

Xuemei Han

School of Forestry & Environmental Studies, Yale University
Room 117, Greeley Lab
370 Prospect Street, New Haven, CT 06511
Office: (203) 432-5144, Cell: (203) 909-5359
xuemei.han@yale.edu, xuemei.han@gmail.com

EDUCATION

Yale University, School of Forestry & Environmental Studies, New Haven, Connecticut

Doctoral of Philosophy, 2011

- *Concentration*: Forest Science, and Natural Resources Management for Development and Conservation

Yale University, Department of Ecology & Evolutionary Biology, New Haven, Connecticut

Master of Science, 2005

- *Concentration*: Ecosystem Ecology

Beijing Normal University, College of Life Sciences, Beijing, China

Master of Ecology, 2003

- *Concentration*: Conservation and Ecology

Bachelor of Biology, 2001

Minor in Computer Science, 2001

OTHER TRAINING

- LIDAR Fundamentals and Applications Workshop, American Society of Photogrammetry and Remote Sensing, 2011
- Land Change Modeling, Association of American Geographers, 2010
- GIS System Architecture Design Strategies, ESRI, 2009
- Advanced GIS in Geo-statistical Modeling, UWICE, Bhutan, 2009

RESEARCH EXPERIENCE

Countries of Research Experience: China, United States, Bhutan, Russia, Nepal

PhD Thesis Research, Yale University, New Haven, CT, 2006-2011

- *Advisor*: Chadwick D. Oliver
- *Dissertation Title*: Assessing the Amur tigers' habitat within the dynamic forests in Northeast China and the Russian Far East
- *Intellectual Merit*: In the departure from the traditional conservation studies, this work examines the Amur tiger's habitat with a dynamic forest perspective for the first time. Therefore, this is a pioneer and seminal study linking the recent paradigm shift in forestry ecology to wildlife conservation. Using an integrated approach of forestry modeling, field surveys, spatial analysis, Geographic Information System (GIS), remote satellite imaging and the Landscape Management System (LMS), this study identified the characteristics that determine the quality of the Amur tiger's habitat, assessed its current habitat and fluctuation in the dynamic forest, evaluated the forest value of biodiversity conservation in Northeast China, and assessed how it is affected by forest development, harvesting history, fires, and current management policy. It developed a technically innovative method to map the wildlife habitat,

and suggested a creative way of conserving the tiger habitat and resolving tiger-human conflict with the sustainable forest management.

- *Methodology*: Spatial analysis and geographic modeling with remote satellite imaging and GIS, forestry growth simulation and management planning with LMS and Toogle program, forest field inventory survey and wildlife population survey, statistical methods including parametric and nonparametric comparison methods, ANOVA, linear regression, logistic regression, power calculation, and sampling.
- *Collaborations*: Worked closely with and received cooperative supports from professors at Yale, ecologists in China and zoologists in Russia; frequent technical communication with the World Bank and WWF
- *Funding Support*:
 - NASA Radar Satellite Image Research Grant
 - Yale School of Graduate Studies Fan Fellowship
 - Yale Institute for Biospheric Studies for Field Ecology Pilot Grant
 - Jubitz Family Endowment for Research from United States
 - National Key Project for Cooperative Research on key issues concerning the environment and resources in China and Russia (Grant No. 2005CB724800) from China
- *Media Reports*: i) “Chad Oliver--Racing to Save the Amur tiger.” Yale F&ES multimedia. Video clip available from: <http://environment.yale.edu/multimedia/video-playlist/>
ii) Conniff, Richard. “Can China Save the Amur Tiger?” Cover story in *Environment YALE: the Journal of the School of Forestry & Environmental Studies*, Fall (2009): 4-11, 37. Article available from: <http://environment.yale.edu/magazine/>
iii) “Q&A with Xuemei Han 07’.” *Environment YALE: the Journal of the School of Forestry & Environmental Studies*, Fall (2009): 9, 37. Available from: <http://environment.yale.edu/magazine/>

Master Thesis Research, Yale University, New Haven, CT, 2003-2005

- *Project Advisor*: Melinda D. Smith
- *Thesis Title*: Comparison of damage to native and exotic tallgrass prairie plants by natural enemies
- *Intellectual Merit*: The study examined how natural enemies influence the invasiveness of exotic species in North America tall-grass prairies through a field comparative experimental study in the Konza prairie, Kansas, US. My results supported the Enemy Release Hypothesis and contributed to clarifying a decade-long debate over the fundamental ecological mechanisms of invasive species.
- *Collaborations*: Received cooperative support from community ecologists and evolutionary biologists at Yale and plant pathologists at Kansas State University

