

NEWSLETTER OF SINO-ECO

April 5, 2001

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(This issue of newsletter has been delayed for a month, mainly due to the editor's personal reasons. The editor apologizes for this delay. And again, the editor wants to thank all those who have contributed to this issue of newsletter.)

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News

1. Investigation Trip to West China (YP)

This summer, the International Foundation of China Environment (IFCE) and Sino-Eco Club will together organize an Investigation Group for Western China (including Sichun, Yunnan and Guichou). The purposes of the trip is to 1) investigate status of environmental conditions, ecological conservation, water and air pollution and so on in these provinces; 2) introduce some successful experiences and technologies of environmental protection and resource management in the United State; and 3) provide our expertise and suggestions on promoting environmental management and sustainable development to local governments regarding the National Plan of Developing Western China. The schedule of the investigation is preliminarily set as June 1-June 14, 2001. Sino-Eco may have 6 positions in the Investigation Group.

Early last month, Dr. Yude PAN, the current president of SINO-ECO, issued an announcement of the project in SINO-ECO's network, inviting applications and/or nominations for the participants.

So far, SINO-ECO members Drs. S. Miao, B. Gu, J. Lin, Q. Dong, X. Yin, P. Mou, X. Zou, F. Gao, and Y. Pan have expressed interests in the investigation trip. Selection of participants is in process and the results will be announced soon. For details, please contact Yude at ypan@fs.fed.us.

2. Western Returned Scholars Association (WRSA) 2001 International Symposium (JL, FG)

The WRSA 2001 International Symposium, entitled “The 21st Century China and International Competition in the Human Capital Market,” will be held in Frankfurt, Germany from August 10 to 12, 2001. As one of the major leaders and overseas partners of WRSA, SINO-ECO is again cordially invited to join the organizing committee of the symposium. After careful discussion, the Chair Committee of SINO-ECO has determined that the topics and issues to be discussed in the symposium fit the missions and interests of SINO-ECO. Thus, the Chair Committee has decided to accept the invitation and to be one of the overseas sponsors. Dr. Yude Pan, the current president of SINO-ECO, will be a member of the Organizing Committee, representing SINO-ECO.

Many SINO-ECO members participated the last two WRSA international symposiums and played important roles in making those symposiums successful. Thanks are due to Dr. Junda LIN, the previous president of SINO-ECO, and Dr. Yegang WU, a senior member of SINO-ECO, for their organizing contributions to the previous symposiums. The Chair Committee of SINO-ECO strongly encourage our members to participate in the upcoming symposium in Frankfurt. For details, please contact Yude at ypan@fs.fed.us, or Dr. Jiansheng Zhang, Deputy Secretary General of WRSA at wrsa@public3.bta.net.cn.

3. The 2nd IALE Asia-Pacific Region Conference (YW, FG)

The 2nd IALE Asia-Pacific Region Conference on Landscape Change and Human Activity will be held in Lanzhou, China, from September 22 to 25, 2001. The aim of the conference is to help participants to approach real landscape change and human activity impact in Asia-Pacific region, including restoration and reconstruction of landscape ecosystem both locally and regionally. The deadline for abstract submission is July 30th, 2001. Abstracts will be published as conference proceedings, which will be available at the conference.

The programs of the conference will include the following:

- A. Theoretical aspects and quantitative approaches.
- B. Landscape change and driving forces
- C. Landscape management and reconstruction
- D. Environment protection and ecological development in Western China
- E. Urban landscape ecology

Two Post-conference excursions have been planned: 1). Silk Road and Arid Region Landscape (Desert, Oasis, and Ancient Culture Heritage-Dunhuang), 2). Qinghai-Xizang(Tibetan) Plateau Landscape (High-Cool Meadow, Salt Lake and Qinghai Lake, Headwaters of Yangtse River, Cool Desert , Lhasa city).

Many SINO-ECO members may be interested in participating the conference. For details, please contact Dr. Yegang Wu at ywu@sfwmd.gov, or Profs. Wang Genxu and Jiao Yuanmei, Cold and Arid Regions Environmental & Engineering Research Institute, CAS, Lanzhou, 730000, telephone 86-931-8272817, fax 86-931-8273894, or e-mail at Landscape2001@sina.com.

4. The book: *Global Ecology: Climate Changes and Ecological Responses* (JL)

The book, "Global Ecology: Climate Changes and Ecological Responses", edited by Drs. Jingyun FANG, Junda LIN, and TANG Hongyan, has been published by Chinese Higher Education Press. The book is a systematic and comprehensive collection of review papers (12 chapters and three appendice) on global climate change and its effects on ecology. Ten Sino-Eco members (Jiquan Chen, Fang Gao, Qinfeng Guo, Dafeng Hui, Guanghui Lin, Junda Lin, Yude Pan, Changhui Peng, Fang Wei, and Daolan Zheng) have authored or co-authored five chapters and one appendix. Many others have provided peer review the book chapters.

