

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
Christina P. Wong

Will defend her dissertation

**Managing for Urban Ecosystem Services:
The Yongding River Ecological Corridor**

Abstract

Sustainability requires developing the capacity to manage difficult tradeoffs to advance human livelihoods now and in the future. Decision-makers are recognizing the ecosystem services approach as a useful framework for evaluating tradeoffs associated with environmental change to advance decision-making towards holistic solutions. In this dissertation I conduct an ecosystem services assessment on the Yongding River Ecological Corridor in Beijing, China. I developed a '10-step approach' to evaluate multiple ecosystem services for public policy. I use the 10-step approach to evaluate five ecosystem services for management from the Yongding Corridor. The Beijing government created lakes and wetlands for five services (human benefits): (1) water storage (groundwater recharge), (2) local climate regulation (cooling), (3) water purification (water quality), (4) dust control (air quality), and (5) landscape aesthetics (leisure, recreation and economic development).

The Yongding Corridor is meeting the final service levels for landscape aesthetics, but the new ecosystems are falling short on meeting final service levels for water storage, local climate regulation, and water purification. I used biophysical models (process-based and empirically-based), field data (biophysical and visitor surveys), and government datasets to obtain the necessary data to create ecological production functions (i.e., regression models). I used the ecological production functions to evaluate how marginal changes in the ecosystems could impact final service outcomes. I evaluate potential tradeoffs considering stakeholder needs to recommend synergistic actions to help management address priorities while reducing shortfalls.

Monday, November, 10, 2014
4:00 p.m.
Wrigley Hall, Conference Room 323

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. Ann P. Kinzig, Chair
Dr. Kai N. Lee, Packard Foundation, Member
Dr. Rachata Muneeppeerakul, Member
Dr. Zhiyun Ouyang, Chinese Academy of Sciences, Member
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