

Conferences on the Environment in China

INTERNATIONAL GEOGRAPHICAL CONFERENCE ON "CHINA AND THE WORLD IN THE 21ST CENTURY"

13-15 August 1998

Hong Kong, People's Republic of China

This conference is sponsored by the Geographical Society of China and the Hong Kong Geographical Association. The conference language is Mandarin Chinese. Conference topics include: sustainable resource utilization and environmental protection; sustainable agriculture; urbanization; and regional disparity and economic development planning.

For additional information contact: Dr. Y. David Chen, Department of Geography, Chinese University of Hong Kong, Shatin, NT, Hong Kong; fax: 852-2603-5006; email: ydavidchen@cuhk.edu.hk.

STRATEGIC CONSIDERATIONS ON THE DEVELOPMENT OF CENTRAL ASIA

13-18 September 1998

Urumqi, Xinjiang, People's Republic of China

This conference is organized by the Xinjiang Environmental Science Research Institute and the Council for Sustainable Development of Central Asia (CoDoCA), in association with the Chinese Academy of Sciences, the International Center for Integrated Mountain Development, and the World Wide Fund for Nature. Conference topics include: Central Asia's unique natural systems and environmental sustainability; and the implementation of sustainable development in Central Asia.

For additional information contact: CoDoCA Organizing Committee, P.O. Box 347, 1400 AH Bussum, The Netherlands; phone: +31-35-693-4266; fax: +31-35-693-5254; email: 101651.1370@compuserve.com; website: <http://ourworld.compuserve.com/homepages/codoca/>

FIRST INTERNATIONAL ASIA-PACIFIC SYMPOSIUM ON REMOTE SENSING: ATMOSPHERIC, ENVIRONMENTAL, AND SPACE

14-17 September 1998

Beijing, People's Republic of China

This conference is sponsored by the International Society for Optical Engineering. Conference topics include: remote sensing in the Asia-Pacific plenary; optical remote sensing of the atmosphere and clouds; and optical remote sensing for industry and environmental monitoring.

For additional information contact: The International Society for Optical Engineering; phone: +1 360-676-3290; fax: +1 360-647-1445; email: spie@spie.org; website: <http://www.spie.org/web/meetings/calls/ae98/ae98.html/>

WATER CHINA '98: THE FIRST INTERNATIONAL EXHIBITION AND CONFERENCE ON TECHNOLOGY AND EQUIPMENT FOR WATER TREATMENT

22-26 September 1998

Beijing, People's Republic of China

This conference is sponsored by China's State Science & Technology Commission, Ministry of Construction, and State Environmental Protection Administration. Conference topics include: water and wastewater treatment technology; water quality analysis; water resource exploration and management; water policy; water conservation and sustainability; and water pollution control strategies.

For additional information contact: Dr. Yegang Wu, 13120 Meadowbreeze Drive, West Palm Beach, Florida, 33414; phone: 561-791-3778; fax: 561-791-8487; email: TCE21st@hotmail.com or waterChina@aol.com.

FOURTH INTERNATIONAL RENEWABLE ENERGY AND ENERGY EFFICIENCY ASIA-PACIFIC CONFERENCE (REAP '98)

14-16 October 1998

Shanghai, People's Republic of China

This conference aims to promote the financing and marketing of renewable energy and energy efficiency in the Asia-Pacific region and to facilitate trade, business, and investment for Asia-Pacific companies and the global market.

For additional information contact: Ms. Tracy Cook, Project Manager, Alternative Development Asia Limited, Hong Kong; phone: +852-2574-9133; fax: +852-2574-1997; email: info@adal.com; website: <http://www.adal.com/>

SIXTH INTERNATIONAL CONFERENCE ON ATMOSPHERIC SCIENCES AND APPLICATIONS TO AIR QUALITY

3-5 November 1998

Beijing, People's Republic of China

This conference is sponsored by the Chinese Research Academy of Environmental Sciences (CRAES) and the China APEC Environmental Protection Center. Conference topics include: acid rain and dry and wet deposition; aerosols; air pollution management; air pollution meteorology; and air pollution modeling.

For additional information contact: Dr. Chenggang Wang, Scientist/China Projects Manager, SJH Consultants, Inc.; phone: 410-356-8862; fax: 410-902-9596; email: cwang1@compuserve.com.

ENVIRONMENTAL TECHNOLOGY CHINA '98 (ETC '98): FOURTH INTERNATIONAL EXHIBITION ON ENVIRONMENTAL PROTECTION, POLLUTION CONTROL, AND GREEN PRODUCTION TECHNOLOGY

10-13 November 1998

Beijing, People's Republic of China

For additional information contact: Adsale Exhibition Services, Ltd., 4/F Stanhope House, 734 Kings Road, North Point, Hong Kong; phone: 852-2811-8897; fax: 852-2516-5024; email: aes@adsaleexh.com.

ENERGY AND POWER CHINA '98 (EP '98): SEVENTH INTERNATIONAL EXHIBITION ON ENERGY AND POWER

11-14 November 1998

Beijing, People's Republic of China

Conference topics include: Power generation; transmission and distribution; and alternative energy sources.

For additional information contact: Adsale Exhibition Services, Ltd., 4/F Stanhope House, 734 Kings Road, North Point, Hong Kong; phone: 852-2811-8897; fax: 852-2516-5024; email: aes@adsaleexh.com.

