassroots organizations includes direct financial support—both core support and project-specific support—information exchange, technology acquisition, and trainings. Core support is particularly important in ensuring an organization's stability and its ability to conduct long-term programs. It is also vital for groups addressing specific threats from resource extraction projects.



Elders looking over sacred stones. Photo by Evgeny Butushev.

Recommendations:

- Provide core support to local indigenous and conservation NGOs for staff salaries, office space, and legal fees;
- Sponsor international and regional exchanges of experts, activists, and indigenous representatives, with a focus on information exchange, coalition building, and professional development in the areas of community participation, public monitoring, environmental law, and sustainable development;

Fund for 21st Century Altai

Barnaul, Altai Region

In the 1980s, activists and community members battled a large hydroelectric dam proposed for the Katun River. Mikhail Shishin, an art history professor based in Barnaul in the Altai Region, helped catalyze a national campaign to stop the proposed Katun Dam. In 1997, Shishin was awarded the Conde Nast Traveler Environmental Award, and used the money from the award to create the Fund for 21st Century Altai. In the 10 years since, the fund has played a key role in advocating for UNESCO's designation of a World Heritage Site, continuing campaigns to stop destructive projects such as the Katun Dam, and facilitating the establishment of the transboundary International Coordinating Council for Greater Altai. The council works with the four member countries of China, Kazakhstan, Mongolia, and Russia to improve management of transboundary economics, nature conservation and ecology, laws and policies, and governance.

The Fund also has two small commercial organizations: an independent TV studio, "Katun," which creates and broadcasts environmental and social awareness programs, and a travel agency, "Milky Way," which organizes eco-tours. In an important new endeavor, the fund is building an Altai Center for Renewable Energy Technology, based in the village of Chemal in the Republic of Altai. The center will showcase new energy technologies and sustainable architecture and design, provide meeting space for technology providers and end users, and conduct workshops and trainings.

- Provide technology grants to existing NGOs to support the purchase of video equipment for documenting issues and successes, computers and network equipment to facilitate information exchange, and GPS and GIS equipment for mapping and surveying;
- Fund local organizations to conduct public environmental impact reviews and cultural impact reviews of potentially harmful projects; and
- Support international organizations with linguistic and cultural expertise working in the Altai to assist with researching and translating materials, networking and coalition building, facilitating joint advocacy work, and bringing international leverage points to bear on threatening projects in the republic.

Alternative Energy

Energy is a key issue in the Republic of Altai: where it comes from, how much it costs, who pays for it, and who controls it. All of the republic's electricity is generated outside the region and is relayed on transmission lines from the neighboring Altai Region. The republic's officials are motivated to develop locally owned and operated power sources. Communities, small businesses, and individuals are eager to meet their own power needs cheaply, using local resources. Implementation of renewable energy technologies inside the Republic of Altai would reduce its energy and economic dependence on federal subsidies and imported electricity. It would also provide an alternative to the larger, more destructive Altai Dam.

Technologies such as active and passive solar, wind power, methane gas digesters, and mini- and microhydroelectric power generators are all considered applicable in the Republic of Altai. Many Altai officials enthusiastically support the concept of renewable energy development. The challenge with all of these technologies, however, remains funding their design, installation, and long-term maintenance and operation.

Recommendations:

- Provide seed funding for technology purchases, design, installation, operation, and maintenance in remote villages;
- Support the development of new government policies and regulatory agencies needed to implement grid-tied renewable technologies, including the basic concept of metering;
- Support surveying for wind mapping and gathering the climatic data necessary for proper site installations;
- Support advocacy efforts to stop construction of the Altai Dam and the Altai Gas Pipeline, promoting alternative energy developments instead;
- Establish links with universities, technology researchers and providers, and communities to increase local technical expertise and to facilitate planning; and
- Launch a microcredit program for renewables and sustainable architecture installations.

Creating and Strengthening Protected Areas

Despite some form of protection for a quarter of the Republic of Altai's territory, the system of protections is weak. It is very new, and protected areas do not have the funding, staffing, or infrastructure to operate effectively. Nature park staff have large responsibilities with inadequate resources. Each park, regardless of size, has a staff of approximately five individuals, several of whom lack experience. Rangers generally have post-secondary education, but it is often in unrelated fields. The extent of a park staff's legal responsibility and authority is often insufficient or unclear. The parks system is so young that there is no central management structure, leaving local staff members to improvise. Communications are difficult; radios for field use do not exist, and, in some cases, the Altai telephone system does not even extend to park headquarters. Additionly, parks are often expected to generate a portion of

their annual budget from tourism and other sources, forcing park staff to dedicate time to tourists and removing critical, scarce resources from ecological protection efforts.

Recommendations:

- Provide additional support for ecosystem-based land-use planning that incorporates community input, including basic technology, GIS training, and surveying;
- Support customs training and enforcement, endangered species trade restrictions, protected areas enforcement, and anti-poaching patrols;
- Provide core operating support for basic infrastructure of existing protected areas, including salaries, operations, transport, public outreach, environmental education, visitor centers, scientific research, and species inventories;
- Assist efforts to create new protected areas and to expand existing ones;
- Offer support to pursue transboundary conservation efforts with China, Kazakhstan, and Mongolia;
- Sponsor international and regional exchanges of experts, activists, protected areas managers, and local and regional government officials;
- Support local networking of park staff and supporters, such as that provided by the regular meetings of the Altai Association of Protected Areas; and
- Aid the local establishment of permanent postsecondary educational programs for park personnel and local tourism entrepreneurs.

