



Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society
Supported by the USAID/Global Conservation Program

The Eastern Steppe Living Landscape: Sustaining Wildlife and Traditional Livelihoods in the Arid Grasslands of Mongolia

Annual Report
October 2007 – September 2008

Living Landscapes Program- Mongolia/Eastern Steppe
Wildlife Conservation Society
30 September 2008

USAID EGAT/NRM/Biodiversity
Leader with Associates Cooperative Agreement Award LAG-A-00-99-00047-00



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I. Summary of Activity Status and Progress

a. Introduction/Summary:

The Eastern Steppe of Mongolia is perhaps the world's largest intact grassland ecosystem. At 250,000 km², the area is roughly the size of the state of Oregon. Treeless flat plains, rolling hills and a significant number of important wetlands characterize the Eastern Steppe which is bordered by Russia to the north and by China to the east and south. This vast wilderness is home to one of the world's last great spectacles of migrating ungulates, the Mongolian gazelle (*Procapra gutturosa*) (Finch 1996), estimated at a population of over a million, based on surveys conducted between 2000 and 2005 by the Wildlife Conservation Society (Olson et al. 2005a; Olson et al. 2005b). Numerous other mammals live on the steppe and the region is one of the most important habitats in eastern Asia for migratory birds (Chan et al. 2004).

The Eastern Steppe is characterized by a temperate climate with scarce precipitation and marginal resources. Human populations on the steppe have historically been sparsely distributed and engaged in traditional nomadic livestock production, an adaptation to the natural conditions. Approximately 200,000 people live on the steppe where they herd approximately 4 million head of livestock (Enkhbaatar 2006). The low human population density, the relatively low impact extensive livestock agriculture and a traditional respect for nature has meant that much of the landscape has remained relatively untouched. Wildlife have had the intact habitat and space they need to survive and flourish, making Mongolia and the Eastern Steppe one of Central Asia's last wildlife refuges.

This historic pattern of sustainable use of the steppe's resources is, however, changing. One of the consequences of Mongolia's transition from a centrally controlled command economy to a free market system has been the opening of trade borders with China and other Asian countries. The demand of wildlife and wildlife products has fueled a commercial trade in wildlife across Mongolia and major declines in the numbers of wildlife due to hunting pressure have been recorded on the Eastern Steppe (Wingard & Zahler 2006). Government development plans for the region include the intensification of the livestock production system and large scale crop-based agriculture which will undoubtedly disrupt the fragile balance of life for both nomadic pastoralists and wildlife on the grassland steppe. The country's economic needs are also driving oil, coal, gas and mineral exploitation in the region, threatening to fragment the grassland with the infrastructure these industries will require.

The WCS Living Landscapes Program, with important support from USAID, strives to address these threats to biodiversity and wild places through the implementation of a participatory, wildlife threats-based strategy for landscape conservation. The program in Mongolia, “The Eastern Steppe Living Landscape: Sustaining Wildlife and Traditional Livelihoods in the Arid Grasslands of Mongolia,” is funded by USAID’s GCPII program.

The Eastern Steppe Living Landscape Project has played an expanding role in shaping wildlife management strategies and conservation policy in the Eastern Steppe since the project began in October of 2003. In FY08, the project further advanced the Landscape Species Approach in the region, by engaging national, provincial and local stakeholders in developing the conservation landscapes for the Eastern Steppe. A series of provincial-level stakeholder workshops was held to present the final suite of Eastern Steppe Landscape Species and their Biological and Human Landscapes. Provincial governors endorsed the conservation planning process, and the resulting provincial-level conservation landscapes form key components of the plan for conserving the entire landscape by identifying species-specific objectives, conservation priorities, and important actions. Securing provincial-level support for the conservation planning process and the initiatives identified will be an important component of the effort to incorporate the Eastern Steppe Conservation Landscapes into nationally identified regional sustainable development plans.

In the fifth year of the project, we have also continued to implement specific but interrelated initiatives aimed at engaging national, local and community-level stakeholders to advance landscape-level wildlife conservation on the Eastern Steppe. Data collected during field-based research projects has continued to inform national environmental policy; most recently contributing to the discussion of the international crisis identified when Mongolian gazelle crossed the border into Russia in search of forage and became entangled in border fencing. The project has continued to work closely with the Eastern Mongolian Community Conservation Association to build a strong local constituency for conservation among livestock herder communities in the region and to promote the preservation and sustainable use of the grassland steppe of Mongolia and the wildlife species and livestock herder livelihoods that it supports. The piloting of a “Collaborative Wildlife Protection Program” in Nomrog Strictly Protected Area continues to be a highly cited example of collaboration among the State Border Defense Agency, Protected Area Administration and provincial-level environmental inspection agencies to effectively and efficiently conduct wildlife monitoring and wildlife law enforcement in regions of the Eastern Steppe where protected areas and international border regions overlap.

b. Highlights

Accomplishments for the program’s fifth year:

- The United States Ambassador to Mongolia, Mr. Mark Minton, visited the Eastern Steppe in July of 2008. He praised the work of the USAID-funded Eastern Steppe LLP and voiced his support for all efforts to conserve the rich resource of Mongolia’s grasslands for future generations.
- A series of successful participatory conservation planning workshops were held in the Eastern Steppe provinces of Khentii, Dornod and Sukhbaatar. Stakeholder participants contributed to the development of Conservation Landscapes for the Eastern Steppe and the process was endorsed by provincial governors.

- Training in wildlife monitoring and protection was delivered to “volunteer rangers” appointed by livestock herder community-based conservation groups or “community partnerships of nature conservation” on the Eastern Steppe. WCS private donors provided a grant to purchase and distribute necessary wildlife monitoring equipment to the volunteer rangers.
- Eastern Steppe LLP Mongolian staff were the recipients of a number of travel and training grants to attend international meetings, conferences and workshops in FY08.
- The WCS monthly conservation networking event continues to draw large numbers of enthusiastic individuals representing NGOs, academic and research institutions, private industry and government agencies involved or interested in wildlife and nature conservation in Mongolia.

c. Table of Activity Status

Activity Number	Activity Title	Status	Page Number
Objective 1	Develop and adopt participatory strategies to reduce threats to wildlife in the Mongolia Eastern Steppe landscape		
1.1	Refine the conceptual model for the Eastern Steppe and create conceptual models for each of the suite of Eastern Steppe Landscape Species to articulate the causal relationships among conservation targets and threats	On track	5
1.2	Identify principal actors to address threats, evaluate their capacity to do so and engage them in specific interventions	Completed	6
1.3	Develop an adaptive, participatory and spatially explicit strategy for threat abatement and landscape conservation	On track	11
1.3.1	Present the Suite of Eastern Steppe Landscape Species to partners and Eastern Steppe stakeholders for formal adoption	Completed	11
1.3.2	Develop a spatially explicit representation for threat abatement and landscape conservation	On track	12
1.3.3	Identify points for critical action to conserve Eastern Steppe Landscape Species	On track	13
Objective 2	Develop and implement sustainable and adaptive mechanisms to strategically address threats across the landscape		
2.1	Establish necessary management mechanisms	On track	15
2.2	Enhance local capacity to implement the strategy	On track	18
2.2.1	Enhance local institutional capacity	On track	18
2.2.2	Enhance local community capacity	On track	20
2.2.3	Enhance local disease management	On track	24
2.2.4	Enhance local scientific capacity	On track	27
2.3	Implement mechanisms for measuring success and adapting the landscape strategy	On track	29
2.4.	Identify and strengthen constituencies for conservation at local, national and international levels to help ensure effective strategy implementation	On track	30

Objective 3	Learning and teaching best practices in the Mongolian Eastern Steppe landscape and beyond		
3.1	Using economic valuation of rangeland and water resources as a tool for site-based conservation: a comparison of the Eastern Steppe of Mongolia and Rungwa-Ruaha Landscape, Tanzania (Property Rights and Pastoralism---Payments for Ecosystem Services)	On track	31
Objective 4	New York Coordination Unit Strategy: Guide the design and testing of wildlife-focused planning, implementation, and evaluation tools for effective conservation at a landscape scale, and promote learning across sites and beyond		
4.1	Provide technical assistance to site-based conservation	On track	33
4.2	Design, implementation, and testing of decision support tools	On track	34
4.3	Catalyze cross-site and cross-organizational learning, and communication	On track	35
4.4	Application of Living Landscapes Program tools beyond core sites	On track	35
4.5	Ensure coordination and communication services for the program	On track	36
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II. Detailed Description of Progress

a. Key short and long-term program objectives for the reporting period (October 2007 – September 2008)

In what is perhaps the largest remaining swath of ecologically functional temperate grassland in the world, WCS is developing and implementing long-term conservation measures at a landscape scale. We are doing this by working with key national, regional and local partners to address identified threats and opportunities, and by focusing research on the conservation and management of wide-ranging and vulnerable Landscape Species that represent the diversity and integrity of the system. Over time, we plan to successfully implement and refine the Landscape Species Approach within the Eastern Steppe Landscape, thereby promoting this concept in other biologically critical landscapes in Mongolia.

Threats to the Eastern Steppe Landscape continue to be related to poor planning and management at the central government level and to deficits in the local and national resources necessary to enforce existing environmental regulations and wildlife protection laws. Oil and mineral exploitation is expanding in the Eastern Steppe with little evidence of science-based decision making or serious consideration of the potential impacts of the oil/mineral extraction and related infrastructure development on the wildlife populations and the communities of nomadic pastoralists living on the Eastern Steppe. Poaching and illegal wildlife trade is decimating populations of fur bearers and large ungulates on the Eastern Steppe and across the nation.

To address poor planning and management at the central government level, the Eastern Steppe Living Landscape Project (LLP) continues, as one of its primary objectives, to develop policy recommendations on a range of critical issues that can be instituted by appropriate agencies and

institutions to alleviate immediate threats to the steppe landscape and to the wildlife and human communities that depend upon natural resources for their survival. In FY08, the Eastern Steppe LLP worked closely with local agencies, wildlife managers and communities of livestock herders, engaging them in conservation planning and wildlife monitoring and protection. The result has been local government support of community-led wildlife conservation initiatives and on-the-ground coordination of wildlife protection activities implemented by the traditionally separate State Border Defense, Protected Areas and State Specialized Inspection agencies.

The Eastern Steppe LLP continues to develop and implement a landscape-scale management planning process, by collecting and interfacing the information necessary to guide management strategies and actions at a broad scale using WCS's Landscape Species Approach, information such as the human-caused threats and the biological requirements of species. In FY08, specific objectives included: presenting the suite of Eastern Steppe Landscape Species to provincial and local (community-level) stakeholders, updating the Biological, Human and Conservation Landscapes for key Eastern Steppe Landscape Species and soliciting input and participation from provincial and local-level stakeholders in the development of an overall conservation plan for the Eastern Steppe. This process of stakeholder participation and peer review fosters support for the conservation targets established among national policy makers, Eastern Steppe stakeholders and the broader conservation community.

In the long term, the Eastern Steppe LLP expects that our use of participatory initiatives for landscape conservation will produce a mosaic of wildlife-focused, landscape-level conservation efforts initiated by the Ministry of Nature and Environment (Protected Area Administration), national agencies with jurisdiction over wildlife protection (State Border Defense Agency and State Specialized Inspection Agency), local governments and communities of livestock herders. The Landscape Species Approach will unite the efforts of the diverse stakeholders on the Eastern Steppe and provide the guidance and tools necessary to implement more strategic and collaborative conservation interventions, monitoring and evaluation activities.

b. Activity Descriptions

OBJECTIVE 1: Develop and adopt participatory strategies to reduce threats to wildlife in the Mongolia Eastern Steppe landscape

Activity 1.1 Refine the conceptual model for the Eastern Steppe and create conceptual models for each of the suite of Eastern Steppe Landscape Species to articulate the causal relationships among conservation targets and threats

The conceptual model for the Eastern Steppe Landscape continues to provide the overall framework for our work in the region. It has been reviewed and revised on a number of occasions, both internally by WCS Mongolia staff and with participation from the program's conservation partners in government and the broader conservation community, including academic institutions and NGOs. In FY08, special emphasis was put on creating opportunities for local and provincial-level stakeholders to review and update the conceptual models. The reviews took place during a series of participatory workshops described in more detail under Activities 1.3.1 through 1.3.3 and Activity 2.2.2 (local communities' contributions). Information necessary to create the latest version of the overall conceptual model for the Eastern Steppe and three key Landscape Species was collected in FY08 and new schematics of the conceptual models will be created and finalized in early FY09. The conceptual models have proven especially useful when describing our project to interested individuals and organizations with limited experience in

the Eastern Steppe, as it clearly outlines goals and objectives, threats or challenges and opportunities for intervention.

In FY08, we had the opportunity to formally invite provincial-level stakeholders to review the overall conceptual model and contribute to the formation of the conceptual models for particular Eastern Steppe Landscape Species. This process was endorsed by each of the Eastern Steppe provincial governors, who all expressed their appreciation for being part of the conservation planning process as opposed to being presented with a finalized project plan for implementation. Government officials and community members alike were interested in incorporating the plans laid out in species-specific conceptual models into the sustainable development strategies for the provinces. Although many of these provincial sustainable development strategies contain sections on “nature conservation”, no explicit plans have been made to conserve biodiversity or secure important habitat. The development of conceptual models and the activities described in Activity 1.3 “Developing an adaptive, participatory and spatially explicit strategy for threat abatement and landscape conserver” will undoubtedly strengthen the “biodiversity and nature conservation” components of the Eastern Steppe sustainable development plans. The conceptual model process has also been incorporated into the process for creating conservation plans for livestock herder community managed areas, “community partnerships for conservation”, as described in Activity 2.2.2.