Dr. J. Fang has mailed (via surface mail) three copies to each Sino-Eco author in early March. The authors should receive them by early May. For further information, please contact Junda at jlin@fit.edu.

5. China's Eco-Regional Assessment Project (QL)

In our last newsletter, we reported that a group of scientists in China, led by Academicians Drs. ZHANG Xinshi, SUN Honglie and LIU Dongsheng initiated a large scale research project to study ecosystems in China. Dr. Guanghui LIN of Columbia University's Biosphere 2 Center is the coordinator in charge of selecting and organizing overseas Chinese scholars who are willing to participate in CEAP. The following is a recent report from Guanghui providing a more detailed description of the project.

Introduction to Eco-regional Assessment Project in China

To face the challenges and threats from more and more serious environmental crisis in China, a group of scientists from Chinese Academy of Sciences, Beijing Normal University and Chinese Academy of Forestry have initiated and are implementing a new project on Chinese ecosystem assessments: Eco-regional Assessment in China. Led by Academicians Prof. Xinshi Zhang and Prof. Dongsheng Liu, this project is aimed at (1) scientific evaluation of current ecosystem status in ten key zones; (2) multidisciplinary assessment of current policies and development in the key zones, and (3) formulation of wise management options for central and local policy makers. The project was initially funded by CAS and is seeking for continuous financial supports from various governmental agencies in China. Building heavily on US successful bio-regional assessment projects such as Forest Ecosystem Management Assessment and Sierra Nevada Ecosystem Assessment, this project is calling for contributions from all overseas Chinese scientists especially those working in USA.

During December 10-17, 2000, Prof. Zhang and Liu led a delegation of 8 Chinese scientists for the first visit to west US on eco-regional assessment. They visited Arizona, Nevada, California

and Oregon to meet and discuss with related US scientists on many critical issues associated with eco-regional or bio-regional assessment. A few current and former SINO-ECO members (Drs. Yuqi Luo, Qingfeng Guo, Ye Qi, Hua Chen, Guanghui Lin) and other overseas Chinese scientist (e.g. Prof. Xubin Zeng, Mr. Wanmei Ni, etc.) attended the meetings they hold at Biosphere 2 Center/Columbia University, University of California at Berkeley, Oregon State University. Other members of SINO-ECO members such as Drs. Frank Gao, Changhui Peng, Harbin Li and Yude Pan have also contributed to these meetings but were unable to participate the meetings because of schedule conflicts or financial constraints. During these meetings, most overseas Chinese scientists expressed strong interests in possible collaborations on this important project with our domestic counterparts in China, which was warmly welcomed by all delegates from China.

Chinese Eco-regional Assessment project became the main theme of a recent Xiangshan Academic Conference (March 20-22, 2001). A group of outstanding scientists in China such as Prof. Honglie Sun, Dongsheng Liu, Xinshin Zhang, Shidong Zhao, Changming Liu, Qiong Gao, Muyi Kang and Zhengqing Li were invited to speech on various perspectives of Chinese Eco-regional Assessment Project. I was invited to participate the conference and delivered a talk “Terrestrial ecosystem functions, their responses to environmental changes and eco-regional assessment in China”.

If any overseas Chinese scientist interests in this project and would like to establish some collaboration with the group in China, please contact me (glin@bio2.edu, Tel: 5208966478) or contact Prof. Xinshi Zhang (zhxsh@public.bta.net.cn, Tel: 010-62208555) or Prof. Dongsheng Liu (tsliu@public.bta.net.cn, Tel: 010-63008112) directly.

6. Recent Visit to the Three Gorge Dam Project and Experts' Post-Visit Suggestions (JC)

The on-going Three Gorge Dam Project has continuously drawn special attentions and concerns from many of us. Last fall, Dr. Jiquan Chen of Michigan Tech University, lead a delegation of international experts and visited the project and Chongqing City. Jiquan's write-up below will provide us some up-to-date information about the project, as well as some in-depth viewpoints from the delegation experts. For your information, Jiquan is a former president of SINO-ECO (1992-1993).

