

# Supporting Urban Deer Management in Southeast Michigan

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# Conservation and Restoration Theme Course 701.503

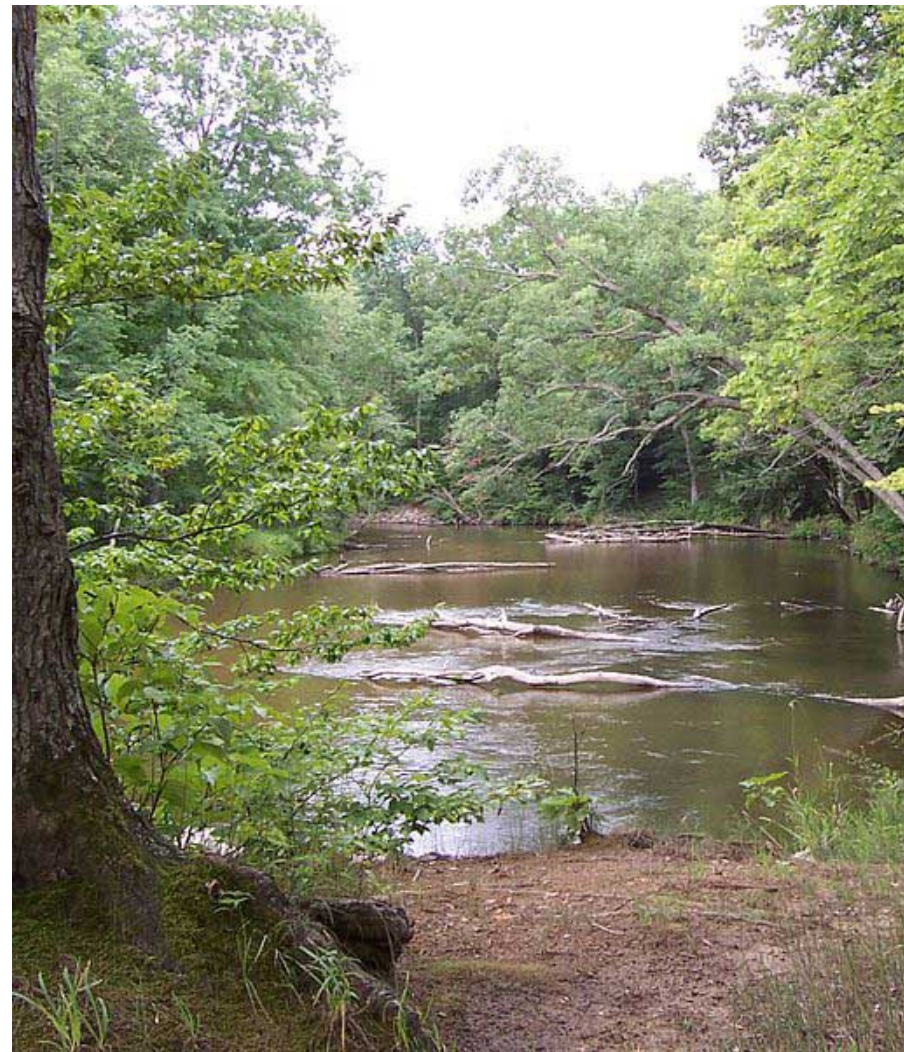
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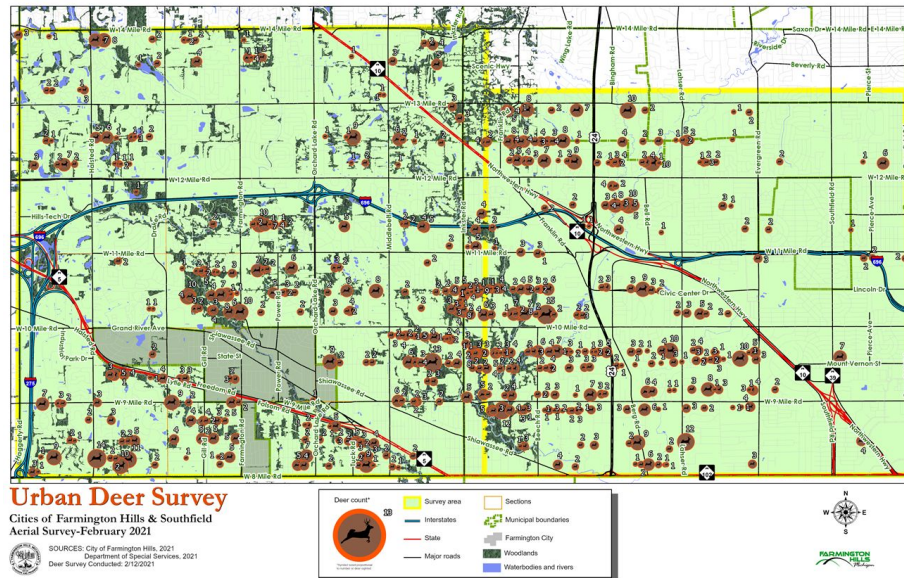
## Projects

