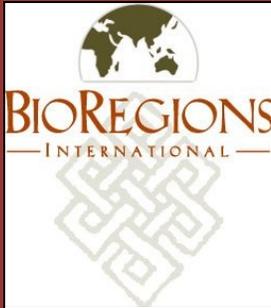


BioRegions Newsletter



Mission: BRI works to empower the nomadic cultures of Mongolia to survive in a rapidly changing world. We support holistic, locally based projects, promoting public health, education, environmental preservation, and economic development.

BioRegions Programs: Montana State University BioRegions Program & BioRegions International Inc.

Letter from the Director

Positive change is sweeping across the world of sustainable development. Several books (Ayittey, *Africa Unchained*; Easterly, *The White Man's Burden*; Calderisi, *The Trouble With Africa*) document the simple concept that conventional foreign aid is not effective when driven only by the donors. Most effective change is made through an *inside-out* pathway which starts with the outsiders learning from the locals. With learning and open communication the true needs of the local insiders can be expressed. If the locals can express their needs and then form common visions for the future with the outsiders, progress is assured. BioRegions has been on this pathway since the first student work trip in 1998, when Mishig sat in the shade of the Boojum Expeditions truck and listed valley-wide needs for research and service projects.

Over the years this evolved into the series of community partnerships which continue today. A critical next step is for us to learn to grow these initial partnerships into true partnerships in which both parties participate in forming and attaining a common vision. In such partnerships each party contributes however it can. Accomplishments are well documented and good feelings are shared and celebrated. Our common humanity comes into the process. Our challenge now is to formalize this process enough to clearly identify desired outcomes for both sides and gauge progress coming from the shared vision and feeling of ownership. When we have clearly taken this step, we will be ready to replicate and expand our processes in other parts of Mongolia.

-Cliff Montagne

BioRegions Programs 2007 Work Trip

Some 30 people joined us at the BioRegions cabin/ger compound in Renchinlhumbe during May, June, and July 2007. We had all kinds of weather from snow to scorching hot days followed by monsoon rains. The BioRegions Work Trip included university students and recent graduates from the Mongolian University of Health Sciences, Montana State University, MSU-University of Washington WWAMI medical school, Yale University Forestry School, University of Michigan, and Middlebury College. Two of these people have 2007-2008 Fulbright Student Program scholarships in Mongolia. We also had university faculty and professionals from the Mongolian Institute of Botany, Mongolian Institute of Geoecology, Mongolian State University of Agriculture, Mongolian University of Health Sciences, Montana State University, University of Montana, Idaho State University, and Mt. Allison

University of New Brunswick along with several BioRegions International Board members. A professional filmmaker and recent graduate of the MSU Natural History and Science Filmmaking program documented our activities. Our activities included research on soil erosion, the local source of salt, sustainable forestry and effects of grazing on soils and plant communities. We hosted several local school teachers and worked with them to produce a simple curriculum in ecological and environmental science education. The second annual Darhad Blue Valley Awards brought valley wide participation. The third annual First Aid training was accomplished using the local medical staff as instructors instead of the Mongolian Red Cross as in past years. We conducted field visits as part of a traditional medicine project to support preparation and publication of a book on Darhad Valley medicinal plants and their uses. The first WWAMI medical student came with the health team,
Continued on the last page...

Values of the Mongolian land and its people

Austin Allen, 2007 MSU graduate



“I feel that Mongolians realize how special their culture is and hold a strong sense of pride towards its wealth.”

My initial attraction to Mongolia begins with its fascinating and unusual culture. Prior to visiting, I was attracted the simplicity of the herder’s everyday lives and how similar it is to ancient ways of our culture prior to modernization. Their daily lives are tied intimately with the land and I feel that it is to be greatly admired. Apart from my attraction to Mongolia as a country, I enjoy working with Dr. Cliff Montagne and deeply appreciate his ways of combining hard science with a firm connection to the surrounding community.

As early as stepping off the plane I began to learn about Mongolia. As everywhere, there are very wealthy people and very poor members of every community. In the capital city of Ulaan Bataar, everyday life resembles other large cities I have visited. Its citizens rely on others to provide food, water and other various necessities. Just a few kilometers down the road herders rely on their animals for food and on streams to provide water.