Findings of the People-to-People Delegation to China from the Society for Conservation Biology

Between Sept. 23 and Oct. 7, 2000, a delegation lead by Dr. Jiquan Chen and organized by the People to People Ambassador Program and the Society for Conservation Biology, visited the Three Gorges Dam project (TGP), cruised upriver from Yichang to Chongqing, flew to Beijing, and held workshops with many experts engaged in various aspects of the project. We are writing to inform the international scientific and economic development communities, and your organization in particular, of opportunities to assist the Chinese people with ecological expertise and research funding to help offset long-term impacts of social change and economic development along the Changjiang (Yangtze) River, in particular the area influenced by the Three Gorges dam. As is described in more detail below, we recommend for your consideration the following actions:

1. Provide financial assistance to China for implementation of annual national interdisciplinary information-sharing workshops.
2. Make funding and technical research assistance available, to collect aquatic baseline data.
3. Assist Urban Planning professionals in Chongqing with design, planning and monitoring of Nature Reserves and with integration of biodiversity and ecological principles into the development of urban riverside parks.
4. Help China create a central storage facility for collection and dissemination of ecological baseline and monitoring data.
5. Provide assistance for China to use Internet technology to improve interdisciplinary communications across the country.

Delegation members represented the professions of plant ecology, wildlife and aquatic biology, forest ecology and political science. Observations from delegation guests representing other professional backgrounds added to the perspectives of the group. The delegation was truly international; cultural backgrounds of representatives included Zimbabwe, Canada, Greece, Germany, China and the U.S., and as such these comments do not reflect the views of any one culture or society. We traveled three days by tour ship from Wuhan upriver through the Three Gorges dam project, to Chongqing (Chungking), observing the river and its surrounding terrain and human influences during our journey. We met with engineers, urban planners, university professors, ecologists and other professionals in Hubei Province, Chongqing municipality and Beijing, to better understand the social, economic and environmental complexities and challenges China faces as it works to provide for the long-term needs of their society. Topics addressed in our meetings with these experts included engineering design and construction, social, economic and ecological concerns, and scientific research associated with the project.

We the delegates offer the following suggestions to the international development and scientific community to help resolve the above concerns:

- 1) *Provide financial assistance to China for implementation of annual national interdisciplinary information-sharing workshops, sponsored by an independent organization such as China's Association of Science and Technology. The purpose of these workshops would be to share monitoring information in particular, among ecologists and biologists, human health professionals, engineers, social scientists, urban planners and economists, regarding design, management and monitoring of development projects. Funding would be used to finance such workshops and facilitate delegate attendance;*
- 2) *Make funding and technical research assistance available, to collect aquatic baseline data on lower trophic-level aquatic organisms, particularly of aquatic macroinvertebrates, phyto- and zooplankton throughout the 60 kilometers+ of the Changjiang river canyon to be inundated starting 2003 by the Three Gorges project. Provide technical assistance in applying these data to develop indices for monitoring aquatic ecosystem health. Both fish and invertebrate/planktonic Indices of Biotic Integrity should be developed from these data, and long-term monitoring of status and trend of these indicators should be conducted.*
- 3) *Assist Urban Planning colleagues in Chongqing with design, planning and monitoring of Nature Reserves and with integration of biodiversity and ecological principles into*

the development of urban riverside parks. Urban planners in China face challenges such as well as the need to provide green space for a huge populace as well as limited horticultural materials available due to the already severe loss of native plant species all along the south side of the Changjiang River for hundreds of kilometers due to acid rain impacts on air quality and soils. Without help, they may fail in many of these endeavors;

- 4) Help China create a central storage facility for collection and dissemination of ecological baseline and monitoring data. GIS Hardware/Software and data custodians would be needed to support a central data facility and to provide interdisciplinary access to the data via ArcInfo and ArcView, for researchers and administrators scattered across the country. In our judgment, the present available infrastructure is not adequate, and requires international financial and technical assistance to become fully functional for the purposes proposed;*
- 5) Encourage China to use Internet technology to improve interdisciplinary communications across the country. Again, the necessary infrastructure, in our judgment, is inadequate at the moment and requires technical and financial assistance from the world community in terms of website and database development and management. Websites could provide access to a database supporting interdisciplinary research and communications. Such sites could also provide access to information on workshops, keep website users current on project progress and other new information, and help support development and application of integrated data and project designs. An annual interdisciplinary workshop would help create interdisciplinary informal peer networks and increase motivation to develop and maintain Internet communication among the disciplines via a common website. This work would also serve the vital function of persuading Chinese government officials with reservations regarding usefulness of the Internet, to see the Internet more as a useful tool for assisting the government in achieving China's societal goals, rather than as a tool used by others to undermine the present political system.*

In summary, it is very clear to our delegation that the Three Gorges Project will be completed. There will be no turning back on the decision to construct the dam. It is also evident to us that many in China's academic, professional, and governmental sectors are interested and willing to undertake serious efforts to understand the effects of the dam and its reservoir, both positive and negative, once the dam begins operating. In the view of our delegation, targeted help from the international community will be a vital component in ensuring that these efforts by the Chinese to understand the consequences of TGP will ultimately succeed on all fronts. Such efforts, supported by the international community, offer a unique opportunity for China and the world community together to learn lessons which when applied offer the hope of bettering the quality of life short- and long-term for people of all nations. For more information, please contact Dr. Jiquan Chen at jiq@mtu.edu, and visit the following WebPage: <http://forestry.mtu.edu/lees/China/>.

