



ECOSYSTEM SCIENCE AND MANAGEMENT MASTER OF SCIENCE

BECAUSE ECOLOGICAL KNOWLEDGE IS THE FOUNDATION OF SOUND, SUSTAINABLE ENVIRONMENTAL POLICY, MANAGEMENT, CONSERVATION, EDUCATION, AND ADVOCACY.

How do natural ecosystems function, and what is the distribution of biodiversity across Earth's surface? How do humans impact ecosystems? How can we effectively address the concurrent crises of climate change, habitat loss and species extinction? In the Ecosystem Science and Management (ESM) specialization, you will explore these questions and learn about natural systems in both classroom and experiential field-based settings. You also will master the technical and quantitative skills necessary for their study, and learn how to apply them to solve complex environmental management problems, preparing you to become both a scientist and a successful sustainability practitioner.

WHY ESM?

- Study how different land uses—agriculture, urban, residential, forest, natural—affect ecological systems.
- Understand the biosphere's responses to human activities, such as climate shifts, land-use conversion, the release of pollutants and species introductions.
- Acquire the fundamental quantitative literacy to correctly evaluate and interpret ecological data.
- Study the effective use of GIS across multiple fields in conservation, including forestry, wildlife mapping, aquatic resources, ecosystem management and regional planning.
- Link the scientific understanding of ecosystems with the challenges inherent in sustainable management and of the societal benefits they support.
- Combine the principles of ecology and engineering to predict, design, construct or restore, and manage ecosystems.
- Identify and manage potential problems that could undermine key initiatives or projects, while building critical decision-making skills.

BOLD LEADERS

KIRK ACHARYA (MS '20) **REGIONAL PLANNER** **USDA FOREST SERVICE**

"I chose SEAS first for its world-class interdisciplinary curriculum, and second for the warm, welcoming community. In the Ecosystem Science and Management specialization, I was able to build on my scientific understanding of global change, but the opportunity to relate these issues to policy and management has been invaluable."



JASON TAYLOR (MS '04, PHD '08) **SUPERINTENDENT** **INDIANA DUNES NATIONAL PARK**

"Having an interdisciplinary education has shaped my ways of thinking and has given me an ability to consider and contribute to problems in different ways than folks with a discipline-specific perspective. This kind of education has been critical to me in making meaningful contributions to the myriad projects and agencies I have been a part of throughout my career."



MASTER'S PROJECTS

Part of the culminating experience of your program is a master's project or master's thesis, where you will work with an external client to solve real-world problems. Recent projects include:

Michigan the Beautiful: The Great Lakes; Exploring Approaches for the Conservation and Stewardship of 30 Percent of Michigan's Coastal and Open Waters of the Great Lakes by 2030

Client: Michigan Sea Grant, The Nature Conservancy, Michigan Department of Natural Resources

Trails of History and Nature: Developing Ecological and Cultural Materials for an Ecotourism Hiking Network on the Aegean Island of Naxos

Client: Cyclades Preservation Fund; Hellenic Society for the Preservation of Nature; Municipality of Naxos and Small Cyclades



St. Pierre Wetland Stewardship Plan: A Model for SEAS Properties Planning

Client: SEAS; Matthaei Botanical Gardens and Nichols Arboretum; Shan-Gri-La Homeowners Association

COURSE SAMPLING

- Conservation Biology
- Ecology of Fishes
- Forest Ecology and Management
- Wildlife Ecology and Management

WANT MORE INFO?

seas-admissions@umich.edu



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FACULTY

- Karen Alofs
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- Michael Kost
- Silvia Newell
- Ivette Perfecto
- Sheila Schueller
- Brian Weeks

BUILD A REWARDING CAREER WITH IMPACT

No matter your path, SEAS Career Services helps prepare you for a purpose-driven career that's right for you. Our career counselors provide guidance on all aspects of career development, from resumes and cover letters to job searches and interview preparation. Plus, we connect you with employers and alumni who can help you imagine the possibilities of where your degree will take you.

ESM graduates work as:

- Biologist
- Conservation worker
- Water quality specialist

Here are just a few of the employers who hire ESM graduates:

