USDA Forest Service

Urban Forest Connections
webinar series

Second Wednesdays | 1:00 – 2:00 pm ET
www.fs.fed.us/research/urban-webinars

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WILDLIFE CONSERVATION IN CITIES AND SUBURBS: RESEARCH, PROGRAMS, TOOLS

Susannah Lerman
Research Ecologist
USDA Forest Service & University of Massachusetts Amherst

David Mizejewski
Naturalist: Media/TV
National Wildlife Federation

Naomi Edelson
Director, State and Federal Wildlife Partnerships
National Wildlife Federation
Beyond Benefits for Humans: How Cities can Support Ecosystem Services for Wildlife

Susannah Lerman
US Forest Service Northern Research Station
Environmental Conservation, University of Massachusetts
The Birds and the Bees

Provisioning Services
- 7,000 – 9,000 insects per clutch
- $56 billion per year
The Birds and the Bees

Cultural Services
- 70 million watch wildlife
Wildlife and Urbanization
Wildlife and Urbanization
Wildlife and Urbanization
Wildlife and Urbanization
Wildlife and Urbanization

Biodiversity

Habitat Loss and Alteration
80% of Americans Live Here
The Urban Forest
The Urban Forest
The Urban Forest

- Nest
- Flying insects
- Cavity nest
- Water
- Nectar
- Earthworms
- Cover
The Urban Forest

- Nest
- Flying insects
- Cavity nest
- Water
- Nectar
- Earthworms
- Cover
Strategies for Enhancing the Urban Forest

Assessing Habitat

Conservation Partners

Creating Habitat
i-Tree Wildlife

Lerman et al. 2014 *Landscape and Urban Planning*
<table>
<thead>
<tr>
<th>CITY</th>
<th>Canopy % (0.04 ha)</th>
<th>Lg Tree Density (0.04 ha)</th>
<th>Basal Area (m²/ha)</th>
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## i-Tree Wildlife

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<tr>
<td>OPTIMAL</td>
<td>35-62%</td>
<td>&gt;6</td>
<td>8-14</td>
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## i-Tree Wildlife

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Lerman et al. 2014 *Landscape and Urban Planning*
i-Tree Wildlife

Highlights
- Assesses bird habitat potential
- Evaluates habitat improvement plans
- Provides detailed information of habitat requirements

Lerman et al. 2014 *Landscape and Urban Planning*
Neighborhood Nestwatch and Citizen Science
Neighborhood Nestwatch and Citizen Science

The Science

• Monitor backyard bird populations
• Identify management regimes
• Improve wildlife habitat
Neighborhood Nestwatch and Citizen Science

The Engagement

- Increase environmental literacy
- Reconnect people with nearby nature
Neighborhood Nestwatch and Citizen Science

The “Feel Good” Factor
Sustainability Begins at Home
Sustainability Begins at Home

163, 800 km²
- 1.9% of USA lands
- 40-55% of urban forest

Milesi et al. 2005 *Env Mgt*
Sustainability Begins at Home

The lawn as habitat

- Mow less:
- 2 weeks = 70% more flowers
- 3 weeks = 300% more flowers

![Graph showing the increase in lawn flowers with less mowing frequency](image)

$p=0.001$
How does mowing frequency influence ecosystem services?
Sustainability Begins at Home

Bee Abundance

<table>
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<tr>
<th># of Bees</th>
<th>1 week</th>
<th>2 weeks</th>
<th>3 weeks</th>
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Lawn Mowing Frequency

p = 0.02

Lerman et al. *in prep*
Sustainability Begins at Home

**Bee Abundance**

- 1 week: Low bee abundance
- 2 weeks: Increased bee abundance
- 3 weeks: Further increase in bee abundance

Significance: p=0.02

**Soil Compaction**

- 1 week: High soil compaction
- 2 weeks: Moderate soil compaction
- 3 weeks: Low soil compaction

Lerman et al. *in prep*
Sustainability Begins at Home

Mow less
- Supports beneficial insects
- Implications for stormwater mgt

Lerman et al. *in prep*
Final Thoughts

Building public support
• Improves urban sustainability
• For the birds and the bees
Opportunities

60% Slated for Development

40% Developed

Convention on Biological Diversity
Opportunities

60% Slated for Development
40% Developed

SEES Fellows Program
DEB #1215859

Keith Nislow
David Nowak
Peter Marra

Joan Milam
David Bloniarz
Alix Contosta

Steve DeStefano
David King
Erika Svendsen