Members' Profiles

1. Dr. Yude Pan, Global Change Research, USDA Forest Service (YP, FG)

Invited by the GCTE (Global Change & Terrestrial Ecosystems, a Core Project of the International Geosphere-Biosphere Programme), Dr. Yude Pan attended the Global Change & Terrestrial Ecosystem (GCTE) workshop "Land Use Change and the Terrestrial Carbon Cycle in Asia" in Kobe, Japan, from January 29 to February 1, 2001. In the workshop, Dr. Pan gave a talk on "Carbon storage and accumulation in forest of China", which was well received by the participants. The participants of the workshop were from the Asian-Pacific countries as well as Russia and the United States. The discussion of the workshop was on the importance of linking biogeochemistry with land use change and issues relevant to the Kyoto protocol in the terms of managing terrestrial carbon pools and reducing the emission of greenhouse gases in the Asia-Pacific region. The workshop finally focused on developing new research partnerships and projects on land use change and carbon cycle research in the region. Post-workshop activities will include publishing a workshop report and a special issue of a scientific journal to include papers contributed by the participants. During the workshop, Dr. Pan met a few colleagues from China, they were Drs. Guangshen Zhuo, Zucong Cai and Jiahua Zhang. The workshop also provided the opportunity for Dr. Pan to establish the contact with the inter-government organization ASP (Asia-Pacific Network for Global Change Research, the host of the workshop) and collaborate with other scientists in the region to propose a new project on China reforestation study which will be potentially funded by the United Nations Environment Programme and the Asia-Pacific Network for Global Change Research. For more information and details, please contact Yude at ypan@fs.fed.us. For your information, Yude is the current president of SICO-ECO (2000-2002).

2. Dr. Yiqi Luo and China Rice FACE Workshop (YL)

Dr. Yiqi Luo, Associate Professor with Dept. of Botany and Microbiology at Univ. of Oklahoma, was invited to attend a workshop held in Nanjing from March 4 to 10, 2001. Here is Yiqi's report.

“From March 4 to 10, 2001, I attended a workshop in Nanjing on China Rice FACE (free-air CO₂ enrichment), a joint project between Chinese and Japanese Scientists. Three US Scientists (Bruce Kimball from USDA ARS, myself, and Marcia Gumputz from North Carolina State Univ.), nine Japanese scientists and a dozen of Chinese Scientists were invited to participate the workshop. The experimental site is at Wuxi, near Shanghai. The project is described on page 7 of the recent GCTE Newsletter (Please see the excerpt below). Major participants in the China Rice FACE are from Nanjing Institute of Soil Sciences, Shanghai Institute of Plant Physiology, Shengyang Institute of Applied Ecology, and Institute of Applied Atmosphere Physics of CAS. Nanjing Agricultural University and Yangzhou University may also participate in the project. Japanese counterparts are from National Institute of Agro-environmental Sciences and Tohoku Experimental Station. I met a representative from Bureau of International Cooperation, NSFC. She encourages oversea Chinese scholars to participate in the project, too.”

Excerpt from GCTE News, Vol. 17, March 2001.

Newsletter of the Global Change and Terrestrial Ecosystems (GCTE) Core Projects of the International Geosphere-Biosphere Programme (IGBP)

China-FACE

A group of Chinese and Japanese scientists is working together to set up a Free Air Carbon dioxide Enrichment (FACE) project in Wuxi, near Shanghai, China. The FACE site is located in rice-winter wheat growing region near the Taihu Lake. This project is designed to address the questions of how rising atmospheric CO₂ affects crop productivity, nutrient cycling, and other ecosystem processes. In particular, the project will have five objectives: (1) to understand mechanisms of crop (rice and wheat) responses to elevated CO₂, (2) to quantify CO₂ effects on crop yield and quality, (3) to estimate changes in nutrient and water use efficiencies under elevated CO₂, (4) to contribute to model development for C and N uptake, transfer, and cycling in the agro-ecosystem, and (5) to evaluate potential effects of elevated CO₂ on exchanges of greenhouse gases in the agro-ecosystems with the atmosphere.