- Fostering Coexistence: Learning to Live with Beaver in the Fleming Creek Watershed
- Supporting Urban Deer Management in Southeast Michigan
- Ecological Inventory and Monitoring for Biodiversity Conservation
- Natural Areas Assessment of UM Lands



# Supporting Urban Deer Management in Southeast Michigan

## Background: Southeast Michigan Urban Deer Coalition



# Supporting Urban Deer Management in Southeast Michigan

## Research Question:

How to achieve a balance between a healthy deer population and diverse native ecosystems in urban areas



## Research Activities

- Conducting a literature review on ecological metrics for measuring deer impacts
- Designing and conducting an ecological field study to assess deer impacts
- Conducting field interviews with impacted residents
- Researching urban deer management programs
- Researching legislation to support local governments in establishing deer management programs
- Producing educational materials (presentations, web pages) on urban deer management

## **Behavior, Education, and Communication**

Potential roles:

- Conducting field interviews with impacted residents
- Researching how other municipalities have successfully managed deer populations
- Developing educational materials for web pages and oral presentations and delivering presentations.

## **Ecosystem Science Management – Conservation Ecology**

Potential roles:

- Researching potential ecological indicators for measuring deer impacts and producing a report of their findings
- Conducting a field study to assess deer impacts in selected natural areas and produce a report of their findings.



## **Environmental Justice**

Potential roles:

- Assessing how harvested deer could help alleviate food access and food justice issues for homeless populations.
- Calculating how much food would come from a regional urban deer management program
- Assessing the benefits of providing venison to homeless shelters or other social service organizations.
- Collaborating with team members on preparing educational materials, presenting at meetings, researching wildlife management policies, and conducting a deer impacts study.

## Environmental Policy and Planning

Potential roles:

- Researching policy and legislation around wildlife management, and specifically urban deer management
- Working with local government officials and the Michigan Municipal League to:
  - Draft sample legislation (resolutions and bills) to support urban deer management
  - Identify potential legislative sponsors
- Quantifying the cost and benefits of action vs no action (e.g., sustainable deer management vs status quo / no management)

## **Geospatial Data Sciences**

Potential roles:

- Analyzing regional habitat availability and important habitat corridors (based on aerial imagery)
- Comparing habitat availability with deer numbers where data is available
- Conducting drone flyovers of specific parcels, counting deer observed, and produce heat maps of deer densities
- Determining key habitat variables by assessing the spatial characteristics that influence deer densities

## **Landscape Architecture**

Potential roles:

- Conducting field interviews with municipalities and residents whose landscaping has been impacted by high deer populations
- Producing deer-resistant landscaping plans as alternatives
- Collaborate with municipalities to offer alternative landscaping designs and recommended plant lists for areas where deer management is not feasible
- Collaborating with team members on conducting field studies, producing and presenting educational materials, and assessing landscape variables that influence deer densities

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## Sustainability and Development

Potential roles:

- Analyzing how continuous sustainable deer management could contribute to a healthy balance between deer and ecosystem health.
- Collaborating with urban planning departments to determine the differing levels of impacts within residential areas of high vs low deer densities.



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## Sustainable Systems

Potential roles:

- Researching how to achieve a balance between healthy, sustainable deer populations and native ecosystems (e.g., forests) in urban areas where invasive plants often outcompete native plants.
- Collaborating with other students on conducting field studies, producing and presenting educational materials, and assessing landscape variables that influence deer densities.



## Potential Deliverables

- Educational materials (presentations, web pages) on urban management
- Draft resolutions for local governments on urban deer management
- Draft state bill for the Michigan state house and senate to require insurance companies to track deer-vehicle accidents and a list of potential house and senate legislators who would sponsor the legislation.
- An assessment of ecological indicators for measuring deer impacts and a report of the findings.
- A field study to assess deer herbivory in selected natural areas and a report of the findings.

## **Potential Deliverables (continued)**

- Field interviews with impacted community members and a report of the findings
- Model landscape designs for areas with high deer densities where deer management is not feasible.
- A study to assess interest in hunting to harvest deer as a sustainable food source
- A study of how to achieve a balance between healthy, sustainable deer populations and native ecosystems (e.g., forests) in urban areas where invasive plants often outcompete native plants, and how continuous deer management could help achieve this balance.
- A final project report