INTERNATIONAL CONFERENCE ON CHINA'S ENVIRONMENT: TECHNOLOGY AND BUSINESS

8-12 June 1999

Beijing, People's Republic of China

This conference is co-sponsored by the Professional Association for China's Environment (PACE) and the China Association for Environmental Protection Industry (CAEPI). Conference topics include: environmental law and policy; water and wastewater industry; air pollution control and the energy industry; sustainable biodiversity and natural resources conservation; solid waste and hazardous waste treatment and management; and China and the global environment. For a preliminary program and the call for papers announcement, please visit the PACE website listed below.

For additional information contact: Dr. Y. Yang Gong, Conference Planning Committee Chair, email ygong@louisberger.com, or the PACE website at <http://www.chinaenvironment.net/>

Inventory of Environmental Work in China

Government Agencies

This inventory includes new activities and an update of the listings which appeared in the first issue of the China Environment Series. For a more comprehensive listing of environmental activities in China, please refer to the website of the Working Group on Environment in U.S.-China Relations, at <http://ecsp.si.edu>.

BATTELLE-AISU

Web address: <http://www.pnl.gov/aisu/>

Web address: <http://www.pnl.gov/china/>

Web address: <http://www.battelle.org/>

Natural Gas Development

Partners: Natural Resources Defense Council, Department of Energy, and private gas companies operating in China

AISU hosted a workshop during the summer of 1997 on accelerating natural gas development in China. Major U.S. natural gas companies operating in China answered the question, "What do you need in order to do more business in China?" A summary of the workshop will be published in the *China Business Review* in the summer of 1998. AISU plans to do more work relating to accelerating the development of natural gas use in the near future.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Web address: <http://www.fs.fed.us/>

Web address: <http://www.fs.fed.us/global/>

Biological Control of Hemlock Wooley Adelges (*Adelges tsugae*)

Partners: Academy of Forestry, and Provincial Forestry Bureaus of Yunnan and Sichuan

The Forestry Service has engaged in cooperative research with the Academy of Forestry and Provincial Forestry Bureaus of Yunnan and Sichuan to find biological control agents, primarily other insects, to control the hemlock wooley adelges which has been introduced to the United States. This pest is causing significant mortality to hemlock trees in Eastern forests. Preliminary screening has been completed and collections are being made to test the efficacy of the insects in controlling the adelges.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Biological Control of Kudzu (*Pueraria lobata*)

The Forest Service is working to develop cooperative research in the biological control of kudzu. This weedy plant species is causing significant damage to forested, agricultural, and other lands in the southern portions of the United States. There are expensive chemical control options but they can not be used in sensitive situations such as riparian, wetland, and residential areas. Identification of collaborators and exploratory studies are currently underway.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Biological Control of the Mile-a-Minute Weed (*Polygonum perfoliatum*)

The Forest Service is researching strategies to control the mile-a-minute weed with several Chinese partners.

This weedy plant species is invading many parts of the United States. Exploratory studies are underway to find natural enemies to this weed.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Biological Control of pine mealybug (*Oracella acuta*) Partners: Chinese Forestry Administration, Academy of Forestry, and the Provincial Forestry Bureau in Guangzhou

The Forest Service is assisting the Chinese Forestry Administration through the Academy of Forestry and the Provincial Forestry Bureau in Guangzhou to find natural enemies to control a mealybug that was introduced into China from the United States. The pest is severely affecting the growth of forest plantations in China. Several insects from the United States have been collected, tested, and released into plantations in China to control the mealybug. The released insects have appeared to be established and are spreading to other areas.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Control of the Asian Long-Horned Beetle
(*Anoplophora glabripennis*)

The Forest Service is developing cooperative research to control the Asian long-horned beetle. A very aggressive pest with origins in China, this insect has also been found in the United States. Currently, eradication efforts have been undertaken in the United States and preliminary information is being gathered through Chinese counterparts at various academies and universities.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Letter of Discussion Between the Chinese Ministry of Forestry and the USDA Forest Service Partner: Chinese Ministry of Forestry

The Chinese Ministry of Forestry (now the Chinese Forestry Administration) and the U.S. Department of Agriculture / Forest Service in 1993 signed a Letter of Discussion to express their mutual interest in cooperating in all areas of forestry, including sustainable forest management, germplasm exchange, remote sensing, and fire management. Discussions are currently underway to sign a Memorandum of Understanding to strengthen cooperation between the two agencies.

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Transfer of Forest Health Monitoring Technology

The Forest Service is providing current forest health monitoring technologies to the Chinese Forestry Administration and the Anhui Forest Biocontrol Station. Activities include assisting the Administration and Station to acquire aerial videography systems, training in the use of the equipment, training in the development of ground based forest pest monitoring, and integrating monitoring data into a geographic information system (GIS).

DEPARTMENT OF AGRICULTURE/FOREST SERVICE

Sustainable Forest Management in Northern Yunnan Province Partners: Yunnan Provincial Government, and The Nature Conservancy

The Forest Service will provide focused technical support to a sustainable forest management project in Northern Yunnan Province. The project, which is being developed by the Yunnan Provincial Government, has the

support of the central government, The Nature Conservancy, and a Thai development company. The aim of the project is to provide a balance of conservation and development in this area of China. Currently, the project is in the planning stages. The Forest Service has assisted in the conceptual planning of the multiple resource management project and may provide further technical assistance as the project progresses.