People in the city are no longer as intimately connected to the land as the Mongolians living in the countryside. While city-living Mongolians have fancy sunglasses and expensive clothes, most lack a true understanding of the environment surrounding them. This is very similar to other areas around the world. Mongolians as a whole appear to revere the land although they are quick to

throw a candy wrapper or worse on the ground.

I observed that many of the everyday tasks of a herder involve the environment directly or indirectly. I learned that because of this intimate connection to the land, it is very important for the community members of Renchinlumbe to be aware of their impacts to the surrounding environment.

In contrast to the large city, in the Darhad Valley, the community members rely on each other as well as on its surrounding natural resources. Families depend on each member to do everyday jobs to make the unit run smoothly. These everyday tasks often involve fetching water and wood, milking and herding animals and preparing food.

I feel that Mongolians realize how special their culture is and hold a strong sense of pride toward its wealth. While most embrace the conveniences and luxuries of the modern world, the connection to traditions has not been lost.

Mongolia is blessed with an abundance of natural resources that play a significant role in its GNP. Mining of gold and copper seems to be a major part of this economy as well as animals and the grasslands that support them. With its abundance of natural resources, sustainable management of these resources must be implemented for a sustainable economy in the future.

Traditional Music Performers in the Darhad

The songs and music of the Darhad Valley are unique to Mongolia and at least one European recording company has recorded their songs which are now available on CD (*Tengis – Songs of the Darkhad People*, Colophon Records in Belgium). We have given grants for

costumes, musical instruments and transportation to enable eight musicians to give concerts around the Darhad Valley. They have also traveled to contests in the provincial capital of Muren. Every year we are rewarded by a special concert from these schoolchildren and their teachers.



Basic Health Screenings of Residents of the Darhad

Susan Gibson, MSU WWAMI Program

The purpose of this study was to acquire basic data regarding the health of residents living within a small rural region of Mongolia. These health screenings were performed in an attempt to establish a database that may prove helpful not only in assessing various health parameters of this largely nomadic population, but also to assist in establishing future health care priorities. A team of individuals associated with the Montana State University BioRegions Program and Montana WWAMI Medical Program visited residents either within their homes or within a local health clinic at the request of the Director of the Renchinlumbe People's Hospital.

Mongolian translators were used to explain the purposes of the screenings, and all subjects were voluntary participants. Data collected included: (1) resting systolic and diastolic blood pressures, (2) fasting plasma glucose, (3) basic urinalysis screening, and (4) a survey of individual knowledge regarding diagnosed diseases.

A total of 107 subjects were included in the study, with 33 of these individuals being males and 74 being females. The average age of these subjects was 38.7 years. Analysis of the test results

revealed average fasting plasma glucose of 90.5 mg/dl. Resting sitting systolic blood pressure was 128 mmHg and resting sitting diastolic blood pressure was 82 mmHg. Preliminary urinalysis results revealed a mean specific gravity of 1.01, pH of 5.0, and urobilinogen of 0.036. When asked by the investigators, 6 subjects reported to have been previously diagnosed with brucellosis; 31 subjects reported to have been previously diagnosed with high blood pressure; 36 subjects reported to have been previously diagnosed with heart disease; 56 subjects reported to have been previously diagnosed with kidney disease; 15 subjects reported to have been previously diagnosed with pulmonary disease; 15 subjects reported to have been previously diagnosed with liver disease; and, 10 subjects reported to have been previously diagnosed with gynecological diseases.

Interpretation of these data suggests that the people of this region have relatively normal fasting plasma glucose values. In addition, the mean resting systolic blood pressure would be categorized as borderline hypertensive, but the mean diastolic blood pressure for the group falls well within a normal range. No group abnormalities are suggested by the urinalysis results, although some individuals did present with abnormal values.



“Although I have only completed my first year of medical school, I joined this trip hoping to learn about another culture in a developing area of the world.”

