1. Conservation of the Altai-Sayan Ecoregion

The primary threats to biological diversity and ecological integrity of the Mongolian Altai-Sayan region are overgrazing, unsustainable forestry practices, water pollution and over-hunting of wildlife populations. These threats, in turn are the driving forces behind habitat fragmentation and loss, land degradation, erosion and desertification

- climate change

Climate change study, carried out in 2005 by WWF Mongolia in the Great Lakes Depression identified that climate change threatens to alter glacier melting, the ice regime of lakes and rivers, and the timing and quantity of seasonal river flows. Already, some changes are evident. A hydrological survey revealed clear signs of disappearing snowfields and shrinking glaciers, and the accompanying melting of permafrost caused landslides. Among the most severe effects to be expected are:
- the flows of many streams may be unpredictable due to the combination of increased aridity, increased snow and glacier melt, and thawing of permafrost soils.
- small, shallow and marginal habitats (ponds, headwater streams, marshes, small lakes, intermittent rivers) will first exhibit the effects of reduced flows;
- changes in seasonal maximum and minimum temperatures, and in the timing of events such as freezing of waterbodies and spring thaw will occur; and
- distributions of aquatic species will change due to alterations in water temperature.

- poaching

Hunting in Mongolia is well regulated in the legal framework, however the enforcement is weak and irregular. Poaching is common and often targets spectacular and globally endangered species. Though poaching is difficult to quantify, it is obvious that one of the main causes of over-exploitation of wildlife. Much of the poaching appears to be driven by the Asian aphrodisiac market with the primary outlet for illegal wildlife goods being China. Elk, musk deer, argali, wolves, and bears are traded regularly into China. Marmot pelts are being traditional goods for illegal trade to Russia for many years because of high demand on the Russian market. Saiga is being hunted for their horns that are valued in Chinese medicine. Snow leopard is also under threat due to poaching (traded for its pelts, bones, and body parts). Conflict between predators such as Snow Leopard and domestic animals is also a well-known cause of retaliation hunting. Stronger enforcement and alternative income options for improved livelihood are the most effective measures against the threat of poaching.

- mining and infrastructure development

Most serious pressures and threats to biodiversity in this eco-region include the hydro power plants, which was identified by the Gap analysis (2008-2010). A number of cases have shown that hydro power establishment can have fatal impact on river and lake ecosystems when filling of dams cuts of water supply to downstream placed lakes, wetlands and streams. The recommendation was given to

minimize the risk connected to hydropower development through improved planning and practicing of Integrated Water Resources Management.

- overgrazing

Improved livelihood requires big herds and deprived livelihoods cause overuse of limited natural resources such as water and grass. Recent decades in Mongolia have seen a tremendous increase in the number of livestock and in addition, an increase in more aggressive grazers such as Cashmere goats. In the high mountain valleys of the Altai-Sayan increased livestock population have led to an expansion of grazing into wildlife habitat in high mountain pastures.
Livestock compete for forage with wild ungulates such as argali and ibex, causing habitat deterioration
In addition, habitat encroachment accompanied by expending livestock numbers increases instances of conflict between wild predators and domestic livestock herds.

- deforestation

Over-exploitation of forest resources is a main cause of deforestation. Forest resources are used primarily for domestic consumption, including construction, but are occasionally commercial purposes. A little patch forest of the Mongolian Altai-Sayan is under human pressure. The illegal extraction of forest products is real and present throughout the region due to high demand in domestic consumption. As with pasture land resources, the absence of effective formal and non-formal institutions to allocate forest resources for various uses and enforce these allocations is resulting in unsustainable use of forest resources. Illegal forest cut exists mostly in Uvs, Khovsgol and Bayan-Ulgii where the main forest resources are in the region.

4. WWF Altai- Sayan Programme

- main goals
- territory
- projects (WWF NL, PA4LP,Oxfam =? WWF Mong).