DEPARTMENT OF COMMERCE

Web address: <http://www.doc.gov/>

U.S. Joint Commission on Commerce and Trade (JCCT)

Partners: Chinese Ministry of Trade (MOFTEC), among others

The JCCT is composed of four separate working groups: the Trade and Investment working group; the Business Development working group; the Commercial Law and Reform working group; and the Management Education and Training work program. Each working group meets independently with its Chinese partners. Subgroups under the Business Development and Industrial Cooperation Working Group focus on trade and business facilitation issues and develop cooperative activities, such as technical training, demonstration projects, and trade promotion events designed to foster business opportunities between the two countries. The JCCT is led by the U.S. Secretary of Commerce and China's Minister of Trade, who meet annually in a Plenary Session.

DEPARTMENT OF COMMERCE/INTERNATIONAL TRADE ADMINISTRATION

Web address: <http://www.ita.doc.gov/>

Web address: <http://www.ita.doc.gov/uscs/>

U.S. Commercial Service

The U.S. Commercial Service (USCS) staff in China offers a number of services for the Chinese market, including business counseling, export assistance, market and policy information, advocacy to support U.S. bids for major projects, and introductions to Chinese government officials and other business contacts. USCS staff have also completed numerous market analyses on the environmental sector, and will open the Shanghai Commercial Center to support visiting U.S. businesses with a major focus on environment.

DEPARTMENT OF COMMERCE/INTERNATIONAL TRADE ADMINISTRATION

Web address: <http://infoserv2.ita.doc.gov/ete/eteinfo.nsf>

Environmental Technologies Exports (ETE)

ETE is the primary point of contact for U.S. environmental firms interested in exporting their goods and services. ETE's staff covers all countries, with an emphasis on the designated Big Emerging Markets, which includes China. ETE, along with EPA, co-chairs the Environmental Technologies Subgroup under the Joint Commission on Commerce and Trade. ETE also publishes the Environmental Technologies Export Market Plan for China, along with other market research related to China and other high-growth export markets.

DEPARTMENT OF COMMERCE/NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

Web address: <http://www.noaa.gov/>

U.S.-China Marine and Fisheries Science and Technology Agreement: Marine and Fisheries Protocol

Partners: National Science Foundation (NSF), National Aeronautic and Space Administration (NASA), Department of the Interior (DoI), Chinese National Academy of Sciences, Chinese Academy of Fisheries Sciences, and the Chinese Ministry of Agriculture, among others

The United States and China have cooperated in marine and fishery science and technology since 1979 under a bilateral protocol jointly managed by NOAA. Other participants in this agreement include NSF, NASA, DoI,

and various academic institutions for the United States, and the Chinese National Academy of Sciences, the Chinese Academy of Fisheries Sciences, the Chinese Ministry of Agriculture, and other agencies within China. This agreement has greatly facilitated data and information exchange, resource leveraging, scientific collaboration, and optimization of national capabilities in marine science and technology.

Activities under the protocol are divided into four major scientific areas: (1) oceanographic and data information cooperation; (2) marine environmental services; (3) role of oceans in global climate change; and (4) living marine resources.

DEPARTMENT OF COMMERCE/NOAA

Development of an Ecosystem Model of Jiaozhou Bay Partners: University of Washington, University of Georgia, and the Institute of Oceanology in Qingdao, China

This project is designed to apply expertise gained from the NOAA Fisheries' Alaska Fisheries Science Center and the University of Washington to Jiaozhou Bay in China. The modeling activity has also expanded to include the University of Georgia and the Institute of Oceanology in Qingdao, China. The model being developed examines the effects of physical and chemical environments on resource production, such as clams, scallops, and shrimp. It will be used to evaluate the optimal mix of aquaculture species and improve the management of Jiaozhou Bay. This activity takes place under the aegis of the Marine and Fisheries Protocol.

DEPARTMENT OF COMMERCE/NOAA

Integrated Coastal Management Partner: Chinese State Oceanic Administration

NOAA's National Ocean Service (NOS) and the State Oceanic Administration of China have been cooperating for several years in the field of integrated coastal management (ICM). This cooperation has led to a series of exchanges of scientists and coastal management specialists between the two countries, the most recent exchange occurring in May 1997 when an NOS team traveled to Beijing to jointly design a series of cooperative ICM projects with their Chinese colleagues. Seventeen ICM projects were designed, falling into three main categories: (1) cooperating in the design of comprehensive site plans for the three U.S.-China sister city sanctuary and reserve sites; (2) establishing and utilizing geographic information systems (GIS) and internet technology in the management of coastal protected areas; and (3) providing guidance in the implementation of a national ICM case study for China. These activities take place under the aegis of the Marine and Fisheries Protocol.

DEPARTMENT OF COMMERCE/NOAA

U.S.-China Marine and Fisheries Science and Technology Agreement: Atmospheric Science Protocol Partners: Chinese Meteorological Administration (CMA), the National Science Foundation (NSF), NASA, and the Department of Energy (DoE)

The United States and China have cooperated in the atmospheric sciences since 1979 when the Atmospheric Sciences Protocol was first signed by NOAA and CMA. The National Weather Service (NWS) is the principal NOAA office responsible for the U.S. aspects of the protocol. Other U.S. participants include the National Science Foundation, NASA, the Department of Energy, and various academic institutions.