Activity 1.2 Identify principal actors to address threats and evaluate their capacity to do so and engage them in specific interventions

The Eastern Steppe LLP (ES-LLP) has always worked to identify key individuals and institutions in the region with the capacity to address the threats facing the grasslands of the Eastern Steppe. In FY08, we continued to identify key stakeholders and strengthen our established relationships with local communities, civil society organizations, and provincial and national-level actors, including the donor community. These linkages have been established with the goal of creating and facilitating the development of collaborative strategies to address threats to wildlife on the Eastern Steppe by ensuring that conservation targets are accepted by stakeholders across the landscape and that interventions are coordinated and carried out effectively. In FY08, we worked on improving coordination and communication among communities of livestock herders working and living on the Eastern Steppe and local soum (county), aimag (provincial)-level officials and Ulaanbaatar-based agencies and institutions. This coordination was accomplished through a series of formal meetings, conferences, workshops and informal gatherings for information exchange. The highlights of some of these meetings, and the policy issues discussed, are described in more detail below. The WCS ES-LLP also organized a national conference focused on sharing “lessons learned” from the implementation of community-based natural resource management in Mongolia in that past 10-15 years. The *Community-based Wildlife Conservation in Mongolia: Successes and Lessons Learned* conference was held in April 2008 and further details are provided under Activity 2.2.2.

National-Level Actors

National-level actors identified by the Eastern Steppe LLP include representatives from the Mongolian national government (members of parliament, ministries, agencies, academic and research institutions), national NGOs and the bi-lateral and multi-lateral donor community. In each of our opportunities to meet and work with national-level actors, we have strived to increase their awareness of threats to the grassland of the Eastern Steppe and build their support for effective interventions. In addition to the specific meetings described below, we have remained in contact, as the government has changed, with the acting representatives from the Ministry of Nature and Environment, State Specialized Inspection Agency, State Border Defense Agency,

Ministry of Food and Agriculture (Veterinary Services and State Central Veterinary Laboratory), Mongolian Academy of Sciences and the National University of Mongolia. Within the international conservation NGO community working in Mongolia (WCS, TNC and WWF-Mongolia/U.S.), the current focus on the Eastern Steppe region provides the opportunity to put in place biodiversity conservation plans that have a lasting impact in the region.

1. *Government of Mongolia and External Partners Meeting 1*: On October 9th and 10th, ES-LLP staff attended a bi-annual technical meeting, jointly organized by the Government of Mongolia and the World Bank. These meetings are designed as forums to discuss Mongolia's development priorities and the role of external partners in supporting those priorities. The October meeting provided an opportunity for civil society organizations and citizens' representatives to comment on current policy and future priorities. WCS's role during the "Rural Development and Environment" working group sessions was that of an observer. Of note were the inclusion of our comments and those of others made on the links between poverty and the environment, which were entered into the official synopsis of the meeting:

"During the meeting, the parties had a very good discussion on environmental issues facing Mongolia. As the donor working group statement submitted to the meeting rightly observed, Mongolians, and especially many among the poor, rely on the environment for their livelihoods. Participants noted that good environmental management is important for economic growth as well as for poverty reduction, and that Mongolia can develop ecologically-friendly products which could find niche markets internationally. It was quite striking that expenditure on environment accounts for only 0.5% of GDP, although the contributions of the environment and natural resources to key sectors like livestock, tourism, and mining are considerable. Participants noted the need for a better estimate of the monetary contribution of the environment and environmental services to the Mongolian economy. They also noted that mechanisms have been developed in other countries to channel budget resources to local communities to provide environmental services, and these could work in Mongolia too." (WorldBank 2007)

2. *Government of Mongolia and External Partners Meeting 2*: On January 9th and 10th, ES-LLP staff attended the second bi-annual technical meeting organized by the Government of Mongolia and the World Bank. The focus of the January 2008 meeting was the Private Sector Development Strategy and key issues affecting the realization of its vision for private sector development in Mongolia. Many of the discussions focused on the role of the government in the development of the mining sector in Mongolia. Concerns about environmental sustainability and transparency in mining revenue management were raised and suggestions were made for bringing all mining practice standards in Mongolia closer to internationally set goals. Suggestions to focus on government efforts to maximize revenues from mining, and, in turn, ensure that the sector is developed in a socially and environmentally friendly way, received some support (World Bank 2008).
3. *Zuun Bus (Eastern Steppe) Partnership*: WCS, The Nature Conservancy (TNC) and WWF-Mongolia have all identified the Eastern Steppe, or sites within the region, as a conservation priority. The organizations have a common interest in improving coordination and establishing a long-term biodiversity conservation plan for Mongolia's Eastern Steppe, known as the *Zuun Bus*, consisting of the three provinces of Khentii, Dornod, and Suhkbaatar. Representatives from the three organizations have held a series of planning meetings and hosted joint activities throughout FY08, including the development of the Conservation Action Plans for Toson Khulstai Nature Reserve initiated by TNC and described in more detail in Activity 1.3.3. TNC and WWF-led conservation initiatives in the region build upon and strengthen those begun under the Eastern Steppe LLP. A Memorandum of Understanding is currently under development which outlines the following areas of mutual interest where greater synergy is expected through collaboration among WCS, TNC and WWF.

- Develop a consensus plan for the conservation of *Zuun Bus* by collaborating on identification, formulation and implementation of projects of mutual interest.
 - Combine science-based methods with a people-focused approach that seeks to balance the interests of conservation with sustainable economic development and social welfare.
 - Address wildlife conservation issues and map conservation priority actions according to organizational strengths; this may include the use of Conservation Action Planning, GAP analysis, and the WCS Landscape Species Approach.
 - Cooperatively support the Ministry of Nature's efforts to consolidate and expand the protected area network as per COP-7 Protected Area of Work, and strengthen environmental policies while providing for sustainable economic growth in the region.
 - Provide assistance to the Government of Mongolia in developing sustainable financing for the protected area network and enforcement of environmental policies.
 - Establish community-based wildlife-monitoring programs and facilitate communication between community partnerships and local officials.
 - Work at the soum (county), provincial, and national levels to develop policy and incorporate conservation objectives into development plans that support community-based wildlife and natural resource management.
 - Engage with Mongolia's Ministry of Nature and Environment and other stakeholders in ways that maximize involvement in the consensus plan.
4. *National University of Mongolia & Mongolian Academy of Sciences:* Mongolian academic and research institutions are national-level actors who have the potential to play a key role in addressing the threat of limited local capacity for wildlife management and conservation science. WCS continued our long tradition of working with these important partners. In April 2008, the WCS Mongolia program organized a visit from Dr. Madhu Rao, WCS Regional Technical Advisor and Coordinator for Asia for the Network of Conservation Educators and Practitioners (NCEP), as well as Dr. Will Banham, WCS Director of Training and Capacity Building. One purpose of their joint visit was co-hosting a workshop at the National University of Mongolia designed to introduce faculty to conservation biology curriculum development resources provided through NCEP, a program developed by the Center for Biodiversity Conservation of the American Museum of Natural History. The broader need for conservation biology training outside of academic and research institutions (such as the Mongolian Academy of Sciences) was also discussed, as were opportunities to link conservation biology capacity building activities more directly with WCS priority species and sites, including the Eastern Steppe. More details on the workshop are provided under Activity 2.2.4.
5. *WCS LLP Participation in Conferences & Workshops:* Eastern Steppe LLP staff take part in relevant conferences and meetings hosted by other institutions and organizations whenever possible. These conferences and workshops are opportunities to share information about the Eastern Steppe, learn from projects implemented by other organizations, and network to improve overall donor/project coordination and cooperation within the environmental and "wildlife conservation" sectors in Mongolia. A few of the conferences and workshops that Eastern Steppe LLP staff attended in FY08 are listed below:
- On November 1, 2007, WCS staff attended a coordination meeting on "Watershed Management & Aquatic Ecology" hosted by The Asia Foundation with support from the

World Bank. WCS staff presented our work with communities of livestock herders on the Eastern Steppe as an example of community-based natural resource management, citizen engagement in conservation in Mongolia, and the establishment of “Community Partnerships” for wildlife conservation. WCS staff also prepared a special report on water-related issues raised by communities of livestock herders on the Eastern Steppe, which included maps of the locations of rivers, springs and streams that have dried up within the past 5 years. This loss of water sources, likely due to a combination of global warming and overgrazing, is a threat to both wildlife and livestock herders on the Eastern Steppe.

- In November, and again in May, WCS staff attended a series of WWF-organized conferences focused on identifying priorities and gaps in the implementation of the *Convention on Biodiversity Programme of Work on Protected Areas* in Mongolia. WCS staff presented both the Eastern Steppe Living Landscapes project and highlights from other WCS projects in Mongolia and participated in the gap assessment and priority-setting exercises.
- WCS staff held a series of informal meetings with representatives from the USAID-funded, Mercy Corps-implemented Gobi Forage project to discuss including wildlife data in the pasture prediction modeling for the Eastern Steppe region as well as coordinating current and future natural resource management activities in Mongolia.
- WCS staff attended a research planning workshop, hosted by researchers from Colorado State University, on Community-Based Natural Resource Management and Resilience to Climate Change from 16-20 June 2008, and offered their expertise on landscape conservation planning and approaches to community-based conservation.
- In July 2008, WCS staff met with representatives of the NGO People Centered Conservation to discuss their community work in the south Gobi and obtain advice about engaging communities in natural resource conservation/sustainable use. The aim of this meeting was potential future collaboration and community partnership exchanges with members of the Eastern Mongolian Community Conservation Association. WCS staff also met with The Asia Foundation to coordinate the distribution of their Community Engagement Tools to herder communities in the Eastern Steppe.

Provincial-Level Actors

It is important to remain in touch with provincial-level actors as well as national-level stakeholders, because individuals in government appointed positions often change. In FY08, the set of provincial-level actors for the Eastern Steppe remained remarkably consistent, which contributed to our successful engagement at this level. In this fiscal year we were able to conduct a series of planned meetings with provincial-level actors and also to take advantage of some opportunities to meet with these individuals at national events.

1. *Eastern Steppe Environmental and Protected Area Agencies:* A series of events marking the 20th anniversary of the establishment of the Mongolian Ministry of Nature and Environment were held in Ulaanbaatar on December 20-21, 2007. WCS staff had the opportunity to meet with representatives from protected areas and environmental agencies of the Eastern Steppe aimags (Dornod, Khentii and Sukhbaatar) who traveled to Ulaanbaatar for the anniversary events. Agendas and participant lists for upcoming conservation planning stakeholder workshops on the Eastern Steppe were discussed and general plans were made for future cooperation and partnership with local authorities and Eastern Steppe stakeholders in 2008.
2. *Eastern Steppe Governors Meetings:* WCS Mongolia Program Country Director, Amanda Fine, met with each of the Eastern Steppe provincial governors in person in January and

February of 2008. The meetings were designed to introduce and gain support for the Eastern Steppe LLP conservation planning workshops to be held in FY08. The governors expressed their appreciation for the USAID-funded WCS efforts in the region and endorsed the participatory conservation planning process. The governors suggested the idea of incorporating the “Eastern Steppe LLP Conservation Landscapes” into the sustainable development plans for the region.

3. *Eastern Steppe Conservation Planning*: Eastern Steppe LLP Conservation Planning Stakeholder Workshops were held in January 2008 in Khentii and Sukhbaatar aimags (provinces) and in February in Dornod aimag. The meetings were coordinated in partnership with the provincial-level Environmental Protection Agency and participants included representatives from the Land Agency, Veterinary Department, Protected Area Administration, Legal and Law Enforcement Agencies, NGOs (WWF and Community Organizations), and the Governor’s Office. More details on the outputs from these meetings are described in Activity 1.3.1 through 1.3.3.

Local-Level Actors

The Eastern Steppe LLP’s primary local partner is the Eastern Mongolian Community Conservation Association (EMCCA). The EMCCA represents communities of livestock herders on the Eastern Steppe with an interest in setting up and managing community areas for wildlife conservation. Throughout FY08, we held periodic planning meetings with the leadership of the EMCCA and have undertaken a series of joint initiatives. The scope of the “community-based wildlife conservation” component of the Eastern Steppe LLP has grown over the years as livestock herders in the region have been identified as a key group of actors to address threats to biodiversity and identify feasible “home grown” solutions to current conflicts between human activities and wildlife. Details of our engagement with the EMCCA and the series of joint initiatives are provided under Activity 2.2.2.