5. WWF Altai- Sayan Programme: main achievements

PROTECTED AREAS

- establishing new PAs

WWF Mongolia continues to address national interests, by supporting the Mongolian Government's commitment to conserve 30% of its territory with unique landscapes, ecological processes and endangered species for future generations. Thus, WWF Mongolia supports increasing or extending the protected areas and also continues to work on strengthening management of existing protected areas.
The biodiversity gap analysis has been carried out throughout 2007-2010 and identified 34 priority areas for biodiversity conservation. Along with key findings, major

recommendations have been issued, including the development of a high level supported and hands-on Conservation Strategy securing a rapid expansion of the PA network which includes also local PAs, as well as applying the Gap analysis and focus PA network extension to the areas selected with major emphasis on eco-regions and ecosystems under-represented in current PA.

Moreover, in the recent year (2009-2010), the Parliament of Mongolia has approved a resolution for creating four new PAs (3 of them are located in the Altai-Sayan eco-region), covering the territory of 650,360 ha. Those include:

• The Altan Khukhii Mountain Nature Reserve area (88,140 ha) for protection of the Snow leopard and its prey species' core habitat.
• The Mongol Els National Park (296,430 ha) for the research of mixed ecosystem of sand dune and lakes as well as for developing eco-tourism in the Altai-Sayan eco-region.
• The Ulaagchinii Khar Nuur National Park with 253,940 ha.

- supporting of existing PAs

On the other hand, the main finding of the management gap analysis within the legal framework has been identified as: The main policy documents adopted by the Parliament are the Law on PA's, 1996, the Law on Buffer zone of PA's, 1998 and National Programme of PA, 1998. A review of the implementation and status of the National Programme has been conducted and the evaluation revealed the implementation quality was at "unsatisfactory or low quality" levels. To summarize, the evaluation found that the implementation of the National Programme focused too much on quantitative rather than qualitative dimensions.
Hence, WWF Mongolia undertook the mid-term evaluation to the implementation of the National Programme on Protected Areas and issued recommendations jointly with the donor organization committee. This happened after 12 years of implementation of the programme which was approved in 1998. In line with those recommendations, the Ministry of Nature, Environment and Tourism (MNET) has updated the second action plan. The continued link between the action plan and the PoWPA has been ensured in due course.

From the financial perspective, the allocation for environmental management through the MNET budget was just 1% of the total state budget in 2008, making the ministry one of the smallest in terms of budget allocations. Within that 1%, the amount allocated to PA management is only between 8 and 10% though showing a light increase in last decade. In addition, more than 90% of PA administration budget goes to salaries and as little as 1% goes to research and monitoring, making the conservation effectiveness questionable.
Hence, WWF Mongolia works toward supporting monitoring and research activities as well as initiating first steps toward creating the sustainable financial mechanism. As such, the sustainable financial mechanism along with implementation recommendations for PA has been developed by working group involving the directors of all PA administrations, staff of MNET and relevant stakeholders. Khuvsgul national park, part of Altai-Sayan eco region was selected as a model PA for implementation of sustainable financial mechanism. During the testing process, the project team organized 4 series of workshops attended by all related local partners of Khuvsgul NP. As a result

of this, the Council of Tour Operators and Conservation Fund agreed to support the priority activities of Khuvsgul NP management plan.

- PAs' staff capacity building

A capacity development training curriculum was prepared with MNET and approved by the Head of PA department of MNET. Each topic included in this curriculum has been detailed and elaborated with the intention of developing a comprehensive training program that meets the real needs. To follow up the capacity development training curriculum, three training sessions were held for improving knowledge and capacity of specialists and rangers of specially protected areas within the Mongolian part of the Altai-Sayan Ecoregion. Trainings were held simultaneously and independently from each other and attended by 75 rangers and 20 specialists of 17 PAs.

- developing partnership between PAs and local communities

Mongolia-specific community based conservation is driven by the unique patterns of nomadic animal husbandry grounded on three pillars: humans-species-nature. This concept of community based nature conservation came into timelight in Mongolia from 2005, resulting in amendment to Law on Environmental protection to include a provision regarding herders' community groups allowing the locals to join into partnerships for sustainable use of pasture and other natural resources.
Presently, more than 600 community groups were formed countrywide under a single goal of nature protection, out of which 87 groups are functioning in the Altai-Sayan as result of tremendous efforts of WWF staff. It generally takes 5-6 years to run 6 phases which are required for a community group to grow mature. These include initiative taking, partners' involvement, team building, goal setting, planning and capacity building.
Additionally, there are many advantages for herders besides nature conservation, including livelihood improvement, self development, team building and socializing aspects. The latest example include the groups from Tsagaan Gol, a part of PA, where more than 220 households had the lowest livestock loss during the last year's natural disaster, called Dzud i.e. their loss was 2-3 times lower than other herders in the area as a result of the reserve pasture they used during winter hardships.