Joint working group meetings are held approximately every two years, alternating between China and the United States. Activities under the protocol are divided into six major areas: (1) climate and monsoon studies; (2) mesoscale meteorology; (3) satellite meteorology; (4) atmosphere chemistry; (5) meteorological modernization; and (6) training and participation.

DEPARTMENT OF ENERGY (DOE)

Web address: <http://www.doe.gov/>

Web address: <http://www.fe.doe.gov/int/china.html>

Web address: <http://www.eia.doe.gov/emeu/cabs/china.html>

For a complete listing of the Department of Energy's environmental activities in China, see Robert Price's article on pages 3-11 of this issue.

DEPARTMENT OF THE INTERIOR/BUREAU OF RECLAMATION

Web address: <http://www.doi.gov/>

Web address: <http://www.usbr.gov/>

Memorandum of Understanding: Water

Partner: Ministry of Water Resources

The Bureau of Reclamation and the Chinese Ministry of Water Resources have a two-pronged Memorandum of Understanding (MOU): (1) the exchange of ideas, information, skills, and techniques on water resources management and conservation; and (2) the exchange of information and technology for preserving and enhancing the environment. Under Annex I, Reclamation helped facilitate U.S. irrigation equipment manufacturers (through the Irrigation Association) to set up three demonstration projects around the city of Zhaoyuan in Shandong Province of China. The object of the demonstration program is to compare the effectiveness of different types of irrigation equipment, and the water savings achieved by the various pieces of equipment. A three year demonstration program was begun after equipment installation was completed in the Spring of 1997.

Reclamation and the Ministry of Water Resources are presently negotiating Annex II to the MOU. This annex would establish a Cooperative Training Program, with the following objectives: (1) further cooperative relations between the two organizations; (2) promote exchange of technical personnel and ideas between the countries; and (3) train administrative and technical personnel in all aspects of water resources management.

DEPARTMENT OF THE INTERIOR/FISH AND WILDLIFE SERVICE (FWS)

Web address: <http://www.fws.gov/>

Cooperation Agreement: U.S.-China Nature Conservation Protocol

Partners: Ministry of Forestry, Ministry of Agriculture, and the U.S. Geological Survey

FWS administers exchanges with China under the bilateral Nature Conservation Protocol. Exchanges carried out in 1997-1998 emphasize wetland and river ecosystem health, including studies of factors affecting the reproduction and survival of sturgeon and Reeves shad in the Yangtze River. Training for Chinese specialists in wildlife forensic identification and in proper identification of live animals/plants and their parts and products at Ports of Entry is also a priority.

DEPARTMENT OF THE INTERIOR/U.S. GEOLOGICAL SURVEY (USGS)

Web address: <http://www.nbs.gov/>

Cooperation Agreement: U.S.-China Nature Conservation Protocol

Partners: U.S. Fish and Wildlife Service, and various Chinese government agencies

The U.S. Geological Survey (USGS), Biological Resources Division, co-leads with the Fish and Wildlife Service the U.S.-China Nature Conservation Protocol. USGS activities in China include the design and deployment of telemetry for radio-tracking mammals, studies of special status species, research on the spawning requirements for sturgeon in major rivers, and training in biological monitoring and methodologies of wildlife research and management.

DEPARTMENT OF THE INTERIOR/U.S. GEOLOGICAL SURVEY

Protocol for Scientific and Technical Cooperation in Surveying and Mapping Studies

Active since 1985, this Protocol focuses on technology transfer and cooperation in the areas of digital cartography, spatial database design, geographical information system applications, remote sensing applications, and geodetic studies.

ENVIRONMENTAL PROTECTION AGENCY (EPA)

Web address: <http://www.epa.gov/>

Web address: <http://www.epa.gov/oia/crp.htm>

China Room Air Conditioner Monitoring Study

Partner: The American Council for an Energy Efficient Economy (ACEEE)

ACEEE will lead efforts to monitor room air conditioners in 150 households in three Chinese cities—Beijing, Shanghai, and Guangzhou. Data collected on room air conditioner energy use and operating patterns in various climates in China will establish the basis for identifying cost-effective measures for improving air conditioner efficiency. The project is expected to be completed in August, 1999.

ENVIRONMENTAL PROTECTION AGENCY

Energy Efficient Lighting

Partner: Lawrence Berkeley National Laboratory (LBNL)

LBNL is assisting China to develop product quality standards and a testing, certification, and labeling program to ensure consistency in results among testing labs in China, and to support lighting products confidence among Chinese consumers. LBNL is also assisting China in documenting barriers to lighting efficiency and successes in overcoming these barriers as a way of monitoring and evaluating the Chinese Green Lights Project.

ENVIRONMENTAL PROTECTION AGENCY

Energy Futures Study

Partners: U.S. National Academy of Sciences (NAS), and the Chinese Academy of Sciences

NAS and the Chinese Academy of Sciences/Chinese Academy of Engineering are undertaking this study to examine project energy growth scenarios in China under several different policy paths. This study is co-funded by EPA, the Department of Energy, and the National Research Council (NRC). The study will be completed by late 1998.

ENVIRONMENTAL PROTECTION AGENCY

USEPA/NASDA Program for Environmental Technology Transfer-China

Partner: National Association of State Development Agencies (NASDA)

EPA funds a program run by NASDA to provide small seed grants of up to \$20,000 to private companies and their non-profit sponsor to gain access to the Chinese environmental technology market. Eight proposals approved by a panel in a competitive solicitation are now underway. No further grants are available.