This project is scheduled to finish infrastructure construction and be operational in June 2001. The experiment will have three control plots with ambient CO₂ and three FACE rings with ambient + 200 ppm CO₂. Each ring is 12.5m in diameter with pure CO₂ injection adopting the Japanese design. The first experimental period will be from June to October 2001, which is the growing season for rice in that region. The CO₂ fumigation system is expected to fully operate for 365 days a year from 2002 to 2005.

Since China is one of the largest rice and wheat production countries, the project has the potential to evaluate the impacts of global environmental change on food supply and feedbacks of agro-ecosystems to climatic changes through the greenhouse gas exchanges.

For additional information, please contact Drs. J.G. Zhu at jgzhu@issas.ac.cn and/or K. Kobayashi at clasman@niaes.affrc.go.jp.

For more information regarding the project, please contact Yiqi at yluo@ou.edu.

3. Dr. Xinyuan Wu, Dept. of Rangeland Ecol. and Mngmt, Texas A & M Univ. (SM)

Dr. Xinyuan Wu has been recently promoted to the rank of Associate Professor with tenure by Texas A & M University at College Station, Texas. Many of us remember that Xinyuan is one of "The Triple Wu", the three coordinators who were in charge of initiating and organizing SINO-ECO Club 13 years ago. Congratulations, Xinyuan!

4. About Dr. Jay Bai (FG)

In our last newsletter, we reported that Dr. Jay Bai, a senior SINO-ECO member, returned to the homeland and set up a research-oriented firm in Hohhot, Inner Mongolia. On February 17, 2001, the China Youth Daily issued a special report describing Jay's difficulties in locating a suitable institution in China that is willing to accept him and to support his research on "Multi-Dimensional Sphere Model" and application of the model in ecological assessment and data analysis.

Apparently, Jay is very disappointed with the situation he has encountered. It is also surprising to many of his friends that in Inner Mongolia, such an inland rural region with a sharp shortage of experts and professionals (ren2 cai2), a US Ph.D. has such difficulties in finding a suitable job.

It is encouraging to read another news on People's Daily (Overseas Edition), February 24, 2001, one week after the above China Youth Daily's news. The news reports the interview with the Vice Chairman of Inner Mongolia Autonomous Government. During the interview, the Vice Chairman pointed out that "for Inner Mongolia, obtaining intellectuals is more important than obtaining funds." The Vice Chairman said that the autonomous government will enhance its propaganda and strengthen its guidance to let the local governments change their traditional thinking and realize "the importance of the intellectuals". It is suggested that Jay contact directly this senior leader of the autonomous government. His name is Wang Feng Qi. Good luck, Jay!

Jay can be reached at mdsmresearch@aol.com (This email is supposed to work in both US and China.).

5. Dr. Junda Lin, Dept. Biological Sciences, Florida Institute of Technology (FG)

Dr. Junda Lin, Associate Professor with Department Biological Sciences, Florida Institute of Technology (FIT), and a former president of SINO-ECO, has been recently awarded the Faculty Excellence in Service by FIT.

Each year, Florida Institute of Technology gives one award each for Excellence in Teaching, Research, and Service. This year, Junda is recognized for his various service activities, including Aquaculture Program Chair, Deputy Director of Vero Beach Marine Laboratory, campus coordinator for Sea Grant, Search Committee for VP for Student Affairs, for Director of International Student and Scholar Services, and for various faculty, Graduate Admissions Committee member; faculty advisor for the Aquaculture Society, and for the Chinese Student and Scholar Friendship Association., Committee (organizing, program, steering) member for various professional conferences, grant and fellowship panel member for EPA and other agencies, panel member for the workshop "Riding the Chinese Dragon", writing articles about China for local newspapers and university publications, and of course the most cheerful one, as the president of Sino-Eco between 1998 to 2000. Congratulations, Junda!

6. Dr. Jianguo Liu, Dept. of Fisheries and Wildlife, Michigan State Univ. (SM, FG, JL)

All of us are very much concerned about the giant panda, China's national treasure. Dr. Jianguo Liu, Associate Professor with the Department of Fisheries and Wildlife at Michigan State University, is one of the leading scientists conducting research on the giant panda. The following is a news release issued today by American Association of the Advancement of Science, in which our member can see a part of Jianguo's research accomplishments and get some most up-to-date information about the giant panda. For more and detailed information, please see the article by Liu et al. in *Science* of April 6, 2001, or contact Jianguo at jliu@panda.msu.edu.

News Release, April 5, 2001.

Rebecca Ham, American Association of the Advancement of Science

*Panda Habitat Not Protected By Nature Reserve,
Say **Science** Researchers*

High-quality panda habitats in China's Wolong Nature Reserve have been disappearing faster than or at rates similar to unprotected areas outside the park since the reserve's creation, according to a new study in the 6 April issue of the international journal, Science.