- research publications

RARE SPECIES CONSERVATION

- monitoring

Recent estimates of the Saiga antelope (*Saiga borealis mongolica*) in Mongolia suggest that conservation measures during the last 3 years led to an increase of the population to ≤5,000 (43% increase from 2007). An aerial survey, first ever conducted in the

country in August 2010, counted up to 8000 individuals, with 40% of confidence and the results were accepted by Mongolian and international saiga experts.
Effective protection measures enabled the Saiga to extend its range in Shargiin Gobi to the south and to the east and in Durgun Tal to the north. A small group of animals was even observed north of Khar Us Lake, in one of the species historical ranges. Saiga groups moved also to Olonbulag, Khaliun Soum, which is part of its historical range. It is important to note that the Saiga has become firmly established in Durgun Tal, where the population used to be very fragile and disappeared regularly during difficult climatic conditions, tough competition from livestock and heavy poaching.

An increase of 24.2% has been showed in ibex numbers in comparison to 2004 year's survey. Prey species for the Snow leopard are mainly Ibex in Jargalant and Bumbat Mountains and prey species population monitoring is conducted in 2009, while in Tsagaan Shuvuut mountain range (both in Russian and Mongolian side) the prey species are an ibex and the domestic yaks. The population assessment should not be an independent activity it needs to remain an integral part of the Snow leopard conservation measures. The objective is to determine population size, structure, density and migration, identify population trends and dynamics and assess threats. The survey of 2009 estimated 227 ibex with a density of 0.7 animals per 1.000 ha. This shows an 24.2 percent increase in ibex numbers in comparison to 2004 year's survey. According to the report on snow leopard monitoring by joint Mongolian and Russian researchers (2010), which was a joint effort of WWF Russia and Mongolia, the number of snow leopards in Tsagaan Shuvuut mountain, including the Russian side, is about 19-25 individuals, 11 of which are in Mongolian side.

Furthermore, the Bio-San programme of wildlife monitoring has been developed and piloted in 7 PAs of Altai-Sayan eco-region. The programme is featured by its uniqueness to convert information on wildlife, gathered by rangers in accordance with approved methodologies into digital database which allows elaboration of accurate data and use in the environmental conservation planning process. WWF Mongolia considers that the creation of the BioSan programme is a valuable contribution to improving management of Protected Areas.

- anti-poaching activities

With the initiative and financial support of WWF Mongolia, under the resolution by the Head of the State Specialized Inspection Agency, Irves-1 and Irves-3 Mobile anti-poaching units (MAPU) were established to be responsible for the territories of Altai-Sayan Mongolia part. MAPU aims at protecting biodiversity and fighting against illegal hunting and trade of wildlife. It has been given the full authority of the State Inspectors for action against all illegal activities, including poaching. In addition, MAPU plays an important role in increasing participation of local communities in conservation by creating volunteer rangers' network. So far, Irves-1 has been handed over to the local Inspection agency late 2009 which ensures the sustainability of WWF's initiative.

During the recent year (2009-2010), MAPU teams revealed 15 serious criminal cases of illegal hunting and trade, including cases of 2 Ibexes, 3 Dalmatian pelicans, 2 Brown

beers, 4 Red deers, 7 Saker falcons, 6 Wild boars, 192 Marmots, 12 Roe deers and 500 Pallas' sandgrouses.
Zero poaching and trade cases of Saiga and Snow leopard reported throughout 2009-2010.

- reintroduction of rare species and their habitats restoration
- research publications

TRANSBOUNDARY COOPERATION

FORESTS

LEGISLATION

Sustainable management of natural resources, including pastureland, and environmental conservation in Mongolia is regulated by several laws. Mongolia's Constitution, adopted in 1992, provides for the State to retain ownership of pastures, forests, subsoil and water resources, thus making private ownership of these resources impossible. To date pastureland in Mongolia is regulated by the Law on Land, passed in 1994.