ENVIRONMENTAL PROTECTION AGENCY

Vehicle Emissions/Leaded Gasoline Phaseout

Partner: State Environmental Protection Administration (SEPA)

EPA has cooperated with SEPA to assist in China's adoption of legislation calling for the nationwide phaseout of lead in gasoline by 2000. Such legislation has already been implemented in Beijing, Guangzhou, and Shanghai. In addition, a SEPA official spent three months at EPA, and EPA is working closely with SEPA and other organizations on implementing regulations, including training at national and local levels, on mobile source air pollution control and lead phaseout. EPA is also funding technical and public information materials development.

UNITED STATES PEACE CORPS

Web address: <http://www.peacecorps.gov/>

Teaching English as a Foreign Language (TEFL) Project, including development of several Environmental English classes

Partners: Chinese Education Association for International Exchange, and the Sichuan Educational Association for International Exchange

Peace Corps/China (in China, Peace Corps is known as the U.S.-China Friendship Volunteers) is presently exploring development of expanded environmental activities in China. There is considerable interest in enlarging the existing TEFL project to enhance the English skills of Chinese working in the environmental area. Possibilities include providing Peace Corps English teachers to nature reserves, forestry colleges, and specific offices focusing on environmental protection activities. In addition, the potential exists to develop an environmental project utilizing parks and wildlife, environmental education, and forestry volunteers. Promising exploratory meetings have been held with the Forestry Bureau and several international conservation organizations.

Nongovernmental Organizations

ENVIRONMENTAL DEFENSE FUND (EDF)

Web address: <http://www.edf.org/>

Environmental Management

Partner: Beijing Environment and Development Institute (BEDI)

EDF is currently undertaking a project, with the Beijing Environment and Development Institute (BEDI), to develop strategies for implementing China's total emissions control policy.

INTERNATIONAL CRANE FOUNDATION (ICF)

Web address: <http://www.baraboo.com/bus/icf/whowhat.htm>

Integrating Conservation with Rural Development at Cao Hai Nature Reserve

Partners: Cao Hai Nature Reserve, Guizhou Environment Protection Agency, and Trickle Up Program

Since 1993, ICF has been working at Cao Hai Nature Reserve, a wetland area supporting 400 wintering black-neck cranes and numerous other waterbirds. As a response to severe human pressure on the wetland and its watershed, this project involves local farmers in creating economic alternatives that protect the resource base on which both human and avian communities depend. The project relies on two micro-finance mechanisms (small grants and revolving loan funds) and emphasizes farmer participation in decision making and conservation.

INTERNATIONAL CRANE FOUNDATION

Integrating Wetland Conservation with Agricultural Development in Sanjiang Plain

Partners: Heilongjiang State Farm Bureau, Heilongjiang Bureau of Water Conservation, Chinese Ministry of Agriculture, Wild Bird Society of Japan, and the Overseas Economic Cooperation Fund (Japan)

This project has developed guidelines for the protection of wetlands and wildlife in what was formerly the largest wetland in China, as part of the preparation for farmland improvement and water management activities. ICF has created a conservation plan to ensure the viability of wetlands protected or proposed for protection in the Sanjiang plain, and hopes to implement this plan in the coming year.

INTERNATIONAL CRANE FOUNDATION

Protection of Black-necked Cranes in Agricultural Areas of Southcentral Tibet

Partners: Tibet Plateau Institute of Biology, Agro-Environmental Protection Institute, and Tibet Agricultural Bureau

Since 1990, ICF has been studying a wintering population of about 3,900 black-necked cranes (two-thirds of the world's known population). As this population is dependent on waste grain of fallow croplands in winter, ICF has worked with agricultural authorities to develop strategies that will maintain cropland and roost site conditions needed by cranes. ICF is currently considering mechanisms for initiating pilot activities at one or more additional locations.

INTERNATIONAL FUND FOR CHINA'S ENVIRONMENT (IFCE)

Web address: <http://www.ifce.org/>

Environmental Television Program Production

IFCE is working on producing a series of television educational programs to introduce the environmental protection history, public involvement, governmental regulations, and advanced technologies of the United States to China. The programs will consist of twenty-four, thirty minute shows. The television programs will be broadcast in Chinese on major Chinese television stations.

INTERNATIONAL FUND FOR CHINA'S ENVIRONMENT

Establishment of Training Center for Environmental and Natural Resource Management

Partner: Southwest Agricultural University

IFCE is developing a training center for environmental and natural resource management in cooperation with the Southwest Agricultural University, Chongqing, China. The purpose of this training center is to provide a vehicle to introduce the latest environmental analysis and resource management technologies to natural resource and environmental managers and scientists in China. The center will also serve as an international training base for southeastern China and southeastern Asia on environmental management and education. The center will be equipped with natural resources management models, environmental monitoring and analysis software, and other computing facilities.

INTERNATIONAL FUND FOR CHINA'S ENVIRONMENT

Development of a Plan for Establishing a College of Environment in Wuhan

Partner: Wuhan Technical University of Surveying and Mapping

IFCE is developing a plan for establishing a college of environment at the Wuhan Technical University of Sur-

veying and Mapping (WTUSM). The proposed college will be an interdisciplinary program to provide training for students in environmental fields.