Experience of WWAMI Student Katie Newell

Although I have only completed my first year of medical school, I joined this trip hoping to learn about another culture in a developing area of the world. While on the trip, I was able to help gather some basic data (blood pressure, glucose levels, and urine analysis) on over one hundred residents. Part of my drive to go to medical school is the desire to help people who are

unable to receive adequate health care. This trip to Mongolia has further inspired my desire to work in an underserved country. I have learned that one can find a friend despite language, economic, and social barriers. Also, for perhaps the first time in my life, I have had to step out of my comfort zone and learn to adapt to a different lifestyle even if only for a short while.



A Busy Day with BioRegions in Mongolia's Darhad Valley

Cliff Montagne, BioRegions Program Director

Sunday June 17, 2007

It warmed up overnight and rained more. It has been unusually wet for June. Today is partly cloudy with enough sun to recharge our battery via our solar panel. W and M left by horse to interview a shaman living up valley. The MSU Sand Dune Erosion research group left by van for a day of fieldwork. The summer English teacher for the Renchinlumbe Schools came over to our BioRegions Program cabin to get acquainted. R is from southern Indiana where she teaches English as a second language in the public school system. She is coming at it with an experience base, and also with lots of humility and willingness to learn herself. She is accompanied by Ulzii, an English teacher from the Murun schools. R is here via a grant she wrote last fall which provides her travel money.



First cup of milk tea...

We walked ¼ km to the start of the Renchinlumbe First Aid training at the hospital. BioRegions (BR) has paid a trainer from the Mongolian Red Cross to come to the Darhad Valley in previous years. Dr. Nanselmaa had 15 women, in the hospital maternity building room. Dr. Puversuren and I started off with an introduction. Then Dr. Nanselmaa gave a physiology lecture using the 3-D cardboard and plastic human model BR bought 5 years ago along with our posters from the training last year. For these learning sessions to be really effective, next year BR needs to bring in a Mongolian trainer to train the doctors in active learning experiential hands on methods rather than just give a lecture.

Monday, June 18

Again this day did not 'dawn' but rather squished with moisture. I had a nice hill run in the early morning rain. We sent/received

email via our satellite phone and I enjoyed reading Joan's message of encouragement about the importance of being humble when working with the grass roots poor. We waited for the government leader from bag (subunit of county) #4 to arrive in a van but it didn't happen so Oggie and I walked downtown for some errands. We spotted Ganba the bag 4 leader who was searching for a van for us with no luck because most of the vehicles were being used to "search for brides." These are the special days before equinox (bride asking days) when young Mongolian men go to present khatags (prayer scarves) to the families of potential brides, to be received or rejected by her father. He finally found three motorcycles, and we gave him gas money to fuel them up at the hand crank gas station.

In the meantime we went to the Renchinlumbe government office, now on the 2nd floor of Mishig's restaurant building after fire destroyed the government office building last winter. The set of offices were a flurry of activity, with cozy stoves putting heat out in the wet cool morning, the typist hammering out something on carbon copies on an ancient hand typewriter. We presented Teki's post doctoral research project to the woman environmental officer.

Seven Cups of Milk Tea (taking off from Greg Mortensen's book title)

Eric our filmmaker, Khongoroo our interpreter, student Matt Davis and I left with Ganba the leader of Bag 4 on three motorcycles. The storm was clearing and the afternoon was one of those perfect



temperature times with sun and blue sky above the now well watered grasslands and forests. Our objective was to visit some of the poorest families who have children who are school dropouts, and learn more about their situations. From the 1920's until 1991, under the socialist governments, all children went to school and the literacy rate was 97%. Our **first cup of milk tea** was with a family with four children. The 13 year old boy dropped out at age eight. His mother said he has a "mind like an animal", and just can't keep up the concentration in school. The father has one eye clouded by a cataract. They are very poor with only a few animals and their income is restricted to the government child support subsidy. The daughter likes the Renchinlumbe School and will keep going. We want to arrange a tutor for the boy this summer and see what his disability is and how he could prepare to be a successful student at the regular school. He would be excited to do this.