Laws on Environmental protection, on Forest and the law on Land has provisions in favor of community based natural resources management and have also provisions decentralizing the management rights to local government level. One should however note that the transfer of management rights both to communities and local government were done without money, thus hindering local communities practicing natural resources management in a meaningful scale.

Currently the government is also preparing separate law on Pasture that also foresees community group based pasture management at heart. However considering the sensitivity of the law one shall expect that its passing and enforcement will take some time.

In the light of need for changing existing livestock management practice and attitude of herders' in aftermaths of natural disasters WWF MPO consider possibility proposing alternative approach that would ensure more sustainable management of grassland.

Current pastoral land-use in Mongolia including the Altay-Sayan region can be characterized as a downward spiral of decreasing herder mobility and increasing out-of-season grazing leading to unsustainable use of grassland. This trend has serious negative impacts on wildlife and livestock competition over open water sources, grazing areas. In addition unsustainable grassland management that causes livestock loss forces poor herders to supplement their livelihoods with illegal hunting.

PUBLIC AWARENESS AND EDUCATION

Communication is a powerful tool to enhance the achievement of conservation results. This explains why WWF Mongolia's every single project/programme includes communications, education and public awareness component as an integral part. Environmental communication is seen as:

- a realistic and essential vehicle for our understanding of the environment as well as our relationships to the natural world. This is about the instrumental function of educating, alerting, persuading, mobilizing and helping the target audiences to shape their perceptions of nature and environmental issues
- a planned and strategic use of communication processes and media products to support effective policy making, public participation and specific project implementation geared towards environmental sustainability
- a way to change people's knowledge and attitudes and hence their behaviour, based upon traditional knowledge and practices
- an integral part of *Education for Sustainable Development (ESD) which is a dynamic and expansive undertaking that envisions a world where every person has the chance to benefit from educational opportunities and to learn the lifestyles, behaviors and values necessary to create a sustainable future*

Education for Sustainable Development (ESD) as supported by the UN Decade for Education for Sustainable Development (DESD) is seen as a key approach to foster change and improvements of the current education system within which learners at all levels can develop confidence and to become competent to support sustainability in Mongolia. WWF Mongolia was pioneering in supporting and piloting ESD approach in the Altai-Sayan since 2004. As part of our policy to promote conservation through education, we deemed important to focus on the intellectual investment to the schools through in-service teacher training sessions. The feature of ESD trainings is its active involvement of every single teacher, school principle and studies managers where participants are asked to work in teams, develop locally relevant curricula, test and implement them with regular feedbacks from WWF team. This approach is called "whole school development" and explains the philosophy behind the change in the education sector of the country.
Transfer of global ideas and philosophies to local level is a challenge. The approach we use to embed the training in issues and processes identified by the target groups themselves has proven highly effective. All teachers at pilot schools have been making own priorities for ESD developing and testing whole school ESD models (including cases, methods, and materials). The learning by doing has shown to be an effective way of making progress.

As part of non-formal education initiatives, there are 25 school based eco clubs actively running in this eco-region, supported by WWF. It is hoped that this effort targeted to children will bring about a gradual change in the mindset of parents when they notice the positive change of their children.

CONSERVATION OF FRESH WATER ECOSYSTEMS

Integrated River Basin Management is a holistic and integrating approach to water resource management, including the broader natural environment, and is always in relation to the socio-economic demands and potentials. The WWF Global Freshwater Programme has adopted the IRBM approach as the backbone of its work, so did WWF Mongolia Programme Office.

In 2009 Government has divided Mongolian territory into 29 water basin and has started actively promote for IWRM for all these basins. Moreover the Government is preparing a amendment to the Law to ensure functionality and sustainability of the management of these river basin through establishment of a full-time river basin administration funded by the State. During 2008-2010 WWF has implemented a project "Sustainable Water Management as a Climate Change Adaptation Strategy in Western Mongolia" shortly Khovd river IRBM that supported the establishment and capacity building of River Basin Councils (RBC) and development Integrated River Basin Management plan (IRBM) for the Khovd and Buyant river basins in Western Mongolia and public awareness on sustainable use of water resources.