INTERNATIONAL FUND FOR CHINA'S ENVIRONMENT

Providing Environmental Magazines to the Libraries of Chinese Universities

IFCE is working on providing free environmental magazines to the libraries of Chinese universities. Due to a shortage of funding, the orders of original western magazines in China's universities have declined by 80 percent over the last decade, seriously hindering teaching and research of environmental science. IFCE is currently contacting more than 150 magazine publishers worldwide to seek support for this effort.

INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT (IIED)

Web address: <http://www.oneworld.org/iied/crosscut.html>

An Interdisciplinary Approach to Reduce Nutrient Losses by Erosion in Sichuan Province, China, by Combined Use of Participatory and Modeling Techniques

Partners: Winand Staring Center for Integrated Land, Soil and Water Research (The Netherlands), the Swedish University of Agricultural Sciences, and several partners in China

This joint project aims to find alternative land and water management systems to reduce the loss of soil, water, and nutrients by combined use of soil erosion and nutrient modeling, and participatory research and planning techniques. The project, which is to begin in mid-1998, will involve: (1) development of a standardized method for measuring nutrients in sediment and runoff at different scales; (2) performance of a field survey in a selected watershed to determine the flows of soil, water, and nutrients and deliver the necessary model input; (3) extension of a state of the art soil and water erosion model with a nutrient sub-model; (4) calibration and validation of the model for conditions met in the study area; (5) participatory appraisal of local social and environmental problems and opportunities; (6) capacity strengthening of Chinese research organizations to conduct soil erosion modeling and participatory appraisals; (7) selection of conservation alternatives and translation into model parameters; (8) formulation of methodology to find conservation alternatives using participation of local actors and the extended model; (9) testing the methodology in the watershed; and (10) implementation of a participatory monitoring and evaluation system.

The project expects to produce: (1) a standardized method of measuring nutrient concentrations in sediment and runoff at different scales; (2) an extended state-of-the-art water erosion model, able to predict and simulate transport of soil, water, and nutrients on the field and watershed scale; (3) a new methodology using a soil erosion model in a participatory planning process; and (4) a participatory monitoring and evaluation system to ensure prolonged use of the results.

INTERNATIONAL RIVERS NETWORK (IRN)

Web address: <http://www.irn.org/>

Three Gorges Project

Using the Three Gorges Project as a case study, IRN is working to increase public awareness regarding the environmental, social, cultural, and economic impacts of unsustainable river management practices in China. Accomplishments of this campaign have included a National Security Council recommendation that the U.S. government should stay clear of the project, and a May 1996 U.S. Export-Import Bank announcement that it will not guarantee loans to U.S. companies seeking contracts for the Three Gorges Project. This announcement impeded private sector capital flows to the project by mobilizing public pressure on existing and potential investors; documenting the immediate technical problems and social and cultural impacts that are being covered up by project officials; and demonstrating to the international media that the Three Gorges Dam is not a fait accompli.

INTERNATIONAL SNOW LEOPARD TRUST (ISLT)

Web address: <http://www.snowleopard.org/islt/>

Conservation of the Snow Leopard and its Mountain Habitat

ISLT is dedicated to the conservation of the endangered snow leopard and its mountain ecosystem through a balanced approach that considers the needs of the local people and the environment.

ISLT's activities in China have focused on three main areas: (1) ISLT held the 7th International Snow Leopard Symposium in Xining, Qinghai Province in 1992; (2) ISLT convened a training workshop on Snow Leopard Information Management Systems (SLIMS) and conducted "hands-on" field surveys in Gansu Province in 1993; and (3) ISLT has translated and distributed snow leopard captive management techniques for eight Chinese zoos.

JOINT INSTITUTE FOR ENERGY AND ENVIRONMENT (JIEE)

Web address: <http://www.jiee.org/>

Economic Training Course

In July 1995, JIEE provided a three-week economic training course for thirty provincial officials of the National Environmental Protection Agency of China. This course focused on economic instruments for environmental protection, especially the design and implementation of a pollution levy system for China.

JOINT INSTITUTE FOR ENERGY AND ENVIRONMENT

Electricity Generation Using Plantation-Grown Biomass

Partners: Yunnan Institute for Environmental Research, Ministry of Energy, Ministry of Horticulture, and NEPA

Electricity generation in rural Yunnan using plantation-grown biomass has been evaluated by JIEE researchers and Chinese government officials. This work, which began in 1989, was carried out with the cooperation of the Yunnan Institute for Environmental Research, the Ministry of Energy, Ministry of Agriculture, and the National Environmental Protection Agency of China. In August 1995, JIEE hosted a workshop and study tour, bringing seven energy and policy officials from Yunnan to the United States to meet with U.S. energy companies who actively invest in China.

JOINT INSTITUTE FOR ENERGY AND ENVIRONMENT

Visiting Scholars Program

JIEE has sponsored four visiting scholars from China who pursued study of environmental concerns in the United States: an official from the Ministry of Finance in 1993; an official from the National Research Center for Science and Technology for Development in early 1995; and two scholars from China's National Environmental Protection Agency in the fall of 1995.

MISSOURI BOTANICAL GARDEN

Web address: <http://flora.harvard.edu/china/> [Flora of China Project web site]

Web address: <http://www.mobot.org/> [Missouri Botanical Garden web site]

Flora of China Project

Partners: Harvard University; the California Academy of Sciences; the Botanical Institutes of Beijing, Guangzhou, Kunming, and Nanjing; the Smithsonian Institution; and the Royal Botanic Garden, Edinburgh

The Flora of China Project is a collaborative effort among a variety of institutions that seeks to create partnerships between Chinese and U.S. research institutions to catalogue the flora of China and produce an up-to-date English version of China's *Flora Reipublicae Popularis Sinicae*, which contains eighty volumes. The project consists of four main areas: (1) publication of translated volumes; (2) creation of a database; (3) maintenance of a species checklist; and (4) specimen purchase.