Our **second cup of milk tea** (always with cookies or bread), came in a tiny one room cabin at the base of the mountain directly east of town. This family has a 12 year old boy and 16 year old girl, and only six animals. Dried meat was hanging on the wall. The girl continues with 9th grade this year, the boy dropped out at grade eight. Even though he liked school, the school supplies were too expensive. This family has no jobs and don't migrate. They cut hay for the winter supply for their six animals. With no jobs they have little money for meat. They would like to increase their herd beyond their two horses and four cows. They had ten goats before, but I think they lost them in the big dzud (blizzard) in the early 2000's. They sell two calves each fall.

For our **third cup of milk tea** we rode south along the mountain front to two gers. The first ger had an elderly man (grandfather) lying on the bed in pain and having a hard time moving due to a bad back. Their six kids, ages 4-22, have dropped out of school because of the hard life with little income. This family has no animals and the older children remain unemployed although one is a herder working somewhere else.

The 9, 13, and 15 year olds would be best to send to school. We talked about the older one(s) becoming apprentices with the BioRegions Artisans Program. It seems so hard to encourage these people to think outside the box.

We walked 150 feet upslope for the **fourth cup of tea** with a family with four kids age 13-21, with none attending school. Our **fifth cup of tea** was at a ger down on the flat area where two older boys were repairing a motorcycle. This family with ten kids, had a premium on sending kids to school, but one of the younger girls had lost two fingers to her brother's wood splitting axe as a three year old, had anemia, and now seems to have memory loss after a day. Again we wonder if some tutoring or special learning would be the key for her. Her 59 year old father, a driver nearing retirement, seemed very supportive in finding possible solutions.

The **sixth cup of tea** was north about 5 km to the Tasarkhai area where we woke up a sleepy teenager. His mother is single and he really does not want to go to school. We are not sure we have a solution for him, but I am thinking about offering artisans apprenticeships to some like him. Just ½ km away was a newly built cabin packed with people and our **seventh cup of tea**. There were several young women who did not want to go to school. We discussed ideas with their parents, who are interested in a ger summer school. We are not sure. After **our seven cups of milk tea**, we had experienced hospitality and enthusiasm from people who live with few or no animals, and no employment. We are excited about possible actions which could make a difference in the literacy and future employment opportunities for these kids. Time will be our teacher.



Third cup of milk tea...



Mongolia and Sand Dunes

Patrick Lawrence, MSU graduate



“The lack of basic energy infrastructure made the use of electronics (GPS and computers) very difficult”

There were several significant obstacles to our research activities. The lack of basic energy infrastructure made the use of electronics (GPS units and computers) very difficult. A string of rainy days could mean a complete loss of productivity and down time. The lack of quick and reliable transportation further complicated the situation. Arranged horses or vans could arrive several hours, or even days late, if they were available at all. This is hardly a failing on the part of the Mongolians – merely a cultural difference in concepts of punctuality that must be taken into account.

Without personal knowledge of the area, researchers, environmental scientists especially, need to be able to improvise and think on their feet if planning on research in the remote areas of Mongolia. Professor Montagne provided many days’ worth of advice and assistance before and after the project, making sure that my plans were on track. During the trip, we worked together on a daily basis, both on this assignment and other BioRegions projects in a positive way.

I feel that a country-wide study of pasture health is long overdue. Mongolia’s environment is its greatest asset and sustains most of its population directly via subsistence. Therefore, monitoring the condition of the grasslands, water and other landscapes is very important while understanding economic and social issues. As the economy cannot be boosted at the expense of the environment and health, so the environment cannot be held untouchable at the expense of common peoples’ livelihoods. The intersection between these different disciplines is the area that interests me the most, and I hope to be involved with holistic research on it in the future. Degradation of communities, human or natural, generally results from human misunderstandings, thus must be dealt with in the human realm.

Whether it deals with this intersection or with more focused research, I have a strong interest in further scientific activities in the Darhad Valley or Mongolia in general. There is a possibility for me of graduate research and thus a continued commitment with the BioRegions Program.



