



DEPARTMENT OF

# FORESTRY AND NATURAL RESOURCES



## Research Overview

Research in Forestry and Natural Resources is focused on discovering new knowledge that advances the science, management, and sustainable use of natural resources. Strong interdisciplinary research addresses current issues in forest, wildlife, and fisheries management, as well as the ecology of natural systems, digital tools for assessing natural resources, genetics, hardwood products innovations, and social science in natural resource decisions. Research groups focus on:

### FOREST SCIENCE

Advancing basic knowledge about forest ecosystems, as well as the physiology, genetics, and growth of hardwood trees, with the goal of providing healthy and sustainable forests in the Central Hardwood Region, including both in rural and urban settings.

### WILDLIFE SCIENCE

Increasing and disseminating knowledge about key wildlife species, populations, and communities, and understanding how they relate to ecosystem structure and functioning as well as to environmental changes.

### FISHERIES & AQUATIC SCIENCE

Developing and disseminating knowledge about aquatic animals and their habitats, including aquaculture, interactions between aquatic and terrestrial ecosystems, and the fates and effects of pollutants, as well as appropriate management practices for the protection and use of aquatic ecosystems.

### ECOLOGY OF NATURAL SYSTEMS

Developing knowledge of factors influencing complex interactions in ecological systems at multiple scales of biological organization, ranging from physiological to community and eco-region units, with an emphasis on effects of human-related drivers such as climate and land-use change, as well as tactics for restoring and conserving ecological processes.

### GENETICS

Applying advanced molecular and analytical methods to a variety of genetic questions (e.g., genetic diversity, relatedness, heritability) in populations of important wildlife and tree species.

### DIGITAL NATURAL RESOURCES

Developing integrated systems of quantitative techniques for assessing and analyzing forest and associated ecosystems. Efforts focus on advancing quantitative methods related to statistical, simulation, and analytical modeling of natural systems at varying spatial and temporal scales.

### NATURAL RESOURCE SOCIAL SCIENCE

Studying the social, political, and economic implications of alternative public policies with regard to the protection, management, and use of natural resources. The awareness, attitudes and behaviors of individuals and groups as these relate to natural resource management are also explored.

### HARDWOOD PRODUCTS INNOVATIONS

Assisting hardwood products industry in developing new knowledge for reducing raw material costs, improving processing technologies, and encouraging innovation in product development through science and engineering.

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*Pictured at left from top:*  
Dr. Jason Hoverman, Dr.  
Liz Flaherty, Dr. John B.  
Dunning, and Dr.  
Eva Haviarova

## Associate Research Centers

- CENTER FOR GLOBAL SOUNDSCAPES
- HARDWOOD TREE IMPROVEMENT AND REGENERATION CENTER (HTIRC)
- ILLINOIS-INDIANA SEA GRANT PROGRAM (IISG)
- INDIANA WATER RESOURCES RESEARCH CENTER (IWRR)
- PURDUE CLIMATE CHANGE RESEARCH CENTER (PCCRC)
- TROPICAL HARDWOOD TREE IMPROVEMENT AND REGENERATION CENTER (TROPHTIRC)



*Songlin Fei, a forest ecologist, has been a pioneer in the use of remote sensing in digital forestry efforts.*

## Faculty and Research Areas

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