The major thrust of the project is to update and publish for the first time in English a comprehensive work on Chinese plants. The project is expected to be completed by the year 2005, eight years after the completion date of the original Chinese version. The data from the Flora of China project will also be entered into a comprehensive Missouri Botanical Garden database that will be accessible on-line. Additional efforts include a checklist project on the plants of China that will be available on-line, and the purchase of about 600,000 Chinese plant specimens for the Garden's herbarium.

NATIONAL COMMITTEE ON U.S.-CHINA RELATIONS

Web address: <http://www.ncuscr.org/>

Exchanges

Partners: Various

Over the years, the National Committee has carried out several delegation exchanges focusing on various aspects of sustainable development and environmental protection. These exchanges (both Chinese delegation visits to the United States and American delegation visits to the PRC) have included: (1) Citizen Involvement in Environmental Protection Delegation to the United States, which examined the way in which American environmental organizations involve average citizens in environmental protection activities; (2) Growth Management Workshop to the PRC, which focused on discussing methods of managing urban growth in order to protect agricultural lands; and (3) Sustainable Agriculture Delegation to the United States, which examined sustainable agriculture practices and government policy related to agriculture.

NATURAL RESOURCES DEFENSE COUNCIL (NRDC)

Web address: <http://www.nrdc.org/>

Energy Efficient Buildings

Partners: Multiple

NRDC's program to promote energy-efficient building construction in China combines a three-city demonstration project, development of more comprehensive building codes, and a new financing mechanism for energy-efficient housing.

NRDC's Three-Cities demonstration project will include a 650,000 square foot, \$70 million Chongqing Guesthouse project now in the design phase. On regulatory mechanisms, NRDC has begun a collaboration with the Ministry of Construction's new Office of Energy Efficiency. Efforts in this area will most likely include real-world pilot projects to first determine what level of standards are achievable in practice, and then demonstrate to local governments and the market that achieving the standards is both practical and economical. NRDC's China Clean Energy Project is working to develop market transformation and financing mechanisms that will help to overcome existing barriers to energy efficiency. NRDC has proposed to work with a Chinese bank that would dedicate a share of its lending to projects that conform with certain sustainable development criteria, including at least a 20 percent net return on investment when the costs of external environmental factors and lower lending costs are considered.

NATURAL RESOURCES DEFENSE COUNCIL

Industrial Energy Efficiency

Partners: Multiple

NRDC's program to promote industrial energy efficiency in China consists of a demonstration project evaluating the potential for combined power and chemical production in Chongqing, and a pilot program for utility-funded demand side management in the aluminum industry.

NRDC has developed a partnership with the Chongqing Municipal Economic Commission and the U.S. Department of Energy to evaluate the use of natural gas, coalbed methane, hydrogen, and coal gasification in combined technologies to produce both power and chemical fertilizer while minimizing carbon dioxide emissions. The feasibility study for this project will be carried out by a team of NRDC policy analysts and technical experts from the U.S.-China Energy and Environment Technology Center (EETC) in Beijing, and the Lawrence Livermore National Laboratory. NRDC is also working with Chinese partners to develop a pilot utility program designed to improve energy efficiency in the aluminum industry. This program would link power production and energy conservation for what may be the first time in China, and provide a model for utility financing of demand side management programs.

NATURAL RESOURCES DEFENSE COUNCIL

Promotion of Gaseous Fuels in China

Partners: Battelle, Pacific Northwest National Laboratory

NRDC will continue to work with Battelle, Pacific Northwest National Laboratory to promote the use of domestic and imported natural gas, coalbed methane, and hydrogen as a large-scale alternative to coal and nuclear power in China. These groups will also work together on a White Paper analyzing the potential for an increased use of gaseous fuels in power production and the resultant impact upon global carbon emissions.

TULANE UNIVERSITY

Web address: <http://www.tulane.edu/~uschina/>

U.S.-China Energy and Environment Technology Center

Partners: U.S. Department of Energy, Tsinghua University, and multiple other U.S. and Chinese governmental agencies

The U.S.-China Energy and Environment Technology Center (EETC) was established in Beijing in 1997 to enhance the competitiveness and adoption of U.S. clean energy and environmental technology in China. The Center is implemented jointly by the United States and Chinese governments, and Tulane and Tsinghua Universities, and is overseen by a Board of Directors and Steering Committee. Both the Memorandum of Understanding between Tulane and Tsinghua, and the Center's charter are in place. Over the past year, the Center has conducted education and training programs, and information seminars. It has worked to develop policy initiatives in the energy and environmental sectors, and matched U.S. business interests with Chinese needs.

U.S.-CHINA ENVIRONMENTAL FUND (USCEF)

High School Environmental Education Program

After initiating an environmental education exchange between eighteen U.S. and Chinese sister cities in 1996, USCEF is now working with the Chinese State Environmental Protection Administration on an education program for high school students in China's largest cities. This experiential education program will create municipal Environmental Handbooks that profile local environmental conditions and will organize monitoring exercises and environmental community service activities.