Darhad Singers at People of the Darhad Blue Valley Awards

Sunglasses, Reading glasses and Bridger Bowl

This summer we distributed 600 pairs of dark glasses and cases donated to people in the Darhad by Dioptics, Inc. We will continue this in 2008. These help prevent cataracts caused by the brilliant winter sun on snow as well as protecting eyes from dust. We also continue to distribute 100’s of reading glasses for people who need them to read and sew. These are donated by the NW Lions Club Recycling Center in Seattle. Also appreciated are the Lost and Found Bridger Bowl Ski Area hats, gloves, coats and goggles. A big “thank you” from the citizens of the Darhad Valley!

School Art Contest

For several years BRI has sponsored an art and literature contest in the Renchinlumbe School with the hope that the children would begin to appreciate how unique their valley and culture are. The first few years there was neither paint, nor colored pencils available except what we brought. Bioregions has gathered drawings and paintings that have been gifted to us by the Renchinlumbe School over several years. Out of the 432 pieces of art we have selected 25 to be professionally printed and bound into a booklet to be available for sale. The monies raised will be returned to the art program.



Moss in the Darhad Valley *(in her own words)*

Enkhjargal, Moss Biologist at the Mongolian Institute of Botany

Previous research of moss in the Khuvsgul region by Russian scientist A.A.Elenkin's identified 98 moss species in 1902. Prior to this, Mongolian scientist Ts.Tsegmed had identified 92 moss species from the region. Nothing had been done since that time. The project by the Mongolian Institute of Botany began in the summer of 2006 and continued in 2007 with the help of the BioRegions Program and Dr. Cliff Montagne. During the study, I identified 158 moss species within the region. This number may be increased by further studies.

During 50 days of fieldwork, we collected 875 samples of moss from 16 different ecological regions around Renchinlkhunbe. Of these moss species, 42 are new to the Khuvsgul region, and 2 are new to Mongolia. This brings the total recorded moss species to 234 within this region. All of these moss samples are now stored in the Herbarium of the Institute of Botany. We plan to write scientific reports for publication of the study.

Nutrition and Community Market

Sean and Tugsu Armstrong's dream to improve conditions in rural Mongolia took another step forward with establishment of a trial Renchinlhumbe community market. In 2006 Sean, as a student of community health, became aware of the need for basic nutrition in Renchinlhumbe. Although they could only spend a short time in Renchinlhumbe, Sean and Tugsu laid the groundwork for a series of weekly markets which would provide a venue for countryside people to sell their crafts and animal products such as fresh dairy and meat items. The market would also benefit the town merchants through

In addition to the study, I am personally interested in the tradition, culture and legacy of the Darkhad, Khalkha and Tsaatan tribes that live in the Darhad Valley. These peoples have a good knowledge about the harvesting and uses of the local medicinal plants. We applied the knowledge gained from the study in educational posters for the people who attended the Darhad Valley's Blue Valley Awards.

I believe the activities of the Bioregions Program are important to the Darhad Valley and its local citizens. We are honored to work with the project. Social-economic conditions and transportation in the area are difficult. There is no electricity, communication, or information systems but the most important problems are the environmental issues of the area. The Bioregions Program focuses on these areas of concern and the associated projects are helping the local people to solve the issues as a community.

attracting country people to their stores as well. Sean's ultimate vision is for a year round market where people have the chance to sell and obtain quality items needed for ordinary living. Along with this he visualizes educational activities focused initially on healthy nutrition. We speculate that much of the traditional diet of meat, dairy, and local plants has been replaced by high-sugar, low nutrient foods. While the meat and dairy portion of the diet may be unchanged, the addition of the high-sugar foods may tip the nutrition and dental health scales towards the negative.



Enkhjargal (Eegii) collecting moss in the Darhad Valley



The Darhad Valley's Indigenous Dietary Mineral Source

Loren Barber, MSU Master's student and BioRegions Interim Coordinator

Throughout history, indigenous cultures all over the world use some form of salt source. Much of this salt was and still is collected from surface crust formed within Earth's mineral deposits. Mongolian nomadic herders in the Darhad Valley have collected salt from the Earth for 100's of years for personal use and for their animals. Traditional medicine practices within Mongolia utilize *vuldog*, the Latin term of the Tibetan word representing the trona mineral, as an ingredient in twenty-six different medications. This mineral is collected from the dried beds of saline lakes around the countryside.