Policy Updates

1. *Brandt’s Vole Management Recommendations*: Bromadiolone, a toxin used to control Brandt’s vole populations which puts non-target wildlife at risk, has not been used on the Eastern Steppe since 2004. The new law on toxins, which was passed by the Mongolian parliament in early 2006 and restricted the use of toxins in the environment, has been upheld to date.
2. *The Nomrog Bridge and Millennium Road*: Despite concerns raised by stakeholders across the region, plans for building the Millennium Road across the Eastern Steppe (avoiding the main population center of Choibalsan and bisecting important Mongolian gazelle habitat) with a link to the “Nomrog Bridge” remain in place. In FY08, WCS staff continued to track the news and meet with provincial-level officials to review infrastructure development plans. In May 2007, WCS received a copy of the official agreement between the Mongolian and Chinese governments to build the Nomrog Bridge and, in September of 2007, our field teams confirmed that construction had begun. Our presence during the final phase of the Eastern Steppe LLP “Collaborative Wildlife Protection” pilot project in the Nomrog Strictly Protected Areas (Activity 2.2.1) will allow us to assess recent developments and develop a plan for assessing the long-term impact of the bridge on wildlife.
3. *Mongolian Gazelle Management & Action Plan*: The Mongolian Gazelle Management and Action Plan outlines management and conservation initiatives designed to “ensure the long term persistence of Mongolian gazelles at an ecologically and culturally meaningful population size throughout its current range and will allow gazelles to occupy former range”,

maintain the integrity of the steppe (by preventing habitat fragmentation) and reduce illegal hunting. The final review and adoption of this plan has been delayed due to changes in personnel within the Mongolian Ministry of Nature and Environment, the main implementer of species management plans in Mongolia. The document is currently being translated into the Mongolian language, and we anticipate that it will be ready for final review and adoption in FY09.

4. *Siberian Marmot Hunting Ban*: The Eastern Steppe LLP continued to contribute to efforts to assess the population of Siberian marmots on the Eastern Steppe in FY08 (Activity 1.3.3). The national ban on marmot hunting is in place through the end of 2008.
5. *Eastern Steppe Economic Region*: There has been very little publicized follow-up to the “Partnership for Development in the Eastern Region” conference held in Dornod province early in FY07. To date, of the six listed development projects or areas, only the Nomrog Bridge development (described in point 1 above) has gone forward. However, there has been some national discussion on the sixth project listed at the conference, which was identifying “financial support for irrigated agriculture”. WCS intends to follow up on this particular issue under the USAID-funded TransLinks project, as described in more detail in Activity 3.1.

Activity 1.3 Develop an adaptive, participatory and spatially explicit strategy for threat abatement and landscape conservation

Activity 1.3.1 The Suite of Eastern Steppe Landscape Species will be presented to partners and Eastern Steppe stakeholders for formal adoption

The suite of WCS Eastern Steppe Landscape Species, which consists of the Mongolian Gazelle (*Procapra gutturosa*), Grey Wolf (*Canis lupus*), Eastern Moose (*Alces alces*), Siberian Marmot (*Marmota sibirica*), White-naped Crane (*Grus vipio*), Asiatic Grass Frog (*Rana chensinensis*), Saker Falcon (*Falco cherrug*) and Taimen (*Hucho taimen*), was presented to Eastern Steppe stakeholders at a series of Eastern Steppe LLP Wildlife Conservation Planning Workshops held in the provincial centers of Dornod, Khentii and Sukhbaatar in January and February 2008. The concept of a “Landscape Species” was defined for participants as was the process for selecting the final suite of 8 Eastern Steppe Landscape Species. The information input into the selection software (area requirements, habitat use, use of management zones, vulnerability of the species to threats, ecological functions, and socio-economic importance of the species) was described, along with information we have received from national and international species experts.

At the national-level stakeholder workshops held in FY07, there was some initial resistance to the idea of selecting only a small group of conservation targets, but this concern was not voiced at provincial-level workshops as the participants recognized the need to focus resources and prioritize interventions. They also supported and articulated the need to evaluate the impact of interventions by monitoring a feasible number of conservation targets.

The Eastern Steppe LLP Wildlife Conservation Planning Workshops were coordinated in partnership with the Dornod, Khentii and Sukhbaatar Environmental Protection Agency and participants included representatives from the Land Agency, Veterinary Department, Eastern Mongolia’s Protected Area Administration, State Border Defense Agency, Private Sector (Petro China Daichin Tamsag LLC), Eastern Mongolian Community Conservation Association (EMCCA), members of EMCCA livestock herder community groups, Legal and Law Enforcement Agencies, NGOs (WWF and Community Organizations), and the Governors’

Offices. More details on the outputs of the workshops are provided under Activity 1.3.2 and 1.3.3.

Activity 1.3.2 Develop a spatially explicit representation for threat abatement and landscape conservation

In FY08, WCS Eastern Steppe Remote sensing/GIS specialist Mr. Ochirkhuyag continued to work closely with the NY-LLP support unit to refine and update the Biological and Human Landscapes for the Eastern Steppe. The program's GIS database was updated when possible and new information was input into models where appropriate. For example, we produced a new map of the current distribution of Siberian Marmots in the Eastern Steppe (Appendix A1) and a revised model of village-based hunting activities (Appendix A2).

A priority for FY08 was gathering feedback from provincial and local-level stakeholders on the Threat and Biological Landscapes that had been developed to date for the Eastern Steppe Landscape Species and then working together to create the Conservation Landscapes for these species. This was done through the series of "Wildlife Conservation Planning Workshops" introduced above. A decision was made to concentrate on three of the eight Eastern Steppe Landscape Species due both to time constraints and an interest in devoting adequate attention and detailed review to a subset of species. The chosen species (the Mongolian gazelle, white-naped crane and saker falcon) address issues of sustainable harvest, eco-tourism potential, migrations across international boundaries and cultural significance.

Participants in the Eastern Steppe LLP Conservation Planning Stakeholder Workshops were presented with the outputs from species biological modeling (Biological Landscapes) and the maps of human activities (Threats Landscapes), to guide the development of landscape-level conservation plans for the species in their province. Environmental policy, goals and challenges were presented by provincial representatives so that areas of synergy and overlap could be identified.

Participants were divided into multi-disciplinary working groups to develop overall conservation goals for their respective province and a detailed species-specific conservation plan for the Mongolian gazelle, white-naped crane and saker falcon. An additional plan was drawn up in Sukhbaatar aimag which focused on Ganga Nuur of Dariganga National Park which is an important regional congregation point for whooper swans. All of the conservation plans identify population targets, a spatial representation of direct threats to the species (loss of habitat, species destruction, etc.) and a list of actions necessary to address threats and reach the population target. Outputs from the workshops are presented in presentation format in Appendix A3.

A particularly interesting component of the workshop was the setting of population targets for the three selected species in each of the three provinces. We explained that setting population goals for Landscape Species was a critical first step to developing landscape-level conservation strategies. Most of the population targets set by provincial and local-level stakeholders involve maintaining or increasing current populations as shown in Table 1. Addressing the requirements of species, especially in light of these population targets, has underscored the need to work across jurisdictional boundaries and even international borders (as in the case of the white-naped crane and Mongolian gazelle).

	White-naped Crane	Saker Falcon	Mongolian Gazelle
Khentii Province	Goal: 2-3 times increase Time: 3-5 years	Goal: 800 – 1,000 individuals Time: 5 years	Goal: 30% increase annually Time: 10 years
Dornod Province	Goal: 25% increase to 700 breeding pairs Time: 10 years	Goal: 50% increase Time: 2 years	Goal: 1 million Time: 2 years
Sukhbaatar Province	Not Applicable	Goal: 10%-20% increase (80-100 breeding pairs) Time: 5 years	Goal: 25% increase annually Time: 3 years

Table 1: Population targets (number and time span) for a subset of Eastern Steppe Landscape Species set at 2008 provincial-level stakeholder workshops.

The workshops held in Khentii and Sukhbaatar were attended by 26 and 27 people, respectively. The Dornod province workshop was attended by 55 people including multiple representatives from the Eastern Mongolian Community Conservation Association (EMCCA) livestock herder community groups and soum (county)-level environmental officers. Both Mongolian and Chinese representatives from the Petro China Daichin Tamsag LLC also attended the Dornod workshop and participated in the working group sessions. Outputs from these workshops will together contribute to an overall conservation plan for the Eastern Steppe. Much of FY09 will be spent compiling the information from these participatory workshops to craft a single, overarching Conservation Landscape for the Eastern Steppe.

The Landscape Species Approach for identifying conservation targets is also incorporated into the conservation planning work with livestock herder community managed areas, “community partnerships for conservation”, as described in Activity 2.2.2.

Activity 1.3.3 Identification of points for critical action to conserve Eastern Steppe Landscape Species

In FY08, the Eastern Steppe LLP continued the process of “identifying points for critical action to conserve Eastern Steppe Landscape Species” by building “Conservation Landscapes” for the Eastern Steppe. The final step in the Eastern Steppe LLP Conservation Planning Stakeholder Workshops described above was the creation of a map for the selected species in each province depicting points for critical action with an explanation of the intervention needed. Copies of the hand-drawn maps are provided in Appendix A3. It will be necessary to analyze these maps and to incorporate the information they hold into current species distribution and human activities maps to confirm that the most critical points have been identified. The provincial governors expressed their interest in having the final Conservation Landscapes incorporated into government plans for the sustainable development of the region.

The Eastern Steppe Conservation Planning Workshops, described above, were especially useful as an opportunity to highlight the community-based conservation and wildlife protection initiatives we have supported in partnership with the EMCCA. It was important to raise awareness among provincial-level government representatives and decision-makers of the opportunities to work with communities to conserve wildlife and important habitat. WCS reported on our experiences working with Community Conservation Partnership organizations through the LLP project and highlighted what have been identified as opportunities (high levels of motivation) and challenges (inconsistent policy implementation) for herder-led, community-

based conservation on the Eastern Steppe. The discussion was productive and led to the identification of future areas of collaboration between WCS and provincial-level environmental policy agencies in support of community-led conservation initiatives.

During the course of FY08, The Nature Conservancy and WWF-Mongolia have launched a GAP analysis for the Eastern Steppe, to which WCS ES-LLP staff have contributed. The process is still ongoing, but one of the outputs will likely be a single Human (“threat”) Landscape for the Eastern Steppe. Both TNC and WWF are interested in incorporating the information we have gathered from stakeholders to inform their conservation target selection and prioritization of initiatives.

TNC has identified the Toson Khulstai Nature Reserve, a 4,700 km² grassland reserve which straddles Khentii and Dornod provinces, as a site for critical action. WCS staff members have been involved in a series of workshops and working group sessions to design a *Conservation Action Plan (CAP)* for Toson Khulstai Nature Reserve. The first, entitled “Partnerships and Planning Processes for Conservation-Lessons Learnt in the Western USA and Mongolia”, was held on April 18, 2008. The second workshop (June 8-10, 2008) was attended by the WCS ES-LLP Remote Sensing/GIS Specialist as the goal of the workshop was to collect information from stakeholders living near the Toson Khulstai Nature Reserve about conservation targets for the area and to define environmental threats. Most recently, on July 21-22, 2008, WCS staff and WCS ES-LLP community partnership members attended the second Conservation Action Planning workshop for Toson Khulstai Nature Reserve hosted by The Nature Conservancy at Shazaan Nuur Eco-camp in Dornod aimag. WCS staff and project partners assisted in drafting conservation strategies and actions for the grassland reserve and our participation and contributions were much appreciated.

Landscape Species Research & Conservation

The development of wildlife management plans and conservation policies benefit greatly from sound science and information about the biology, distribution, habitat needs and threats facing conservation targets. The ES-LLP strives to contribute to the information available on the current trends of key wildlife species on the Eastern Steppe by conducting our own studies or encouraging and supporting the work of others, as described below.

Mongolian Gazelle: The Mongolian gazelle, an Eastern Steppe Landscape Species, is important to the livelihood of livestock herders living on the Eastern Steppe and the ecological integrity of the steppe ecosystem. WCS has conducted research to understand the ecology and population dynamics of the Mongolian gazelle since the late 1990’s. In FY08, a collaborative research team with scientists from the Smithsonian Institution, WCS, the University of Massachusetts and the University of Maryland initiated a four year study of resource predictability and Mongolian gazelle movement strategies on the Eastern Steppe, in order to better understand the conservation requirements of Mongolian gazelle. The project is supported with funding from the National Science Foundation and is implemented in partnership with the Mongolian Academy of Sciences and WCS.

One clear advantage of long-term monitoring of Mongolian gazelle, and other conservation targets, is the ability to respond in a timely manner to questions raised by managers in the field. In May 2008, the Russian conservation and research community reported a large congregation of Mongolian gazelle along the Russian-Mongolian border near the Ereentsav-Solovievsk border crossing in northern Dornod aimag. Many of the gazelle were reported to be in poor condition, and a number of individuals died after getting caught in the barbed wire fences which run along the border. Mongolian gazelle movement and population dynamics data, from WCS and our

colleagues, indicate that this is not the first time a large number of gazelle have congregated in this area of the country; similar reports were made in 2002. A scientific explanation for this crisis was provided for broad distribution (Appendix A4). This situation highlights the need to maintain the connectivity of the steppe habitat to ensure the conservation of migratory species like the Mongolian gazelle. Russian and Mongolian authorities reported an interest in removing the fencing along the border.

Siberian Marmot: Concerns about the rapid decline in Siberian marmot populations have been present since the Eastern Steppe LLP began in 2003. The Siberian marmot is an Eastern Steppe Landscape Species, important to the livelihood (via the meat and fur trade) of livestock herders living on the Eastern Steppe as well as to the ecological integrity of the steppe ecosystem. Their dramatic decline, recorded across the country, is due primarily to over-hunting for the fur trade. The Eastern Steppe LLP has worked to monitor the population size and distribution of marmots on the Eastern Steppe since 2005. The evidence collected by the Eastern Steppe marmot survey team has been used to support the extension of the Government of Mongolia's ban on marmot hunting—a policy put in place to allow marmot populations to rebound across the country to a level at which hunting for subsistence and small-scale fur trade can again be practiced at a sustainable rate.

In FY08, the ES-LLP concentrated on collating all of the field data and information collected since 2005 for presentation, along with detailed instructions on the research and survey methods used, so that local wildlife managers can continue population assessments on the Eastern Steppe. A draft of the final document, with the summary of 3 years of field data which will also be turned into a manual for conducting the population assessments over time, is provided in Appendix A5.

Siberian Marmot Modeling: In FY08, Drs. Susan Townsend and Karl Didier of WCS compiled data from the past 3 years of marmot field surveys, and used this information to create a map and spatial model of the current distribution of marmots in the Eastern Steppe. From 2005-2005, Dr. Townsend surveyed more the 6,300 km of transects spread across the steppe, and compiled a database of more than 4,000 observations of marmots, including sightings of live marmots and active and inactive marmot burrows. Over the past year, Drs. Didier and Townsend used this information to create statistical models of the current (actual) and potential distributions of marmots (Appendix A1). These models were presented at a statistical conference in Great Britain, and a paper for scientific publication is planned in FY09. The maps will be an invaluable resource for targeting conservation action for marmots.

OBJECTIVE 2: Develop and implement sustainable and adaptive mechanisms to strategically address threats across the landscape

Activity 2.1 Establish necessary management mechanisms

In FY08, the WCS Mongolia program worked with those national-level Mongolian government agencies with jurisdiction over wildlife protection, conservation and management to improve their capacity and support initiatives aimed specifically at addressing unsustainable hunting and illegal wildlife trade, the implementation of species' management plans and the prevention of the use of toxins as a pasture management tool. The WCS Mongolia program has been able to leverage approximately \$80,000 per year from the World Bank's Netherlands-Mongolia Trust for Environmental Reform to follow up on the recommendations detailed in the 2006 report on illegal wildlife trade entitled "The Silent Steppe: the Illegal Wildlife Trade Crisis in Mongolia"(Wingard & Zahler 2006). The trade in wildlife, and the illegal and unregulated hunting that supports this

trade, is the most critical and most immediate threat to wildlife species on the Eastern Steppe and across Mongolia today.

Overhunting & Illegal Wildlife Trade

Wildlife Trade Law Reform: In FY08, WCS continued to play an active role in lobbying for legal reforms to improve hunting management and control over wildlife trade in Mongolia. In October 2007, WCS staff attended a 2-day workshop organized by the Ministry of Nature and Environment and the WWF-Mongolia program office to review proposed amendments to the Mongolian Law on Hunting. The twenty individuals in attendance represented government agencies, NGOs and the private sector (hunting companies). Broad support for revisions of the law was voiced but no consensus was reached on the specific changes necessary. The WCS review of wildlife management and trade law (funded by the World Bank's Netherlands-Mongolia Trust Fund for Environmental Reform and published in 2006) will be used as the foundation document for the final analysis of the needed changes and identification of the specific amendments and additions necessary to ensure that the revised law addresses the challenges of wildlife management and trade control in a market-driven economy. WCS staff members also attended a WWF-sponsored follow-up workshop to address wildlife trade legislation in January, 2008. The changes in the Mongolian government in 2007/2008 have meant that the review of the Mongolian Law on Hunting, and others on the agenda for parliamentary consideration, has not been completed.

Enforcing Wildlife Trade Law in Ulaanbaatar: From the end of FY07 through the beginning of FY08, the WCS Mongolia program consulted with environmental law expert Ms. Katie Scharf to review current laws and recommend strategies to regulate the trade of wildlife in Mongolia. She focused specifically upon the scope of legal liability and penalties available under Mongolian law. The focal point of the study was Ulaanbaatar, which is the seat of Mongolia's government, media markets, and civil society, as well as the center of the wildlife trade. Some of the country's largest raw materials markets are located to the east and west of the city; road inspection points, the train station, and the airport are all strategic sites for enforcing trade regulation. For these reasons, Ulaanbaatar was chosen as the site for WCS to launch an effort to support improved enforcement of wildlife trade regulations.

Ms. Scharf's report, *Strategies for enforcement of wildlife trade regulations in the raw materials markets of Ulaanbaatar, Mongolia* (Appendix A6), highlights the fact that responsibilities for enforcement of wildlife trade is distributed among half a dozen different agencies. Inspectors (state and municipal), rangers, and customs officials enforce administrative penalties for minor violations. Criminal-level violations must be referred to the National Police, who then turn cases over to the General Prosecutor's Office for prosecution in any of county or provincial-level courts, etc. The goals of future WCS efforts, described below, have been to facilitate investigative collaboration among the different agencies, to encourage information sharing, and to harmonize confiscation procedures in order to make the system more efficient and effective.

Wildlife Trade Market Surveys: Responding directly to the recommendations for "near-term measures" outlined in Ms. Scharf's report, the WCS Mongolia program launched an effort to survey Ulaanbaatar area markets for wildlife trade activity and to assess the strengths and weaknesses of the existing enforcement system through "ride-alongs" with enforcement officials. The market surveys and ride-along efforts were implemented in December 2007 through February 2008, the peak season for wildlife trade in Mongolia. The surveys were performed in raw material markets, large whole-sale food markets, restaurants and hospital/pharmacies in the Ulaanbaatar area with a smaller scale survey completed in Choibalsan, Dornod aimag (province) on the Eastern Steppe. The market surveys confirmed that there is significant trade in protected

species and their products, especially fur. There are multiple opportunities for enforcement of laws that apply to wildlife and wildlife trade that are currently missed because enforcement officials are not patrolling markets effectively. The draft final report from the market surveys is provided in Appendix A7.

WCS Staff Recognition: WCS Mongolia program Wildlife Trade Specialist, Ms. N. Odonchimeg, was honored during the 20th Anniversary celebrations of the Ministry of Nature and Environment (MNE) with an award of “Best Environmental Manager” according to MNE Minister’s order No. 339, for her contribution to Mongolian Nature and Environment.

Wildlife Trade Conferences: WCS staff attended two meetings in February to address the impact of wildlife trade across the region. The first meeting was a joint WCS and TRAFFIC event which took place February 24-28, and focused on improving and standardizing methodology for monitoring wildlife trade. The second meeting, “WCS Strategic Planning Meeting on Asia Wildlife Trade” was held between February 29th and March 2nd. Both meetings were held in Khao Yai National Park, Thailand.

Wildlife Trade Law Enforcement: In July 2008, WCS began a project called “Protecting Mongolia’s Wildlife Through Wildlife Trade Law Enforcement” with support from the second phase of the World Bank’s Netherlands-Mongolia Trust Fund for Environmental Reform Program (NEMO II), in cooperation with the Mongolian Ministry of Nature and Environment. An introductory workshop to kick off the project promoting multi-agency patrol teams for wildlife trade law enforcement was held on August 20th, with partners from the State Specialized Inspection Agency, Municipal Inspection Agency, National Police, Customs Agency and NGO representatives including WWF-Mongolia, the Mongolian Game & Hunting Society and the Animal Rights Conservation Fund. In the first year, the project is designed to tackle illegal wildlife trade in Ulaanbaatar markets and collection points around the city by improving the quality and frequency of enforcement activities and coordination among enforcement agencies.

Wildlife Species’ Management Plans

A major impediment to the official adoption and implementation of wildlife species’ management and action plans in Mongolia is that there is currently no formal procedure for review and acceptance of the documents compiled by conservation organizations and stakeholder groups, even when the process is endorsed by the Government of Mongolia. The species’ action plan of top priority for the ES-LLP is that developed for the Mongolian gazelle through a participatory, multi-stakeholder process which began in 2003. WCS has also been involved in the development or discussions surrounding species management plans for the Mongolian saiga (*Saiga tatarica mongolica*) and the Takhi or Przewalski’s horse (*Equus ferus Przewalskii*). At a recent stakeholder meeting to discuss the outputs from a Takhi conservation conference, held on July 4, 2008 at the Mongolian Academy of Sciences’ Institute of Biology, organizations and individuals in the conservation community decided to work together to address the lack of a formal procedure for review and approval of wildlife species management plans in Mongolia. It is hoped that this unified effort will be a more effective and efficient means of drawing attention to and resolving this issue in Mongolia. The next step will be the official submission of the Mongolian Gazelle Management and Action Plan for endorsement by the Government of Mongolia.

Pasture Management/Toxin Use

The widespread use of the anti-coagulant toxin Bromadiolone as a lethal means to control rodents (e.g., Brandt's voles) is no longer a government-sanctioned method for pasture management, nor is it being practiced any longer in Mongolia. In FY08, the Eastern Steppe LLP continued to monitor the use of toxins in pasture management in Mongolia through communication with the Plant Protection Institute and Ministry of Food and Agriculture. The work done by WCS, WWF-Mongolia and the UNDP-GEF Sustainable Grasslands Management Program to raise awareness among Mongolian government agencies about the detrimental effects of Bromadiolone use on non-target species and the costs of using toxin-based pasture management techniques has resulted in law and policy changes that seem to have had a lasting effect.

Activity 2.2 Enhance local capacity to implement the strategy

Activity 2.2.1 Enhance Local Institutional Capacity

In FY08, the Eastern Steppe LLP continued its work in Nomrog Strictly Protected Area (SPA) to build a pilot "Collaborative Wildlife Protection Program". Nomrog SPA supports populations of a number of regionally and globally threatened wildlife species including Red Deer, Roe Deer, Lynx and at least five of the Eastern Steppe Landscape species, the Eastern Moose, Grey Wolf, White-naped Crane and Taimen. The reserve is threatened by a range of factors resulting in the unsustainable harvest of wildlife caused by: 1) cross-border incursions, encroachment and poaching by foreign nationals; 2) poaching and habitat destruction by government staff members who live in the protected areas; and 3) poaching by influential Mongolian and foreign outsiders. This component of the project is designed to highlight the capacity needs, provide training and promote collaboration among the local (soum/county and aimag/provincial) branches of the institutions charged with wildlife management in the region including the Environmental Departments, the "environmental inspectors" of the State Specialized Inspection Agency (SSIA), the Protected Area Administration (PAA) of the Ministry of Nature and Environment (MNE), and the State Border Defense Agency (SBDA).

Wildlife Law Enforcement Training, Nomrog Strictly Protected Area: Nomrog SPA is also characterized by its location within an international border region (approximately 80% of the Mongolia's protected areas overlap at least partially with border zones) where jurisdiction over wildlife protection and conservation is shared between the Administration of Nomrog SPA of MNE and the SBDA. The ES-LLP has established a "Wildlife Protection Training Program" for field staff within Nomrog SPA which is designed to enhance wildlife protection in the SPA and highlight the important role of law enforcement staff (including volunteer local volunteer rangers) in conservation. The long-term goal is to strengthen the legal and enforcement capacity in Nomrog SPA through a "Collaborative Wildlife Protection Program" which involves State Border Defense Agency staff, SPA park rangers, local volunteer rangers and state environmental inspectors in wildlife conservation activities within Nomrog SPA. At the end of FY07 (September 16-25, 2007), the second wildlife law enforcement training was held in Nomrog Strictly Protected Area (SPA) in Sumber soum of Dornod Aimag. The training brought together staff from the newly formed Nomrog SPA administration, senior officials and patrol staff from the State Border Defense Agency (SBDA) and wildlife/environmental law enforcement staff from the State Specialized Inspection Agency and the National Police and local volunteer rangers. The 25 participants were provided copies of the finalized training manual and some essential equipment including binoculars, spotting scopes, maps, compasses and digital cameras. The participants were trained through illustrated lectures, discussions and field exercises in wildlife monitoring, law enforcement and effective patrolling. They received a certificate upon completion of the course. A full report on the training is provided in Appendix A8.

A Mongolian version of the “Wildlife Law Enforcement Training Manual” created for use during these training exercises has been completed. The ES-LLP has distributed the manual to all the current and newly identified staff working within the Nomrog SPA. The distribution of the manual to all protected areas on the Eastern Steppe that overlap with international border regions has been delayed until the resources are identified to provide basic training on the use of the manual in these protected areas.

Wildlife Law Enforcement Training-Assessment of Success: In December 2008, WCS staff members traveled to Choibalsan, Dornod province, to hold follow-up meetings with the Wildlife Law Enforcement Training participants. The purpose of the meetings with representatives from the SBDA, Nomrog SPA, Dornod Protected Area Administration and the Environmental Protection Agency was to collect the information gathered by collaborative patrol teams set up during the training and to prepare this information for analysis and distribution. Suggestions were made for updating the patrol forms, improving the quality of the data collected and for storing, analyzing and presenting the information from the patrols in a format that officials can use to improve the future management of the protected area and improve wildlife law enforcement in the region. A final assessment of the training program and its effectiveness in building the wildlife monitoring and protection skills of the individuals working within Nomrog SPA, as well as establishing the collaborative approach to wildlife protection which is essential in these regions, will be completed at the end of FY08.

Wildlife Monitoring and Poaching Database: In December, 2007, the initial set of patrol forms for Nomrog SPA were collected and input into a simple excel-based datasheet. The patrol forms were updated to make recording observations in the field more efficient and to facilitate the downloading of the information into a database. In September 2008 the full set of patrol forms was collected and a small wildlife survey was completed with Nomrog SPA staff including border guards and protected area rangers. The quality of the information collected will be assessed in early FY09 and preparations will be made to create a database of patrol information for Nomrog SPA. Eventually the wildlife monitoring component of the database will be developed, possibly using the MIST software. Currently, the patrol forms are designed for the recording of observations of wildlife. The patrol techniques, forms and database will be updated to allow for an estimation of “catch per effort” which will be a better indication of both the volume of poaching activity and the numbers of wildlife within Nomrog SPA.

Wildlife Trade Monitoring and Poaching Prevention: In FY08, the ES-LLP worked to address regional illegal hunting and wildlife trade issues by involving representatives from the agencies with responsibility for monitoring hunting and wildlife trade on the Eastern Steppe in the initiatives outlined under Activity 2.1. The Dornod provincial branch of State Specialized Inspection Agency (SSIA) was involved in the market surveys and wildlife trade enforcement capacity assessment completed in FY08. Although Ulaanbaatar was the focus of activities of the World Bank NEMO II-funded work on wildlife trade in FY08, the plan is to scale up the initiative so that it includes rural markets in the future, and the Eastern Steppe region will be the first site of the rural expansion of the program.

Activity 2.2.2 Enhance Local Community Capacity

In FY08, the ES-LLP has again made great progress, and has seen great potential, in engaging communities of livestock herders on the Eastern Steppe to implement effective wildlife protection and community-based management of their natural resources. We continue to work very closely with the Eastern Mongolian Community Conservation Association (EMCCA) which acts as the umbrella organization for the groups of livestock herders on the Eastern Steppe engaged in community-led wildlife protection and management. In FY08, the Eastern Steppe LLP provided technical assistance and support to EMCCA herder communities whether or not they had been legally recognized as “community partnerships” for nature conservation by local governments. The Mongolian governmental policy trend of the transferal of the rights and responsibilities over wildlife and natural resources to communities of livestock herders continued in FY08. Government agencies, civil society organizations, and representatives of national and international conservation organizations continued to promote community-based natural resource management in Mongolia as a solution to the limitations of government-led enforcement of communal grazing rules, pasture management plans and wildlife hunting regulations over large areas of country. The Eastern Steppe LLP focused on three key elements of community conservation on the Eastern Steppe in FY08 as described below.

Capacity Building—Wildlife Protection, Monitoring and Management

In FY08, the ES-LLP provided wildlife and natural resource conservation training to members of livestock herder communities on the Eastern Steppe using a number of different approaches. Trainings and technical assistance were delivered using a combination of community site visits, participatory workshops and “herder to herder” training opportunities. All of the activities were designed to improve skills and build confidence in the areas of wildlife monitoring, community action plan development and wildlife law enforcement and protection techniques. Trainings (formal and informal) were conducted in partnership with the EMCCA.

Community Ranger Training: The WCS/USAID Eastern Steppe project conducted its second training for livestock herder community rangers between September 26th and 29th, 2007 in collaboration with the EMCCA. Herder community partnership leaders and volunteer rangers were brought together to collectively develop a system for recording information about impacts and/or threats to wildlife and natural resources in community managed areas. Expected outputs from the training include regular monitoring and reporting of wildlife and natural resource use violations in community areas to local wildlife and environmental officials. Reporting forms were finalized after the September workshop and sent to the **Volunteer Rangers** from 14 active herder community groups. These forms are being used to monitor impacts and/or threats to wildlife and natural resources in their community managed areas. A full report on the Volunteer Ranger Training is included in Appendix A9.

Community Conservation Partnership Database: Resource maps are being developed for all of the EMCCA livestock herder community partnerships on the Eastern Steppe. In early FY08, maps from three of the community conservation groups on the Eastern Steppe (Bayan-Ukhaa, Zegstei, and Yeson-Erdene) were completed and their boundaries updated (GPS coordinates), and data about wildlife observations collected throughout the summer/fall of 2007 were compiled. These resource maps are a key tool for community-based wildlife management and conservation work on the Eastern Steppe and they are being developed with each of the community groups as opportunities arise.

Equipment for Community Rangers: In FY08, Ann Winters, the WCS/USAID Eastern Steppe Conservation Program Manager, facilitated the donation of wildlife monitoring equipment to volunteer rangers from EMCCA community groups in the Eastern Steppe. The equipment purchase was funded by WCS private donors, meeting a need identified by an earlier WCS assessment. Volunteer rangers have been selected by community group members and are responsible for monitoring and reporting wildlife use violations in their community managed areas. The donated equipment – including binoculars, digital cameras and GPS units – will be used by community volunteer rangers to improve wildlife monitoring and the reporting of wildlife use violations.

Community Partnership Capacity Building: WCS Eastern Steppe LLP staff, Mr. Baterdene from the EMCCA and a masters student from the National University of Mongolia conducted a month of “mini-workshops” with the members from each of the active (14) EMCCA livestock herder communities on the Eastern Steppe from July 15th through August 15th. The goal was to reach each of the “community partnerships” for nature conservation in Khentii, Dornod and Sukhbaatar provinces. The “mini workshops” were designed to assess community perspectives on the wildlife populations in their areas, map habitats, discuss natural resource use monitoring and begin drafting action plans for their community managed natural resource use areas. The team reviewed wildlife monitoring methods with volunteer rangers in their normal patrol areas and worked with community members to demarcate community area boundaries (GPS coordinates) which will be added to the database of community managed areas. The goal is to further develop the capacity of community partnerships to effectively manage natural resources and conserve wildlife in their areas. This includes developing clear goals and objectives for community managed areas and skills in wildlife monitoring, natural resource impacts monitoring and reporting, wildlife protection coordination, management and sustainable stocking of pastures, water resource protection and member engagement.

Legal Process Assessment—Implementation of Community-Based Conservation

As the primary stakeholders, communities of local, nomadic herding families living on the steppe are critical to long-term conservation success in this large grassland ecosystem. WCS’s experience in the Eastern Steppe suggests that the future of the region is dependent, in large part, on the effectiveness of local citizens as stewards of their environment and as a strong constituency for sustainable natural resource management and wildlife conservation. Local community institutions are recognized as important for developing sustainable livelihoods and natural resource management in Mongolia, and policy decision makers are increasingly using their experiences to formulate policies and regulations. Moreover, the local institutions themselves, including the EMCCA, are developing mechanisms to scale up community empowerment. In FY08, the EMCCA and the Eastern Steppe LLP continued to assist communities with the legal procedures necessary to form community partnerships on the Eastern Steppe and worked to strengthen relationships between community groups and government officials.

Legal Establishment of Community Partnerships for Conservation: The legal process for establishing community “owned” or managed protected areas for wildlife and natural resource conservation continues to be a complicated and relatively long process. If applications are successful, livestock herder community groups are officially designated as a “Community Partnership” (*nokhorlol* in Mongolian) for nature conservation by the soum (county) and aimag (provincial) governments. In FY08, the Eastern Steppe LLP and the EMCCA have tracked the progress of community groups’ applications to their local governments and have assisted with components of the applications, especially management plans. In Mongolia, local governments meet to review community applications only once a year. We anticipate that 10-15 community

groups will have submit updated versions of their applications and we will receive reports of the outcome of these applications by the end of FY09.

Mapping Community Conservation Partnership Boundaries and Natural Resources: One of the requirements for legal recognition of “Community Partnerships” is to post signs demarcating community area boundaries. By December 2007, the Eastern Steppe LLP was able to deliver maps (at least in draft form) depicting boundaries and locations of specific natural resources to each of the livestock herder community groups based on the information they had provided during earlier workshops and planning sessions. In addition to satisfying the application requirement, these maps are essential tools for community wildlife monitoring and protection activities. An example of a map and management plan from a “Community Partnership” is provided in Appendix A10.

Government Officials & Community Conservation Partnerships: The Eastern Steppe LLP hosted a workshop in collaboration with the EMCCA on **Wildlife Protection Coordination** for herder community volunteer rangers, soum inspectors and protected areas (PA) rangers on February 22-23, 2008, in Choibalsan, Dornod. Presentations included: The SSIA and Wildlife Protection Responsibilities of Soum Inspectors, Wildlife and Natural Resource Protection in Protected Areas, and a Volunteer Ranger Job Description. Volunteer rangers, soum inspectors and PA rangers broke into groups, according to their soum, and worked together to list the impacts to wildlife and natural resources that they had observed in the past. Groups also drafted Wildlife Protection Action Plans for each of their areas.

The first day of the workshop concluded with a mini drama session on hunting laws where participants performed three short ‘mini-dramas’ centered on wildlife conservation issues. During the final day of the workshop volunteer rangers met with the Eastern Steppe LLP Remote sensing/GIS specialist to map impacts they had recorded to wildlife and natural resources in their community managed areas. The RS/GIS specialist also taught participants how to use a map and compass when recording observation locations. Participants were given additional recording sheets for monitoring impacts. A total of 34 participants (24 male, 10 female) attended this workshop, including 11 representatives from herder community groups, and individuals from four organizations; the Eastern Mongolia Protected Areas Administration (11), State Specialized Inspection Agency (9), Dornod Environmental Protection Agency (2) and EMCCA (1). A full report on the workshop is provided in Appendix A11.

Support Network Development—Linking Conservation Communities

The ES-LLP is fully aware that the long-term sustainability of community-based wildlife conservation and natural resource management groups on the Eastern Steppe will depend, at least in part, on their ability to communicate, learn from and be supported by other groups on the Eastern Steppe and throughout Mongolia. Members of livestock herder communities under the leadership of the EMCCA have repeatedly expressed their interest in opportunities to share their experiences and learn from others. In FY08, the Eastern Steppe LLP organized a conference in Ulaanbaatar to bring together various donor-funded and Mongolian NGO-led initiatives in the area of “community-based wildlife and natural resource conservation” to discuss lessons learned and to facilitate cross-site learning and exchange among projects and community groups. Participants included representatives from “Community Partnerships” across Mongolia as well as the NGO and donor-funded project management teams. ES-LLP staff have also held a number of meetings with representatives from more traditional agricultural/rural development projects and other “nature conservation”-based groups in Mongolia to discuss ways of linking Eastern Steppe community-conservation groups with other projects so that they can take advantage of services provided.

Community-based Wildlife Conservation in Mongolia: Successes and Lessons Learned: The ES-LLP organized and hosted a workshop, Community-based Wildlife Conservation in Mongolia: Successes and Lessons Learned, on April 16-17, 2008 in Ulaanbaatar, Mongolia. The overall aim of the workshop was improved wildlife and natural resource management and protection in Mongolia through information sharing about effective community-based wildlife and natural resource conservation approaches. The key topic areas of the workshop included: 1) community-based wildlife conservation approaches; 2) the legal framework for establishing community partnerships and their subsequent participation in decision-making; and 3) resources and skills for communities. The workshop provided an important communication and collaboration opportunity for the many organizations supporting community partnerships and natural resource conservation in Mongolia. Over 50 participants, representing NGOs, community-conservation groups, and projects funded by bilateral and multilateral organizations, attended the workshop. The United Nations Development Programme (UNDP) Altai-Sayan Project provided supplementary financial support for the event which allowed for the inclusion of a larger and broader group of participants. Workshop proceedings are available in Appendix A12.

International Examples of Community-Based Conservation: Maria Fernandez-Gimenez, a professor from Colorado State University, assisted with workshop facilitation and gave a presentation on *Developing Effective Governance and Participation in Community-based Conservation* with case studies from Mongolia, native lands in the United States, and Latin America. The inclusion of international examples of successes and failures was extremely valuable. Dr. Fernandez-Gimenez provided insight into academic research in the area of effective governance systems for community-based natural resource management, and commented on Mongolia's progress and current challenges in the area. There was strong consensus among participants that herder community partnerships are an important part of promoting and achieving sustainable wildlife and natural resource management in Mongolia. As they themselves underscored, livestock herder community partnerships are well positioned based on the fact that their members: 1) reside in areas of conservation concern; 2) have a direct impact on natural resources such as wildlife; and 3) can monitor and manage wildlife and natural resources in their community managed areas. Herder communities are motivated to conserve natural resources because they depend on them for their livelihoods; these resources include wildlife and their products, water sources, pasture for livestock production, fuel sources such as willow and dung, and wild plants for food and medicinal purposes.

Blog: Information Exchange on Community Based Wildlife Conservation in Mongolia: In June 2008, WCS staff launched the *Community Based Natural Resource Conservation Blog* (<http://monconservation.blogspot.com/>) in response to requests made at the workshop mentioned above. Individuals from various conservation NGOs were invited to become authors and members and this Blog has become an important forum for continued discussion about effective approaches to community-based nature conservation in Mongolia. Its development will continue in FY09 and its effectiveness will be evaluated over time.