This increased ecological degradation in a protected area may raise questions worldwide about the use and management of reserves as conservation tools. Established in 1975, the Wolong reserve is considered a "flagship" nature park, receiving exceptional support from the Chinese government and international organizations like the World Wildlife Fund.

Population pressure from the reserve's human residents are "the direct driving force behind the destruction of the forest and panda habitat," according to a team of Chinese and U.S. researchers led by Jianguo Liu of Michigan State University. Wolong's local population grew from 2560 people and 421 households in 1975, the year the reserve was created, to 4260 people and 904 households in 1995.

"To a large extent, Wolong's ecological fate represents the success or failure of tremendous conservation efforts" made by the government and other organizations, write the study's authors.

"The effectiveness of protected areas needs to be thoroughly examined and monitored, and new approaches that integrate ecology, demography, and socioeconomics are needed to truly protect protected areas," says Liu.

The Science researchers used remote sensing data, including Corona satellite photographs and Landsat satellite images, to compare forest cover in the reserve and surrounding area before and after Wolong was established as a nature reserve.

The team combined these data with information on elevation, slope of the land, and forest cover preferred by the pandas to rank regions within the reserve according to their suitability as panda habitat.

Liu and his colleagues found that the total amount of high-quality panda habitat, the number of individual habitat patches, and the average patch size within Wolong all decreased at a faster rate after the reserve was established, compared to degradation rates before the reserve's creation. The total amount and average patch size of high quality panda habitat also declined at a faster rate inside the reserve compared to surrounding areas after the reserve's establishment.

In most cases, habitats of average and marginal quality suffered a similar fate of shrinking area and fragmentation. The loss of high-quality habitats is a particular worry because these patches are usually "source areas," where pandas reproduce in higher numbers, says Liu.

Habitat loss is at least partially responsible for the dramatic decrease in wild pandas in the reserve, according to the research team. The wild panda population plummeted from 145

individuals in 1974 to 72 in 1986, and the current number of pandas "is likely to be even smaller," write the Science authors.

Human activities that pose a potential threat to the panda reserves include fuelwood harvesting, farming, house construction, and tourism. With farming and home construction limited to specific areas within the reserve, Liu says that fuelwood collection is "the most destructive force" within Wolong.

"Because forests at lower elevation were largely cut before the reserve was established, forests in areas of higher elevation--usually higher quality habitats for pandas--naturally became new targets of destruction for fuelwood," says Liu.

Tourism also has an indirect effect on the degradation of the Wolong panda habitat, stimulating the local economy in a way that increases the extraction of local resources.

"One of the local products purchased by some tourists is smoked pork. Because food for pigs needs to be cooked using fuelwood, higher demands for smoked pork by tourists leads to more consumption of fuelwood," says Liu.

Although the research team believes that immediate efforts to conserve high-quality panda habitat in the reserve are important, they feel that quality education for the reserve's children may be "the most socially acceptable and ecologically sound way" to limit ecological threats to Wolong. Better educational opportunities could allow residents to attend technical schools and colleges and obtain jobs outside the reserve, according to Liu.

"Our computer simulations suggest that even if only 22 percent of the reserve's young people relocate as a result of attending college, getting married, or taking outside jobs, the human population in the reserve would be reduced to about 700 people by the year 2047, and the giant panda habitat would recover and then increase by seven percent," said Liu.

The Wolong reserve contains about 10 percent of the world's remaining wild giant panda population, and is the birthplace of Mei Xiang and Tian Tian, the much-celebrated pandas on loan from the Chinese government to the Smithsonian National Zoo in Washington, D.C.

The other members of the research team include Marc Linderman and Li An of Michigan State University, Zhiyun Ouyang of the Chinese Academy of Sciences, Beijing, and Jian Yang and Hemin Zhang of China's Center for Giant Panda Research and Conservation, Wolong Nature Reserve, Sichuan Province, China. This research was supported in part by NSF, NASA, NIH, the American Association for the Advancement of Science, the John D. and Catherine T. MacArthur Foundation, Michigan State University, the National Natural Science Foundation of China, the Ministry of Science and Technology of China, and China Bridges International.

9. Dr. Quanlu (Michael) Wang, Argonne National Laboratory

Dr. Quanlu Wang was asked early this month by the Energy Foundation to serve on its Board of Directors. The Foundation, based in San Francisco, is a major private funding organization supporting world-wide research activities regarding efficient use of energy. It is extremely encouraging and celebratory to see a SINO-ECO member holding such an elite and influential position in such a major foundation. The following is a brief provided by Quanlu about the Energy Foundation.