“The salty substance collected by the Darhad nomadic herders is referred to as *hujir*...”

The salty substance collected by the Darhad nomadic herders is referred to as “*hujir*” and collect it from a saline lake called Tohi. This lake is a very important resource due to its abundance of salt mineral source for the nomadic herder's human and livestock needs. During the Soviet Union's domination of Mongolia, the eastern portion of Tohi's saline lake and mineral crusted lakeshores were protected by a fence and paid guard. During the 1990's, funding depleted and this area was no longer protected from animal impact and human overuse. Since this time, the residents of the valley have noted a decrease in spatial extent of Tohi and its *hujir* quality.

The residents of the valley are concerned with this decreasing size and the chemical composition of the *hujir* they collect and consume. They are also curious of the health effects of consuming it. The goal of my project is to address these concerns and to document the physical and chemical aspects of the Tohi area, as well as other salt sources within the valley as important resources for the people of the Darhad Valley and the entire Aimag.

This summer, soil, salt and water samples were collected from the Tohi saline lake and salt crust area. Samples were also collected from family *hujir* supplies, representative of the Tohi area and the *hujir* being consumed. These samples will be analyzed this fall/winter for their chemical content and mineral composition through chemical analysis techniques.

The area was also mapped with a GPS receiver and a valley-wide GIS database of salt deposition areas will be created this fall. This database will include the locations, spatial extent, chemical composition, usages, animal and human impacts to the area and other pertinent information. This database will serve as baseline data for the spatial change of the Tohi area overtime. This will also help to determine if protection fences (planned to be built this fall) are sufficient or if other protection measures should be taken.

The final goal will be to link the *hujir* consumption rate to the elemental content measured from the samples analyzed, and determine the amounts of each element being consumed per day in a dietary risk assessment. Health issues can be associated to these results and public health educational materials and information given to the people of the Darhad Valley.

Conclusions from this project will answer the concerns of the Darhad Valley residents by helping them understand the formation process of *hujir* and more importantly what is being ingested upon consumption. Knowing the formation process will also identify the best measures to sustainably harvest the salt substance and protect the area from overharvesting impact.



People of the Darhad Blue Valley Awards

It was our desire to learn if a celebration of the Darhad culture through its art, crafts and music would be valued by the community. To this end BioRegions suggested, helped organize, and financially sponsored the *People of the Darhad Blue Valley Award* festival in 2006 and 2007. The first year was a success, with over 300 people in attendance at what was referred to as "Our Heritage Days". Quality and sincerity as expressed through craft, art and performance were honored, and participants and audience responded with enthusiasm. In 2007 older people commented favorably on the resurgence of Darhad traditional singing. However, attendance was down, and there were fewer traditionally-dressed participants.

2008 Citizen's Trip for Mongolia

Our definition of 'citizen of the world' is one who is interested in the well-being of all nations and cultures to actively participate and collaborate in promoting sustainability. BioRegions is organizing a

Ger Schools

We sponsored 2 ger schools for children who cannot attend the regular boarding school for financial or family reasons. The Winter Ger School is run by a retired Director of the Renchinlumbe School. These children are needed to herd the animals on the eastside of the Horidal Sardiq Mtn Range. A teacher administers

Inspiring Books

We are always searching for inspirational books to support our "bottom up" work in Mongolia. Most government foreign aid as well as many big foundations focus on an area with preset agendas.