Economic Valuation of Natural Resources

In FY08, the ES-LLP's interest in examining the "value" of natural resources on the Eastern Steppe was developed more fully, with assistance from the USAID-funded WCS TransLinks team. This ES-LLP/WCS TransLinks collaborative component of our "community-based conservation" work is discussed more fully in Activity 3.1 where we describe how our plan to place an economic value on Eastern Steppe natural resources (in order to inform decision-making and policy formulation within the context of community management and access to natural resources) has been addressed in the context of land tenure rights and ecosystem services.

Activity 2.2.3 Enhance Local Disease Management

The disease interface of wildlife, livestock and human health continues to be a concern on the Eastern Steppe. Although livestock disease was determined to be a threat to conservation targets during the LLP conservation planning process, the ES-LLP has not had any project funds to devote to data collection or interventions in the field. The WCS Mongolia program has raised small funds to investigate Foot and Mouth disease in livestock and Mongolian gazelle on the Eastern Steppe through a grant from the American Zoo and Aquarium Association (AZA) Conservation Endowment Fund. Additionally, in collaboration with the WCS Field Veterinary Program (FVP), the program has raised significant funds to investigate the impact of highly pathogenic avian influenza (HPAI) in wild migratory birds in Mongolia and across the region. The avian influenza work in Mongolia is funded by the USAID-supported Global Avian Influenza Network for Surveillance (GAINS) program as well as a contract from the National Institutes of Health and National Institute of Allergy and Infectious Diseases (NIH-NIAID) Centers for Excellence in Avian Influenza Research and Surveillance (CEIRS) program. These funded projects have provided the opportunity to enhance local disease management on the Eastern Steppe by involving local veterinary personnel in wildlife disease-related projects and by improving our own country program's capacity to address wildlife disease.

WCS Mongolia Veterinary Capacity: The WCS Mongolia/Field Veterinary Program hired Mongolian veterinarian Dr. S. Enkhtuvshin in December 2007 to assist with the coordination of avian influenza and manage veterinary and wildlife disease epidemiology projects for the Mongolia program. Dr. Enkhtuvshin is a graduate of the Mongolian National Agricultural University's Veterinary Faculty and the University of California, Davis, where she received her masters in Preventive Veterinary Medicine in 2006.

Foot and Mouth Disease (FMD): In July 2008, the WCS Mongolia veterinary staff collated the data on Foot and Mouth disease in Eastern Steppe Mongolian gazelle and livestock, collected over the past 10 years, in preparation for some final confirmatory testing of archived samples and publication of the results. Over the course of the project, the capacity to analyze serum samples from livestock and Mongolian gazelle calves for FMD has been developed at the Immunology Department of the Mongolian Institute of Veterinary Medicine. Results are being confirmed at the U.S. Foreign Animal Disease Laboratory in Plum Island, New York. A copy of the FMD project report submitted to the AZA is provided in Appendix A13.

Pathology Training: The WCS veterinary team has also been preparing for a basic veterinary pathology training to be held in conjunction with the annual meeting of all aimag veterinarians at the State Central Veterinary Laboratory (SCVL) in Ulaanbaatar at the end of September 2008. The team has been working in collaboration with SCVL staff, the WCS Bronx Zoo pathology department and a veterinary pathologist working as a VSO volunteer at the SCVL this year. Improvements in veterinary pathology capacity in Mongolia could greatly improve disease diagnosis and management in both wildlife and domestic animals.

Highly Pathogenic Avian Influenza (HPAI) Caused by H5N1

Avian influenza is a viral disease which naturally circulates in wild birds; however, it has the potential to mutate into highly pathogenic forms that cause significant morbidity (sickness) and mortality (death) in domestic and, increasingly, wild birds. Therefore, avian influenza is a conservation concern given its potential direct impact on endangered populations of wild birds. Wild birds may also be endangered by disease control plans that call for their destruction. The WCS-led avian influenza surveillance work in Mongolia has been conducted nationwide, with a

focus in central Mongolia where the HPAI form of the virus was isolated from wild birds in 2005 and again in 2006. Some of the surveillance work each year is carried out in the Eastern Steppe. In early FY08, the avian influenza team finished their 2007 field season in Sukhbaatar aimag where they surveyed three lakes within the Ganga Nuur National Park. Surveys included counts of live birds present, transects for sick and dead birds, collection of water quality data and collection of fecal samples from congregatory water birds. Ganga Nuur is an important collection point for whooper swans (*Cygnus cygnus*) before they migrate south for the winter.

The HPAI work has provided the opportunity to train young Mongolian biologists and veterinarians, improving their skills as field biologists, bird specialists and disease investigators. This field-based program provides students and young scientists with hands-on training that is often lacking in their formal education programs. The skills acquired by these young biologists and veterinarians will contribute to Mongolia's capacity to address disease at the interface of wildlife and domestic populations in the future.

Surveillance for Highly Pathogenic Avian Influenza: WCS-led HPAI surveillance efforts in FY07 and FY08 have not identified any signs of unusual avian mortality at any site, suggesting that no outbreaks of HPAI occurred at the locations visited. This evidence, coupled with data from surveillance efforts coordinated through the Ministry of Food and Agriculture, suggests that there have been no outbreaks of HPAI in Mongolia in 2007 or 2008. The WCS-led team continues to collect samples from live, otherwise healthy birds for HPAI testing. Swabs from individual birds are screened for Influenza A using rRT-PCR and positive samples are submitted for viral isolation at the United States Department of Agriculture – Agriculture Research Service, Southeast Poultry Research Laboratory in Georgia, United States. Survey findings and details of samples collected are posted on the GAINS website, <http://www.gains.org>. As results of laboratory analyses are received, they are shared immediately with partners at the Mongolian Central Veterinary Laboratory and the Veterinary Department, Ministry of Food and Agriculture. With their approval, laboratory results are then shared with the wider influenza community through <http://www.gains.org>. WCS avian influenza reports for the 2006 and 2007 seasons are provided in Appendices A14 and A15.

Wild Bird Migration Studies: The HPAI surveillance project has provided the opportunity to study the little-known migration patterns (including distribution, movements and habitat requirements) of Mongolian waterfowl, many of which are threatened or critically endangered. In FY07, the WCS avian influenza team began a relatively small effort to mark captured birds (primarily whooper swans and bean, swan and bar-headed geese). These efforts have been scaled up significantly in FY08 with close to 1,000 birds fitted with individually numbered neck collars this past year. Considering that 25% of the birds marked during 2007 were re-sighted in their wintering quarters, we are confident that this increased marking effort will pay dividends in the coming months and generate a wealth of data on the migratory movements of Mongolian waterfowl. This information is essential for wildlife managers working to conserve these species across their range. An example of the first re-sighting of a bar-headed goose from the 2007 marking efforts is described below.

- The first report of the re-sighting of a bar-headed goose captured and marked by the WCS GAINS team in Mongolia in the summer of 2007 was received in December 2007. The male bar-headed goose was tagged with the collar E6 on July 19, 2007 in the Darkhad Valley of Hovsgol aimag (N: 99.41078, E: 51.19736). He was one of 50 Bar-headed Geese fitted with collars in July, and is the first for which re-sighting information was received. Additionally we had C6, a female and two other bar-headed geese re-

sighted in India. Based on the information given, the birds traveled a direct line distance of ~4,780 km as depicted in the photo below.



Bar-headed goose E-9 at capture in Mongolia in July 2007.



Migration of bar-headed goose from Mongolia to India (~4,780 km).

Mongolian National Bird Banding Program: The wild bird migration studies described above have been used as the impetus for building a national bird banding program in Mongolia which will be sustained well beyond the length of the avian influenza project. The WCS Mongolia program and the avian influenza team have worked with our Mongolian partners to develop a bird banding program in Mongolia. To introduce the idea to a broad range of individuals in the scientific and conservation communities, the WCS avian influenza project hosted a workshop on bird marking at the National University of Mongolia (NUM) on May 9, 2008. This "First Mongolian Bird Marking Workshop: The Science and Conservation of Bird Marking" was very well received, with approximately 60 attendees including ecology students, NUM faculty and professionals from the veterinary and health sectors. Dr. Philip Round of the Wetland Trust and Mahidol University joined WCS Field Veterinarian Dr. Martin Gilbert for presentations and discussion on bird capture and marking techniques, applications and data management. Based on the level of enthusiasm evident during discussion sessions, there is clearly a great deal of interest in developing a national bird banding program in Mongolia.

Avian Influenza-Planning & Coordination: WCS staff participated in a Wild Bird Surveillance 2008 Coordination Workshop held on January 10, 2008 at the State Central Veterinary Laboratory (SCVL). WCS presented our 2007 Wild Bird and Avian Influenza Surveillance activities and preliminary results. The workshop was coordinated by the Veterinary Department of the Ministry of Food and Agriculture with FAO/USAID support, and participants included representatives from the Ministry of Nature and Environment, Agricultural University, Institute

of Biology, National Center for Infectious Diseases with Natural Foci and the SCVL. English and Mongolian versions of the 2006 WCS/USAID GAINS report, “Disease Surveillance: Avian Influenza in Migratory Birds in Mongolia” were distributed. (The English version is available in Appendix A14.) WCS staff presented at the next Wild Bird Surveillance and Coordination Workshop held on 18 March, 2008. The workshop participants included representatives from the Agricultural University, State Central Veterinary Laboratory, Institute of Biology, and the National Center for Infectious Diseases with Natural Foci. The objectives of this meeting were to describe the GAINS database to local agencies, to raise interest and to get commitments to contribute Avian Influenza and bird observation information.

Activity 2.2.4 Enhance Local Scientific Capacity

In FY08, practically every ES-LLP activity had a component which contributed to building local scientific capacity on the Eastern Steppe. Capacity building opportunities were provided across our range of activities, as described below. In FY08, the WCS Mongolia program furthered its relationship with the National University of Mongolia (NUM) through a visit from Dr. Madhu Rao, WCS Regional Technical Advisor and Coordinator for Asia for the Network of Conservation Educators and Practitioners (NCEP), and Dr. Will Banham, WCS Director of Training and Capacity Building. Drs. Rao and Banham helped present and coordinate a workshop, co-hosted with NUM, designed to introduce faculty to conservation biology curriculum development resources provided through NCEP, a program developed by the Center for Biodiversity Conservation of the American Museum of Natural History. If established, a link between NCEP and NUM would result in a higher-quality of conservation biology instruction for Mongolian scientists and wildlife managers, who can then apply their skills to the problems of biodiversity conservation on the Eastern Steppe and beyond.

The number of individuals trained in projects designed to enhance local scientific capacity are outlined below:

1. *Mongolian gazelle project*: Ms. Bolortsetseg, a female graduate student from NUM is currently, and will continue to be, employed full-time on this project as the field assistant, database manager and wildlife health project coordinator. She completed her master’s degree and successfully defended her thesis at NUM in March 2008. In FY08, her training and experience extended to the field of “community conservation education” and she will continue her work with WCS Mongolia as our primary community outreach and education coordinator.
2. *Siberian marmot study on the Eastern Steppe*: Two students from NUM were hired as field assistants on this project in FY07 and were involved in data analysis and report publication in FY08. (The marmot project report is provided in Appendix A4.)
3. *Joint surveys with the Protected Area Administration*: Two young conservation officers, 2 protected area staff and 1 community volunteer ranger received field-based training on wildlife survey techniques as part of a joint ES-LLP and Protected Area Administration survey of Ugtum Nature Reserve in FY07. All five individuals were involved in the data analysis and report writing phase of this study in FY08. The Ugtum Field Survey Report is available in Appendix A16.

4. *Community-based conservation on the Eastern Steppe:* The training and capacity building components of the community-based work on the Eastern Steppe are directed at volunteer rangers from the livestock herder community conservation group. The trainings provided in FY08 focused on wildlife monitoring and improving the scientific capacity of these community members as described in Activity 1.3.3. Over 60 individuals received training through these activities in FY08.
5. *Nomrog wildlife protection program:* Nomrog Protected Area staff and young officials from both the State Border Defense Agency and State Specialized Inspection Agency were trained in FY07/FY08. Fifteen individuals were trained in FY07 and an additional 15 individuals received training in FY08.
6. *Avian Influenza:* In FY08, the avian influenza team placed an emphasis on providing capacity building opportunities for Mongolian students or recent graduates in the fields of veterinary medicine and biology (ecology, conservation and/or ornithology). The students have learned quickly and have become integral members of the team. This project, although not funded directly by the WCS/USAID ES-LLP, has increased local capacity in the areas of wild bird handling, wildlife survey skills, disease outbreak investigation and basic ecology.

WCS Mongolia & Eastern Steppe LLP Staff Capacity: In FY08, we identified a number of opportunities for ES-LLP staff to enhance their own scientific capacity through participation in international scientific meetings, WCS conferences and formal training programs provided through the WCS Education Department at the Bronx Zoo in New York. In each instance the ES-LLP staff member received scholarship funding to attend the events described below, based on applications and abstracts they submitted highlighting their work on the Eastern Steppe.