The Energy Foundation was created in 1991 by three Foundations: the Rockefeller Foundation, the John D. and Catherine T. MacArthur Foundation, and the Pew Charitable Trusts. They felt that a joint effort was necessary to affect the enormous energy sector. In the years since, the Joyce Mertz-Gilmore Foundation, the McKnight Foundation, and the David and Lucile Packard Foundation have jointed the Energy Foundation.

The Energy Foundation's board of directors consists of 12 members ranging from corporation CEOs and former DOE (Department of Energy) assistant secretaries and a former congressman. Every year, the Energy Foundation provides grants to non-profit organizations and universities to promote energy efficiency in all economic sectors. The board of directors review the foundation's grant directions and major proposals. The Foundation has established a program in China with seven staff members stationed in Beijing to promote energy efficient and clean technologies primarily in China's utility and transportation sector.

For more information, you can go to the Foundation's webpage: www.ef.org, or contact Quanlu at MWang@perilous.es.anl.gov. Congratulations, Quanlu.

Recent Publications

(The following is a list of recent publications of some SINO-ECO members. The editor believes that these technical publications are representing our members' academic and professional achievements. The editor encourages our members to contribute to this section to demonstrate our accomplishments and share the information and joys with others.

Jay Bai, Ecological Data Analysis Company, Hohhot, China.

(1) Bai, J. and E. Guo. 2001. Multi-Dimensional Sphere Model and Its Application in Stock Market Analysis. *J. University of Inner Mongolia (Natural Sc. Edition)*, Vol.32 No.2.

Jiquan Chen, School of Forestry and Wood Products, Michigan Tech Univ.

(1) Chen, J., S.D. Saunders, T. Crow, K.D. Brososfske, G. Mroz, R.Naiman, B. Brookshire, and J. Franklin. 1999. Microclimatic perspectives in forest ecosystems and landscapes. *Bioscience*, 49(4): 288-297.

(2) Brosnoff, K.D., J. Chen, T. R. Crow, and S. C. Saunders. 1999. Vegetation responses to landscape structure at multiple scales across a northern Wisconsin pine barren landscape. *Plant Ecology* 143(2): 203-218.

(3) Chen, J. and G.A. Bradshaw. 1999. Forest structure in space: a case study of an old growth spruce-fir forest in Changbaishan Natural Reserve(CNR), P.R. China. *Forest Ecology and Management*, 120: 219-233.

(4) Chen, J., M. Matthias Falk, K. T. Paw U, T. Suchanek, S. Ustin, B. Bond, N. Phillips, K. Brosnoff, and E. Euskirchen. 2000. Biophysical controls of carbon flows in three successional Douglas-fir stands based upon eddy-covariance method. *Tree Physiology* (special issue)

(5) Zheng, D. and J. Chen. 2000. Edge effects in fragmented landscapes: a generic model for delineating area of edge influences (D-AEI). *Ecological Modeling* 132/3: 75-190

Bai-Lian (Larry) Li, Department of Biology, University of New Mexico.

(1) Leibowitz, S.G., Loehle, C., Li, B.L., and Preston, E.M. 2000. Modeling landscape functions and effects: a network approach. *Ecological Modeling*, 132: 77-94.

A simple network-based theoretical modeling approach was proposed for assessing the effects of human activities at the landscape scale in this paper.

(2) Medvinsky, A.B., Tikhonova, I.A., Li, B.L., and Malchow, H. 2000. Effect of carnivorous zooplankton on the dynamics of trophic interactions of fish with plankton. *Biophysics*, 45 (4): 727-731.

A mathematical analysis of aquatic trophic dynamics in this paper shows that carnivorous zooplankton increases the system stability with respect to transition to the regime in which fish population oscillates. As a result, a collapse of the system giving rise to algal bloom becomes less likely.

(3) Wu, H., Li, B.L., Springer, T.A., and Neill, W.H. 2000. Modeling animal movement as a persistent random walk in two dimensions: expected magnitude of net displacement. *Ecological Modelling*, 132: 115-124.

This paper gives a semi-empirical model of persistent random walk with four different turning angle distributions for studying animal movements in two-dimensional landscape.

(4) Allen, A.P., Li, B.L., and Charnov, E.L. 2001. Population fluctuations, power laws and mixtures of lognormal distributions. *Ecology Letters*, 4: 1-3.

This paper challenges the results of power-law distributions of North American breeding bird populations published in Nature by Keitt and Stanley (1998). We find that the power-law they report can be attributed to mixing of lognormal distributions.

Student Corner

1. Small Grants for Students

The following message is from Ms. Wei Fang of SUNY at Stony Brook.