USCEF has two programs underway in China on pollution prevention and control. The first is a study of environmental infrastructure finance and methods to increase foreign private sector investment to develop China's environmental sector. The second focuses on facilitating projects for pollution prevention and control.

U.S.-Chongqing Task Force in Energy/Environmental Technology Cooperation

Effective strategies for collaboration with China on issues of global environmental management need to take into account the sheer size of China's population and physical territory. China is simply too big for collaboration with any one country to make much of a difference. Therefore, progress will be most likely if the United States either brings other countries (e.g., Japan) into this collaboration, or focuses its resources and policy attention on particular parts of China.

The U.S.-Chongqing Task Force in Energy / Environmental Technology Cooperation takes the latter approach. It seeks to concentrate the capabilities and resources of the U.S. private sector (both profit and nonprofit), in cooperation with U.S. government agencies, on the energy and environmental priorities and needs of a single city in China. In doing so, the project seeks to provide a model of U.S. involvement and assistance that can be replicated (and improved upon) by other cities in China.

Chongqing (formerly Chungking, China's capital during World War II) is situated 1200 miles inland on the Yangtze River in central southwest China. Following its designation in March 1997 as a "directly administered municipality," reporting directly to Beijing, its enlarged boundaries now encompass a population of 30 million, making it China's largest city. The city has severe air pollution problems stemming largely from the burning of high sulfur coal to produce power and to supply energy to industry. Construction of the Three Gorges Dam 500 miles downstream will compound an existing crisis in wastewater management: the city now dumps its untreated wastewater into the Yangtze, which upon completion of the dam in 2007 will become a reservoir. Over one million people to be displaced by that reservoir will also flock to Chongqing in search of new homes.

Under the aegis of the Task Force, a dozen U.S. firms have begun assisting the city in addressing these challenges. Former cosponsors of the Task Force include the National Bureau of Asian Research (NBR), based in Seattle, and the Center for Strategic and International Studies (CSIS), based in Washington, D.C. Current sponsors include the Pacific Rim Enterprise Center (PREC), also located in Seattle. The Task Force benefits from the Seattle-Chongqing sister city relationship, which this year will celebrate its fifteenth anniversary. Party Secretary Zhang Delin co-chairs the Task Force from the Chinese side; U.S. members of Congress Jennifer Dunn (R-WA) and Jim McDermott (D-WA) serve as co-chairs of the Steering Committee of U.S. members.

Through numerous exchanges with Mayor Pu Haiqing and his senior deputies in Chongqing and in Washington, D.C., the Task Force has defined an agenda of collaboration which includes, among other items: energy efficiency measures, renewable energy development, clean coal demonstration projects, and compressed gas vehicle development. U.S. government agencies, including several offices of the Department of Energy, and the Natural Resources Defense Council (NRDC), are assisting in addressing this multi-faceted agenda. Corporate Task Force members are now seeking partners for these projects in Chongqing and financing for feasibility studies to carry out the projects.

For further information about the Task Force, please contact David Wendt at (208) 236-3301 or wenddavi@isu.edu. Information on the Task Force can also be obtained from Michael Jacobson of PREC at (206) 224-9934.

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China Environment Research at Carnegie Mellon University

Faculty and students in the Department of Engineering and Public Policy (EPP) at Carnegie Mellon University are engaged in a number of studies related to China's environment. This research lies in three areas: air pollution, brownfields development, and public perceptions of the environment.

Drawing on existing Chinese epidemiological and air quality studies, Dr. Keith Florig assessed the nationwide health impacts of air pollution in China. The results, published in the June 1997 issue of *Environmental Science and Technology*, suggest that air pollution is responsible for roughly one in every eight deaths in the country as a whole, with the bulk of the health impacts occurring in rural populations.

Using a series of source and dispersion models, Ph.D. student Sun Guodong is evaluating the relative contribution of various sources of particulate matter to particulate exposure among the entire Chinese population. Results show that environmental tobacco smoke and cook smoke are much larger contributors to particulate exposure than large point sources such as power plants and neighborhood heating boilers.

In response to concerns about chemical contamination at many of China's failing state-owned industrial facilities, Ph.D. student Zhang Jianyu is researching brownfields policy in China. He has found that policies for the management of contaminated industrial sites are still in their infancy in China. Zhang is talking with officials at China's State Environmental Protection Administration (SEPA) and the U.S. Environmental Protection Agency (EPA) to assess China's potential brownfields problem and to transfer lessons learned from the U.S. brownfields experience. Zhang's work will appear in a Chinese television documentary produced by Global Village, a Chinese NGO.

Since 1990, Chinese social scientists have mounted over a dozen surveys to measure citizen concerns about the environment. Dr. Keith Florig is collaborating with Dr. Xi Xiaolin, and colleagues at the National Research Center for Science and Technology Development in Beijing, to review these studies in light of the international literature on public perceptions of the environment. In October 1997, Dr. Xi organized a workshop in Beijing to bring together Chinese social scientists and government agencies interested in evolving perceptions of the environment. A workshop report in Chinese, and a summary report in English, will be available by summer 1998.

Much of the China-related research at EPP has been funded by grants from Carnegie Mellon University and the National Science Foundation (SBR-9521914). For more information about any of these projects, please contact Dr. Keith Florig at 412-268-3754 (phone), 412-268-3757 (fax), or Keith_Florig@andrew.cmu.edu /