1. On November 12-16, 2007, ES-LLP staff attended a **WCS Asia Education & Capacity Building Meeting** in Vientiane, Lao PDR. The conference covered four major themes: 1) grade school-based education; 2) university education and research mentoring; 3) community-based education and outreach; and 4) partner institution capacity building. WCS staff presented and received feedback on two of our Eastern Steppe projects. The first was a review of the wildlife law enforcement trainings which have been provided to staff of Nomrog SPA and border guards from the State Border Defense Agency (Activity 2.2.1) and the second was the creation of “Traveling Community Conservation Trunks” for the Eastern Steppe (Activity 2.4). The traveling trunk project is designed to bring conservation curriculum to rural communities in Mongolia’s Eastern Steppe to raise awareness of wildlife conservation issues and build the capacity for communities to engage in wildlife conservation.
2. ES-LLP staff member Ms. Bolortsetseg was accepted into the **WCS Conservation Education Fellowship program** in FY08. She attended the three week training at the WCS Conservation Education Center in New York, where she developed a project to train members of the community managed areas on the Eastern Steppe. The materials she developed during her fellowship training were used for habitat mapping and wildlife monitoring in community managed areas (Activity 2.2.2).
3. WCS Eastern Steppe LLP GIS and Remote Sensing specialist Mr. Ochirkhuyag attended the **XXI Congress of the International Society for Photogrammetric and Remote Sensing in Beijing, China**, where he was awarded “Best Poster Paper” for the Congress in July 2008.

4. Mr. Ochirkhuyag also received a scholarship from the **Society for Conservation GIS** to attend a training course that focused on the application of GIS in Conservation. Following this training, conducted by Environmental Systems Research Institute in Redlands, California, Mr. Ochirkhuyag presented a paper on “The Eastern Steppe Living Landscape” at both the **28th Annual Environmental Systems Conference held August 4-8, 2008 in San Diego, California** and the **11th Annual SCGIS Conference held August 12-15, 2008 in Monterey, California**.

WCS Conservation Networking Event: The WCS Mongolia program continues to sponsor a monthly conservation networking event that is widely publicized within the academic and research community in Mongolia. Students from Mongolian universities and young biologists from research institutions and government agencies make up the majority of the monthly audiences, which number between 50 and 60 individuals every month. The list of presentations given in FY08 is provided in Appendix A17.

WCS Fellowships to Mongolians: In FY08, the third Mongolian to receive a WCS Graduate Scholarship Award was announced. These awards provide financial support for young scholars to pursue graduate study in the field of conservation biology at a program of their choice, usually in the United States or Europe. The third Mongolian (or Mongolia-based project) to receive a WCS Research Fellowship Award was also announced in FY08. These two sources of funding provide opportunities for promising Mongolian conservation biologists to pursue their own research and/or receive an international standard graduate education in the field.

Activity 2.3 Implement mechanisms for measuring success and adapting the landscape strategy

Although the ES-LLP has lacked the necessary resources and capacity to implement a complete monitoring program for the full suite of Eastern Steppe Landscape Species, progress has nevertheless been made in this area. In FY08, the project consolidated the data collected over the past 3 years on the Siberian marmot (e.g., information on the spatial distribution and local population density of the species on the steppe). The ES-LLP supported the efforts of the University of Maryland, University of Massachusetts and the Smithsonian Institute to apply for National Science Foundation (NSF) funding to continue to collect information on Mongolian gazelle migratory patterns and the factors that trigger that nomadic movement on the Eastern Steppe. The Mongolian gazelle research proposal was funded by the NSF in FY08 and the first field season for the 3-year program will begin in September 2008. The Mongolian institutional partner for this project is the Institute of Biology at the Mongolian Academy of Sciences.

Both the Mongolian gazelle management plan and the summary report on the WCS ES-LLP Siberian marmot research and conservation efforts contain information necessary to build monitoring frameworks for these key Eastern Steppe Landscape Species. The baseline wildlife survey performed in the Ugtum Nature Reserve and the building of capacity in Nomrog Strictly Protected Area (SPA) also represent significant steps in the process of developing monitoring plans for these two important sites on the Eastern Steppe. Emphasis in the upcoming year will be placed on completing this process for Mongolian gazelle and Siberian marmot. These efforts will guide future work on the Eastern Steppe and will hopefully be the long-term conservation plans for protected areas and conservation targets, including the Eastern Steppe Landscape Species.

We hope that it will be possible to incorporate monitoring frameworks into protected area and species management plans on the Eastern Steppe, but the limited resources in the hands of local wildlife managers from protected areas and officials in environmental departments remain an impediment. For this reason, the ES-LLP has investigated the feasibility of incorporating the species monitoring conducted by herder community conservation groups into the monitoring frameworks for the Eastern Steppe Landscape Species. Methods for community monitoring of a number of key Eastern Steppe Landscape Species (the Siberian marmot, Mongolian gazelle, saker falcon and grey wolf) have been introduced to communities and tested in FY08 (described in more detail in Activity 2.2.2).

Activity 2.4 Identify and strengthen constituencies for conservation at local, national and international levels to help ensure effective strategy implementation

In FY08, ES-LLP Country Program Director Dr. Amanda Fine presented a paper highlighting the challenge of conserving the grasslands of Mongolia's Eastern Steppe at a WCS conference on "Protected Areas, Governance, and Scale" held at the White Oak Conservation Center in Florida on June 4-7, 2008. This and other presentations made by ES-LLP staff at international meetings contributed to the effort to raise awareness about the conservation importance of the Eastern Steppe grasslands, and to build an international network of conservation scientists willing to address the issues facing Mongolia and provide necessary links between Mongolian scientists, wildlife managers, conservation policy makers and the international community. The Eastern Steppe paper presented at the White Oak conference is available in Appendix A18.

In an effort to foster the development of a strong local constituency for conservation among current and future Eastern Steppe stakeholders, the ES-LLP partnered with Conservation Ink and their Mongolian NGO partner, People Centered Conservation, to create educational and outreach materials for schools and communities on the Eastern Steppe. These materials are packaged in a "nomadic trunk for conservation" which travels from community to community across the Eastern Steppe through the system of rural schools. The materials in the traveling trunks are designed to educate community members and schoolchildren alike about the biodiversity on the Eastern Steppe. In preparation for the launch of the program at the start of the 2008 school year, the materials for the Eastern Steppe Conservation Trunks were finalized and tested in FY08. Links will be made with education-related project activities conducted in collaboration with herder communities (Activity 2.2.2) and protected area staff (Activity 2.2.1), such as developing and teaching best practices in conservation. A few specific tasks accomplished in FY08 are described below.

- A teacher focus group (Mongolian teachers and methodologists) was held in Ulaanbaatar, Mongolia, to review the curriculum and activities developed for the Eastern Steppe Conservation Trunk.
- Twenty-four lesson plans for the Eastern Steppe Conservation Trunk were completed and approved.
- All physical activity items for the Trunks were assembled including posters, books, CDs, puppets, wildlife track imprint and specimens, binoculars, etc.
- Community facilitator and teacher training workshops for the Trunk curriculum and activities were held in Choibalsan, Dornod province.
- The Eastern Steppe Conservation Trunks were piloted in nine Choibalsan schools
- Teacher and community facilitator trainings are planned for Khentii and Sukhbaatar provinces in early FY09.

The Eastern Steppe Conservation Trunk curriculum highlights the value of natural resources on the Eastern Steppe and the conservation importance of the region. The curriculum emphasizes the need to end unsustainable practices such as overhunting and overgrazing which lead to habitat degradation, wildlife population declines and the eventual loss of the very natural resources that Eastern Steppe stakeholders rely upon for their livelihoods. Through these direct conservation education efforts, directed at herder communities and local government and park officials, we expect to begin a process of building awareness and strengthening the local constituency for sound management and conservation in the Eastern Steppe.

OBJECTIVE 3: Learning and teaching best practices in the Mongolian Eastern Steppe landscape and beyond

Activity 3.1 Using economic valuation of rangeland and water resources as a tool for site-based conservation: a comparison of the Eastern Steppe of Mongolia and Rungwa-Ruaha Landscape, Tanzania (Property Rights and Pastoralism---Payments for Ecosystem Services)

ES-LLP staff have been involved in a series of discussions and framework development activities with staff from both the Rungwa-Ruaha Landscape and the USAID-funded TransLinks project. Participants in these discussions included Mongolia, Ruaha and NY-based WCS staff as well as Dr. Shahid Naeem from the Earth Institute at Columbia University and Matt Turner from the Land Tenure Center at the University of Wisconsin-Madison. The originally planned activity, “using economic valuation of rangeland and water resources as a tool for site-based conservation”, has been modified slightly and will be addressed by carrying out three case studies as described below. Although the links with the Rungwa-Ruaha Landscape are clear and there are opportunities for cross-site learning around the issues of pastoralists’ access to water and wildlife, it is not logistically feasible at this point to implement simultaneous case studies.

In FY08, the ES-LLP, NY-based LLP and TransLinks teams decided to focus on examining the effectiveness of Eastern Steppe governance structures in facilitating collaboration among solitary livestock herder families in order to achieve democratic consensus on natural resource management issues (such as improving grazing systems and enforcing hunting regulations on economically important wildlife). The focus for the first two activities is the Siberian marmot, an Eastern Steppe Landscape Species. The third case study that will be developed, in partnership with the TransLinks project, is an assessment of the potential impact of converting the grasslands of the Eastern Steppe to intensive, crop-based agricultural lands. The potential impact of this agricultural conversion on the Eastern Steppe will be modeled specifically to reveal how land use change and habitat fragmentation would affect the Mongolian gazelle, another key Eastern Steppe Landscape Species. The three case studies, and the progress made to date, are described below.

Economic and Ecological Valuation of the Siberian Marmot: This is a “desk study” which will rely on published research and supplementary data to review the ecological function of marmots in the Eastern Steppe and their economic value to the people of the region. The study will determine the ecological and economic importance of marmots on the Eastern Steppe and, based on the analysis of available information, will explore how changes in marmot populations might affect ecosystem services and local livelihoods. These functions and values will be considered in the context of three scenarios: their present populations, their pre-1940 populations and populations that continue to decrease below present levels. To date, all of the relevant literature and documents produced by the ES-LLP and other projects have been compiled. The analysis is due to be completed in the first half of FY09 as part of a course requirement for a student at Columbia University’s Center for Environmental Research and Conservation.

Mobile pastoralists & sedentary resources (Siberian marmot): The second case study will examine the governance structures available to manage and protect natural resources on the Eastern Steppe. Broadly, this case study is designed to build core knowledge and an understanding of how natural resource governance systems influence security, benefit sharing and sustainability on the Eastern Steppe. The study will focus on community-based natural resource management, for the Siberian marmot in particular. The central question is whether pastoralists (mobile livestock herders organized as community-based wildlife conservation groups, community partnerships or “nokhorlols”) on the Eastern Steppe can effectively manage and protect what is essentially a sedentary resource, the Siberian marmot. This case study will build on the work already completed by the ES-LLP through its partnership with EMCCA. Additional data collection is currently underway as part of the activities undertaken during ES-LLP staff visits to livestock herder community partnerships or “nokhorlols” in July and August 2008, as described under Activity 2.2.2. The major questions are 1) whether mechanisms are in place to prosecute individuals who poach marmots in community areas, and 2) is whether the legal and practical mechanisms that are in place will provide for protection of natural resources (by government officials or an alternative body) when the community group members are absent, grazing their livestock on summer, winter or spring pastures.

The Potential for Intensive Crop Production in the Eastern Steppe of Mongolia: Cause for Concern?: The goal of this case study is to understand the potential for intensive crop production in the Eastern Steppe and possible impacts that it may have on biodiversity, particularly the Mongolian gazelle. There is concern that people (government, development agencies) want to encourage intensive crop production in the Eastern Steppe, that such production may not be sustainable, and that it would have negative impacts on biodiversity. This case study will be developed as part of the TransLinks project and is expected to take 2-3 years. In FY08, an initial set of objectives for the project have been developed and efforts to form a “project advisory committee” have begun. The project advisory committee will advise ES-LLP RS/GIS specialist Mr. Ochirkhuyag and WCS landscape ecologist Dr. Karl Didier on the agricultural and grassland management components of the study. Representatives from the Nature Conservancy’s grasslands-based projects have already expressed their willingness to assist with this effort.

OBJECTIVE 4: New York Coordination Unit Strategy: Guide the design and testing of wildlife-focused planning, implementation, and evaluation tools for effective conservation at a landscape scale, and promote learning across sites and beyond

The NY-based Coordination Unit (CU) of the Living Landscapes Program (LLP) is designed to develop and test wildlife-focused, landscape-scale approaches to biological conservation across multiple sites. To ensure the widespread utility of these new conservation approaches, the program is testing them within landscapes or seascapes that encompass a diverse array of ecological features, land-uses, resource-use issues, and jurisdictional arrangements. The CU is charged with designing and managing the program to develop new approaches in close collaboration with WCS field-based staff, to facilitate and harmonize testing and implementation among these core sites, and to capture the synergistic benefits of their diverse experiences. It guides development of landscape-scale strategies, tools and techniques; assists in the design and development of cost-effective intervention and monitoring programs at these sites; promotes cross-site learning; and ensures communication among the sites, WCS staff (central and field), USAID (DC and missions), and the larger conservation community.