“If you are in graduate school and have no green card, you might think of getting your own funding is almost beyond reach. At least that was the impression I first got a while ago. Over the years, I gradually found a bunch of small funding sources that are often overlooked by professors, but would offer nice start-up money and add spices in one's resume. Some of them, such as Sigma Xi Grants-in-Aid of Research, AAUW international Student Fellowship, et. al., do NOT require green card. NSF Dissertation Improvement Grant is highly competitive and prestigious, and maybe the only serious grant a foreign student is eligible to compete with his American peers.

I don't know if this is common knowledge to everyone. I also don't know how much established professors would value the small amount of money one manage to have in graduate school. It is probably not as important as publications. But I found the process of writing grant proposals really sharpened my thinking and invoked new ideas, not mentioning the improvement of writing. I also feel myself more equal to my peers after I proved I can also get grants/honors/awards. Therefore, I highly recommend all of you to try, and would appreciate if you can share your knowledge with us in the student corner. This plea also apply to professors, who might have tried and succeeded in many ways in advising their international students to get funding.

If you are interested in this message or have suggestions to the related issue, please send your comments to weifang@life.bio.sunysb.edu. If necessary, we can compile a list of funding source that most applicable to international graduate students. Your input would be greatly and broadly appreciated.”

People On Move

1. Dr. Qinfeng Guo has recently moved to North Dakota. He is working as a senior research scientist with US Geological Survey there. His new e-mail address qguo@usgs.gov.

Career Opportunities

1. ENVIRONMENTAL SCIENTIST IV, Salary Range: \$43,093 - \$53,866, CLOSING DATE: April 23, 2001. PLEASE INDICATE POSITION #59363 ON YOUR APPLICATION

Division of Air and Waste Management
Delaware Department of Natural Resources and Environmental Control (DNREC)
Dover, Delaware

Incumbents in this class are responsible for conducting complex applied research and program design associated with managing the quality of natural resources. Applicants must have experience in solid and hazardous waste characterization and re-use to include the application of ecological and health risk assessment in determining appropriate re-use scenarios. Minimum qualifications include:

(1). Possession of a Master's degree in an environmentally related scientific discipline **OR** a Bachelor's degree in an environmentally related scientific discipline **AND** current professional certification at the highest level by one following organizations:

- American Fisheries Society
- American Registry of Certified Professionals in Agronomy, Crops, and Soils
- Certified Hazardous Materials Manager
- Ecological Society of America
- Entomological Society of America
- National Association of Environmental Professionals
- Professional Geologist (PG)
- Professional Engineer (PE)
- Qualified Environmental Professional
- Society of Wetland Scientists
- Wildlife Society

(Applicants should attach a copy of their transcripts (unofficial is acceptable) and their professional registration (if required) to the application.

- (2). Scientific prominence or recognition with publication in a scientific or trade journal.
- (3). Experience with the interpretation and application of state and federal environmental laws, rules, regulations, policies and procedures.
- (4). Experience with scientific data interpretation and analysis.
- (5). Experience in environmental/natural resources program or project management.
- (6). Ability to communicate effectively.

For more information and application forms: Call DNREC Human Resource Office at (302) 739-5823 or visit: www.dnrec.state.de.us

Your Help Needed

1. SINO-ECO Chair Committee plans to update our website. One effort would be to update our members' directory. The latest SINO-ECO Directory is the one updated in August 1998. Please our members provide your current information to us (to Dr. Shili Miao, or any of the Chair Committee member listed at the end of this newsletter), in the format of:

Name:
Work phone: Fax: , E-mail:
Work Address:
Current status or title:

Work and/or Research Area(s):

Home Address: (Optional), phone: (optional), e-mail: (optional)

Another effort would be to create links to our members' home page. If you have your homepages ready and are willing to have them linked to SINO-ECO website, please provide your homepage addresses (to Dr. Shili Miao, or any of the Chair Committee member listed at the end of this newsletter).

2. From Fang Gao: I am looking for a fundamental map of China, with English names and notes, for a research project. I need to add some notations and explanations on the map. If you have or know where to get such a map, please help (fgao@state.de.us). Thanks in advance.

Membership Due

Regular membership: \$10; Student membership: \$5; Donation is welcome.

Payable to: SINO-ECO Club.

Send to: Wei Fang
Department of Ecology and Evolution
SUNY at Stony Brook
Stony Brook, NY 11794-5245

SINO-ECO 2000-2002 Chair Committee Members

Yude Pan, President (ypan@fs.fed.us)

Shili Miao, Vice President (smiao@sfwmd.gov)

Wei Fang, Treasurer (weifang@life.bio.sunysb.edu)

Paul Mou, Public Affairs (ppmou@uncg.edu)

Fang Gao, General Editor (fgao@state.de.us)