Master Thesis Research, Beijing Normal University, Beijing, China, 2001-2003

- *Advisor*: Rumei Xu
- *Master Thesis Title*: Establishing database and website of invasive species in China
- *Intellectual Merit*: Joined the first group studying the ecology of invasive species in China and contributed by establishing the first invasive species database and website in China. Then analyzed the pattern of biological traits and spread of exotic species.
- *Other projects involved*: The metapopulation of melitaeine butterfly species in Songshan Mountain, Beijing

Spatial Analyst, Yale University, New Haven, CT, 2010-2011

- *Project Supervisor*: Karen Seto
- *Project*: Land use and urbanization mapping
- *Duties*: Developing algorithms and radar images processing for urbanization mapping in industrialized areas in Asia, literature review, and writing peer-reviewed journal articles

GIS Consultant, Ministry of Agriculture and Forests, Royal Government of Bhutan, 2009-2010

- *Project Supervisor:* Dr. Maung Moe Myint
- *Project:* Design the multi-user institutional level Geographic Information System and Geo-database for Ministry of Agriculture and Forests, Royal Government of Bhutan
- *Duties:* Investigating the Geo-data needs and the present GIS and hardware system situation of 17 national-wide institutions administrated by the Ministry of Agriculture, designing GIS and Geo-database for Geo-data coordination and network communication among these institutions, providing data configuration, technical recommendation and physical implementation, and writing technical reports

Social Health Research, New Haven, CT, 2009-2011

- *Project Co-Investigator* with Dr. Xuesong Han
- *Project:* Depression Survey of Chinese students at Yale
- *Duties:* Proposing hypothesis, designing questionnaire and study procedure, consulting and discussing the study with senior faculty, Yale Office of International Students and Scholars, and Yale Health Services, writing proposal and preparing HIC application, data analysis, and writing peer-reviewed journal articles

Research Assistant, Yale University, New Haven, CT, 2006-2010

- *Projects:* Water resources management and ecosystem services of Loess Plateau in Northwestern China; Food security in Poyang Lake watershed; Watershed management in Oregon; Multiple projects on urbanization and agricultural land use change
- *Duties:* Spatial data acquisition, synthesis and analysis; coordinating international conferences; participating in field trips, translating and preparing documents for proposals and reports; formulating and writing study proposals; and writing peer-reviewed journal articles

Researcher and Interviewer , the State Agriculture Department of P. R. China, Beijing, 1998 -1999

- Conducted a socio-economic survey study on the farmer's financial burden issue in Inner Mongolia
- Interviewed hundreds of civil workers in Beijing who just abandoned their farmlands and migrated to Beijing

TEACHING EXPERIENCE

Asian Pacific Network Workshop on Forest Resource Management, Kuming, China, Training Course Instructor, Nov, 2010

- *Session:* Technical training on GIS, Remote Sensing, Statistic, Landscape Management System and Toogle Program, and their application in wildlife conservation study

Yale University, School of Forestry & Environmental Studies, New Haven, Connecticut Teaching Assistant, 2006-2010

- *Courses:* Global Resources and Environment
Managing Resources
Modeling Geographical Object
Modeling Geographical Space
Introduction to Statistics in the Environmental Sciences

College of Life Sciences, Beijing Normal University, Beijing, China Teaching Assistant, 2002

- *Courses:* Zoology

Anshan No.1 High School, Anshan, Liaoning province, China

Instructor, 2001

- *Course*: Biology

Elementary School of Beijing Normal University, Beijing, China

Instructor, 2000-2001

- *Course*: Natural Sciences

OTHER RELEVANT EXPERIENCE

Conference and Field Survey Coordinator, 2006-2010

- (Invited) Coordinated the session of “**Frontiers in wildlife ecology and management**” in the **23rd IUFRO (International Union of Forest Research Organization) World Congress**, reviewed presentation abstracts, communicated with the Chair of Congress Scientific Committee and session presenters, and will moderate the session in Seoul, Korea, in Aug., 2010.
- Coordinated the Conferences of Biodiversity in Northeastern Asia in Beijing in 2006 and 2007, academic workshop of Amur tiger conservation and study in Harbin in 2006, and Conference of Ecosystem Services of Loess Plateau in Beijing in 2009
- Organized cooperative field survey for Amur tiger prey and habitat with Russian, Chinese, and American scientists in Vladivostok in 2007
- Managed logistics for above conferences and field survey including international communication, financial budgeting, and translation

‘Son of the Farmers’ Association Founder 2000-2002

- Co-founded the largest student association at Beijing Normal University, with about 200 members.
- Organized weekend volunteer teaching groups in suburban Beijing for dropout children recently migrated from rural areas
- Coordinated lectures on agriculture and rural issues
- Gained national media attention. The association was covered by several of the most influential media, including CCTV and China Youth Daily