During FY08, the priority for the Coordination Unit continued to be working with field sites to promote adoption of best-practice tools for effective conservation at landscape scales, and to plan to consolidate lessons learned as the USAID GCP approaches its final year.

Activity 4.1 Provide technical assistance to site-based conservation

Members of the NY Coordination Unit worked closely with field sites to provide targeted technical input (punctual advice and informal and formal training in strategic conservation planning, monitoring the effectiveness of conservation actions, geographic and quantitative analysis, and specific conservation issues) throughout the year. In a number of cases, this involved trips to sites as reported in the previous sections of this and the other site-specific reports: Madidi (Bolivia), Maya (Guatemala), Glovers (Belize), and Eastern Steppe (Mongolia). As our LLP/GCP sites are at different stages of development or evolution, they have warranted (and requested) different levels of NY coordination unit assistance during this reporting period. This is to be expected and reflects our adaptive management approach to conservation investment.

Overall, LLP staff supported the 4 four sites through the following process:

- **Finalization of each site's suite of Landscape Species.** LLP-NY support included providing guidance on the candidate species and other data required for the target selection process, technical support for the software used to select Landscape Species, and review of draft Landscape Species suites in order to assist field staff in choosing the most appropriate conservation targets for their site.
- **Development of quantitative population targets for Landscape Species.** LLP-NY provided technical support and helped gather information from the literature. Setting appropriate population targets is pivotal to the strategic application of the Landscape Species Approach (LSA).
- **Creating draft Biological, Human, and Conservation Landscapes or Seascapes for Landscape/Seascape Species.** LLY-NY led on the development of several models and provided technical support to field staff to ensure the successful development of these models that are at the core of the LSA.

Dr. Karl Didier worked closed with WCS Mongolia staff to produce a spatial model of the distribution of Siberian marmot one of the Eastern Steppe's Landscape Species for which we previously had little information. The pelts and meat of Marmots contribute significantly to local economies though their populations have been severely depleted by over harvesting by non-local trappers. The model and map will be invaluable for focusing conservation attention on parts of the steppe critical for marmot conservation.

Dr. Karl Didier completed a technical manual entitled "Building Conservation Landscapes – Mapping the Possible Impacts of Your Conservation", which has been printed and will be shortly available for download from the Living Landscapes' web site (www.wcslivinglandscapes.org).

Monitoring highly elusive species scattered across vast geographic areas is a huge challenge and Dr. Samantha Strindberg of LLP-NY traveled to Belize City and to Flores, Guatemala in March 2008 to assist the Belize and Guatemalan field teams with the design and analysis of their biological monitoring data. In Belize the focus was on the LAMP (Long-term Atoll Monitoring Program) surveys, fisheries catch data collection program, spawning aggregation counts, and in-water sea turtle surveys, while in Guatemala the challenging species in terms of monitoring

included the scarlet macaw and Central American river turtle with the decorative palm (xate), although stationary and fairly abundant, posing its own distinct monitoring challenges.

Activity 4.2 Design, implementation, and testing of decision support tools

Activity 4.2.1 Living Landscapes Program technical manuals

WCS/NY staff also wrote and published two more installments in its series of Technical Manuals and Bulletins: “Technical Manual 7: Building Conservation Landscapes – Mapping the Possible Impacts of your Conservation Actions” (Appendix B1), and “Summary: Landscape Species Approach – A Wildlife Based Strategy for Conservation” (Appendix B2).

Activity 4.2.2 Landscape Species Approach progress

As planned, in April of 2008, staff from the Living Landscapes Program developed and facilitated for the first time a 2-week intensive course entitled “Conservation Planning Using the Landscape Species Approach”. The course was designed for WCS field staff and was attended by 18 staff from 7 landscapes and 1 seascape. During the course, field staff members were trained in all steps of systematic conservation planning and specific LSA tools developed over the past 10 years of GCP funding, and were given the opportunity to apply those tools to their particular landscapes. The course also provided LLP-NY staff to expose field staff to the newly released strategic planning and adaptive management software program – Miradi – developed by the Conservation Measures Partnership with support from Benetech.

We plan to offer the course at least 2 more times for WCS staff, and may offer it to practitioners outside of WCS, depending on funding availability (i.e., a NASA grant for which we’ve recently applied). This training demonstrates how we are now extending the benefits of the LSA (and the GCP funding that allowed for its development) far beyond the 6 sites that directly received funding.

Activity 4.2.3 Integrating strategic planning and project management

As WCS is going through an organizational transformation to more explicitly interconnect the living institutions (our zoos and aquarium) with the global conservation program progress on integrating strategic planning with operations planning and report was slow in FY08. LLP tools and approaches to conservation developed with the support of GCP continued to be enormously influential as WCS developed both its strategic goals – saving wildlife and wild places and connecting people to nature, and its operational systems for attaining these goals. LLP continued to work with the developers of Miradi to ensure that this desktop tool effectively integrates strategic planning and operations planning and reporting. WCS continues to be corporate sponsor of Miradi development.

Activity 4.3 Catalyze cross-site and cross-organizational learning, and communication

Activity 4.3.1 Annual meeting, cross-site and cross-organizational learning

In FY08, LLP-NY staff finished writing and producing a series of “Guidance Briefs” based on information gathered at the LLP Annual Meeting in May 2007 that brought together the 14 LLP sites, including the 4 currently funded by USAID (see Appendices B3-B10). The Briefs are intended to be an accessible, user-friendly way to introduce new sites to the Landscape Species Approach and to guide users in when and how the LSA works best. As soon as the new WCS

website is finalized -- it is currently being completely redesigned – we will post the Guidance Briefs.

Cross-site learning

The third two-week LLP/WCS workshop on “Statistical Design and Analysis of Biological Monitoring Programs for Conservation Management”, designed and led by Drs. Samantha Strindberg and Fernanda Marques (WCS Brazil Program) was held in Manaus, Brazil in June 2008. This workshop significantly advanced the access of WCS field staff to the technical knowledge that they need to monitor elusive species. WCS field staff in attendance included Guido Ayala and Boris Rios Uzeda from the Greater Madidi Landscape, Bolivia, along with Eduardo Toral and Javier Torres (Yasuni-Napo Landscape, Ecuador). The Ecuadorian landscape site was supported by the first round of USAID/GCP funding and is continuing to apply the tools and build upon the success of their previous conservation work.

Dr. Strindberg continued to work closely with Dr. Emma Stokes to build spatial models using Generalized Additive Modeling techniques for two of their Landscape Species, namely elephants and chimpanzees, in the Ndoki-Likouala Landscape, Congo (supported by the previous round of USAID/GCP funding), thus building on USAID/GCP prior investments.

Cross-organizational learning

Drs. Didier and Wilkie continued their involvement with a GCP learning project to evaluate the different approaches that conservation NGOs use to select conservation targets (e.g. WCS’s Landscape Species Approach).

Activity 4.3.2 CMP: leadership, design, writing and audits

LLP-NY staff continued to play a leadership role in the identification, design and implementation of Conservation Measures Partnership activities. David Wilkie worked closely with Nick Salafsky of FOS, Dan Slazer of TNC and Benetech a not-for-profit software developer to develop Miradi modules prior to its public release in February 2008. David Wilkie also work with Miradi developers to devise a financing model that would generate sufficient capital for continued evolution of Miradi and to ensure that prospective users from low-income countries could afford to purchase a Miradi license.

Activity 4.3.4 Preliminary assessment of the human welfare impacts of establishing national parks

Significant numbers of data entry errors were found in the Parks and People Access database requiring several additional person-months of investment to clean the dataset in preparation for analysis. The dataset is now accurate and ready for analysis.

Activity 4.4 Application of Living Landscapes Program tools beyond core sites

Activity 4.4.1 Training workshops and technical assistance in the use of LLP tools

LLP NY staff continued to provide assistance to WCS and reserve staff of the Amazon Andes Conservation Program in Brazil, Peru, Ecuador, and Bolivia during a week long workshop in Brazil.

The third two-week LLP/WCS workshop on "Statistical Design and Analysis of Biological Monitoring Programs for Conservation Management", designed and led by Drs. Samantha Strindberg and Fernanda Marques (WCS Brazil Program) was held in Manaus, Brazil in June 2008. This workshop significantly advanced the access of WCS field staff to the technical knowledge that they need to monitor elusive species. WCS field staff in attendance included Guido Ayala and Boris Rios Uzeda from the Greater Madidi Landscape, Bolivia, along with Eduardo Toral and Javier Torres (Yasuni-Napo Landscape, Ecuador). The Ecuadorian landscape site was supported by the first round of USAID/GCP funding and is continuing to apply the tools and build upon the success of their previous conservation work.

Activity 4.4.2 Technical Manuals

We continued to make our series of technical manuals available to conservation practitioners and decision makers on our website, as hard-copy booklets and on CD. Manuals are now available in English, French and Spanish.

Activity 4.5 Ensure coordination and communication services for the program

The program director and assistant director continued to meet with staff from the core sites and other WCS large-scale conservation sites to discuss the development of the program, on-the-ground implementation of the Landscape Species Approach, and further development of tools relevant to the approach. Program staff also continued to meet with collaborators, NGOs, governmental officers, and representatives of other stakeholder groups to promote use of the strategies and tools.

Throughout the year, the Coordination Unit has assisted field staff in completing annual Implementation Plans, reporting on Performance Monitoring forms, and submitting Annual Reports. The program director and assistant director and other staff have continued to contribute significantly to USAID/GCP quarterly and annual meetings in Washington DC and continue to provide regular reporting and updates to USAID.

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III. Appendices

- A1. Maps of the current and potential distribution of Siberian Marmots on the Eastern Steppe, and the difference between the two
- A2. Comparison of the original and revised models of village-based hunting activities
- A3. Outputs from Eastern Steppe Participatory Conservation Planning Workshops
- A4. Report: *Drought, Habitat Availability, and Fencing: Conservation Issues for Mongolian Gazelles*
- A5. Draft Report: Survey Results (2005-2007) and Monitoring Techniques for Siberian Marmots on the Eastern Steppe
- A6. Report: Strategies for Enforcement of Wildlife Trade Regulations in the Raw Materials Markets of Ulaanbaatar, Mongolia
- A7. Draft Report: Wildlife Trade Market Surveys in Ulaanbaatar and Surrounding Areas, December 2007-February 2008
- A8. Report: 2007 Wildlife Law Enforcement Training, Nomrog Strictly Protected Area
- A9. Report: Volunteer Ranger Training, September 2007
- A10. Case Study: Livestock Herder Community Managed Area Mapping
- A11. Report: Wildlife Impacts Training, February 2008
- A12. Proceedings: Community-Based Wildlife and Natural Resource Management in Mongolia: Lessons Learned
- A13. Report: Foot and Mouth Disease in Mongolian Gazelle and Livestock on the Eastern Steppe
- A14. Report: WCS Avian Influenza Surveillance in Wild Migratory Birds, 2006
- A15. Report: WCS Avian Influenza Surveillance in Wild Migratory Birds, 2007
- A16. Report: Baseline Assessment of Wildlife in Ugtum Nature Reserve
- A17. List: WCS Conservation Networking Event Schedule
- A18. White Oak Conference Paper: *Conserving the Grasslands of Mongolia's Eastern Steppe*

- B1. LLP Technical Manual 7. Building Conservation Landscapes – Mapping the Possible Impact of Your Conservation Actions.
- B2. LLP Summary Manual. The Landscape Species Approach: A Wildlife-based Strategy for Conservation Developed by the Living Landscapes Program of the Wildlife Conservation Society.
- B3. Didier, K., V. Falabella, A. Johnson, V.H. Ramos, A. Rasphone, T. Siles and the L.L.P. 2008. Living Landscapes Field Guidance: Biological Landscapes. 4 pp.
- B4. Garcia, R., A. Johnson, A. Pattanavibool, H. Rainey, E. Suárez, A. Vedder and the L.L.P. 2008. Living Landscapes Field Guidance: Conceptual Models. 4 pp.
- B5. Bryja, G., V. Falabella, A. Fine, A. Novaro, A. Rasphone, F. Semanini and the L.L.P. 2008. Living Landscapes Field Guidance: Conservation Landscapes. 5 pp.
- B6. Bean, T., P. Coppolillo, E. Delattre, R. Garcia, H. Rainey, S. Strindberg and the L.L.P. 2008. Living Landscapes Field Guidance: Landscape Species Selection. 6 pp.
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- B8. Bean, T., T. Clements, P. Coppolillo, A. Fine, A. Novaro, E. Stokes and the L.L.P. 2008. Living Landscapes Field Guidance: Setting Population Targets. 4 pp.
- B9. Bryja, G., E. Delattre, K. Didier, S. Hoare, O. Lkhamjav, V.H. Ramos, and the L.L.P. 2008. Living Landscapes Field Guidance: Threats Landscapes. 4 pp.
- B10. Gibson, J., S. Hoare, O. Lkhamjav, F. Semanini, T. Siles, E. Suárez and the L.L.P. 2008. Living Landscapes Field Guidance: Participatory Threats Assessment Workshop. 3 pp.