This has been especially true in Africa where greater sums of aid money has been spent. BioRegions has found

We think the lower attendance was partly due to the timing of advertising and lack of opportunity for artisans to sell their products, both solvable problems. The 2008 advertising is scheduled to begin sooner and BioRegions has committed funds to allow display and selling of Blue Valley Award products in a local store. Trip scheduling should allow for all BioRegions participants to attend the 2008 Awards. Board member Wayne Poulsen's vision and enthusiasm to encourage quality artistic expression for the benefit of local people continues to underpin this portion of the Artists and Artisans Program. Although the concept for the Awards came from BioRegions rather than from the community, we hope that local initiative will develop to continue it indefinitely.

citizens' trip to share experiences with the 2008 BioRegions Program Work Trip. We will hike, ride and live with a Mongolian family in their ger. Citizens will also be assigned projects and work alongside BioRegions researchers.

final tests that are accepted by the government. We also sponsor a ger school in the summer when families have come together after the hard winter. We have been asked to sponsor additional kindergarten schools near bag centers as parents are reluctant to send 5 year olds to the boarding school in Renchinlumbe.

this type of application is only short lived and seldom works. The books listed support this idea.

**Three Cups of Tea* by Greg Mortenson

**Africa Unchained* by George Ayittey

**The White Man's Burden* by William Easterly

**The Trouble with Africa* by Robert Calderisi



Khongorzul explains her educational poster on vitamin C deficiency at the People of the Darhad Blue Valley Awards



Effects of Grazing on Soils



Sand dunes with soil erosion fences erected by BioRegions

Otgonsuren (Oggie) visited the Darhad Valley in 1999 as a student intern with BioRegions. She then worked for the Hovsgol Ecology Project (www.hovsgolecology.org) while completing her master's degree. Now an ecologist with the Institute of Geoecology, Oggie spent the summer as our lead translator while initiating the first field measurements of carbon dioxide respiration in Darhad Valley soils. Microbes in the soil give off carbon dioxide, so soil with high respiration rates are highly active biologically.

Oggie established grazing enclosure study plots just outside Renchinlumbe and measured respiration in grazed and ungrazed pasture. We plan for her studies to continue in future years in anticipation that her information will help decision makers wrestle with effects of increased temperatures and increasing grazing pressure. This may set the stage for more effective grazing management. Oggie also gave birth to a baby girl in September and reports that she and her daughter are doing fine.

Sustainable Forestry

Tom James, student at the Yale University School of Forestry, is studying Siberian larch and sustainable forestry for his master's degree. Tom partnered with Khishigjargal, also a former participant in the Hovsgol Ecology Project and now a

student of the Mongolian State University of Agriculture, to determine the effects of tree spacing on tree growth for Darhad Valley larch. This will help Darhad forest managers know how much to thin young larch, leading to more sustainable forest practices.

Yes, I'd like to support **BioRegions International** !

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The 3 "A's"

Arts and Artisans Program initiated an Apprenticeship Program in 2004 but focused on other projects in 2005-06. In 2007, the Apprenticeship Program is

being reinitiated with selections this fall of up to six artisans/apprenticeship pairs who will share their skills and products with the 2008 work trip participants.

Work Trip 2007 Continued...

which included medical school faculty, a Mongolian dental student, an undergraduate in Social Health from the Mongolian University of Health Sciences, as well as faculty from the WWAMI program and pre-medical students from Montana State University. The health team conducted a health screening for around 100 citizens in cooperation with Renchinlumbe Peoples Hospital staff and distributed dark glasses for summer and winter protection. We also visited families of several children who did not attend school last year. BioRegions sponsored a trial weekly community market in Renchinlumbe which we hope will

develop into an institution supporting local commerce and nutritious eating habits.

Our Mongolian partners and colleagues played essential roles from logistics, to translation, to food providers. Darhad Valley BioRegions director Mishig orchestrated our activities, Maagi and Piljee fed us. Sunjidmaa, our Ulaanbaatar coordinator, ecologist Otgonsuren and Khongorzul, a pharmacy student from the Mongolian University of Health Sciences, served as both translators and project participants. Numerous other Mongolian colleagues also assisted with translation.

Ger for Sale



BioRegions International has imported authentic Mongolian gers. These beautifully painted, five-walled felt tents measure ~21 BioRegions International has imported authentic Mongolian gers. Mongolian artisans hand-paint the poles, door, and center ring with traditional Mongolian designs.

Cost: \$5,500

All proceeds support our projects in Mongolia.

Please contact us if you are interested!



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