Editor in Chief, 1999-2000

- “*Green Destiny*,” a student magazine on “green issues” published once a month by the College of Life Sciences, Beijing Normal University

Project Manager, 2000-2001

- Designed and developed a computer platform, *Protect Our Environment*, for high school environmental education, with Beijing K12 Educational Co., China

HONORS & AWARDS

- NASA Rader Satellite Image Grant – NASA and Alaska Satellite Facility 2008
- Fan Fellowship –Yale University 2003-2008
- Graduate Student Conference Travel Fund – Yale Graduate Student Assembly 2007, 2009
- Doctoral Student Conference Travel Fund -- Yale School of F &ES 2007, 2009, 2010
- The Jubitz Family Endowment for Research Internships – Yale School of F&ES 2006
- Yale Institute for Biospheric Studies, Field Ecology pilot research grant 2006
- Student Scholarship – 2nd New England Invasive Plant Summit 2005
- Ecology & Evolutionary Biology Graduate Student Discretionary Fund 2004

- First place in Outstanding Student Fellowship – BNU Fellowship 2000
- The Second prize of outstanding reports on rural issues
–The State Agriculture Department of P. R. China 1999
- Outstanding Student Fellowship – BNU Fellowship 1999
- Norman Bethune Foundation Fellowship 1998
- The First Prize of Physics Olympic Competition in Inner Mongolia 1996

PUBLICATIONS

- Yue D, Xu X, Hui C, Xiong Y, **Han X**, Ma J. (in press) Biocapacity supply and demand in Northwestern China: a spatial appraisal of sustainability. *Ecological Economics*.
- **Han X**, Oliver C D, Guo Q, Ge J, Kou X. (in press) Managing forest stand structures to enhance conservation of the Amur tiger in and after Northeast China's Natural Forest Protection Program. (Book chapter) in Stanturf J. eds *Forest Landscape Restoration: Integrating Natural and Social Sciences*. Springer. 2010
- **Han X**, Myint M M. 2009. Design strategy of multi user institutional level Geographic Information System and Geo-database for Ministry of Agriculture. Concept Note. Ministry of Agriculture and Forests, Royal Government of Bhutan.
- **Han X**, Dendy S P, Garrett K A, Fang L, Smith M D. 2008. Comparison of damage to native and exotic tallgrass prairie plants by natural enemies. *Plant Ecology*. 198 (197-210) (IF = 2.175)
- Han X, **Han X**, Luo Q. 2008. Cancer incidence patterns by race and gender in United States. *Communication on Contemporary Anthropology*. 2(4): 62-71
- **Han X**, Oliver C D, Ge J, Guo Q, Kou X. 2007. Could forest management that ensures a balance of stand structures enhance biodiversity conservation in Northeast China's Natural Forest Protection Program need? *Proceedings IUFRO Conference on Forest Landscape Restoration*. Korea Forest Research Station Institute. Seoul, Korea. 40-43.
- Lin W, **Han X**, Xu Y, Xu R. 2006. Introduction to the web "Bio-Invasion in China" *Journal of Beijing Normal University (Natural Science)* 2006 (2). (in Chinese)
- Zhang Y, Shan Y, **Han X**. 2009. Design and analysis of an Input-output Table of Material Flow in Economic System in Beijing of China. *Journal of Natural Resources*. 24 (3) (in Chinese)
- Song H, Zhang Q, **Han X**, Xu Y, Xu R. 2004. CLIMEX :professional biological software for predicting potential distribution of species. *Entomological Knowledge*. 2004 (4) (in Chinese)
- **Han X**. 2003. Establishment of database and internet website resources for Biological invasion in China. (Book Chapter) in Xu Rumei eds. *Early Warning of Biological Invasion*, Science Press Group, Beijing. (in Chinese)
- Xu Y, **Han X**, Song H, Zhang Q, Xu R. The Chinese Database and Web of Invasive Animals, *Acta Entomologica Sinica*. 2003. (in Chinese)
- **Han X**, Xu Y, Song H, Zhang Q, Xu R. 2002 Analysis of the global distribution of plant pests, *Plant Quarantine*. 16(6). (in Chinese)
- **Han X**, Xu X, Song H, Zhang Q, Xu R. 2002. Analysis of the host and spread of 134 plant pests, *Plant Quarantine*. 16(4). (in Chinese)
- Zhang Q, Xu Y, Huang X, **Han X**, Xu R. 2002. Prediction of suitable areas for the Japanese beetle in China. *Plant Quarantine*. 2002 16 (2). (in Chinese)

Translations:

- Chadwick D. Oliver, Stand Dynamics, **translator**. China Environmental Science Press, 2011 (English to Chinese)
- Janice VanCleave, Food and nutrition, **translator**. China Light Industry Press, 2000 (English to Chinese)