Supporting Eco-tourism, Effective Land-use Planning, and Legislative and Policy Reforms

Developing environmentally and culturally sustainable tourism can be an important source of revenue for the Republic of Altai, providing jobs and other income for local people. In addition to direct

Arkhar

Gorno-Altaisk, Republic of Altai

Arkhar is a local wildlife conservation NGO working to conserve two highly endangered species: the snow leopard and Argali sheep, a Central Asian big horn sheep. Arkhar's director, Mikhail Paltsyn, is a biologist and GIS expert who worked for the Altaisky and Katunsky *Zapovedniks* (nature preserves) for over 10 years. Paltsyn's background provides him with important expertise for strengthening Altai's protected areas and biodiversity conservation. Currently Paltsyn also works as Endangered Species Group Leader for the UNDP/GEF project, "Biodiversity Conservation in the Russian Portion of Altai-Sayan Ecoregion."

provision of services, many people can be employed in manufacturing souvenirs or fine handicrafts or in distributing specialty products like honey or Siberian pine nuts. All of these occupations can provide a valuable source of income for local residents in an area where unemployment is very high and salaries very low. Current levels of tourism are already straining existing infrastructure, however. Planned and existing tourist facilities need to be designed to have minimal impacts on the environment.

Recommendations:

- Sponsor trainings in "leave no trace" philosophy—including cultural sensitivity for sacred sites—for protected areas managers, tour operators, and community members;
- Support the development of waste management plans for protected areas and communities heavily impacted by tourism;
- Sponsor the development of signage, brochures, trail maps, visitor centers, environmental education, and general public outreach and education materials:
- Provide hospitality training for locals to provide an alternative to poaching; and
- Develop microcredit and small-business development programs for seed money to launch small business ventures.

Altai-based NGOs and Projects

Without the hard work and dedication of local projects and NGOs, much of the progress made in Altai conservation over the last 20 years would not have happened. Throughout this paper, we have highlighted the work of number of local NGOs: Arkhar, Foundation for Sustainable Development of Altai, Fund for 21st Century Altai, Altai Association of Protected Areas, and Tengri School of Spiritual Ecology. These groups conduct activism and public education and outreach, watchdog potentially harmful projects, attract regional and international support, provide technical expertise, conduct international exchanges, support protected areas, and promote science-based conservation.

Other key Siberian NGOs that conduct projects or work collaboratively in the Republic of Altai include the Siberian Environmental Center, EcoDom, ISAR–Siberia in Novosibirsk, and Taiga Research and Protection Agency in Kemerovo Region. National Russian organizations working in Altai include Greenpeace—Russia, which works proactively and collaboratively with local NGOs to address large-scale threats to conservation and biodiversity in the republic. World Wide Fund for Nature's (WWF) Altai-Sayan project, while spread over a much larger territory, also devotes significant resources to the Republic of Altai, supporting government programs, ecosystem-based planning, research initiatives, anti-poaching brigades, and parks management.

In addition to the Tengri School of Spiritual Ecology, a number of groups provide support for Altai's indigenous communities. The Russian Association of Indigenous Peoples of the North (RAIPON) has a number of chapters in the republic. RAIPON provides national support from its Moscow office, advocating for federal laws, policies, and projects to benefit indigenous peoples across Russia.



Shaman Maria Amanchina and local expert Maya Erlenbaeva documenting sacred stones. Photo by Ashley Tindall.

International Conservation Efforts

Due to Altai's remote location and relative isolation, there are only a few international groups regularly involved in conservation activities in the Altai Republic.

Pacific Environment, a San Francisco-based organization, has worked alongside Altai groups for 15 years. Pacific Environment works to protect the living environment of the Pacific Rim and partners with leading environmental and indigenous organizations throughout Siberia and the Russian Far East. Pacific Environment conducts joint advocacy with grassroots organizations by offering technical support and expertise, connecting Russian environmental leaders with colleagues and decision-makers around the world, and by providing grants to support leading Russian environmental organizations. Pacific Environment works especially closely with Fund for 21st Century Altai and Foundation for Sustainable Development of Altai.

The Altai Assistance Project (AAP) is a group based in New York's six-million-acre Adirondack Park. AAP works to strengthen management and conservation systems of Altai nature parks, promote sustainable land-use planning and regulation, demonstrate alternative energy technology, and develop a community-based tourism network. AAP works in close partnership with Gorno-Altaisk-based Foundation for Sustainable Development of Altai.

The Altai Project (TAP) is a project of Earth Island Institute. TAP focuses on nature conservation, promotes renewable energy and environmentally sustainable housing design, and supports indigenous organizations in their efforts to restore and protect traditional lands. TAP has been working for many years with grassroots groups in the Republic of Altai and Altai Krai, including the Fund for 21st Century Altai, Arkhar, and the Tengri School of Spiritual Ecology. They also work with the staffs of many of the republic's protected areas.

The Global Environmental Facility (GEF), in cooperation with the United Nations Development Program (UNDP), recently launched a new multimillion dollar biodiversity and conservation program in the region. This project is expected to interface mainly with government programs and larger NGOs such as WWF. In an early stage of implementation, local groups are concerned that the program will not provide on-the-ground conservation benefits.

Despite the significant conservation opportunities in Altai, few international funders have supported work in the area. The Weeden Foundation has been the lead private foundation that has made commitments over many years to conserving biodiversity and promoting sustainable development in Altai. The Trust for Mutual Understanding, which supports exchanges between the U.S. and countries of the former Soviet Union, has also supported a number of environmentally oriented exchanges with Altai groups. The Ford Foundation has recently started supporting efforts in Altai through its environmental justice program. To fully realize the conservation opportunities in Altai, additional international funders are needed.