Submitted and to be submitted:

- **Han X**, Guo Q, Ge J, Oliver C D. Quantifying forest stand density in Northeastern China with consideration of Amur tiger conservation. *Forest Ecology & Management* (IF = 2.48 top in Forestry)
- **Han X**, Myint M, Gregoire T, Ge J, Oliver C D. Landscape-level mapping of forest type and stand structure for wildlife habitat -- a case study for Amur tiger conservation. *Remote sensing of Environment* (IF= 4.754)
- **Han X**, Myint M, Gregoire T, Ge J, Oliver C D. Integrating pixel-based and object-based approach for image classification by an innovative application of K-mean algorithm and multinomial logistic regression. *Remote sensing of Environment* (IF = 4.754)
- **Han X**, Ge J, Oliver C D. Demonstration of designing a forest management plan for the Amur tiger (*Panthera tigris altaica*) conservation using Landscape Management System. *Journal of Applied Ecology* (IF = 5.63)
- **Han X**, Ge J, Oliver CD. Forest dynamics, its potential effects on wildlife, and its relationships to Amur tiger (*Panthera tigris altaica*) conservation. *Frontiers in Ecology and the environment* (IF = 6.93).
- Han X, **Han X**, Jacobs S, Jean-Baptiste M. A depression survey among Chinese students at Yale. *Journal of Counselling Psychology*
- **Han X**, Zhang Q, Seto K, Applying Radar image in urban expansion detection: Baotou, Inner Mongolia as a case study. *International Journal of Remote Sensing* (IF = 1.62)

CONFERENCE PRESENTATIONS

- *Training course on Landscape Management System and Toggle Program; & GIS, Remote Sensing, Statistics, and Landscape Management System in application of wildlife conservation study.* Oral presentation in technical session of APFNet Workshop on Forest Resources Management in Asian and the Pacific. --Kunming, China; Nov., 2010
- *Assessing the Amur tiger's habitat within dynamic forests in Northeastern China and Russian Far East.* Oral presentation in the 23th IUFRO (International Union of Forest Research Organization) World Congress --Seoul, S. Korea; Aug, 2010
- *Landscape-level mapping of forest stand structure and type by combining multispectral reflectance and radar backscatter using K-mean algorithm.* Oral presentation in the 23th IUFRO World Congress --Seoul, S. Korea; Aug, 2010
- *Designing conservation plan for the Amur tiger using Landscape Management System.* (Invited by the World Bank). Oral presentation in the Northeastern China Tiger Habitat Conservation Project Workshop --Changchun, China, May, 2010
- *Managing forest stand structures to enhance conservation of the Amur tiger in Northeastern China.* Oral presentation in 94th ESA Annual Meeting. -- Albuquerque, New Mexico, USA; Aug. 2009
- *Managing forest stand structures to enhance conservation of the Amur tiger in Northeastern China.* Oral presentation in 23rd SCB Annual Meeting. -- Beijing, China; Jul. 2009
- *Evaluating Amur tigers' habitat within dynamic forests.* Oral presentation in 25th Annual FES Doctoral Research Conference. -- New Haven, CT, USA; Feb. 2009
- *Managing forest stand structures to enhance conservation of the Amur tiger.* Oral presentation in WWF AHEC Programme NE China February Meeting. -- Changchun, China; Feb., 2008
- *Could forest management that ensures a balance of stand structure enhance biodiversity conservation in Northeast China's Natural Forest Protection Program Need?* Oral presentation in the International Conferences on Forest Landscape Restoration. -- Seoul, S. Korea; May, 2007
- *Comparison of damage to native and exotic tallgrass prairie plants by natural enemies.* Poster presentation in 2nd New England Invasive Plant Summit. -- Framingham, MA, USA; Sept. 2005

PROFESSIONAL AFFILIATIONS

- Society of American Foresters (2007-present)
- Ecology Society of America (2006-present)

- Society for Conservation Biology (2006-present)
- American Society for Photogrammetry and Remote Sensing (2008-present)
- American Planning Association (2009-present)
- American Geophysical Union (2009-present)
- Yale Large Carnivore Group (2008-present)

SKILLS & INTERESTS

- Languages: Fluent in English and Chinese (Mandarin)
- Data Analysis: Geographic Information System (GIS), Erdas IMAGINE, ENVI, IDRISI, MapReady, R, Minitab, SPSS, Landscape Management System, Toogle, and MS Office
- Other skills: CPR/AED certified, and American Red Cross First Aid certificated
- Interests: Public health, social and economical development, and multi- cultural comparison, landscape photography, bird watching, religion, cooking, running, and outdoor adventures